Dedicated to Frances
Preface to second edition, 
titled *Food Science Sourcebook*

It was realized, even prior to the printing of the first edition, that a book of this magnitude would never be complete and that at some point a line must be drawn and data currently available must be organized. This was done to get the first edition into print. However, prior to its printing, revisions and new data were becoming available for inclusion in the second edition (now titled *Food Science Sourcebook*), which includes most of the information in the first edition plus twelve additional years of collecting data.

The author wants to thank the many readers, colleagues, and students who have made suggestions on how the manuscript could become more useful. Most of the suggestions have been incorporated into this edition. Like the first edition, the second edition is certainly also not complete, and the author would certainly appreciate communications from readers and colleagues for suggestions and recommendations on how additional editions might be improved.

HERBERT W. OCKERMAN
Columbus, Ohio
Preface to first edition, titled Source Book for Food Scientists

The Source Book for Food Scientists materialized as the result of accumulating current data and relevant facts in the field of food science and technology. Since reference sources are often scattered, there has been a need for a one-volume data book of this type. A number of my colleagues have urged me to make my data bank available to others, hence this volume.

Such a book could be organized as follows: a dictionary interpretation of terms used in food science and technology; tabular material giving detailed information on food composition and properties; chemical formulas and structures; uses of foodstuffs; harvesting; slaughtering and related information concerning the meat industry..., in fact, almost any and every type of subject one might encounter dealing with food.

I have organized the material in two parts. Part 1 covers what I call my “personal dictionary” of pertinent information. Part 2 contains the tabular and general information that broadens the base of Part 1 with factual data.

I have found it invaluable. My earnest desire, now that the material is to be published, is that it will equally serve other food scientists and technologists working in various capacities in industry, government, and the academic community.

I wish to acknowledge the encouragement given me by Dr. Donald K. Tressler, President, AVI Publishing Company, and to express my appreciation for his belief and support in this project.

It is also a special pleasure for me to acknowledge the editorial assistance provided by Mrs. Lucy Long, Senior Editor at AVI, and to Mr. Gessner Hawley, Editor of the Condensed Chemical Dictionary and Co-editor of the Encyclopedia of Chemistry. It was their collaboration and assistance that transformed a very rough draft into a publishable manuscript. However, errors of omission or commission are mine alone to bear.

I would also like to thank the scores of publishers and authors who have granted me permission to reprint their copyrighted materials. Thanks are also extended to the many authors and contributors to government publications for information obtained from those sources. Specific acknowledgement is noted for each source as it appears in this book.

I also wish to extend grateful thanks to my wife, Frances, for her assistance in typing and proofreading. Her patience and help contributed much to the completion of this book.

This is the First Edition of the Source Book and I would greatly appreciate communications from readers for suggestions or recommendations on how to improve it and also to call to my attention errors that may be corrected in the next printing.

HERBERT W. OCKERMAN
Columbus, Ohio

Jan. 1, 1978
How to Use The *Food Science Sourcebook*
(important to obtain maximum utilization of this book!)

For ease of retrieval, this book has been organized into two parts. *Start your search in Part 1* and this, if necessary, will lead you to Part 2 by extensive cross-references. Part 1 consists of dictionary terms and descriptions wherein the definition usually contains detailed information on the subject and, where feasible, some data concerning its use or properties. With the majority of these *Sourcebook* terms and description in Part 1, there is a reference to Part 2, giving a list of subjects for further information. (See the breakdown of the *artichoke* entry below.)

Part 2 is composed of alphabetical sections containing food composition, properties, and general data designed as the basis for the initiation of a broader search for further information relevant to the dictionary term given in Part 1. Part 2 is, in truth, a “data book” of tables, figures, charts, formulas, etc.

Part 1 will lead the reader to a pertinent, appropriate section in Part 2, or one can refer to Part 2 independently of the Part 1 dictionary description because it is organized alphabetically; however, some information will be missed if the second approach is used.

**Term**

**Generic name**

**Growth preferences**

**artichoke** *(French; globe; true; *Cynara scolymus)*

A deep-rooted, 3- to 5-ft perennial, thistle-like plant, belonging to the daisy or thistle family; grows well in a cold, moist climate; the flower heads (green to purplish; small to 5-in. diam.) and “chokes,” or unopened, tightly clinging fleshy petals, have scales with fleshy bases. 650 seed/oz; thin to 2-3 ft apart in rows 3-4 ft apart. In season Nov.–May; harvest when buds are compact and refrigerate as soon as picked.

**Size**

<table>
<thead>
<tr>
<th>Size</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>Pickling, stews, casseroles</td>
</tr>
<tr>
<td>Medium</td>
<td>Salads</td>
</tr>
<tr>
<td>Large</td>
<td>Stuffing</td>
</tr>
</tbody>
</table>

**Type**

<table>
<thead>
<tr>
<th>Type</th>
<th>Where grown</th>
<th>Varieties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conical bud</td>
<td>Europe</td>
<td>French or green French Thistle or prickly Violet</td>
</tr>
<tr>
<td></td>
<td>U.S. and</td>
<td>Giant bud</td>
</tr>
<tr>
<td></td>
<td>Europe</td>
<td>Green or white globe Red Dutch Violet bud</td>
</tr>
</tbody>
</table>

**Varieties**

<table>
<thead>
<tr>
<th>Other varieties</th>
<th>Commercial growth area</th>
<th>Cooking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creole</td>
<td>Southern Louisiana</td>
<td>Boiled and served with melted butter</td>
</tr>
<tr>
<td>Grande Beurre</td>
<td>California Gulf Coast</td>
<td>Most popular</td>
</tr>
<tr>
<td>Green Globe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gros Vert de Laon</td>
<td>Purple Globe</td>
<td></td>
</tr>
</tbody>
</table>
### How to Use The *Food Science Sourcebook*

- **Portion eaten**: The fleshy base of the scales is eaten raw, baked, fried, stuffed, served with sauces, or preserved in oil; the base of the flower head and the central leaf stalk are also eaten.

- **Canned information**: Canned and frozen styles:
  - Whole (one per can)
  - Topped Hearts (packed in brine, vinegar, sauces, or olive oil)

- **Weights**
  - 1 large artichoke cooked and drained = 15 oz
  - 1 artichoke heart = 15 g
  - 1 serving = 1/2 lb
  - = 1 med. artichoke

- **Composition**: Composition: moisture 86%; protein 3%; fiber 11%; ash 0.8%; pH 5.6
  - Store at 31–32°F, at 60–95% relative humidity; use in 1–2 weeks.
  - See Chinese artichoke; Jerusalem artichoke;
  - other artichoke entries

- **For more information**
  - For more information, see Part 2: Iron; Minerals; Food; Niacin; Phosphorus; Potassium; Potassium-Rich Foods; Vegetable Composition; Vegetable Plants; Vegetables, Canning Dates

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**Other ready-reference material that is to be found in the book:**

Inside the front cover is a table for temperature conversion from Fahrenheit to Celsius or vice versa.

Inside the back cover will be found conversion factors for units of weight, units of liquid measure, oven temperatures, and units of volume.

And following is a list of the most-often-used abbreviations for quick reference.
## Common Abbreviations

NOTE: Where the abbreviation denotes either the singular or plural, the spelled-out version of the abbreviation carries an asterisk (*).

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>ampere*</td>
</tr>
<tr>
<td>AAAS</td>
<td>American Association for the Advancement of Science</td>
</tr>
<tr>
<td>AOAC</td>
<td>Association of Official Analytical Chemists</td>
</tr>
<tr>
<td>apoth.</td>
<td>apothecary</td>
</tr>
<tr>
<td>approx.</td>
<td>approximately</td>
</tr>
<tr>
<td>atm</td>
<td>atmosphere</td>
</tr>
<tr>
<td>at. no.</td>
<td>atomic number</td>
</tr>
<tr>
<td>at. wt.</td>
<td>atomic weight</td>
</tr>
<tr>
<td>avg.</td>
<td>average</td>
</tr>
<tr>
<td>avdp.</td>
<td>avoirdupois</td>
</tr>
<tr>
<td>bp</td>
<td>boiling point</td>
</tr>
<tr>
<td>Brit.</td>
<td>British</td>
</tr>
<tr>
<td>Btu</td>
<td>British thermal units</td>
</tr>
<tr>
<td>bu</td>
<td>bushel*</td>
</tr>
<tr>
<td>cal</td>
<td>calorie*</td>
</tr>
<tr>
<td>°C</td>
<td>Centigrade or Celsius</td>
</tr>
<tr>
<td>ca.</td>
<td>circa or about</td>
</tr>
<tr>
<td>cc</td>
<td>cubic centimeter* (also cm²)</td>
</tr>
<tr>
<td>CAMP</td>
<td>computer assisted menu planning</td>
</tr>
<tr>
<td>CFN</td>
<td>Council on Food and Nutrition of the American Medical Association</td>
</tr>
<tr>
<td>cg</td>
<td>centigram*</td>
</tr>
<tr>
<td>chem.</td>
<td>chemical or chemistry</td>
</tr>
<tr>
<td>cl</td>
<td>centiliter*</td>
</tr>
<tr>
<td>cm</td>
<td>centimeter*</td>
</tr>
<tr>
<td>CP</td>
<td>chemically pure</td>
</tr>
<tr>
<td>cps</td>
<td>cycles per second</td>
</tr>
<tr>
<td>cu.</td>
<td>cubic</td>
</tr>
<tr>
<td>cwt</td>
<td>hundredweight</td>
</tr>
<tr>
<td>d</td>
<td>density</td>
</tr>
<tr>
<td>dc</td>
<td>direct current</td>
</tr>
<tr>
<td>deg</td>
<td>degree*</td>
</tr>
<tr>
<td>df</td>
<td>degrees of freedom</td>
</tr>
<tr>
<td>dg</td>
<td>decigram*</td>
</tr>
<tr>
<td>diam.</td>
<td>diameter</td>
</tr>
<tr>
<td>dag</td>
<td>dekagram*</td>
</tr>
<tr>
<td>dal</td>
<td>dekaliter*</td>
</tr>
<tr>
<td>dl</td>
<td>deciliter*</td>
</tr>
<tr>
<td>dm</td>
<td>decimeter*</td>
</tr>
<tr>
<td>dwt</td>
<td>pennyweight</td>
</tr>
<tr>
<td>doz</td>
<td>dozen*</td>
</tr>
<tr>
<td>dr</td>
<td>dram*</td>
</tr>
<tr>
<td>e.g.</td>
<td>for example</td>
</tr>
<tr>
<td>EMF</td>
<td>electromotive force</td>
</tr>
<tr>
<td>equiv. wt.</td>
<td>equivalent weight</td>
</tr>
<tr>
<td>°F</td>
<td>Fahrenheit</td>
</tr>
<tr>
<td>FAO</td>
<td>Food and Agricultural Organization, United Nations</td>
</tr>
<tr>
<td>FDA</td>
<td>Food and Drug Administration</td>
</tr>
<tr>
<td>ffa</td>
<td>free fatty acid*</td>
</tr>
<tr>
<td>fl</td>
<td>fluid</td>
</tr>
<tr>
<td>FNS</td>
<td>Food and Nutrition Service, US Department of Agriculture</td>
</tr>
<tr>
<td>FNB</td>
<td>Food and Nutrition Board of the National Academy of Science–National Research Council</td>
</tr>
<tr>
<td>fp</td>
<td>freezing point</td>
</tr>
<tr>
<td>fpm</td>
<td>feet per minute</td>
</tr>
<tr>
<td>fps</td>
<td>feet per second</td>
</tr>
<tr>
<td>ft</td>
<td>foot*</td>
</tr>
<tr>
<td>g</td>
<td>gram*</td>
</tr>
<tr>
<td>gal</td>
<td>gallon*</td>
</tr>
<tr>
<td>gpm</td>
<td>gallon* per minute</td>
</tr>
<tr>
<td>gr</td>
<td>grain*</td>
</tr>
<tr>
<td>h</td>
<td>hectare*</td>
</tr>
<tr>
<td>hg</td>
<td>hectogram*</td>
</tr>
<tr>
<td>Hg</td>
<td>mercury</td>
</tr>
<tr>
<td>hhd</td>
<td>hogshead*</td>
</tr>
<tr>
<td>hp</td>
<td>horsepower</td>
</tr>
<tr>
<td>h</td>
<td>hour*</td>
</tr>
<tr>
<td>h.d.</td>
<td>inside dimension</td>
</tr>
<tr>
<td>i.e.</td>
<td>that is</td>
</tr>
<tr>
<td>imp</td>
<td>imperial</td>
</tr>
<tr>
<td>in.</td>
<td>inch*</td>
</tr>
<tr>
<td>IU</td>
<td>International Units</td>
</tr>
</tbody>
</table>
# Common Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>J</td>
<td>joule*</td>
</tr>
<tr>
<td>kcal</td>
<td>kilocalorie*</td>
</tr>
<tr>
<td>Kg</td>
<td>kilogram*</td>
</tr>
<tr>
<td>Km</td>
<td>kilometer*</td>
</tr>
<tr>
<td>Kw</td>
<td>kilowatt*</td>
</tr>
<tr>
<td>l</td>
<td>liter* (more often spelled out to avoid misinterpretation with numeral one)</td>
</tr>
<tr>
<td>Lat</td>
<td>latitude</td>
</tr>
<tr>
<td>Lb</td>
<td>pound*</td>
</tr>
<tr>
<td>M</td>
<td>meter*</td>
</tr>
<tr>
<td>Mmol</td>
<td>Molal</td>
</tr>
<tr>
<td>Max.</td>
<td>maximum</td>
</tr>
<tr>
<td>MDR</td>
<td>minimum daily requirement (no longer used; see RDA)</td>
</tr>
<tr>
<td>Med.</td>
<td>medium</td>
</tr>
<tr>
<td>Mg</td>
<td>milligram*</td>
</tr>
<tr>
<td>Mhz</td>
<td>megahertz</td>
</tr>
<tr>
<td>Mi</td>
<td>mile*</td>
</tr>
<tr>
<td>MID</td>
<td>Meat Inspection Division, US Department of Agriculture</td>
</tr>
<tr>
<td>Min.</td>
<td>minimum</td>
</tr>
<tr>
<td>Ml</td>
<td>milliliter*</td>
</tr>
<tr>
<td>Mm</td>
<td>millimeter*</td>
</tr>
<tr>
<td>Mo.</td>
<td>month*</td>
</tr>
<tr>
<td>Mol. Wt.</td>
<td>molecular weight</td>
</tr>
<tr>
<td>Mp</td>
<td>melting point</td>
</tr>
<tr>
<td>Mps</td>
<td>meters per second</td>
</tr>
<tr>
<td>Mv</td>
<td>millivolt*</td>
</tr>
<tr>
<td>No.</td>
<td>number (when followed by numeral)</td>
</tr>
<tr>
<td>NFE</td>
<td>nitrogen free extract</td>
</tr>
<tr>
<td>Nih</td>
<td>National Institutes of Health</td>
</tr>
<tr>
<td>NMR</td>
<td>nuclear magnetic resonance</td>
</tr>
<tr>
<td>Npu</td>
<td>net protein utilization</td>
</tr>
<tr>
<td>Npv</td>
<td>net protein value</td>
</tr>
<tr>
<td>Nrc</td>
<td>National Research Council</td>
</tr>
<tr>
<td>NSF</td>
<td>National Science Foundation</td>
</tr>
<tr>
<td>O.D.</td>
<td>outside dimension</td>
</tr>
<tr>
<td>Opt.</td>
<td>optimum, optional</td>
</tr>
<tr>
<td>Oz</td>
<td>ounce*</td>
</tr>
<tr>
<td>PER</td>
<td>protein efficiency ratio</td>
</tr>
<tr>
<td>Pk</td>
<td>peck*</td>
</tr>
<tr>
<td>Ppm</td>
<td>parts per million</td>
</tr>
<tr>
<td>Ppt</td>
<td>precipitate; parts per trillion</td>
</tr>
<tr>
<td>Prob.</td>
<td>probable</td>
</tr>
<tr>
<td>Psf</td>
<td>pounds per square foot*</td>
</tr>
<tr>
<td>Psi</td>
<td>pounds per square inch*</td>
</tr>
<tr>
<td>Psia</td>
<td>pounds per square inch atmosphere*</td>
</tr>
<tr>
<td>Pt</td>
<td>pint*</td>
</tr>
<tr>
<td>Qt</td>
<td>quart*</td>
</tr>
<tr>
<td>R</td>
<td>correlation</td>
</tr>
<tr>
<td>Rda</td>
<td>recommended daily allowance</td>
</tr>
<tr>
<td>Rh</td>
<td>relative humidity</td>
</tr>
<tr>
<td>Rpm</td>
<td>revolutions per minute</td>
</tr>
<tr>
<td>Sig.</td>
<td>significant</td>
</tr>
<tr>
<td>Sp.</td>
<td>specific</td>
</tr>
<tr>
<td>Sp. Gr.</td>
<td>specific gravity</td>
</tr>
<tr>
<td>Sq.</td>
<td>square</td>
</tr>
<tr>
<td>Tbsp</td>
<td>tablespoon*</td>
</tr>
<tr>
<td>Temp.</td>
<td>temperature</td>
</tr>
<tr>
<td>Tsp</td>
<td>teaspoon*</td>
</tr>
<tr>
<td>USDA</td>
<td>United States Department of Agriculture</td>
</tr>
<tr>
<td>Us</td>
<td>USP</td>
</tr>
<tr>
<td>Vol.</td>
<td>volume</td>
</tr>
<tr>
<td>Vit.</td>
<td>vitamin (rarely used)</td>
</tr>
<tr>
<td>Vit.</td>
<td>vitamin (rarely used)</td>
</tr>
<tr>
<td>Wt.</td>
<td>weight</td>
</tr>
<tr>
<td>Yd</td>
<td>yard*</td>
</tr>
<tr>
<td>Yr</td>
<td>year*</td>
</tr>
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</table>
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Food Science Sourcebook Food Composition, Properties, and General Data 833

Temperature Conversion Table Inside Front Cover
Weights and Measures Conversion Tables Inside Back Cover
Part 1

Terms and Descriptions
A  1) Abbreviation for absolute temperature. 2) Abbreviation for acre
Å  Abbreviation for angstrom
a.  See water activity
a  See ampere
a- Prefix meaning not or without
-a Latin suffix making some words singular and others plural
aalrauchmettwurst Pork salami
aarey A semihard, buffalo's-milk cheese
aarlborg A clear, schnaps-type spirit with a high alcohol content
AAS Atomic absorption spectrometry
ab- Prefix meaning away from
abacaxi  See pineapple
abaisse A thin, undercrust pastry
abalone (awabi; muttonfish; ormer; paua; sea-ear; Haliotis cracherodii; H. iris (paua from New Zealand); H. rufescens; H. splendens; H. tuberculata (Channel Islands)] A large (1-ft) mollusk or Pacific sea snail with a single, flattened shell. The "foot," or central muscle, is eaten and is somewhat tough (if overcooked) but has a delicate clamlike flavor. The meat is firm, creamy white, and mild. It is available fresh, dried (brined, cooked, smoked, and then sun-dried), dry shredded, dry powder, salted, canned (in brine), frozen, and as soup. It may be used in chowders, soups, canapés, sandwiches, and for stir-frying. The shells are a source of mother of pearl and blister pearl.
Composition: moisture 76%; protein 19%; fat 0.5%; carbohydrate 3.5%; ash 1.6%
See Part 2: Minerals (Trace), Food
abampere
  1 abampere = 10 amperes (A)
See ampere
A-band Dark bands (anisotropic) in muscle fiber; they contain all the myosin and the ends of the actin filaments.
abandon See expire
abattoir Slaughterhouse
abbaye de cîteaux A rich, creamy, soft, French, monk's cheese
abbot A fish called an angle shark (Squatina squatina) or anglerfish (Lophius piscatorius)
abcoulomb
  1 abcoulomb = 2.998 × 10\(^{10}\) statcoulomb
ABC's Letter- and number-shaped pasta that is \(\frac{1}{2}\) in. tall
abdominal Refers to the stomach, or belly, between the thorax and pelvis
abductor A muscle that draws a limb, wing, or other body appendage away from a medial position
abduug Sour diluted milk that is often salted, has spices and herbs added, or is sweetened
abe nego A red palm oil
Aberdeen A soft, mellow, creamy, Scottish cheese
Aberdeen-Angus Commonly referred to as Angus. Solid black breed of beef cattle that has no horns; origin, Northeastern Scotland; imported into America by G. Grant of Victoria, Kansas.
See Part 2: Beef and Dual-Purpose Cattle; Gestation Periods
Aberdeen-Angus crosses
  Angus × Horned European breeds → nearly always polled
  × Brahman → 95% female polled
  × red-bodied cattle → black with white markings of the other breed
  × white Shorthorns → blue-gray (mixture of white and black hair)
  × Charolais → black or "smokey" white
Aberdeen-Angus-Hereford cross Offspring will be polled and have a white face and black body; if two of the above offspring are crossed, the following ratio of offspring will result:
  27 polled, white face, black body
  9 horned, white face, black body
  9 polled, entirely black
  9 horned, white face, red body
  3 horned, entirely black
  3 horned, white face, red body
  3 polled, colored face, red body
  1 horned, colored face, red body
Aberdeen-Angus, Red Red color is inherited as a single, one-gene recessive trait in Angus cattle.
Red × Red → always Red
aberdin buttery A wheat-flour roll
abertam A golden, hard, salty, pressed, German cheese made from sheep's or goat's milk
abfarad
  1 abfarad = 1 × 10\(^{9}\) farads (F)
  = 1 × 10\(^{-15}\) microfarads (\(\mu\)F)
See farad
abhenry
  1 abhenry = 1 × 10\(^{-9}\) henry (H)
  = 1 × 10\(^{-6}\) millihenry (mH)
See henry
abifo Chindanda made from maize flour and plantain
abijau An alcoholic beer
abiu A South American fruit whose edible pulp (eaten stewed or grilled) is covered with a red capsule

ablongo Steamed chindanda made from maize or rice and plantain; flavored with onions, pepper, and ginger

abnormal Not normal; unnatural; not typical; unusual or irregular

aboodoo An acidic maize dumpling

abohm

\[ 1 \text{ abohm} = 1 \times 10^{-6} \text{ ohm (}\Omega\text{)} = 1 \times 10^{-15} \text{ megohm (M}\Omega\text{)} \]

See ohm

abolo Acetic, steamed or baked maize dumpling (wheat flour may be added)

abomasum (glandular stomach; true stomach)
The fourth section of the ruminant stomach, which is located on the right side; often called the true stomach or rennet bag; it functions very much like the entire monogastric stomach; a bovine abomasum may have a capacity from 2 to 5 gal

abondance (tomme d'abondance) A 20- to 40-lb paste to semihard, cow's-milk cheese, with a washed rind, small holes, and mild to full fruity flavor, that is produced in France and aged 2-3 months

abongo An acidic-maize, sugar, and palm-oil dumpling

abrey A nonalcoholic, sour drink made from white sorghum

abricot Brandy distilled from fermented apricot juice

abricotine A sweet apricot (Prunus armeniaca) liqueur. A French liquor made from brandy, fresh apricot pulp, and apricot kernel. A cordial made from brandy and apricot extract

Abruzzi A variety of rye

abscess Pus in any tissue or organ

abscissa (x axis) Horizontal axis on rectangular coordinates

abscission Detachment or separation of a fruit from a tree or shrub. Treatment with chemicals before harvesting aids this separation.

absciss(e) (Artemisia absinthium) 1) An herb (wormwood) grown for its aromatic oil, which is used as a condiment; an alcoholic liquor can be made from its leaves. See wormwood. 2) A strong (high alcohol content), dry liqueur or elixir flavored with wormwood, aniseed, licorice, or fennel. It also contains a habit-forming drug.

absciss(e) oil See wormwood

absolute alcohol Contains about 99.8% alcohol; can be made as follows:
1. Heat crystalline copper sulfate until it is a white powder
2. Add to commercial alcohol (96%) until it no longer turns blue
3. Filter into a clean, dry, tightly capped bottle

absolute temperature (A)

\[ ^\circ\text{K (kelvin)} = ^\circ\text{C} + 273.16 \]

\[ ^\circ\text{R (Rankine)} = ^\circ\text{F} + 459.69 \]

See Part 2: Temperature (Conversion Table)

absolute value (|n|) A number without a + or – sign

absolute zero –459.69°F; –273.16°C

absorption Penetration of a liquid into the fine structure of a solid, the liquid being retained within the solid. Cellulosic materials (absorbent cotton, paper) readily absorb liquids. Absorption of nutrients by the intestinal walls is an important factor in metabolism; transfer of substances or nutrients from the gastrointestinal tract (intestine) to the blood or lymph systems, e.g., from the alimentary tract by digestion or from tissue. Retention of holding of oil or fat by a food. The word also means the tendency of a material to accept energy in the form of certain wavelengths of light (absorption band). See also spectrophotometric analysis

abusage Fried bean curd See tofu

abutilion A vegetable plant; its flowers or leaves are eaten

abvolt

\[ 1 \text{ abvolt} = 1 \times 10^{-8} \text{ volt (V)} \]

See volt

ABY agar See Part 2: Microorganism, Media

ac See alternating current

Ac Symbol for the element actinium

a.c. Latin for before meals

acacia A shrub; its young flowers (blossoms of acacia (wattle)) are used in making fritters or for food flavoring.

acacia gum See gum arabic

acar (achar) 1) General term for pickle, sometimes hot. 2) Pickled fruit. 3) Pickled vegetables

accelerated freeze-drying Freeze-drying with expanded metal (or spikes) between the drying surface of the frozen food and the heating platens

accelerated rancidity test Any test to determine the relative shelf life of fats or food by increasing the development of rancidity. This is usually done by abnormally increasing the temperature, light, and/or oxygen level. See active oxygen method

accelerator A device used to produce electron beams that can be used in food irradiation

acceptable quality level (AQL) A level of lot quality expressed as a percentage defective that is acceptable

acceptance A draft on which the debtor indicates by the word “accepted” the debtor's intention to pay

acceptance number The maximum number of defects acceptable in a lot

acceptance sampling plan A procedure for accepting a lot based on inspection of a sample from the lot

acclimation Adjustment to new surroundings

accoub Mediterranean vegetable; edible thistle

<table>
<thead>
<tr>
<th>Parts eaten</th>
<th>Used as</th>
<th>Similar to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buds</td>
<td>Parboiled vegetable</td>
<td>Potatoes</td>
</tr>
<tr>
<td>Root</td>
<td>Salsify substitute</td>
<td>Salsify</td>
</tr>
<tr>
<td>Shoots</td>
<td>Asparagus substitute</td>
<td>Asparagus</td>
</tr>
</tbody>
</table>
Acetomonas **Yeast-batter fritters containing fish, meat, vegetables, or fruit**

**Accum, Frederick** A German food chemist who applied chemistry to food problems in the 1800s and wrote *Culinary Chemistry* and *A Treatise on Adulterations of Food*

**aceda** A thick porridge gruel made from sorghum or millet

**acetunas** Olives

**aceitunas** Olives

**acelga** See *beet, silver*

**acelora cherry** (West Indian cherry, Barbados cherry) A tropical berry (*Malpighia punicifolia; M. glabra*) high in vitamin C (1700 mg ascorbic acid/100 g pitted fruit); it resembles a cherry but is an entirely different fruit.

<table>
<thead>
<tr>
<th>Composition</th>
<th>Pulp &amp; skin (%)</th>
<th>Juice (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>92</td>
<td>94</td>
</tr>
<tr>
<td>Protein</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Fat</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Carbohydrate</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>pH</td>
<td></td>
<td>3–3.5</td>
</tr>
</tbody>
</table>

See Part 2: Fruit Storage I

**acesulfame K** Artificial sweetener used in Europe

**acetabulum** Hip joint cavity; socket or cavity that receives the head of another bone

**acetal** ([CH₃CH(OAC₂H₅)₂] A volatile liquid used as flavoring

**acetaldehyde (ethyl alcohol)** ([CH₃CHO]) Found naturally in many foods and added to others as a flavoring agent; sp. gr. 0.804–0.811 at 0°/20°C, 99% pure

Storage: closed container in a cool (less than 15°C) place

**acetaldehyde phenethyl propyl acetal propional** Synthetic fruit flavoring

**acetamide** (CH₃CONH₂) Normal constituent of some foods and also a nitrogen excreatory product of mice

**acetanisole (p-methoxyacetophenone)**

\[
\begin{align*}
\text{CH}_3\text{O} & \quad \text{C} \quad \text{CH}_3 \\
\end{align*}
\]

Used as a flavoring agent in foods; mol. wt. 150.18

Storage: full, tight, glass containers in a cool, dark place

**acetic acid (ethyl acetate)**

\[
\begin{align*}
\text{CH}_3\text{C} & \quad \text{O} \quad \text{CH}_3\text{C} \quad \text{O} \\
\end{align*}
\]

A saturated carboxylic acid occurring as a free fatty acid in natural fat; found in vinegar (4–12%); formed by the bacterial fermentation (*Acetobacter aceti*) of alcohol:

\[
\begin{align*}
2\text{C}_2\text{H}_5\text{OH} + \text{O}_2 & \rightarrow 2\text{CH}_3\text{C} \quad \text{O} \\
\text{acetaldehyde} & \\
2\text{CH}_3\text{C} \quad \text{O} + \text{O}_2 & \rightarrow 2\text{CH}_3\text{C} \quad \text{OH} \\
\text{acetaldehyde} & \\
\text{acetic acid} & \\
\end{align*}
\]

mol. wt. 60.03, equiv. wt. 60.03

<table>
<thead>
<tr>
<th>Commercial grades</th>
<th>mol/l</th>
<th>g/l</th>
<th>% by wt.</th>
<th>Sp. gr.</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic acid</td>
<td>6.27</td>
<td>376</td>
<td>36</td>
<td>1.045</td>
<td>6.27</td>
</tr>
<tr>
<td>Acetic acid, glacial</td>
<td>17.4</td>
<td>1045</td>
<td>99.5</td>
<td>1.050</td>
<td>17.4</td>
</tr>
</tbody>
</table>

Can be obtained also by destructive distillation of wood and by reaction of carbon monoxide with methanol. Used in preserving and as acidifiers (pH control) and flavoring agents in food (particularly in dairy products)

580 ml of 99.5% CH₃COOH to dilute to 10 l, approx. normality 1.00

Storage: tight container

See Part 2: Concentration of Commercial Strengths of Acids and Bases; Normal Solutions; pH, Standard Solutions; Reagents, Normal Solutions

**acetic bacteria** *Acetobacter*

**acetic ether** (ethyl acetate)

\[
\begin{align*}
\text{CH}_3\text{C} & \quad \text{O} \quad \text{CH}_3\text{CH}_3 \\
\end{align*}
\]

Artificial fruit essence

**acetoacetic acid**

\[
\begin{align*}
\text{CH}_3\text{C} & \quad \text{CH}_2\text{C} \quad \text{OH} \\
\end{align*}
\]

Product of incomplete oxidation of fatty acids See *acetone bodies*

**Acetobacter** A rod-shaped (2-μm long) microorganism that occurs in pairs of long or short chains; they are important in the carbon cycle, the production of vinegar, and the oxidation of ethanol to acetic acid and acetate or lactate to carbon dioxide and water. See Part 2: Spoilage, Carbohydrate Foods

**acetoin (acetyl methyl carbinol; dimethylketol)** (CH₃CH(OH)COCH₃) Used as a flavoring agent in food

Storage: full, tight, glass container in a cool place

See *acetyl methyl carbinol*

**acetomel** A syrup made from equal parts of honey and vinegar

**Acetomonas** A rod-shaped (3-μm long) obligate aerobic microorganism that oxidizes ethanol to acetic acid;
6 Acetomonas

eyes they are found on fruits and in fermented beverages. See Part 2: Spoilage, Carbohydrate Foods

acetone (2-propanone; dimethyl ketone)

\[
\text{(CH}_3\text{COCH}_3)\]

Used as an extraction solvent in food; mol. wt. 58.08; 99.5% pure
Storage: tight container, away from fire

acetone bodies Compounds such as \(\beta\)-hydroxybutyric acid, acetoacetic acid, and acetone; these are sometimes end products of metabolism and are excreted as such; they are acidic and moderately toxic

acetonemia Metabolic cattle disease usually occurring early in lactation; loss of flesh and milk production, and an unsteady gait are symptoms; the presence of acetone bodies in the blood, prevented by a balanced ration

acetone peroxide Mainly 2,2-hydroperoxypropane on a cornstarch carrier; strong oxidizing agent; used as a bleaching and maturing agent and as a dough conditioner
Storage: in cool (below 24°C) and dry place

acetophenone (methyl phenyl ketone)

\[
\begin{align*}
\text{O} & \quad \text{C} - \text{CH}_3 \\
\end{align*}
\]

Used as a flavoring agent in food; mol. wt. 120.15
Storage: full, tight, glass container, away from light in a cool place

acetylation The addition of an acetyl group to a molecule

acetylated monoglycerides Waxlike solids that are partial or complete esters of glycerin with a mixture of acetic acid and edible fatty acids. Made by interesterification of edible fats with triacetin and glycerol; the \(\text{CH}_3\text{CO}–\) group is attached to the glycerol. They are used as emulsifiers, coagulating agents, texture-modifying agents, solvents, and lubricants, in the chocolate covering of ice cream bars, and in jelly beans.
Storage: well-closed container

acetylcholine

\[
\begin{align*}
\text{CH}_3\text{C} - \text{O} - \text{CH}_2\text{CH}_2 - \text{N} - \text{CH}_3 \\
\end{align*}
\]

Present in many parts of the body and important in transmitting nerve impulses

acetylene (HC≡CH) Can be prepared by treating calcium carbide with water; used in illuminating and welding See alkyne

acetyl galactosamine

\[
\begin{align*}
\text{O} & \quad \text{H} - \text{C} - \text{O} - \text{C}_3\text{H}_7 \\
\end{align*}
\]

A monosaccharide derivative used as a building block in nature

acetyl glucosamine

\[
\begin{align*}
\text{O} & \quad \text{H} - \text{C} - \text{O} - \text{C}_3\text{H}_7 \\
\end{align*}
\]

A monosaccharide derivative used as a building block in nature

acetyl methylcarbinol (acetoin)

\[
\begin{align*}
\text{O} & \quad \text{H} - \text{C} - \text{O} - \text{C}_3\text{H}_7 \\
\end{align*}
\]

A product of dextrose fermentation partially responsible for the aroma of butter and for flavor in a number of foods

achar Cucumbers, shallots, and chilies marinated in vinegar, sugar, and salt; pickle, sometimes hot. See acar

achard Unsalted bamboo shoots pickled in vinegar

achar tandal Pickled cauliflower stalks

ache See celery

achene A small, dry, single-seeded fruit that remains closed at maturity, e.g., strawberry seed

achillea (Achilleapatarnica) An herb used in salads

Achilles tendon A tendon that attaches the gastrocnemius muscle to the os calcis See Part 2: Connective Tissue, Composition

achiote Seeds of the annatto tree used in coloring and flavoring meats and oils

achlorhydria Lack of gastric HCl in gastric juice, causing bacterial growth and putrefaction of gastric contents

achojcha An edible fruit from a South American tree

Achromobacter (Alcaligenes) Small, bacterial rods; gram-negative, strictly aerobic, nonpathogenic, usually motile, microorganisms found in the intestinal tract; in dairy products, rotting eggs, and other
foods; in soil, and fresh and salt water; responsible for spoilage and producing rancidity of meat and fish  

See Part 2: Spillage, Protein Foods  

achylic  An absence of chyle in gastric juice; a deficiency of hydrochloric acid and rennin in gastric juice  

acid  A compound that may be either organic or inorganic and is characterized by the following properties: gives up (donates) protons (hydrogen ions, H⁺) to other substances; has a hydrogen ion as its positive radical in solution; contains hydrogen atoms that are replaceable by positive components; reacts with a base to form a salt and water (neutralization); has a pH less than 7.0. Inorganic acids ionize strongly in water, e.g., sulfuric, hydrochloric. Organic acids ionize slightly or not at all in water; they may be saturated or unsaturated. They all contain one or more carboxyl groups (—COOH) and have the generalized formula  

\[
\begin{align*}
R &\quad \text{aliphatic group} \\
O &\quad \text{hydrogen atoms}
\end{align*}
\]

See also fatty acid  Acids have a sour, sharp taste; many inorganic acids are severely corrosive to the skin and must be handled with care. In mixing, always add acid to water—never the reverse.  

See Part 2: Concentration of Commercial Strengths of Acids and Bases; Indicators, pH, and Acid Base; Organic Acids in Fruits and Vegetables  

acid alcohol A mixture of 50 ml of 35% alcohol and 3 drops of pure hydrochloric acid  

acid calcium phosphate  See calcium acid phosphate  

acid-cured fish (vinegar-cured fish) Fish or seafood preserved in an acidified brine or jelly  

acid cut Faded areas in cheese, often around holes  

acid detergent fiber (ADF) Fiber extracted with acidic detergent as a technique for evaluation of food and feed  

acid drop Boiled sugar flavored with citric acid  

acid equivalent (AE) For a herbicide, it is the amount of active herbicide per volume for a formulation of a herbicide with an acid base (e.g., 2,4-D) and is essentially the same as active ingredient  

acid fast Laboratory staining technique (capable of retaining a stain (red) after washing with a dilute acid) to help identify the tuberculosis and paratyphoid bacteria. The organisms are resistant to drying and disinfectants due to a waxy capsule.  

acid flux Flux used in soldering; it is a solution of zinc chloride, ammonium chloride, and hydrochloric acid or similar substances in water or alcohol.  

acid food (high-acid food) Food with a pH of 4.6 or below; can be processed in a boiling water bath (steam not required); includes most fruit, fruit juice, most tomatoes, and pickled vegetables. It will not support growth of Clostridium botulinum and the food is usually only pasteurized.  

acid-forming food Foods that leave an acid residue in the body after the food (e.g., meat, eggs, fish, and cereal) has been utilized (oxidation). The pH of urine reflects the character of the food.  

acid halides  

\[
R-C-X
\]

Named after the acid by dropping the -ic and adding -yl, followed by the name of the halide  

acidic A substance that tends to form an acid  

acidified canned food Low-acid foods adjusted to a pH of 4.6 or lower and a water activity greater than 0.85 are usually only pasteurized, e.g., onions, peppers, and pickled foods  

acidity The pH of a solution between 7.1 and 1.0  

See Part 2: Bananas, Composition; Lemon Juice Composition; Lime Juice Composition; Milk, Physical Properties; pH, Buffer Solutions; pH, Standard Solutions; pH, Universal Indicators; pH Values of Biological Materials  

acid-modified starch Acid modification lowers the paste viscosity of a starch solution  

acid nitriles Organic compounds having the generalized formula R—CN  

acid number  See acid value  

acidophilus milk A smooth, creamy-textured cultured milk, with a medium-strong acidic flavor of buttermilk (but less acid), that is normally low in fat; usually made from cow’s milk and produced by adding acidophilus bacteria (Lactobacillus acidophilus or Bifidobacterium bifidum)  

Procedure for production:  

1. Heat to 37°C for 4 h to encourage spore germination  
2. “Sterilize” at 95°C for 30 min  
3. Cool to 37°C  
4. Inoculate with 4% starter culture  
5. Acidity of 0.6–1.3% lactic acid (milk sours at 0.3% lactic acid, casein coagulates at 0.6–0.7% lactic acid)  

See Saint Ivel  

See Part 2: Fluid and Fermented Milks, Composition  

acidosis 1) Accumulation of acid or excessive loss of base from the body. 2) Accumulation of β-hydroxybutyric and acetoacetic acids  

acid salt A salt in which only part of its available hydrogen (of the acid) has been replaced by a metal  

acid sodium phosphate  See sodium phosphate  

acidulant An organic acid added to food to aid in preservation, to chelate metals (which also aids in retarding oxidation), and to modify taste (both acid and sweetness); it may be used with buffers to adjust pH, which in turn modifies physical properties.  

See Part 2: Acidulants  

acid value (acid number) Mg of caustic potash (potassium hydroxide) needed to neutralize the free fatty acid in 1 g of fat; a measure of processing care, storage deterioration, completeness of esterification, and amount of fat hydrolysis. The acid value is approximately twice the free fatty acid content (when expressed as oleic acid). See also free fatty acid.
acini di pepe

ackee (Blighia sapida) Edible pod of a small West Indian tree, whose flesh may be cooked or canned; it is poisonous when not ripe.

AC medium An infusion-free, general culture medium for the propagation of anaerobes, microaerophiles, and aerobes; it is recommended for controlling sterility of products.
See Part 2: Microorganism, Media

acetic acid (citric acid) (HO_2CH=C(CO_2H)CH_2CO_2H)

Naturally occurring flavoring material found in beet root and cane sugar and also added as a flavoring to other foods

acoria Insatiable appetite after eating

acorn 1) Many species of oak produce an edible acorn that is sometimes roasted, ground, and used for a coffee substitute and can also be used for bread or mush. Sweet acorns (Quercus esculenta) are used like chestnuts. The nuts can also be fed to hogs. 2) A thin-shelled, round winter squash variety (Danish, Des Moines, individual, green table), furrowed with deep ridges and shaped like an (oak tree) acorn. It is dark green splashed with orange and has yellow flesh; its exterior turns orange on storage.

1 med. to small acorn squash = 1 lb
See squash, winter

acorn coffee Oak-tree acorns roasted and used like coffee

acre (a.; A) A measure of surface area
1 acre = 6,272,640 square inches (in.²)
= 100,000 square links
= 43,560 square feet (ft²)
= 4840 square yards (yd²)
= 4046.87 square meters (m²)
= 160 square rods (rd²)
= 10 square chains (gunters)
= 0.40469 hectare (ha) or square hectometers (hm²)
= 0.001563 square kilometer (km²)
= 640 acres = 1 square mile (mi²)
See Part 2: Acre, Plants; Acre, Trees

acreage allotment An individual farm's share, based on previous production and on the nation's needs for acreage of a particular crop

acreage reduction program (ARP acreage limitation program) Requires a farmer to reduce the amount of crop planted below a base acreage level to qualify for price supports and target prices

acre-foot A measure of volume
1 acre-foot = 325,900 gallons (gal)
= 43,580 cubic feet (ft³)

acre-inch A measure of volume
1 acre-inch = 3630 cubic feet (ft³)
= 102.8 cubic meter (m³)

acrid Sour, sharp, tart flavor or harsh, sharp, or pungent odor

acrolein

\[
\begin{align*}
\text{CH}_2&\text{-OH} \\
\text{CH}&\text{-OH} \rightarrow \text{C} = \text{O} + 2\text{H}_2\text{O} \\
\text{glycerol} &\text{acrolein}
\end{align*}
\]

It is irritating to the mucous membrane and is the compound given off in smoke when fat is heated to the point of decomposition.

à croûte cendrée Ashes are applied to cheese to inhibit mold.

à croûte lavée Cheese is periodically washed to keep it from drying and to inhibit mold growth.

à croûte sechée A dried-rind cheese

ACTH Adrenocorticotropic hormone; secreted by the pituitary gland and stimulates the adrenal cortex

actin A protein located in the thin filaments of muscle See actomyosin

actinin A myofibrillar protein that is a portion of the thin filament in muscle tissue; it is divided into α-actinin, which promotes the lateral association of F-actin, and β-actinin, which inhibits the polymerization of F-actin.
See Part 2: Myofibrillar Proteins of Muscle

actinium (Ac) An element; at. no. 89; mass number of most stable isotope 227; electron configuration 2-8-18-32-18-9-2 orbit K L M N O P Q oxidation state +3; parent member of the actinide series of radioactive elements; Group IIIB of the Periodic Table

Actinomyces A microorganism in the soil, from which certain antibiotics are derived
See Part 2: Microorganism, Media

actinomycete isolation agar See Part 2: Microorganism, Media

actinomycetin Antibiotic agent effective against certain gram-positive and gram-negative organisms

Actinomycosis A disease (e.g., lumpy jaw) caused by Actinomyces

action level The safe residue limit Food Safety Inspection Service (FSIS) uses for unavoidable residues where a tolerance is not established

activated To cause a reaction to quicken, e.g., heat-accelerated

activated carbon See carbon, activated

activated 7-dehydrocholesterol See vitamin D

activated silica See silica, activated

activated sludge See sludge, activated
activator  An ion whose presence promotes enzyme activity
active carbon  See carbon, activated
active ingredient  The portion of a chemical formulation that is active

<table>
<thead>
<tr>
<th>Form</th>
<th>Often expressed as</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquids</td>
<td>lb/gal</td>
</tr>
<tr>
<td>Wettable powders</td>
<td>%</td>
</tr>
<tr>
<td>Granules</td>
<td>%</td>
</tr>
</tbody>
</table>

active oxygen method (AOM)  An accelerated rancidity test used as a method of measuring fat stability by bubbling oxygen (at a constant rate) through heated fat (usually 97.6°C) and following the peroxide formation (usually 100) or rancid odors may be used as an end point. Results are expressed in hours. See accelerated rancidity test
active oxygen stability  Numerical expression of the number of hours a fat withstands the development of rancidity
active transport  A material passing across a cell membrane (energy is expended), in and out of a cell, against a concentration gradient
activity  See Part 2: Calorie Utilization
act of God  Used to denote an occurrence beyond human control (e.g., accidents, earthquakes, floods, etc.). This usually will not terminate a transportation contract or discharge the parties unless so stipulated in the agreement.
actomyosin  The globulin complex that is the major constituent of skeletal muscle, responsible for muscle contraction; consists of actin and myosin proteins  See Part 2: Myofibrillar Proteins of Muscle
acuity  Fineness of discrimination; ability to detect small differences; often applied to vision
acute  Disease occurs quickly and progresses rapidly
acute toxicity  Immediate effects of consuming a specific amount of a substance; usually measured by the amount given in a single dose that will kill one-half of a test population of organisms. This is called the lethal dose for 50% (LD50).
acyl group

\[ R - C = O \]

An organic group formed by attachment of a carbonyl group (C═O) to an alkyl or aryl group

adenine-riboflavin dinucleotide  A dinucleotide containing riboflavin phosphate and adenylic acid

\[ \text{CH}_3(\text{CHOH})_3\text{CH}_2-\text{O}\overset{\text{PO}}{\text{P}}\overset{\text{PO}}{\text{O}}\text{CH}_2\text{C-C-C-C-N-C-N} \]

\[ \text{NH}_2-\overset{\text{C}}{\text{C}}-\overset{\text{N}}{\text{C}}-\overset{\text{N}}{\text{N}} \]

(*take on H here)
adensine

A nucleoside composed of adenine and ribose

\[
\begin{align*}
N = C - NH_2 \\
\text{HC} & \quad C - N = CH \\
N - C - N & \quad \text{OH} \quad \text{OH} \\
& \quad \text{OH} \quad \text{OH} \\
& \quad \text{OH} \quad \text{OH} \\
& \quad \text{OH} \quad \text{OH}
\end{align*}
\]

adensine diphosphate (ADP)

\[
\begin{align*}
\text{NH}_2 \\
\text{N} & \quad \text{N} \\
\text{N} & \quad \text{N} \\
\text{OH} & \quad \text{OH} \\
\text{OH} & \quad \text{OH} \\
\text{OH} & \quad \text{OH} \\
\text{OH} & \quad \text{OH}
\end{align*}
\]

adensine monophosphate (AMP)

See adenylic acid

\[
\begin{align*}
\text{NH}_2 \\
\text{N} & \quad \text{N} \\
\text{N} & \quad \text{N} \\
\text{OH} & \quad \text{OH} \\
\text{OH} & \quad \text{OH} \\
\text{OH} & \quad \text{OH} \\
\text{OH} & \quad \text{OH}
\end{align*}
\]

A high-energy molecule that stores energy obtained from oxidation of glucose (38 ATP per oxidation of glucose molecule) and uses it to power body functions

adensine triphosphate (ATP)

\[
\begin{align*}
\text{NH}_2 \\
\text{N} & \quad \text{N} \\
\text{N} & \quad \text{N} \\
\text{OH} & \quad \text{OH} \\
\text{OH} & \quad \text{OH} \\
\text{OH} & \quad \text{OH} \\
\text{OH} & \quad \text{OH}
\end{align*}
\]

adensine triphosphate (ATP)

A high-energy molecule that stores energy obtained from oxidation of glucose (38 ATP per oxidation of glucose molecule) and uses it to power body functions

adensine monophosphate (AMP) See adenylic acid

A mononucleotide of adenine

adermin See pyridoxin

ADF Acid detergent fiber See acid detergent fiber

ADG See average daily gain

adhesion Sticking or joining

adhesive A sticky, tenacious, glutinous textural property perceived by the tongue and teeth

adia A rice and legume flour cake that is usually fermented (with lactic acid)

ad inf. Ad infinitum (to infinity)

adipic Relating to fat

adipic acid

An acidulant; naturally occurring in beets and added to foods for tartness, as a neutralizing agent, or as a buffer; sometimes used in baking powder. It is 110–115% as tart as anhydrous citric acid.

Storage: well-closed container

See Part 2: Acidulants

adipose Relation to fat

adipose tissue Tissue that contains fat

Average composition: moisture 11–17%; protein 3–7%; fat 75–85%; 3–8 calories/g.

See Part 2: Hide, Layers; Hides, Salt Absorption

adipsia Lack of thirst

adjustment tolerance tolerance, or limit, used to signal need for adjustment of a production unit. Products beyond this tolerance are not necessarily defective.

ad lib. Ad libitum (at one’s pleasure); without restraint or limit

ad libitum (ad lib.) At one’s pleasure; availability of food on a free-choice basis

adobo 1) Meat or fowl. 2) A pork, fish, or chicken stew. 3) Meat cut into cubes, with vinegar, salt, garlic, and pepper added, cooked in water, fried in lard, and stored in lard

ADP See adenosine diphosphate

adrenal cortex extract A drug extracted from the outer portion (cortex) of the adrenal glands of cattle, hogs, and sheep and used to treat Addison’s disease and shock

adrenal glands (suprarenal) Two small reddish brown glands located near the kidneys; inner section of the gland is known as the medulla; outer portion is the cortex. This gland is stimulated by the adrenocorticotropic hormone produced by the pituitary gland: I. Inner portion produces a secretion that makes the blood vessels smaller and speeds up the heart rate; II. Outer portion produces a secretion the lack of which causes Addison’s disease.
adrenosterone (C₁₉H₂₄O₃) An androgenic steroid isolated from the adrenal cortex
See Part 2: Steroids

adsorption Adherence of molecules of a gas, liquid, or solid to the surface of a solid. It is important in deodorizing (activated carbon) and decolorizing (clays). It also plays a part in catalysis.

adulteration The addition of deleterious substances, debasement, mixing, or the incorporation of cheaper, inferior, or less-valuable substances without admission; if any substance has been added, mixed, or packed therewith to increase bulk or weight to reduce quality or strength, or to make the product appear to be better or of greater value

advance payment Payment made in advance, before data are available to compute the program benefits

adventitious roots Roots found in other than normal places

advice note A note sent to the buyer or consignee saying that the goods are ready for delivery

advocaat An egg-nog-type, thick (emulsified egg yolk), brandy liqueur with low alcohol content

adygeiskii A panir-type cheese made from cow’s milk

adzuki bean (Phaseolus angularis; Vigna angularis) A subtropical, Japanese, red leguminous bean that is used as a protein supplement similar to the soybean, except that the oil content is low. It is used fresh, dried and made into flour or cooked into cakes, or mixed with sugar to make a bean jam.

-a Latin suffix indicating plural

aegopodium (Bishop’s-weed; goutweed; Aegopodium podagraria) Perennial herb, with parsleylike leaves, used in seasoning; variety often used is Variegatum.

aemono A salad with dressing or salad dressing

aer Prefix meaning air

aerate Forcing air into water or waste
Purposes:
1. Carbon dioxide removal
2. To encourage aerobic bacterial growth
3. Ferrous iron removal
4. Flotation

aerated water (carbonated water; effervescent water) Beverage carbonated by addition of carbonic acid under pressure See carbonated water

aeration Incorporation of air into liquid (e.g., fat); movement of air through other material

aerial part The part of the plant that is aboveground

Aerobacter A gram-negative rod-type microorganism that will ferment glucose and lactose to produce acid and gas; found in dairy products, grain, sewage, water, and the alimentary tract.
See Part 2: Microbiological Media

aerobe Microorganism that can grow in the presence of free oxygen
See Part 2: Microbiological Media

aerobic 1) Descriptive of bacteria that require air or oxygen to survive See also facultative anaerobe,

microaerophiles, obligate aerobes 2) Subjecting the body to sustained vigorous activity (e.g., running); builds endurance

Aeromonas A small rod-shaped (3-μm long), facultative aerobic microorganism that is found in water and may be pathogenic to aquatic animals; breaks down carbohydrate to yield acid and gas
See Part 2: Spoilage, Protein Foods

Aeromonas hydrophila A pathogenic microorganism that can grow in refrigerated meat, poultry, fish, and vegetables

aerophagy Swallowing of air

aerosol 1) A suspension in air of a liquid or solid in finely divided form, as discharged through a small orifice by a propellant gas or other pressure source, e.g., spray-drying of milk. 2) A gas-tight container containing a propellant gas (a fluorocarbon, a hydrocarbon, or an inert gas) that forces a product from the container

aerosol container A container that is manufactured to withstand high internal pressure and containing a valve to dispense the product

AFD Accelerated freeze-drying

AFDOUS code Association of Food and Drug Officials of the United States; a frozen-food handling code

affine Cured

affouk A sorghum beer

aflatoxin A metabolic toxin produced by Aspergillus flavus and other fungi. It is carcinogenic.

African goose

African chilies See capsicum

African cucumber See bitter melon

African rue (Peganum harmala) An African plant from which are isolated harmine and harmaline, both of which are stimulants to the central nervous system.
See Part 2: Poisonous Plants

African beer (Eucheuma spinose; Gelidium cartilagineum; G. japonicum; Gracilaria confervoides; G. lichenoides) A dried hydrophilic, polygalactoside gelling agent made from sea grass (Gelidium cartilagineum, Gracilaria confervoides, and other red algae); used as a bacterial medium and in foods (soups, jellies, ice cream) as a stabilizer, emulsifier, and, thickener, and

agaro agar (agar; Chinese isinglass; Japanese agar; Japanese gelatin; Japanese isinglass; mousse de Japon; vegetable gelatin; Eucheuma spinose; Gelidium cartilagineum; G. japonicum; Gracilaria confervoides; G. lichenoides) A dried hydrophilic, polygalactoside gelling agent made from sea grass (Gelidium cartilagineum, Gracilaria confervoides, and other red algae); used as a bacterial medium and in foods (soups, jellies, ice cream) as a stabilizer, emulsifier, and, thickener, and
for clarification of wine. It is dried, white, semi-transparent, odorless, and tasteless. 1.5% concentration coagulates at 32–40°C and liquefies at 85–95°C. Gel strength is proportional to concentration (0.5–2.0%); it is increased with sugar and locust bean gum content. Mol. wt. 5,000–30,000. It is indigestible by humans, acts as bulk, and has laxative properties. It is used as a substitute for gelatin. Some people are allergic to agar.

Available forms:
- Blocks (square kanten)
- Fine, hairlike
- Powder
- Slender sticks (slender kanten)

It will absorb 200 times its volume in water. For dessert use 2 tsp/pt of water

Storage: well-closed container

See kanten

See Part 2: Gum Characteristics; Gums and Gelling Agents; Gums and Gelling Agents, Characteristics; Gums, Physicochemical Properties; Stabilizers, Thickeners

agaric Any mushroom, particularly the species of the genus Agaricus; fungus

agave (century plant) American aloe or a fermented drink made from the sap of the aloe. In addition to making a drink, it is used for animal feed and to make a drug.

agbelimokple A soft, cassava dumpling

age The passage of time (or other units) from the beginning of an event

See Part 2: Bone Age; Teeth Eruption

aged Food (e.g., beef, cheese) and beverages (e.g., spirits, wine) stored under controlled conditions to improve flavor, color, and/or texture

aged cheese See cured (cheese)

aged meat Meat held 2–3 weeks or more (conditioning) at refrigerated temperatures (34–38°F) to improve flavor and tenderness; Thamnidium mold contributes to flavor of aged meat.

Quick aging: 2–3 days at 62–65°F, high humidity, and under ultraviolet lights.

ageing See aging

agglomerate Material packed in a dense cluster

agglutination Particles combining into clumps

aggregate fruit Fruit formed from a flower containing many pistils (e.g., blackberry)

See Part 2: Fruit Classification

agi Capsicum pepper; dwarf red pimiento

agidi A fermented (with lactic acid, pH 4.4–4.4), thick maize gruel that is cooked and wrapped in leaves

aging 1) Any increment of time that may (or may not) be accompanied by physiological change. Holding a food product (e.g., meat, wine) under specific conditions of temperature, humidity, etc. for an extended period of time to improve its texture, flavor, and other properties, or to determine its shelf life (change in properties with the passage of time, e.g., milled flour) See also aged meat

See Part 2: Cheese Characteristics; Tenderness of Poultry

2) In citrus fruit, a condition sometimes found after harvest and often called stem-end rind breakdown; the rind around the stem button wilts and shrivels, caused by loss of water from the fruit.

agitation Mixing or stirring action

aglau See limburger cheese

aglauico del vulturo A dry, red, Southern Italian wine (usually aged) made from aglianico grapes

aglutition Loss of ability to swallow

agnotelli An envelope of pasta (ravioli) stuffed with meat, spinach, or other savory mixtures

agon A freshwater, sardinelike fish

agrafa A gruyerelike, fresh Greek cheese made from ewe’s-milk

agras A sweet beverage made from grape juice, sugar, and almonds

agribusiness Firms engaged in production and distribution of agricultural inputs or in the marketing, processing, or distribution of agricultural products

agricultural adjustment Programs designed to regulate agricultural production and marketing. The Agricultural Adjustment Act of 1933 created the Agricultural Adjustment Administration.

Agricultural Conservation Program (ACP) A program in which farmers agree to carry out specified conservation practices on their farms and receive payments to help defer part of the cost

Agricultural Development Council Training, research, and education in agricultural economics and rural sociology in less-developed countries (630 Fifth Ave., New York, NY 10020)

agricultural lime See hydrated lime; lime

agricultural limestone Liming material composed of 58% CaCO$_3$ and 42% MgCO$_3$; each pound has the neutralizing equivalent of 0.95–1.08 lb of CaCO$_3$ (approx. this quantity of dolomitic limestone) See lime

agricultural policy Government programs that most directly affect the prices and incomes received by farmers

Agricultural Research Service (ARS) See Science and Education Administration

Agricultural Stabilization and Conservation Service (ASCS) Agency that administers the farm price and income support programs and some conservation and forestry cost-sharing programs

agrimony (cocklebur; stickwort; Agrimonia eupatoria) A member of the rose family whose aromatic, stringent leaves are used to make a tonic tea

agrin A soft, white, goat’s-milk cheese that may be covered with mold

agro-dolce A sweet-sour sauce used on game or meat

agronomy The science of soil structure, fertility, and management and the application of its principles to agricultural crop production

aguacate See avocado

aguaji A grouper fish used for food See grouper

aguardiente A spirit, similar to brandy, distilled from wine or molasses
aguay (tree strawberry) A South American shrub that produces a berry used in preserves.

aguncate A green, Peruvian gourd with avocado-like flesh.

agungate A South American fruit often used as a vegetable.

ahel A maize-based aliha beverage.

ahliho A maize-based aliha beverage.

Ahr A northern region of Germany noted for excellent red wines.

AID Agency for International Development.

AIEE American Institute of Electrical Engineers.

aigre-doux Sour-sweet.

aiguebelle Green or yellow herb (50 types) liqueur.

aiguiUette Thin strip of cooked meat.

ain shams A new muenster-type cheese from combined milk.

aioli A garlic-flavored mayonnaise.

air The atmosphere enveloping the earth, composed chiefly of oxygen (21%), nitrogen (78%), argon (0.93%), and carbon dioxide (0.03%).

Specific heat = 0.238 cal/g°C.

Density of dry air at 0°C and 760 mm = 0.001293 g/cm³.

See Part 2: Ingestion and Inhalation; Insulation.

airag See kumiss.

airan (ayran; eyran) Sour, diluted, curdled milk.

air cell An air-containing vacuole within an egg.

See Part 2: Egg Structure.

air conditioning Controlling the temperature and humidity of air.

air-dry Drying a product by natural air movement, yielding approximately 90% dry matter.

air-slaked lime Liming material composed of 80–95% Ca(OH)₂; each pound has the neutralizing equivalent of 0.85–1 lb of CaCO₃ (or approx. this quantity of dolomitic limestone).

aish Wheat bread.

aisy cendré A French cheese made from cow’s milk.

aitch bone (edge-bone) Symphys pubis; rump bone; hip bone See ischium.

See Part 2: Beef Round, Bone Structure; Beef Wholesale Cuts; Bone; Bone Age; Lamb Wholesale Cuts; Pork Wholesale Cuts; Veal Wholesale Cuts.

aji Capsicum peppers; chillies See agi.

ajinomoto (aji-no-moto) Monosodium glutamate.

ajou A sorghum beer.

akaafa See agidi.

akakla Baked chindanda made with maize and ripe plantain.

akala A shrub that has large, purple or orange, round berries that are juicy and contain small seeds.

akamu Sour sorghum or millet porridge.

akasa Sour maize porridge.

akatsakoe Sour maize porridge.

akebia (quinata) A fruit native to the orient that is the size and shape of a banana.

akee A medium-sized tree that bears a 3-in. red fruit; when ripe the fruit opens and a cream-colored aril is exposed; the aril is consumed raw, fried, or boiled.

akene Dry carpel having a single seed.

akevitt See akvavit.

akit Sour, diluted milk.

akkawi A panir-type cheese made from cow’s milk.

ak-mak A sesame cracker that is usually made without sugar.

AK medium (Arret & Kirshbaum) Microbiological medium designed for the production of spores of Bacillus subtilis, which, in turn, are used for the detection of antibiotics in milk.

See Part 2: Microbiological Examination of Dairy Products.

akpatogui Dried fish.

akpeteshie A local gin distilled from palm wine.

ak庇蒂 A fermented (with lactic acid, pH 4–4.4) fried dumpling made from maize or maize with plantain.

akple A soft, sour-dough, fermented dumpling made from maize and cassava.

akporhe Acidic, white, refined maize-meal dumpling.

akpu A soft, cassava dumpling.

akraihehme Sour, diluted milk.

akshi-ki-sidhu Wine made from bark of the bahera tree (Terminalia belerica).

aku Fresh tuna.

akureyri A blue cheese made from cow’s milk.

akvavit A schnapps-type spirit distilled from potato or cereal grain (often barley) and flavored with caraway seed.

akvavittee See akvavit.

akvaviittee See akvavit.

akyeke Steamed cassava bread.

Al Symbol for the element aluminum.

-al Ending for an aldehyde compound.

à l’ With; in.

à la In the; often precedes how a food is prepared; with; in.

à la bigarade Use of orange flavoring.

à la boulangire With onions and potatoes.

à la brioche Cooked on a skewer.

à la carte The diner may select individual items and pays for each.

alachlor See Part 2: Corn Herbicides.

à la coque Boiled eggs.

à la duchesse In sauce.

à la grecque In the “Greek style;” vegetables seasoned with oil, vinegar, and spices and served chilled.

à la king Meat or poultry prepared with milk, eggs, mushrooms, and seasoning and served in a cream sauce with mushrooms, peppers, pimentos, and/or sherry.
à la maison Style of the house; specialty of the house
à la mode (in the fashion of) 1) Dessert (usually a la maison Style of the house; specialty of the house
à la Newburg A seafood (especially lobster, shrimp, etc.) served with a thick sauce made from cream, eggs, and butter, usually flavored with wine. The name is said to be taken from that of the chef who invented it (Newburg), in which the first and third letters were inverted.
alanine Monoamino-monocarboxylic nonessential amino acid; used as a nutrient and a dietary supplement

\[
\text{CH}_3 - \text{CH} - \text{C}<\text{O} \quad \text{NH}_2
\]

Storage: well-closed, light-resistant container
See Part 2: Amino Acids; Amino Acid, Solubilities; Corn, Amino Acids; Egg Products, Nutritive Value; Grain Analysis; Manure Analysis; Wheat, Amino Acids; Wheat Products, Amino Acid Compositions
à la provençal With olive oil, lemon juice, parsley, and garlic
Alaska pollack (walleye pollack; Theragra chalcogramma) A finfish found in the Pacific and available fresh, frozen, salted, dried, and spice-cured; it is a source of vitamin oil and roe. The flesh is light in color with a very light delicate flavor.
alb- Prefix meaning white
albacore E Germo alalunga; Seriola lalandi (Atlantic); Thunnus alalunga (Pacific or longfin tuna); T. germo (chicken of the Pacific coast) An alternate name for tuna; a saltwater fish of the tuna family, weighing 10-20 lb, whose flesh is firm and mildly flavored; best tuna for canning and the only species that can be labeled "white meat tuna"
albana A grape used in Italy to produce a popular light, fresh white wine
albedo 1) Whiteness; light reflected by a surface. 2) White material remaining on an orange after peeling
See Part 2: Orange Structure
albedo browning A discoloration of the white, spongy inner tissue of the rind of lemons. Externally, it appears as a slight, pebbly, brown-to-gray darkening of the rind. It usually occurs when immature fruit is stored at 32°F with poor ventilation.
alberga See pigeon pea
albert sauce A horse-radish-flavored sauce
albondigas Spiced meat balls
albumen Egg-white albumin
albumin (Pure protein; commercial egg white is spelled albumen.) A simple protein that is soluble in water and dilute salt solutions and is coagulable by heat. It is the protein portion and chief constituent of egg white; the albumin of egg white is sometimes called albumen. Found in nearly all living cells:

<table>
<thead>
<tr>
<th></th>
<th>Found in</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albumin</td>
<td>Grain, soybeans</td>
</tr>
<tr>
<td>Lactalbumin</td>
<td>Milk</td>
</tr>
<tr>
<td>Ovalbumin</td>
<td>Eggs</td>
</tr>
<tr>
<td>Serum</td>
<td>Blood</td>
</tr>
</tbody>
</table>

See Part 2: Milk and Milk Products, Vitamin Content; Milk, Species; Wheat Products, Amino Acid Compositions
albuminoid (scleroprotein) A simple protein that is insoluble in water, dilute salt solutions, dilute acids or alkalies, and absolute or 70-80% alcohol (e.g., keratin, elastin, collagen, and fibroin)
Alcaligenes A Gram-negative, aerobic to facultatively anaerobic (8-μm long) rod-type microorganism found in dairy products, soil, water, and the intestinal tract; no gas is produced by carbohydrates; responsible for ropy milk
See Part 2: Intestinal Microorganisms in Triple-Sugar Agar; Microorganism Reactions on Differential Tube Media
alcohol A class of organic compounds in which one or more alkyl or aryl groups and one or more hydroxyl groups are present. The suffix -ol is approved by IUPAC, e.g., methanol, ethanol, etc. Both straight-chain and ring structures of various types occur. Aliphatic alcohols are subclassified as monohydric, dihydric, trihydric, and polyhydric (polyol), the names indicating the number of OH groups present. See also absolute alcohol; acid alcohol; cholesterol; ethyl alcohol; glycerol; glycol; industrial alcohol; methyl alcohol
Alcohol is usually derived from sugar by fermentation and has stimulating effects; if no other name is indicated, it is usually ethyl alcohol; commercial alcohol is usually 92.3% by weight or 94.9% by volume.

Sugar-yielding yeasts, fungus

<table>
<thead>
<tr>
<th></th>
<th>alcohol + CO₂</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saccharomyces cerevisiae</td>
<td></td>
</tr>
</tbody>
</table>

Alcohol content in the blood, given as the number of drinks (1 ½ oz, 86 proof liquor or 12 oz beer) in a 2-h period:

<table>
<thead>
<tr>
<th>Body weight</th>
<th>Below 0.05% (be careful driving)</th>
<th>0.05-0.09% (impaired driving)</th>
<th>Above 0.1% (do not drive)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>1-2</td>
<td>3</td>
<td>4 and up</td>
</tr>
<tr>
<td>120</td>
<td>1-2</td>
<td>3</td>
<td>4 and up</td>
</tr>
<tr>
<td>140</td>
<td>1-2</td>
<td>3-4</td>
<td>5 and up</td>
</tr>
<tr>
<td>160</td>
<td>1-3</td>
<td>4</td>
<td>5 and up</td>
</tr>
<tr>
<td>180</td>
<td>1-3</td>
<td>4-5</td>
<td>6 and up</td>
</tr>
<tr>
<td>200</td>
<td>1-3</td>
<td>4-5</td>
<td>6 and up</td>
</tr>
<tr>
<td>220</td>
<td>1-3</td>
<td>4-6</td>
<td>7 and up</td>
</tr>
<tr>
<td>240</td>
<td>1-4</td>
<td>5-6</td>
<td>7 and up</td>
</tr>
</tbody>
</table>

alcoholic beverage A drink in which ethyl alcohol is present; the content varies widely with the nature of the drink. To remove stain from cloth, soak in cold...
Washable—soak 15 min in 1 tbsp bleach + 1 qt water
Colored—soak 1.5 h in 2 tbsp hydrogen peroxide + 1 gal water
See Part 2: Alcoholic Solutions; Minerals (Trace), Limits

alcoholometer A hydrometer calibrated in percentage of alcohol
alcohol, perfume Alcohol denatured with diethyl phthalate
alcohol, vinegar Distilled vinegar
aldehyde A class of organic compounds characterized by the presence of the unsaturated carbonyl group (C=O). A hydrogen atom is also attached to the carbon atom, so that the generalized formula is represented by

R—C=O

The characteristic suffix is -al in IUPAC nomenclature, e.g., methanal (formaldehyde). Aldehydes may be aliphatic or aromatic.
aldehydo See Part 2: Sugar, d-aldehydo
al dente A description of pasta that has reached the perfect state of cooking; pasta cooked till slightly chewy or firm (not soft); literally, "to the tooth"
alidosterone (C21H28O5) A hormone; a mineralocorticoid that causes the retention of sodium and the loss of potassium; it is isolated from adrenals. See Part 2: Steroids
aldirin A toxic insecticide that may be carcinogenic. Its use on food crops has been prohibited.

ale A light-brown, cereal-extract (usually from barley), alcoholic beverage made from barley malt and hops by a top-fermenting yeast; it used to differ (little difference today) from beer in that hops were used and it was lighter in color and sweeter; English beer with 3.1–6.6% alcohol by volume; beer flavored with hops
aleastico A red table or dessert wine made from aleastico grapes
aleastico di puglia A red, sweet dessert wine
alebele A coconut-filled pancake
aleberry A warm, English drink made from beer, oatmeal, sugar, wine, lemon juice, and nutmeg
alecost (costmary; Chrysanthemum balsamita) Chrysanthemum-balsam leaves used as an aromatic mintlike herb and used in salads
alectryon Acidic, red fruit from a New Zealand tree

See Part 2: Nutrients in Crops; pH Values of Biological Materials; Seed, Germination
alfalfa meal, dehydrated 0.6 lb/qt; 19 lb/bu

alfalfa sprouts (Medicago sativa) Delicate seedlings that are used raw or cooked in salads, sandwiches (they will not wilt or loose their crispness on sandwiches), or vegetable dishes. They are white (the lighter the color, the sweeter the taste) with tiny budding tops and have a sweet to grassy taste. They can be grown in 3–6 days.

alfisols Brown and reddish brown soils, found in areas of Mediterranean-type climate; the vegetation is commonly savanna woodland.

alfol Crumpled aluminum foil used as insulation
See Part 2: Insulation, Conductivity Values

alfonsino (Beryx splendens) A food fish

al fresco In the open air, usually in reference to dining

algae Chlorophyll-bearing, unicellular or multacellular (consisting of a plant body that is not divided into roots, stems and leaves) plants that are either motile or nonmotile, are often microscopic, and are primarily aquatic; subclassified as green, blue-green, red, and brown. They include many types of seaweed. The larger types, called kelp, do exhibit some differentiation of cell function in organs of attachment. Kelp is the chief source of carrageenan used as a texturing aid in ice cream, etc. Algae contain 50% protein on a dry basis. See also agar-agar; algin; carrageenan See Part 2: Microorganism, Media

algae bloom Visible concentration of algae growth caused by rapid growth

algae meal, dried A natural additive used to color (yellow) chicken feed

algam (Durvillea antarctica) An edible seaweed

algaroba See bean, locust

algarroba (St. John’s bread) See carob pod

alga spot A subtropical fruit disease caused by the growth and expansion of algal (Calphaleuros virescens Kunze) tissues of the host tree. The fruit may be spotted, with a mosslike appearance.

algicide A chemical that is toxic to algae (e.g., copper sulfate) but that, in proper concentrations, will cause negligible toxicity to other forms of life

algin A hydrophilic gum extracted from sea-growing brown alga (Macrocytis pyrifera), composed of D-mannuronic and L-galacturonic acid residues; mol. wt. 35,000–200,000; used as a stabilizer for bread mix, sauces, and in some cheeses See also alginic acid; alginate

alginate A gelatinous derivative (e.g., ammonium alginate, calcium alginate, potassium alginate) of alginic acid, obtained from seaweeds, that is used as a clarifying agent, stabilizer, and water retainer See also alginic acid
See Part 2: Gum Characteristics; Gums and Gelling Agents; Minerals (Trace), Limits; Stabilizers, Thickeners

alginic acid (C₆H₈O₆)n A hydrophilic carbohydrate extracted from seaweed (Laminaria spp.); equiv. wt. 200.0; used as an emulsifier, stabilizer, and thickener. Types used in food industry are as follows:
Ammonium alginate [(C₆H₁₀O₅NH₄)n], ammonium salt of alginic acid
Potassium alginate [(C₆H₁₀O₅K)n], potassium salt of alginic acid
Propylene glycol alginate [(C₆H₁₀O₇)n], propylene glycol ester of alginic acid
Sodium alginate [(C₆H₁₀O₅Na)n], sodium salt of alginic acid

Storage: well-closed container
See also algin
See Part 2: Minerals (Trace), Limits

alicante A red, Spanish dessert wine

alicyclic A class of organic compounds in which the carbon atoms form closed rings of various geometrical shapes. They may be saturated or unsaturated and have properties resembling those of aliphatic compounds. They may be hydrocarbons (cyclohexane) or alcohols (cholesterol).

aligot (tomme d’aligot) A mozzarella cheese made from cow’s milk

alha A brown-colored, cereal-based, nonalcoholic beverage

alimentary Pertaining to food, nutrition, or absorption of food

alimentary paste Bland-flavored pasta, such as macaroni, spaghetti, vermicelli, noodles, and other products prepared from durum wheat flour See wheat

alimentary tract (digestive tract) Hollow foodpassage duct leading from the mouth to the anus, including glands that secrete digestive juices

aliphatic A class of organic compounds in which the carbon atoms are arranged in a straight (open) or branched chain. They may be either saturated or unsaturated. They include hydrocarbons, organic acids, ketones, amines, aldehydes, and the more common alcohols, e.g., methanol, ethanol, butanol, etc. See also alkane, alkene, alkadiene, alkyne

aliquot Exactly measured volume; a definite part of a whole

alisander An herb with a celery-like flavor

alise Brandy distilled from fermented rowan berries (Sorbus aucuparia)

alizarine yellow A pH indicator (0.1% water solution) with a range of 10.11–12.0. It is yellow in acid and violet in the basic direction.

alkadiene (CₙH₂₉₋₂) An unsaturated aliphatic hydrocarbon that contains two double bonds. Also called diolefin

alkalescens A species of Shigella microorganism; renders milk alkaline with changing appearance, taste, or odor; occasionally causes diarrhea See Part 2: Intestinal Microorganisms; Intestinal Microorganisms in Triple-Sugar Agar

alkali (alkaline) Various bases (taste may be sour or bitter); hydroxides of alkali metals and ammonium (e.g., ammonium bicarbonate, calcium carbonate, sodium bicarbonate); has a hydroxyl ion as its negative radical in solution. A substance with mild to caustic properties; pH in excess of 7; turns litmus
paper blue and neutralizes acids; saponifies fat. See also base; caustic soda

alkali metal The strongly electropositive metals occurring in Group IA of the Periodic Table. They have a valence of 1.

alkaline-earth metal The metals occurring in Group IIA of the Periodic Table, with the exception of beryllium. They are electropositive, and have a valence of 2.

alkalinity Usually considered to be the bicarbonate, carbonate, and hydroxide content (although other materials may also contribute)

alkali refining Treatment of liquid fat with alkali to remove free fatty acids as soapstock

alkaloid A product of plant metabolism, many of which are poisonous. They belong to the class of nitrogenous heterocyclic compounds. Well-known examples are nicotine, caffeine, morphine, and strychnine.

alkane \((C_nH_{2n+2})\) A class of saturated aliphatic hydrocarbons containing only single bonds. Also called paraffins

alkanesulfonic See sulfonic acid

alkanet (oxtongue; Anchusa officinalis) 1) A plant whose leaves can be used as a vegetable. 2) A vegetable color (brown-red) from the alkanet root

alkanethiol \((R—SH)\) An alcohol-type organic compound in which the oxygen atom of the OH group is replaced by a sulfur atom. Such compounds were formerly called mercaptans.

alkane \((C_nH_{2n})\) A class of unsaturated aliphatic hydrocarbons containing one double bond. Also called paraffins

alkyl cyanide See nitrile

alkyl group \((C_nH_{2n+1})\) An aliphatic saturated hydrocarbon group having one valence \((CH_3, C_2H_5, etc.)\), often represented by R

alkyl halide \((C_nH_{2n+1}X)\) Any alkane in which one hydrogen atom has been replaced by an atom of either fluorine, chlorine, bromine, or iodine (X)

alkyl metallic sulfate \(R—O—SO_2—O—*M\), where M stands for a metal

alkyl sulfate \(R’—O—SO_2—O—R\)

alkyl sulfide See alkylthioalkane

alkylthioalkane \((R—S—R)\) An ether-type organic compound in which the oxygen atom is replaced by a sulfur atom.

alkyne \((C_nH_{2n—2})\) A class of unsaturated aliphatic hydrocarbons containing one triple bond; also called acetylene compounds

all- Prefix meaning other, different, or abnormal

all-American selection Results of garden trials over a wide geographic area; gold, silver, and bronze awards are given to the seed producers.

All Bran A ready-to-eat cereal; 32.9% fiber, 19% sugar; 70 g/cup

allegheny metal A corrosion-resistant alloy containing Iron \((17–20\%)\), Nickel \((7–10\%)\), Chromium, Manganese, Phosphorus, Sulfur, Carbon, Silicon. Practically insoluble in food

allemande A smooth, yellow sauce made from the strained stock of veal, fish, or chicken and mixed with egg yolks, cream, lemon juice, and spices (e.g., nutmeg)

allergen A substance that produces allergy

allergy An unusual, abnormal, or exaggerated reaction (hypersensitivity) to an ordinary substance (sometimes ordinary food) to which most individuals of the same species are not sensitive

alley cropping Food crops grown in “alleys” formed by hedgerows of leguminous trees or shrubs

allgauer A Swiss cheese made from cow’s milk

allgauer bergkäse A German, hard cheese made from cow’s milk

allgauer rahmkäse A German, soft cheese made from cream; Limburger class

allgood See good King Henry; mercury

alheal See valerian

alliaria (jack-by-the-hedge) An herb with garlic-like flavor

allies Small stalked fungi

alligator (Alligator mississippiensis) Tail portion may be eaten

alligator apple See custard apple

alligator pear See avocado

allo- Prefix meaning other, different, or abnormal

alloose \((C_6H_{12}O_6)\) A synthetic aldohexose sugar See Part 2: Sugar, d-Aldehydo

alotment An allotted share of production for an individual farm

allotropy Element in more than one form in the same state

alloy A substance with metallic properties, composed of two or more chemical elements of which at least one is a metal

allspice (pimento, not pimiento) (Jamaican pepper; pimenta; pimenta berry; Pimenta dioica; P. officinalis Lindl) 1) Dried, nearly ripe reddish brown berry \((\frac{1}{2}-in.\) diameter) of pimento tree (tropical, evergreen) used as a spice; berries are picked prior to ripening (green), sun-dried (reddish-brown), and used whole or ground (usually as a fine grind). Flavor: pleasant, slightly floral, with a slightly bitter and astringent taste, and has an aroma similar to a mixture of nutmeg, cinchona, and cloves. For labeling purposes the word “allspice” indicates Jamaican origin only.
18 allspice

Composition: quercitannic acid 8% (min.), moisture 8% (max.); fat 8–9%; volatile oil 3.5% (v/v min.); protein 4–7%; carbohydrate 72–73%; fiber (25% max.) 21–22%; ash (6% max.) 4–5%; ash insoluble in HCl 0.4% (max.).

Used in baked goods, fruit preserves, gravies, pickling spice, puddings, and relishes.

Sources:
- Guatemala
- Honduras
- Jamaica (highest oil content)
- Mexico

See Part 2: Essential Oils; Spices, Microbial Content

2. A shrub-type herb (*Calycantha floridus*) whose wood has an allspice scent.

allspice oil A yellow to reddish brown oil obtained by steam-distillation of the fruit of allspice
- Optical rotation -4° to 0°
- Refractive index 1.527–1.540 at 20°C
- Sp. gr. 1.018–1.048 g/ml

allumette Potatoes or other vegetables that are cut like matches; puff-pastry hors d’oeuvre or entree covered with various garnishes; small puff-pastry cakes

alluvial Diverse, high-fertility, valley-floor soil

allyl cyclohexanepropionate (allyl-3-cyclohexanepropionate)

\[ \text{CH}_2\text{CH}_2\text{COOCH}_2\text{CH}==\text{CH}_2 \]

Used as a food-flavoring agent

Storage: tight, light-resistant container

allyl hexanoate (allyl caproate)

\[ [\text{CH}_3(\text{CH}_2)_2\text{COOCH}_2\text{CH}==\text{CH}_2] \]

Used as a food-flavoring agent

Storage: full, tight, glass container in a cool place away from light

allyl α-ionone (allyl ionone)

\[ CH_2\text{CH}==CH_2 \]

Used as a pineapple-like flavoring agent

Storage: full, tight, glass container away from light

allyl isothiocyanate (volatile mustard oil)

\[ \text{CH}_2==\text{CH}==\text{N}==\text{C}==\text{S} \]

A flavoring compound found in mustard and obtained by distillation of the seed of *Brassica nigra* or *B. juncea* or made synthetically; used as a flavoring agent

Storage: full, tight container in a cool, dark place

almojabano A maize-meal muffin stuffed with white cheese

almond (bitter, *Prunus amygdalus*; sweet, *P. amygdalus dulcis*) A small, self-sterile tree grown for its nuts (the seed of a leathery fruit that ripens in August and September) and for oil production; a hard-shelled ellipsoidal nut

Other varieties:

<table>
<thead>
<tr>
<th>Variety</th>
<th>Common name</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amara</td>
<td>Bitter</td>
<td>Almond oil for flavoring and emollient</td>
</tr>
<tr>
<td>Dulcis</td>
<td>Sweet</td>
<td>Edible nuts</td>
</tr>
<tr>
<td>Mission</td>
<td></td>
<td>Short, plump nut used for chocolate candy and for a roasted or salted snack</td>
</tr>
</tbody>
</table>

Used in the following forms:
- Blanched, roasted, and salted
- Blanched, slivered (blanched, halved, cut lengthwise, shorter than matchstick size)
- Broken blanched
- Chopped, natural (natural almond, chopped)
- Diced, roasted, and salted (finely diced and roasted, lightly salted)
- Hulls (used for cattle feed)

Types

- Hard-shell
- Papershell
- Soft-shell
- Standard-shell

Varieties

- Peerless (California)
- Jordan (imported)
- Valencia (imported)
- Nonpareil
- DKL
- Ne Plus Ultra
- Drake

Shell

- Thick; cracking
- Thin; cracked with fingers
- Thin; cracked with fingers
- Thick; cracking

Shape and/or use

- Hard, tightly covered shell; sold in shell
- Oblong; long plump kernel
- Pointed at one end and flat on the other; plump kernel
- Used whole, sliced, blanched, chopped, and slivered
- Long, thin; used for candy-coated Jordan almonds
Used in following forms (cont)
Roasted, blanched, and slivered (blanched, slivered, roasted to golden color)
Shells (used to make charcoal briquettes)
Sliced, blanched (thinly sliced lengthwise, skin removed)
Sliced, natural (thinly sliced lengthwise, skin not removed)
Split, blanched
Whole, blanched (shell and skin removed)
Whole, natural (shell removed, brown skin not removed)
45% refuse
1 lb, hard-shell, in shell = 1-1.25 cup whole meat (6.3 oz)
1 lb, papershell, in shell = 2 cups meat
1 lb almond nutmeats = 3-4 cups nutmeats
1 lb shelled nutmeats = 3 1/2 lb imported unshelled
1 lb shelled nutmeats = 2 lb, Calif. unshelled
1 cup, shelled and chopped = 4.5 oz
1 cup shelled nutmeats = 150 g (5.4 oz)
1 cup, blanched = 3 oz
1 lb, shelled = 3.25 cups, chopped
1 cup, in shell = 2.8 oz
1 almond, shelled = 1.2 g
Preparation
To split: warm and use knife
To blanch: cover with water, boil at high heat, and cool quickly
Roasting: Place in an oiled pan in a 350°F oven for 10 min or, in butter or oil, 300°F oven for 15-20 min
Toasting: Place in a 300°F oven for 15-20 min or 350°F for 10 min
Storage: below 35°F
Unshelled, unroasted—refrigerate for up to 1 yr
Shelled, unroasted—in tightly closed containers in refrigerator or freezer
Shelled, roasted—refrigerate for up to 3 months

<table>
<thead>
<tr>
<th>Composition</th>
<th>Moisture (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Carbohydrate (%)</th>
<th>Ash (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dried</td>
<td>5</td>
<td>19</td>
<td>54</td>
<td>20</td>
<td>3</td>
</tr>
<tr>
<td>Roasted</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>salted</td>
<td>1</td>
<td>19</td>
<td>57</td>
<td>20</td>
<td>3.5</td>
</tr>
</tbody>
</table>

15 almonds (2 tbsp) = 105 calories
Salted, roasted = 311 mg Na/cup (157 g)
Unsalted, slivered = 4 mg Na/cup (115 g)

See Part 2: Beans, Peas, and Nuts; Flavor Ingredients, Taste and Flavor Type; Fruit and Nut Rootstock; Minerals, Food; Nut, Grades; Protein Factors; Tocopherols

**almond black** Black pigment produced by charring almond shells

**almond essence** Made from the kernel of bitter almonds, or plums, peaches, cherries, or similar fruit

**almond extract** A solution of oil and bitter almonds or oil extracted from bitter almonds in 1% alcohol; used for flavoring. Can be prepared (chemically iden-

tical) from the following:

- Oil of apricot kernels
- Oil of bitter almonds (more delicate and more expensive)
- Oil of peach kernels

**almond meal** When partially defatted, it is 39% protein.

**almond oil** An oil obtained from bitter almonds or (steam-distilled) other kernels (peach or apricot pits), containing amygdalin; after removal of hydrocyanic acid (very poisonous) it is mixed with water and alcohol and is used as a flavoring agent. It may also be pressed from sweet almonds. Good-quality oil is yellow-white and odorless and has a slight nutlike flavor.

- Acid number, 2.85
- Iodine number, 93-100
- Refractive index (15.5°C), 1.472-1.475
- Saponification number, 188-195
- Specific gravity, 0.914-0.920

Storage: full, tight, glass container in a cool place protected from the light

**almond paste** Made by cooking blanched and ground sweet and bitter almonds (56 parts) with sugar or dextrose (34 parts) and water (10 parts); remaining pulp after removal of oil from almonds. Used in candies and macaroons. Maximum of 14% water; max. 40% total sugar expressed as invert sugar

**almond sauce** A sauce made from almonds and bread crumbs and used on white meat

**almond sirup** See almond syrup

**almond syrup** An emulsion of the following:
- Sweet ground almond kernels (10 parts)
- Bitter ground almond (or apricot or peach) kernels (3 parts)
- Barley syrup (or syrup of orange-flower water)
- Sugar

**al-mukdi** Sweet, fermented, alcoholic beverage made from honey, often flavored with fruit juice and spices

**aloha** A liqueur flavored with coffee

**alouette** A soft United States or French cheese (spread)

**alpenklubler** A dry, uncooked, Swiss sausage made from medium- or coarse-chopped beef and pork, which is fermented and stuffed into an artificial casing

**alpestre** An herb liqueur

**al pete** A hard, peppery, Italian cheese

**alpha (A, a)** Greek letter, with the English equivalent of “A”

**alpha amino acid** See amino acid

**alphabet** Pasta shaped like letters

**Alpha-Bits** An oat cereal
1 cup = 1 oz

**alpha particle (α)** A positively charged particle emitted from the nucleus of an atom. It is composed of two protons and two neutrons, is identical to the nucleus of a helium atom, and has low penetrating power. A form of radiation given off by radium and other radioactive elements; atomic mass = 4.0028
alpha tocopherol

A chemical with vitamin E activity found in some foodstuffs. Use as a food additive, a food nutrient or dietary supplement, or an antioxidant for cereals or grain products to maintain or improve nutritional value.

Sources: alfalfa; cottonseed oil; wheat-germ oil

Storage: tight container in the dark

**alpha tocopheryl acetate**

Used as a nutrient or dietary supplement

Storage: tight container in a dark place

**alpha tocopheryl acid succinate**

Used as a food nutrient or dietary supplement

Storage: tight container in a dark place

**alsike clover (Trifolium hybridum)**

A perennial hay; seed 2-4 lb/acre (60 lb/bu); pH 6-6.8; inoculation is necessary; cut in full bloom

**Alta**

A variety of fescue

**altayskii**

A Swiss cheese made from cow's milk

**alte kuhkäse**

A high-protein, hand-molded, semisoft cheese made from cow's milk

**altenburg**

A small, flat, German cheese made from goat's milk

**Alternaria**

A genus of *Fungi Imperfecti*; one of the plant diseases caused by this fungus is carrot blight, which appears as irregular necrotic areas on older leaves.

See Part 2: Mold, Food; Molds, Mycotoxins; Rot Spoilage

**alternaria rot (black rot)**

1) Rot caused by a fungus (*Alternaria citri*) found on lemons that affects the central core or stem end. 2) A surface brown-to-black spotting or rot on fresh figs caused by *A. tenuis*. Decay (called mildew) is shallow on immature fruit but penetrates deeper with maturity. Low-temperature storage (below 45°F) offers the best control.

**alternate AM-PM**

Weight and milk sample taken at a single milking per month; usually taken at morning milking for one month and at even milking the next

**alternate (biennial) bearing**

The tendency to bear a heavy fruit crop in one season and a light crop or no crop the following season

**alternate routing**

A routing less desirable than normal but that results in identical terms

**alternating current (AC)**

An electric current that reverses its direction of flow at constant intervals
altitude Distance above sea level. Cooking time alterations are as follows.

Boiling water bath:
- Add 1 min/1000 ft if cooking time is less than 20 min
- Add 2 min/1000 ft if cooking time is more than 20 min

Pressure cooker:
- Add 1 lb/2000 ft; time remains the same

Cake recipe alterations per cake:

<table>
<thead>
<tr>
<th>Altitude (ft above sea level)</th>
<th>Shortening Sugar</th>
<th>Baking powder</th>
<th>Temp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3000-</td>
<td>1 tbsp</td>
<td>1½ tbsp</td>
<td>—</td>
</tr>
<tr>
<td>5000-</td>
<td>2 tbsp</td>
<td>3 tbsp</td>
<td>Reduce ⅓</td>
</tr>
<tr>
<td>7000 ft</td>
<td>3 tbsp</td>
<td>4 tbsp</td>
<td>Reduce ⅓ Increase 25°F</td>
</tr>
<tr>
<td>Over</td>
<td>5000 ft</td>
<td>Less less</td>
<td></td>
</tr>
</tbody>
</table>

See Part 2: Altitude Adjustments for Baking; Altitude Corrections for Boiling Water; Temperatures Corresponding to Gauge Pressure at Various Altitudes

alt kuhkase (hand cheese) A German cheese

altrose (C₆H₁₂O₆) An artificially obtained sugar; isomeric with glucose

See Part 2: Sugar, D-aldehyde

alum An inclusive term for several aluminum-type compounds; used in the preparation of pickles and maraschino cherries to give crispness and to harden gelatin; e.g., aluminum sulfate [Al₂(SO₄)₃ • 14H₂O], usually stated as containing 17.1% Al₂O₃ or 9.0% Al. Available as liquid, rice, granular, and technical. See also aluminum potassium sulfate; aluminum sulfate

alum-cochineal Potassic alum, 6 g; powdered cochineal, 6 g; distilled water, 90 ml; boil 30 min on steam bath; allow to settle and pour off the liquid; add water to bring up a 180 cc, boil down to 90 cc, cool, filter, add a small amount of thymol or salicylic acid

aluminum (aluminium; Al) A metallic element; at. no. 13; at. wt. 26.98; oxidation state + 3; electron configuration 2 – 8 – 3 orbit K L M

Nontoxic; used in food machinery and cooking utensils. It is a good conductor of heat (spreads heat evenly), responds quickly to temperature change, resists corrosion, is soft, and is durable; it may react with acidic foods and wine, green leafy vegetables, and eggs and is dissolved by both acid and alkalis.

aluminum ammonium sulfate (ammonium alum) [AlNH₄(SO₄)₂ • 12H₂O] A buffer and neutralizing agent

Storage: tight container

aluminum foil Thin sheets of aluminum that can be used to wrap food

aluminum hydroxide [Al(OH₃)] A gastric antacid; mol. wt. 77.99, equiv. wt. 26.00

aluminum phosphate (ALP) A fumigant that can be mixed with cereal, legumes, and all foodstuffs to curtail infestation

aluminum potassium sulfate (potassium alum) [K₂SO₄ • Al₂(SO₄)₃ • 24H₂O] A double salt of aluminum used in water purification, as a food additive (buffering, neutralizing, and firming agent), and as an astringent

Storage: well-closed container

See Part 2: Reagents, Normal Solutions

aluhta A red wine

alveolus Site of milk production in the mammary gland

A.M. 1) Ante meridiem, before noon. 2) A fruit juice drink

Am Symbol for the element americium

amaarwa A sorghum beer

amaas Yogurt

amabile A dry, sweet wine

amala (oka) Porridge or paste made from yam ( Dioscorea) flour

amamori A sweet-potato-based arrack beverage

amandine Cooked with almonds

amani See nori

amarante A white wine from Portugal

amaranth 1) FD & C Red No. 2—The red azo dye extensively used for many years as a food colorant, but prohibited in 1976 because of suspected carcinogenicity. It has been replaced for many applications by Red No. 40. 2) Spinach of the east; a green leaf vegetable (Amaranthus) whose cooked leaves are used like mild spinach. 3) A family of plants cultivated for
their flowers. 4) Love-lies-bleeding; pilewort; prince's feather; red cockspur; an herb that can be used for tea. 5) A drought-resistant grain that is high in protein and lysine.

**amarelo cure (yellow cure)** Portuguese salt cod in which some of the salt (final 18%) is removed between soaking and drying stages.

**amaretto** A liqueur flavored with apricot kernels and almonds.

**amarit** An alcoholic beer.

**amarogen** Bitter-producing groups, e.g., —SH~

**amarit** A dry, rich, heavy, red Italian wine.

**amarula** A liqueur made from fruit of marula or amarula (Sclerocarya caffra).

**amasi** Yogurt.

**amazake** A thick, creamy, rice wine.

**amazombé** A southern African plant whose leaves may be eaten fresh or dried.

**ambali** A fermented, sour millet and rice cake.

**ambarella** (golden hog; jungli amba; otaheite apricot; otaheite plum; spondias) Fruit from a Pacific tree whose yellow flesh is firm, juicy, and succulent; used green (in pickles and curries) or ripe (eaten raw and in preserves and jams).

**ambaritsa** Beef and pork pepperoni.

**ambelbel** A millet beer.

**amber fish (amberjack; California rockfish; yellow tail)** A large (up to 100 lbs, avg. 8 lb) food fish. Small species:
- Common amber
- Coronado
- Lemon fish
- Madregala
- Yellow tail

**ambergris** A gray to black waxy mass obtained from the sperm whale (Physeter catodon) and used to fix delicate odors.

**amberjack** See amber fish.

**ambert** A blue cheese made from cow's milk.

**ambient temperature** The prevailing or surrounding temperature.

**amblygustia** Defective taste.

**ambrette seed oil** A volatile oil steam-distilled from the seed of Abietmoschus moschatus; sp. gr. 0.898–0.920, saponification value 140–200. A musky flavoring agent. Storage: flat, glass, tight container in cool place protected from light.

**ambrosia** 1) Mixture of grapefruit and orange sections, pineapple pieces, and whole maraschino cherries, garnished with coconut. 2) A sweet drink, fruit salad, or pudding. 3) Anything gratifying in taste or odor. 4) Feather geranium; an oak-leaf-shaped leaf of a fragrant annual herb.

**ambrosia fruit** See ambrosia.

**ambrosial** Exquisitely pleasing in taste or smell.

**amebiasis** Infected with amebae.

**amebiasis** To improve See also modified wine.

**amensalism** One species is suppressed by toxic products of another.

### Composition of American Cheese

<table>
<thead>
<tr>
<th>Composition</th>
<th>American Cheese</th>
<th>American Cheese</th>
<th>American Cheese</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>39–40</td>
<td>43–44</td>
<td>47–48</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>22–23</td>
<td>19–20</td>
<td>16–17</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>31–32</td>
<td>24–25</td>
<td>21–22</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>1–2</td>
<td>7–7.5</td>
<td>8.5–9.0</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>5.6–6.0</td>
<td>5.2–5.4</td>
<td>5.8–6.0</td>
</tr>
<tr>
<td>1 oz (calories)</td>
<td>105</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>1-in. cube (calories)</td>
<td>60</td>
<td>55</td>
<td>–</td>
</tr>
<tr>
<td>1 tbsp (calories)</td>
<td>–</td>
<td>45</td>
<td>40</td>
</tr>
</tbody>
</table>

**American blue** A blue cheese made from cow's milk.

**American cheddar** A semihard, aged cheese.

**American cheese (American cheddar; cheddar; store cheese)** A general term often used for United States cheeses; A mild, semisoft, processed cheese with a cheddarlike flavor; pH 4.9. These cheeses are sometimes colored yellow with annatto.

- $3\frac{1}{2} \times 3\frac{1}{2} \times \frac{1}{4}$-in. slice = 1 oz
- 1-in. cube = 0.6 oz

Grated:
- 1 tbsp = $\frac{1}{3}$ oz
- 1 tsp = $\frac{1}{4}$ oz
- 1 cup = $3\frac{1}{3}$ oz
- 5 cups = 1 lb

**American cold-pack** A cheese food.

**American Diabetics Association** An organization concerned with the detection and control of diabetes.

**American Dietetics Association** A professional organization for defining and maintaining standards for the dietitian.

**American eel (Anguilla rostrata)** See eel.

**American ice cream** Frozen custard that may contain starch, fruit, nuts, and/or chocolate.

**American leg of lamb** Frozen custard that may contain starch, fruit, nuts, and/or chocolate.

**American mackerel** See mackerel.

**American pasteurized process cheese** A smooth, semisoft to soft, mild, cheddarlike flavored cheese, pale yellow to orange in color.

**American plaice (dab; Hippoglossoides platessoides)** A food fish with white meat and light to moderate flavor, a long rough dab. See plaice.

**American plan (AP; full pension)** Three meals a day included in room rate. See en pension.

**American plum borer (Euzophera semifuneralis)** A borer that will also attack pear trees.

**American Spice Trade Association (ASTA)**

ASTA color—rating based on extractable color and used for paprika and red pepper.

ASTA methods—laboratory methods for measuring various quality factors of spices.

ASTA quality—quality level that meets Federal government and American trade requirements.

See paprika.
American system A system for grading wool based on Merino wool, which is fine. Grades: Fine, half blood, 3/4 blood, 1/4 blood, low 1/4 blood, common, braid

Americium (Am) A radioactive element of the actinide series; Group IIIB of the Periodic Table; at. no. 95; mass no. of most stable isotope 243; oxidation state +3, +4, +5, +6; electron configuration 2-8-18-32-24-9-2

amer picon An orange-flavored red aperitif wine; a drink made by distilling alcohol over oil of oats; 38-40% alcohol; often sweetened

amese A soft, cassava dumpling

ametryne See Part 2: Corn Herbicides

amfrom (anfrom) A medium-soft, medium-flavored cheese made from cow's milk

amide A class of compounds derived from ammonia, some of which are inorganic (sodamide, NaNH₂) and some organic. Organic amides contain an acyl group

\[
R - C = NH₂
\]

They are related to organic acids, in which the OH group is replaced by NH₂. See also acyl group

amidze A red palm oil

AMIF-72 An antioxidant containing butylated hydroxyanisole

amine A class of organic compounds that may be derived from ammonia (NH₃) by substituting an alkyl or aryl group (CH₃ or C₆H₅) for one or more of the hydrogen atoms. See also amine acid

amino The —NH₂ group

aminoacetic acid See glycine

amino acid A basic unit of protein containing at least one amino group (NH₂) and at least one carboxyl group or a derivative of this basic structure; they are of L-configuration, except glycine (which has no asymmetric carbon); 22 amino acids are constituents of proteins, and many others exist independently; 8 of the 22 are called essential, as they must be obtained from outside the human body; that is, in the diet.

<table>
<thead>
<tr>
<th>Essential</th>
<th>Nonessential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isoleucine</td>
<td>Alanine</td>
</tr>
<tr>
<td>Leucine</td>
<td>Arginine (essential during rapid growth)</td>
</tr>
<tr>
<td>Lysine</td>
<td>Aspartic acid</td>
</tr>
<tr>
<td>Methionine</td>
<td>Cystine</td>
</tr>
<tr>
<td>Phenylalanine</td>
<td>Glycine</td>
</tr>
<tr>
<td>Threonine</td>
<td>Glutamic acid</td>
</tr>
<tr>
<td>Tryptophan</td>
<td>Histidine (essential during rapid growth)</td>
</tr>
<tr>
<td>Valine</td>
<td>Serine</td>
</tr>
<tr>
<td></td>
<td>Tyrosine</td>
</tr>
<tr>
<td></td>
<td>Proline</td>
</tr>
</tbody>
</table>

See Part 2: Amino Acids; Amino Acid, Solubilities; Coconut, Amino Acids; Corn, Amino Acids; Egg Products, Nutritive Value; Manure Analysis; Milk, Amino Acids; Protein and Amino Acids, Color Reactions; Wheat, Amino Acids; Wheat Products, Amino Acid Compositions; Wheat Products Composition

amino acid fortification The addition of synthetic amino acids to food in order to improve its amino acid pattern. See fortification

p-amino benzoic acid (PABA) (NH₂C₆H₄COOH) A vitamin-like compound essential for growth of some organisms; also antagonizes sulfanilamide. See antagonism

See Part 2: Wheat, Vitamins

c-a minocaproic acid See norleucine

aminodimethylaniline oxalate A reagent for certain bacteria

See Part 2: Microorganism, Media

c-aaminoglutaric acid See glutamic acid

c-aaminoisocaproic acid See leucine

c-aaminoisovaleric acid See valine

c-aaminopropionic acid See alanine

c-aamino succinic acid See aspartic acid

amioca Modified starch made from a waxy strain of corn

amioca starch (amylopectin starch) A major constituent of cornstarch

amiral Butter sauce used on fish

ammeter An instrument that is connected in series with the circuit and measures electric current

ammonia, anhydrous (NH₃) A liquid fertilizer material that becomes gaseous at atmospheric pressure. Fertilizer notation 82-0-0. Acidic in nature; requires 1.47 lb of dolomitic limestone to neutralize each pound applied; bp -33.35°C, fp -77.7°C, heat of vaporization 327 cal/g, specific heat 1.07 cal/g-degree. An end product of animal metabolism. Made from natural gas or synthesis gas. Low electrical conductivity. Pungent, suffocating smell. Very soluble in water, giving an alkaline solution of ammonium hydroxide. Also used as a refrigerant

ammonia, aqua A solution of ammonia in water, forming ammonium hydroxide (NH₄OH). Solutions vary in strength from 10-29%. Pressure 40 psi at 25°F, 197 psi at 100°F. See also ammonium hydroxide

See Part 2: Ammonia Solutions; Concentration of Commercial Strengths of Acids and Bases; Fertilizer; Fertilizer Materials; Normal Solutions; pH, Standard Solutions; Refrigerant; Sanitizers; Sanitizing, Chemicals; Wheat Products, Amino Acid Compositions

ammonia, quaternary A disinfectant that reduces the surface tension of microorganisms; unstable in the presence of organic matter; odorless, tasteless, and colorless

ammoniated Impregnated or combined with ammonia or an ammonium compound

ammoniated glycyrrhizin A flavoring ingredient that is 100 times as sweet as sucrose

ammonia water See ammonia, aqua
ammonification The production of ammonia by bacteria from protein

\[
\begin{align*}
\text{H} & \quad \text{R} - \text{C} - \text{C} - \text{OH} \\
\text{NH}_2 & \quad + 3\text{O}_2 \rightarrow 2\text{NH}_3 + 4\text{CO}_2 + 2\text{H}_2\text{O}
\end{align*}
\]

ammonium \( \text{NH}_4^+ \)

ammonium alginate (algin) \( [(\text{C}_6\text{H}_7\text{O}_6\text{NH}_4)]\) A food additive; used as a stabilizer, thickener, emulsifier, or texture modifier
Storage: tight container
See algin; alginate; alginic acid

ammonium alum See aluminum ammonium sulfate

ammonium bicarbonate \( (\text{NH}_4\text{HCO}_3) \) Alkaline substance used as a leavening agent, but an excess will liberate ammonia gas

ammonium carbonate A mixture of ammonium carbamate and ammonium acid carbonate. Used to aid fermentation in wine manufacturing and as a general-purpose food additive

ammonium chloride \( (\text{NH}_4\text{Cl}) \) Water-soluble crystals; salty taste; used as yeast food, dough conditioner, and fertilizer
Storage: tight container
See Part 2: Normal Solutions

ammonium glutamate See monoammonium glutamate

ammonium hydroxide \( (\text{NH}_4\text{OH}) \); \( \text{NH}_3 \) in water; mol. wt. 35.05, eq. wt. 35.05

<table>
<thead>
<tr>
<th>Commercial strength</th>
<th>mol/l</th>
<th>g/l</th>
<th>wt.</th>
<th>Sp. gr.</th>
<th>Normality</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.8</td>
<td>251</td>
<td>28</td>
<td>0.898</td>
<td>14.8</td>
<td></td>
</tr>
</tbody>
</table>

710 ml of 27% ammonium hydroxide to dilute to 10 l gives an approximate normality of 1.00; used as an alkali
Storage: tight container at temperatures less than 25°C
See also ammonia (aqua)

ammonium nitrate \( (\text{NH}_4\text{NO}_3) \) A fertilizer material; fertilizer notation 33.5-0-0; 33.5% nitrogen (50% of this is ammonia and 50% is nitrate); acid in nature and would require 0.58 lb of dolomitic limestone to neutralize each pound applied See also ANL; calnitro
See Part 2: Fertilizer; Fertilizer Materials

ammonium nitrate and lime See ANL

ammonium phosphate Used to improve bakery products, as a buffer, and as a leavening agent. Also used in animal feed and as a fertilizer material; fertilizer notation 11-48-0

<table>
<thead>
<tr>
<th>Dry matter</th>
<th>Protein equiv.</th>
<th>Phosphorus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibasic ( (\text{NH}_4)_2\text{HPO}_4 )</td>
<td>97%</td>
<td>112%</td>
</tr>
<tr>
<td>Monobasic ( (\text{NH}_4)\text{H}_2\text{PO}_4 )</td>
<td>97%</td>
<td>69%</td>
</tr>
</tbody>
</table>

ammonium phosphate, dibasic (diammonium phosphate) \( [\text{(NH}_4)_2\text{HPO}_4] \) Used in food as a buffer, dough conditioner, leavening agent, and yeast food
Storage: tight container

ammonium saccharin (1,2-benzisothiazolin-3-one 1,1-dioxide ammonium salt) \( (\text{C}_7\text{H}_8\text{N}_2\text{O}_3\text{S}) \) Non-nutritive sweetener
Storage: tight container

ammonium sulfate Used in food (often yeast food) as a general-purpose additive, dough conditioner, buffer, leavening agent, and acidifier; also used as a fertilizer material; fertilizer notation 20.5-0-0; \([\text{NH}_4\text{H}_2\text{SO}_4]\) acid in nature and would require 1.1 lb of dolomitic limestone to neutralize each pound applied
Storage: tight container
See Part 2: Fertilizer Materials; Normal Solutions

ammonium thioctyanate See Part 2: Normal Solutions

amodeogboe Sour maize porridge

amokaklo A fermented food made from fried maize with onion and salt or maize with plantain, onion, and salt

amontillado A moderately dry, matured, nutty-flavored sherry with more body and color than fino, from which it is often made by aging in the cask

amoroso A sweet, dry, or cream sherry

amorphous Irregular arrangement of atoms in a substance. Lacking a crystalline structure, a characteristic of the liquid state of matter; some materials that are apparently solid, such as glass, are not crystalline and are considered to be liquids of extremely high viscosity; e.g., brittles, butterscotch, caramels, and taffy

amou An esbareich-type cheese that is matured 2–6 months

amourette A violet-colored, French, alcoholic drink used as an aperitif

amoy oolong A Chinese oolong tea

AMP See adenosine monophosphate

amp See ampere

ampalaya Balsam apple; an East Indian yellow, bitter gourd or melon used in pickles and curries
See Part 2: Vegetable Storage
ampere (A; amp) The rate of current flow (I or i)
1 A = 6.24 x 10^18 electrons per second.
ampere-hour
1 ampere-hour = 3600 coulombs (C) = 0.03731 faraday
See ampere
ampere, international
1 ampere, international
= 0.9998 ampere (absolute, U.S.)
ampere per square centimeter (A/cm²)
1 A/cm² = 10,000 amperes per square meter (A/m²) = 6.452 amperes per square inch (A/in.²)
See ampere
ampere per square inch (A/in.²)
1 A/in.² = 1553 amperes per square meter (A/m²) = 0.155 ampere per square centimeter (A/cm²)
See ampere
ampere-turn
1 ampere-turn = 1.257 gilberts
See ampere
ampere-turn per inch
1 ampere-turn/in. = 39.37 ampere-turns per meter = 0.4950 gilberts per centimeter = 0.3937 ampere-turns per centimeter
See ampere
ampere-turn per meter
1 ampere-turn/m = 0.0254 ampere-turn per inch = 0.01257 gilberts per centimeter = 0.01 ampere turn per centimeter
See ampere
amphetamine A potent, potentially habit-forming, appetite-suppressant drug. These prescription drugs have a number of known side effects.

amphoterie Elements that are in the center of the activity or electromotive force series and may either gain or lose electrons (act as a base or an acid) depending upon what elements they are associated with (e.g., sulfur) See hydroxide, amphoterie
amphoterie hydroxides Hydroxides that have the properties of both acids and bases
amplitude A combination of qualitative and quantitative evaluations of a product; overall judgment
amprolium Used in beef cattle to prevent and treat coccidiosis
ampule A small, thin-walled, glass or plastic container with a narrow neck that is heat-sealed after filling. It is opened by breaking the neck.
ampulla (of the ductus deferens) The enlargement of the vas deferens that expels sperm cells
amygdalin A glycoside found in almonds, cherries, and peaches that contains cyanide and benzaldehyde (flavor) units
amy acetate
\[
\text{CH}_3\text{—C(\text{CH}_2)_4\text{CH}_3} \\
\text{O}
\]
A flavoring compound found in bananas
amylase Several starch-splitting enzymes that hydrolyze (1 -> 4) glucosidic linkages in polysaccharides such as starch and glycogen; e.g.,

\[
\begin{align*}
\text{starch} & \xrightarrow{\alpha\text{-amylase}} \text{dextrin} + \text{maltose} \\
& \xrightarrow{\beta\text{-amylase}} \text{maltose} \\
& \xrightarrow{\gamma\text{-amylase}} \text{glucose}
\end{align*}
\]
amylase, B An enzyme that splits off maltose units from nonreducing end of starch molecules
\[
\begin{array}{c}
\text{C—CH=CH—CH=CH—CH—O} \\
\text{(CH}_2)_4\text{C}_3
\end{array}
\]
A floral flavoring agent
Storage: full, tight, glass container, protected by an antioxidant and from the light in a cool place
amyli Dried tamarin See tamarind
amyloglucosidase An enzyme See also glucoamylase
amylytic Denotes enzymes that act on carbohydrates
amyllopectin (amioca starch) A starch constructed in a bush-shape arrangement; most of the \(\alpha\)-d-glucopyranosyl sections are linked 1 -> 4, but branches are attached 1 -> 6 approximately every 26 monosaccharide units. It provides cohesive or gummy properties to cooked starch and is soluble and stable in water at concentrations of 5-10%. Because of the branching association between molecules, this compound does not often occur (except at low temperatures), which prevents gelling and produces a solution with high water-binding capacities. This makes rice moist and sticky on cooking. Glutinous rice starch is approximately 100% amyllopectin.
See Part 2: Amylopectin; Amylose and Amylopectin; Starch
amylopsin (amylase) A pancreatic enzyme capable of hydrolysis of starch, glycogen, or their breakdown products
See Part 2: pH Values of Biological Materials
amylose A starch constructed of a linear chain of \(\alpha\)-d-glucopyranosyl units joined by 1 -> 4 linkages. It is responsible for the gelling characteristics of cooked starch (association between molecules occur and this network traps water and produces gels); soluble in hot water but tends to precipitate on cooling and forms a rigid, irreversible gel that is responsible for the skin on cooked starch products.
See Part 2: Amylose; Amylose and Amylopectin; Starch
amyris oil  Steam-distilled oil from the wood of West Indian sandalwood (Amyris balsamifera); sp. gr. 0.943–0.976; used as a food flavoring agent
Storage: full, tight, glass container in a cool place protected from light

ana- Prefix meaning not or without
an- Prefix meaning upward, backward, or excessive

anabolism  Growth or building process; the digestion or reduction of food, synthesis of complex products, and storage of energy that takes place in a living organism

anadame bread  Corn bread containing molasses

anadas  Collection of wine of any one year

anaerobic  1) Descriptive of bacteria that can live without air or oxygen See also facultative anaerobe; obligate anaerobe
See Part 2: Microbiological Media
2) Descriptive of an activity that demands maximum energy output for a brief period of time, e.g., 100-ya dash; builds stamina

anaerogenic  Forming little or no gas
See Part 2: Intestinal Microorganisms in Triple-Sugar Agar

anaheim (California chile; chili verde)  A light- to bright-green, mild to mildly hot chili pepper, 6 in. long, 1-1.5 in. thick. Available fresh or canned; fresh pepper should be charred and peeled

anaheim green chile (California green chile)  A 6- to 8-in. long, mild-flavored, green chile with rounded tip. Can substitute canned green chile

analog (anologue)  A similar substance or material; something that is similar to something else

analysis  Resolution into component parts

analysis of variance  (For measurement data of two or more trials) A mathematical analysis to determine if differences between averages are significant. If $F$ is significant then see means test to see which means are significant.

analysis of variance (subtreatments)

analysis of variance (two-way classification)

---

<table>
<thead>
<tr>
<th>$a$ treatments</th>
<th>$\Sigma$ groups</th>
<th>$\Sigma X$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$X_{11}$</td>
<td>$X_{12}$</td>
</tr>
<tr>
<td>2</td>
<td>$X_{12}$</td>
<td>$X_{22}$</td>
</tr>
<tr>
<td>$\ldots$</td>
<td>$\ldots$</td>
<td>$\ldots$</td>
</tr>
<tr>
<td>$j$</td>
<td>$X_{1j}$</td>
<td>$X_{2j}$</td>
</tr>
<tr>
<td>$\ldots$</td>
<td>$\ldots$</td>
<td>$\ldots$</td>
</tr>
<tr>
<td>$n$</td>
<td>$X_{1n}$</td>
<td>$X_{2n}$</td>
</tr>
</tbody>
</table>

Total: $\Sigma X = X_{11} + \ldots + X_{an}$

Source of variation | df | Sum of squares (SS) | Mean squares (MS) |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>$(an) - 1$</td>
<td>$\Sigma X^2 - \frac{(\text{total } \Sigma X_{..})^2}{an}$</td>
<td>$\frac{\Sigma X^2}{df} = \sigma^2 + nK^2$</td>
</tr>
<tr>
<td>Treatment mean ($a$)</td>
<td>$a - 1$</td>
<td>$\frac{\Sigma (\text{Treat. } \Sigma X_{..})^2}{n} - \frac{(\Sigma \Sigma X_{..})^2}{an}$</td>
<td>$\frac{SS}{df} = \sigma^2$</td>
</tr>
<tr>
<td>Indiv. or error ($n$)</td>
<td>$\text{Sub. or } (n - 1)a$</td>
<td>$\Sigma x^2 - \Sigma x_{..}^2$</td>
<td>$\frac{SS}{df} = \sigma^2$</td>
</tr>
</tbody>
</table>

$H_0$: $u_1 = u_2 = u_3 = \ldots = u_a$  
$F = \frac{MS \text{ of treatment}}{MS \text{ of individual}}$  
$df f_1 = a - 1$  
$df f_2 = a(n - 1)$
Subtreatment (b)  

<table>
<thead>
<tr>
<th>j = 1, ..., b</th>
<th>1</th>
<th>j</th>
<th>b</th>
<th>1</th>
<th>j</th>
<th>b</th>
<th>1</th>
<th>j</th>
<th>b</th>
</tr>
</thead>
<tbody>
<tr>
<td>n obs. per</td>
<td>1</td>
<td>X_{i1}</td>
<td>X_{i1j}</td>
<td>X_{i1b}</td>
<td>X_{i1j}</td>
<td>X_{i1b}</td>
<td>X_{a1i}</td>
<td>X_{a1j}</td>
<td>X_{a1b}</td>
</tr>
<tr>
<td>k = 1, ..., n</td>
<td></td>
<td>X_{i1k}</td>
<td>X_{i1jk}</td>
<td>X_{i1kb}</td>
<td>X_{i1k}</td>
<td>X_{i1kb}</td>
<td>X_{a1ik}</td>
<td>X_{a1jk}</td>
<td>X_{a1kb}</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Σ</td>
<td>X_{i1}</td>
<td>X_{i1j}</td>
<td>X_{i1b}</td>
<td>X_{i1j}</td>
<td>X_{i1b}</td>
<td>X_{a1i}</td>
<td>X_{a1j}</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Σ</td>
<td>X_{i..}</td>
<td>X_{i...}</td>
<td>X_{a..}</td>
<td>X_{a...}</td>
<td>X_{a..}</td>
<td>X_{a...}</td>
<td>X_{a..}</td>
</tr>
</tbody>
</table>

1) \( C = (X_{i..})^2/n \)
2) Total SS = \( \Sigma X_{ijk} - C = (X_{i11})^2 + \cdots + (X_{a1b})^2 - C \)
3) Total SS for subtreat. = \( \Sigma X_{ijk} - n = (X_{i11})^2 + \cdots + (X_{a1b})^2/n \)
4) SS for error or individual - total SS (2) - total SS subtreat. (3) = \( \frac{abn - 1}{ab - 1} \)
5) Total SS for treat. = \( \Sigma X_{ij}/bn - C \)
6) SS subtreat. of same treat. = total subtreat. (3) - SS treat. (5) = \( \frac{abn - 1}{ab - 1} \)

<table>
<thead>
<tr>
<th>Sources of variation</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>abn - 1</td>
<td>(2)</td>
<td></td>
</tr>
<tr>
<td>Total for treatment</td>
<td>a - 1</td>
<td>(5)</td>
<td>SS/df</td>
</tr>
<tr>
<td>SS subtreat. of same treat.</td>
<td>(b - 1)a</td>
<td>(6)</td>
<td>SS/df</td>
</tr>
<tr>
<td>Individuals</td>
<td>(abn - 1) - (ab - 1)</td>
<td>(4)</td>
<td>SS/df</td>
</tr>
</tbody>
</table>

F for treatment = \( \frac{MS(5)}{MS(6)} \)
F for subtreat. = \( \frac{MS(6)}{MS(4)} \)

<table>
<thead>
<tr>
<th>Sources of variation</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>n - 1</td>
<td>Group SS</td>
<td>SS/n - 1</td>
</tr>
<tr>
<td>Treatment</td>
<td>a - 1</td>
<td>Treat. SS</td>
<td>SS/a - 1</td>
</tr>
<tr>
<td>Error</td>
<td>(n - 1)</td>
<td>Error SS</td>
<td>SS/(n - 1)</td>
</tr>
<tr>
<td></td>
<td>( x(a - 1) )</td>
<td>( x(a - 1) )</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>an - 1</td>
<td>Total SS</td>
<td></td>
</tr>
</tbody>
</table>

Group F = \( \frac{MS_{of group}}{MS_{of error}} \)
Treat. F = \( \frac{MS_{of treat}}{MS_{of error}} \)

**anatomy** The branch of science that deals with structure of plants and animals

**ancho** A chile pepper. When fresh it looks like a bell pepper. When dried it has a flat, rounded shape (3- to 4-in. diam.) and is wrinkled, brick red to black and mild to faintly hot.

**ancho chile** Dried form of poblano chile; substitute 1 tsp chile powder for each ancho chile

**anchosen** Sprat and herring preserved with salt and sugar or starched sugar

**anchovis** Sprats or small herring prepared similarly to anchovy

**anchovy** A pungent, salted and pickled herringlike fish (Engraulidae) usually packed in oil and canned (as flat fillets or rolled and stuffed with capers or pimientos), made into a table sauce, or potted to form a paste. They are also available fresh, frozen, salted, smoked, dried, and as meal or oil. Also used for fish meal and bait. They are usually 4-5 in. long and black-blush brown with silver sides.

Name and location:
Anchoveta (South America), *Engraulis ringens*
Anchovy (Australia), *E. australis*
Anchovy (Azov Sea), *E. encrasicholus maeticus*
Anchovy [Black Sea, synonym chamsa (Russian)], *E. encrasicholus ponticus*
Anchovy (European), *E. pseudoharengus* (synonym, *E. encrasicolus* Linnaeus)

Anchovy (Indian), *Anchoviella indica* [synonym, *E. (Stolephorus) indicus*]

Anchovy (Japanese), *E. japonicus*

Anchovy (Malayan), *Stolephorus spp.*

Anchovy, Northern (East Pacific), *E. mordax*


Bay, *A. mitchilli*

North Atlantic, *E. encrasicolus bleeker*

Northern (Pacific), *E. mordax*

Striped, *A. hepsetus*

Composition (pickled): moisture 59%; protein 19%; fat 10%; carbohydrate 0.3%; ash 11.5%

**anchovy butter** Anchovy paste mixed with butter (10–33%); a mixture of finely ground anchovies (1 part) with sweet butter (2 parts)

**anchovy cream** Anchovy paste mixed with vegetable oil (min. 10%)

**anchovy dressing** A dressing made with anchovy, oil, pepper, vegetables or greens, and vinegar

**anchovy paste** Finely ground (pounded), boned, and skinned anchovies (may be smoked) mixed with salt (maximum 20%), salt peter, and spices and cured for 6 months

**anchovy pear** (river pear) A 2- to 3-in. russet-colored fruit, eaten as a pickle, from the *Grias cauliflora* tree

**anchu** A rice beer

**ancien imperial** (carré affine; petite carré) A small (2 x 2 x 1 in.) French cheese

**ancona** A Mediterranean class of chickens that lays a white-shelled egg; greenish black with some white tip feathers; varieties, single-comb and rose-comb

**andouille** A large French sausage (or pudding) made from pork and/or pork by-products; a kind of sausage made of tripe

**andouille de couenne** A semidry, cooked, unsmoked, medium-seasoned, French, pork sausage, made from (coarsely chopped) ½ pork casings and ⅔ rinds and stuffed into beef casings

**andouille de guémène** A semidry, cooked, smoked, coarsely chopped, medium-seasoned, French sausage made only from pork casings and not stuffed into a casing

**andouille de pays** A semidry, cooked, smoked or unsmoked, medium-seasoned, French sausage made from pork coarsely chopped, head meat and hearts and stuffed into beef casings (or a casing may not be used)

**andouille de viande** A semidry, cooked, unsmoked, medium-seasoned, French sausage made from pork coarsely chopped, shoulder meat, back fat, and casings and stuffed into a beef casing (or a casing may not be used)

**andouille de Vire** A semidry, cooked, smoked, medium-seasoned, French sausage made from coarsely chopped pork casings and stomachs and not stuffed into a casing

**andouille rouge** A semidry, cooked, unsmoked, medium-seasoned, French, pork sausage made from coarsely chopped, beef casings, pork stomachs, pork meat, and pork hearts and stuffed into a pork casing

**andouillette de Cambrai** A moist, cooked, unsmoked, medium-seasoned, French sausage made from coarsely chopped, veal tripe and stuffed into pork or beef casings

**andouillette de Troyes** A moist, cooked, unsmoked, medium-seasoned, French sausage, made from coarsely chopped, pork casings and stomachs and stuffed into pork and beef casings

**andouillettes** A moist, cooked, unsmoked, medium-seasoned, French, pork and veal sausage, made from coarsely chopped, veal tripe and pork stomach and stuffed into beef or pork casings

**andouillettes provençales** A moist, cooked, unsmoked, medium-seasoned, French sausage, made from coarsely chopped, pork casings and stomachs and pork meat and stuffed into beef or pork casings

**andouillettes rouennaises** A moist, cooked, unsmoked, medium-seasoned, French, pork and veal sausage, made from (coarsely chopped) 50% veal tripe and 50% pork casings and stuffed into beef or pork casings

**androgeun** Male secondary sex hormone

**androgenic agents** Used to improve growth performance and carcass characteristics

**androstenedione** A steroid hormone

See Part 2: Steroids

-ane IUPAC ending for alkane (paraffin) series of hydrocarbons

**anebabaruu** Two injera (soft bread baked from teff) baked together and eaten with spiced butter

**anejo** A low-fat, hard, salty, crumbly cheese made from cow’s or goat’s milk

**anemia** (anaemia) A condition in which there is a deficiency of blood or parts of blood (e.g., low hemoglobin or a reduction in the number of red blood cells). Dietary factors that are often helpful are iron, B-complex vitamins, protein, copper, vitamin B₁₂ and specific foods

**anemic** Affected by a deficiency of hemoglobin and often by a reduction in the number of red blood cells

**anesthesia** (anaesthesia) Insensibility to pain

**anethole** (p-propenylanisole)

\[
\text{CH}_3\text{O} - \text{CH} = \text{CHCH}_3
\]

An aniselike flavoring agent obtained from anise oil, from other sources, or made synthetically

Storage: full, tight container in a cool, dark place

**aneurin** See thiamin

**anfrom** See amfrom

**angba** A clear, mildly alcoholic beer made from sorghum, millet, or maize

**angel cake** A dessert baked from egg whites, sugar, flour, cream of tartar, and flavoring

2.5-in. sector of 9.75-in. round cake

= 135 calories

See Part 2: Baked Products, Frozen Storage Life
angelfish A foodfish
Angelfish (Europe) See monkfish
Angelfish (U.S.), Pomacanthus and Holocanthus spp.
angel food A white sponge cake made with egg whites and leavened by air
angel food cake An unshortened cake containing egg whites, flour, sugar, and salt; air beaten into the egg white produces the leavening.
Composition: 134–250 mg Na/ 1/3 cake (56 g)
angelfish (Pomacanthus, Holocanthus spp.)
angiolika (angelique; Angelica archangelica) 1)
A many-blossomed, large biennial herb of which the leaf stalks (which resemble rhubarb) and midribs are used as food garnishes and confections; grown in cold climates

<table>
<thead>
<tr>
<th>Part</th>
<th>Form</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Root</td>
<td>Essential oil</td>
<td>Gin</td>
</tr>
<tr>
<td>Seed</td>
<td>Essential oil</td>
<td>Vermouth, chartreuse</td>
</tr>
<tr>
<td>Young stems and leaves</td>
<td>Crystallized</td>
<td>Confectionery with sugar flavoring</td>
</tr>
<tr>
<td></td>
<td>Essential oil</td>
<td>Decorating</td>
</tr>
</tbody>
</table>

Storage (root oil): full tight, glass containers in the dark (sp. gr. and viscosity increase on storage)
2) Several different types of alcoholic beverages are named after this plant; including a white dessert wine. See Part 2: Essential Oils

angelinique See angeliac
angharaghul Dried hard spheres of fermented milk or milk curds
angico gum (Brazilian gum) A brown gum from a South American tree used in tanning and varnishes See Part 2: Gum Distribution
ang-kak A red food-coloring agent made from rice fermented (by mold)
ang-khak An oriental food made from fungus growth on rice See Part 2: Fungi Food Products
angler A 3- to 5-ft food fish
Angler, (synonyms, lesser weever, stingfish), Trachinus vipsa
Angler (Japan), Lophius lituon
Angler (Northwest Atlantic; synonym, goosefish), L. americanus
angler fish A white- and flaky-fleshed grouper-type fish; United Kingdom (synonyms, monkfish, fishing frog, or silver salmon), Lophius piscatorius Linnaeus
anglikska gorkaia A cordial made from brandy and an infusion of apricots
angola pea See pigeon pea
angora A fleece breed of goat originally from Asia Minor whose fleece is used to prepare mohair cloth
angostura bitters An extract from the bark of Galipea officinalis, used to flavor drinks See Part 2: Essential Oils
angoumois grain moth (Sitotroga cerealella) An insect that attacks wheat
anise (Pimpinella anisum L.)

Sources:
- Egypt
- Spain

Uses:
- Seed—flavoring wine, seasoning food, condiment
- Oil (from seed)—aromatic, volatile, agreeable odor, warm sweetish taste
- Leaves—raw salad, garnishes, flavoring

For flavoring in beverages, bread, cookies, rolls, soups, and sweets

Available forms: whole and ground (coarse to medium)

Matures in 75 days

Composition (dry): moisture 9-10%; protein 17-18%; (fresh 5-6%); fat 15-16%; carbohydrate 50-51%; fiber 14-15%; ash 6-7%; not more than 9% total ash; not more than 1.5% HCl-insoluble ash

Storage (seed): cool, dry, dark place

See star anise

See Part 2: Flavoring Agents, Natural; Flavor Ingredients, Taste and Flavor Type

anise oil A clear to pale-yellow oil steam-distilled from dried ripe fruit of star anise (Pimpinella anisum or Illicium verum) mixed with water and alcohol; flavor is very strong; used as a food-flavoring agent; optical rotation -2° to +1°; refractive index 1.553-1.560 at 20°C; solidification point, now lower than 15°C; sp. gr. 0.978-0.988 g/ml

Storage: full, tight container in cool place

anise seed Composition: moisture 9.5%; protein 17.6%; lipid 15.3%; carbohydrate 50.0%; fiber 14.8%; ash 1.9%

anisette A sweet, aniseed-flavored (Pimpinella anisum) herb liqueur; a French, colorless liquor distilled from fennel, anise, and coriander seed, fortified with brandy, and sweetened

anisole

Methylphenyl ether; used as a flavoring agent in food

Storage: full, tight, glass container in a cool, dark place

anisotropic Yielding different characteristics in different directions; predetermined axis

anisyl acetate (p-methoxybenzyl acetate)

A floral, fruity, flavoring agent used in food

Storage: a full, tight, glass container in a cool place, protected from light

anisyl alcohol

A floral food-flavoring agent

Storage: full, tight, glass container in a cool, dark place

anju

1 lb, fresh, pared, cored, and coarsely chopped

= 3 cups

ANL (ammonium nitrate and lime) A neutral fertilizer material made from ammonium nitrate (NH₄NO₃) and lime; 9% CaO, 7% MgO

annatto (anatto; annoto; arnatto; arnatto) A vegetable of brown-red color from the fruit (seed) of the Bixa orellana L.; used in coloring oils and food

annatto extract A food color See bixin

annealing A heating and cooling process

anniviers A semihard cheese made from cow's milk, with a full, fruity flavor

annoneous fruit (custard apples) A small tree that bears a multiple fruit with a scaly surface. Light, yellow flesh of round or heart-shaped fruit; eaten both raw and cooked

Varieties:
- Atemoya—hybrid of Cherimoya × Sugarapple
- Bullock's Heart—buff or red-brown heart-shaped fruit that is firm, granular, and sweet
- Cherimoya—green fruit with a pineapple-like flavor
- Ilama—similar to Cherimoya but grown in lowlands
- Soncoya—large fruit
- Sour Sop—fruit has soft spine on green rind; flesh is white and acid; 4-5 lb
- Sweet Sop (Sugarapple)—similar to Cherimoya but without the aroma; sweet custardlike flesh

Raw composition: moisture 71-82%; protein 1-2%; fat 0.3-0.6%; carbohydrate 16-25%; ash 1%

annot A valencay-type cheese made from goat's or sheep's milk and matured for 2 months

annual A plant with a 1-yr life cycle (seed to seed)

anoe 1) The positive electrode in an electrolytic cell. 2) The electron-collecting element in a tube. 3) The electrode through which current enters an electrolyte

anodized can Meat can with an aluminum cleat welded to the end of the can to aid in prevention of corrosion and discoloration

anodyne A substance that relieves, reduces, or eases pain; a soothing substance

anolini An envelope of pasta filled with bread, cheese, eggs, and beef stew

anomaly An irregularity or abnormality

anorectic (anoretic; anorexic) Without appetite

anorexia Pathological absence, lack, or loss of appetite or of behavior characteristic of hunger in the presence of energy needs and food

anorexia nervosa (nervous loss of appetite) Starvation disease

anosmia Complete inability to smell or inability to smell particular substances

anoxia Oxygen deficiency to the tissues that causes permanent damage

anugar A tilsit-type cheese

ANSI American National Standards Institute. This organization sets standards for many areas of technology.
ant An insect; attracted to plants by aphid honeydew
antacid Substance that neutralizes or counteracts acidity
antagonism The competitive or inhibiting effect of one substance upon another of similar molecular structure, e.g., between paraaminobenzoic acid and sulfanilamide. Substances having this effect are called antimetabolites. The antigen-antibody relationship is based on this behavior. See also antibody
ant, carpenter A type of ant that hollows out wood for a nest, leaving sawdust
ante- Prefix meaning before
ante mortem Before death
anterior See ventral (belly). See cranial (front or head) in comparative anatomy
anterior pituitary See pituitary
antetaste A prior taste; precedes the main taste
ant, fire A type of ant that builds a cone-shaped mound in soil and nests in walls. Some people are allergic to its sting.
antelmintic A substance or compound that expels or destroys internal parasites or intestinal worms
anther Pollen-bearing end of stamen
See Part 2: Flower, Perfect
anthermis Liqueur flavored with mint
anthocyanin A red plant pigment; also found in blue and purple plants
antholyti A thick, wrinkled, light-yellow, Greek cheese
anthony See runt
anthotiri A soft, white cheese made from sheep’s milk, usually flavored with herbs or honey
anthracene \([C_6H_4(CH)_2C_6H_4]\) A fused-ring aromatic hydrocarbon obtained by distillation of coal tar

![Anthracene](image)

anthracite See coal
anthracnose 1) A disease of beans that causes dark circular leaf spots, cankered stem, and cratered pods. 2) A common and widely distributed rot of ripe tomatoes. Infected tomatoes first show water-soaked spots that are slightly sunken; the spots enlarge, darken, become more sunken, and often develop targetlike markings; the center of the spot may turn tan and develop dark specs. Control: captan, chlorothalonil, mane, zineb 3) A fungus (Elsinoe veneta) that affects the canes, leaves, and petioles of raspberry (black and red), blackberry, and strawberry plants. Raised spots (\(\frac{1}{8}\) in.) with gray centers and red margin are noted. Control: good air drainage, anthracnose-free plants and fungicide spray 4) A disease of watermelon that produces water-soaked spots on the fruit. 5) Bird’s eye rot—An American bunch grape fungus disease found in sections of the northeastern and southeastern states. 6) Black spot, ripe rot—Small, light-brown, circular discolorations (fungus) on the skin of avocados, mangoes, papayas, and citrus fruit. Large decayed areas are found on overripe fruit; the decay penetrates deeply into the flesh. In papayas, a saucer decay develops and as it enlarges it has brown to black centers often covered with a scaly depression; the causal fungus is Colletotrichum gloeosporioides and normally enters through breaks in the skin. Chilling to 45°F will retard the rotting, but many avocados are subject to chilling injury below 55°F. Control: hot water treatment (130°F for 5 min.)
See Part 2: Sorghum Diseases
anthracnose rot (gloeosporium fruit rot) A fruit rot of bananas caused by Gloeosporium musarum Manifestations of the disease: Finger stalk rot—Injury to individual finger stalk; followed by infection of the tissue, which becomes brown, slowly involving the entire finger, and finally turns black. Spotting—Infection enters through the peel (injury is common at harvest); small spots increase in size and turn black; largely confined to the peel. Ripe-fruit rot—Superficial brown spots turn black, enlarge, and coalesce. Tip rot—the flower is infected and rot appears as fruit is turning yellow; tip darkens in color and under fruit decays
anthrax Pathogenic food-borne (in infected meat and milk) bacterial infectious disease of humans and animals caused by Bacillus anthracis; vegetative cells are killed by pasteurization; spores survive 3-5 min. at 100°C
anti- Prefix meaning against
antiberiberi See thiamin
antibiotic A substance produced by microorganisms that can inhibit or destroy other microorganisms; a substance that occurs in nature and is usually of mold origin; inhibits the growth of bacteria. See Part 2: Antibiotic Standards; Wastes, Agricultural and Industrial
antibiotic medium (seed agar) A microbiological medium used for preparation of test cultures prepared for antibiotic assays of ointments, tablets, milk, and for assaying antibiotics. See Part 2: Microbiological Examination of Dairy Products; Microorganism, Culture Media, Dairy and Food Products
antiblacktongue factor See niacin
antibody A protective substance formed in the blood (serum) by lymphocytes when antigens (foreign proteins, usually bacteria or viruses) are present. Both antigen and antibody are proteins. The antibody is able to inhibit or destroy the invading organism, partly as a result of the antagonism between the molecules of antigen and antibody. A form of gamma globulin. Specific immune-reaction material that works against disease
anticaking agent An additive used to prevent caking of dry material; in salt, cures, or seasonings (up to 2% in combination in meat-curing ingredients). Substances used are as follows (asterisk indicates use...
anticaking agent

in table salt):
  Calcium aluminum silicate*
  Calcium carbonate
  Calcium silicate*
  Calcium stearate
  Glycerol (glycerin)
  Magnesium carbonate
  Magnesium silicate*
  Propylene glycol
  Silica gel
  Sodium aluminosilicate
  Sodium calcium aluminosilicate
  Sorbitol
  Tricalcium phosphate
  Tetrasodium pyrophosphate

In salt (13 ppm in meat-curing ingredients) yellow prussiate of soda (sodium ferrocyanide decahydrate)

anticipated delay report A regular report, issued by both manufacturing and purchasing to the material planning function, noting jobs or purchase orders that will not be completed on time, the reasons why, and the new completion date

anticoagulant A substance used to prevent the coagulation of liquids containing colloids, i.e., heparin, dicoumarin, oxalate, citrate, hirudin

anti-egg-white-injury factor See biotin

antifoaming agent An additive used in low percent­ages to retard foaming of liquids, i.e., silicones (fats, methyl polysilicone), octanol, sulfonated oils

antigen Any foreign substance (protein, protein polysaccharide complex, carbohydrate, etc.) that when incorporated into an animal is identified as foreign and causes the lymphocytes to produce specific antibodes (immunologic response), which bind the antigen; a substance that will stimulate production of antibodies See antibody

anticoagulant See biotin

antihemorrhagic vitamin See vitamin K

antimetabolite An inactive substance that is similar to and tends to replace an essential metabolite See antagonism; metabolite

antimony (Sb, from Lation stibium) A metallic element; Group VA of the Periodic Table; at. no. 51, at. wt. 121.76; oxidation states +3, +5, −3; electron configuration 2−8−18−18−5; orbit K L M N O

Used as a glaze on enamel and pottery; may be extracted by lemonade

antineuritic See thiamin

antinutritional factor Component of food that hinders the nutritional response

antioxidant A substance that retards oxidation of organic substances, including fat rancidity and enzymatic browning; e.g., propyl gallate, ascorbic acid, butylated hydroxyanisole (BHA), butylated hydroxytoluene (BHT). Not more than $\frac{1}{1000}$ of 1% BHA or $\frac{1}{1000}$ of 1% citric acid may be used in unsmoked dry sausage during preparation for trichinae treatment.

See Part 2: Antioxidant Activity; Antioxidant Mixtures; Antioxidants, Formulas; Antioxidant Structure
apagado  Fresh grape juice in which fermentation is stopped by adding 16–18% alcohol
apatite  Rock containing as high as 40% phosphoric acid
apennino (alpino) A dry, uncooked, unsmoked, mildly seasoned (with garlic), Italian-style, American salami sausage made from coarsely chopped beef and pork and that is fermented and stuffed into a pork casing. The product is air-dried for 60–100 days.
apepsia  Absence of digestion
aperient  Laxative
aperitif  A short drink of an alcoholic beverage offered before dinner to increase the appetite; from Latin aperire, to open
aperitif wine  A slightly bitter, flavored, often red, wine with a high alcohol content, usually consumed before meals
apex  The tip of a cone or cone-shaped structure
APF (animal protein factor)  See vitamin B₁₂
apfelwein  Cider that is fermented
aphagia  Inability to swallow
aphid (plant louse)  A small (less than \( \frac{1}{4} \) in.), soft-bodied insect that can have a pink, light or dark green, yellow, or black body, and that has six legs, can be winged or wingless, and has sucking mouth parts; host plants include most fruit trees.
Damage: The aphids cluster on stems and under leaves and suck sap from tree parts, causing leaves to curl and thicken, turn yellow, and die, or honeydew secreted by the aphids covers the leaves and fruit, and a black sooty mold grows on it.
Control: A dormant fruit tree oil spray before foliage breaks; insecticides, such as malathion, diazinon
Aphids can damage lettuce by
Reducing plant vigor
Contaminating the plant with honeydew and cast skins
Transmitting plant diseases
The plant is destroyed if infestation is heavy. See bean aphid; green peach aphid; apple aphid; melon aphid; woolly pear aphid
See Part 2: Insect Control
aphid lion (lacewing)  An insect; the adult has gauzy green wings, yellow eyes, and fragile hairlike antennae and deposits eggs singly on stalks; The larva is yellowish or mottled red or brown, has a long (\( \frac{9}{16} \) in.), narrow body that tapers at both ends, and has large sickle-shaped jaws and prominent projecting hairs.
Benefit: larva feeds on aphids, mealy bugs, scales, thrips, and mites
APHIS  See Animal and Plant Health Inspection Service
aphthous fever  See foot and mouth disease
apiti  Acidic, baked dumpling made from maize
apitiv  A fortified, alcoholic, sherry-type wine
apitissi  Baked chindanda made from maize and plantain
APL  A high-level programming language for special applications
apoenzyme  The protein part of an enzyme to which a coenzyme can attach; an inactive protein that when attached to a coenzyme becomes active
apoenzyme + Coenzyme \( \rightarrow \) enzyme
(specific (nonprotein, (active protein, inactive) biochemical inactive))
catalyst
apollinaris  A Rhine, effervescent, mineral water
aposia  Lack of thirst
apositia  Lack of desire to eat
apothecary wrap  See drug store wrap
appalam  Thin, crisp, dried sheets of legume or rice flour
apparent consumption  See food supply data
appearance  The visual size, shape, color, and conformation of food
appenzell  A full-fat, smooth, firm, yellow, Swiss cheese made from cow’s or goat’s milk, with brown wrinkled skin and small holes; similar to Emmentaler
appenzeller  A smooth, firm, cow’s-milk cheese from Switzerland that is seasoned with wine and spices during the curing period
appenzeller-siedwurst  A moist, cooked or uncooked, unsmoked, medium-seasoned, Swiss sausage made from finely chopped beef, pork, and veal stuffed into a beef casing
appenzeller racs  A sharp, gray, small-holed cheese made from skimmed milk and steeped in wine
appertisation  Canned fish
Appert, Nic(h)olas (1795)  A Frenchman who first preserved food by thermal processing in a sealed container (canning)
appetite  A complex of sensations by which the organism is aware of a desire or craving for and anticipation of the ingestion of palatable food; desire for food or drink
appetizer  A moist, uncooked, smoked, medium-seasoned, East German sausage made from finely chopped beef and pork stuffed into an artificial casing
appetitost cheese  A sour cheese made from buttermilk
appetitsild  Sprats that are spice-cured and packed in vinegar, salt, and spices
appetizer  A food used to introduce a meal; it includes hors d’oeuvres, cocktails, and canapés.
See Part 2: Salad Dressing or Mayonnaise Variations
appetizing  Appealing or tempting to the appetite
apple  A fleshy, round fruit (pome) of the tree of the genus *Malus*; there are more than 3000 apple classifications; originally from central Asia
Average yield: 75–200 lb/tree
Bearing age: 2–5 yr
Sprays required: 8–15/yr
Useful life: 15–20 yr
Grades:
U.S. Extra Fancy
U.S. Fancy
U.S. No. 1
U.S. No. 2
Combinations of grades
**Uses:**
- Apple butter
- Brandy
- Canned

**Styles:**
- apple butter, applesauce; chunky pieces;
- peeled and sliced; peeled, in quarters or halves;
- peeled whole and cored; rings, artificially colored and spiced; unpeeled whole (baked) and cored

**Packed in starch, sugar, and spices as pie filling:**
- thickened, sweet, and spicy syrup; or water

**Most apples need more than one variety for cross-pollination.**

<table>
<thead>
<tr>
<th>Harvest time</th>
<th>Variety in order of harvest time</th>
<th>Fruit</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid-July–mid-Aug.</td>
<td>Vista Bella</td>
<td>Yellow</td>
<td>Cooking, eating</td>
</tr>
<tr>
<td></td>
<td>Julyred</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Jerseymac</td>
<td>Red</td>
<td>Eating, storage</td>
</tr>
<tr>
<td></td>
<td>Lodi</td>
<td>Yellow, red blush</td>
<td>Eating, cooking</td>
</tr>
<tr>
<td></td>
<td>Viking</td>
<td>Red</td>
<td>Eating, sauce, pie</td>
</tr>
<tr>
<td></td>
<td>Tydeman Early</td>
<td>Red, tart</td>
<td>Salads, sauces, pie, baking</td>
</tr>
<tr>
<td></td>
<td>Gravenstein</td>
<td>Yellow</td>
<td>Eating, sauce, pie</td>
</tr>
<tr>
<td></td>
<td>Paulared</td>
<td>Red</td>
<td>Eating, cooking</td>
</tr>
<tr>
<td></td>
<td>Prima</td>
<td>Scab-resistant</td>
<td>Snacks, salads, cooking, all-purpose</td>
</tr>
<tr>
<td></td>
<td>Cortland</td>
<td>Red stripe</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Macoun</td>
<td>Red, rounded, tart</td>
<td>Cooking, eating, storage, cider, sauce, pie, baking</td>
</tr>
<tr>
<td></td>
<td>Spartan</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Jonathan</td>
<td>Red</td>
<td>Cooking, eating baking, sauce, pie</td>
</tr>
<tr>
<td>Late Sept.–late Nov.</td>
<td>Rhode Island Greening</td>
<td>Yellow, firm, tart</td>
<td>Cooking, eating baking, sauce, pie</td>
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<tr>
<td></td>
<td>Sour type Delicious</td>
<td>Yellow-green, golden, round</td>
<td>Eating</td>
</tr>
<tr>
<td></td>
<td>Priscilla</td>
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<td></td>
<td>Jonagold</td>
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<tr>
<td></td>
<td>Golden (Yellow)</td>
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<td></td>
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<tr>
<td></td>
<td>Delicious</td>
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<td></td>
<td>Empire</td>
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<tr>
<td></td>
<td>Spigold</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Grimes Golden</td>
<td>Yellow, tart</td>
<td>Storage, fresh, sauces, cider, eating, pie, baking, cooking</td>
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<tr>
<td></td>
<td>Northern Spy</td>
<td>Red, firm</td>
<td>Snacks, storage, salads, all-purpose, cooking, baking eating</td>
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<td></td>
<td>Stayman Winesap</td>
<td>Red, purple undertone, round firm, tart</td>
<td>Storage, cider, fresh, baking, sauce, all-purpose, cooking, dessert, eating, pie</td>
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<tr>
<td></td>
<td>Idared</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Red Delicious</td>
<td>Red, large</td>
<td>Eating, storage</td>
</tr>
<tr>
<td></td>
<td>Red Rome</td>
<td>Firm</td>
<td>Storage, baking</td>
</tr>
<tr>
<td></td>
<td>McIntosh</td>
<td>Red, tart</td>
<td>Storage, cider, pie, fresh, sauce, eating</td>
</tr>
<tr>
<td></td>
<td>Mutsu</td>
<td>Green-yellow</td>
<td>Eating, sauce, pie, baking</td>
</tr>
<tr>
<td></td>
<td>Melrose</td>
<td>Red</td>
<td>Eating, sauce, pie, storage</td>
</tr>
<tr>
<td></td>
<td>Yellow Newtown</td>
<td>Yellow, tart</td>
<td>Storage, eating, pie, sauce</td>
</tr>
<tr>
<td></td>
<td>York Imperial</td>
<td>Red, yellow, spots, firm, tart</td>
<td>Storage, cooking, dessert baking, sauce, pie</td>
</tr>
<tr>
<td></td>
<td>Baldwin</td>
<td>Red</td>
<td>Dessert, cooking, storage</td>
</tr>
</tbody>
</table>

20–30% refuse (peeling and core)
1 barrel = 3 bu = 150 lb
1 Eastern box (11 x 3 x 17 in.) = 54 lb
1 Northwest box (10.5 x 11.5 x 18 in.) = 44 lb (size indicates approximate number per box, usually ranges from 36 to 256)
= 29–35 pt, frozen
apple butter

1 case (24) No. 2 ½ cans = 1.4 bu, fresh
1 bu, fresh = 48 lb (40-50 lb)
= 32-40 pt, frozen
= 16-20 qt, apple slices
= 16-22 qt, canned
1 bu, dried = 26 lb
1 lb, fresh = 4 small apples
= 3 medium apples
= 2 large apples
= 3 cups diced
= 2 ½-3 cups, pared and sliced
= ½ of a 9-in. pie
= 3-4 servings
1 lb, dried = 8 lb, fresh
= 4 ½ cups, dried
1 qt, canned = 2.3-3 lb, fresh
= 7-8 med. apples
16 oz, canned = 4 servings if liquid is used
= 2-3 servings if drained
1 pt, frozen = 1.25-1.5 lb, fresh
One 8-oz apple, dried = 8 servings
1 cup, dried, cooked, sweetened = 8.4 oz
1 cup, dried = 105 g (3.7 oz)
1 cup, sliced = 1 med. apple
1 cup, thinly sliced = 8 oz
1 cup, pared and sliced = 120 g (4.3 oz)
1 cup, peeled, cored, thinly sliced
= 0.8 large cooking apple
1 cup, cored and chopped = 0.8 med. apple
1 cup, finely chopped = 2 small apples
1 large apple, peeled, shredded = 1.5 cups
1 med. apple = 0.5 cup, grated
= 1 cup, shredded
1 med. apple, peeled, cored, chopped = 0.7 cup
1 serving = 1 med. fresh apple
= ½ cup sauce
= ¼ cup, dried
Comparison (pared), 70-80% edible:

<table>
<thead>
<tr>
<th>Composition</th>
<th>Fresh</th>
<th>Dried</th>
<th>Dried apple nuggets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>85</td>
<td>24</td>
<td>1.6</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>0.2</td>
<td>1</td>
<td>1.4</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>0.3</td>
<td>1.6</td>
<td>1.0</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>12-14</td>
<td>72</td>
<td>94</td>
</tr>
<tr>
<td>Sugar (%)</td>
<td>8-11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ash (%)</td>
<td>0.3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>3.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>2.9-3.4</td>
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<td></td>
</tr>
<tr>
<td>Vitamin A (IU/100 g)</td>
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<td></td>
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<tr>
<td>Ascorbic acid (mg/100 g)</td>
<td>5</td>
<td></td>
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</tr>
</tbody>
</table>

To ripen: Keep in a cool room (60-70°F) until ripe; room temperature will ripen 10 times faster than refrigerated temperature. To prevent darkening after cutting, dip in lemon, lime, orange, grapefruit, pineapple juice, or ascorbic-citric acid powder.

Storage: cool, dry place or refrigerator (30-31°F) at relative humidity 85-90%
Do not wash until served.
Freezing point 28°F
Use ripe apples within 1 week.

Storage (long-term): apples will be more mealy and less flavorful, contain less acid, and lose pectin

Varieties:
1. Used fresh (39% of total)
   - Grimes Golden
   - Red Delicious
   - Jonathan
   - Winesap
2. Dual-purpose (47% of total)
   - Cortland
   - Rome
   - Golden Delicious
   - Stayman
   - McIntosh
   - Yellow Newtown
   - Newton
   - Wealthy
3. Used for processing (14% of total)
   - Baldwin
   - Rhode Island Greening
   - Gravenstein
   - Winesap
   - Northern Spy
   - York Imperial

See Part 2: Ascorbic Acid; Calories, Daily Recommendations; Canned Spoilage Related to pH; Canned Yield; Flavor Ingredients, Taste and Flavor Type; Food, Composition; Frozen Food Storage; Fruit and Nut Rootstock; Fruit and Vegetables, Diseases; Fruit, Availability; Fruit Classification; Fruit Composition; Fruit, Cooking; Fruit, Dried, Simmering; Fruit, Frozen Yield; Fruit, Growing Season, Storage Life; Fruit Harvest Dates; Fruit Sugars; Fruit Servings per Pound; Fruit, Simmering; Fruit Storage; Iron; Microwave Cooking; Fruit; Minerals, Food; Minerals (Trace), Limits; Nicotinic Acid, Food; Nutrients in Crops; Organic Acids in Fruits and Vegetables; Pectin Content; pH Values of Biological Materials; Plant Foods, Composition; Potassium; Riboflavin; Riboflavin, Food; Rot Spoilage; Standards, Processed Fruit and Vegetable Products; Storage; Storage, Dry; Storage Times; Sugar, Fruit; Thiamin; Transit Temperature; Vitamin C; Wastes, Agricultural and Industrial; Wine, Sweet

apple acid Malic acid

apple and thorn skeletonizer An insect; the adult is a small, dark-brown moth and the larva caterpillar feeds on the underside of leaves, which become a mass of webbing and grass.

apple aphid An aphid that is also found on pears

apple base Apple or apple juice added to other fruit; used in making jams, jellies, or preserves

apple brandy (apple jack) A high-alcohol-content spirit distilled from fermented apple juice See cider

apple, bush See apple, rose

apple butter A light- to dark-brown, soft mixture made by cooking apple pulp (fresh, canned, or dried) to a thick paste; spices (cloves, allspice, and cinnamon are often used) may or may not be used; less sugar is used than for jams and jellies; Sometimes cooked in vinegar and sugar.

Composition: Moisture 52%; protein 0.4%; fat 0.8%; carbohydrate 47%; ash 0.4%

Defect action level: average microscopic mold count of 12%, average of 4 rodent hairs/100 g, average of five insects of equivalent (not including mites, thrips aphids, or scales)/100 g. See butter (fruit)

apple, dried See apple, rose

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**apple, candied**

A stick is inserted into a fresh apple and it is dipped into a mixture of sugar, corn syrup, water, vinegar, and food coloring.

**apple, canned**

Available forms:
- Whole (cored like baked apples)
- With peel
- Without peel
- Slices
- Apple rings (colored and spiced)
- Chunky pieces

Packed in the following:
- Water
- Thickened, sweet, and spicy syrup
- With starch, sugar, and spice (pie-filling mix)

**apple, chopped**

Dried quarters or smaller pieces of peeled and cored apples.

**apple cider butter**

Fruit butter made from apple cider, fresh apples, and sugar.

**applied grades**

<table>
<thead>
<tr>
<th>USDA</th>
<th>Western states</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extra fancy</td>
<td>Extra fancy</td>
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<tr>
<td>Fancy</td>
<td>Fancy</td>
</tr>
<tr>
<td>No. 1</td>
<td>C</td>
</tr>
</tbody>
</table>

**apple jack**

Brandy distilled from apple cider; beverage produced by freezing hard cider (to concentrate) See apple brandy; cider

**apple jin**

A liqueur made from apples

**apple juice**

Unsweetened apple juice that is filtered through a fine (finer than for cider) filter and is often pasteurized by mild heat See cider

**apple, kangaroo** *(Solanum aviculare)*

Egg-shaped, mealy-textured, sour-sweet, yellow fruit of an Australian grass

**apple, love** See tomato

**apple maggot**

An insect; the adult is a black fly that has white bands on the abdomen, has green eyes, is \( \frac{1}{2} \) in. long, and lays eggs on the host plant (apple, crab apple, hawthorne, blueberry, buckthorn, European plum, cherry, and pear). The maggot is yellowish white and up to \( \frac{3}{4} \) in. long. It creates a small puncture, pitted and distorted areas in the skin, and tunnels through the flesh that turn brown and rot; stored apples also rot.

Control: discard all dropped fruit; use an insecticide

**apple, malay**

A 2- to 3-in. fruit grown on a variety of myrtle trees in the South Pacific

**apple mint** *(royal mint; Mentha rotundifolia)*

A member of the mint family that has more delicate flavor than spearmint or peppermint and is used for sauce and jelly

**apple pie**

\( \frac{1}{2} \) of a 9-in. pie (71 g) = 300 calories

\[ = 208 \text{ mg Na} \]

See Part 2: Baked Products, Frozen Storage Life

**apple pie spice**

Includes cinnamon, cloves, nutmeg or mace, allspice, and ginger

**apple polish**

Carnauba wax from Brazilian wax palm. The wax produces a sheen and retards moisture loss. Does not wash off.

**apple pomace**

It is often dehydrated and used as animal feed

Composition (dehydrated): dry matter 89%; protein 4.6%; fiber 18%; fat 4.7%; ash 3.1%

**apple red bug**

An insect; the adult is orange-red with dark markings and up to \( \frac{1}{2} \) in. long. The nymph is bright red and smaller than the adult; it punctures fruit and causes spots and deformation.

**apple, rings**

Dried, transversely cut slices from peeled and cored apples

**apple, rose** *(apple, bush)*

A large berry grown in Malaya

**applesauce**

A sauce made from apples (a blend of several types) and sugar; pink applesauce is made by leaving the skin on red apples during cooking. Sometimes cinnamon, nutmeg, grated lemon rind, or raspberry-lemon concentrate is added.

Available forms:
- Chunky texture
- Pureed
- Spiced

Available forms:
- Combined with raspberries, strawberries, pineapple, apricots, etc.

1 case (24) No. 2\( \frac{1}{2} \) cans = 1.2 bu fresh

1 lb apple sauce = 1.75 cups

1 cup apple sauce = 260 g (9.1 oz)

**apple, star** *(Chrysophyllum cainito)*

A soft, custard-textured, eggplant-like, tropical fruit with black seed, purple skin, and purple flesh, produced by a West Indian tree

Varieties:
- Green
- Purple

**apple tea**

Tea made from fresh or dried apple parings

**apple (cider) vinegar**

A vinegar condiment made from apple juice, containing the following amounts:
- 4% acetic acid (min.)
- 1.6% apple solids (max. 50% reducing sugars)
- 0.25% apple ash (min. water-soluble ash 0.01% of phosphoric acid, P\( _2O_5 \))

Standard for household use: Light brown to deep brown

**apple wine**

Carbonated cider (fermented)

**applewood**

A cheddar-type cheese smoked in apple-wood smoke

**Applied Nutrition Programme (ANP)**

Educational activities using modern knowledge of food nutrition to improve local food production, consumption, and distribution in favor of the local communities

**apricot** *(Prunus armeniaca)*

A medium-sized tree (native to China) that bears fruit from pale yellow to
deep orange, which is eaten fresh, canned (juice pack, unsweetened, light syrup, heavy syrup, extra heavy syrup), dried and frozen, or made into jam; intermediate between peach and plum.

Three species of plum are known as apricots:
- *Prunus armeniaca* (common)
- *Prunus dasycarpa* (black)
- *Prunus mume* (Japanese)

The fruit must be tree-ripened to have full flavor and does not ship well.

**Immature**—very firm, pale yellow or greenish yellow

**Mature**—yield to gentle pressure, golden orange

**Overmature**—soft, dull color

**Peeling**—scald in boiling water for 45 s and then into cold water

**Canning**—should be harvested firm ripe, not mature

**Drying**—should be harvested fully mature

Canned styles available:
- Peeled slices
- Peeled halves
- Peeled whole (with or without pits)
- Unpeeled halves
- Unpeeled halves [packed in water with no sugar (water pack)]
- Unpeeled [pitted, without liquid or sugar (solid pack)]
- Unpeeled halves, [soft, fully ripe, picked from area of the tree exposed to sun, high sugar content, good flavor, soft texture, cloudy syrup (mello ripe)]

<table>
<thead>
<tr>
<th>Variety</th>
<th>Flavor</th>
<th>Size or color</th>
<th>Firmness</th>
<th>Pit burn</th>
<th>Pollinated by</th>
<th>Most popular</th>
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<tr>
<td>Blenheim (Royal)</td>
<td>Excellent</td>
<td>Small-med. golden</td>
<td>Med.</td>
<td>Yes</td>
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<tr>
<td>Early Golden</td>
<td>Rich, deep</td>
<td>Large; orange with blush</td>
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<td></td>
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<td></td>
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<td>Good</td>
<td>Large; golden skin, orange blush</td>
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<td>Same variety</td>
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<td>Goldrich</td>
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<td>Same variety</td>
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<td>Dark; more meat</td>
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<td>Perfection</td>
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<td>Med.</td>
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<td>×</td>
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<tr>
<td>Superb</td>
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<td>Wenatchee (Moorpark)</td>
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<td></td>
<td></td>
<td></td>
<td>Same variety</td>
<td></td>
</tr>
</tbody>
</table>

6% refuse (pits)

1 bu, fresh = 48 lb (40–50 lb)

= 60–72 pt, frozen

= 20–24 qt, canned

1 lug (4.6 x 12.5 x 16.1 in.) = 24 lb
apricot (Prunus armeniaca)

1 crate (4.5 x 16 x 16.1 in.) = 22-24 lb
= 28-33 pt, frozen
1 lb, fresh
= 8-12 med. raw apricots (small, 20/lb; large, 10/lb)
= 2 1/2 cups, fresh sliced (155 g or 5.5 oz/cup)
= 56 med. dried apricots
= 3 cups dried apricots (150 g or 5.3 oz/cup)
= 8-12 whole, canned
= 12-20 halves, canned
= 2.5 cups, cooked
= 4-6 servings

1 lb, dried = 85 halves
= 12-17 servings
= 5-6 cups cooked apricots
= 6-8 lb, fresh
1 pt, frozen = 0.7-0.8 lb, fresh
1 cup, fresh halves = 5.5 oz
1 cup, canned = 8.8 oz
1 cup, dried = 24 large halves
= 40 small halves
= 3.0-5.6 oz
1 cup, dried, cooked = 26 halves
= 8.6-10.4 oz
1 serving = 2 med. apricots
= 5 dry halves

To ripen: Keep at room temperature, in open air, and out of sun until flesh begins to soften.

Storage: when ripe, store uncovered in refrigerator (31-32°F) and 85-90% relative humidity; use in 3-14 days; frozen (0°F) storage life, 1 yr

See Part 2: Flavor Ingredients, Taste and Flavor Type; Frozen Food Storage; Fruit and Vegetables, Composition; Fruit, Availability; Fruit Classification; Fruit Composition; Fruit, Cooking Fruit, Dried, Simmering; Fruit, Frozen Yield; Fruit, Growing Season, Storage Life; Fruit, Harvest Dates; Fruit Servings per Pound; Fruit, Simmering; Fruit Storage; Microwave Cooking, Fruit; Minerals, Food; Organic Acids in Fruits and Vegetables; Plant Foods, Composition; Potassium-Rich Foods; Standards, Processed Fruit and Vegetable Products; Storage; Sugar, Fruit; Vitamin A; Vitamin A, Food; Wine, Sweet

apricot brandy Brandy or high-alcoholic-content spirits flavored with dried apricots; brandy distilled from fresh fruit and kernels or infusion of apricots into spirit base

apricot, canned In addition to apricots, may also contain natural and artificial flavors, spices, vinegar, lemon juice or organic acid, or ascorbic acid (no greater than quantity needed to preserve color)

<table>
<thead>
<tr>
<th>Syrup</th>
<th>Sucrose (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extra light</td>
<td>10-16</td>
</tr>
<tr>
<td>Light</td>
<td>16-21</td>
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<tr>
<td>Heavy</td>
<td>21-25</td>
</tr>
<tr>
<td>Extra heavy</td>
<td>25-40</td>
</tr>
</tbody>
</table>

apricot kernel paste Paste produced by cooking blanched, ground kernel with sugar

apricot liqueur Infusion of apricots with spirits

apricot nectar Made from fresh apricots or from cooked dried apricots, usually with sugar syrup added; 1.4% protein
1 cup = 8.4-8.6 oz

apricot, slab Dried, flat, halves and irregular shapes and sizes of apricots

aprikosengeist Apricot brandy

spry Apricot liqueur

APT agar Microbiological agar for growth of lactic acid bacteria; often used for heterofermentative lactobacilli that cause greening in meat
See Part 2: Microbiological Media

apriting A moist, cooked, smoked Swedish sausage made from finely chopped, mildly seasoned (with potato starch and skim milk powder) beef and pork stuffed into an artificial peelable casing

aqa A type of chicha

AQL Acceptable quality level

aquaculture Human-controlled cultivation and harvest of both freshwater and marine aquatic species

aqua fortis Nitric acid (HNO₃)

aquadiente Rum or brandy distilled from fermented grape juice

aqua regia Mixture of three parts hydrochloric and one part nitric acid (3HCl + HNO₃)

aqvavit Brandy

aquavit A dry, clear, white, caraway-flavored liquor (43% alcohol) distilled from grain, potatoes, or sawdust See akvavit

aquavit Distilled liquor, especially brandy

aqueous Pertaining to water; a solution containing water

aqueous electron (eₐq) A hydrated electron that is the radiolytic product of water

Ar Symbol for the element argon

arabic bread A pocketed, flat bread

arabic gum See gum arabic

See Part 2: Gums and Gelling Agents; Gums and Gelling Agents, Characteristics; Gum Distribution; Pentosans; Stabilizers; Thickeners

arabinogalactan A food stabilizer, thickener, or texture modifier used in nonstandardized salad dressings and pudding mixes See larch gum

arabinose A five-carbon monosaccharide (pentose) sugar found in fruit juices and gum
See Part 2: Sugar, d-Aldehydo

arachichu A South American tree that produces edible fruit

arachidic acid (arachic acid) A 20-carbon saturated acid found in peanut oil
See Part 2: Fats and Oils, Fatty Acid Composition; Fatty Acids, Fatty Acids and Their Properties; Fatty Acids, Fats and Oils; Milk, Fatty Acids, Seasonal; Saturated Fatty Acids; Wheat, Fatty Acids
arachidonic acid

\[
CH_3(CH_2)_4CH=CHCH_2CH=CHCH_2CH=CH(CH_2)_3CH\ce{O}CH
\]

A 20-carbon unsaturated acid found in animals
See Part 2: Fats and Oils, Composition; Fatty Acids; Fatty Acids and Their Properties; Fatty Acids, Fats and Oils; Unsaturated Fatty Acids

arachis oil See peanut oil

arad An Edam-type cheese

aradisame Bread baked from dried flour made by fermenting pseudostem of ensete or false banana

arak An alcoholic drink made from dates and flavored with mastik; an alcoholic drink made from grapes and flavored with anise seed See arrack

araka See kumiss

aralar A lightly smoked, esbareich-type cheese with a brown rind, cured in caves for 1 month

aravis A blue cheese made from goat's milk, flavored with parsley

arbitrage The simultaneous purchase and sale of similar or identical commodities in two different markets in hopes of gaining a profit from price differentials; buying in one market and selling at a profit in another, in order to take advantage of price differences

arbut (Arbutus undeo) See arbutus

arbutus (strawberry tree) A shrublike tree that produces a red, warty berry that is used to make liqueurs and confectionery

area A bivalve mollusk that is eaten raw or cooked

archil A coloring material derived from a vegetable and used in food; produces violet-red, blue, or purple colors

arctic char (Salvelinus alpinus Linnaeus) A food fish

arctic cisco (Coregonus autumnalis Pallas) A food fish

arctic grayling (Thymallus arcticus) A food fish

ardenner A dry, uncooked, smoked Belgian sausage (salami) made from medium-chopped, medium-seasoned, beef and pork, fermented and stuffed into beef casings

ardennes ham A country-style dry-cured ham produced in Belgium

ardi-gasna An esbareich-type cheese matured for 3–6 weeks

are A measure of area

1 are = 119.6 square yards (yd^2)
1 are = 100 square meters (m^2)
1 are = 0.02471 acre

area (A) A measure of surface

Area of triangle = \( \frac{1}{2} \) (base \( \times \) height)

Area of circle = \( \pi r^2 = 0.785d^2 \) (\( \pi = 3.1416 \), \( r = \) radius, \( d = \) diameter)

Square and circle of equal area: side of square = \( d/\sqrt{2} \)
Area of sphere = (\( d^2 \))\( \times \)3.1416

area (A) A measure of surface

Aries (d'Arles) A dry, uncooked, unsmoked, French salami-type (similar to Milano) sausage made from
medium- to coarse-chopped, mild- to medium-seasoned beef, pork, and goat (sometimes made with
horse or donkey meat) fermented and stuffed into beef, pork, or artificial casings. See salami, d’Arles

Arlington  A variety of lespedeza (Sericea)

arm  1) The upper limb of a human or the forelimb of
(Pseudaletia unipuncta) Armyworm

2) Canes that are left after pruning and that produce
the fruiting shoots and canes

armadillo (Tolypeutes tricinctus)  An armor-plated
mammal that is edible

armagnac (brandy of Lafayette)  A dry, French,
heavy-bodied brandy (40–50% alcohol) distilled from
fermented marc residue of grapes and used as an
after-dinner cordial

armavir  A Russian parn-type cheese made from sour
sheep’s milk with added buttermilk or whey

arm bone  Humerus

arm roasted  Beef roast made by cutting across the
forearm bone

arm steak  Steak made from the same areas as an
arm roast

Armyworm (Pseudaletia unipuncta)  A worm
whose larva feeds on small grain and native grass and
strips the plant of its leaves; it can destroy lettuce
plants and is a peanut pest. See also fall armyworm

Beet armyworm, Spodoptera exigua

Yellow-striped armyworm, S. ornithogalli

See Part 2: Insect Control

arneguy  See adri-gasna

aroma  Fragrance or odor imparted by the volatile
constituents of a material, food, essential oil, or oleo-
resin

aromatic  1) An unsaturated organic compound in
which the carbon atoms are joined in a closed hexagonal
ring and whose structure is based on that of
benzene. Such rings are called carbocyclic when com-
posed only of carbon atoms, and heterocyclic if atoms
of other elements are constituents of the ring. See
also benzene. 2) A fragrant, usually pleasant, spicy,
slightly pungent aroma and pungent taste; associated
with some plants other than those that flower

aromatic acid  An acid in which one or more of the
hydrogen atoms of the aromatic nucleus has been
replaced by a carboxyl group

aromatic alcohol  An alcohol derived from benzene
in which one or more of the hydrogen atoms of the
benzene ring is replaced by a hydroxyl or hydroxyl-
containing group, e.g., phenol (C₆H₅OH) and benzyl
alcohol (C₆H₅CH₂OH)

aromatic bitters  An alcoholic beverage (alcohol con-
tent as high as 40%) with a distinctive flavor

aromes de Lyon  A valencay-type cheese made from
goat’s milk and soaked for 1 month in white wine and
dry-cured for 1 month

arracacha (api; arracacia; Arracacia xanthorrhiza)  A South American or Mexican root plant
used for starch production, used as yams, or cooked
like potatoes or sweet potatoes

See Part 2: Starchy Roots, Composition

arrack (arak; arak; mastika; ouzo; raki; zibib)  A clear to straw-colored distilled (to various strengths)
alcoholic spirit that is fermented from sugar obtained
from the palm tree, rice, or molasses and is normally
flavored with aniseed. See palm

arrag  See kumiss

arran  A cheddar-type cheese sometimes colored yel-
low with annatto

arroba, metric  A unit of weight used in Brazil

1 arroba = 0.015 metric ton

arrillado criollo  A moist, cooked, unsmoked Argen-
tinian sausage made from finely chopped, mildly sea-
soned (with cayenne, garlic, marjoram, and vinegar)
beef, pork (heads), and wheat flour and cooked in
molds lined with caul fat

arrowgrass (Triglochin)  Popular name for several
greenlike plants, such as marsh arrowgrass and sea-
side arrowgrass

See Part 2: Poisounous Plants

arrowhead (tube potato; Sagittaria sagittifolia)  A water plant with starchy edible roots that can be
used as a vegetable or powdered like arrowroot

arrowroot (Maranta arundinacea)  A perennial that produces starchy rhizomes (1 ft long by ¾ in.
diam.); the rhizomes are white and covered with large
paper white scales; a very digestible starch is made
from these tubers; refined starch from the tubers of
this plant is also referred to as arrowroot as well as
tapioca and farina. The rhizomes must be peeled
carefully because the rind contains a bitter drug. The
roots are crushed or rasped and the starch is washed
out. The name comes from the Indian practice of
treating arrow wounds with the root. The finely pow-
dered starch is used to prepare blancmange, custards,
and puddings

Composition: protein 0.4%; fat 0.1%; carbohydrate 94%

arrowroot flour  Flour produced from the rhizome of
a tropical perennial herb

1.25 tsp arrowroot = 1 tbsp wheat flour for thick-
ening

See also arrowroot
**arrowroot powder**  A powder produced from the rhizome of a tropical perennial herb. See also arrowroot

**arrowroot starch**  A starch obtained from roots of a West Indian tropical plant and used as a thickening agent in cooking. See also arrowroot

**arrowtooth flounder**  (*Atheresthes stomias*)  A white-meat fish with a light to moderate flavor

**arroz**  Rice

**arroz fermentado**  A cooked staple of fermented rice

Arroz amarillo (yellow)

Arroz requemado (brown)

**ARS**  See Agricultural Research Service

**arsenic (As)**  A nonmetallic element; at. no. 33; at. wt. 74.92; Group VA of the Periodic Table; oxidation states +3, +5, −3; electron configuration 2−8−18−5

**arsine**  (*AsH₃*)  A highly toxic gas derived from arsenic

**artefact**  See artifact

**arteriosclerosis**  Thickening of arteries and loss of contractibility and elasticity

**artery**  Vessel that carries blood from the heart

**artery curve**  Pumping the curing pickle into a ham through the femoral artery and allowing the blood vessels to distribute the cure to the ham

**arthriti**  Inflammation of a joint

**artichoke**  (*Cynara scolymus*)

A deep-rooted, 3- to 5-ft perennial, thistle-like plant, belonging to the daisy or thistle family; grows well in a cold, moist climate; the flower head (green to purplish; small to 5-in. diam.) and "choke," or unopened, tightly clinging fleshy petals, have scales with fleshy bases. 650 seed/oz; thin to 2-3 ft apart in rows 3-4 ft apart. In season Nov.-May; harvest when buds are compact and refrigerate as soon as picked.

<table>
<thead>
<tr>
<th>Size</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>Pickling, stews, casseroles</td>
</tr>
<tr>
<td>Medium</td>
<td>Salads</td>
</tr>
<tr>
<td>Large</td>
<td>Stuffing</td>
</tr>
</tbody>
</table>

**artichoke heart**  The tender, inner part of the artichoke

Types available:

Canned

Whole (served like fresh vegetables)

In vinegar or sauces (hors d’oevres)

Frozen

**artichoke noodle**  A noodle made from the flour from the tuber of the Jerusalem artichoke (which is not an artichoke)

**articulation**  A juncture of movable segments of a body; joint

**artifact**  A tissue structure that has been changed by artificial means

**artificial color**  Usually made from coal tar (coal is heated in a vacuum) and used in the range of 10-500 ppm

**artificial feeding**  Young receiving milk from another species; infant being fed with milk other than human

**artificial flavoring**  Any substance that is added to impart flavor and is not derived from a spice, fruit (or juice), vegetable (or juice), yeast, herb, plant material
artificial flavoring

(i.e., bark, bud, root, leaf, etc.), meat, seafood, poultry, eggs, dairy product, or fermentation product

artificial insemination The introduction of spermatozoa into the vagina or uterus by instrumental rather than natural means

artificially dried Dried by other than nature means

arva See ava; kava

aryl group An aromatic group such as C₆H₅, C₆H₄, etc. representing a benzene nucleus minus one, two or more hydrogen atoms which are replaced by various groups or side chains. Often represented in formulas by R.

As Symbol for the element arsenic

asadero A provolone-type cheese made from cow's milk

asado Skewered meat roasted before an open fire; a roast

asafetida (asafoetida) A semisolid plant gum obtained from the root of the genus Ferula; it has a bitter taste and a distinctive odor. See Part 2: Essential Oils

asali A liquor made by fermentation of honey

ASAP As soon as possible

A-1 Sauce A semiliquid, highly spiced, strong meat sauce made with vinegar, onions, and spices Composition: 275 mg Na/tbsp (17 g)

asbach Grape brandy aged in Limousin oak cask

asbestos Magnesium silicate (Mg₃Si₂O₇ • 2H₂O). There are two major types, serpentine (chrysotile) and amphibole. Both are extremely fibrous and are completely noncombustible. Asbestos fiber is a carcinogen when inhaled. See Part 2: Insulation

Ascaris suis Round intestinal worms that are parasites in hogs

ASCII (American Standard Code for Information Interchange) Character code used for representing information in most non-IBM equipment

ascites Accumulation of fluid in the abdominal cavity

asciutto Dry wine

asclepian A protease enzyme found in the juice of the milkweed

ascorbate A salt of ascorbic acid See ascorbic acid

ascorbic acid vitamin C (C₆H₈O₆)

A water-soluble vitamin whose deficiency causes a disease known as scurvy; body does not store.

1 IU vitamin C = 0.05 mg ascorbic acid

20 IU vitamin C = 1 mg ascorbic acid

Deficiency symptoms: bleeding gums, sore joints

Used as a food additive in beverages, meats, beverage mixes, fruit products, acidic foods, baked goods, and processed fruit to improve or maintain nutritional quality or as a preservative or an antioxidant (reducing agents). It keeps uncooked peaches from turning brown (oxidation of catechol and tannin) and frozen foods from darkening [150 mg/lb of finished pack or ½ tsp (1000 mg)/4 cups of cold syrup].

Comparable antioxidant activity:

1 part erythorbic acid = 1 part ascorbic acid

1.09 parts sodium erythorbate = 1 part sodium ascorbate

1 part of erythorbic acid = 1.23 parts sodium erythorbate

Its antioxidant properties are utilized in frozen and canned fruit, beer and ale, wines, carbonated beverages, frozen fish, potatoes (peeled), salads, and cole slaw.

Sources: citrus fruits, tomatoes, strawberries, peas, raw green leaves (cabbage, lettuce), carrots, apples, potatoes, liver, brussels sprouts, broccoli, sweet red and green peppers, and cantaloupe

Body function: function of connective tissue, resistance to infection, elimination of potential toxins See vitamin C

It can be used in cured meat to speed up color reaction. ½ oz ascorbic or isoascorbic acid per 100 lb meat; 0.875 oz sodium ascorbate or sodium isoascorbate per 100 lb meat; 75 oz ascorbic or isoascorbic acid per 100 gal pickle (10% pump); 87.5 oz sodium ascorbate or sodium isoascorbate per 100 gal pickle (10% pump); 10% spray solution may be applied to outer surface.

Storage: tight, light-resistant container; air and heat speed up destruction

See Part 2: Ascorbic Acid; Ascorbic Acid, Food; Ascorbic Acid, Fruit Juices; Beans, Peas, and Nuts; Cereal Fortification; Cereals, Vitamin and Mineral Content; Composition of Food; Dairy Products, Composition; Egg Composition; Fats and Oils, Composition; Fish and Shellfish, Composition; Fruit and Vegetables, Composition; Fruit Composition; Grain Products, Composition; Lemon Juice Composition; Lime Juice Composition; Meat Composition; Meat Pigment; Milk
and Milk Products, Vitamin Content; Milk Composition; Olives and Pickles, Composition; Plant Foods, Composition; Poultry Composition; Recommended Daily Dietary Allowance; Sausage Composition; Soups, Composition; Sugars and Sweets, Composition; Tomato and Tomato Products, Composition; Variety Meat, Percentage of Daily Recommended Allowances; Vegetable Composition; Vitamins; Vitamin Sources, Functions, and Stability

**ascorbyl palmitate (palmitoly L-ascorbic acid)**

\[
\text{CH}_3\text{CH}_2\text{CH}_2\text{COOCH}_2\text{C} = \text{OH} \quad \text{OH} \quad \text{OH} \\
\text{H} \quad \text{O}
\]

Used in food as an antioxidant

**Storage:** tight container in a cool, dry place

**ASCS** See Agricultural Stabilization and Conservation Service

- **ase** Suffix used in naming certain enzymes, e.g., zymase, diastase

- **aseeda** A thin, flat bread made from sorghum

- **asem** See tamarind

- **asepsia** Prevention of the presence of microorganisms See aseptic

- **aseptic (asepsia)** The exclusion of putrefying bacteria and the use of sterilized equipment and environment

- **aseptic processing** A presterilized container is filled with a commercially sterilized cooled product and hermetically sealed in an environment free of microorganisms

- **as-fed** Feed as consumed

- **ash** 1) The solids remaining after the complete combustion of a material; mineral residue; residue of inorganic material after incineration (cleanliness of pure spices can be determined by ash analysis).

   See Part 2: Amino Acids

- **asian** 1) Pickled vegetables. 2) Pickled fruit

- **as/ia** Indicates that goods are offered for sale without warranty or guarantee. The purchaser has no recourse on the vendor for quality.

- **asitia** Dislike of food

- **ASME** American Society of Mechanical Engineers

- **asparagi alla parmigiana** Asparagus cooked with butter and parmesan cheese

- **asparagine** A derivative of aspartic acid See also aspartic acid

   See Part 2: Amino Acids

- **asparagus (Asparagus officinalis)** This cool-weather, long-lasting (harvested for eight weeks; in market from late winter to midsummer), early-appearing, perennial dioecious plant (originally from the Mediterranean and Middle East) is a member of the lily family; the round, compact, brittle, straight, young white shoot, or "spear" (green or purple-tipped), is cooked in water and served with butter or sauce and can be frozen and canned. Plant (1600 seed/oz) 12–24 in. apart in rows 4–5 ft apart; germination period 23–35 days. If covered with soil, the plant will develop underground, which will blanch (or whiten) the stems (milder and often canned), but green asparagus is more tender, better flavored, and more nutritious and is often canned or frozen. Harvest by cutting just below the ground when the spears are 4–10 in. long just before tips begin to open (open tips are a sign of overmaturity); most flavorful when young and fresh. Refrigerate when cut to preserve the sugar level. A color preservative sometimes is added (stannous chloride).

   Male plants yield heavier spears.

   Female plants yield larger-diameter spears.

   To cook: whole or sliced asparagus is boiled or steamed 4–15 min or until tender.

   **Available forms:**

   - All white (covered to protect from light, or special varieties)
     - Center cut
     - Tips and spears
   - Canned (in salt brine: regular, dietetic, green, white spears and liquid)
     - All green (grown above ground)
     - Center cuts (contains no tips)
     - Cuts and tips

- **ash analysis** A value determined by incinerating a sample material at high temp (525°C) for 16–18 hr

- **ashanku** Baked chindanda made with maize and plantain

- **ash bread** Corn bread

- **ash gourd** See gourd

- **asiego** A low-fat, mild, light-yellow, cylindrical, and smoky after-dinner cheese originally made from sheep's milk, now made from cows' milk (2–6 months ripening); longer ripening (min. 12 months) produces a hard, sharp cheese used for grating

- **asinan** 1) Pickled vegetables. 2) Pickled fruit

- **as/is** Indicates that goods are offered for sale without warranty or guarantee. The purchaser has no recourse on the vendor for quality.

- **ash analysis** A value determined by incinerating a sample material at high temp (525°C) for 16–18 hr

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- **ash analysis** A value determined by incinerating a sample material at high temp (525°C) for 16–18 hr
asparagus (Asparagus officinalis)

canned (Continued)
Spears (5 1/2 in.)
Tips (uniform length; 3 1/2 or 3 3/4 in.)
Fresh
Frozen
Natural (green tips, lower spear greenish or white)
Cuts and tips
Tips and spears
Solid tips or points (1–2 1/2 in.)
Soup cuts or cut
Canned tip and spear sizes:
Small
Medium
Large
Mammoth
Colossal
Giant
Fresh sizes:
Pencil—less than 3/8 in. diam.
Medium—3/8–1 in.
Jumbo—1–2 1/2 in.
Colossal—3 1/2 in. and up
Refuse: 25% butt ends
12 spears per bunch
1 bunch = 3.5 lb
1 bu = 40–50 lb
1 bu, fresh = 9–14 qt, canned
1 crate = 30 lb
1 crate, fresh = 12 bunches, 2 lb each
1 qt, canned = 2 1/2–6 lb, fresh
1 qt, frozen = 2–2 1/2 lb, fresh
1 lb, fresh = 2–4 servings
1 pt, frozen = 1–1.5 lb, fresh
10 oz, frozen = 2–3 servings
1 cup, canned = 7.5–8.6 oz
1 cup, cooked = 180 g (6.4 oz)
1 serving = 0.25–0.5 lb
1 part freeze-dried weight = 20 parts fresh weight

Composition (fresh): moisture 92%; protein 3%; fat 0.2%; carbohydrate 5%; ash 0.6%; pH 5.4–6.1
Storage: Do not wash before storage; keep in refrigerator crisper or plastic bag to keep humid (90–95% relative humidity); use in 2–3 days.

asparagus bean (dow guak; yardlong bean; Vigna sesquipedalis) An oriental vine pea that produces a 2- to 3-foot-long pod with a seed approximately every inch; does not produce a large yield and is grown more for curiosity. The edible pod tastes like asparagus.

asparagus beetle (Crioceris) A pest that lays its eggs in June on growing plants (e.g., asparagus shoots); these develop into small dark green worms or grubs that feed on foliage and burrow into the soil. They develop into beetles that look like slender ladybird beetles.

asparagus broccoli See broccoli

asparagus, bush A West African plant that produces shoots that are used like asparagus and leaves that are boiled and mixed with rice

asparagus, cream of, soup

<table>
<thead>
<tr>
<th>Variety</th>
<th>Stalk</th>
<th>Flavor</th>
<th>Rust resistance</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brocks Imperial</td>
<td>Long</td>
<td>Good</td>
<td>Moderate</td>
<td></td>
</tr>
<tr>
<td>California</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Martha Washington</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mary Washington</td>
<td>Large, thick, heavy, med. green, rust-resistant, standard</td>
<td>Good, mild</td>
<td>High</td>
<td>Fresh, canning, freezing</td>
</tr>
<tr>
<td>Paradise</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viking</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waltham Washington</td>
<td>Green, thick, heavy, rust-resistant</td>
<td>Good</td>
<td>High</td>
<td>Fresh, canning, freezing</td>
</tr>
</tbody>
</table>

Part 2: Ascorbic Acid; Asparagus Terms; Calories, Daily Recommendations; Canned Spoilage Related to pH; Frozen Food Storage; Fruit and Vegetables,
asparagus, cream of, soup, canned

<table>
<thead>
<tr>
<th>Composition</th>
<th>Condensed with milk</th>
<th>Condensed with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>84.1</td>
<td>86.0</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>1.8</td>
<td>2.5</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>3.3</td>
<td>3.3</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>8.5</td>
<td>6.6</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0.6</td>
<td>0.3</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.3</td>
<td>1.5</td>
</tr>
</tbody>
</table>

asparagus pea (catjang; winged pea; yardlong bean; *Lotus tetragonolobus purpureus*)
1) Young pea pods used as human food. 2) A plant that produces an asparagus-flavored pod that is cooked whole (not a normal garden pea)

aspartame An approved (FDA, 1981) low-calorie, synthetic, non-sugar sweetener [relative sweetness of 20,000–30,000 (sucrose = 100)], with a caloric value of 4 calorie/g but sweeter than sugar and with no bitter aftertaste. It is the methyl ester of aspartyl phenylalanine, a dipeptide of two natural amino acids (L-aspartic acid and ethyl ester of L-phenylalanine).

```
HO—C—CH2—CH—C—N—C—O—CH3
O       NH2       O
```

1 tsp sugar = 18 calories

Equivalent sweetness of aspartame = $\frac{1}{10}$ calorie
1 tablet = 1 tsp sugar = 0.25 calorie
1 packet = 2 tsp sugar = 4 calories

It does not contribute texture to baked products and loses its sweetening power at high cooking temperatures.

aspartic acid A nonessential monoamino-dicarboxylic amino acid

```
HO—C—CH2—CH—C—OH
O       NH2
```

Used as a nutrient or dietary supplement in food
Storage: tight, light-resistant container

See Part 2: Amino Acids; Amino Acid, Solubilities; Corn, Amino Acids; Egg Products, Nutritive Value; Grain Analysis; Manure Analysis; Wheat, Amino Acids; Wheat Products, Amino Acid Compositions

Aspergillus A common mold

See Part 2: Mold, Food; Molds, Mycotoxins; Rot Spoilage; Spoilage, Fat in Foods

aspergillus black-mold rot (erroneously called smut) Black-mold rot caused by the fungus *Aspergillus niger*; it affects figs, citrus fruit, onions, pomegranates, and grapes. In figs the disease first appears as pink color of skin and pulp and there is a cheesy consistency of the pulp. There is often little external indication of the disease. Refrigeration (31°F) will delay the decay.

Aspergillus flavusoryzae group A group of proteolytic enzymes used to soften beef tissue

Aspergillus oryzae A proteolytic enzyme used to soften beef tissue

aspergillus rot Decay on fruit held at high temperatures caused by *Aspergillus niger* (oranges) and *Geotrichum candidum* (lemons)

asphalt A complex mixture of bitumins obtained from midcontinental and western petroleum; occurs naturally in Trinidad

See Part 2: Insulation

aspic Jellied (gelatin) broth used for molding or to give a shiny finish to a variety of foods; a spicy, tart jelly made from brown (meat) or white (fish) stock and may be thickened with gelatin; sold in powdered form

aspirate To remove liquids by suction; to draw in; to remove light material using air

aspirin (acetylsalicylic acid)

```
O
C—OH
O
```

A common anodyne that often causes bleeding, especially from the gums

as purchased As ordinarily obtained from a typical retail store

See Part 2: Fruit Composition

assaissonnement Seasoning

Assam A province of northeastern India that produces a strong, rich, heavy tea See black tea; tamarind

assasin bug A light-brown, long-legged, ½ - to 2-in.-long insect that walks over plants slowly and clumsily and holds its forelegs in a prayerlike position and uses them to capture and hold its prey

Benefit: feeds on immature forms of insects

assay Determination of potency or purity

assets Cash and property that have a market value

assignable cause Variation in a product that can be determined and corrected (as opposed to chance variation)

assimilation Incorporation and conversion of absorbed nutrients (food) into substances of the body (living tissue); the manufacture of protoplasm

assmannhausen A red Rhine table wine

ASTA American Spice Trade Association See paprika

astatine (At) A halogen element; Group VIIA of the Periodic Table; at. no. 85; mass number of most
46 astatine (At)

stable isotope 210;
electron configuration 2–8–18–32–18–7
orbit K L M N O P

aster leafhopper (Macrosteles fascifrons) An insect that is \( \frac{3}{8} \) in. long
Host: cereal, forage, and vegetable crops

asternal rib See false rib; rib

aster yellows A virus disease of strawberries in which early symptoms are yellowing, dwarfing, and cupping of young leaves. It may be prevented by planting virus-free stock and using insecticides

asthenia Weak, without energy

asthmatic A type of arteriosclerosis in which there are deposits of cholesterol and other lipids

Atoll brose A thick whiskey liqueur with oatmeal, honey, and cream

asthmatic Malnutrition, often in children

Atka mackerel (Pleurogrammus azonus, synonym P. monopterygius) A food fish

Atlantic herring See sea herring

Atlantic mackerel A food fish

Atlantic ocean perch A finfish with light meat and a pronounced flavor

Atlantic salmon A finfish with light meat and a light to moderate flavor

Atlantic wolfish (catfish; Anarhichas lupus) A finfish with light meat and a light to moderate flavor

Atlantic salmon

See Part 2: Beef Chuck; Beef Wholesale Cuts; Bone; Lamb Wholesale Cuts; Pork Wholesale Cuts; Veal Wholesale Cuts

atmosphere (atm; standard, 760 mm) A measure of pressure; at atmospheric pressure, there are \( 2.7 \times 10^{19} \) molecules per cubic centimeter.

1 atm (standard)

\[ \begin{align*}
&= 10,333 & \text{kilograms per square meter (kg/m}^2) \\
&= 1,013,250 & \text{dynes per square centimeter (dyn/cm}^2) \\
&= 2,116.35 & \text{pounds per square foot (psf)} \\
&= 760 & \text{millimeters of mercury (mm Hg) [column of mercury (Hg), 13.59593 sp. gr. at 0°C and under standard acceleration of gravity]} \\
&= 76 & \text{centimeters of mercury (cm Hg; at 0°C)} \\
&= 33,9006 & \text{ft (column of water, max. density at 4°C, 39°F)} \\
&= 29.9212 & \text{inch [in.; column of mercury (Hg), 13.59593 sp. gr.]} \\
&= 14.6969 & \text{pounds per square inch (psi)} \\
&= 10.3329 & \text{m (column of water, max. density at 4°C, 39°F)} \\
&= 1.0558 & \text{tons per square foot (ton/ft}^2) \\
&= 1.03329 & \text{kilogram per square centimeter (kg/cm}^2) \\
&= 0.76 & \text{meters of mercury (m Hg; at 0°C)} \\
&= 0.007348 & \text{ton per square inch (ton/in.}^2) \\
\end{align*} \]

atele A weak alcoholic beverage made from malted maize and hot peppers

atom The smallest particle of an element that exhibits the properties of that element

atomic number The number of protons in an atomic nucleus, ranging from 1 for hydrogen to 106 for the most recently discovered element. This number indicates the position of an element in the periodic table and determines its chemical properties and behavior

atomic weight The mass (weight) of an atom of an element, obtained by averaging the mass of all its isotopes, in relation to the mass of carbon-12 isotope (exactly 12.00), which is now the official standard

atrophy Wasting away; diminishing in size

atrophy See auricle

atrophy See Part 2: Microorganism, Media

atsumandie (bakhar, murcha) Gray-white, dried balls of starter containing bacteria, molds, and yeast
auto-oxidation

on a starch or cereal base; used as an inoculum for sake

**atta pancake** A whole-meal, wheat-flour pancake, often with coconut and cumin

**attar of roses** See rose Bulgarian

**attelet** Small skewer

**at-the-money** When the option strike price is at the underlying futures contract price

**atto** (10⁻¹⁸) Prefix for quantities one quintrillionth (= 0.000 000 000 000 000 001) smaller than the base unit

**attribute** In inspection, an attribute will classify an item as either defective (e.g., broken glass in a food sample) or nondefective

**atzmon** A creamy, semisoft, mild-flavored, cheese made from cow's milk and surface-bacteria ripened

**A.U.** Old abbreviation for angstrom

**Au** Symbol for the element gold (from Latin *aurum*)

**au** With; in

**aubergine** Eggplant See *eggplant*

**au beurre** Cooked with or in butter; sautéed

**au brun** Cooked in brown sauce

**auction** Type of sale in which the highest bid purchases the object for sale

**au fait** Brick ice cream with layers of frozen fruit

**au four** Bake; baked in an oven

**aufschnitt** A moist, cooked, smoked or unsmoked, mildly seasoned Swiss sausage made from fine-, medium-, or coarse-chopped beef, pork, and veal either stuffed into a beef or an artificial casing or not stuffed into a casing; meat or sausage thinly sliced

**au gras** Cooked in broth or gravy or covered with gravy or sauce

**au gratin** 1) Covered with cheese and/or crumbs or a rich sauce or with bread crumbs and cooked (brown in an oven or broiler) or browned. 2) A casserole with cream sauce, stock, or milk and buttered bread crumbs, browned in an oven

**augsburger** A moist, cooked, smoked or unsmoked, mildly seasoned (with no nitrite or nitrate) Austrian sausage made from finely chopped beef and pork stuffed into a beef casing that has a diameter greater than 30 mm

**au jus** With natural juice

**au jus, gravy**

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dehydrated</th>
<th>Prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
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<tr>
<td>Protein (%)</td>
<td>12.4</td>
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</tr>
<tr>
<td>Fat (%)</td>
<td>14.0</td>
<td>0.3</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>41.6</td>
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</tr>
<tr>
<td>Fiber (%)</td>
<td>0.2</td>
<td>0.01</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>29.6</td>
<td>0.7</td>
</tr>
</tbody>
</table>

**au jus, gravy, canned** Composition (canned): protein 1.2%; fat 0.2%; carbohydrate 2.5%

**au lait** With milk

**au maigre** Without meat

**au naturel** 1) Food or drink prepared simply, plain, or raw. 2) Canned fish prepared by cooking in its own juice. 3) Canned fish in a light brine and sometimes vinegar

**aura** A blue cheese made from cow's milk

**Aureomycin** An antibiotic See also chlortetracycline

**aureomycin rose** Microbiological media used for the detection of yeast and mold. See Part 2: Microbiological Examination of Dairy Products

**aureus** A species of *Staphylococcus* microorganism found in dairy products and water. See Part 2: Water Activity, Organisms and Food

**auricle** The upper chambers of the heart, called right and left auricle

**aurere sauce** A white sauce

**au rouge** With red sauce

**aurum** A golden, aromatic, Italian liqueur made from orange peel and brandy

**auslese** Noble wines made from the ripest bunches of grapes, which are late-gathered and specially selected for ripeness

**austere** Undeveloped wine that will become full-bodied

**Australian lettuce** Curly head lettuce that resembles chicory

**Australian native plum (black apple; bush apple; rose apple; wild plum; *Syderorylon australe*)** Large plum-shaped fruit

**Australorp** An English class of chickens with black plumage and white skin and lays a brown-shelled egg. See Part 2: Poultry Breeds and Varieties

**Austrian smoked cheese** A smoked processed cheese made from cow's milk.

**auto-** Prefix meaning self

**autocatalytic reaction** A self-propagating reaction

**autoclave (pressure cooker)** A container for sterilizing by steam under pressure

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Boiling point of water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atmospheric</td>
<td>100°C (212°F)</td>
</tr>
<tr>
<td>Atmospheric + 10 lb</td>
<td>115°C (239°F)</td>
</tr>
<tr>
<td>Atmospheric + 15 lb</td>
<td>121°C (250°F)</td>
</tr>
<tr>
<td>Atmospheric + 20 lb</td>
<td>126°C (259°F)</td>
</tr>
</tbody>
</table>

*See pressure cooker*

**autolysis** Digestion of cell material by cellular enzymes; breakdown (by natural enzymes) of tissue after death

**autolyze** To undergo autolysis (self-digestion of plant or animal tissue)

**automatic** Self-acting; involuntary

**auto-oxidation** Self-perpetuating or self-catalyzed (no enzyme needed after it gets started) chemical reactions that cause oxidative rancidity
autosmia  Disorder of the sense of smell causing odors to be perceived when none are present

autotroph  Bacteria that use CO₂ as the sole source of carbon; organisms that are self-feeders or obtain their energy from the sun (light); carbon source is generally CO₂

autotrophic organism  An organism capable of converting inorganic matter to organic matter

autumn  See Frost Date, Autumn

autun  A soft, white cheese made with goat’s milk or goat’s milk with cow’s milk

auvergne  See cantal

au vert  With green sauce

aux-  Prefix meaning increase or growth

ava (arva; kava; yava)  An alcoholic beverage made by fermenting the roots of the pepper plant See kava

available chlorine  The amount of active chlorine that a compound can release in water

available nutrient  A nutrient in the form that can be totally absorbed by the body from the digestive tract; a nutrient that can be digested, absorbed, and used in the body

avdp.  Avoidedupois weight

avenin  See ligumin

average  The arithmetic mean

average amount of inspection  Average number of items inspected per inspection lot for a particular sampling plan

average daily gain (ADG)  Average increase in live weight per day

average error  A method of expressing error for a single observation and an average of a series of measurements. Average error for a single determination (a):

\[ a = \pm \frac{\Sigma V}{n} \]

\[ \Sigma V = \text{sum of deviation from the average regardless of sign} \]

\[ n = \text{number of observations} \]

Average error for an averaged value for n observations (A):

\[ A = \pm \frac{\Sigma V}{n\sqrt{n}} \]

average error 0.8453 = probable error

average error 1.2532 = mean square error

avers  A valenciay-type cheese made from goat’s milk

aversion  Dislike, repugnance, and avoidance of a stimulus

avgolemono sauce  An egg-lemon sauce

avidin  A toxic principle (antivitamin), occurring in egg white, that is inactivated by heat; it is a protein that combines with biotin, thus inactivating it; however, it loses this ability on heating; also, it inactivates biotin and makes it unavailable to animals.

avocado (aguacate; alligator pear; calavo; Persea americana)  A tropical American fruit (originally from Central and South America). A medium-sized tree that produces a fruit about the size and shape of a pear (some are almost spherical or oval), with rough or smooth skin, which may be green, yellow, maroon, or brown-green, brown, or purplish black when ripe; weight from 4 oz to 3 lb; the flesh, which may be eaten raw, used as a vegetable or fruit, or spread like butter, surrounds a single stone.

Types:

Summer—dark, rough (pebbly) texture
Winter—thin green skin

High in protein, vitamin B, and vitamin A (290 IU/100 g); ascobic acid, 16 mg/100 g

1 avocado = 1 lb
1 cup, diced = 5.2 oz
1 cup, mashed = 8.2 oz
1 serving = 0.25–0.5 avocado
1 lug (4.5 × 12.5 × 16.1 in.) = 12–15 lb
1 lb = 2 1/2 cups, sliced
1 cup = 140 g (5 oz)

Must be picked green and ripened at room temperature. Place in lemon or lime juice dip, which will keep peeled flesh from turning dark.

To ripen: keep in open air at room temperature, out of sunlight

Storage: Fruit is easily bruised; storage in paper bag in the dark at room temperature accelerates ripening. When ripe, store in refrigerator (45–55°F) at 85–90% relative humidity; use in 3–10 days. See anthracnose; rhizopus rot

<table>
<thead>
<tr>
<th>Varieties</th>
<th>Size (in.)</th>
<th>Moisture (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Carbohydrate (%)</th>
<th>Ash (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>3 1/2 × 4 1/2</td>
<td>10</td>
<td>74</td>
<td>2.2</td>
<td>17</td>
<td>6</td>
</tr>
<tr>
<td>Florida</td>
<td>3 × 4</td>
<td>12</td>
<td>78</td>
<td>1.3</td>
<td>11</td>
<td>9</td>
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</tbody>
</table>

*Some varieties up to 30%
avocado chilling injury Critical temperature (36–55°F) varies with variety, maturity, season, and storage time. Injury is characterized by a gray-brown discoloration of the flesh, abnormal ripening, undesirable flavors, pitting, and/or darkening of the skin.

avocado flesh darkening Dark flesh may be caused by the following:
- Chilling
- Freezing
- Heating
- Overripe
- Season
- Seed growth
- Variety

avocado heat injury Temperatures as low as 77–80°F often cause abnormal softening (uneven or rubbery), darkening of color, often a scaldlike discoloration and off flavor.

avocado oil A semidrying oil separated from the pulp of the avocado; 70–95 iodine number.

avocado scab The disease appears as raised, circular-to-oval, dark-brown to purple corky spots that may be scattered or coalesce to give a russeted appearance. It is confined to the outer surface and does not impair the eating quality of the fruit but other fungi may gain entrance through the blemishes. It is caused by Sphaceloma perseae and will not develop or spread during transit or storage.

avocado stem end rot Decay begins at the stem end and proceeds toward the blossom end, causing an external discoloration. The fungi most commonly associated with it are Diplodia natalensis P. Evans, and Phomopsis and Dothiorella spp.

Avogadro’s number (N) The number of material units (molecules, atoms, ions, electrons, etc.) present in 1 mole of substance, namely, $6.023 \times 10^{23}$ See also mole

Avordupois (avdp) A system of U.S. and British weights.

avzoman A moist or dry, cooked Iranian sausage made from finely chopped beef, lamb, and goat, stuffed into beef, sheep, or artificial casings.

awshari Dried, hard spheres of fermented sheep’s and sometimes goat’s milk or milk curds

awule bolo Baked or steamed fermented rice balls

azoxphthol Vitamin A

axial Relating to the axis of a structure

axil The angle between stem and leafstalk; the armpit.

axillary The angle between stem and leafstalk; the armpit.

aztec marigold See tagetes

azodicarbonamide

$$\text{O}$$

$$\text{O}$$

$$\text{H_2N-C-N=NH}_2$$

Used as a maturing and bleaching agent for food or flour and as a dough conditioner.

azetra A golden, hard, pressed cheese made from sheep’s milk, with a mild maturation of approximately 1 month

azetic A soft Portuguese cheese made from goat’s milk

azeotrope A mixture of two or more liquids that distills at a constant temperature and has a constant composition.

azetidinone A mixture of two or more liquids that distills at a constant temperature and has a constant composition.

azytaz A golden, hard, pressed cheese made from sheep’s milk, with a mild maturation of approximately 1 month

azotic A soft Portuguese cheese made from goat’s milk

azodyne A golden, hard, pressed cheese made from sheep’s milk, with a mild maturation of approximately 1 month
B See boron

Ba Symbol for the element barium

baba A yeast cake flavored with rum or fruit

babassu A nut from the babassu palm native to Brazil, from which oil is obtained by pressing

See Part 2: Fats and Oils, Characteristics; Fats and Oils, Fatty Acid Composition: Fats and Oils, Physical and Chemical Properties; Fatty Acids, Fats and Oils; Iodine and Saponification Values; Melting Points, Fats and Oils; Oil or Fat, Characteristics; Saturated Fatty Acids; Specific Gravities, Fats and Oils; Titer, Fats and Oils; Unsaponifiable Matter

Babcock test A fat test for milk, developed in 1890 by S. M. Babcock

babe A small (50–60 g), doughnut-shaped, open-textured sponge cake made from wheat flour, containing currants and orange peel

babek Coarse-chopped, pork chorizo

babooey Tea bread

baboy Pork

baby beef Young cattle (between 12 and 18 months) that have been well fed, often weighing less than 700 lb and often milk- and grass-fed; (the meat is tender and cuts are smaller, light red in color, and with less fat than mature beef)

baby bel An edam-type cheese

baby food See infant food; strained food

baby food with meat A fine- to medium-chopped, cooked, unsmoked, American sausage that is canned sterile or shelf-stable

baby-keet Guinea chicks

baby Swiss See Swiss, baby

bacalao Cod (sometimes other species) that are dried and salted

bacardi 1) A type of light rum. 2) An alcoholic beverage made with ½ lime or lemon juice, ½ tsp sugar, 1 tsp grenadine, 1½ oz (1 jigger) light rum, shaken with ice and strained

baccharis A plant with a fragrant root; a genus of American plants of the thistle family

See Part 2: Poisonous Plants

baccho An alcoholic, sugar-cane juice wine, usually consumed fresh

Bacillaceae A family of small rod- or coccoïd-shaped, aerobic or obligate anaerobic, usually gram-positive microorganisms found in soil and animals; a few produce disease.

See Part 2: Water Activity, Organisms and Food

bacilli (plural of bacillus) A subdivision of bacteria whose shape resembles a rod (Latin, stick); they are gram-positive, spore-forming, and survive pasteurization.

See Part 2: Canned Spoilage Manifestations; Canned Spoilage Related to pH; Rot Spoilage; Spoilage, Carbohydrate Foods; Spoilage, Protein Foods; Thermophiles

Bacillus botulinus Anaerobic bacteria that produce a toxin that causes food poisoning known as botulism

Bacillus cereus Faculative bacteria found in soil and water that may utilize bound oxygen to cause spoilage in canned foods

Media used for growth:

- Phenol Red Agar base; add Mannitol, Antimicrobial Vial P, and Egg Yolk Enrichment 50%
- Phenol Red broth base
- Nitrate Broth
- Litmus Milk
- MR-VP Medium
- Nutrient Gelatin
- Nutrient Agar

See Part 2: Food Poisoning, Bacteria

bacitracin methylene disalicylate An animal drug used to promote growth and feed efficiency, to control dysentery, to reduce liver abscesses, and to increase egg production

bacitracin, zinc An animal drug used to promote growth and feed efficiency

back The upper part of an animal from the neck to the pelvis area

See Part 2: Meat Identification

backbone (spinal column) Vertebral column, consisting of cervical, thoracic, lumbar, sacral, and caudal vertebrae See thoracic vertebrae; lumbar vertebrae; sacral vertebrae

See Part 2: Beef Wholesale Cuts; Bone; Bone in Retail Cuts; Lamb Wholesale Cuts; Pork, Cooking; Pork Loin Cooking; Pork Wholesale Cuts; Veal Wholesale Cuts

back end of machine Discharge end

back fat Fat from the back region, usually pork

back order That portion of an order that cannot be delivered at the scheduled time, but that will be delivered at a later date

back-packed Cured meat product in a weak pickle (25°) and stored at −15°F to await a more favorable market

backsberg A red and white wine

backsettler See black tea

backstein A German, brick-shaped, limburger-type cheese

backsteiner A soft to semisoft, low-fat, strongly flavored cheese made from cow's milk and bacterially surface-ripened
bacteriophage 51

backsteinkäse A limburger-type cheese made from whole cow’s milk

back strap A wide, elastin, yellow band located along the top of the shoulder of an animal and used to support the head; it should be removed from a roast because it will remain tough; also called ligamentum nuchae.

See Part 2: Beef Rib Nomenclature

backwardation Market situation in which prices are progressively lower in the future delivery months than in the nearest delivery month. Backwardation is the opposite of contango.

bacon A belly or side of a hog that has been cured and may be smoked; about 12% of a hog carcass (head and leaf fat on). Slices of cured pig meat

Bacon, Canadian style, is made from boned pork loin.

Bacon squares are made from jowl.

Salt pork (white bacon) is salted back fat.

Slab bacon is bacon from the whole belly or sections of it (unsliced).

Cured pork belly

Thin-sliced = 35 slices/lb

Regular-sliced = 22 slices/lb

Thick-sliced = 18 slices/lb

<table>
<thead>
<tr>
<th>Composition</th>
<th>Raw</th>
<th>Cooked, drained</th>
<th>Unheated</th>
<th>Cooked, drained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water (%)</td>
<td>19</td>
<td>8</td>
<td>62</td>
<td>50</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>8</td>
<td>30</td>
<td>20</td>
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<tr>
<td>Fat (%)</td>
<td>69</td>
<td>52</td>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>1</td>
<td>3.2</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2</td>
<td>6.3</td>
<td>3.6</td>
<td>4.7</td>
</tr>
</tbody>
</table>

Bacon, raw: 0.15% cholesterol

Cooked: 137 mg Na/slice (7 g)

Canadian: 394 mg Na/slice (28 g)

Storage: keep in original wrappers; refrigerate at 36–42°F; should be used within 1 week after opening

See Part 2: Bacon Dressing; Broiling Griddle; Meat; Broiling Meat; Broiling Time and Temperature; Calories, Daily Recommendations; Food, Composition; Meat and Meat Products Composition; Meat Composition; Meat, Frozen Storage; Meat Identification; Meat Storage; Minerals; Food; Pork Chart; Pork, Cooking; Pork, Cooking Methods; Pork Cuts; Pork Cuts and Uses; Pork Storage; Pork Yield; Portion Size; Spoilage, Protein Foods; Storage Times; Thiamin, Food

bacterial spot (Xanthomonas pruni) A disease caused by bacteria on peach, apricot, nectarine, and plum leaves, fruit, and twigs. Leaves have water-soaked areas on the underside; then small, irregular, dark-green spots, which have a greasy appearance; later the spots turn brown or black, usually concentrated at the tip. Fruit has water-soaked spots, which enlarge, turn greenish white, and become slightly raised. They eventually turn light brown and become sunken and scabby with cracks in the skin or deep pits that make rot infection possible. Fruit is not affected after it ripens.

Control: plant disease-resistant varieties; use fixed copper

See Part 2: Sorghum Diseases

bacterial starter culture A preparation used in manufacturing some sausage; not to exceed 0.5%; e.g.,

1. Thuringer
2. Lebanon bologna
3. Salami
4. Pork roll
5. Cervelat

bacterial streak See Part 2: Sorghum Diseases

bacterial stripe See Part 2: Sorghum Diseases

bacteria-treated A product that has been treated by exposure to ethylene oxide gas to reduce levels of microorganisms

bactericide A product that kills most bacteria; synonymous with germicide except more restrictive in what it is active against

bacteriophage An organism (often a virus) that inhibits the growth of bacteria by surrounding and gradually disintegrating the bacterial cell ("phage" = "eats")

See Part 2: Sanitizing Chemicals
bacteriostat  An agent that inhibits or stops the growth and reproduction of or kills bacteria

bactofugation  Centrifugal force and heat applied to food to reduce bacterial count

bacto-tryptone  A peptone used in microbiological differential test media based on the elaboration of indole by bacteria; used in examination of water and sewage, dairy products, and in canned goods for “flat sour” and “sulfide spoilage”

See Part 2: Microorganism, Culture Media, Dairy and Food Products; Microorganism, Selective and Differential Broths and Media, Water Filtration Plant

bactrian  A two-humped (220 lb fat) camel that is grown for wool (outer hair is coarse and wiry, undercoat is short, soft, and fine), milk (2.9% fat), work (20–30 mi/day), and meat; often found in desert and semidesert areas

badacsonyi  A full-flavored, white wine

badacsonyi keknyelu  Moderate, dry, Hungarian wine

badderlock (henware; honeyware; murlin; Alaria esculenta)  An edible seaweed

baden  A region in southern Germany with volcanic soil that produces powerful, aromatic wine

badiane (badian; Chinese anise; star anise)  The fruit of a Chinese anise tree; its aromatic volatile oil is used as a condiment and for flavoring; an alcoholic beverage flavored with bitter almonds

See Part 2: Essential Oils

badgiallum  Wine cup made from claret and herbs

bae (Bengal quince)  A fermented, gray, salty, fish paste condiment

baffle  A plate used to deflect or retard the course of a material (often gas)

bagaceira  Brandy distilled from fermented grape juice

bagasse  Pith or cellulosic waste remaining after the processing of sugar cane; also used as pig feed, as poultry litter, as a mulch, as insulation board, and locally as a boiler fuel

See Part 2: Fuel, Heating Value

bagel  A small, crusty, ring-shaped, golden brown, yeast roll or biscuit made from high-gluten flour, given a short fermentation period, and boiled in syrup or poached in salt water; the roll is topped with poppy seed, or shimp paste used as a flavoring or condiment

1 bagel = 2 oz

See Part 2: Fermented Ingredients

BAGG broth  See Part 2: Microorganism, Media

baghrir  A wheat, semolina pancake

bagnes  A semihard, cow’s-milk cheese with a full, fruity flavor

bagni  A sorghum beer

bagoong  A fermented, yellow-brown, salty (20–25%), fish, clam, or shrimp paste used as a flavoring or condiment

bagoong na alamang  A fermented, gray or pink, salty, small shrimp paste condiment

bagoong na isda  A fermented, gray, salty, fish paste condiment

bagoong na sisi  A fermented, salty, shelled oyster paste condiment

bagozzo  A dry, yellow, hard, sharp, pungent, caciotta Italian cheese that is made from cow’s milk and often has a red rind

baguette  French bread

Types available:

Angiase (long and cylindrical with a flat, cut top)
Ficelle (very thin)
Gruau (darker and thinner than angiase)

baguette bread  The main type of French bread, with seven cuts on the surface; approximately 70 cm long and weighs 250 g

baguette cheese  A strong-flavored, cow’s-milk cheese usually packaged in boxes

bagulumbang nut (soft lump: Aleurites trisperma)  A tree native to the Philippines that is very similar to the tung oil tree; a drying oil is extracted from the seed.

See Part 2: Unsaturated Fatty Acids

bagworm  An insect, the larva is brown to dark brown and is found on leaves in a conspicuous spindle-shaped case or bag. The adult female is rarely seen. The larva eats the leaves of fruit trees. Control: remove bags and burn them

bahia  A liqueur flavored with coffee

bahia grass (Helminthosporium sativum)  A tropical American, perennial pasture grass

See Part 2: Seed, Germination

baida  A white, brined cheese made from skimmed cow’s or buffalo’s milk

baie de houx  A brandy made from holly berries (Ilex aquifolium)

bail  A wire handle attached to ears or cleats of a container

Bailey’s  A low-alcohol, whiskey cream liqueur flavored with chocolate

bai-ming  A sour, fermented snack made from tea leaves

bain-marie  A multiple-compartmented double saucepan; a double boiler in which foods are cooked in separate sections; a double boiler in which water surrounds the cooking pot

Baird Parker agar  A medium used to grow Staphylococcus aureus See agar-agar

See Part 2: Microorganism, Media

bakasang  Fermented fish food

bakava  A nut-filled, thin-layered (30 layers) pastry flavored with butter and honey

bake  To cook covered or uncovered in an oven, usually by dry heat; to cook by covering with coals, heated stones, or heated metal; when applied to meat it is often called roasting; to roast; to cook in a covered casserole
bake blind  To bake a pie shell without its filling
baked Alaska  A frozen desert consisting of a block of ice cream over which is spread a coating of meringue made of beaten egg whites, sugar, and flavoring. The combination is baked in a hot oven for 3-5 min, till meringue is delicately browned.
baked apple berry  See cloudberry
baked beans  1) Beans baked (dry heat) in an oven before canning. 2) Steam-baked beans; beans are cooked by steam in the can after sealing; dried beans that are soaked, boiled, and retorted with pork and tomato products, often baked before serving; 6% protein, 17% carbohydrate. 3) Dry mature beans processed in tomato sauce or in brown sugar and molasses, usually with pork, and cooked in ovens See also haricot bean
Composition: 810 mg Na/cup; pH 5.6
See Part 2: Portion Size
baked goods  Foods that have been cooked by baking Storage (frozen): freeze after cooling, wrap in moisture-vapor-resistant materials, and freeze to 0°F or lower.
See Part 2: Baked Products, Frozen Storage Life; Calories, Daily Recommendations; Frozen Food Storage
baked oyster shells  A liming material composed of 85% CaCO₃; each pound has the neutralizing equivalent of 0.8-0.9 lb of CaCO₃ (or approx. this quantity of dolomitic limestone).
baker  A dish without a fitted cover, used to hold vegetables for serving
baker's cheese  A fine-grained cheese, similar to cottage cheese, that is made from skimmed cow's milk and drained in bags; may be salted or unsalted; used in pastries and cheese cake
baker's custard  See crème pâtisserie
baker's yeast  Yeast used in baked bread items and other baked goods
bakery waste  Often dehydrated (dried bakery waste) and used as animal feed
Composition (dried): dry matter 92%; protein 10%; fat 12%; fiber 1.2%; ash 4%
bakey  Descriptive of an unpleasant taste in tea usually caused by too high a firing temperature
bakhar  See atsumandie
baking ammonia (ammonium bicarbonate)  
\[ \text{NH}_4\text{HCO}_3 \xrightarrow{\text{heat}} \text{NH}_3 \uparrow + \text{CO}_2 \uparrow + \text{H}_2\text{O} \]
baking chicken  See hen
baking powder  A mixture of dry acid or acid salt with baking soda and starch or flour (stabilizer that functions by absorbing atmospheric moisture and keeping ingredients dry to prevent reaction prior to use)
See Part 2: Altitude Adjustments for Baking; Lamb Cuts; Pork Cuts; Pork Loin Cooking; Poultry Class; Veal Chart
Contents:
Baking soda—sodium bicarbonate (NaHCO₃)
Acid salt—cream of tartar, or tartaric acid, calcium acid phosphate, or sodium aluminum sulfate
Starch—cornstarch
Must liberate at least 12% CO₂; may be single- or double-acting. In the presence of moisture as well as heat, carbon dioxide is evolved as a result of the chemical reaction of the acid on the carbonate. The following are commonly used:
Acid
Citric acid
Tartaric acid
Acid salt
Calcium acid phosphate (fairly fast-acting)
Combination of calcium acid phosphate and sodium aluminum sulfate (moderately fast-acting)
Cream of tartar or tartaric acid (fast-acting)
Potassium acid tartrate
Sodium aluminum sulfate (slow)
Acid food substance
Brown sugar (contains some molasses)
Chocolate (not Dutch process)
Corn syrup
Honey
Maple syrup
Molasses (organic acids)
Sour milk (lactic acid)
Single-acting: potassium acid tartrate (cream of tartar) and tartaric acid; yields gas when combined with liquid and gas expands when heated

\[ \text{KHC}_4\text{H}_4\text{O}_6 + \text{NaHCO}_3 \xrightarrow{\text{cream of tartar}} \text{KNaC}_4\text{H}_4\text{O}_6 + \text{CO}_2 \uparrow + 2\text{H}_2\text{O} \]
op or

\[ \text{H}_2\text{C}_4\text{H}_4\text{O}_6 + 2\text{NaHCO}_3 \xrightarrow{\text{tartaric acid}} \text{Na}_2\text{C}_4\text{H}_4\text{O}_6 + 2\text{CO}_2 \uparrow + 2\text{H}_2\text{O} \]
sodium bicarbonate

Fast-acting: liberates 80% CO₂ during mixing and standing; contains 5.95% tartaric acid [\( \text{H}_4\text{C}_2\text{H}_4\text{O}_6 \)], 44.90% cream of tartar [\( \text{KHC}_4\text{H}_4\text{O}_6 \)], 26.72% sodium bicarbonate [\( \text{NaHCO}_3 \)], 22.40% starch (\( \text{C}_6\text{H}_{12}\text{O}_6 \)) or 33.45% monocalcium phosphate [\( \text{CaH}_4\text{(PO}_4)_2 \cdot \text{H}_2\text{O} \)], 26.73% sodium bicarbonate, and 34.84% starch; needs to be baked soon after mixing
Slow-acting: liberates CO₂ when heated; contains 40.38% sodium acid pyrophosphate [\( \text{Na}_2\text{H}_4\text{(P}_2\text{O}_7)_2 \)], 30.50% sodium bicarbonate, and 29.03% starch
Double-acting (a slow- and a fast-acting ingredient): sodium aluminum sulfate, which reacts with baking soda on heating, and calcium acid phosphate, which reacts with baking soda when mixture is cold; most commonly used; yields gas when combined with liquid and when heated
4 tsp = $\frac{1}{3}$ oz
1 tsp = 3.6 g
### Baking Powder

<table>
<thead>
<tr>
<th>Type</th>
<th>Vol. (tsp)</th>
<th>g</th>
<th>Water (%)</th>
<th>Calcium (mg)</th>
<th>Phosphorus (mg)</th>
<th>Potassium (mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium aluminum sulfate, monocalcium phosphate</td>
<td>1</td>
<td>3.0</td>
<td>2</td>
<td>58</td>
<td>87</td>
<td>5</td>
</tr>
<tr>
<td>Sodium aluminum sulfate, monocalcium phosphate, calcium sulfate</td>
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<td>2.9</td>
<td>1</td>
<td>183</td>
<td>45</td>
<td>—</td>
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<td>Straight phosphate</td>
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<td>Low sodium</td>
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<td>207</td>
<td>314</td>
<td>471</td>
</tr>
</tbody>
</table>

#### Double-acting (cont)

<table>
<thead>
<tr>
<th>1 tsp double-acting</th>
<th>1 tsp baking powder (cont)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$= \frac{1}{2}$ tsp single-acting</td>
<td>$= \frac{1}{4}$ tsp baking soda + $\frac{1}{4}$ tsp molasses</td>
</tr>
<tr>
<td>$= \frac{1}{4}$ tsp baking soda</td>
<td>$= \frac{1}{2}$ cups baking powder = 1 lb</td>
</tr>
</tbody>
</table>

Too much will cause a salty, bitter taste and will sometimes discolor the product.

#### Altitude Adjustment for Cake Baking:

<table>
<thead>
<tr>
<th>Elevation (ft)</th>
<th>Decrease baking powder per cake (tsp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>$\frac{1}{4}$</td>
</tr>
<tr>
<td>3500</td>
<td>$\frac{1}{3}$</td>
</tr>
<tr>
<td>5000</td>
<td>$\frac{1}{2}$</td>
</tr>
<tr>
<td>6500</td>
<td>$\frac{2}{3}$</td>
</tr>
<tr>
<td>8000</td>
<td>$\frac{3}{4}$</td>
</tr>
</tbody>
</table>

#### Storage:

Keep at room temperature (below 70°F, shelf life 1 yr); baking powder loses its strength with age.

See also **altitude**

### Baking Soda

#### Composition (double-acting):

13.28% monocalcium phosphate $[\text{CaH}_4(\text{PO}_4)_2 \cdot \text{H}_2\text{O}]$, 19.92% sodium aluminum sulfate, 26.73% sodium bicarbonate, and 40.07% starch or 6.68% monocalcium phosphate anhydrous $[\text{CaH}_4(\text{PO}_4)_2]$, 21.39% sodium aluminum phosphate $[\text{NaH}_4\text{Al}(\text{PO}_4)_6 \cdot \text{H}_2\text{O}]$, 26.37% sodium bicarbonate, and 45.21% starch.

Baking powder contains 339 mg Na/tsp (3 g).

1 tsp = 3.8 g

1 tsp baking powder

$= \frac{1}{4}$ tsp baking soda $+ \frac{1}{2}$ tsp cream of tartar

$= \frac{1}{4}$ tsp baking soda

$+ \frac{1}{2}$ cup of fully soured milk or buttermilk

$= \frac{1}{4}$ tsp baking soda $+ \frac{1}{2}$ tbsp vinegar or lemon juice $+ \frac{1}{2}$ cup sweet milk

### Sodium Aluminate Sulphate

$2\text{NaAl(SO}_4\text{)}_2 + 6\text{NaHCO}_3 \xrightarrow{\Delta} 4\text{Na}_2\text{SO}_4$

#### Sodium Bicarbonate

$2\text{NaHCO}_3 \rightarrow \text{Na}_2\text{CO}_3 + \text{H}_2\text{O} + \text{CO}_2$

It may be used when mixture contains acid (e.g., buttermilk, molasses, chocolate, fruit, or fruit juices); ingredients, should be baked immediately after mixing.

Your answer: It may be used when mixture contains acid (e.g., buttermilk, molasses, chocolate, fruit, or fruit juices); ingredients, should be baked immediately after mixing.
bamboo shoot (jook sun; *Phyllostachys*)

Altitude adjustment for cake:

<table>
<thead>
<tr>
<th>Elevation (ft)</th>
<th>Decrease baking soda per cake (tsp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>1/4</td>
</tr>
<tr>
<td>3500</td>
<td>1/3</td>
</tr>
<tr>
<td>5000</td>
<td>1/2</td>
</tr>
<tr>
<td>6500</td>
<td>3/4</td>
</tr>
<tr>
<td>8000</td>
<td>1</td>
</tr>
</tbody>
</table>

Baking soda can also be used for removing odor.

**ballotine** 1) Meat that is boned, stuffed, and rolled. 2) Galantines dish

**balchán** (balachong; belachen; blachan) A Far-Eastern condiment made from fermented seafood or shrimp paste, chilies, and salt

**baladí** A panir-type cheese made from sheep's or cow's milk

**balady** A flat pocket bread

**balámath medium** See Part 2: Microorganism, Media

**balance** Blending products for the proper mix

**balance of payment** Difference between total payment made to foreign nations for goods purchased and the receipts from them for goods sold

**balance of trade** Difference between money value of merchandise imported and exported

**balance sheet of agriculture** A statement indicating the value of land and property that farmers own balanced against the debt that farmers owe

**balao balao** Red or brown, salty, fish paste made by fermenting fish with rice

**balbakwa** Salted (30%) and aged fish

**balche** A white, alcoholic, viscous, beverage made by fermentation of the juice of the century plant (*Agave*)

**balda-babaran** A sorghum beer

**baldpate widgeon** (green-headed widgeon; wheat duck; white-belly; widgeon; Mareca americana) An edible wild game bird

**Baldwin** A variety of apple that is in season from Nov. to March; good sauce and cooking apple and fair eating apple

**balkan** A moist, cooked, smoked Finnish sausage made from medium-chopped, medium-seasoned beef and pork stuffed into a 60-mm artificial casing and cooked with warm smoke

**ball** A name given to edam-like and to some Pennsylvanian cheeses

**ball and socket** See ground glass joint

**balleron** A moist, cooked, smoked or unsmoked Swiss sausage made from fine- or medium-chopped, mildly seasoned beef, pork, and veal stuffed into a beef or an artificial casing

**ball mill** A porcelain container filled about half-full with flintlike balls and rotated in the horizontal position; used to mix and grind chemicals

**balsam** One of several varieties of resinous tree products characterized by a distinctive pleasant aroma and a sticky consistency. Used as a flavoring agent in many foods and in certain types of medications such as cough syrups, e.g., Tolu balsam, Canada balsam, and Peru balsam

See Part 2: Organic Acids in Fruits and Vegetables; Essential Oils

**balsam apple** See bitter melon

**balsam pear** (bitter gourd; *Momordica charantia*) A tropical climbing plant that produces a rough ribbed elongated (up to 8 in.) fruit that is orange-yellow or white

Uses: fruit is cooked and eaten; tender shoots and leaves can be cooked like greens. See [bitter melon](#)

Storage: full, tight, glass container in a cool, dark place

**balsam wool** A heat-insulating and sound-reducing material made from shredded wood fibers

See Part 2: Insulation

**balsa wood** A light, strong wood from tropical America

**balushahi** A sugar-coated doughnut made from wheat flour

**balut** A hard-boiled duck egg containing a partly developed embryo

**bambaloni** A ring doughnut made from wheat flour

**balmermycins** An animal drug used to increase weight gain and improve feed efficiency

**bamboo bean** Shoots are stir-fried, deep-fried, or eaten fresh

**bamboo shoot** (jook sun; *Phyllostachys*) Thick (3-in. diam.), tender-crisp, green-pointed (6–12 in. long) shoots that grow from the ground under a bamboo plant; in appearance, they resemble aspara-
bamboo shoot (jook sun; Phyllostachys)

56 bamboo shoot (jook sun; Phyllostachys) gus spears and in flavor, the artichoke; prepared like asparagus. If not harvested, they would grow into new stems.

Types:
- Spring (darker, harder, takes longer to cook)
- Winter (most expensive; soft creamy color)

Available forms:
- Canned without salt
- Canned with salt
- Fresh

1 cup julienne strips bamboo shoots = 8 oz

They are boiled, salted, or pickled.

Composition: moisture 91%; protein 3%; fat 0.3%; carbohydrate 5%; ash 1%

bambara cake Cassava bread

bamfo bisi A deep-fried, fermented maize or maize with plantain

bamia See okra

bamnie Cassava bread; fried cassava cakes

banana (Musa acuminata; M. balbisiana; M. hybrid; M. sapientum) A giant herb (originally from Eastern and Southeastern Asia) that produces bunches of fruit; each bunch contains 9–12 half-spirals (hands) of fruit, each containing 12–16 fruits (fingers); one bunch may contain 120–200 bananas and weigh 50–80 lb.

Plant growth:
- Height—10–33 ft
- Temperature—60–95°F (75°F optimum)
- Moisture—plentiful
- Rhizome or sucker to harvest—9¿-30 months (average growth period 365 days)

Types:
- Dessert—eaten raw; 17–19% sugar
- Lady fingers—short fruit
- Red-skinned—red skin and orange tint to flesh

Cooking—high starch, low sugar, picked green

Forms: Most are eaten fresh, some cooked, some dried and some made into flour, some fermented into beer.

Names:
- Apple (Lady Finger)
- Cavendish—commercial
- Orinoco (horse banana)—good for cooking
- Plantain—starchy cooking banana

To prevent darkening after slicing, dip in lemon, lime, orange, grapefruit, or pineapple juice.

Dried types:
- Slices (dark yellow; require rehydration prior to use)
- Flakes (yellow-gray)
- Powder (yellow-gray)

Weight (oz) | Size (in.)
---|---
Small 4.9 | 7¿ x 1¿
Medium 6.2 | 8¿ x 1¿
Large 7.0 | 9¿ x 1¿

Refuse: 35%
1 box (13 x 12 x 32 in.) = 40 lb
1 lb = 3–4 bananas
= 2 cups, sliced (1 cup = 140 g or 5 oz)
= 1¿ cups, mashed (1 cup = 230 g or 8.2 oz)
= 3–4 servings

1 cup, mashed = 2–3 med. bananas
= 1 large banana
= 7.8–8.2 oz
1 serving = 1 med. banana
1 cup, diced = 1 small banana
1 cup, chunks = 5 oz
1 cup, sliced = 1¿ med. bananas
= 5.0–5.1 oz
1 cup, dry flakes = 3.6 oz

Composition: moisture 76%; protein 1%; fat 0.2%; carbohydrate 22%; ash 0.8%; pH 4.5–4.7

Sugar (%) | Starch (%)
---|---
Green (astringent) 2 | 20
Ripe 19 | 2

Fiber—1.8%
Vitamin A—430 IU/100 g
Ascorbic acid—10 mg/100 g
Edible energy value 5.4 MJ/kg

Fruit should be picked green and allowed to ripen (at room temperature) off the tree (good traveler). Skin of the fruit is green and turns yellow, speckled with brown spots, when ripe.

To ripen for market: hold at 68°F for several days

Storage conditions: unwrapped; keep out of sun; temperature 55–60°F (refrigeration below 55°F stops ripening and results in browning, softening, and undesirable flavor development often called chill damage, but can be used for short-term storage if necessary); relative humidity 90%; freezing point 26–30°F

Uses:
- Green fruit—vinegar; dried for flour
- Leaf—wrapping in which food can be cooked
- Male bud—used as cabbage
- Ripe fruit—rum; dried
- Trunk—livestock feed

See anthracnose rot; crown rot; pitting; plantain; speckle; thielaviopsis stalk rot

See Part 2: Ascorbic Acid; Banana, Areas of Production; Bananas, Composition; Calories, Daily Recommendations; Canned Spoilage Related to pH; Flavor Ingredients, Taste and Flavor Type; Food, Composition; Fruit and Vegetables; Diseases; Fruit, Availability; Fruit Classification; Fruit Composition; Fruit Servings Per Pound; Fruit Storage; Iron; Microwave Cooking, Fruit; Minerals, Food; Niacin; Niacin, Daily Recommendations; Organic Acids in Fruits and Vegetables; Phosphorus; pH Values of Biological Materials; Plant Foods, Composition; Potassium; Potassium-Rich Foods; Riboflavin; Storage; Thiamin; Transit Temperature; Vitamin A, Daily Recommendations; Vitamin C

banana chilling injury Chilling can cause peel injury for both green and ripe bananas:
- Green—surface cells in the peel are killed and oxidation causes a dark and “smokey” appearance. There is often a brown ring under the peel and the banana is more sensitive to mechanical injury. Ripening is also delayed. Flavor loss and core hardening sometimes also occur.
- Ripe—dull or dark brown appearance. (Sunlight will also darken the peel.)

Chilling injury is caused by 12-h exposure to temperatures below 45°F

Transportation temperature: 53–56°F
Ripening temperature: 55–68°F
banana cream pie  Composition: 90 mg Na/\(\frac{1}{8}\) pie (66 g)
See Part 2: Grain Products, Composition
banana, crème de  A mixture of banana and brandy
banana fig  1) Porridge or paste made from green banana (Masa) flour. 2) Dried banana slices
banana flavoring  A synthetic flavoring mixed with alcohol and water
banana flour (bananose)  Well-ripened bananas are dried and then ground into a gray to yellow meal; also, a pale gray, easily digestible flour made from bananas.
banana, red (claret banana)  A strong-flavored banana that does not ship well.
banana squash  A 1.5- to 2-ft winter squash with tapering ends and a distinctive flavor; both smooth and wrinkled skin types are available, with ivory to pale orange color, turning pink with storage. See squash, winter.
bananose  See banana flour.
banbury  1) A small, round, soft, rich English cheese.
2) A tart made of citrus peel and raisins baked in a pastry shell.
bancha  A coarse-leaf, Japanese tea.
bandal  A panir-type cheese made from cow's milk; sometimes lightly smoked.
Banda mace  Dried arillodes of nutmeg from Banda (Nile area of Africa), which contain 13% essential oil.
See Part 2: Spices, Microbial Content.
B and B  An after-dinner cordial made from 1 part benedictine and 1 part brandy.
bandon  A cheddar-type cheese made from Jersey cow's milk.
bank treatment  Application of herbicide only to the row area and depending on cultivation to eliminate weeds between rows.
banfo  A hard, yellow, milk cheese with eyes.
bang  A beverage made from ale, cider, whiskey, or gin with sugar and spices.
banger  A medium- to coarse-chopped, uncooked, unsmoked, American sausage available as large-diameter links or rings; hot grilled or fried English sausage; a sausagelike product containing various amounts of rusk or other cereals.
bangi  A green, baseball-sized fruit from the Philippines, with milky juice.
Bang's disease  A cattle disease causing abortion, weak calves, sterility, and retention of afterbirth; usually spread by infected animals; infected animals should be slaughtered; called undulant fever in humans. See also brucellosis.
See Part 2: Illness from Food.
bank cress  See cress, American.
banker  A sour-dough, fermented dumpling usually made with maize and cassava.
bannet  Herbal substitute for cloves.
bannock  A large, flat, round, unleavened, hearth-baked bread or cake (many varieties).
banon  A valencay-type cheese, made from goat's, sheep's, or cow's milk, that is spiced (often with savory), soaked in valencay brandy, wrapped in chestnut or savory leaves, and matured for 2 weeks to 2 months. A small, thin, blue, mold-covered, French cheese, close white curd and mild flavor.
bantu  A passion-fruit (Passiflora) liqueur.
bantu beer  A sorghum beer.
banyuls  A dark, fortified (16% alcohol), French sweet or dessert wine.
  Types:
  - Aged (Rancio)
  - Red (Grenache)—black grapes
  - Rosé (Grenache)—black grapes
  - White (Banyuls)—white grapes.
baobab  A 12-in. subacid fruit encased in a woody shell. See monkey bread.
bap  A soft-textured, small, white, round, wheat-flour loaf of bread or roll.
  Types:
  - Buttery
  - Flurry.
bar  1) A measure of atmospheric pressure equal to one million dynes per square centimeter (10^6 dyn/cm^2):
   \[ 1 \text{ bar} = 1 \times 10^6 \text{ dyn/cm}^2 \]
   \[ = 1.020 \times 10^4 \text{ kilograms per square meter (kg/m}^2) \]
   \[ = 2089 \text{ pounds per square foot (lb/ft}^2) \]
   \[ = 33.46 \text{ feet of water at 4°C (ft H}_{2}O) \]
   \[ = 29.53 \text{ inches of mercury at 0°C (in. Hg)} \]
   \[ = 14.504 \text{ pounds per square inch (lb/in.}^2) \]
   \[ = 1.020 \times 10^5 \text{ kilograms per square meter (kg/m}^2) \]
   \[ = 0.9869 \text{ standard atmosphere (atm)} \]
2) Galeichthys marinus—a white-fleshed, saltwater catfish.
bara brith  A heavily fruited tea bread.
barack likor  An apricot liqueur.
barack palinka  An apricot liqueur.
Barbados  An island in the West Indies; often indicating products produced there. See also molasses.
Barbados cherry  An acid berry similar to a cherry and used in pies.
Barbados gooseberry  A cactus plant that has a yellow, smooth berry. See gooseberry.
Barbados rum  A light and dry rum.
Barbados water  Rum.
barbaresco  An Italian Piedmont (northwestern Italy) light, dry, red wine made from Nebbiolo grapes.
barbari  A flat pocket bread.
barbarone  Red table wine.
barbary fig  See prickly pear.
barbecue (barbeque, bar-b-Q)  To cook in a pit; the whole carcass may be roasted. A meal in which barbecued meat is served. A meat with sauce roasted over coals or in an oven; to roast or broil, basting with a highly seasoned sauce (to cook in or served with barbecue sauce).
See Part 2: Poultry Class; Sauce, Barbecue.
barbecue loaf  A comminuted meat loaf made from beef and pork seasoned with barbecue flavor.
Composition: moisture 65%; protein 16%; fat 9%; carbohydrates 6.5%; ash 4%.

Barbecue loaf

Barbecue pit An earth (sometimes masonry) pit in which food is steam-cooked; heat is supplied by coals, hot rocks, or hot metal; moisture is supplied by the food or other vegetable matter added to the pit; it is a slow cooking process.

Barbecue sauce Many types of sharp sauces used in cooking or served with grilled meat. A typical sauce may be made from mango, onion, pepper, salt, spices, sugar, tomatoes, and vinegar.

Composition (Ready-to-serve): moisture 80.9%; protein 1.8%; lipids 1.8%; carbohydrates 12.8%; fiber 0.6%; ash 2.7%; 130 mg Na/tbsp (16 g)

Barbe de capucin See chicory

Barbel (Barbilla; Barbus barbus) An edible European freshwater fish of the carp family; its soft roe is good to eat but hard roe is poisonous.

Barbera 1) A red grape. 2) A full-bodied, dry, tart Italian Piedmont (northwestern Italy) red table wine

Barberry (Berberis vulgaris) 1) A tart, red berry of a shrub; used for acid-flavored jellies, jams, or preserves. 2) Fruit from a group of plants that have small blue to black berries that are used in sauces, pies, preserves, ices, and beverages and are dried like raisins.

Barbery See Troyes

Barcelona nut Hazelnut kernel

Bard Thin strips of bacon or fat secured to meat or poultry to prevent drying during cooking

Bardolino A light red wine with a touch of sharpness produced in the Lake Garda and Verona regions of northern and northeastern Italy

Barenfang A sweet, honey liqueur flavored with lime

Barfi A fudgelike candy

Barge A measure of pressure

1 barge = 1 dyne per square centimeter (dyn/cm²)

Barium (Ba) An alkali metal element; at. no. 56; at. wt. 137.36; oxidation state +2; electron configuration 2–8–18–18–8–2; Group IIA of Periodic Table. Barium and all its soluble compounds are toxic; insoluble barium sulfate is not.

Barium carbonate See Part 2: Normal Solutions

Barium chloride See Part 2: Normal Solutions

Barium fluosilicate (BaSiF₆) An inorganic insecticide

Barium hydroxide [Ba(OH)₂] mol. wt. 171.3547; equiv. wt. 85.6773 See Part 2: Normal Solutions

Barium nitrate See Part 2: Reagents, Normal Solutions

Barium oxide See Part 2: Normal Solutions

Bark Outer covering of a tree or fat covering of an animal

Bar-le-duc A jam with red or white currants suspended in clear jelly

Bar-le-duc jelly Preserves made from red currants with the seed removed; more sugar than normal is used and the berries remain whole.

Barley (Hordeum vulgare) 1) An annual grain, originally from Central Asia, used for malt, meal, and livestock feed; matures in 265–280 days; plant 80–100 lb (2 bu) per acre. Kernel color may be white (preferred), red, purple, blue, or black. Enzymes from sprouting barley are used for brewing and fermentation.

To prepare for food: boil or parch the whole grain, and grind for making gruels, or flour for flat bread.

<table>
<thead>
<tr>
<th>Type</th>
<th>Genus</th>
<th>Description</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-row</td>
<td>H. distichon</td>
<td>Only middle spikelet of each three produces seed</td>
<td>Malting; pearl barley soup and stew; patent barley meal; livestock feed</td>
</tr>
<tr>
<td>6-row</td>
<td>H. vulgare</td>
<td>3 spikelets develop per node; more hardy than 2-row</td>
<td>Same uses</td>
</tr>
</tbody>
</table>

Moisture content for storage should be less than 13%; pH 6.0; variety—Davie

<table>
<thead>
<tr>
<th>Composition</th>
<th>Grain (Pacific coast)</th>
<th>Pearled</th>
<th>Grain screenings (sun-cured)</th>
<th>Hay (sun-cured)</th>
<th>Straw</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry matter (%)</td>
<td>88</td>
<td>89</td>
<td>89</td>
<td>89</td>
<td>87</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>12</td>
<td>9.6</td>
<td>9</td>
<td>11.7</td>
<td>7.6</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>5</td>
<td>6.3</td>
<td>—</td>
<td>8.6</td>
<td>24</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>2</td>
<td>1.8</td>
<td>1</td>
<td>2.3</td>
<td>1.9</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.3</td>
<td>2.7</td>
<td>1</td>
<td>3.1</td>
<td>6.6</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>—</td>
<td>—</td>
<td>78</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>
Composition: starch is of the waxy (devoid of amylose) type
1 cup unpolished or pearl barley is equivalent to 1 cup brown or white rice.

Grades or types:
- Common
- Grits—coarsely granulated common (used as porridge)
- Pearl (perled)—polished, which removes inner and outer husk and leaves a round pellet free of hulls and bran
- Medium pearl
- Fine pearl
- Starch (pot)—outer husk removed
- Scotch style—coarsely ground barley with the husk (acidic taste) removed but not polished
- Unpolished (cooks more slowly than pearl)

Barley flour will darken and increase density of breads.
1 bu = 47.48 lb
1 qt = 1.5 lb
1 qt ground barley = 1 lb
2 cups pearl barley = 1 lb

Storage: tightly closed container in a cool place; freeze for longer storage
2) A medium-to-coarse-chopped, uncooked, unsmoked, American sausage available as large-diameter links or rings

See Part 2: Cereal Composition; Cereal Fortification; Cereal Nutrient Content; Cereals, Vitamin and Mineral Content; Grain Products, Composition; Minerals, Food; Nutrients in Crops; Pentosans; Plant Foods, Composition; Protein Factors; Seed, Chemical Composition; Seed Composition; Seed, Germination; Soups, Composition; Spoilage, Fat in Food; Tocopherols; Vitamin A, Food

barley flour A breakfast food that contains the protein hordein, which has properties similar to gliadin; can be mixed with other flour but flavor is the limiting factor. To make raised bread, you can mix 20% barley flour with 80% wheat flour. To make hot breads with baking powder, you can mix 80% barley flour with 20% wheat flour.

barley malt 1) Malted barley. 2) Breakfast cereal containing malted barley

barley meal A dark whole-meal flour made from coarsely ground whole barley grain, including outer and inner husks
Composition: moisture 12%; protein 10–11%; fat 2–3%; carbohydrate 72–73%; ash 2–3%

barley miso A flavorful paste made from soybeans and barley

barley, pearled Barley that has been reduced to small round grains containing endosperm and a little of the bran See barley

barley sausage An English sausage made from beef and large quantities of barley See barley

barley sugar (Originally, it contained barley water.) Sucrose that has been heated until it melts and allowed to recrystallize in large granules; cane sugar flavored with lemon

barley water Barley boiled in salt water, strained, chilled, and used as a beverage; a liquid drink, often used with invalids, made from barley, water, and lemon juice

barley wine A sweet, strong, fruity ale

barley yellow dwarf A virus transmitted by insects (aphids, greenbug) that causes reduced growth and shriveled grain

barm 1) Yeast that forms on fermenting malt liquor. 2) A form of yeast used in making bread

barm bread A wheat bread that uses fermenting malt liquor to extend the bread

barm cake A wheat-flour roll

barm yeast Top layer of fermenting malt liquor, used to inoculate other fermentations or to leaven bread

barnacle A crustacean; many edible varieties are available fresh or canned

barnyardgrass [Echinochloa crusgalli (L)] An annual weed

barny flavor A cowy or unclean flavor of milk

barolo An Italian piedmont (northwestern Italy) dark, red, dry, full-flavored table wine made from Nebbiolo grapes

baron Two hind legs and saddle of lamb

baron of beef Two unseparated sirloins; generally roasted

barracuda See barracuda

Food types:
Atlantic–Mediterranean, Sphyraena sphyraena
Australia (snoek, snook; similar to tuna or mackerel), Thyrsites atum
Giant sea pike (Indo-Pacific), S. jello
Japanese, S. picuda
Pacific, S. argentea
Sea pike, Sphyraena spp.

barracuda (sea pike; giant pike; Sphyraena barracuda) A large carnivorous sharklike or pike-like fish sometimes used for food; a small shark

Name and location:
Atlantic–Mediterranean, Sphyraena sphyraena
Giant sea pike (Indo-Pacific), S. jello
Pacific, S. argentea

Available fresh, salted, and dried

See Part 2: Vitamin D, Fish

barrel 1) A measure of volume
1 barrel = 42 gallons (oil)
2) A container; for wine and whiskey, an oak barrel is preferred

barrel (U.S.; dry) A measure of volume
1 dry barrel = 7056 cubic inches (in.³)
= 105 quarts (qt; dry)
= 3.281 bushels (bu)

barrel (U.S., liquid) A measure of volume
1 barrel = 1.1924 × 10⁶ milliliters (ml)
= 32256 drams (U.S. fl)
= 7276.5 cubic inches (in.³)
= 4196.7 ounces (Br. fl)
= 4032 ounces (U.S. fl)
= 119.2369 liters (l)
= 31.5 gallons (U.S.)
= 26.23 gallons (Br.)
= 4.2109 cubic feet (ft³)
= 0.11924 cubic meter (m³)
barrique A wine container
1 barrique = approximately 50 gallons
= 225 liters
= 24 cases of wine
barro A clay soil that produces a coarse and heavy wine
barrow A male hog that has been castrated before advanced sexual development
See Part 2: Swine Market Classes and Grades
Barsac A full, sweet, white wine of high sugar content produced by allowing the grapes to stay on the vine until they are attacked by mold, dehydrated (concentrating the sugar), and pressed (of the small quantity of juice remaining) to produce a very expensive wine. See also sauterne
bar sirup (bar syrup) A simple syrup See sirup
bar syrup (bar sirup) See gum syrup
barszcz Borsch
Bartlett (William pear) A variety of pears of small size and rusty color
bartzch Brandy made from hogweed
Barzona An American breed of nearly solid red (light cherry to mahogany) cattle with a little white on underline and head; developed from an Afrikander-Hereford cross, mated to Santo Gertudis and Angus bulls
basal 1) Near the base. 2) An annual plant whose leaves are used to flavor soups, ragouts, sauces, sausages, and salads. 3) Indicates intensity of natural body activity; physiologically, the metabolism of a human or animal organism under rest conditions (involuntary rate of metabolism)
basal diet A common diet to which experimental substances are added
basal glume rot (Pseudomonas atrofaciens) A bacterial disease of wheat that occurs at the base of the attachment point of glumes and kernels
basal metabolic rate (BMR) Heat produced during complete rest following fasting. It is measured by a calorimeter and is expressed as calories per square meter of body surface
basal metabolism Energy required for maintenance
basal spray To apply a spray to the bark at the base of a woody plant
basa wood See Part 2: Insulation
basis Any substance that accepts or acquires protons (H⁺), has a pH higher than 7.0, reacts with acids to form salts, and has the hydroxyl ion as its negative radical in solution See also alkali
See Part 2: Concentration of Commercial Strengths of Acids and Bases; Indicators: pH and Acid Base
base acreage See farm acreage base; crop acreage base
base-forming foods Foods (e.g., milk, nuts, most fruits, potatoes, and legumes) that leave an alkaline residue in the body after the food has been utilized (oxidation). The pH of the urine reflects the character of the food.
basela (baselle; Indian spinach; Malabar nightshade) A tropical plant whose leaves may be used as a vegetable
Types:
Red
White
base line In gas chromatography, a straight line drawn when no sample is going through the detector
base-line information (or data) Information on nutritional areas obtained before the planning and undertaking of applied nutrition programs; information that provides a basis for evaluating the results of these programs at appropriate times in the future
basella A climbing plant used as a substitute for spinach See basela
baseplate pressure Pressure that holds the body and end of a can (e.g., for food) against the chuck when the can is sealed
basi An alcoholic, juice wine made from sugar cane
Basic (beginner's all-purpose symbolic instruction code) A simplified, widely used programming language
basic commodities
Corn
Cotton
Peanuts
Rice
Tobacco
Wheat
basic loan rate The rate set by law for agricultural products. The basic loan rate cannot drop more than 5% below the previous year's. The Secretary of Agriculture can reduce the actual loan rate below the basic rate by as much as 20%. See: Findley provision
basic price An EEC trading term, fixed annually to apply throughout a 12-month period starting Nov. 1
basic salt Part of the available hydroxyl ion of the base, have been replaced by another negative radical
basic seven food group
1. Green, leafy, or yellow vegetables
2. Citrus fruits, tomato, cabbage
3. Potatoes and sweet potatoes, other fruits and vegetables
4. Milk and milk products
5. Meat, fish, poultry, eggs, legumes
6. Bread and cereal grains
7. Butter or margarine
basic slag A fertilizer material which is a by-product of the steel industry; fertilizer notation 0–9–0; basic in nature and equal to 0.5–0.7 lb of dolomitic limestone for each pound of material; 8–10% P₂O₅, 46% CaO, 6% MgO
basil (herbe royale; sweet basil; Ocimum basilicum L.; O. minimum) A spicy, sweet, aromatic, annual herb (1–2 ft tall) of the mint family; green (purple also available), 1 1/2-in. leaves used as seasoning with clove-like flavor. Thin to 7 in. apart in rows 18 in. apart; reaches maturity in 85 days; harvest 2–3 times/yr. The herbage is cut and used fresh or air-dried; seeds are also eaten. Used in meat pies, as seasoning, and in soups, stews, and tomato paste
Varieties:
- Dwarf bush (O. basilicum) — primarily ornamental but also used for flavoring
- Lemon — used as an ornamental and for flavoring
- Lettuce leaf
- Purple or opal

Types available:
- Bush (holy basil, tulsi, O. minimum)
- Italian, curly, lettuce (O. crispum)
- Purple bush (O. minimum purpureum)
- Sweet (O. basilicum: 18 in. tall, annual) — used for flavoring
- Wild (basil thyme) — different flavor

Sources:
- California (highest price because of color, uniformity, and cleanliness)
  Sizes available: whole; coarse (1/4 in.); medium (1/2 in.); fine (3/16 in.); powdered
- France (top import price; randomly sized)

Composition: (average ground): moisture 6-7% (9% max.); protein 14-15%; fat 3-4%; carbohydrate 60-61%; fiber 17-18%; ash 14-15 (3.7% max.; 15.7 max. sweet basil); volatile oil 0.4 v/w min.
1 part freeze-dried weight = 8 parts fresh weight

bass (bar; lupus; sea perch) 61

basil, lettuce leaf (Perilla frutescens) An annual herb with crinkled foliage
basil oil Steam-distilled from Ocimum basilicum and used as a spicy flavoring agent in food
Storage: full, tight, glass container in a cool, dark place
basil vinegar Rinse basil and pat dry; fill jar lightly with basil; heat (do not boil) good cider or wine vinegar and pour vinegar over basil to cover; store at room temperature for 2-3 weeks; strain through cheesecloth and store in a bottle
basis The differential at any time between the futures price for a given commodity and the comparable cash or spot price for the commodity
basis weight A measure of thickness
Metal — weight per base box (31,360 in.²) in pounds per 31,360 square inches
Paper
- a) in pounds per thousand square feet
- b) in pounds per ream or 3000 square feet

bass (bar; lupus; sea perch) A food fish found in both fresh and salt water
Types:
- Atlantic (salmon bass), Morone labrax
- Bayou (20 lb, large mouth), Huro floridiana; Micropterus salmoides
- Black sea (east-coast Atlantic), Centropristes striatus
- Calico or strawberry (river), Pomoxis sparoides
- Common (Japan), Nipon spinosus
- Freshwater black (river), Micropterus dolomieu
- Mediterranean–North sea, Decentrarchus labrax

<table>
<thead>
<tr>
<th>Water</th>
<th>Common name</th>
<th>Other name</th>
<th>Fat (%)</th>
<th>Size (lb)</th>
<th>Where</th>
</tr>
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<tbody>
<tr>
<td>Fresh</td>
<td>Calico</td>
<td>Strawberry</td>
<td>0.5</td>
<td>10–40</td>
<td>Great Lakes, Mississippi Southern coast</td>
</tr>
<tr>
<td></td>
<td>Channel</td>
<td>Red drum</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Largemouth</td>
<td>Straw</td>
<td>2.6</td>
<td>2–20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Smallmouth</td>
<td>Black</td>
<td>2.6</td>
<td>0.5–5</td>
<td></td>
</tr>
<tr>
<td>Salt</td>
<td>White</td>
<td>Silver</td>
<td>2.3</td>
<td>1–2</td>
<td></td>
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<tr>
<td></td>
<td>Black</td>
<td>Giant sea</td>
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<tr>
<td></td>
<td>Black sea</td>
<td>Lupus</td>
<td>0.2–4</td>
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<tr>
<td></td>
<td>California</td>
<td>Black</td>
<td>1.6</td>
<td>50–100</td>
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<tr>
<td></td>
<td>Common</td>
<td>Blackfish,</td>
<td>1.6</td>
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</tr>
<tr>
<td></td>
<td>Striped</td>
<td>Sea striped</td>
<td>2.3</td>
<td>0.5–75</td>
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<tr>
<td></td>
<td>Sea striped</td>
<td>Bass</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
62 bass (bar; lupus; sea perch)

Types (cont)
- Rock (river), *Ampholites rupestris*
- Sea (salt water), *Morone labrax*
- Stone (salt water), *Polyrrion cernum; P. americana*
- Striped, *Roccus saxatilis*
- White (river), *Lepibema chrysops*

See Part 2: Frozen Food Storage; Minerals, Food; Vitamin A, Fish; Vitamin D, Fish

**bassersdorfer-schublig** A moist, cooked, smoked Swiss sausage made from fine- or medium-chopped, medium-seasoned, beef, pork, and veal stuffed into a beef casing

**bassora gum** See gum tragacanth

**basswood** A tree that is fair for firewood, yielding 14 million Btu/cord (20% moisture), is easy to start, is easy to split, and produces medium smoke, fair coals, and few sparks

**baste** To moisten food during cooking by spooning or conveying by other means the pan liquor, butter, fat, or other liquid over the food at frequent intervals to prevent drying and/or to add flavor

**bastourma** A salted, dried meat

**bastourma** Spiced ham

**bata** A sweet, fermented, alcoholic beverage made from honey, often flavored with fruit juice and spices

**bátarde** A white sauce with eggs

**batarekh** Dried, salted fish roe (eggs)

**batch bread** A wheat bread

**batch bun** A fruit bun containing candied citrus fruit peel, saltanas, and butter

**batch pack** See unit pack

**bate** A digesting process used on hides prior to tanning to make them soft or pliable

Agents used:
1. Manures
2. Desiccated pancreas enzyme
3. A wood enzyme

**Bath chap** Sugar-cured lower cheek and tongue of pork

**bath cheese** A creamy, full-fat, soft, unsalted cheese made from cow’s milk and consumed fresh

**batsoy** Noodle soup

**battelmatt** Swiss cheese made from cow’s milk

**batter** 1) A mixture of flour and liquid

<table>
<thead>
<tr>
<th>Name</th>
<th>Parts flour</th>
<th>Parts liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pour</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Soft drop</td>
<td>1 1/2–2</td>
<td>1</td>
</tr>
<tr>
<td>Medium</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Stiff drop</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

2) A mixture of tissue for a sausage product. 3) Any mixture thin enough to pour or drop from a spoon See dough. 4) A semiliquid mixture, primarily of eggs, used to coat food prior to frying

**battlemat** A large (40–80 lb), round, Swiss or Italian cheese similar to, but softer than, emmentaler

**battuto** A mixture of onion, garlic, celery, and parsley, cooked in oil and flavored with bacon and used to make soups or stews

**batura** A flat, fermented, deep-fried, wheat bread

**batzi** Apple brandy

**bauernbratwurst** A moist, cooked or uncooked, unsmoked Swiss sausage made from medium- or coarse-chopped, medium-seasoned beef and pork (e.g., pepperoni) stuffed into a beef or pork casing

**bauernfleischkäse** A moist, cooked, unsmoked Swiss sausage made from medium-chopped, medium-seasoned beef and pork stuffed into an artificial casing

**bauernsalami** 1) A dry, uncooked, smoked, fermented, Swiss sausage made from medium- or coarse-chopped, heavily seasoned beef and pork stuffed into a beef, pork, or artificial casing. 2) A dry, uncooked, smoked, East-German sausage, made from medium-chopped, medium-seasoned beef and pork, that is fermented and stuffed into a beef or artificial casing

**bauernschinken** A farmer-style, boneless, dry-cured ham made from the top and bottom round of the ham and given a heavy smoke

**bauernschublig** A dry, uncooked, smoked or unsmoked, Swiss sausage, made from medium- or coarse-chopped, heavily seasoned beef and pork stuffed into a beef, pork, or artificial casing

**batus** A bread, made from rice and wheat flour, that is high in eggs and fat and contains dried grapes and other fruit

**Baumé (Bé)** A scale used to measure density of a liquid; the specific gravity at 60°F corresponds (not same value) to degree Baumé; it represents about one-half of the solids content

See Part 2: Brine, Meat Curing; Salt, Brine; Salt, Brine Table; Sugar Solutions

**bauxite** (Al₂O₃) Raw material from which aluminum sulfate is manufactured

**Bavaria blu** A blue-mold, high-fat, semisoft cheese

**Bavarian cream** A sweet, soft egg custard, containing folded gelatin and whipping cream, that can be flavored with many different things

**Bavarian cream pie** Composition: 71–78 mg Na/ 1/8 pie (82 g)

**Bavarian smoked** A processed, cow’s-milk cheese that is smoked

**bavaroise** A vinegar, horseradish, and nutmeg-flavored sauce used on seafood

**bawursau** A moist, cooked, Polish sausage made from finely or coarsely chopped, medium-seasoned beef and pork stuffed into an artificial casing

**bay** An inlet of water; a section of a barn; the bark of a dog; light red color in horses; an evergreen tree of the laurel family whose leaf has a very aromatic flavor and is used with meat, fish, poultry, soups, stuffing, and pickling solutions See bay leaf

See Part 2: Essential Oils; Spices, Microbial Content
bean, black (Australian bean; Moreton Bay chestnut) 63

bayberry  Popular name for shrubs of the species of the genus Myrica, also called candleberry and wax myrtle; used for flavoring (e.g., sweet bay) or seasoning and to make dripless candles. Bayberry trees (family Myrtaceae) are used to make rum.

bay leaf (laurel; sweet bay; Laurus nobilis L.; Pimenta acris kosterl) Dried leaves from an evergreen tree used as an herb; dark green, wavy-edged leaves (2-4 in. long); they are very aromatic when crushed. Available both fresh or dried (whole, fancy, cracked, crushed, and medium-fine grind); from Turkey.
Composition: moisture 5-6% (8% max.); volatile oil 0.8% v/w min.; protein 7-10%; fat 8-9%; carbohydrate 74%; fiber 26-27%; ash 3-4%.
Used in or with chicken, fish, meat, pickling, potatoes, rice, soups, stews, stuffing, and tomato dishes.

bay oil  See myrcia

bayonne ham  A country-cured (in brine with red wine, olive oil, and rosemary) style, lightly smoked, pork ham produced in the Basque area of France and Spain.

bay salt  Rock salt

bay smelt  See smelt

bazari  An 80-85% extraction wheat flour bread

BBB  Bed, breakfast, and bath

bbl  Barrel

BC  1) Before Christ. 2) Beef casing

BCF  Bureau of Commercial Fisheries

B-compound  A paraffin wax used as a lubricating film.

BCP-D agar  See agar-agar

BDG broth  See Part 2: Microorganism, Media

Be  Symbol for the element beryllium

Bé  See baumé

-be  Suffix meaning life

bead  A rounded depression

beaded can  A can that is strengthened by concentric depressions or reinforcing ribs around the body

bead molasses (brown sauce)  Trade term for a sweet sauce made from brown sugar, salt, soybean, water, and wheat flour; used for flavoring and coloring in baked beans, chop suey, chow mein, dark breads, ginerre cookies, and oriental dishes.

bean (pulse; Phaseolus vulgaris)  A (leguminous) vegetable food, the dried seeds of which are also used as food; the green (unripe) seed (several are contained in a pod), the pod (immature), and the dry seeds are used as a high-protein food; often served cold in salads or as a relish and can be marinated in oil and vinegar. Other closely related genera are sometimes called beans (e.g., black-eyed peas, soybeans).

4 servings = 1.5 lb

Grades are based on the following:
Brightness of color (bright, uniform color)
Uniformity of size (even cooking)
Visible defects (cracked seed coat, foreign material, or insect pinholes)

Storage: 32°-45°F (refrigerator crisper or plastic bags); relative humidity 90%; freezing temperature 30°F; pH 5.0-6.0; use within 3-5 days.

See Part 2: Beans, Dry, Cooking; Beans or Peas Planting Guide; Beans, Peas, and Lentils Label; Beans, Peas, and Nuts; Calories, Daily Recommendations; Canned Spoilage Related to pH; Canned Yield; Food, Composition; Frozen Food Storage; Fruit and Vegetables, Composition; Iron; Iron, Daily Recommendations; Microwave Cooking, Fresh Vegetables; Microwave Cooking, Frozen Vegetables; Microwave Processing Time; Minerals, Food; Niacin; Niacin, Daily Recommendations; Nicotinic Acid, Food; Nitrate, Vegetables; Nutrients in Crop; Organic Acids in Fruits and Vegetables; Pentosans; Phosphorus; pH Values of Biological Materials; Plant Foods; Composition; Planting Density; Portion Size; Protein Factors; Pulses, Nuts, and Seeds, Composition; Riboflavin; Riboflavin, Food; Seed, Chemical Composition; Seed, Germination; Soups, Composition; Standards, Processed Fruit and Vegetable Products; Storage, Dry, Storage Times; Sugar, Legumes; Thiamin; Thiamin, Daily Recommendations; Transit Temperature; Vegetable Boiling; Vegetable Composition; Vegetable Cooking, Frozen; Vegetable Frozen Yield; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Plants; Vegetables, Boiling Time, Frozen; Vegetables, Canning Dates; Vegetables, Classification; Vegetables, Cooking Frozen; Vegetable Servings; Vegetables, Panned; Vegetable Storage; Vegetable Yield; Vegetable Yield, Canned and Frozen; Vegetable Yield, Frozen, Canned, and Fresh; Vegetable Yields; Vitamin A, Food

bean, adsuki (Phaseolus radiatus)  An edible bean grown in the Mississippi valley

bean, adsubi (Phaseolus radiatus)  An edible bean

bean, aden (Phaseolus angustifolius)  A bean native to the orient used for food

bean aphid (Aphis fabae)  An insect that feeds on beans, peas, beets, and chard; dark olive-green to black in color

bean, asparagus (blackeye bean; Cuban bean; yard long bean; Doliches sesquipedalis; D. unguiculatus; Vigna catjang; V. sesquipedalis) A kidney-shaped, red or yellow-brown bean contained in 1- to 2-ft long pods produced on a pole-type of cowpea.

Storage: 145 days

Orient  Express

<table>
<thead>
<tr>
<th>Variety</th>
<th>Season</th>
<th>Plant</th>
<th>Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orient</td>
<td>145</td>
<td>Pole</td>
<td>Steamed,</td>
</tr>
<tr>
<td></td>
<td>days</td>
<td>(planting-out</td>
<td>lightly boiled,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>to harvest</td>
<td>stir-fried,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>fresh,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>frozen</td>
</tr>
</tbody>
</table>

bean, beautiful  See pea bean

bean beetle  See Part 2: Insect Control

bean, bird's-foot  See bean, black-eyed

bean, black (Australian bean; Moreton Bay chestnut)  1) An Australian tree that produces 3-4 edible

<table>
<thead>
<tr>
<th>Varieties</th>
<th>Habitat</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>Riverbank</td>
<td>Fish food (canned), 1 1/2 cups= 1 oz</td>
</tr>
<tr>
<td>Pole</td>
<td>25 to 30 ft</td>
<td>Grass, hay, forage; hay 1 lb= 3 cups</td>
</tr>
<tr>
<td>Field</td>
<td>35 to 45 ft</td>
<td>Forage, hay, fish food 1 lb= 3 cups</td>
</tr>
<tr>
<td>Goshawk</td>
<td>1 to 3 ft</td>
<td>Hay, greenhousg gas, fish food 1 lb= 3 cups</td>
</tr>
<tr>
<td>Longleaf</td>
<td>4 to 6 ft</td>
<td>Hay, greenhousg gas, fish food 1 lb= 3 cups</td>
</tr>
<tr>
<td>Lamalone</td>
<td>6 to 8 ft</td>
<td>Hay, greenhousg gas, fish food 1 lb= 3 cups</td>
</tr>
<tr>
<td>Loblolly</td>
<td>8 to 10 ft</td>
<td>Hay, greenhousg gas, fish food 1 lb= 3 cups</td>
</tr>
<tr>
<td>Shortleaf</td>
<td>10 to 12 ft</td>
<td>Hay, greenhousg gas, fish food 1 lb= 3 cups</td>
</tr>
<tr>
<td>Yellow</td>
<td>12 to 14 ft</td>
<td>Hay, greenhousg gas, fish food 1 lb= 3 cups</td>
</tr>
</tbody>
</table>

bean, strategy

bean, strategy

bean, strategy

bean, strategy

bean, strategy

bean, strategy
bean, black (Australian bean; Moreton Bay chestnut)
chestnutlike seeds per pod; roast before eating. 2) Black turtle soup bean—A pungent, preserved, salty soybean, often seasoned with garlic; a rich-flavored legume grown in the South and used in thick soups and in oriental and Mediterranean dishes
1 pound of dry black beans = 2.5 cups
See bean, urd
bean, blackeye (bird's-foot bean; blackeye pea; cowpea) A cream-white, oval-shaped bean with a black spot where the bean was attached to the pod
See bean, blackeye
bean, black, soup, canned
Condensed, prepared with water
<table>
<thead>
<tr>
<th>Composition</th>
<th>Condensed</th>
<th>Condensed, prepared with water</th>
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<tbody>
<tr>
<td>Moisture (%)</td>
<td>75.3</td>
<td>87.3</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>4.8</td>
<td>2.3</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>1.3</td>
<td>0.6</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>15.4</td>
<td>8.0</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>3.1</td>
<td>1.5</td>
</tr>
</tbody>
</table>
bean, Boston style
Composition: 606 mg Na/cup (260 g)
bean, broad (faba; fava bean; field bean; flava bean; horse bean; longpod; Scotch bean; shell bean; Windsor bean; Vicia faba) A hardy bean that prefers a neutral or alkaline soil and a cool climate; 17/oz seed; 7-10 days germination period; thin to 6 in. apart in rows 24 in. apart. Pods are large and thick and often grow to 15-in. length and contain large, flat, angular seed; young pods can be eaten.
Varieties:
- Bunyard's Exhibition
- Early Longpod
- Green Longpod
- Green Windsor
- Harlington White
- Masterpiece
- Saville Longpod
- 1 cup, canned, drained = 5 oz
See bean, fava
bean, butter A large, white bean. The name is also used for soya bean. See bean, lima
bean cake Sufu soybean curd
bean, Chartres A brown variety of bean
bean, chevrier A green variety of bean
bean, chili (red; Mexican) An oval, slightly flattened, maroon bean that is slightly longer than the pea bean

<table>
<thead>
<tr>
<th>Variety</th>
<th>Season</th>
<th>Plant</th>
<th>Pod</th>
<th>Bean</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broad Windsor</td>
<td>65</td>
<td>Upright</td>
<td>Long</td>
<td>Inedible, 5-7/pod,</td>
<td>Green, green, long, flat, shell</td>
</tr>
<tr>
<td>Long Pod</td>
<td>85</td>
<td>Bush</td>
<td>Long</td>
<td>7 in.</td>
<td>light green</td>
</tr>
</tbody>
</table>
bean, Chinese See bean, urd
bean, Chinese long See Chinese long bean
bean, civet See bean, butter
bean, coca (Phaseolus vulgaris) A blue-to-purple-podded French bean that changes to green when cooked; may be used as a green or dried bean
bean, Congo See cajun
bean, cranberry A pink-marked bean
bean, crackshank lima See jack bean
bean, Cuban See bean, asparagus
bean curd See tofu
bean curd cheese Sufu soybean curd
bean, dry A bean grown for mature seed and dried to below 4% moisture; spacing 4-8 in.; harvest when pod is full.
To dry: Pick when mature and spread out in a warm, dry place until dry or, after pods are ripe, pull and dry bean plants like hay. To protect after drying, refrigerate at 0°F or lower for 4 days or heat in an oven at 180°F for 15 min, and leave in oven for 1 h after heat is turned off.
Soaking: Simmer for 2 min; let stand 1 h or overnight.
To cook: Add 1 tsp salt to 1 cup dry beans and cook until tender or pressure-cook 3-10 min; baking soda (alkali) is often added (1/4 tsp to 1 pt water) to soften beans, but it lowers B-vitamin content and produces a soft texture. Soaking-water temperature of 120°F for 6 h will produce 100% increase in weight. Cooking will produce additional 50% gain in weight. Use 1 cup beans/4 cups water for both soaking and cooking.
Types: pea (navy), pinto, great northern, kidney, lima, butter bean, haricot
Colors: white, red, pinto (mottled), black, brown

100 lb, fresh-11-13 lb, dry beans
1 bu = 60 lb
1 lb, dry = 11 servings
= 2-2.5 cups
= 2-6 cups, cooked
Composition: moisture 8-13%; protein 22%; fat 1.5%; carbohydrate 61%; ash 4%
Storage (dry): tightly closed container, 50-70°F; dry; do not mix with older product; storage life 1 yr
Storage (cooked): in refrigerator 1-4 days; frozen 1 mo
bean, Dutch A brown variety of bean
bean, fava (broad; broad bean; fava; horse; Windsor) A large (1 in.), tough-skinned, greenish brown bean with a distinctive flavor. Similar to lima beans except that fava beans are globular in shape. When immature, the pods can also be eaten. Some people are allergic to this bean. See bean, broad

bean, field Applies to several kinds of shelled and dried bean, including French haricots, navy bean, red kidney, Spanish frijoles, and white marrowfat
bean, flower or fire (Phaseolus multiflorus) A kidney bean

bean, French (kidney bean; snap bean; string bean; wax bean; wax-pod bean; Phaseolus vulgaris) The most common form of green bean that is grown for its immature pod. The kidney-shaped bean can be eaten in the pod green (snap bean) or it can be dried (shell bean). It is smaller and more delicate than the snap bean. 40 seed/oz; germination period is 5–10 days

bean, frijole (Spanish frijole) A small, flat, kidney-shaped bean contained in an inedible pod; grown in Mexico and southwestern United States

Varieties:
Bagou
Red Indian

bean, garbanzo (ceci pea; chick pea) Grown on a pea-like plant with one or two large irregular-surfaced beans per pod. Nut-flavored and commonly pickled in vinegar and oil for salads. Similar beans are cranberry and yellow-eye beans

bean, garden Beans grown for immature edible pods.

Green pod varieties:
Bush—Bountiful, Stringless Green Pod
Pole—Kentucky Wonder, Rust Resistant Kentucky Wonder

Wax or yellow pod varieties:
Bush—Stringless Wax, Yellow Bountiful
Pole—Golden Cluster Wax, Kentucky Wonder Wax

bean, goa Indian trailing bean used like kidney beans

bean grades (edible) U.S. Grades 1, 2, 3; handpicked grades: U.S. No. 1 choice handpicked; U.S. No. 1 handpicked; U.S. No. 2 handpicked; U.S. No. 3 handpicked

bean, great northern A bean that is larger than, but similar to, pea beans; used in soups, salads, casserole dishes, and home-baked beans

Variety: Montana White, season 90 days

The highest grade is U.S. No. 1 choice handpicked or handpicked

1 cup, raw = 6.2 oz
1 cup, cooked = 6 oz

bean, green (kidney bean; snap bean; snap (string); snap (stringless); string bean) Applies to a wide range of beans that are moderately mature but not dried, usually eaten with pod.

Varieties (stringless):
Flat
Round (refugee)

Terminology: The beans are called string (there are now stringless varieties), snap, pole, or bush beans when fresh and green or wax (waxy yellow color) beans when canned or frozen.

bean, green shell A bean growth for the immature pod

bean, guar (cluster bean; Cyamopsis tetragonoloba) A drought tolerant legume grown for seed and forage

bean, haricot (butter bean; flageolet; navy bean; soissons; Phaseolus vulgaris) 1) The seed of any bean plant. 2) Dwarf French bean grown for dried
66 bean, haricot

seed and not for pods; 40 seed/oz and 5–10 days germination period; dried seed grown for that purpose; can be eaten fresh but is usually dried.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Season</th>
<th>Pod</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comtesse de Chambord</td>
<td>100 days</td>
<td>Short</td>
</tr>
</tbody>
</table>

**bean, horse** See bean, broad; bean, sword

**bean, horticultural** A term often used to identify beans grown for their immature pods (snap beans) or for their ripe seed (field beans)

Varieties:
- Bush—dwarf horticultural, French horticultural
- Pole—cranberry, horticultural

**bean, hyacinth** (lablab; Dolichos lablab) A tropical bean with edible pods and seed

**bean, India** See bean, urd

**bean, jack** (Canavalia ensiformis) Composition (seed): dry matter 91%; protein 31–34%; fat 2%; fiber 11%; nitrogen-free extract 50%; ash 3%; (plant) protein 11%; (silage) protein 10.6%  

See bean, sword; jack bean

**bean, Jacob's cattle** A fine-grained, spotted and speckled bean

**bean, Kentucky Wonder** A variety of pole bean

**bean, kidney** (field bean; French bean; frijole; haricot; Phaseolus vulgaris; P. coccineus) A common kidney-shaped bean that is often dried. A legume originally from Central and South America that produces an edible [but more frequently inedible (tough)] 6-in. pod; today the bean is usually red; 95 days to dry-shell stage. In American usage, the term is applied to a large, red-brown, kidney-shaped field bean of distinctive flavor. In other usage, it sometimes designates the entire range of species of beans. Usually, it designates a large, dark red bean, with a distinctive flavor, that is used in baked dishes (often used for baked beans), is boiled in soup and chili con carne, in salads, and in many Spanish and Mexican dishes. It is often canned with sauce, honey, sugar, bacon, and/or pork. Variety: California Red Kidney produces a large, red, kidney-shaped bean.

Canned styles available:
- Clear salt brine
- Sweetened sauce

Pods are sickle-shaped, 10–15 cm long, containing 5–20 beans. Dry bean color may be white, pink, red, speckled, brown, or blue-black. Dry bean size 20,000–60,000/kg

Composition (dry): protein 20–25% (deficient in methionine and cystine but rich in lysine and tryptophan); fat 2%; carbohydrate 50%; moisture 10%; pH 5.7

To rehydrate, combine 40 lb dry beans, 40 lb water, and 1 lb salt.

Composition (cooked): fiber 3.6%  
1 lb, dried = 2 1/2 cups  
= 12 cooked servings  
= 5 1/2 cups, cooked
1 cup, dry = 185 g (6.5 oz)
1 cup, cooked = 185 g (6.5 oz)
1 cup, canned, with solids and liquid = 9 oz

1 cup, canned, drained solids = 8.4 oz

See bean, French; bean, green

**bean, kotenashi** A small, white, dried (sometimes canned) bean

**bean, lablab** (Lablab vulgaris) A short, broad, thick bean with white on one edge. Pods and leaves are sometimes consumed. See bean, hyacinth

**bean, lima** (butter; civet; sieva; Phaseolus limensis; P. lunatus var. macrocarpus) A common bean that has a flat seed that is used for food; originally from Central and South America; called butter beans in the South; should be harvested as soon as the beans are fully formed. Often canned in tomato sauce with pork or meat flavoring. The beans may also be dried.

<table>
<thead>
<tr>
<th>Type</th>
<th>Distance between plants</th>
<th>Distance between rows</th>
<th>Seed per 100-ft row</th>
<th>Days to harvest</th>
<th>Yield per 100-ft row</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bush</td>
<td>10 in.</td>
<td>30 in.</td>
<td>12 oz</td>
<td>110</td>
<td>2 bu</td>
</tr>
<tr>
<td>Pole</td>
<td>3 ft</td>
<td>3 ft</td>
<td>12 oz</td>
<td>110</td>
<td>2 bu</td>
</tr>
</tbody>
</table>

Colors: white, yellow, brown, mottled, green (youngest)

Types:
- Fordhook (variety)—large, thick bean
- Large
- Small (butter bean, baby lima)—small, thin bean with less starch
- Speckled butter bean (large bean)—green, pink, red, lavender, and purple with brown and purple speckling

Trade names:
- Baby—small bean
- Butter—small bean
- Potato—large bean

Pods are picked after seeds are enlarged but before pods turn yellow and are shelled prior to cooking.

To cook: Boil shelled bean (never eaten in pod) 20–30 min or until tender

The highest grade for large and small lima is U.S. extra No. 1

Grades of canned:
- Baby (tiny, midget)—small, light green immature beans
- Green—larger
- Green and white—largest size, 60% mature green and 40% mature white

pH 5.9–6.5

Seed 50–75 lb/acre

<table>
<thead>
<tr>
<th>Composition</th>
<th>Raw immature seed</th>
<th>Dried mature seed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>67</td>
<td>10</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>0.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>22</td>
<td>64</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2</td>
<td>3.6</td>
</tr>
<tr>
<td>pH</td>
<td>6.5</td>
<td>—</td>
</tr>
</tbody>
</table>

Refuse (green): 50–55%
1 lb, shelled = 2 lb, unshelled
<table>
<thead>
<tr>
<th>Type</th>
<th>Size</th>
<th>Variety</th>
<th>Flavor</th>
<th>Use</th>
<th>Pod</th>
<th>Bean</th>
<th>Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fordhook</td>
<td>Bush (dwarf)</td>
<td>Burpee’s Bush</td>
<td>Good</td>
<td>5 × 1 in.,</td>
<td>4–5 per pod;</td>
<td>75 days</td>
<td></td>
</tr>
<tr>
<td>(Potato type,)</td>
<td></td>
<td>Burpee’s Improved</td>
<td></td>
<td>slightly</td>
<td>large, flat</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>curved</td>
<td>oval</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Fordhook-242</td>
<td>Good</td>
<td>Fresh,</td>
<td>4–5 per pod;</td>
<td>Mid season,</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>frozen,</td>
<td>large</td>
<td>75 days</td>
<td></td>
</tr>
<tr>
<td>Pole</td>
<td>Burpee’s Best</td>
<td>Rich, tender</td>
<td></td>
<td>4.5 × 1 in.</td>
<td>4–5 per pod</td>
<td>92 days</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Fresh,</td>
<td>4.5 × 1.2 in.</td>
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<tr>
<td></td>
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<td>Burpee’s Improved Giant</td>
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<td></td>
<td></td>
<td>Polled</td>
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<td></td>
<td></td>
<td>Fordhook Pole</td>
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<td></td>
<td></td>
<td>Improved</td>
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<td></td>
<td></td>
<td>Challenger</td>
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<tr>
<td></td>
<td></td>
<td>King of the Garden</td>
<td>Good</td>
<td>Fresh,</td>
<td>3–4 per pod</td>
<td>88 days</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>dried,</td>
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<td></td>
<td></td>
<td>frozen</td>
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<tr>
<td></td>
<td></td>
<td>Prizetaker</td>
<td>Excellent</td>
<td>Fresh,</td>
<td>3–5 per pod</td>
<td>90 days</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>frozen</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baby</td>
<td>Bush (dwarf)</td>
<td>Allgreen</td>
<td></td>
<td>2.5 × 0.75 in.</td>
<td>3–4 per pod, dark green</td>
<td>70 days</td>
<td></td>
</tr>
<tr>
<td>(Henderson),</td>
<td></td>
<td>Baby Fordhook</td>
<td>Good</td>
<td></td>
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</tr>
<tr>
<td>small-seeded</td>
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<td></td>
<td>Bridgeton</td>
<td>Good</td>
<td></td>
<td></td>
<td>Carmine-</td>
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<tr>
<td></td>
<td></td>
<td>Dixie Butterpea</td>
<td>Very</td>
<td></td>
<td></td>
<td>speckled</td>
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<td></td>
<td></td>
<td></td>
<td>good</td>
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<td></td>
<td></td>
<td>Early Thorogreen</td>
<td>Very</td>
<td>Fresh,</td>
<td>2.75 × 0.75 in.</td>
<td>67 days</td>
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<td></td>
<td></td>
<td></td>
<td>good</td>
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<td></td>
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<td></td>
<td></td>
<td>canned,</td>
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<td>dried</td>
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<tr>
<td></td>
<td></td>
<td>Henderson</td>
<td>Good</td>
<td>Shelled,</td>
<td>3–4 per pod;</td>
<td>67 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>canned,</td>
<td>green, white</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>dried</td>
<td>when dry</td>
<td>Speckled</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Jackson Wonder</td>
<td></td>
<td>3 in.,</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>dark green</td>
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<tr>
<td></td>
<td></td>
<td>Nemagreen</td>
<td></td>
<td>Dried,</td>
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<td></td>
<td></td>
<td>Thaxter</td>
<td></td>
<td>fresh</td>
<td></td>
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</tr>
<tr>
<td>Pole</td>
<td>Carolina or</td>
<td>Dried,</td>
<td>3.5 in.</td>
<td>3–4 per pod;</td>
<td>78 days</td>
<td></td>
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<tr>
<td></td>
<td>Sieva (butter</td>
<td>fresh</td>
<td></td>
<td>med. green,</td>
<td></td>
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<td></td>
<td>bean)</td>
<td></td>
<td></td>
<td>dried,</td>
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</tr>
<tr>
<td></td>
<td>Florida Speckled</td>
<td>Shelled,</td>
<td></td>
<td>Speckled</td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td>Butter</td>
<td>dried,</td>
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<td></td>
<td></td>
<td>canned,</td>
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<td></td>
<td></td>
<td>frozen</td>
<td></td>
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</tr>
</tbody>
</table>

**In pod:**
- 1 bu, fresh = 28–35 lb
- 6–10 qt, canned
- 12–16 pt, frozen

**1 lb, fresh = 2–3 servings**
- 0.33 lb shelled beans
- 0.7–1 cup shelled beans

**Shelled:**
- 1 bu, dried = 56 lb
- 1 lb, dried = 2⅔ cups
- 5⅔ cups, cooked
- 11 servings
- 1 qt, canned = 2–5 lb, fresh
- 3–4 qt, fresh
### Shelled (cont)

- 1 qt, frozen = 4-4.5 lb, fresh
- 1 lb, fresh = 2 cups
  = 6 servings
- 1 lb, canned = 3-4 servings
- 1 pt, frozen = 2-2.5 lb, fresh
- 9-10 oz, frozen = 3-4 servings
- 1 cup, fresh = 155 g (5.5 oz)
- 1 cup, dried = 180 g (6.3 oz)
- 1 cup, boiled, drained = 6 oz
- 1 cup, canned solids and liquids = 8.8 oz
- 1 cup, drained solids = 6.2 oz
- 1 cup, frozen, boiled and drained = 6 oz
- 1 cup, dried, baby = 6.4 oz
- 1 cup, dried, large = 6.2 oz
- 1 cup, dried, boiled and drained = 6-8 oz

1 serving = 0.5–0.75 lb, fresh, in pod
  = 0.5 cup, fresh, shelled

**Storage:** Leave in pods; refrigerate 32-40°F; 85–90% relative humidity; use within 1–15 days; frozen (0°F) storage life 12 months.

*See Part 2: Beans or Peas Planting Guide; Planting Density; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Yields*

### bean, apo (black-eye pea; cow bean)

A small, white pea with a black spot

### bean, bean, phasey

(*Macroptilium lathyroides*) a tropical annual legume often grown in mixed culture and used for forage

### bean, pink

A pink bean related to the kidney bean and used in Mexican dishes and chili; more delicately flavored than the red beans

### bean, pinto (frijole)

A flat, dappled (white or buff and brown spotted) pink bean (legume) that is the same species as the kidney and red beans but is larger and more tender and cooks more easily than the pea bean; used as a green shell or dried bean (85 days to dry-shell stage). Medium to large bean that is used in salads and chili and as a dried soup bean. Pods are 5 in. long with 5–6 beans per pod. There is a tawny variety that is drought resistance. The highest grade is U.S. No. 1 choice handpicked or handpicked.

1 cup, dry = 6.8 oz

### bean, pole

A type of bean that is tall and climbing
bean, snap or wax (yellow-podded; *Phaseolus vulgaris*)

---

**bean pork** Square-shaped, fatty bacon, back fat, or fresh jowls cooked with beans

**bean, prairie** (*Phaseolus retusus*) An edible bean grown in the western United States

**bean, red** A red variety of lima beans

**bean, Rangoon** A red variety of *lima bean*

**bean, rice** (*Phaseolus calcaratus; Vigna umbellata*) An edible, Asian, green pole bean related to the *adzuki bean*

**bean, runner** (scarlet runner; string bean; *Phaseolus multiflorus; P. coccineus*) A large, perennial bean that is cooked when green; most varieties produce scarlet flowers but some produce white or red and white flowers; 30-40 seed/oz; 7-10 days germination period

**beans** Seeds of leguminous plants

**bean, Santa Maria pinquito** A bush-type bean that has tiny, pink beans that are dry-shelled for baking. They are low in starch and do not break during cooking.

**bean, scarlet runner** (multiflora bean; stick bean; *Phaseolus coccineus; P. multiflorus*) Primarily an ornamental climber (15 ft) but pods (5 in. long with 3-5 seeds) are edible when young and green; dry seeds (brown, red, or black) are also shelled and used as food. See bean, runner

**bean, Scotch** See bean, broad

**bean, shell** See bean, broad

**bean, sieva** (*Phaseolus lunatus*) A small variety of lima bean that stays green when dried. See bean, *lima*

**bean, snake** See bean, sword

**bean, snap** (common bean; *Phaseolus vulgaris*) A term applied to the immature pods (3-6 in. long) of various kidney beans; immature beans (if pods are lumpy, beans should be shelled); string bean See bean, *French; bean, green*

1 cup, fresh = 3.6 oz
1 cup, fresh, French style = 2.8 oz
1 cup, cooked = 4.4-4.8 oz
1 cup, canned, solids and liquid = 8.2 oz
1 cup, canned, drained solids = 5 oz
1 cup, frozen, boiled, drained = 5.6 oz

See Part 2: Beans or Peas Planting Guide; Planting Density; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Yields

**bean, snap, green or wax** (stringless or string bean) Green and wax are different only in color. Bush bean—5 plants per foot in rows 18 in. apart. Pole bean—thin to 3 plants per pole with poles 3 ft apart

**bean, snap or wax** (yellow-podded; *Phaseolus vulgaris*) A term applied to immature beans; one of several beans known as common bean; dry seeds are sold as dried horticultural-type, kidney (white or red), marrow, navy (white), or pinto beans, depending on variety. They may be stringless or string bean. Green and wax are different in color.

### Table: Common Bean Varieties

<table>
<thead>
<tr>
<th>Type</th>
<th>Variety</th>
<th>Seed color</th>
<th>Pod</th>
<th>Use</th>
<th>Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bush, green</td>
<td>Astro</td>
<td>White</td>
<td>6 in.; round, long, stringless</td>
<td>Fresh, frozen</td>
<td>57 days</td>
</tr>
<tr>
<td></td>
<td>Avalanche</td>
<td>White</td>
<td>6 in.; flat, green, stringless</td>
<td>Fresh, frozen, canned</td>
<td>54-60 days</td>
</tr>
<tr>
<td></td>
<td>Blue Lake</td>
<td></td>
<td>6.5 in.; long, narrow</td>
<td>Fresh, canned all-purpose</td>
<td>50 days</td>
</tr>
<tr>
<td></td>
<td>Bountiful</td>
<td></td>
<td>6.5 in.; thick, oval, slightly curved</td>
<td>Frenched</td>
<td>52 days</td>
</tr>
<tr>
<td></td>
<td>Commodore (Bush Kentucky Wonder)</td>
<td>Wine-red</td>
<td>6.5 in.; long, narrow</td>
<td>Frenched</td>
<td>52 days</td>
</tr>
<tr>
<td></td>
<td>Contender</td>
<td>Buff</td>
<td>6.5 in.; flat, wide, green, stringless</td>
<td>Garden, frenched</td>
<td>42-55 days</td>
</tr>
<tr>
<td></td>
<td>Early Harvest</td>
<td>White</td>
<td>7 in.; smooth, round, straight</td>
<td>Fresh, shipping</td>
<td>50 days</td>
</tr>
<tr>
<td></td>
<td>Executive</td>
<td></td>
<td>5.5 in.; smooth, round, straight</td>
<td>Canned, frozen</td>
<td>45 days</td>
</tr>
<tr>
<td></td>
<td>Extender</td>
<td></td>
<td>6.5 in.; smooth, round, dark green, no fiber, stringless</td>
<td>Canned, frozen</td>
<td>45 days</td>
</tr>
<tr>
<td></td>
<td>Greencrop</td>
<td>White</td>
<td>7 in.; flat, wide, green, stringless</td>
<td>Garden, frenched</td>
<td>42-55 days</td>
</tr>
<tr>
<td></td>
<td>Harvester</td>
<td></td>
<td>5.5 in.; smooth, round, straight</td>
<td>Fresh, shipping</td>
<td>50 days</td>
</tr>
<tr>
<td></td>
<td>Improved Tendergreen</td>
<td>White</td>
<td>6.5 in.; smooth, round, dark green, no fiber, stringless</td>
<td>Canned, frozen</td>
<td>45 days</td>
</tr>
<tr>
<td></td>
<td>Lika Lake</td>
<td>White</td>
<td>7 in.; flat, wide, green, stringless</td>
<td>Garden, frenched</td>
<td>42-55 days</td>
</tr>
<tr>
<td></td>
<td>Old Dutch Half Runner</td>
<td>White</td>
<td>5.5 in.; smooth, round, straight</td>
<td>Fresh, shipping</td>
<td>50 days</td>
</tr>
<tr>
<td></td>
<td>Orbit</td>
<td>White</td>
<td>6.5 in.; smooth, round, dark green, no fiber, stringless</td>
<td>Canned, frozen</td>
<td>45 days</td>
</tr>
</tbody>
</table>

(Continued)
<table>
<thead>
<tr>
<th>Type</th>
<th>Variety</th>
<th>Seed color</th>
<th>Pod</th>
<th>Use</th>
<th>Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provider</td>
<td></td>
<td></td>
<td>5 in.; med. green, round, straight</td>
<td>Frozen, canned</td>
<td>50 days</td>
</tr>
<tr>
<td>Roma</td>
<td>White</td>
<td></td>
<td>4.5 in.; flat, green</td>
<td>Canned, frozen</td>
<td>59 days</td>
</tr>
<tr>
<td>Romano (Italian)</td>
<td>Buff seeds with white eye</td>
<td></td>
<td>5.5 in.; flat, med. green, stringless</td>
<td>Garden, canned, frozen</td>
<td>50–65 days</td>
</tr>
<tr>
<td>Roundup</td>
<td></td>
<td></td>
<td>Purple</td>
<td>Frozen</td>
<td>51 days</td>
</tr>
<tr>
<td>Royalty Purple</td>
<td>Light buff</td>
<td></td>
<td>6 in.; oval, straight</td>
<td>Garden</td>
<td>42–52 days</td>
</tr>
<tr>
<td>Spartan Arrow</td>
<td></td>
<td></td>
<td>4 in.; stringless</td>
<td>Frozen, canned</td>
<td>52 days</td>
</tr>
<tr>
<td>State White</td>
<td></td>
<td></td>
<td>4 in.; stringless</td>
<td>Fall crop</td>
<td>50–60 days</td>
</tr>
<tr>
<td>Half Runner</td>
<td></td>
<td></td>
<td>6 in.; stringless</td>
<td>Fresh, canned, frozen</td>
<td>46–55 days</td>
</tr>
<tr>
<td>Stringless Green Pod</td>
<td></td>
<td></td>
<td>6 in.; brown</td>
<td>Fresh, frozen</td>
<td>55 days</td>
</tr>
<tr>
<td>Tendercrop</td>
<td></td>
<td></td>
<td>5 in.; black</td>
<td>Home, market, canned</td>
<td>50–60 days</td>
</tr>
<tr>
<td>Tenderette</td>
<td>White</td>
<td></td>
<td>6 in.; black</td>
<td>Fresh, frozen</td>
<td>55 days</td>
</tr>
<tr>
<td>Tendergreen</td>
<td>Brown buff with purple mottling</td>
<td></td>
<td>5 in.; green, stringless</td>
<td>Fresh, canned, frozen</td>
<td>50 days</td>
</tr>
<tr>
<td>Tenderpod</td>
<td></td>
<td></td>
<td>5 in.; green, stringless</td>
<td>Fresh, canned, frozen</td>
<td>50 days</td>
</tr>
<tr>
<td>Top Crop</td>
<td>Mottled brown</td>
<td></td>
<td>6 in.; med. green, straight, round stringless</td>
<td>Fresh, canned, frozen, market</td>
<td>43–51 days</td>
</tr>
<tr>
<td>Brittle Wax</td>
<td></td>
<td></td>
<td>6.6 in.; yellow, round</td>
<td>Fresh, frozen, canned</td>
<td>52 days</td>
</tr>
<tr>
<td>Cherokee</td>
<td>Black</td>
<td></td>
<td>6 in.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gold Cup</td>
<td>White</td>
<td></td>
<td>6 in.; round, straight</td>
<td>Fresh, canned</td>
<td>45 days</td>
</tr>
<tr>
<td>Goldcrop</td>
<td></td>
<td></td>
<td>6 in.; round, straight deep golden</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Golden Wax Improved</td>
<td>White</td>
<td></td>
<td>6 in.; round, stringless, shiny, yellow</td>
<td>Fresh, frozen, canned</td>
<td>50 days</td>
</tr>
<tr>
<td>(pod golden yellow)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midas</td>
<td></td>
<td></td>
<td>5 in.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moongold</td>
<td></td>
<td></td>
<td>5.5 in.; round, sl. curved, stringless, yellow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pencil Pod</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resistant Kinghorn</td>
<td>White</td>
<td></td>
<td>6 in.; smooth, round, stringless, yellow</td>
<td>Canned, frozen</td>
<td>45 days</td>
</tr>
<tr>
<td>Surecrop Stringless Wax (Yellow Bountiful)</td>
<td></td>
<td></td>
<td>6 in.; flat, yellow</td>
<td></td>
<td>52 days</td>
</tr>
<tr>
<td>Blue Lake</td>
<td>White</td>
<td></td>
<td>6 in.; dark green, round, stringless, straight</td>
<td>Fresh, canning, freezing, dry</td>
<td>60 days</td>
</tr>
<tr>
<td>Burpee Golden</td>
<td></td>
<td></td>
<td>6 in.; wide, flat, yellow</td>
<td></td>
<td>60 days</td>
</tr>
<tr>
<td>Dale</td>
<td>White or brown</td>
<td></td>
<td>9 in.; round, silvery-green, stringless</td>
<td>Fresh, canning, freezing</td>
<td>58 days</td>
</tr>
<tr>
<td>Kentucky Wonder, Green (Old Homestead)</td>
<td></td>
<td></td>
<td>9 in.; stringless, yellow</td>
<td></td>
<td>61 days</td>
</tr>
<tr>
<td>Kentucky Wonder, Wax</td>
<td>White</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Continued)
<table>
<thead>
<tr>
<th>Type</th>
<th>Variety</th>
<th>Seed color</th>
<th>Pod</th>
<th>Use</th>
<th>Season</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Romano (italian pole)</td>
<td></td>
<td>6 in.; wide, stringless</td>
<td>Market, freezing</td>
<td>65 days</td>
</tr>
<tr>
<td></td>
<td>Scarlet Runner</td>
<td></td>
<td>6 in.; green</td>
<td>Cooked</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Selma-Zebra (pod green, striped blue)</td>
<td></td>
<td>8 in.; blue, turns green on cooking</td>
<td>Fresh, dried, frozen, Freezing, fresh</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Violet Potted Stringless</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grown for</td>
<td>Called</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immature pods</td>
<td>French beans</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Garden beans</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Snap beans</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>String beans</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immature seed</td>
<td>Green shell beans</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mature seed</td>
<td>Dry beans</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

60–100 seed/oz; seed 50 lb/acre; spacing, bush, 5 plants/foot in rows 18 in. apart; Pole, thin to 3 plants per pole with poles 3 feet apart.

Varieties of stringless:
- Flat
- Round (refugee)

Refuse: 10% ends and strings
- 1 ton, fresh = 100 cases (24) No. 2 1/2 cans
- 1 bu = 30 lb
- $=15–20$ qt, canned
- $1\frac{1}{2}–2\frac{1}{2}$ lb fresh = 1 qt, canned
- $1\frac{1}{2}$–2 lb, fresh = 1 qt, frozen
- 1 lb, fresh = 4–6 cooked servings
- 16 oz, canned = 3–4 servings
- 1 serving = $\frac{1}{4}–\frac{1}{2}$ lb

Used whole, split, sliced, or chopped
Cook: boil 10–15 min or until tender

Storage: Do not wash; sprinkle with a few drops of water, place in a plastic bag, and refrigerate at 45°F; 85–90% relative humidity; 8–10 days storage life; frozen (0°F) storage life 8 months

bean, sword (horse bean; jack bean; saber bean; snake bean; Canavalia ensiformis) A long (20 in.) bean that when young is eaten like green beans and when mature is roasted as a coffee substitute

bean, tepary (frijole; pinto; Phaseolus acutifolius var. latifolius) An early-maturing, small-shelled, bush-type, dry-land, kidney haricot bean used primarily for shelled dry seed (white, brown, yellow, or spotted) See bean, kidney

bean, thrip (Caliothrips fasciatus) A bean pest that can also affect pears

bean, tonka (coumara nut; tonqua) A South American tree that produces aromatic seed from which an essential oil known as coumarin (coumarine, coumarouma) is obtained; sometimes used as an imitation vanilla

bean, urd (black bean; black gram; Chinese bean; India bean; Phaseolus mungo) An Asian bean that is used to grow bean sprouts or is crushed to prepare papad See black gram

bean, velvet (Bengal bean; Mucuna pruriens; Stizolobium deeringianum) An ornamental bean that grows up to 20 ft in length; similar to the white haricot bean See velvet bean

bean, wax A green type of bean with yellow or golden immature pods and used like green beans

Canned or frozen styles:
- Whole (often packed vertically in a can)—if about the same length, they are called asparagus-style
- French (julienne or shoestring)—sliced lengthwise
- Cut (short cuts)—sliced crosswise
- Kitchen cuts (home cuts)—cut diagonally

Cut (short cuts)—sliced crosswise
Kitchen cuts (home cuts)—cut diagonally
- 1 bu, fresh = 30 lb
- $=30–45$ pt, frozen
- 1 pt, frozen = 0.7–1 lb, fresh
- 1 cup, boiled, drained = 5.8 oz
- 1 cup, canned, solids and liquids = 8.4 oz
- 1 cup, canned and drained = 4.4 oz

bean, weevil See pea weevil

bean, white The mature beans are dried and used as food; the largest to the smallest are great northern, large white, medium white, pea or navy, and small white

Canned styles:
- Boston, Boston style, New England, New England style—molasses
- Plain sauce—salt, spices, sugar and/or molasses, carmel, and sometimes onion and/or vinegar
Plain sauce and pork
Tomato—tomato pulp, water, sugar, spices
Tomato and pork
1 bu, dry = 60 lb

**bean, Windsor** Available in several varieties: Beck’s Dwarf; Dwarf White Gem; Green Windsor; Sutton

See **bean, broad**

**bean, wing** Has a large, crunchy pod; the whole plant is edible.

**bean with bacon, canned soup**

<table>
<thead>
<tr>
<th>Composition</th>
<th>Condensed, prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>70.2</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>5.9</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>4.4</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>17.0</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>1.3</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.6</td>
</tr>
</tbody>
</table>

**bean with bacon, dry soup**

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dehydrated, prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>4.0</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>19.4</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>7.6</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>57.7</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>5.4</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>11.3</td>
</tr>
</tbody>
</table>

**bean with frankfurters, canned soup**

<table>
<thead>
<tr>
<th>Composition</th>
<th>Condensed, prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>67.7</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>7.6</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>5.3</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>16.7</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>1.3</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.6</td>
</tr>
</tbody>
</table>

**bean with ham, chunky, canned soup** Composition (ready to serve): moisture 78.6%; protein 5.2%; fat 3.5%; carbohydrate 11.2%; ash 1.5%

**bean, wood** (*Phaseolus nanus*) A kidney bean

**bean, yard-long, green pod (kaohsiung)** A bean that produces a long (1.5 foot), slender, round, green pod on a climbing vine; cooked like snap beans

**bean, yellow-eye** A large bean with a yellow eye

**beard** Hair on the face of men or projections on animals in the same general location; projections on grain

See Part 2: Rice Kernel

**bear grass** (*elk grass; fire lily; squaw grass*) Edible bulbous rootstock (roasted); young stems are prepared like asparagus. Southern and western North American pasture grass of several species that have similar grass like foliage

See Part 2: Poisonous Plants

**bearing surface** The portion of a container (e.g., food can) on which it rests

**bearish** A downward price trend in the market

**bearnaise** A thick meat or fish hot sauce made of egg yolk, butter, vinegar, tarragon, shallots, wine, herbs, and seasonings

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dehydrated, prepared with milk and butter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>5.7</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>14.1</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>9.0</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>59.7</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0.2</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>11.5</td>
</tr>
</tbody>
</table>

**beat** 1) To force air into food, usually with a circular motion; mixing food by briskly lifting and dropping; to stir vigorously. 2) To tenderize meat by striking it with a heavy object

**beaten biscuit** Made from a wheat dough beaten with a wooden mallet

**beater** An instrument used to beat, whip (incorporate air), or blend liquids during cooking

**beaufort** A large, wheel-shaped, hard, Swiss or French cheese made from whole cow’s milk

**Beaujolais** Any of several light, fresh, dry, fruity, and brilliant purple-colored wines produced in the Beaujolais region of France; a region in east-central France famous for its wine

Communes:
- Brouilly
- Chenas
- Chiroubles
- Fleurie
- Julienes
- Morgon
- Moulin à Vent

**beaumont** A large, semisoft, light to beige, cow’s-milk cheese with a yellow rind. Mild when young but strong when ripened; usually cured for 1–5 months

**beaune** A dry white and also a red wine

**bebida** A Cuban rum

**bebontot** Pork or sometimes beef cubes (15–20 mm) flavored with turmeric, alpina galangal, pepper, garlic, chilies, and ginger and then dried

**béchamel** A white, broth-cream sauce

**bèche de mer** (*cotton spinner; sea cucumber; sea slug; trepang*) An Oriental seafood that is usually made into a soup

**becher** An herb liqueur

**becquerel** In radioactivity, 1 disintegration per second

**beda** A white, brined cheese made from skimmed cow’s or buffalo’s milk

**bee** An insect that makes honey; a colony consists of one fully grown queen (mother, long slender body, lays 4000 eggs per day), a few hundred drones (male, larger than workers, no sting), and 40,000–50,000 workers (female, smallest).
Breeds:
Carniolans (common black, common brown)
Caucasians
Cyprian
Italian
Syrians

bee balm See bergamot

bee borage An herb used in soup, fried, or as a sandwich filling

beechnut The edible, triangular-shaped nut from the beech (Fagus) tree
Composition: moisture: 7%; protein 19%; fat 50%; carbohydrate 20%; ash 4%
Raw—astringent
Roasted—flavor between hazel and chestnut
It can be made into a form of coffee. Beechnut oil does not turn rancid and can be used for frying but gives off an odor if heated to too high a temperature.

beechwheat See buckwheat

beef A bovine animal or the flesh from a bovine animal at least 10 months old
1 barrel = 200 lb
1 qt, canned = 3–3.5 lb, fresh untrimmed round with bone
= 5–5.5 lb, fresh untrimmed rump with bone
Cooking temperature: cooked to internal temperature 140°F (rare), 160°F (medium), or 170°F (well done)

<table>
<thead>
<tr>
<th>mg Na/oz (28 g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooked lean 18</td>
</tr>
<tr>
<td>Corned 280</td>
</tr>
<tr>
<td>Dried 1219</td>
</tr>
</tbody>
</table>

Cholesterol content is 77 mg./3 oz

See Part 2: Animal Foods, Composition; Beef and Dual-Purpose Cattle; Beef, Boneless Cuts; Beef Chart; Beef Chuck; Beef Cuts; Beef Cuts and Uses; Beef, Degrees of Doneness; Beef, Percentages of Daily Recommended Allowances; Beef Retail Yield; Beef Rib Carving; Beef Rib Nomenclature; Beef Roasting; Beef Round, Bone Structure; Beef Round Cuts; Beef Rounds; Beef Yields; Bone Age; Braising Time; Broiling Time and Temperature; Calories, Daily Recommendations; Cattle; Cholesterol Control; Cooking in Liquid, Time; Food, Composition; Frozen Food Storage; Frozen Meat Storage Time; Gland Weights; Glutamate; Glutamate Addition; Grades, Meat; Iron, Daily Recommendations; Lamb Chart; Liver, Meat and Meat Products Composition; Meat Composition; Meat, Frozen Storage; Meat Identification; Meat Label; Meat, Nutritive Value; Meat, Servings per Pound; Meat Storage; Minerals, Food; Niacin, Daily Recommendations; Nicotinic Acid, Food; Portion Size; Potassium-Rich Foods; Riboflavin, Daily Recommendations; Riboflavin, Food; Roasting Meat; Roasting, Time and Temperature; Sauce, Beef Steak; Simmering Meat; Soups, Composition; Specific Heat, Meat; Tallow, Beef, Triglyceride Mole Percent Composition; Thiamin, Daily Recommendations; Thiamin, Food; Vitamin A, Food; Yield Grade, Meat

beefalo A type of cattle (buffalo-bison hybrids)

beef bologna Bologna made exclusively of beef, has a garlic flavor See bologna

beef brisket A cut of beef located between the fore-shanks; usually cooked by simmering or made into corned beef; maximum gain in weight on curing, 20% over fresh uncured weight

beef broth, canned soup Composition (ready-to-serve): moisture 97.5%; protein 1.4%; fat 0.2%; carbohydrate 0.04%; fiber trace amount; ash 1.05%

beef broth, cubed, soup

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dehydrated</th>
<th>Prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>3.3</td>
<td>98.0</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>17.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>4.0</td>
<td>0.08</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>16.1</td>
<td>0.3</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>59.3</td>
<td>1.2</td>
</tr>
</tbody>
</table>

beef broth, soup

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dehydrated</th>
<th>Prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>3.3</td>
<td>96.8</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>16.0</td>
<td>0.5</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>8.9</td>
<td>0.3</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>23.6</td>
<td>0.8</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0.2</td>
<td>0.01</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>48.2</td>
<td>1.6</td>
</tr>
</tbody>
</table>

beefburger Hamburger

beef carcass See Part 2: Beef Carcass, Cutting Yield; Beef Carcasses, Yield Grade; Beef Chart; Beef Yields

beef, chipped See beef, dried

beef, chunky, canned soup Composition (ready-to-serve): moisture 83.3%; protein 4.9%; fat 2.1%; carbohydrate 8.1%; fiber 0.3%; ash 1.5%

beef, cooking See Part 2: Beef, Cooking

beef, cutting See Part 2: Beef Chart; Beef, Chicago-Style Cutting; Beef, New York-Style Cutting; Beef Yields

beef, dried (chipped) A long-cured product made from beef round that is cured, smoked, dehydrated, and thinly sliced; available canned, in jars, and vacuum-packaged

beef extract A water-soluble, yellow-brown paste (60% solids; max. 25% moisture) obtained by boiling lean beef under vacuum, straining the broth, evaporating it to 50% water, and adding salt. It is used for flavoring. Liquid beef extract is made by diluting the paste. (Fluid extract of beef contains max. 50% moisture.) It is used in food items and at 0.3% in bacterial media because it supplies most of the nutriments needed for bacterial growth.

beef fat See Part 2: Fats and Oils, Composition; Fats and Oils, Fatty Acid Composition; Fatty Acids, Fats and Oils; Tallow, Beef, Triglyceride Mole Percent Composition; Unsaturated Fatty Acids

beef German sausage A moist, cooked, unsmoked, Australian sausage made from finely chopped, mildly seasoned (with or without garlic) veal stuffed into artificial casings
**beef grades** Quality grades are as follows:
- Prime
- Choice
- Select
- Standard
- Commercial
- Utility
- Cutter
- Canner

**Yield grades:**
- Yield Grade 1
- Yield Grade 2
- Yield Grade 3
- Yield Grade 4
- Yield Grade 5

**beef gravy, canned** Composition: moisture 87.5%; protein 3.7%; lipid 2.4%; carbohydrate 4.8%; ash 1.6%

**beef hams** See Part 2: Microorganism, Culture Media, Dairy and Food Products

**beef loaf, jellied** Cooked beef, is shredded, molded with gelatin, and cooked in a loaf or roll

**Beefmaster** A cross of Brahman on both the Hereford and Shorthorn in a three-way cross, estimated at 25% Hereford, 25% Shorthorn, and 50% Brahman See Part 2: Beef and Dual-Purpose Cattle

**beef mushroom, canned soup**

<table>
<thead>
<tr>
<th>Composition</th>
<th>Condensed</th>
<th>Condensed, prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein (%)</td>
<td>4.6</td>
<td>2.4</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>2.4</td>
<td>1.2</td>
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**beef noodle, canned soup**

<table>
<thead>
<tr>
<th>Composition</th>
<th>Condensed</th>
<th>Condensed, prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>84.4</td>
<td>92.0</td>
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<tr>
<td>Protein (%)</td>
<td>3.8</td>
<td>2.0</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>2.5</td>
<td>1.3</td>
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<tr>
<td>Carbohydrate (%)</td>
<td>7.2</td>
<td>3.7</td>
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<tr>
<td>Fiber (%)</td>
<td>0.1</td>
<td>Trace amounts</td>
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<tr>
<td>Ash (%)</td>
<td>2.1</td>
<td>1.1</td>
</tr>
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</table>

**beef noodle, dried soup**

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dehydrated</th>
<th>Dehydrated, prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>5.0</td>
<td>95.3</td>
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<tr>
<td>Protein (%)</td>
<td>17.9</td>
<td>0.9</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>6.4</td>
<td>0.3</td>
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<tr>
<td>Carbohydrate (%)</td>
<td>48.6</td>
<td>2.4</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0.5</td>
<td>0.02</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>22.1</td>
<td>1.1</td>
</tr>
</tbody>
</table>

**beef olives** Thin rump steak rolled around suet, bread crumbs, and flavoring and cooked in brown sauce or stock

**beef patties** An uncooked, unsmoked, American sausage made from meat that is medium to coarsely chopped, restructured, ground, pressed, formed, and molded or sliced

**Beef Promotion and Research Act** A checkoff and promotion program for beef

**beef roast** A large cut of beef prepared by dry heat (roasting) or moist heat (pot-roasting)

**beef salami** Salami made exclusively of beef

**beef sausage** A moist, uncooked, unsmoked, American or Irish sausage made from fine-, medium-, or coarse-chopped, mild- or medium-seasoned beef stuffed into an artificial casing. Available in small-diameter links, rolls for slicing, machine-formed, or extruded

**beef sausage, fresh** A moist, uncooked, unsmoked, American sausage made from medium- or coarse-chopped, mild-, medium- or heavily seasoned beef stuffed into a pork, sheep, or artificial casing or not stuffed into a casing. Product is available in bulk, small-diameter links, rolls for slicing, machine-formed or extruded patties, and chub form. The sausage is made from fresh or frozen beef not including beef by-products; maximum fat 30%; maximum added water 3%

**beef side** One-half of a split carcass or a split fore- and hind-quarter

**beef, sliced** Boneless beef that is chopped, cooked, smoked, and sliced. It is not dehydrated and is more perishable than dried beef

**beefsteak** A thin cut of beef, with or without bone, prepared by broiling or frying

**beefsteak fungus** (**Fistulina hepatica**) A red fungus that grows on trees and is used like mushrooms

**beef stroganoff** Beef cooked with onions, mushrooms, sour cream, tomato puree, Worcestershire sauce, and sometimes wine and often served over noodles

**beef tallow** See tallow

**beef tea (broth)** An extract made by simmering beef (with or without vegetables) in water; beef broth, beef essence; used as a foundation for soups, sauces, etc.

**beef tongue** Weighs 3½–6 lb and may be obtained fresh or cured and smoked See cured beef tongues

**beef tree** An instrument attached to the rear legs of a beef carcass during slaughter and is attached to a hoist for raising the carcass

**beef with barbecue sauce** A sauce containing at least 50% meat (wt. of cooked and trimmed meat) or 72% uncooked meat

**beef yield** See Part 2: Beef Yields

**beer** 1) A gassy, alcoholic beverage produced from extracted malted barley or other cereal and hops; an infusion (wort) of malted (germinated) barley that is boiled with hops and then fermented by yeast (**Saccharomyces cerevisiae**) Types Top-fermented:
- Bitter—lightly cured malt, pale in color, highly hopped
- Bottled or canned—higher carbonation
- Brown
- Pale
- Stout

Keg—contains color and flavor over time

Mild—highly cured malt, lower amount of hops, sweet
**beet (beetroot)**

Bottom-fermented (yeast at end of fermentation):
- **Lager**

Steps in manufacturing:
1. Barley is steeped in cold water.
2. Barley spread on the floor and periodically stirred.
3. Barley is placed in a large oven and temperature increased.
4. Sprouts are removed and barley becomes malt.
5. Malt is ground and becomes grist.
6. Grist is mixed with hot water and becomes mash.
7. The resulting liquid is the wort and is placed in a large copper boiler.
8. Hops are added and the liquor boiled.
9. Hops are strained and liquid cooled.
10. Yeast is added and fermentation takes place.
11. When sugar content is lowered to the appropriate point, the yeast is removed.
12. The liquid is put into casks to age.

<table>
<thead>
<tr>
<th>Type</th>
<th>Serving temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dark</td>
<td>50–53°F</td>
</tr>
<tr>
<td>Pale</td>
<td>41–44°F</td>
</tr>
</tbody>
</table>

1 keg = 180 12-oz servings
1 keg (8 gal) = 85 12-oz servings
1 cup = 8 oz
1 fl oz = 30 g
= 12.5 calories

**pH 4.0–5.0**

Storage: 32°–40°F

2) A soft, buttery, bland German-style cheese

**beer, bock**
A sweet, heavy, dark beer brewed in March; has a high alcohol content

**beer cheese (bierkäse; weisslacker)**
A soft to semisoft, semi-strong- to strongly flavored white cheese made from mixed skimmed and whole cow's milk and surface-bacteria ripened

**beer, draught (schenkbier)**
Made with a shorter fermentation than lager beer

**beerenauslese**
A sweet, noble, exceptional-quality wine made from individually selected grapes from the best bunches

**beer, lager**
A light, summer beverage produced by cool, slow fermentation

**beer salami**
A moist, cooked, smoked, Greek-style sausage made from finely (Greek) or coarsely (Australian) chopped, medium-seasoned beef and pork stuffed into pork, sheep, or artificial casings. Australian beef sausage stuffed into an artificial casing. See **beerwurst**

**beerwurst (beer salami; bierwurst)**
A cooked, smoked, garlic-flavored, German sausage made from beef and pork, similar to beef salami; contains no beer. See **salami, cooked beef**

**beesting (beasting; beistyn; biesting)**
The first milk produced after a calf is born. It can be mixed with 3–4 volumes of milk and used in cooking.

**beeswax**
A wax from the honeycomb of the bee; used to glaze candy

See Part 2: Saturated Fatty Acids; Wax

**beeswax, white (white wax)**
Bleached, purified wax from honeycomb of the bee (Apis mellifera); melting range 62–65°F; sp. gr. 0.95; used as a food glaze, polish, flavoring agent, and general-purpose additive. Storage: tight container

**beeswing**
A light, mucilaginous, floating, thin crust or sediment that often forms in old port wine

**beet (beetroot)**
A cool-weather annual or biennial member of the goosefoot family, closely related to sugar beets; the red (golden or yellow and white varieties are also available) beetroot may be used as a salad root, boiled, steamed, baked, fried, packed in vinegar, stuffed, canned, or made into soup or wine; the root may be spherical to oblong or ovoid.

Types:
- *Beta cicla* (chard)—leaves and stalk used as vegetables
- *B. rubra*—red root, used as a vegetable
- *B. vulgaris*—white root, used for sugar and cattle feed

Garden beet—small and red Stock beets, or mangels—too coarse for human food; used for chicken or cattle feed Sugar beet—large and coarse, 15–22% sugar, sometimes used for livestock feed

800–1400 seed/oz; 10–14 days germination time; 1 oz of seed for 50–100 foot row; 5–6 seed/ft or row; 10–12 lb of seed/acre (14–16 lb/acre for processing); thin to 3 in. apart in rows 18 in. apart (greens from thinning may be cooked like spinach or used in salads); harvest (50–60 days) when diam. is 1.25–2 in. (1 bu/25-ft row). Toughness increases with maturity. See **pickle**

**Canned styles (regular pack or vinegar and sugar):**
- Cut—from beets with 2- to 2.75-in. diam.
- Diced—\( \frac{3}{8} \) in. cubes
- Quarters
- Shoestring
- Sliced—\( \frac{3}{8} \) in. thick
- Strips

Harvard beets—in slightly thickened, sweet vinegar sauce
Puréeed
Whole—up to 1.75 in. diam.

**Frozen styles:**
- Cut
- Diced
- Sliced
- Whole

**Monogerm varieties:** Explorer; Monogerm; Monoking; Pacemaker

**Refuse:** (fresh) 20–25% tops and skin

100 lb fresh beets = 14–17 lb dry beets
1 bu, topped, fresh = 52 lb (50–60 lb)
= 16–24 qt, canned
= 35–42 pt, frozen
1 crate (8 x 12 x 22 in.), bunched = 40 lb
3 qt, sliced (7 lb, without tops) = 6 pt, pickled
2–3 \( \frac{1}{2} \) lb, fresh, topped = 1 qt, canned
2 \( \frac{1}{2} \)–3 lb, fresh, topped = 1 qt, frozen

---

**Composition**

<table>
<thead>
<tr>
<th></th>
<th>All beef</th>
<th>All pork</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture</td>
<td>54</td>
<td>61.5</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>12.3</td>
<td>14.2</td>
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<tr>
<td>Fat (%)</td>
<td>29.5</td>
<td>18.8</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>1.7</td>
<td>2.0</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.8</td>
<td>3.4</td>
</tr>
<tr>
<td>Variety (garden beet, small)</td>
<td>Root and greens</td>
<td>Size</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>----------------</td>
<td>------</td>
</tr>
<tr>
<td>Albino White</td>
<td>Globe; tops may be used as greens</td>
<td>1 in.</td>
</tr>
<tr>
<td>Badger Baby</td>
<td>Globe</td>
<td></td>
</tr>
<tr>
<td>Crosby’s Egyptian (Redhart)</td>
<td>Flat or globe</td>
<td></td>
</tr>
<tr>
<td>Crosby’s Green Top Detroit Dark Red</td>
<td>Grown for greens Ball or globe; tops can be used as greens</td>
<td>Med.; 2½–3 in.</td>
</tr>
<tr>
<td>Early Wonder</td>
<td>Semiglobe</td>
<td>3 in.</td>
</tr>
<tr>
<td>Flat Egyptian Golden</td>
<td>Flat or globe; tops may be used as greens</td>
<td></td>
</tr>
<tr>
<td>Green Top Bunching</td>
<td>Flat or globe; tops may be used as greens</td>
<td></td>
</tr>
<tr>
<td>Little Egypt</td>
<td>Long</td>
<td></td>
</tr>
<tr>
<td>Long Dark Blood</td>
<td>Long</td>
<td></td>
</tr>
<tr>
<td>Long Smooth Blood</td>
<td>Long</td>
<td></td>
</tr>
<tr>
<td>Lutz Green Leaf (winter-keeper, long season)</td>
<td>Shaggy, top-shaped; midrib used as greens</td>
<td>Very large</td>
</tr>
<tr>
<td>Perfected Detroit</td>
<td>Globe</td>
<td>Med.</td>
</tr>
<tr>
<td>Red Ball</td>
<td>Globe or ball</td>
<td>3 in.</td>
</tr>
<tr>
<td>Red Pak</td>
<td>Flat or globe</td>
<td></td>
</tr>
<tr>
<td>Ruby Queen</td>
<td>Flat or globe</td>
<td></td>
</tr>
<tr>
<td>Snowhite</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

1 lb, fresh, without tops, diced = 2 cups = 3–4 servings
1 lb, fresh, with tops = 2 servings
16 oz, canned = 3–4 servings
1 large beet = 1 1/3 cups, peeled and coarsely shredded
1 cup, topped, fresh = 145 g (5.1 oz)
1 cup, canned, solids and liquid = 5.8–8.6 oz
1 cup, sliced, boiled, drained = 7.2 oz
1 cup, canned, drained solids = 5.2–6.2 oz
1 cup, dined, boiled, drained = 6 oz
1 serving = 1.5 med. beets = 0.3–0.5 lb

Composition: moisture 87%; protein 1.5%; fat 0.1%; carbohydrate 10%; sugar 10% (increases with maturity); fiber 2.1%; ash 1%; 81 mg Na/cup; pH 4.9–5.5

Storage: Dig before ground freezes; cut tops off ½ in. from beet; cover with dry sand and store in a cool place, pit, cold cellar, or root cellar or remove tops and store covered in a refrigerator (32°F); 90–95% relative humidity; use within 1 week to 3 months

See Part 2: Canned Spoilage Related to pH; Canned Yield; Food Composition; Glutamate; Minerals, Food; Nitrate, Vegetables; Pentosans; Plant Foods, Composition; Planting Density; Portion Size; Root-Crop Characteristics; Seed, Germination; Standards, Processed Fruit and Vegetable Products; Storage; Sugar, Vegetables; Vegetable Boiling; Vegetable Composition; Vegetable Cooking, Frozen; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Plants; Vegetables, Canning Dates; Vegetables, Classification; Vegetables, Cooking Frozen; Vegetable Servings; Vegetable Storage; Vegetable Yield; Vegetable Yield, Canned and Frozen; Vegetable Yield, Frozen, Canned, and Fresh; Vegetable Yields; Wastes, Agricultural, and Industrial

**beet greens** Beet tops used as greens; good source of Vitamin A

1 bu, fresh = 15 lb = 10–15 pt, frozen
1 pt, frozen = 1–1.5 lb, fresh
1 cup, boiled and drained = 5.2 oz
1 serving = 0.3 lb

Composition: moisture 90%; protein 2%; carbohydrate 5.5%; fat 0.3%

Storage: Wash and drain; store in refrigerator crisper or plastic bag; use within 1–2 days.
beet juice (beet powder) A vegetable dye used to color food
beetle See Part 2: Ham Beetle; Larder Beetle
beet leafhopper An active, sun-loving, dry-climate, wedge-shaped, 1/4-in. long insect that varies in color from light yellowish green in summer to grayish brown in the fall. It seldom becomes numerous enough to cause damage but carries a virus that it transmits to plants, causing curly-top disease
beet pickle Whole or sliced beets placed in a vinegar and sugar solution
1 cup, diced = 2 med. beets
beet powder A natural food additive used for food color
beet pulp, dried
1 bu = 19 lb
1 qt = 0.6 lb
beetroot See beet
beet, silver (acelga beet spinach; perpetual spinach) The stalk and leaf may be used as a vegetable; the leaf is coarser and milder than spinach
beet, spinach See beet, silver
beet sugar (Beta vulgaris L. gramineae)
<table>
<thead>
<tr>
<th>Pulp</th>
<th>With crown</th>
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</thead>
<tbody>
<tr>
<td>Wet Dehydrated molasses Fresh Silage</td>
<td></td>
</tr>
<tr>
<td>Dry matter (%)</td>
<td>11</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>1.2</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>3.1</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>0.2</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>0.5</td>
</tr>
</tbody>
</table>

See sucrose; sugar beet
begging Washing meat
behenic acid [CH_3(CH_2)_7COOH] A 22-carbon saturated fatty acid found in peanut and rapeseed oils See Part 2: Fats and Oils, Fatty Acid Composition; Fatty Acids; Fatty Acids and Their Properties; Fatty Acids, Fats and Oils; Saturated Fatty Acids
behen oil (oil of ben) A nondrying oil from ben nut (Moringa) used in food, for extraction, and for lubrication See Part 2: Saturated Fatty Acids
beignet A light, batter-dipped, paste fritter that is deep fat fried
bealachan A fermented paste of prawns or shrimp
belachen See balachan
belarno A rich, hard, goat cheese from Italy
belegte brot A rye-bread open sandwich
belfast ham A smoked, dry-cured, pork ham
Belgian endive See chicory; French endive
Belgian sausage A moist, cooked, Australian sausage
belle sir Cheese pickled in brine
bella alpina A creamy, semisoft, surface-bacteria-ripened, mild-flavored cheese made from cow's milk

benedictine and brandy (B & B) 77
bella lago A creamy, semisoft, surface-bacteria-ripened, mild-flavored cheese made from cow's milk
bella milano A creamy, semisoft, surface-bacteria-ripened, mild-flavored cheese made from cow's milk
bellelay (monk's-head) A soft rennet, buttery, 10- to 15-lb cheese made from whole milk in Switzerland; a tilsit-type cheese; Swiss cheese
bellelay cheese See monk's-head cheese
belles des champs A cream cheese
belling A method of testing eggs: gently tap eggs together; checked eggs give a dead sound, those without checks give clear, bell-like sound
belle isle cress See cress, American
bell scraper A metal dome-shaped scraper with a wooden handle used to remove hair or dirt from a hog carcass
belly The area of a hog carcass from which bacon is made and spare ribs removed; trimmed hog belly is 14% of hog carcass See Part 2: Pork Cuts
Bel Paese A 5-lb, mild, mellow, semi soft Italian dessert cheese that is mild- to strong-flavored, surface-bacteria-ripened, with a light yellow interior and gray surface and is made from whole (cow's) milk; ripened 6-8 weeks; there is a map on the package. See Part 2: Cheese Characteristics; Cheese, Vitamin Content; Milk and Milk Products, Vitamin Content
bel piano lombardo A creamy, semisoft, surface-bacteria-ripened, mild-flavored, cheese made from cow's milk
bel piemonte A creamy, semisoft, surface-ripened, mild-flavored cheese made from cow's milk
Belted Galloway Black Scottish beef cattle with white belt circling body between shoulders and hooks. See Part 2: Beef and Dual-Purpose Cattle
Beltsville No. 1 A breed of hogs originated by U.S.D.A.; consists of a cross between Danish Landrace (75%) and Poland China (25%); it is black with white spots and has drooping ears. See Part 2: Swine Breeds
Beltsville No. 2 A breed of hogs originated by U.S.D.A. by crossing Yorkshire (58%) and Duroc (32%) and also adding 5% Hampshire and 5% Landrace blood; it is red in color and has a white underline and occasional black spots
Beltsville Small White See Part 2: Turkey Varieties
belval A tilsit-type cheese
belvoir blue A mild-flavored blue cheese made from cow's milk
belyash A meat-filled, fried, wheat-flour dough pie
Benedict A test for reducing sugar
benedictine (D.O.M.) A famous, very sweet, aromatic, French herb liqueur with cognac base; used as an after-dinner cordial or in mixed drinks
benedictine and brandy (B & B) A drier benedictine
bene seed (benne seed; benni seed)

See sesame seed

bengal agar See agar-agar

See Part 2: Microbiological Examination of Dairy Products

bengal gram See chick pea

benne oil See sesame oil

bensaab A thick, porridge gruel made from sorghum or millet mixed with beans

ben shalom A citrus liqueur

bent grass (Agrostis) A reedy, stiff, wiry grass used for pasture or turf; neglected pasture

See Part 2: Seed, Germination

benzaldehyde (benzoic aldehyde)

\[\text{CHO}\]

A compound that is found in the kernels of bitter almond, peach, and apricot but is usually made synthetically; used as a flavoring agent in food

Storage: full, tight, light-resistant container in a cool, dark place

benzene (C₆H₆) A liquid hydrocarbon made from petroleum or coal tar; it is an unsaturated aromatic substance that is the chemical basis for hundreds of derivatives, e.g., dyes, pharmaceuticals, insecticides, plastics, detergents, etc. Many of its derivatives are made by substituting various groups or side chains for one or more of the hydrogen atoms. See aromatic; petroleum

\[\text{C₆H₆}\]

tenzene hexachloride (C₆Cl₆) A poisonous chlorinated hydrocarbon used as an insecticide. It is a mixture of several isomers and contains 12-14% of the toxic gamma isomer. See also lindane

benzoate of soda See sodium benzoate

benzocaine A local anesthetic used in some diet gums, candy, and lozenges to numb the taste buds

benzoic acid

\[\text{C₆H₅COOH}\]

An aromatic acid used as an antimicrobial agent (preservative that inhibits the growth of many molds) in food (e.g., bread, catsup, cheese, fruit products, acidic foods and margarine, etc), but only up to 0.1%; metabolized by humans. It occurs naturally in cinnamon, cranberries, greengage plums, prunes, ripe olives, and benzoin resin.

Storage: tight container

See Part 2: Organic Acids in Fruits and Vegetables

benzophenone (diphenyl ketone; benzoylbenzene)

\[\text{O} \quad \text{C} \quad \text{O}\]

Used as a flavoring agent in food

Storage: cool, dry place

benzoyl peroxide

\[\text{O} \quad \text{O} \quad \text{O} \quad \text{O}\]

Used as a bleaching agent for flour, oil, or cheese; as a maturing agent, and as a dough conditioner

Caution: The dry product can spontaneously explode!

Storage: Store in original container and observe safety precautions printed on the label.

See peroxide

benzyl acetate

\[\text{CH₂OCOCCH₃}\]

Used as a floral flavoring agent in food

Storage: full, tight, glass container in a cool, dark place

benzyl alcohol (phenyl carbinol)

\[\text{CH₂OH}\]

Used as a flavoring agent in food

Storage: tight container

benzyl benzoate

\[\text{C₆H₅COOCH₂­}\]

Used as a food flavoring agent

Storage: full, tight container in a cool place protected from light

benzyl butyrate

\[\text{CH₂OCOCCH₂CH₂CH₃}\]

Used as a plumlike flavoring agent in food

Storage: full, tight, glass container in a cool, dark place

benzyl cinnamate

\[\text{CH=CHCOO─CH₂─} \quad \text{C₆H₅}\]

Used as a flavoring agent in food

Storage: full, tight glass container in a cool, dark place

benzyl phenylacetate

\[\text{CH₂COOCH₂} \quad \text{C₆H₅}\]

Used as a sweet, floral flavoring agent in food

Storage: full, tight, glass container in a cool, dark place
benzyl propionate

\[
\text{CH}_2\text{OOCCH}_2\text{CH}_3
\]

Used as a sweet, fruity flavoring agent in food
Storage: full, tight, glass container in a cool, dark place

benzyl salicylate

\[
\text{-OH} \quad \text{-COOCH}_2\text{-}
\]

Used as a sweet flavoring agent in food
Storage: full, tight, glass container in a cool place

berberry  See barberry

bercy  A white, fish-flavored sauce

Berderaux  A red wine with a low alcohol content

beref (sele)  Dark brown, fermented balls of melon seed used in soup and stews

bergamot (bee balm; Oswego tea; Monarda)  An essential oil used in flavoring; a sweet, fruity flavoring agent. It is obtained from several different plants: *Citrus bergamia*—a pear-shaped orange whose peel is used for flavoring; a volatile essential oil is expressed from the peel of the fruit
*Monarda didyma*—aromatic herbs of the mint family; used to flavor beverages and for tea, salad, and food flavoring
Leaves—used dried or fresh for salads, tea, and pork
Flowers—used in salads
*Pyrus persica*—a pear
Storage: full, tight, glass container, in a cool place protected from light
See Part 2: Essential Oils; Flavoring Agents, Natural

bergerac  A light red or white wine

bergkäse  A hard, yellow, mild to sharp Swiss cheese with eyes that is made from cow’s milk

bergkäse  A hard, yellow, mild to sharp Swiss cheese with eyes that is made from cow’s milk

berkshire  A meat-type breed of hogs that originated in South Central England from Chinese, Siamese, and Italian strains; it is black, preferably with six white points, and has an erect ear and a turned-up snout.
See Part 2: Swine Breeds

Berkshire Knot  Large, horned, dark-faced breed of sheep

**berliner (New England; New England-style sausage)** 1) A cooked, smoked sausage made from coarse-cut pork [with a small (15% max.) quantity of finely chopped beef] and veal, which is held three days before stuffing to allow curing, stuffed into a beef or an artificial casing; available in large-diameter links, rings, or large-diameter casings for slicing; stomachs or tripe not permitted. It is cooked and smoked and contains only sugar and salt as seasonings.
Composition: moisture 61–67%; protein 15–17%; fat 7–17%; carbohydrate 2–5%; ash 3.6–4%
2) A moist, cooked, unsmoked Australian sausage made from finely chopped, mildly seasoned beef and pork; not stuffed into casings

berliner blood sausage  A dried, smoked, cooked sausage containing bacon

berliner kuhkäse  See alte kuhkäse; hand cheese

Bermuda grass (wire grass; Cynodon dactylon)  A perennial plant used for pasture and lawns; hard to eradicate; pH 5.0–5.5; approx. nutrients used in growing 3 tons for grazing: 85 lb N, 18 lb P2O5, 60 lb K2O; varieties: Coastal; Common; Midland
1 bu, Bermuda grass seed = 35 lb
See Part 2: Seed, Germination

Bermuda plan  Breakfast only included in room rate

Berner zungenwurst  A moist, cooked, smoked Swiss sausage made from coarsely chopped, medium-seasoned beef and pork stuffed into a beef or an artificial casing

bernkastel  A flowery, white wine made from Riesling grapes

berry (true)  A subdivision of simple fruit; it has a fleshy ovary wall enclosing one or more seeds and attached to a fleshy placenta; (e.g., gooseberry, currant, cranberry, grape, banana, tomato, eggplant); fruit usually referred to as berries fall under the aggregate fruit classification. Canned grades consider uniformity of ripeness, color, and texture:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Syrup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fancy</td>
<td>Heavy</td>
</tr>
<tr>
<td>Choice</td>
<td>Medium heavy</td>
</tr>
<tr>
<td>Standard</td>
<td>Light</td>
</tr>
<tr>
<td>Water pack</td>
<td>Water</td>
</tr>
<tr>
<td>(pie pack)</td>
<td></td>
</tr>
</tbody>
</table>

Berries (except strawberries)
50-gal barrel = 380 lb
1 crate, fresh = 36–40 lb
= 16–20 qt, canned
5 cups, fresh = 1 qt, canned
2 cups, fresh = 1 lb
1 qt, canned = 1–2 boxes, fresh
= 1½–3 lb, fresh
1 qt, fresh = 1½ lb, fresh
To remove stains from cloth, soak promptly in cold water and launder in hot water, with bleach if necessary.
Composition: moisture 85%; protein 1%; fat 1%; carbohydrate 13%; ash 0.5%
Storage: Keep whole, unstemmed, uncovered (but can be covered if moisture loss is a problem), and unwashed; temperature 31°F; relative humidity 85–90%; freezing point 29-30°F; use in 1–2 days

See Part 2: Calories, Daily Recommendations; Fruit, Availability; Fruit Harvest Dates; Fruit Classification; Fruit Composition; Fruit, Frozen Yield; Fruit Storage; Standards, Processed Fruit and Vegetable Products; Storage Times; Vegetables, Classification

berry, loose-frozen Berries that are frozen individually prior to packaging so that they remain loose and easy to remove from the container

berry pie See Part 2: Baked Products, Frozen Storage Life

berseem clover (Egyptian clover; *Trifolium alexandrinum*) A tall-growing annual grown as a winter forage crop

beryllium (Be) A metallic element; at. no. 4; at. wt. 9.013; Group IIA of the Periodic Table; oxidation state +2; electron configuration 2–2

Beryllium and its compounds are poisonous.

berxozyovitsa A sour, alcoholic beverage made from the sap of the birch tree

Berzelius, Jons Jakob A Swedish chemist who discovered that iron in hemoglobin gives the ability to absorb oxygen

besan A flour made from lentils (*Chana del*)

beskidzka A semidry, cooked, double-smoked Polish sausage made from medium- or coarse-chopped, medium-seasoned beef and pork stuffed into a horse casing

best if used by Gives the date by which a product should be used for the best taste and texture

beta (\(B, \beta\)) Greek letter with an English equivalent of b

beta-adrenergic agonists (beta-agonists) Structural analogs of the catecholamines epinephrine and norepinephrine. They are used to improve growth performance and carcass characteristics.

beta-apo-8'-carotenal A natural as well as synthetic food additive used to color (yellow, red) food

beta carotene (carotene; provitamin A beta carotene)

\[
\begin{align*}
\text{CH}_3 & \quad \text{CH}_3 \\
\text{CH} = \text{CH} & \quad \text{C} \quad \text{CH} \quad \text{CH} = \text{CH} \quad \text{C} \quad \text{CH} \quad \text{CH} \quad \text{CH} = \text{CH} \quad \text{C} \quad \text{CH} \quad \text{CH} \quad \text{CH} = \text{CH} \\
\text{CH}_3 & \quad \text{CH}_3 \\
\end{align*}
\]

A synthetic as well as natural food additive found in many fruits and vegetables and in animal fat, liver, and fish oil; used to maintain or improve nutritional values (vitamin A) or as a yellow color additive for food. A carotenoid that is transformed to vitamin A in the liver

betaine (\(C_6H_13O_2N\)) See Part 2: Grain Analysis; Wheat Products, Composition

beta particle \((\beta^+ \text{ or } \beta^-)\) A positively or negatively charged particle that is emitted from the nucleus of an atom during radioactive decay and has a mass and charge equal in magnitude to those of the electron. A negatively charged beta particle is physically identical to the electron.

beta ray A stream of high-speed, negatively charged particles coming from the nucleus of radioactive elements; physically identical to electrons, with moderate penetrating power

betal 1) Leaf of a creeper pepper (*Piper betel*) that is chewed for its stimulating effect. 2) The dried seed of *Areca catechu*, a pinnate-leaved palm also chewed for its stimulatory effect. See palm See Part 2: Vegetable Storage

bethmale A semihard cheese, with a full, fruity flavor, that is made from cow’s or sheep’s milk

betty A dessert made by placing alternate layers of sweetened fruit and buttered bread crumbs in a dish and baking

Betula A genus of birch trees; the black birch (*B. lenta*) bark is extracted for methyl salicylate. See Part 2: Flavoring Agents, Natural

beurre manie A smooth paste mixture of flour and butter used for thickening sauces; often made into balls

beurre noir (black butter; French) Butter melted over low heat until it is dark brown; used as a sauce for fish or meat

beverage Inclusive name for any liquid drink, usually agreeable, consumed by humans See Part 2: Beverage, Carbonated, Ingredients; Microbiological Media; Minerals (trace), limits

beverage wine Average, everyday wine; opposite of vintage

beynum A Swiss cheese made from cow’s milk

BG sulfa agar See agar-agar See Part 2: Microorganism, Media

bgug panir A low-fat, high-protein, hand-molded, semisoft cheese made from sheep’s milk

BHA See butylated hydroxyanisole See Part 2: Antioxidant Activity; Antioxidant Mixtures; Antioxidants, Formulas; Antioxidant Structure

bhalle Cakes or balls of spiced black gram (*Phaseolus mungo*) that are deep fat fried

bhatura A flat, fermented wheat bread that is deep fat fried

BHC Abbreviation for benzene hexachloride See also lindane

BHT See butylated hydroxytoluene See Part 2: Antioxidant Activity; Antioxidant Mixtures; Antioxidants, Formulas; Antioxidant Structure
bile salts 81

Bi Symbol for the element bismuth
bi- Prefix meaning two; di- is more frequent
-bi- Infix meaning life
bianco A tilsit-type cheese
bianco vermouth A pale, sweet vermouth
biarom A tilsit-type cheese made from partially skimmed milk
bias Prejudiced judgment
biayla surowa A moist, uncooked Polish sausage made from medium-chopped, beef and pork, with textured vegetable protein (TVP) and stuffed into a sheep casing
bib (pout; pouting; Gadus luscus) A food fish
bibbelskase A soft, white cheese made from cow's milk and flavored with horseradish and herbs
bibib lettuce (limestone) Similar to Boston lettuce, deep green and crisp leaves. See also lettuce
bicarbonate of soda (NaHCO₃) Acid sodium carbonate used to retain color in cooking vegetables and to produce carbon dioxide in bread See baking soda; sodium bicarbonate
biceps brachii A muscle of the chuck that lies in front of the humerus; attaches to the head of the radius
biceps femoris A thigh muscle running from the ischium (ox) or from the ilium over the ischium (other animals) to the back of the tibia; it is the large lateral muscle of the round; part of the bottom round. See Part 2: Edible Meat and Chilled Carcass
b.i.d. Latin for twice a day
biddy Slang or colloquial term for a hen
bielanska A moist, cooked, smoked Polish sausage made from finely or medium-chopped, medium-seasoned beef and pork, with plasma and textured vegetable protein (TVP), and stuffed into an artificial casing
bien cuit Well done
biennial A plant or plant parts, such as bramble canes, that completes its life cycle (seed to seed) within a 2-yr period. See alternate
bier Beer
bierkase See beer cheese
bierschinken A sausage product usually made from pork cuts other than the ham. 1) A medium- to coarse-chopped, cooked, American sausage available in large-diameter links, rings, or large-diameter casings for slicing. 2) A moist, cooked, smoked East German sausage made from fine- to coarse-chopped, mildly seasoned beef and pork stuffed into a beef, sheep, or an artificial casing. 3) A moist, cooked, smoked West German sausage made from fine- and coarse-chopped, mild-seasoned beef and pork stuffed into a beef or an artificial casing
bierschinkenwurst A moist, cooked, smoked Swiss sausage made from coarsely chopped, mildly seasoned beef and pork stuffed into a beef or an artificial casing
bierworst (Dutch; dauerwurst) Beef and pork cervelat. 1) A semidry, uncooked, smoked Dutch sausage made from medium-chopped, medium-seasoned beef and pork that is fermented and stuffed into an artificial casing. 2) A moist, cooked, smoked Belgian sausage made from medium-chopped, heavily seasoned beef and pork
bierwurst Beef and pork cervelat. 1) A moist, cooked, unsmoked Australian sausage made from medium-chopped, mildly seasoned beef. 2) A moist, cooked, smoked East German sausage made from fine-, medium- or coarse-chopped, mild- or medium-seasoned beef and pork stuffed into a beef, sheep, or an artificial casing. 3) A moist, cooked, unsmoked, Irish sausage made from medium-chopped, medium-seasoned pork stuffed into an artificial casing. 4) A semidry, cooked, smoked, West German sausage made from medium-chopped, mildly seasoned beef and pork stuffed into an artificial casing. 5) A moist, cooked, smoked Swiss sausage made from coarsely chopped, medium-seasoned, beef and pork stuffed into a beef or artificial casing See beerwurst
bifidus milk An acidophilus milk made in Sweden
big A soft, white cheese made from goat's milk
bigarade An orange-flavored, bitter sauce used mainly for game
big Boston See Boston lettuce
bigeneric Obtained by crossing two genera
Biggy agar See agar-agar
See Part 2: Microorganism, Media
bighead (Aristichthys nobilis) A food fish
bighorn (Ovis canadensis) An edible, wild, mountain sheep
bigmouth (Megastomatus cyprinella) A buffalo fish, winter carp
bigos A mixture of sauerkraut and sausage, ham, game, or bacon that is seasoned with pepper
big packer hides Hides removed from the carcass by relatively skilled labor
Big Stem Jersey A dry, meaty variety of sweet potato
big vein A disease of lettuce that causes a clearing of chlorophyll from the area around the leaf veins. Plants are stunted.
bilberry (blueberry; blueberry; huckleberry; whortleberry; worts huckleberry; Vaccinium myrtillus) A low shrub bearing a juicy, bluish black, globose fruit; the fruit is acid when raw but is used in tarts and jam and to make wine. It is available fresh, canned, and frozen. See blueberry
bil-bil A clear, mildly alcoholic, red sorghum beer
bile A bright-colored liquid that is secreted by the liver, stored and concentrated (4-5 times) in the gallbladder, discharged into the duodenum, and used to facilitate digestion, particularly of fat
bile broth Microbiological broth used in the detection of coliform organisms; bile is inhibitory for most other bacteria. See Part 2: Microbiological Examination of Dairy Products
bile salts Salts formed from bile acids; their function is emulsification of fats, which can then be hydrolyzed more rapidly
bilimbi (carambola; cormandel; gooseberry; Averrhoa carambola)  The yellow, acid fruit of the carambola tree See carambola

billbug  An insect that makes holes in corn stalks near the ground or across the corn leaves; often kills buds of young plants  Control: early planting, rotation; avoid infested area for few years; treat plowed area

billigservelat  A moist, cooked, unsmoked Norwegian sausage made from medium-chopped, mildly seasoned beef and pork stuffed into an artificial casing

billion  A numerical term; in France and the United States it is 1,000,000,000 (10^9); in England and Germany 1,000,000,000,000 (10^12)

bill of lading  A carrier's contract and receipt for goods that the carrier agrees to transport from one place to another and to deliver to a designated person

billy  A valençay-type cheese made from goat’s milk, wrapped in plane or grape leaves, and matured in pots

billtong  Long strips of beef or antelope meat cut into strips, rubbed with a curing mixture, and dried to produce jerky

bilva  The round, thick, hard skin of the fruit of the ugli tree. It is made into jam and eaten after baking

bind  To add eggs, thick sauce, or other ingredients to a mixture so that it will hold together

bindae tok  A pancake made from batter containing ground dried green beans

binder  A substance that gives a mixture uniform adhesion, uniform solidification, and uniform consistency

binder (sausage)  A term used in sausage manufacture to indicate a material that will absorb and hold moisture at elevated temperatures; may not contain over 31% collectively or individually:

1. Cereal
2. Vegetable starch
3. Starchy vegetable flour
4. Soya flour
5. Nonfat dry milk (dried skim milk)
6. Dried milk
7. Max. 2% isolated soy protein

binders  Cross fibers that bind sheep fleece together

binding activity  Measured as milliliters of fat emulsified per 100 mg of total protein

binn  A semihard cheese made from cow's milk, with a full, fruity flavor

binomial distribution  A population that can be divided into two classes (e.g., yes and no); the variable is a discrete value in contrast to a continuous variable

binomial system  A system of naming things using two names, e.g., genus and species

binoro  A small fish that is brined and then packed in dry salt

bintang baru  An alcoholic beer

binubudan  A clear rice wine

binuburan  A clear rice wine

bio-  Prefix meaning life

bioassay  Determination of the relative potency of a substance by evaluating the physiological effects of a substance on a living organism, including higher animals

bioavailability  Presentation of a nutrient across the intestinal mucosa in a form that can be utilized by the body (human or animal)

biochemical oxygen demand (BOD)  The oxygen consumed by the oxidation of organic matter, usually by bacterial action for a specific period of time (usually 5 days) at a specific temperature (usually 20°C) See biological oxygen demand

biodegradability  Able to be degraded by living organisms in normal effluent (sewage) treatment

biopolse  A moist, cooked, unsmoked Norwegian sausage made from medium-chopped, medium-seasoned pork with blood added, and stuffed into an artificial casing

biogas  Methane admixed with other hydrocarbon gases obtained by destructive distillation of animal manures and other agricultural wastes; used as a fuel

biokinetic zone  The temperature range that permits life; generally considered to be between 0 and 60°C (60–140°F). A few examples can be found outside this range.

biological assay  An analysis conducted by examining the effect of a substance on experimental animals

biological oxygen demand (BOD)  The amount of oxygen necessary for aerobic putrefaction of a sewage sample. It is measured by the ability to decolorize a solution of potassium permanganate. See biochemical oxygen demand

biological value (BV; of a protein)  The percentage of true digestible protein used by the body. The proportion of absorbed nitrogen that is retained in the body for maintenance and/or growth when a given protein is consumed; a measure of the efficiency with which a protein furnishes the proper amount and proportion of essential amino acids to the body; related to protein quality; percentage of true absorbed protein (or nitrogen) from the intestinal tract that is available for productive body functions

\[
BV(\%) = \frac{\text{N intake} - (\text{urinary N} + \text{fecal N})}{\text{N intake} - \text{fecal N}} \times 100
\]

Values:

- To support growth = 0.70 +
- Egg 0.99 (range 0.94+)
- Milk 0.85
- Beef 0.74
- Rice 0.70
- Maize 0.54
- Wheat 0.64

biomass  The total amount [usually in tons of dry matter (20% moisture)] of plant material (from roots to tops) per unit area

biosate agar  See agar-agar

See Part 2: Microbiological Media

biota  All living organisms of a given region
biotest A can-testing procedure in which cans are filled with a nutrient solution, closed, heat-processed, cooled in water, contaminated with spoilage bacteria, and checked for the number of swollen cans.

biotin (coenzyme R; vitamin H)

A water-soluble member of the vitamin B complex necessary for growth and health; found in enzymes that are active in carboxylation. It occurs in yeast, liver, and milk. Persons who consume large amounts of raw egg white may develop a nutritional deficiency because the avidin in the egg white combines with biotin in such a way as to make it unavailable. Withdrawal of egg white from the diet will correct this deficiency. See also avidin.

biscuit 1) Literally, twice-cooked, from French cuire. A small breadlike cake made from flour, milk, shortening, and baking powder, baked at about 400°F, and served hot. For optimum lightness it should double in volume during baking (12–15 min at 425°F).

   one 2-in. diam. biscuit = 1 oz
   Composition: From baking powder, 175–272 mg Na/biscuit (28 g)
   2) Soft, unsweetened, hot, leavened dough bread.
   3) Similar to a mouse but frozen in individual forms.
   4) Animal feed made from shaped and baked dough.

   See Part 2: Calories, Daily Recommendations; Grain Products, Composition; Spoilage, Fat in Foods; Thiamin, Food.

biscuit, beaten A non-baking-powder biscuit that is hard and crackerlike.

biscuit dough

   1 biscuit = 22–25 g
   Storage: refrigerate.

biscuit, drop An irregularly shaped biscuit that is tender with a crisp crust and a coarse texture.

bishops-weed See aegopodium.

bisk See biscuit.

bismark An intoxicating beverage made by mixing a bottle of stout and a pint of champagne.

bismuth (Bi) A metallic element; at. no. 83; at. wt. 208.99; Group VA of the Periodic Table; oxidation states +3, +5; electron configuration 2–8–18–32–18–5; orbit K L M N O P

bismuth sulfite agar See agar-agar.

bismuth sulfite broth See Part 2: Microorganism, Media; Microorganism, Selective and Differential Broths and Media, Water Filtration Plant.

biscuit 1) A thick, smooth, creamy soup that is made from fish, shellfish, or game and is strained; may also contain cubes of meat. 2) A high-fat ice cream that contains bread or confection products or nuts.

bisulfate group —O—SO₂—OH

bisulfate ion (HSO₄)⁻

bit The smallest unit of information that the computer recognizes. A bit is represented by the presence or absence of an electronic signal (0 or 1).

bicle The smallest unit of information that the computer recognizes. A bit is represented by the presence or absence of an electronic signal (0 or 1).

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biscuit 1) A thick, smooth, creamy soup that is made from fish, shellfish, or game and is strained; may also contain cubes of meat. 2) A high-fat ice cream that contains bread or confection products or nuts. See coulis.

bistort (adderwort; snakeweed; Polygonum bistorta) An astrigent plant of the dock family used for seasoning; the leaves may be eaten like spinach and the roots may be baked.

bisulfate group —O—SO₂—OH

bisulfate ion (HSO₄)⁻

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bicle The smallest unit of information that the computer recognizes. A bit is represented by the presence or absence of an electronic signal (0 or 1).
biting Descriptive of a sensation perceived by the tongue; can be caused by, e.g., pepper or ginger. It is less intense and of shorter duration than a burning sensation.

bittki A round or flat hamburger that can be flavored with many different things

bitter 1) A basic taste response, perceived at the back of the tongue, that may be caused by quinine, caffeine, and some alkaloids. 2) A well-hopped, bitter ale popular in England; standard English draught beer See Part 2: Bitter Flavors; Bitters, Herbs; Flavor Ingredients, Taste and Flavor Type

bitter almond See almond See Part 2: Essential Oils

bitter ash (bitterwood) See quassia extract

bitter chocolate See chocolate

bitter gourd See balsam pear

bitter melon (African cucumber; balsam apple; balsam pear; Mormodica charantia) A green, wrinkled, cucumber-sized vegetable with an initial bitter quinine flavor and a mintlike aftertaste

bittern America—Botaurus lentiginosus Australia—B. pollicoptilus Europe—B. stellaris An edible nocturnal water bird

bitter orange See sour orange

bitter pit A physiological disease of the fruit surface of apples and pears that causes watery spots on the calyx end of the fruit Control: calcium chloride spray

bitter rot An American fungal disease of bunch grapes that may appear as the fruit begins to mature. More prevalent in the South. Regular sprays for black rot and downy mildew generally control this disease.

bitters Scented or flavored alcoholic mixtures; aromatic or medicinal liquids, sometimes alcoholic in nature; used in cooking and as tonics Types:

Aromatic—used as short drinks
Flavoring—used to flavor drinks

bittersweet A flavor of bitter and sweet; the root and bark of a climbing plant (Celastrus scandens) that when consumed can increase perspiration; poisonous nightshade (Solanum dulcamara)
See Part 2: Flavor Ingredients, Taste and Flavor Types

bitter tonic Bitter-tasting substances used to stimulate flow of digestive juices

bitterweed A grass which will cause off-flavors in milk when eaten by cows
See Part 2: Poisonous Plants

bitto A hard emmentaler, Italian- or Swiss-type of cheese, with small eyes, made from cow's or goat's milk. It may be consumed fresh or aged as much as 2 yr.

bituminous See coal

Biuret test A general test for protein; a pink to purple color is formed when protein is heated with alkali and copper sulfate; the color is due to the presence of two

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\begin{array}{c}
\text{C} \\
\text{N} \\
\text{O}
\end{array}
\end{align*}
\]

groups. Tripeptides and all native proteins give a positive test.
See Part 2: Protein and Amino Acids, Color Reactions

bivalves Clams:
Butter
Geoduck
Hard or quahog
Littleneck
Pismo
Razor
Soft or steamer
Surf or skimmer
Mussels:
Blue
California
Oysters:
Eastern/Atlantic
Gulf
Olympia
Pacific
South American
Scallops:
Bay
Calico
Sea

bixin (annatto extract) A yellow to peach coloring material obtained by extracting the seed of Bixa orellana tree

biza A cottage cheese, containing garlic and onion or carob, made from sheep's milk

bjorpylsa A moist, cooked, smoked Icelandic sausage made from finely chopped, medium-seasoned beef and pork, with pork fat added, stuffed into an artificial casing

bjorskinka A moist, cooked, unsmoked Icelandic sausage made from finely chopped, medium-seasoned pork, with pork fat added, stuffed into an artificial casing

Bk Symbol for the element berkelium

bla castello A blue-mold, high-fat, semisoft cheese with white surface mold

black and gray fleece Wood containing some dark fibers; cannot be used for making light-colored fabric

Black and White See Holstein-Friesian

black and white bass See sea bass

black apple See Australian native plum

blackback See flounder

blackberry (Rubus allegheniensis) A prickly (there are thornless sports) climbing plant that produces a fruit composed of a large number of one-seeded drupelets that are closely set together on a core; the fruit is borne in clusters at the ends of older shoots; the berries are consumed fresh, canned, frozen
(whole, with or without sugar or syrup), made into jam, and made into wine. Plant may be an erect cane or a trailing vine; bearing age 2 yr; average yield 3–6 lb/plant; good shipper if not overripe; ripens in early summer. Blackberry leaf is sometimes used for a tea tonic.

**Major types:**
- Dewberry (trailing vine)—milder flavor
- Upright
- Wild—not as sweet

**Judging ripeness:**
- Underripe—green or red
- Ripe—lustrous black (there is also a white variety)
- Overripe—dull black or gray

**Canned forms available:**
- In light syrup
- In water
- Ready-to-use pie filling
  - 100 lb, fresh = 16–20 lb, dried
  - 1 crate, fresh = 24 qt
    - = 32–36 qt, frozen
    - = 12–18 qt, canned
  - 1 chip box crate = 16 qt
    - = 22 lb
  - 1 pt, frozen = 1.3–1.5 pt, fresh
  - 1 lb, fresh = 1 qt, fresh
    - = 5 servings
  - 1 cup, canned = 8.6–9.2 oz

<table>
<thead>
<tr>
<th>Variety</th>
<th>New Canes (originate below crown)</th>
<th>Time of ripening</th>
<th>Hardiness</th>
<th>Harvest duration</th>
<th>Plant characteristics</th>
<th>Area (U.S.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thornless:</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Austin Thornless</td>
<td>Thornless</td>
<td>Early</td>
<td>Moderate</td>
<td>10–15 days</td>
<td>Berry is large, round, black; good flavor; moderate production</td>
<td>South</td>
</tr>
<tr>
<td>Black Satin</td>
<td>Thornless</td>
<td>Midseason</td>
<td>Hardy</td>
<td>3–4 weeks</td>
<td>Berry is med.-large, firm, black; good flavor; very productive</td>
<td>Southern Midwest, Pacific Northwest</td>
</tr>
<tr>
<td>Cory Thornless</td>
<td>Midseason</td>
<td>Less hardy</td>
<td></td>
<td>10–15 days</td>
<td>Berry is large, black, sweet, soft; fairly productive</td>
<td>Pacific Coast</td>
</tr>
<tr>
<td>Dirksen Thornless</td>
<td>Thornless</td>
<td>Midseason</td>
<td>Hardy</td>
<td>3 weeks</td>
<td>Berry is med.-large, firm, black; good flavor; very productive</td>
<td>Southern Midwest, Pacific Northwest</td>
</tr>
<tr>
<td>Smoothstem</td>
<td>Thornless</td>
<td>Late</td>
<td>Moderate</td>
<td>1 month</td>
<td>Berry is med.-large, black; good flavor; very productive, vigorous</td>
<td>Mid.-Atlantic Coast</td>
</tr>
<tr>
<td>Thornfree</td>
<td>Thornless</td>
<td>Late</td>
<td>Hardy</td>
<td>1 month</td>
<td>Berry is med.-firm, black; good flavor; very productive</td>
<td>Northeast, Pacific Northwest</td>
</tr>
<tr>
<td>Thornless Boysen</td>
<td>Midseason</td>
<td></td>
<td>Moderate</td>
<td>10–15 days</td>
<td>Berry is large, soft, wine-colored, very sweet; fairly productive</td>
<td>South, Pacific Coast</td>
</tr>
<tr>
<td>Thornless</td>
<td>Thorned</td>
<td>Late</td>
<td>Hardy</td>
<td>1 month</td>
<td>Berry is large, exceptionally firm, sweet, black; productive</td>
<td>Pacific Northwest</td>
</tr>
<tr>
<td>Evergreen</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Thornless Logan</td>
<td>Thorned</td>
<td>Early</td>
<td>Less hardy</td>
<td>10–15 days</td>
<td>Berry is large, long, reddish, acid, high flavor; very productive</td>
<td>Pacific Coast</td>
</tr>
<tr>
<td>Thornless Young</td>
<td>Thorned</td>
<td>Early</td>
<td>Moderate</td>
<td>10–15 days</td>
<td>Berry is large, soft, wine-colored, very sweet; fairly productive</td>
<td>South, Pacific states</td>
</tr>
<tr>
<td>With thorns:</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Darrow</td>
<td>Thorned</td>
<td>Early</td>
<td>Long</td>
<td></td>
<td>Large berry; tall and erect; heavy producer</td>
<td></td>
</tr>
</tbody>
</table>
blackberry (Rubus allegheniensis)

1 cup, fresh = 144 g
= 5.2 oz
1 serving, fresh = 0.75 cup
Composition: moisture 85%; protein 1%; fat 1%; carbohydrate 12%; vitamin A 200 IU/100 g; ascorbic acid 21 mg/100 g; pH 3.2–4.5 (3.5 avg.)
Defect action level:
Average microscopic mold count of 60%
Average 4 larvae/500 g or average of 10 insects (larvae or other insects) per 500 g (excluding thrips, aphids, and mites)
Storage: Do not wash; refrigerate; use in 1–2 days.

See Part 2: Fruit Harvest Dates; Fruit Classification; Fruit Composition; Fruit, Frozen Yield; Minerals, Food; Plant Foods, Composition; Storage; Sugar, Fruit; Wine, Sweet

blackberry, canned In addition to blackberries, may also contain natural and artificial flavors
In syrup:
Extra light (<14% sucrose)
Light (14–19% sucrose)
Heavy (19–24% sucrose)
Extra heavy (24–35% sucrose)

blackberry jelly
1 tbsp = 20 g
blackberry juice
1 cup = 8.6 oz
blackbird oats See wild rice
black bread See rye
black bryony (Tamus communis) A climbing gourd whose young shoots are edible and used like asparagus
black cap See raspberry
black chaff (Xanthomonas translucens) A bacterial disease of wheat that can affect any aboveground part of the plant
black cherry aphid (Myzus cerasi) A tiny, black, shiny insect that often slows the growth of cherries
black cod (Erilepis zonifer) A food fish; market name for sablefish
black cumin (fennel flower; Nigella sativa) A spice; used as a pepper substitute
black currant A bush fruit that is made into jams, jellies, pies, and puddings and is used to flavor ice cream, gin, and liquor
black diamond A cheddar-type cheese
black drum A light-meat finfish with light to moderate flavor
black end See hard end
black-eyed bean Asparagus bean See pea, black-eye
black-eyed pea Cowpea See cowpea; pea, black-eye
See Part 2: Beans, Peas, and Nuts
Blackface Hampshire, Oxford, and Shropshire sheep or lambs sired by a ram of one of these breeds
Black-faced Highland A long-fleece breed of sheep originating in Scotland
See Part 2: Sheep Breeds

blackfish (oyster fish; tautog; Labridae) An Atlantic coast fish weighing up to 20 lb See sea bass
black fly A pest that attacks many vegetable, weed, and hedge plants. Destroying its breeding areas is necessary for control.
black forest ham A country-cured style of ham produced in Germany
black forest schinkenspeck The sirloin butt area of the ham, mildly cured and smoked for 3 days
black grain stem sawfly (Cephus tabidus) An insect that attacks wheat
black gram (urd; woolly pyrol; Phaseolus mungo) A hairy plant (pulse) that has a pod that contains up to 10 black seeds with a white hilum; harvested in 4 months See bean, urd; urdbean

Parts of plant Used for
Dry seed Human food (pulse)
Total plant Green manure
Young pods Boiled and eaten

black grouper See grouper
black haw (sheepberry; slag-bush; Viburnum prunifolium, V. rufidumum) A bush bearing a bluish-black edible fruit (\( \frac{3}{8}-\frac{1}{2} \) in.) that is flat to spherical with a single pit and that is used to make jams and jellies and to flavor cordials
black knot A fungal disease of plum, prune, and cherry trees that causes a corky swelling on limbs and twigs
Control: Remove infected and wild trees; use a fungicide spray

Black Leaf 40 An insecticide that is a 40% solution of nicotine sulfate
black lovage See alexanders
black neck rot See thielaviopsis stalk rot
black pepper See pepper
black pit A disease of citrus fruit caused by Pseudomonas syringae. It appears as brown- or black-colored, sunken rind spots from \( \frac{2}{3} \)- to \( \frac{1}{4} \)-in. diam.
black plate Low-carbon steel without a metallic coating
black point A disease of wheat that discolors the grain; caused by Helminthosporium spp., Alternaria spp., and others
black pudding (blood sausage) A sausage made of fat, sheep's or pig's blood, and seasoning. 1) A moist, cooked, unsmoked British sausage made from fine-, medium-, or coarse-chopped, mild- or medium-seasoned beef, lamb, pork, veal, and goat stuffed into beef, pork, or artificial casings. 2) A moist, cooked, unsmoked Australian sausage made from finely chopped, mildly seasoned pork stuffed into artificial casing
black pudding rings A moist, cooked, unsmoked Irish sausage made from coarsely chopped, medium-seasoned beef, lamb, and pork stuffed into beef, pork, or artificial casings
black rice See wild rice
black root  See black rot
black root rot  The general name given for several root problems in strawberries
Control: Use only healthy white-rooted plants.

black rot  1) Egg yolk that becomes black, hard, and solid, evolving hydrogen sulfide; albumin becomes liquefied, granular, and dark in color. 2) A sweet-potato disease (black root, black shank, Ceratocystis fimbriata) that may occur on any underground part of the plant and that produces black, sunken spots on the surface of the sweet potato. It may start in the field but can continue during storage. 3) An American bunch-grape fungal disease that affects the leaves (brown spot with black border) and fruit (brown spots, rot of entire berry, black wrinkled mummies)
Control: Remove infected portions; maintain good air circulation; use several applications of a fungicide.
4) A fungus that affects the leaves (spots with \( \frac{1}{2} \) to \( \frac{1}{4} \)-in. diam. and an irregular purple margin), fruit (brown to black rot with light and dark bands at blossom end), and branches (cankers) of apple and pear trees
Control: Remove infected branches and fruit; adequate pruning and fertilization; use fungicide spray.
5) A fungus (Alternaria citri) found on oranges, grapefruit, and tangerines; the cut fruit shows an internal rather solid black rot at either the stem or stylar end. See alternaria rot. 6) Rot (soft rot, water blister, water rot) in pineapple caused by the fungi Ceratocystis paradoxa (imperfect stage) and Thielaviopsis paradoxa. Rot originates in the base or at injuries, with the fruit tissue having a brown, water-soaked, soft appearance and a sweetish odor often with no external appearance of decay. See brown rot
Control: fungicides and refrigeration (45°F)
black salsify  See scorzonera
black sapota  See persimmon
blackshank  A red or white wine
black sea bass  A finfish with darker meat and light to moderate flavor See sea bass
black seed  A strawberry disease caused by a fungus (Mycosphaerella fragariae). The disease appears only on ripe berries. Application of a fungicide will help in prevention; also, proper spacing and correct timing of fertilizer application are helpful
black shank  See black rot
black spot  See black rot, brown rot
blackstem rust  A fungal disease due to Puccinia graminis tritici
blackstrap molasses  A molasses from which most of the sugar has been removed; it is dark in color, strong in flavor, high in ash content, and used for fermentation purposes. It contains 30% sucrose, 20% reducing sugars, 20% nonsugars, 20% water, and 10% ash. See also molasses
See Part 2: Sugars and Sweets, Composition
black stripe  A hot or cold beverage made by mixing molasses, rum, and nutmeg
black tea  Tea made from leaves that have been fermented (oxidized) to darken the leaves and soften the flavor before being steamed, rolled, and dried. The beverage has an amber color and rich aroma and flavor, and is less bitter and astringent than green tea. See also tea
Types:
Assam—a strong, pungent, brisk flavor and mellow body
Backsettler—a hearty, brisk flavor
Breakfast—mixes well with milk
Darjeeling—reddish color and fragrant aroma
English breakfast—med.-black color and med. strength
Flowery pekoe
Indian—delicate flavor
Irish blend (Assam and high-grown Sri Lanka)—strong, full body
Keemun (English breakfast)—rich, aromatic, smooth flavor and light body
Kenya BP—broken pekoe
Lapsang souchong—smokey aroma and taste, slate gray color, and med. body
Orange pekoe—flowery light body and mild, clear taste
Pamir tura—cuppery color, flavorful, and mild taste
Pekoe
Russian caravan—broken orange pekoe, strong, heavy-bodied tea, usually weakened with hot water and consumed with sugar and lemon
Souchong
Yunnan FOP—light character, fragrant, and smooth
black teeth  Long tusks of young pigs
black tongue  A deficiency disease in dogs due to improper diet. See also pellagra
black turtle soup, bean  See bean, black
black walnut (Juglans nigra)  A tall North American tree grown for lumber and nuts; the nuts are larger but shells are thicker than European walnuts; the nut flavor is strong and is used in confectionery and ice cream. See also walnut

black walnut (Juglans nigra)  87

black turtle soup, bean  See bean, black
black walnut (Juglans nigra)  A tall North American tree grown for lumber and nuts; the nuts are larger but shells are thicker than European walnuts; the nut flavor is strong and is used in confectionery and ice cream. See also walnut

<table>
<thead>
<tr>
<th>Variety</th>
<th>Tree</th>
<th>Nut</th>
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<tbody>
<tr>
<td>Old Fashioned</td>
<td>100–150 ft,</td>
<td>Rich</td>
</tr>
<tr>
<td></td>
<td>fast-growing,</td>
<td>long-lived</td>
</tr>
<tr>
<td>Shellbark (Kingnut)</td>
<td>40 ft, hardy</td>
<td>Easily shelled</td>
</tr>
<tr>
<td>Hickory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thomas</td>
<td>40 ft</td>
<td>Large, thinner shell</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Improved varieties</th>
<th>Nut production/tree-yr</th>
<th>Shell thickness</th>
<th>Disease resistance</th>
</tr>
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<tbody>
<tr>
<td>5–6 yr</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15–20 yr</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Myers</td>
<td>( \frac{1}{2} ) bu</td>
<td>1 bu</td>
<td>Thinnest</td>
</tr>
<tr>
<td>Ohio</td>
<td>( \frac{1}{2} ) bu</td>
<td>2 bu</td>
<td>Thin</td>
</tr>
<tr>
<td>Thomas</td>
<td>( \frac{1}{2} ) bu</td>
<td>2 bu</td>
<td>Thin</td>
</tr>
</tbody>
</table>

Harvesting: Allowing nuts to lie on the ground discolors the kernels and makes flavor even stronger
1. Remove hulls after nuts fall
2. Wash
3. Dry 2–3 weeks
black walnut flavoring  Synthetic flavor mixed with some natural oil, alcohol, and water blad[...]

A prefix or suffix meaning bud or child

blast (rottenneck) A rice disease caused by a fungus (Pyricularia oryzae Cav.) that produces narrow, spindle-shaped lesions on leaves of young rice plants. Control: planting resistant varieties of stock, early seeding, flooding, or fungicides blatina A red wine Blaye Red and some white wines produced on the north bank of the Gironde River in the Bordeaux region (southwest France), e.g., Côte de Blaye, blayais bleach To remove color from an oil; agents used are activated carbon, activated clay, diatomaceous earth, and fuller’s earth. See Part 2: Margarine Production bleaching Reducing the amount of coloring material; e.g., activated charcoal or diatomaceous (fuller’s) earth may be used in oil bleaching agent 1) A compound that will reduce color; e.g., in flour, yellowish color reduced to white and in, milk, grass feed causes a buff-colored milk that can be whitened with benzoyl peroxide. 2) A substance that accelerates the aging process; improves baking qualities bleaching powder (chlorinated lime) Calcium oxychloride (CaOCl₂); contains from 24 to 37% available chlorine bleeders Openings in a retort that when open allow removal of air bleeding Causing blood to flow from an animal; esanguination blemish A mark, injury, or deformity of the skin or adjacent tissue that would mar the appearance but not impair the usefulness of an animal blend 1) A “ready-to-use blend” or “complete blend” is a mixture of all seasonings (e.g., salt, sugar, spices). 2) To combine well; to mix thoroughly blended A good balance of flavor character notes in the proper order and with no unpleasant aftertaste; e.g., coffee, tea, whiskey, wine blended credit A financing plan for export sales. Government credit guarantees, at lower interest rates, are blended with commercial credit to provide lower interest rates and favorable terms for foreign buyers blended whiskey Mixture of two or more straight whiskeys (100 proof) or of straight whiskey with silent spirit or water; caramel is usually added blend price The price paid for milk based on its class blenio A Swiss cheese made from cow’s milk blenny (Enedrias nebulosus) A food fish bleu Blue cheese bleu cheese See blue cheese bleu d’Auvergne (bleu de salers) A strong-flavored, blue-veined, unpressed, uncooked, mild, Roquefort-type blue cheese made from cow’s milk and with no rind bleu de basillac A Roquefort-type blue cheese bleu de Bresse An unpressed (4 in. across), uncooked, creamy, blue-veined cheese made from cow’s milk bleu de Bresse An unpressed (4 in. across), uncooked, creamy, blue-veined cheese made from cow’s milk black walnut (Juglans nigra)
milk; it has a thin rind and a soft mottled texture and is milder-flavored than most bleu cheeses (but still strong); 50% fat on a dry-weight basis

**bleu de Haut-Jura** A semihard, mill-stone-shaped, white cheese with blue veins and yellow or red rind

**bleu de laqueuille** A pungent blue cheese made from cow’s milk and similar to a mild Roquefort but with a harder crust

**bleu de l’Aveyron** A blue-veined cheese aged in caves

**bleu de londes** A low-fat blue cheese made from cow’s milk

**bleu de pelouse** A high-fat blue cheese made from cow’s milk

**bleu de Quercy** A blue cheese made from cow’s milk

**bleu de sassenage** A semihard, cylindrical (1-4.5 lb), blue-veined cheese made from cow’s milk

**bleu des Causses** A sharp, rich, creamy-textured, blue-veined, unpressed, uncooked, blue cheese that is made from cow’s milk and is aged in humid cellars or caves; it is gold-foil wrapped and weighs about 5 lb.

**bleu de septmoncel** A blue cheese made from cow’s milk

**bleu de thiezac** A blue cheese made from cow’s milk and aged in humid cellars

**bleu de tignes** A blue cheese made from cow’s milk

**bleu de velay** A low-fat blue cheese made from cow’s milk

**bleu de Quercy** A blue cheese made from cow’s milk

**bleu des Causses** A sharp, rich, creamy-textured, blue-veined, unpressed, uncooked, blue cheese that is made from cow’s milk and is aged in humid cellars or caves; it is gold-foil wrapped and weighs about 5 lb.

**bleu du Haut-Jura (bleu de gex; gex)** A cow’s-milk blue cheese with white paste center and a yellow-red rind

**bloeits (Lepista)** An edible fungus that has a mushroom shape with a gray or brown cap

**blight** A disease that causes all or a part of a plant to wither and die

**blinchki** Thin pancake

**blind end** Closed at one end

See Part 2: Casings, Hogs and Beef; Casings, Terms

**blini** A buckwheat pancake

**blintze** A pancake rolled around meat, cheese, or fruit and served with sour cream, applesauce, or jam

**bliny** Buckwheat pancakes consumed with butter or sour cream

**blister beetle** A slender beetle, about four times as long as wide, with conspicuous head and neck, long legs and antennae, and soft wing covers. These beetles often swarm into sugar beet fields, strip the plants, and leave as suddenly as they came.

Insecticide: parathion, ethyl

**blister package** Contains the product in a rigid dome, or bubble, of plastic mounted on paperboard

**bloat** A condition caused by failure to eliminate normal gases from the rumen; distention of the rumen or the large colon by gas; usually occurs after placing on lush pasture; swelling high above the left flank, unsteady gait, causing the animal to fall

**bloater** 1) A herring (fish) that has received a medium salt cure and has been smoked overnight. 2) A large, fat mackerel. 3) Golden cure. 4) A freshwater white-fish (Coregonus hoyi)

**bloater paste** A mixture of 2 3 parts mashed bloaters and 1 3 butter

**block edam cheese** Same as edam except that it is made in the shape of a rectangle or cube

**blockwurst** 1) A semidry type of American sausage with a maximum moisture–protein ratio (MPR) of 3.7:1. 2) A dry, uncooked, smoked or unsmoked Swiss sausage made from medium- or coarsely chopped, heavily seasoned beef and pork stuffed into a beef, an artificial, or no casing

**blocky** Deep, compact, wide, and low-set

**bloderkäse** A low-fat, high-protein, cube-shaped, semisoft cheese with the surface covered with bacterial smear

**blodkorv** A moist, cooked, unsmoked, finely chopped Swedish sausage made from mildly seasoned, blood, fat, and rye flour stuffed into an artificial casing

**blodpolse m rosiner** A moist, cooked, unsmoked Norwegian sausage made from medium-chopped, medium-seasoned, pork with blood and raisins added, and stuffed into an artificial casing

**bloedworst** 1) A moist, cooked, unsmoked Dutch sausage made from medium-seasoned beef blood with coarsely chopped fat, and stuffed into beef or pork casings

2) A moist, cooked, unsmoked Belgian sausage made from medium-seasoned beef with pig’s blood and stuffed into beef or pork casings

**Blonde (Blonde d’Aquitaine)** A yellow- to fawn-colored French breed of cattle known for its rate of gain. Developed from three strains: Garonnaise, Pyrénéenne, Quercy

**Blonde d’Aquitaine** A dual purpose (draught and beef), light to dark wheat-colored cattle from southwestern France

**blood** Red fluid tissue circulated by the heart; transports oxygen, carbon dioxide, nutrients, and waste products. Buffering system compounds HCO₃⁻, H₂CO₃, HPO₄²⁻, H₂PO₄⁻;

\[
\text{hemoglobin} + \text{acid H}^+ + \text{HCO}_3^- \rightarrow \\
\text{H}_2\text{CO}_3 + \text{base OH}^- + \text{H}_2\text{CO}_3 \rightarrow \text{H}_2\text{O} + \text{HCO}_3^-
\]

The volume obtained on slaughtering is as follows:

<table>
<thead>
<tr>
<th>Species</th>
<th>Avg. volume (approx. 50–75% of total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>30</td>
</tr>
<tr>
<td>Sheep</td>
<td>4–5</td>
</tr>
<tr>
<td>Pigs</td>
<td>5–8</td>
</tr>
</tbody>
</table>

Normal pH range 7.3–7.5

\[a_w = 0.995\]

Physiological saline = 0.85% salt

If calories are needed = 5% glucose

1 lb green blood = 0.2 lb dry blood
blood

To remove stain from cloth: Soak in cold water and an enzyme product, and bleach if needed.

See Part 2: Blood; Gland Weights; Minerals, Plant or Animal Tissue; Moisture in Biological Materials; Organ Weights; pH Values of Biological Materials

blood agar See agar-agar

See Part 2: Microorganism, Media

blood albumin Blood serum that has been clarified and dried See also albumin

blood and tongue pudding A moist, cooked, smoked or unsmoked, jellied and/or specialty American sausage made from fine to chunky, mildly seasoned beef, lamb, and pork with certified beef blood and with cooked and cured lamb, pork, and/or beef tongue and stuffed into a beef or an artificial casing or into pans. The product is available in rings or loaves.

blood and tongue sausage Cooked and cured lamb, pork, or beef tongue placed lengthwise in the center of a roll of pork or beef blood sausage

blood bread A mixture of blood, flour, and fat; it is cooked, sliced, and fried

blood, dried Can be used as a fairly rapid-release nitrogen fertilizer

blood flour Dried blood in fine powder form
Composition (spray dehydrated blood): dry matter 93%; protein 86%; crude fiber 1%; fat 1.3%; ash 6.6%

blood meal Dried ground blood; approximately 85% protein

blood molasses A red syrup obtained from beet sugar extract

blood orange A sweet orange in which the flesh has blood-red streaks

blood pudding Similar to blood sausage except it contains no skeletal meat See black pudding

blood pudding, morcella 1) A nonspecific product made from pork, pork fat, and beef or pork blood.
2) A moist, cooked, unsmoked, mildly seasoned Uruguayan sausage made with pork blood, pork fat, pork skin, and vegetables and stuffed into a beef or pork casing

blood sausage (blutwurst) 1) A cooked, dark red sausage containing meat (often head or jowl) and cooked pork or beef blood; cooked pork sausage with beef blood. 2) A moist, cooked, smoked or unsmoked, jellied and/or specialty American sausage made from fine- to coarse-chopped, mildly seasoned beef and pork; made with only certified blood, some meat, and pork skins, lips, snouts, ears, jowls, and pickled ham fat, and stuffed into a beef, pork, or an artificial casing. The product is available in rings or loaves.
3) A sausage made from the following:
   Beef blood
   Diced cooked fat pork
   Finely ground cooked meat
   Gelatin-producing materials
   Spices
4) Other types: French (brandy added); Italian (raisins added)
Composition: moisture 47%; protein 14.6%; fat 34%; carbohydrate 1.3%; ash 2.3%
See black pudding

blood system See American system

blood vessel A tube that transports blood through the body, i.e., an artery or a vein

bloodwort (Rumex sanguineus) A dock used as a herb; the leaves may be cooked like spinach

bloodwurst A moist, cooked, Australian sausage

Bloody Mary An alcoholic beverage made from
3 oz (2 jiggers) tomato juice
1 oz (1 jigger) lemon juice
Dash of Worcestershire sauce
1 1/2 oz (1 jigger) vodka
Salt and pepper to taste
shaken with ice and strained, or from the following:
1 1/2 cups cocktail vegetable juice
1/4 cup plus 2 tbsp of vodka
1/2 tsp Worcestershire sauce
1 tsp hot sauce
1 tsp lime juice
Dash of pepper

bloom 1) Bright red color (oxymyoglobin) of meat when it is fresh See also fat bloom. 2) White appearance on the surface of chocolate caused by fat changing form or diffusing out of the product. 3) Surface color of grapes or peaches; powdery covering on fruit after picking. 4) Crust color on bread

bloomer French bread made in England

blossom blight See pseudomonas blight

blossom end The end opposite the stem end. The stem end will have a scar or the remains of the stem; the blossom end is usually more rounded than the stem end.

blossom end decline See endoxerosis

blossom end rot A physiological disorder (rot) in tomatoes; a small, water-soaked spot first develops at or near the stem end of infected tomatoes. The spot enlarges and darkens, becoming sunken and leathery. Most prevalent during stress, e.g., long dry periods or after unusually abundant rain.
Control: Apply proper amounts of lime and super phosphate. Avoid excessive use of nitrogen fertilizers.

blotch See cercospora spot

blow-up test A container test in which pressure is applied until the side seam gives away

blubber Unrendered fat from whales or other aquatic animals

blue (bleu) A semihard, Danish or French, white cheese that contains veins of blue mold, has a zesty flavor, and is made from whole (cow's) milk
Ripening time: 2 months min.; 3-4 months usually; 9 months, pronounced flavor
It is used in salads and dressings and as a dessert cheese.
1 cup, crumbled = 4-4.8 oz
1-in. cube = 0.6 oz
Composition: moisture 42-43%; protein 21-22%; fat 28-29%; carbohydrate 2-3%; fiber 0%; ash 5-5.5%
See also blue cheese

See Part 2: Cheese Characteristics; Cheese, Vitamin Content; Milk and Milk Products, Vitamin Content; Vitamin A, Milk and Milk Products
### Blue Andalusian
A Mediterranean class of chicken that lays a white-shelled egg.

### blueback
A Maine trout; a Columbia salmon; a river herring.

See Part 2: Salmon and Trout.

### blueberry (Vaccinium nitidum)
A shrub that bears a bluish black fruit that is used in pies, stewed with sugar, or in puddings. Types are highbush and lowbush, the latter usually being smaller and of lighter color.

- **Canada,** *V. myrtilloides*
- **Dryland (low huckleberry),** *V. pallidum* and *V. altomontanum*
- **Evergreen (evergreen, box, or coast huckleberry),** *V. ovatum*
- **Highbush, V. australe and V. corymbosum**
- **Lowbush, V. lamarchii**

Mountain (broadleaved huckleberry), *V. membranaceum*

Rabbiteye, *V. ashei*

Wild highbush, *V. altomontanum* and *V. constablaei*

Grown on acid soil (pH 4.3-4.8); berry pH 3.7; bearing age 3 yr; yield per plant 6 lb; the silvery bloom is a natural, protective waxy coating. The berry is larger and sweeter than huckleberry, with very small seeds. Grown in wide range of climates. Ripens in June to August.

Canned styles are available packed in light syrup or water and as ready-to-use pie filling; also available frozen whole.

1 24-qt crate, fresh = 12-18 qt, canned = 32-36 pt, frozen.

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<table>
<thead>
<tr>
<th>Blueberry variety (very tall)</th>
<th>Area</th>
<th>Season</th>
<th>Yield</th>
<th>Berry size</th>
<th>Flavor</th>
<th>Color</th>
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</thead>
<tbody>
<tr>
<td>Bluebelle</td>
<td>South; Southwest</td>
<td>Late midseason</td>
<td>High</td>
<td>Large</td>
<td>Fair</td>
<td>Dark</td>
</tr>
<tr>
<td>Bluegem</td>
<td>South; Southwest</td>
<td>Early midseason</td>
<td>Average</td>
<td>Medium</td>
<td>Fair</td>
<td>Light</td>
</tr>
<tr>
<td>Blueblue</td>
<td>South; Southwest</td>
<td>Early midseason</td>
<td>Low</td>
<td>Med.</td>
<td>Average Med.</td>
<td></td>
</tr>
<tr>
<td>Climax</td>
<td>South; Southwest</td>
<td>Early midseason</td>
<td>Low</td>
<td>Large</td>
<td>Good Med.</td>
<td></td>
</tr>
<tr>
<td>Delite</td>
<td>South; Southwest</td>
<td>Early midseason</td>
<td>Average Small</td>
<td>Average Med.</td>
<td>Good Dark</td>
<td></td>
</tr>
<tr>
<td>Garden Blue Homebell</td>
<td>Ohio Valley; South West</td>
<td>Late Midseason</td>
<td>Average</td>
<td>Med.</td>
<td>Good</td>
<td>Dark</td>
</tr>
<tr>
<td>Menditoo</td>
<td>Ohio Valley; South West</td>
<td>Late</td>
<td>Average</td>
<td>Large</td>
<td>Fair</td>
<td>Dark</td>
</tr>
<tr>
<td>Southland</td>
<td>South; South West</td>
<td>Midseason</td>
<td>High</td>
<td>Small</td>
<td>Average</td>
<td>Light</td>
</tr>
<tr>
<td>Tifblue</td>
<td>South; South West</td>
<td>Late midseason</td>
<td>High</td>
<td>Small</td>
<td>Average</td>
<td>Light</td>
</tr>
<tr>
<td>Woodard</td>
<td>South; South West</td>
<td>Early</td>
<td>Large</td>
<td>Med.</td>
<td>Good</td>
<td>Med.</td>
</tr>
</tbody>
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---

### Highbush variety

<table>
<thead>
<tr>
<th>Variety</th>
<th>Area</th>
<th>Season</th>
<th>Fruit cluster</th>
<th>Berry size</th>
<th>Flavor</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>Mountain and Upper Piedmont of the South; New England</td>
<td>Early Late midseason</td>
<td>Loose Loose</td>
<td>Medium Very large</td>
<td>Good Good, mild</td>
<td>Dark Light blue</td>
</tr>
<tr>
<td>Berkeley</td>
<td>Mountain and Upper Piedmont of the South; New England</td>
<td>Midseason</td>
<td>Loose</td>
<td>Large</td>
<td>Good</td>
<td>Light blue</td>
</tr>
<tr>
<td>Bluecrop</td>
<td>Mountain and Upper Piedmont of the South; New England</td>
<td>Midseason</td>
<td>Tight</td>
<td>Large</td>
<td>Mild</td>
<td>Light blue</td>
</tr>
<tr>
<td>Bluehaven</td>
<td>Great Lakes states; New England</td>
<td>Midseason</td>
<td>Med. tight</td>
<td>Very large</td>
<td>Excellent</td>
<td>Light blue</td>
</tr>
<tr>
<td>Blue ray</td>
<td>Mountain and Upper Piedmont of the South; New England</td>
<td>Early</td>
<td>Med. large</td>
<td>Good</td>
<td>Light blue</td>
<td></td>
</tr>
<tr>
<td>Bluetta</td>
<td>Middle Atlantic states</td>
<td>Med. tight</td>
<td>Small</td>
<td>Good</td>
<td>Blue</td>
<td></td>
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Continued
<table>
<thead>
<tr>
<th>Highbush Variety</th>
<th>Area</th>
<th>Season</th>
<th>Fruit Cluster</th>
<th>Berry Size</th>
<th>Flavor</th>
<th>Color</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collins</td>
<td>Great Lakes states; New England</td>
<td>Midseason</td>
<td>Med. tight</td>
<td>Med. large</td>
<td>Excellent</td>
<td>Light blue</td>
<td></td>
</tr>
<tr>
<td>Coville</td>
<td>Late</td>
<td>Loose</td>
<td>Very large</td>
<td>Good, tart</td>
<td>Light blue</td>
<td>Frozen, pies, preserves, fresh</td>
<td></td>
</tr>
<tr>
<td>Croatian</td>
<td>Mountain and Upper Piedmont of the South; Southwest</td>
<td>Loose</td>
<td>Med. to large</td>
<td>Good</td>
<td>Dark blue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Darrow</td>
<td>Middle Atlantic states</td>
<td>Late</td>
<td>Med. tight</td>
<td>Large</td>
<td>Excellent</td>
<td>Light blue</td>
<td></td>
</tr>
<tr>
<td>Dixi</td>
<td>Middle Atlantic states</td>
<td>Late</td>
<td>Med. tight</td>
<td>Large</td>
<td>Excellent (does not hold up well)</td>
<td>Blue</td>
<td></td>
</tr>
<tr>
<td>Earliblue</td>
<td>Early</td>
<td>Loose</td>
<td>Large</td>
<td>Good</td>
<td>Light blue</td>
<td>Fresh, frozen, pies</td>
<td></td>
</tr>
<tr>
<td>Elliott</td>
<td>Late</td>
<td>Loose</td>
<td>Large</td>
<td>Good; high dessert quality</td>
<td>Light blue</td>
<td>Light blue</td>
<td></td>
</tr>
<tr>
<td>Floridablue Harrison</td>
<td>South, Southwest Mountain and Upper Piedmont of the South; Southwest</td>
<td>Late April</td>
<td>Large</td>
<td></td>
<td>Light blue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Herbert</td>
<td>Midseason, July</td>
<td>Loose</td>
<td>Very large; 1 in.</td>
<td>Excellent; highest dessert quality</td>
<td>Med. blue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jersey</td>
<td>Late</td>
<td>Very loose</td>
<td>Med. large</td>
<td>Fair</td>
<td>Light blue</td>
<td>Fresh, baked</td>
<td></td>
</tr>
<tr>
<td>Lateblue</td>
<td>Mountain and Upper Piedmont of the South</td>
<td>Late</td>
<td>Loose</td>
<td>Med.</td>
<td>Good</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meader</td>
<td>Great Lakes states; New England</td>
<td>Midseason</td>
<td>Loose</td>
<td>Med.</td>
<td>Subacid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morrow</td>
<td>Ohio Valley; Southwest Mountain; Upper Piedmont</td>
<td>Very early</td>
<td>Large</td>
<td>Good</td>
<td>Med. blue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Murphy</td>
<td>Mountain and Upper Piedmont of the South; Southwest</td>
<td>Loose</td>
<td>Med.</td>
<td>Fair</td>
<td>Dark blue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patriot</td>
<td>Mountains of the Piedmont; New England</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rancocas</td>
<td>Very tight</td>
<td>Small</td>
<td>Good</td>
<td>Med. blue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubel</td>
<td>Very loose</td>
<td>Small</td>
<td>Fair</td>
<td>Med. blue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharpblue Weymouth</td>
<td>South; Southwest</td>
<td>Late April</td>
<td>Med. loose</td>
<td>Large</td>
<td>Poor</td>
<td>Dark blue</td>
<td></td>
</tr>
<tr>
<td>Wolcott</td>
<td>Loose</td>
<td>Med.</td>
<td>Good</td>
<td>Dark blue</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
blue cheese

A white, semisoft to semihard, full-fat, cow’s milk cheese with internal blue mold, matured to give a piquant flavor. It is an attempt to duplicate the French Roquefort made from the milk of sheep; it is usually in a wheel shape, has a piquant spicy flavor, and is ripened by internal mold (Penicillium roquefortii).

Composition: moisture 40–42%; protein 21–22%; fat 28–31%; carbohydrate 2%; ash 5–6%; salt 4%; 396 mg Na/oz (28 g); 100 calories/oz (28 g) or 60 calories per 1-in. cube

Storage: can be frozen (0°F) in small quantities if used for salads or dressings; use in 6 months

Other blue-veined cheeses are danablu, gorgonzola, salad or dressings; use in 6 months

1 cup, crumbled = 4 oz

Penicillium glaucum

Spore growth
Blister rot—spots 1/2- to 2-in. diam.
Pinhole rot—spots, 1/4-in.

Control: Insecticide

Fruit: 40-45°F almost completely retards growth

Part 2: Fish and Shellfish, Composition; Minerals, Food

blue mackerel

See mackerel

blue mold rot (blue-contact mold) 1) A citrus fruit rot, caused by Penicillium italicum, that develops in the following stages:

- Pinhole rot—spots, 1/2- to 1-in. diam.
- Blister rot—spots 1/2- to 2-in. diam.

Spore growth

Control: Refrigeration of fruit at 40 to 45°F almost completely retards growth

2) A rot of figs, caused by Pencillium spp., that is blue-green in color and slightly softens the tissue

See penicillium rot

Blue No. 1

An FD & C food color additive

blue plate

A plate with partitions to keep food separated

blue stem

See stem rot

blue stem cattle

Cattle from 1) Osage of Oklahoma or 2) Flint hills of Kansas

bluestone

(CuSO₄ • 5H₂O) Cupric sulfate

blue veal

Blue cheese

blue vinny (blue vinid; dorset blue) A low-fat, flat, hard, white, English cheese that has blue horizontal veins and is made from cow’s milk

blue walleye (Stizostedion vitreum glaucum) A blue pike; a food fish
blue wensleydale A blue cheese made from cow's milk

blushing Milky appearance of a can coating, due to absorption of water

blutwurst (blood sausage; leberwurst) A moist or semidry, cooked or uncooked, smoked or unsmoked Swiss sausage made from fine-, medium-, or coarse-chopped, mild- or medium-seasoned beef, pork, and veal (may have blood added) stuffed into a beef, pork, or an artificial casing. See blood sausage. See Part 2: Sausage Identification.

BOA See biological oxygen demand

boal A red Madeira wine. See bual.

boar Porcine: an uncastrated male pig or hog. See Part 2: Meat and Meat Products, Composition; Swine, Market Classes and Grades.

board foot A measure of lumber

\[
1 \text{ board foot} = 144 \text{ cubic inches (in.}^3) = 0.0024 \text{ cubic meter (m}^3)\
\]

boar odor An objectionable sex odor of mature male swine. It is caused by a normal metabolite of male sex hormone. The chemical responsible for the odor is 5α-androst-16-en-3-one and it can be detected by most females and approximately 50% of males. Early castration eliminates the problem.

bob veal Carcass of immature veal; the animal is usually less than 21 days of age.

bob white (Colinus virginianus) An edible quail or partridge. See quail.

bocchini A small, provolone-type cheese.

bock beer A dark, strongly alcoholic, sweet beer brewed in winter and served in the spring.

bocksbeutel A flagon-shaped (bulging bottle) bottle. See franconia.

bockwurst An uncured, unsmoked, imitation sausage made from finely chopped, mildly seasoned beef, pork, and veal, sometimes made with milk, vegetables, and eggs, stuffed into a beef or an artificial casing.

bockwurst, cooked A moist, cooked, unsmoked American sausage made from finely chopped, mildly seasoned beef, pork, and veal, sometimes made with milk, vegetables, and eggs, stuffed into a beef or an artificial casing.

bockwurst, fresh A moist, uncooked, unsmoked American sausage made from finely chopped, mildly seasoned beef, pork, and veal, sometimes made with milk, vegetables, and eggs, stuffed into a sheep or an artificial casing.

bockwurst (East Germany) A moist, cooked, smoked East German sausage made from medium-chopped, medium-seasoned beef and pork stuffed into a pork or an artificial casing.

BOD See biochemical oxygen demand

bodara Dried cod or pollock.

bodek A Jewish food inspector (meshgiach) specifically trained to check the internal organs of animals for blemishes and scars.

BOD load for trickling filter Waste applied in pounds of BOD per day per 1000 cubic feet of filter.

boerkenkaas A farm-made type of gouda cheese.

boerenkool A smoked, country sausage.

boerenkaas A farm-made type of gouda cheese.

bofrot A wheat-flour doughnut.

bog strawberry See cranberry.

bohea A Java tea.

bohemian presky A medium- to coarsely chopped, uncooked, unsmoked American sausage available in large-diameter links or as a ring sausage.

bohemian rye bread See bread, bohemian rye.

bohemian rye flour Rye flour blended with wheat flour to give it more gluten so it can be used in baking bread.

bohobe Steamed maize chindanda.

boil To cook partially or fully submerged in water or liquid at boiling temperature (100°C; 212°F). See Part 2: Beans, Dry, Cooking; Vegetable Boiling; Vegetables, Boiling Time, Frozen.

boiled ham A cured, unsmoked ham that is boned, cooked (steam or water cooked), compressed, and shaped. See also ham, boiled.
boiled soap A hard soap made from tallow or grease, using a soda base and removing the glycerin formed.

boiler plate A term used to describe the terms and conditions on the back side of a purchase order.

boiling See Part 2: Altitude Corrections for Boiling Water.

boiling point (bp) The temperature at which a liquid vaporizes; normal boiling point is the temperature at which the vapor pressure of a liquid reaches 760 mm Hg.

Boiling point elevation:
- 0.52°C for 1 g mol. wt. of a nonionized substance (e.g., sugar) per liter of water
- 1.04°C for 1 g mol. wt. of a completely ionized substance (e.g., NaCl) per liter of water

540 cal is required to change 1 g of water at 100°C into steam at 100°C. See altitude, pressure cooker.

boiling water bath canner A kettle with lid, rack, and cover; deep enough to allow water to cover jars by 1-2 in.; used for processing high-acid (pH below 4.6) foods.

boil, rolling A boil that cannot be stirred down.

bois de rose oil Obtained by steam-distillation of wood from Aniba rosaeodora; used as a floral flavoring agent in food.

Storage: full, tight, glass container in a cool, dark place.

bojak A sorghum beer.

bojalwa A sorghum beer.

bok choy (celery cabbage; celery mustard; Chinese cabbage; Chinese mustard; pak choi) A Chinese or oriental cabbage (3-4 lb) or greens with 8-14 in.-thick, white, crisp stalks (10-14 in.) and large, spoon-shaped, dark, fleshy green leaves; can be frozen. It takes 45-60 days to mature. See Chinese cabbage; Chinese chard.

Varieties Days to maturity
- Crispy choy 45
- Lei choi 47

1 bunch bok choy = 4 cups, sliced.

See Part 2: Vegetable Composition, Part I.

bokinj A Swiss cheese made from cow's milk.

bola A round (with flattened poles), semihard, edam-type cheese made from cow's milk.

bolar roast A beef roast made from the lower half of a clear-cut shoulder (shoulder clod).

boletes Species of fleshy, central-stalk fungi (mushrooms), several of which are edible.

Boletus A genus of mushrooms.

bolina A blue cheese made from cow's milk.

bollos pelones Fried or poached corn bread containing spiced meat.

boll weevil An insect that lays its eggs in cotton buds and bolls; the larvae destroy the fruit; adults are gray-brown with long snout, about ¼ in. long; larvae are white with brown head.

bollworm A moth that lays its eggs on squares, blooms, and bolls of cotton; the larvae destroys the fruit; adults are a gray-brown moth with green areas, wingspread approx. 1½ in.; larvae (young) are white and brown and (old) green to orange with brown stripes.

bologna (Infrequently referred to as breakfast sausage.) 1) A comminuted, mildly flavored, fully cooked (ready to serve), smoked, large-casing sausage; made from beef, pork, and spices; may also be all beef or garlic-flavored; normally contains 60% beef and 40% pork; however, the following percentages are found in formulations:

<table>
<thead>
<tr>
<th>Percentage of Ingredient</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-60% bull or beef trimmings</td>
<td></td>
</tr>
<tr>
<td>30-60% regular pork trimmings (50-50)</td>
<td></td>
</tr>
<tr>
<td>0-10% hearts</td>
<td></td>
</tr>
<tr>
<td>0-32% pork cheek meat</td>
<td></td>
</tr>
<tr>
<td>0-25% veal</td>
<td></td>
</tr>
<tr>
<td>0-35% beef brisket &amp; cheek meat</td>
<td></td>
</tr>
<tr>
<td>0-10% cooked beef tripe</td>
<td></td>
</tr>
<tr>
<td>0-25% back fat</td>
<td></td>
</tr>
<tr>
<td>10-40% ice</td>
<td></td>
</tr>
<tr>
<td>2-3% salt</td>
<td></td>
</tr>
<tr>
<td>0-8% binders (nonfat dry milk, dry skim milk, soya flour)</td>
<td></td>
</tr>
<tr>
<td>*0.5 oz sodium nitrite per 100 lb</td>
<td></td>
</tr>
<tr>
<td>*0-2 oz sodium nitrate per 100 lb</td>
<td></td>
</tr>
<tr>
<td>*7-16 oz sugar per 100 lb</td>
<td></td>
</tr>
<tr>
<td>*0-5 oz sodium ascorbate per 100 lb (added late in chopping)</td>
<td></td>
</tr>
<tr>
<td>*4-6 oz white pepper per 100 lb</td>
<td></td>
</tr>
<tr>
<td>or 4-6 oz black pepper per 100 lb</td>
<td></td>
</tr>
<tr>
<td>*0-2 oz ground cardamom per 100 lb</td>
<td></td>
</tr>
<tr>
<td>*2-2½ oz oregano per 100 lb</td>
<td></td>
</tr>
<tr>
<td>*0-2 oz sage per 100 lb</td>
<td></td>
</tr>
<tr>
<td>0-1½ oz fresh onions per 100 lb</td>
<td></td>
</tr>
<tr>
<td>0-2 oz nutmeg per 100 lb</td>
<td></td>
</tr>
<tr>
<td>0-2 oz garlic per 100 lb</td>
<td></td>
</tr>
<tr>
<td>0-2 oz ginger per 100 lb</td>
<td></td>
</tr>
</tbody>
</table>

*combination often used

Processing:
1. Grind through ⅛ in. plate.
2. Chop beef.
3. Add seasoning and cure (not ascorbate).
4. Add binder and ice as needed.
5. Add pork, ice, and ascorbate.
6. Do not exceed 65°F.
7. Stuff.
8. Smokehouse temperature:

<table>
<thead>
<tr>
<th>Time (h)</th>
<th>Temp. (°F)</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>⅛</td>
<td>130</td>
<td>Dry</td>
</tr>
<tr>
<td>1</td>
<td>155</td>
<td>Smoke</td>
</tr>
<tr>
<td>1⅛</td>
<td>160</td>
<td>Smoke</td>
</tr>
<tr>
<td>1½</td>
<td>185</td>
<td>Cook (until internal temp. reaches 150-155°F)</td>
</tr>
</tbody>
</table>

Shower for 20-30 min; room temperature, 1 h; store in cooler.
bologna

Home storage: Keep in original wrapper and refrigerate.
2) A finely chopped, cooked, smoked, fine-cut, batter-type American sausage available in medium- to large-diameter links or large-diameter casings for slicing (more popular)

<table>
<thead>
<tr>
<th>Composition</th>
<th>Moisture (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Carbohydrate (%)</th>
<th>Ash (%)</th>
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</thead>
<tbody>
<tr>
<td>Beef</td>
<td>54.8</td>
<td>11.7</td>
<td>28.4</td>
<td>2</td>
<td>3.2</td>
</tr>
<tr>
<td>Beef and</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pork</td>
<td>54.3</td>
<td>11.7</td>
<td>28.3</td>
<td>2.8</td>
<td>3</td>
</tr>
<tr>
<td>Pork</td>
<td>60.6</td>
<td>15.3</td>
<td>19.9</td>
<td>0.7</td>
<td>3.5</td>
</tr>
<tr>
<td>Turkey</td>
<td>65</td>
<td>13.7</td>
<td>15.2</td>
<td>1</td>
<td>3.3</td>
</tr>
</tbody>
</table>

1 slice = 22–42.5 g
220–225 mg Na/slice (22 g)

See Part 2: Meat Composition; Sausage Composition; Sausage Identification; Sausage, Nutritive Value; Sausage, Types

bolognese A pasta sauce made from vegetables, tomatoes, wine, and herbs

bolognese, alla Food in the rich style of Bologna

bowl 1) A measure of cloth
1 bolt = 36.576 m
2) Development of a seed stalk

bolted Separated by a bolting cloth, as flour from bran

bolting Ingesting or eating too rapidly or greedily

bolus (eud) Food that a ruminant regurgitates for remastication before reswallowing; food formed into a mass for swallowing; a large pill for dosing animals

bomb Two or more frozen mixtures are combined in a melon or mold

Bombay duck (Harpodon negereus) A small (3 oz, 10–12 in.), gelatinous fish from the Indian coast that may be consumed fresh or often is split, boned, and dried or is canned in relish

bomb calorimeter An instrument for measuring gross energy or heat of combustion

bombe A frozen dessert made with an outside layer of syrup custard and the center filled with ice cream, parfait, or mousse to which beaten cream has been added. A ball-shaped dessert or confection. A special ring-shaped mold with a lid is used.

bonal A red, aperitif wine

bonardo A dry, red wine

bonavist See lablab

bonbel A medium-flavored, semisoft cheese made from cow’s milk

bon bons See candy

bond The state- (or federally) controlled holding of spirits until duty is paid

bondard A camembert-type cheese made from cow’s milk and shaped into short cylinders

bondaroy au foin (pithiviers au foin) A soft cheese with blue rind made from cow’s milk and matured 5–7 weeks in hay

bondart A soft cheese made from cow’s milk

bonde (bondart; bondon) A soft, small, loaf-shaped, neufchâtel-type cheese made from whole milk

bondiola pork butt A semidy, uncooked, smoked, heavily seasoned Uruguayan whole pork butt that is not stuffed into a casing

bondon A cheese made from ewe’s milk or from a mixture of cow’s and ewe’s milk. Sometimes it is a blue cheese.

bondon de Neufchâtel A camembert-type cheese made from cow’s milk

bone 1) The fundamental structural system of the body. Composed of connective tissue and

\[ \text{Ca}_3(\text{PO}_4)_2 \_ \text{CaCO}_3; \]
skeleton; retail meat-store bones will yield 60% meat scraps; 30% moisture; 10% tallow.
Bone in 1000-lb beef carcass:
- Chuck bones 12 lb
- Shoulder blade bone 3.2 lb
- Forequarter shank bones 13.2 lb
- Hindquarter bones 16.5 lb
- Rump and sirloin bones 20.5 lb
- Plate and rib bones 25.2 lb
Total 90.6 lb

2) To remove bones from; removal of bones

See Part 2: Beef Chuck; Beef Round, Bone Structure; Beef Wholesale Cuts; Beef Yields; Bone; Bone Age; Bone and Body Weight; Bone and Retail Cuts; Bones, Composition; Gland Weights; Moisture in Biological Materials; Organ Weights; Poultry Yield

Bone charcoal (bone black) Composition: dry matter 90%; protein 8.5%; calcium 27%; phosphorus 13%

Bone dust A fish from which the principal bones have been removed

Bone fertilizer Forms:
- Boiled or steamed bone
- Bone ash
- Bone black or animal charcoal
- Bone dust
- Bone meal
- Raw bone

Bone flour, steamed A phosphorus fertilizer

Bone grease Fat obtained from rendered bones; oil obtained by dry distillation; tallow obtained by boiling

See Part 2: Iodine and Saponification Values

Boneless Contains no bone

Boneless fish Contains no bones

Boneless sirloin Boned muscle of the loin end wholesale cut

Bone meal A meal made from pulverized animal bones, either steamed under pressure or unsteamed and ground. The former is used for animal feeds and the latter, called raw, for an all-around fertilizer (slow in action). Feed grade must have 65-75% tricalcium phosphate and 2% max. ammonia. Fertilizer grade has 40-55% tricalcium phosphate, 20-25% phosphoric acid, and 4-5% ammonia. A general organic fertilizer. Composition (steamed): dry matter 96-97%; protein 11-13%; fiber 2%; fat 3%; ash 70%; calcium 24-30%; phosphorus 12.5-13.3%; sodium 5.5%; sulfur 2.4%; iron 2.6%

See Part 2: Fertilizer Materials; Packinghouse By-Products Composition

Bone meal powder Diet supplement used mainly as a source of calcium

Bone oil 1) Oil obtained by heating bones. 2) The liquid portion of bone fat; used as a lubricant and on leather

Bone phosphate Derived from animal bones

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Calcium phosphate</th>
<th>Soft animal matter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>Calcium phosphate</td>
<td>Soft animal matter</td>
</tr>
<tr>
<td>Burned</td>
<td>Organic matter</td>
<td>Calcium phosphate</td>
</tr>
</tbody>
</table>

Bone set A bitter herb
Bonekamp Bitter cordial
Boned fish A fish from which the principal bones have been removed
Boné damme See orache
Boné sirloin Boned muscle of the loin end wholesale cut
Bonito (bonita) Common name for several saltwater food fishes, resembling a mackerel (related to mackerel) and tunny fish, but the flesh (reddish) is more tunalike (tuna or mackerel family) and is used for the same purpose.
- Atlantic, Sarda sarda
- Australia, S. australis
- California, S. lineolata
- Ocean, skipjack
- Pacific, S. chilensis
- Plain, Orcynopsis unicolor
- Striped (Oriental), S. orientalis

It is available fresh or dried and flaked.
See Part 2: Vitamin A, Fish; Vitamin D, Fish

Bonne damme See orache
Bonnekamp Bitter cordial
Boodoo (abodoo) An acidic maize dumpling
Borage (Borago officinalis) A coarse, annual (80 days), 2-ft, aromatic herb with a cucumber-like fragrance; the leaves, flowers, and flower spikes are used to add flavor to food. Leaves may be used as a salad or to flavor lemonade and cooling drinks. Flowers are also sugared and used as a confection. See cool tankard

Parts of plant:
- Flowers are candied
- Leaves and flower tops used in beverages
- Nectar used by bees
- Oil used to flavor drinks (adds coolness)
- Tender growth boiled and used as a vegetable (greens)
- Young leaves used in salads

Borassus palm See palmyra

Borax Hydrated sodium salt of boric acid, Na₂B₄O₇ • 10H₂O (sodium tetraborate). There is also an anhydrous grade used as an herbicide. See Part 2: Fertilizer Materials

Bordeaux A region in southwestern France in which red (claret) and white wines of the same name are produced

Types:
- Red (claret)
- White
- Graves (dry)
- Sauterne (sweet)

See Blaye; Bordeaux, white; Bourg; Cabernet; Cérons; claret; Entre Deux Mers; Loupiac; Médoc; Pomerol; Premières Côtes de Bordeaux; Saint Croix de Mont; Sauternes; St. Emilion

Bordeaux mixture A mixture of slaked lime and copper sulfate solution; used as an insecticide, especially for potato bugs

Bordeaux supérieur A dry, well-balanced, red, French wine
Bordeaux, white  White wine produced in the Bordeaux (southwest France) area in the districts of Barsac, Cérons, Entre Deux Mers, Graves, Loupiac, Premières Côtes de Bordeaux, Sainte Croix du Mont, and Sauternes.

Bordelaise A rich sauce made of red (sometimes white) wine, shallots, thyme, and pepper and used for red meat.

Border, Leicester A large, fertile breed of English sheep used primarily in crossing.

Bordetella A genus of microorganisms that are gram-negative coccobacilli; they cause respiratory-tract infections.

Bordeaux (B) A nonmetallic element; at. no. 5; at. wt. 10.82; Group IIIA of the Periodic Table; oxidation state +3; electron configuration 2-3 orbit K L. A trace element in plant nutrition; deficiency causes death of stem and root tips and irregular growth, with terminal end curling and disintegration of plant tissue.

Bos A zoological genus that includes all cattle (and buffalo).

Bosham-kimchi An acidic, carbonated Chinese cabbage.

Bossons A cow’s-milk cheese.

Bossons macéres A strong-flavored, valencay-type cheese made from goat’s milk and matured in white wine or brandy, olive oil, and herbs.

Boston baked beans Baked beans (navy, kidney, or haricot), cooked slowly (6-8 h in an oven) and flavored with molasses. See also haricot bean.

Boston bluefish See pollock.

Boston brown bread A moist, steamed, brown bread made from the following ingredients:

- Corn meal
- Baking soda
- Molasses
- Rye meal or flour
- Sour milk or buttermilk
- Wheat flour (often whole wheat)

Boston butt Upper portion of a pork shoulder.

Boston cream pie Composition:

- 2½-in. sector of 8-in. round pie = 210 calories

Boston cut (English cut) A rectangular cut of meat from the thin end of the fourth and fifth ribs of the beef chuck.

Boston lettuce (big Boston, butterhead) A type of lettuce having velvety spreading leaves that separate easily.

Boston mackerel Salted mackerel.

Botanical Refers to any plant, root, bark, herb, or spice used for its effect on the body in addition to its taste.

Botargo (red caviar) Dried, salted roe (eggs) of gray mullet.

Boterhamworst 1) A moist, cooked, smoked Dutch sausage made from fine- or coarse-chopped, medium-seasoned pork, beef, and/or veal with coarsely chopped fat and stuffed into a beef or an artificial casing. 2) A moist, cooked, unsmoked Belgian sausage made from finely chopped, medium-seasoned beef and pork stuffed into beef or artificial casings.
**botryodiplodia fruit rot** A wound parasite fungus (*Botryodiplodia theobromae* formally called *Diplodia musae*) that causes the following forms of rot in bananas:

- **Crown rot**—similar to main stem rot except a larger area
- **Finger-stalk rot**—water-soaking and blackening of finger stalks
- **Main-stalk rot**—cut end of main stem takes on a water-soaked appearance, followed by blackening, softening, and splitting of stem
- **Tip rot**—brown discoloration and softening of the pulp; Peel becomes black and wrinkled

**Control**: Cooling fruit to 53-56°F and prompt ripening and marketing

**botryosphaeria canker** A fungus that affects woody tissue (blisters filled with liquid and later a sunken, dark-colored lesion) and fruit (small, reddish brown spots that enlarge to form egg-shaped rotted spots) on apple and pear trees

Control: Prune and destroy affected parts; maintain trees in good vigor and use fungicide spray.

**Botrytis** A genus of fungi causing rotting in plants and diseases in insects

See Part 2: Mold, Food; Rot Spoilage

**Botrytis cinerea** See pourriture noble

**botrytis rot** (gray-mold rot) A citrus fruit rot caused by *Botrytis cinerea* in which the fruit surface becomes drab or cinnamon brown and later may turn buff or dark brown

**Control**: Prune and destroy affected parts; maintain trees in good vigor and use fungicide spray.

**botulinum** See Clostridium botulinum

**botulism** A type of food poisoning caused by consuming toxin produced by the anaerobic bacteria *Clostridium botulinum*; most potent poison known to humans; neurotoxin formed during growth of *C. botulinum* (spore-forming bacteria that require no oxygen). Six antigenic types of toxin (different species): humans (A, B, E, F); animals (C, D). Spores of these bacteria are often found in soil and are likely to be present in soil-contaminated food. See also *Clostridium botulinum*

See Part 2: Bacterial Food-borne Illnesses; Diseases, Food-Borne; Food Poisoning, Bacteria; Illness from Food; Infectious Diseases, Food-Borne; Microbial Toxins

**bouché** Corked

**bouchée** Small, puff pastry shell or patties filled with meat or fish

**boudanne** A French cheese made from whole or skimmed milk

**boudin** A light sausage or pudding usually made with chicken and veal or from chicken or pork

**boudin aux fruits** A moist, cooked, unsmoked French blood sausage made from medium-chopped, medium-seasoned pork with fruits or vegetables and stuffed into pork or sheep casings

**boudin blanc** A moist, cooked, unsmoked Belgian sausage made from finely chopped, medium-seasoned pork, stuffed into pork casings

**boudin de Bourgogne** A moist, cooked, unsmoked French blood sausage medium-chopped, medium-seasoned (with fat, onions, milk, and rice) pork stuffed into pork casings

**boudin de langue** A moist, cooked, smoked French blood sausage made from medium-chopped, medium-seasoned beef and pork stuffed into a beef casing. The product is like saucisson noir with pork or beef tongues.

**boudin de Strasbourg** A moist, cooked, smoked French blood sausage made from medium-chopped, medium-seasoned (with fat and cooked onions) pork
boudin de Strasbourg

0. with 15% rinds and 15% milk-soaked bread and stuffed into pork casings

boudin du Poitou A moist, cooked, unsmoked French blood sausage made from medium-chopped, medium-seasoned pork with spinach, cream, milk, and bread (no fatty tissues added) and stuffed into pork casings

bouerou A sorghum beer

bougon A valetay-type cheese made from goat's milk

bouillabaisse A chowder made from at least two kinds of fish (several types of fish are used); a stew made from fish, shellfish, onions, tomatoes, and spices

bouilli Boiled or stewed food (French)

bouillon To boil (French)

bouillon broth A clarified liquid (soup) prepared by simmering beef or fish; usually dark in color. It is seasoned with vegetables and condiments (herbs and spices) during cooking. Tomato bouillon has a tomato-juice base and can be combined with meat stock.

bouillon cube (or powder) A dehydrated cube containing salt, hydrolyzed vegetable protein and fat, dextrin, sugar, meat extract, and coloring.

bouillion (broth; stock) A clarified liquid (soup) prepared by simmering beef or fish; usually dark in color. It is seasoned with vegetables and condiments (herbs and spices) during cooking. Tomato bouillon has a tomato-juice base and can be combined with meat stock.

See Part 2: Soups, Composition

Ingredients: salt 50-70%; beef extract 8-30%; plant or vegetable extract 3-30%

bouillir To boil (French)

boisson bouillon cube (or powder) A dehydrated cube containing salt, hydrolyzed vegetable protein and fat, dextrin, sugar, meat extract, and coloring.

bouillon (broth; stock) A clarified liquid (soup) prepared by simmering beef or fish; usually dark in color. It is seasoned with vegetables and condiments (herbs and spices) during cooking. Tomato bouillon has a tomato-juice base and can be combined with meat stock.

Storage: room temperature (below 70°F); shelf life 1 yr

Composition: moisture 4%; protein 20%; fat 3%; carbohydrate 5%; ash 68%

Boulin's picro-formol Picric acid, saturated:

Aqueous solution (1 g/75 ml H2O), 75 parts

Formalin, 25 parts

Glacial acetic acid, 5 parts

Not for use with kidney or cells containing mucin.

1. Fix for 4-16 h
2. Wash with several changes of 50% alcohol
3. Wash with several changes of 70% alcohol
4. Store in 70 or 80% alcohol

boukhla Fig brandy

boula boula A soup made of turtle, sherry wine, and whipped cream

boule des moines A semisoft cheese made from cow's milk and shaped into 80-mm balls; herb-flavored.

Also, a strong flavor is often imparted by maturing in beer washing

boulette A semisoft cheese made from cow's milk; usually with a red rind. A strong flavor is often imparted by maturing in beer washing. Pepper and herbs are often used as flavoring.

boulogne A dry, uncooked, unsmoked Belgian sausage made from medium-chopped, medium-seasoned horsemeat. It is fermented and stuffed into pork casings.

bound water Water that has been adsorbed by the colloids (proteins) of a living cell

bouquet The smell or scent that characterizes an alcoholic beverage, especially a fine wine

bouquet garni A group of herbs used in seasoning stews, soups, and casseroles that is removed after cooking; usually contains bay leaves, onion, parsley, and thyme. May also contain dried orange peel, lemon thyme, mace, marjoram, and winter savory

bouquetiere, à la With several vegetables

bourbon whiskey An alcoholic beverage made from a mash that contains at least 51% corn (with added rye and barley) in its grain content (usually 65-75% corn); aged in charred new oak containers for at least 2 yr

bourdon tube A closed, flexible, coiled, metal tube that expands or contracts with temperature and controls the position of a marking pen on a temperature recorder

Bourg Red and some white wines produced on the north bank of the Gironde River in the Bordeaux region (southwest France), e.g., Côte de Bourg; bourgeais

Bourgogne A dry, white or light red wine

bourgueil A French, red, table wine

bourguignon A meat cooked in red wine sauce with onions and mushrooms

bourride A fish dish

bourrault A small (250 g), triple-cream, excelsior-type cheese that is sometimes herb-flavored and has a light pink rind

boursin A soft-ripened, white, triple-cream, excelsior-type French cheese made from whole cow's milk and sometimes flavored with garlic, herbs, or pepper

boursoufl A soft French cheese

bouitifar A semidy, cooked, unsmoked French blood sausage made from medium-chopped, medium-seasoned pork stuffed into beef or pork casings

bouza A sorghum or millet beer

bovine Pertaining to oxen or cattle (Bos bovis and related species); Latin bos

See Part 2: Molds, Mycotoxins

bovine TB medium See Part 2: Microorganism, Media

bowfin (Amia calva) A mudfish that can be used for food

bowl chopper See chopper

bow tie A bow-tie-shaped pasta, 1 5/8 × 1 1/2 in.

box A medium-flavored, semisoft cheese made from partially skimmed cow's milk

box curing (pressure) Curing bacon in a box and applying pressure to it during cure. Use 2 oz cure/lb bacon; duration of cure is not too important, because bacon will not overcure

box elder A tree that is fair for firewood [19 × 10^6 Btu/cord (20% moisture)], medium-difficult to start, and difficult to split and produces medium smoke, fair coals, and few sparks

box elder bug (Leptocoris trivittatus) A black and red sucking bug that attacks ripening fruit

boysenberry A seedless, red to purple, oblong, juice berry of a trailing blackberry developed by crossing...
raspberry, blackberry, and loganberry; very similar to loganberry

<table>
<thead>
<tr>
<th>Variety</th>
<th>Color</th>
<th>Size</th>
<th>Season</th>
<th>Major growth area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thornless</td>
<td>Black-maroon</td>
<td>2 in.</td>
<td>June</td>
<td>Southern Pacific Coast</td>
</tr>
</tbody>
</table>

Frozen styles available: whole, with or without sugar or syrup
- 1 24-qt crate = 12-18 qt, canned
  = 32-36 pt, frozen
- 1 pt, fresh = 13 oz, frozen
- 1 pt, frozen = 1.3-1.5 pt, fresh

See Part 2: Fruit, Frozen Yield

**boysenberry, canned** In addition to boysenberries, may also contain natural and artificial flavors

Syrups:
- Extra light (< 14% sucrose)
- Light (14-19% sucrose)
- Heavy (19-24% sucrose)
- Extra heavy (24-35% sucrose)

**BP** Broken pekoe; a cut-leaf rather than full-leaf tea

**Br** Symbol for the element bromine

**bra** A hard (sometimes soft), white, creamy, mild (sometimes salty and sharp), compact, Italian cheese made with partly skimmed cow's milk

**Brabham** A variety of cowpeas

**brachetto** A red, still or sparkling, Italian wine

**brachiocephalicus** A muscle that runs from the shoulder to the head along the ventral side of the neck

**braciola** Meat rolled around a stuffing and cooked in wine sauce

**brack** A heavily fruited tea bread

**brack bread** Bread usually made from rye and often with molasses

**bracken (brake) fern** (fiddlehead; *Pteridium* spp.)
- 1) Unopened leaves and roots are edible. 2) A poisonous plant See *fern shoots*

**See Part 2: Poisonous Plants**

**brackish** A salty, alkaline taste

**brackkorv** A moist, cooked, smoked Swedish sausage made from finely chopped, mildly seasoned (potato starch and skimmed milk powder) beef and pork stuffed into a peelable artificial casing

**bract** A modified leaf below a flower or flowering part

**bracteole** A small or secondary modified leaf below a flower or flowering part

**bradenham ham** A dry-cured, black-skinned pork ham smoked in molasses

**brado** Herring that is lightly salted and smoked

**Bradford system** See *English system*

**Braford** A cross of Brahman (3/8) and Hereford (5/8) beef cattle

**braga** A millet beer with honey or grapes

**braganza** (Portuguese cabbage) A white-ribbed cabbage with smooth or curly leaves, used like sea kale

See *couve tronchuda*

**Brahma** An Asiatic class of chickens that have feathered shanks, pea comb, and yellow skin and lay a brown-shelled egg

<table>
<thead>
<tr>
<th>Varieties</th>
<th>Plumage color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light*</td>
<td>Generally white; neck feathers black with white edging; tail feathers dark</td>
</tr>
</tbody>
</table>
| Dark*     | (Female) neck and back are greenish black with edging of white; front of neck black; rest of body mostly black  
  (Male) head and upper neck are gray; rest of body gray with black penciling; tail is black |
| Buff*     | Similar to Light except the white areas are replaced by buff |

*Bantam varieties

See Part 2: Poultry Breeds and Varieties

**Brahman** (Indian cattle; Zebu) A breed of beef cattle derived from several breeds of native Indian zebru (*Bos indicus*) cattle; they have a prominent hump above the shoulders and excess skin below the neck and brisket and have flat horns and drooping ears; their color ranges from gray to red. Guzerat strain most popular in the United States; can withstand extreme heat and repel both flies and ticks

See Part 2: Beef and Dual-Purpose Cattle

**Brahorn** A cross of Brahman and Shorthorn beef cattle

**braided cheese** String cheese made from cow's milk, often flavored with caraway or nigella seed

**brain** Nerve tissue in the skull of animals; some types are used as food, e.g., calves.

- 0.9 lb/1000-lb steer
  - To prepare, soak in cold water and remove blood vessels and connective tissue; often braised or breaded and then sauteed
  - Composition: moisture 79%; protein 10%; fat 9%; carbohydrate 1%; ash 1.4%; 35 mg Na/oz (28 g)
  - Store in coldest part of refrigerator; use within 1–2 days.

See Part 2: Beef Cuts and Uses; Cholesterol Control; Gland Weights; Lamb Cuts and Uses; Moisture in Biological Materials; Organ Weights; Pork Cuts and Uses; Unsaturated Fatty Acids; Variety Meat, Cooking; Variety Meat, Percentage of Daily Recommended Allowances; Variety Meat Preparation; Veal Cuts and Uses

**brain heart infusion agar** See Part 2: Microorganism, Media

**brain veal agar** See Part 2: Microorganism, Media

**braise** To cook slowly in a covered utensil with a small amount of liquid (e.g., water, tomato juice, bouillon); a moist-heat method of cooking (for less tender cuts of meat); moisture is added and the product placed in a closed container and cooked either in an oven (350°F) or on top of a stove, frequently preceded by browning in fat.
See Part 2: Beef, Cooking; Beef Cuts; Braising Meat; Braising Time; Lamb Braising; Lamb Cuts; Lamb Cuts and Uses; Meat Composition; Pork, Cooking; Pork Cuts; Pork Cuts and Uses; Pork Loin Cooking; Variety Meat, Cooking; Variety Meat Preparation; Veal Chart; Veal Cuts; Veal Cuts and Uses; Vitamin Retention, Meat

bramble  
(Rubus) Many varieties of what are often called berries, e.g., blackberry

bran  
1) The ground, outer protective layer (pericarp) and the layer just under it (aleurone layer) in cereal grains; pericarp or seed coat; high in roughage and B-complex vitamins. The pericarp is 5% of the kernel and the aleurone is 8% of the kernel. Bran is largely cellulose and contains minerals and vitamins. As milled, it may contain some germ. Yield is 20 lb/bu.  
2) A breakfast food made from the bran and embryo fraction of wheat.  
3) Dried parts of shrimp used for animal food

See Part 2: Wheat and Flour Composition; Wheat, Carbohydrate Composition; Wheat, Fatty Acids; Wheat Kernel Parts; Wheat Products, Composition

bran, breakfast cereal

1 cup All Bran = 2 oz  
1 cup 40% Bran Flakes = 1.2 oz

bran cereals, ready-to-eat
Composition: 160–304 mg Na/oz (28 g)

branched chain  
A linear series or chain of carbon atoms occurring in hydrocarbons and alcohols in which one or more substituent groups is present. Compounds containing branched chains are notably more reactive than normal or straight-chain compounds, especially in catalytic cracking processes; for example, normal heptane has an octane number of 0, whereas isooctane rates 100. The more extended the branching, the more reactive the compound in organic synthesis. Branched-chain compounds are isomeric with the corresponding straight-chain compounds and are indicated by the prefix iso-. An example is butane:

```
H H H H
HC—C—C—CH or CH₃CH₂CH₂CH₃
H H H H

normal butane
(straight-chain)
```

```
H H H
HC—C—CH
H H or CH₃CHCH₃CH₃

isobutane
(branched-chain)
```

branco cure  
Salted (29%) cod that have been bleached by water

brand  
1) A mark burned or frozen on an animal's skin; a trademark.  
2) A mark or stamp approved by a controlling authority.  
3) A sour-milk, curd cheese flavored with beer

brandade  
A creamy, paste mixture of salted cod, milk, and olive oil flavored with pepper, nutmeg, garlic, and lemon juice

brand cheese  
A sour-milk, German cheese that is moistened with beer

brandy  
A spirit with a high alcohol content, distilled from fermented grape juice, wine or wine residues, or other fruit. The distillate or mixture of distillates from fermented juice, mash, or wine of fruit distilled at less than 190 proof; usual range 37–43% alcohol by volume.

Types:  
Armagnac (France)  
Cognac (France)

See Part 2: Minerals (Trace), Limits

brandy flavoring  
A synthetic flavoring

1 tbsp brandy flavoring = ½ cup brandy

brandy mint (balm mint; Mentha peperita)  
Distillation of its purple flowers yields oil of peppermint

brandy sauce  
A butter- and brandy-flavored sauce

brandy snaps  
Dark-colored, cornet- or cylinder-shaped, crisp wafers that are cream-filled and often brandy-flavored

bran flakes  
A breakfast cereal made from 40% bran and embryo of wheat; a ready-to-eat breakfast cereal formed from precooked or toasted mixtures of wheat bran (outer coarse coat of grain), barley malt, sugar, and salt

Types:  
All Bran—made entirely from wheat bran  
Bran Flakes—made with other parts of wheat (40–51% bran)

Composition (40% bran): 85 calories/oz (1 cup); moisture 3%; protein 10%; fat 2%; carbohydrate 77%; sugar 13%

See Part 2: Grain Products, Composition

bran flakes with raisins  
A breakfast cereal

Composition: moisture 7%; protein 8%; fat 1.5%; carbohydrate 76%; 80 calories/oz (1 cup)

Brangus  
A cross of Brahman (½) and Angus (½) beef cattle. They are black and polled. Produced by the following combinations:

1. (½ Brahman and ¼ Angus) x (¼ Brahman and ¼ Angus)  
2. (¼ Brahman and ¼ Angus) x Angus  
3. Brangus x Brangus

See Red Brangus

See Part 2: Beef and Dual-Purpose Cattle

bran muffin  
Composition: moisture 7%; protein 8%; fat 10%; carbohydrate 41%

branntwein  
Brandy

brannvin  
A schnapps-type spirit

brasciole  
Meat wrapped around a stuffing of ground meat and sometimes bread crumbs, cheese, and spices, browned in oil, and cooked in broth

brass  
An alloy of copper, tin, and zinc; somewhat soluble in food and dissolves in both acid and alkalis

Brassica  
A large genus of plants that includes the following:

1. Black mustard
2. Brussels sprouts
3. Cabbage
4. Cauliflower
5. Kale
6. Pe-ts'ai
7. Rape
8. Rutabaga
9. Turnips

bratbuckling  Lightly cured, smoked herring
bratkäse  A semihard, cow’s-milk cheese with a full fruity flavor
bratwurst  A German “frying sausage” product made from lean pork (sometimes veal) trimmings

Ingredients:
- Pork trimmings (70% lean)
- 2% salt
- 6 oz white pepper per 100 lb
- ½ oz celery seed per 100 lb
- ½ oz mace per 100 lb
- 1 oz sage per 100 lb

Grind ⅛ in. plate; mix; stuff; cook in water to internal temp. of 145°F. Usually sold uncooked; called white sausage if cooked; sometimes sold fresh. 1) A fresh, uncooked (if cured, must be labeled), uncooked (sometimes cooked), unsmoked (occasionally smoked) sausage. 2) A moist, uncooked, uncured, unsmoked American sausage made from medium-to-coarsely chopped, mildly seasoned (with coriander, ginger, mustard, and pepper) beef, pork, and veal with added water, extenders, and antioxidants, stuffed into a large-diameter link or ring, pork, or artificial casing. 3) A German sausage made from lean pork trimmings (may contain veal and/or pork); it may be fresh or cooked. 4) Sheboygan bratwurst are fresh and require thorough cooking. 5) Nuremberger bratwurst are fully cooked and require only heating. 6) A moist, uncooked, unsmoked Australian sausage made from finely chopped, mildly seasoned beef and lamb stuffed into a beef or pork casing. 7) A moist, cooked, unsmoked Irish sausage made from finely chopped, mildly seasoned pork stuffed into a pork casing. 8) A moist, cooked, unsmoked Norwegian sausage made from coarsely chopped, medium-seasoned beef and pork stuffed into a pork casing. 9) A moist, cooked, unsmoked West German sausage finely chopped, mildly seasoned pork without nitrite and stuffed into a pork casing; product is cooked before consumption. Composition: moisture 56%; protein 14%; fat 26%; carbohydrate 2%; ash 2%; 158 mg Na/oz (28 g)

See Part 2: Meat Composition; Sausage Identification; Sausage, Types

bratwurst, cooked  A moist, cooked, smoked or unsmoked, uncured American sausage made from fine- to medium-chopped, mildly seasoned (with pepper, coriander, ginger, and mustard) beef, pork, and veal (sometimes made with poultry meat) stuffed into a pork or an artificial casing; available in medium to large links or large-diameter casings for slicing

braudost  An edam-type cheese

braun  A coarse- to chunk-chopped, unsmoked, cooked, jellied American specialty sausage; available in links, in loaves, or canned

braunschweiger  A sausage normally made of 50% pork liver and 50% pork jowl; however, the following percentages are found in formulations:
- 40–50% pork liver
- 20–50% pork jowl
- 0–12% bacon ends or cured meat
- 0–15% veal
- 20–40% pork trimmings
- 0–20% beef trimmings
- 0–7 ½% ice
- 0–5% binder
- *1.6–2.5% salt
- *6–16 oz sugar/100 lb
- *⅛–⅜ oz NaNO₂/100 lb
- *⅛–⅜ oz NaNO₃/100 lb
- *2–6 oz pepper/100 lb
- 0–5 lb onion/100 lb
- 0–4 oz onion powder/100 lb
- *0–1 oz sweet marjoram/100 lb
- *0–1 oz cardamon/100 lb
- *0–1 oz mace/100 lb
- 0–1 oz caraway seed/100 lb
- 0–3 oz mustard/100 lb
- 0–⅛ oz clove/100 lb
- 0–2 oz coriander/100 lb
- 0–⅛ oz sage/100 lb
*This combination is used in some formulations.

Processing:
1. Slash liver and place in ice water to bleach; drain.
2. Chop liver, ice, and seasoning.
3. Add meat and chop.
4. Stuff.
5. Cook in 160°F water until internal temp. reaches 145°F.

6. Chill in ice water (internal temp. 90–100°F).
1) A moist, cooked, smoked or unsmoked, jellied and/or specialty American sausage made from fine- to coarse-chopped, mildly seasoned beef, pork, and veal with pork livers and/or beef livers (minimum 30% liver), cured pork, beef, veal, and pork fat and stuffed into a pork or an artificial casing and available in rings or loaves. 2) Liver sausage that has been smoked after cooking or includes smoked meats as ingredients. Fully cooked, ready to eat. 3) A moist, cooked, smoked Austrian sausage made from medium-chopped, medium-seasoned cured (with nitrite) beef and pork stuffed into beef or artificial casings; diam. greater than 30 mm

Composition: moisture 48%; protein 13–14%; fat 32%; carbohydrate 3%; ash 3%; 324 mg Na/slice (28 g)

See Part 2: Meat Composition; Sausage Identification; Sausage, Nutritive Value

braunschweiger, mettwurst, fein  A moist, uncooked, smoked East German sausage made from finely chopped, medium-seasoned beef and pork stuffed into an artificial casing or not stuffed into a casing

braunschweiger, mettwurst, grob  A moist, uncooked, smoked East German sausage made from coarsely chopped, medium-seasoned beef and pork stuffed into an artificial casing or not stuffed into a casing

Braunvieh  German brown cattle

brawn  1) A moist, cooked, unsmoked British sausage made from medium- or coarse-chopped, mild- or medium-seasoned beef, lamb, pork, veal, and goat not
stuffed into a casing; boned, jellied, potted meat; a
pork-based, highly seasoned, jellied molded sausage; a
head-cheese type of sausage made from pork heads,
legs, and feet and sometimes the tongue. 2) Boiled,
pickled, and pressed boar flesh. 3) Seasoned, spiced,
and pressed pork or veal trimmings. 4) Young entire
male hog

brawler male hog castrated after maturity

brawn, Irish A moist, cooked, unsmoked Irish
sausage made from coarsely chopped, medium-sea­
soned pork stuffed into an artificial casing or not
stuffed into a casing

brazier A shallow-bowled grill that may or may not
have a windscreen

Brazilian cherry See surinam cherry

Brazilian parana Full-bodied, strong-flavored coffee

Brazilian santos A Brazilian coffee; it is sharp, re­
freshing, strong, and light-colored in the cup.

Brazilian tea See Maté

Brazil nut (butternut; castanas; creamnut, paranu­t; Bertholletia excelsa) A hard-shelled, trian­
gule-shaped (1.5 in. long) nut used for food and oil; a
wild, large (130 ft) South American tree that pro­
duces woody fruit (2-4 lb, 5 in.) containing 12-25
three-sided nuts packed together in a spherical cov­
ering; they are washed by immersion in a stream to
remove dirt and empty nuts; the nuts have to be
cracked to obtain the kernel, which is eaten raw.
Composition (kernel): moisture 5%; protein 14%; fat
67%; carbohydrate 11%; ash 3%

<table>
<thead>
<tr>
<th>1 lb shelled kernels</th>
<th>2 lb, unshelled</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 lb unsheled nuts</td>
<td>7.7 oz shelled nuts</td>
</tr>
<tr>
<td></td>
<td>= 1.5 cups shelled nuts</td>
</tr>
<tr>
<td>1 cup, whole, unsheled</td>
<td>= 14 nuts</td>
</tr>
<tr>
<td></td>
<td>= 4.3 oz</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1 cup, shelled</th>
<th>5 oz</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-5 large nuts</td>
<td>2 tbsp</td>
</tr>
<tr>
<td></td>
<td>= 115 calories</td>
</tr>
</tbody>
</table>

| 1 nut, shelled | 4.2 g |

Unshelled Shelled Price

Extra large (jumbo) Large Higher
Large Medium Medium
Large medium Medium Midget
Medium Medium Lower

See Part 2: Beans, Peas, and Nuts; Minerals, Food;
Nut, Grades; Plant Foods, Composition; Protein Fac­
tors

bread 1) A leavened mixture made from flour or meal
and baked in an oven. A baked staple food in which
gluten protein of wheat, rye, or mixed flours is ex­
panded by fermentation and heat-fixed to produce an
aerated product with a crust that is ⅜ in. thick. Often
leavened (sometimes unleavened) by various means:
1. Natural fermentation by yeast [(Saccharomyces
cerevisiae) produces CO₂ in the bread]
2. Adding old dough in which fermentation has oc­
curred
3. Baking powder

4. Aeration

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>White (%)</th>
<th>Whole wheat (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flour</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Water</td>
<td>60-65</td>
<td>66</td>
</tr>
<tr>
<td>Yeast</td>
<td>2-3</td>
<td>2</td>
</tr>
<tr>
<td>Salt</td>
<td>2</td>
<td>2.25</td>
</tr>
<tr>
<td>Sugar</td>
<td>4-8</td>
<td>4</td>
</tr>
<tr>
<td>Mold inhibitor</td>
<td>0.125</td>
<td></td>
</tr>
<tr>
<td>NFDM* solids</td>
<td>3-4</td>
<td></td>
</tr>
<tr>
<td>Shortening</td>
<td>2-4</td>
<td>5</td>
</tr>
<tr>
<td>Emulsifier</td>
<td>0.25</td>
<td>0.2-0.4</td>
</tr>
</tbody>
</table>

*Nonfat dry milk

2½ pullman loaves bread = 50 servings

Weight per slice:
Cracked wheat 0.8-0.9 oz
French (20 slices/lb) 0.8 oz
Italian (20 slices/lb) 0.8 oz
Pumpernickel 0.8-1.4 oz
Raisin 0.8-0.9 oz
Rye 0.6-1.2 oz (25 g; 8% fiber)
Vienna (20 slices/lb) 0.8 oz
White 0.8 oz
White (very thin) 0.5 oz

Whole wheat 0.8-1.1 oz (25 g; 10% fiber)

Equivalents: ⅓ potato; ⅔ slice of bread; ⅓ cup of rice, ⅔ cup macaroni, or ⅔ cup vegetable; ⅔ matzoh; 1½ tbsp flour; 2½ biscuit; 5 small graham crackers

1 lb loaf = ⅔ lb flour (3 cups flour)
   = 1 cup water
1 lb = 12-18 slices
1 cup, ⅔-in. cubes = 2.7 slices
1 cup soft bread crumbs = 1.4 slices
1 slice = 0.7 cup soft crumbs

<table>
<thead>
<tr>
<th>Composition</th>
<th>Moisture (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Carbohydrate (%)</th>
<th>Ash (%)</th>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pumpernickel</td>
<td>34</td>
<td>9</td>
<td>1</td>
<td>52</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rye</td>
<td>36</td>
<td>9</td>
<td>1</td>
<td>52</td>
<td>2</td>
<td>5.0-6.0</td>
</tr>
<tr>
<td>White</td>
<td>36</td>
<td>9</td>
<td>3</td>
<td>51</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Whole wheat</td>
<td>36</td>
<td>10</td>
<td>3</td>
<td>48</td>
<td>2</td>
<td>5.0-6.0</td>
</tr>
</tbody>
</table>

Bread contains the following:
62% total solids
114-175 mg Na/slice (25 g)
1.1-1.8 mg thiamin/lb
0.7-1.6 mg riboflavin/lb
10-15 mg niacin or niacinamide/lb
8-12.5 mg Fe/lb
(optional) 150-750 U.S. Pharmacopeia units of vi­
tamin D/lb

Storage (fresh): Keep in original wrapper in a bread
box, at room temperature; use in 5-7 days; will
retain freshness longer if it is refrigerated; refrigerate
if weather is hot and humid and mold growth is a
problem. Wrap in moisture-vapor-resistant material;
wrapping when cool helps to keep bread moist.

Storage (frozen): 0°F; quick-bread storage life 2-4
months; yeast-bread storage life 6-12 months; rolls
2-4 months
2) To coat with bread crumbs, as breaded cutlets; coating should not exceed 30% of weight of finished product.

See also Boston brown bread

See Part 2: Baked Products, Frozen Storage Life; Bread and Flour Enrichment; Calcium, Daily Recommendations; Calories, Daily Recommendations; Cereal Enrichment; Food, Composition; Food Guide; Frozen Food Storage; Grain Products, Composition; Iron, Daily Recommendations; Minerals, Food; Niacin, Daily Recommendations; Nicotinic Acid, Food; Pantothenic Acid Content; Portion Size; Riboflavin, Daily Recommendations; Spoilage, Carbohydrate Foods; Thiamin, Daily Recommendations; Thiamin, Food; Vitamin A, Food; Wheat, Minerals; Wheat, Vitamins

bread, black (sourdough bread) Usually made from rye, often with molasses

bread, Bohemian rye A dark rye bread that is often made with a fermented or "sour" dough

bread, Boston brown A dark brown usually cylindrical loaf that is steamed or baked and made with the following ingredients:
- Baking powder or baking soda and sour milk
- Corn meal
- Wheat flour
- Milk
- Molasses
- Rye flour or meal
- Salt
- Optional ingredients
  - Seedless raisins
  - Water

Loaves are sometimes canned.

bread, cheese Made by adding 20% cheese to white, graham, or whole-wheat dough

bread crumbs Small particles of bread, ¹⁄₄ to ¹⁄₂-in. diameter

<table>
<thead>
<tr>
<th>Type</th>
<th>How to make</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brown</td>
<td>Dry and bake stale bread, grind</td>
<td>On pies</td>
</tr>
<tr>
<td>Buttered or fried</td>
<td>Stir and fry in butter</td>
<td>Garnish</td>
</tr>
<tr>
<td>Fresh</td>
<td>Blend stale bread, frying</td>
<td>Pudding and frying</td>
</tr>
<tr>
<td>White</td>
<td>Bake until dry, grind</td>
<td>Frying</td>
</tr>
</tbody>
</table>

1 lb, soft = 10 cups
1 lb, dry = 4.4 cups
1 cup, dry = 115 g (3.6 oz)
1 cup, soft = 45 g (1.6 oz)
1-2 fresh slices = 1 cup soft crumbs
1 fresh slice = 0.75 cup soft crumbs
1 dry slice = 0.25 cup fine dry crumbs
See Part 2: Grain Products, Composition; Water Activity, Organisms and Food

bread cubes
1 cup ¼-in. cubes = 1.25–1.8 slices
1 cup dry cubes = 1.4 slices

bread, currant Tea bread with currants

bread, Easter Tea bread

bread, enriched Methods of manufacture:
- Made with enriched flour
- Made with enriched yeast
- Flour mixed with necessary vitamins and minerals
- Combination of above methods

see bread

bread, entire wheat See bread, whole wheat

bread flour See hard-wheat flour

breadfruit (Artocarpus communis; A. incisa) A tall, tropical tree that produces fruit with up to 8-in. diam. and a thick, warty, green skin; the fruit is high in starch and is eaten after roasting; it can also be preserved by fermentation; Jak (Jack fruit) is a related species with larger and more odoriferous fruit that is eaten raw or cooked (by roasting, boiling, or frying). It can be made into flour that can be used for bread. Cooked seeds are like chestnuts.

Composition: moisture 71–72%; protein 1–2%; fat 0.3%; carbohydrate 25–26%; ash 1%
See Part 2: Fruit Composition

bread, fruit Made by adding raisins or other dried fruit to white, graham, or whole-wheat dough; bread keeps well.

bread, gluten Bread made from gluten flour

bread, graham Bread made from flour that contains the outer bran covering of the wheat kernel; made from husks and entire crushed kernels of rye grass

See bread, whole wheat

bread, honey Bread that will keep for long periods of time without drying out or spoiling

bread, Irish soda A bread made with baking powder or yeast; may contain caraway seeds and raisins; soda is added to neutralize the acid of buttermilk and to act as an additional leavening agent.

bread, nut Made by adding nut meats to white, graham, or whole-wheat dough

bread pudding A bread and milk custard with different types of flavoring, such as cheese, currant, nutmeg, onion, parsley, pepper, or salt

bread, rye A bread made from a mixture of rye flour (up to ⅔) and wheat flour. It keeps fresh longer than bread made only from wheat.

bread, rye, whole Made from flour of the complete seed of rye grass

bread, salt-rising White bread leavened by fermenting warm milk, salt, and corn meal

bread, San Francisco An acidic, French-type sour-dough bread

bread sauce A sauce made from flavored bread crumbs cooked in milk

bread, spice Tea bread

bread, spoon A soft corn bread

bread sticks A crisp, crusty loaf of bread (10–12 in. long × ⅛ in. diam.) that may have poppy or sesame seeds on the surface; crisp pencil of French bread with no salt coating

bread, Vienna Bread (often containing milk) that is baked in an oven that contains steam, which gives the bread a crispy, glazed crust
bread, walnut and raisin  A tea bread containing walnuts and raisins
bread wheat  See wheat
bread, white  See wheat
Bread made from refined grains of wheat

Styles available:
  Baked in pans
  Round top
  Sandwich or pullman
  Split top
  Twin
  Twisted
  Baked on oven hearth
  Braided
  Cottage or round
  French
  Vienna

See bread

bread, whole wheat (entire wheat bread; graham bread)  Made from ground whole grain of wheat (whole-wheat flour) See bread
  1 slice = 0.75 cup soft bread crumbs
break down  To subdivide
breakdown  The onset, beginning, or progress of undesirable chemical (e.g., free fatty acid formation, peroxide formation, polymerization, off flavor, off odor) or physical (e.g., darkening, gumming, foaming) changes in food; decomposition, either physical or chemical
breakdown of tissue (fruit)  Decomposition of fruit cells due to a bruise or age
breakfast  The morning or first meal of the day, often including some of the following: bacon; cereal (hot or cold); egg(s); juice; ham; kippers; sausage; toast
breakfast bacon  Slices of cured beef
breakfast cereal  See Part 2: Grain Products, Composition

breakfast cheese  A round, small, limburger-type cheese See frühstück
breakfast link  1) A fresh sausage made with pork. If the word sausage is used in the label, then it does not have to be all pork. 2) A medium- to coarse-chopped, uncooked, unsmoked American sausage. Available in small-diameter links, rolls for slicing, machine-formed, or extruded
breakfast prune  See prune, prepared
breakfast sausage  1) May be made from fresh or cured beef, pork, veal, lamb, or mutton, and/or frozen meat (cured or fresh beef, pork, veal, lamb, or mutton), and/or fresh or frozen meat by-products; max. 50% trimmable fat. 2) A moist, uncooked, unsmoked (smoke flavoring permitted) American sausage made from medium- or coarse-chopped, mild- or medium-seasoned beef and pork, with by-products, extenders, and binders, stuffed into a pork, sheep, or an artificial casing or not stuffed into a casing. Product is available in bulk, small-diameter links, rolls for slicing, machine-formed or extruded patties, and chubs; max. 3% (total ingredients) water can be added; max. 3.5% (finished sausage) extenders or binders may be added.
breakfast steak  Steak cut from the chuck

break joint  A temporary cartilage located \( \frac{1}{2} \) in. above the ankle of a sheep. It has four distinct ridges.

<table>
<thead>
<tr>
<th>Age of sheep</th>
<th>Feet removed</th>
<th>Joint appearance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lamb</td>
<td>Break joint</td>
<td>Smooth, moist, red</td>
</tr>
<tr>
<td>Yearling</td>
<td>Break joint</td>
<td>Rough, hard and dry, White</td>
</tr>
<tr>
<td>Mutton</td>
<td>True joint (spool joint) below the break joint</td>
<td>White</td>
</tr>
</tbody>
</table>

See Part 2: Bone Age; Lamb, Wholesale Cuts

bream (Abramis brama)  A name given to many species of fish. A European freshwater or similar type of fish; species of carp; there are also a sea bream and several Far-Eastern species called bream.
Freshwater—members of the family Cyprinidae
Sea—members of the family Sparidae
Freshwater fish:
  Common (Europe), Abramis brama
  Bony (Australia), Fluvialosa richardsoni
Sea bream:
  Pinfish (western Atlantic), Lagodon rhomboides
  Redfish, Sebastes spp.
  Eastern Atlantic (see sea bream)

See demersal fish; sea bream

breast  The sternum
See Part 2: Bone; Bone in Retail Cuts; Braising Meat; Braising Time; Lamb Chart; Lamb Cuts; Lamb Cuts and Uses; Lamb Wholesale Cuts; Lamb Yield; Meat Identification; Meat, Servings per Pound; Turkey Composition; Veal Chart; Veal Cuts; Veal Cuts and Uses

breastbone  Sternum sternebrae
See Part 2: Lamb Wholesale Cuts; Pork Wholesale Cuts; Veal Wholesale Cuts

breast-feeding  Feeding an infant mother’s milk (from the mother’s breast)

breast, poultry  When dressed for sale, breasts are separated from the back at the shoulder joint with a cut running backward and downward from that point along the junction of the vertebral and sternal ribs; the ribs may be removed. The breast may be cut along the breastbone to make two approximately equal halves or the wishbone portion may be removed along the breastbone to make three parts. Pieces cut in this manner may be substituted for lighter or heavier pieces for making packages an exact weight. A package may contain two or more of such parts without affecting the appropriateness of the labeling (e.g., chicken breasts). Neck skin shall not be included with the breast, except that turkey breast may include neck skin up to the whisker.

breast with ribs  Breast with ribs shall be separated from the back at the junction of the vertebral ribs and back. Breasts with ribs may be cut along the breastbone to make two approximately equal halves or the wishbone portion may be removed before cutting the breastbone, to make three parts. Pieces cut in this manner may be substituted for lighter or heavier pieces for making packages an exact weight. A package may contain two or more of such parts.
without affecting the appropriateness of the labeling (e.g., breast with ribs). Neck skin shall not be included, except that “turkey breasts with ribs” may include neck skin up to the whisker.

**breech wool** The coarsest wool of the fleece, which grows on the outer thighs and crotch area

**breech** 1) A race of animals having well-defined distinguishing characteristics and the ability to reproduce these characteristics in their offspring. 2) A balance of characteristics of excellent wine that includes bouquet, flavor, strength, and aftertaste

**breed character** A combination of masculinity or femininity with breed type features, head type being very important

**breeding age** First breeding:
- Jersey 16 months
- Guernsey 18 months
- Ayrshire 19 months
- Holstein 20 months
- Beef cattle 18 months
- Swine 8 months
- Sheep 12 months

**breed type** A characteristic form of a breed, along with typical color, marking, and head

**brem** A dried, sweet-sour or starchy-sweet, fermented, glutinous rice extract

- Brem madium—yellow-white; sweet-sour flavor
- Brem wonogiri—white; sweet flavor

**brem bali** A glutinous, rice-based, arrack beverage

**bremen** See goose

**bremner** A cracker, usually made without sugar

<table>
<thead>
<tr>
<th>Types</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bran</td>
<td>Blue</td>
</tr>
<tr>
<td>Corn</td>
<td>White</td>
</tr>
<tr>
<td>Dill</td>
<td>Orange</td>
</tr>
<tr>
<td>Oat</td>
<td>Brown</td>
</tr>
<tr>
<td>Poppy</td>
<td>Red</td>
</tr>
<tr>
<td>Regular</td>
<td></td>
</tr>
<tr>
<td>Sesame</td>
<td>Yellow</td>
</tr>
</tbody>
</table>

**brennevin** A schnapps-type spirit made from potatoes

**bressola** Dried beef

**bressan** A valencay-type cheese made from goat’s milk

**brettonne, à la** Garnished with beans

**breudher** A round, often doughnut-shaped, open-textured sponge cake made from wheat flour. It is often moistened with sugar syrup and the center filled with fruit and cream.

**brewer anaerobic agar** See Part 2: Microorganism, Media

**brewer’s grain** Used as animal feed
See Part 2: Cereal By-Products, Composition

**brewer’s yeast** Yeast starter inoculum for beverages (e.g., beer)
Composition: dry matter 93%; protein 44%; fiber 3%; fat 0.8%; ash 6.6%
See yeast

**brewis** 1) Oatcake in broth. 2) A dish made of fish, bread, and pork fat

**brick** 1) A tilsit-type cheese. 2) A hardened block of clay
See Part 2: Insulation; Insulation, Conductivity Values

**brickbat cheese** An English cheese made from fresh milk

**brick cheese** An American, moist, semisoft, white to cream-colored (some light yellow to orange) cheese made from whole milk; contains many small holes; it may be either natural or processed; it is brick-shaped (10 x 6 x 3 in.) and has mild to sharp flavor; ripened by bacteria surface growth; often used in sandwiches. Usually heavily salted and aged for 2 months
Composition: moisture 41-42%; protein 21-23%; fat 29-31%; carbohydrate 2-3%; ash 3-4%; 159 mg Na/oz
Storage: Can be frozen (0°F) if no more than 1 in. thick; use within 6 months.
See Part 2: Cheese Characteristics; Cheese, Vitamin Content; Vitamin A, Milk and Milk Products

**briquebec** A medium-flavored, semisoft, wheel-shaped cheese made from cow’s milk

**bridge roll** A small, oval-shaped roll made from wheat flour

**brie (‘‘the queen of cheeses’’)** 1) A dessert cheese that is flat, dish-shaped (1–3 kg), light-colored, soft, and savory; has a flowery rind and sharp flavor and is very soft when ripe; made from cow’s milk; medium and small wheels ripened 4-8 weeks by external molds. 2) A soft-ripened, often full-flat delicate-flavored French cheese, made from cow’s milk, with a dry-cured, edible, thin, (white, golden, or brown) powdery mold-covered crust or rind. May run at room temperature.
Sizes available: ½–1 in. thick; 15–20 in. (2 kg) or 4–6 in. diam.
Types:
- Coulommiers (full fat)
- Grass (full fat)
- Maigre (low fat)
- Meaux (full fat)
- Melun (full fat)
- Migras (half fat)
Composition: moisture 45–51%; protein 20–22%; fat 26–30%; carbohydrate 0.4–0.6%; fiber 0%; ash 2–4%; salt 2%; 175 mg Na/oz
Storage: refrigerate, tightly covered; use within 2 weeks; dries out quickly if not protected; does not keep well
See Part 2: Cheese Characteristics; Cheese, Vitamin Content; Milk and Milk Products, Vitamin Content; Vitamin A, Milk and Milk Products

**brie de Coulommiers** A soft, full-fat, dry-cured cheese made from cow’s milk and matured 4–6 weeks; it is small, flat, and disk-shaped with a white mold covering.

**brie de Meaux** A soft, full fat, fruity, dry-cured cheese that is made from unpasteurized cow’s milk, matured 4–6 weeks, and has a white mold covering

**brie de Melun** A soft, full-fat, dry-cured cheese made from unpasteurized cow’s milk; it has a dark rind and is usually matured 7–10 weeks
brie de Montereau  A soft, small (400 g to 1 kg), full-fat, matured cheese made from unpasteurized cow's milk, with a dark rind and dry crust

brie laitier  A camembert-type cheese made from pasteurized milk and matured for 3–4 weeks

brigg  A weak alcoholic beer

Briggsian logarithms  See logarithm base 10

brightness  A term applied to the color of wool

bright wool  Wool of a clean nature and uniform shrinkage; produced east of the "seminight" area

brill  A flat, turbotlike fish (a small species of the turbot family), similar to the flounder sea fish. Many similar-looking fish are often called brill.

North Sea, *Rhombus laevis*, syn. *Scophthalmus rhombus*
Northwest Atlantic, *Ophopsetta maculate*
Oceania *Colistium guntheri*
Pacific, petrale sole

brillat-savarin  A medium-sized (500 g) excelsior-type cheese

brilliant-green agar  See Part 2: Intestinal Microorganisms; Microbiological Media; Microorganism, Selective and Differential Broths and Media; Water Filtration Plant

brilliant green bile  See Part 2: Microorganism, Culture Media, Water and Sewage; Standard Methods; Microorganism, Selective and Differential Broths and Media, Water Filtration Plant

brilliant green bile broth  A liquid medium for coliform test
See Part 2: Microbiological Media; Microorganism, Culture Media, Dairy and Food Products

brilliant green lactose  See Part 2: Microbiological Examination of Dairy Products

brina dubreala  A white, brined cheese made from sheep's milk

brin d'amour  A valencay-type cheese made from goat's milk and matured for 3 months on herbs

brine  Sodium chloride dissolved in water; natural brines contain from 2.6% (sea water) to 20% or more, plus other salts. Brine strength depends on the proportion of salt to water and not on other possible ingredients. Used to preserve butter, fish, meat, and vegetables

Types:
Weak brine—permits fermentation to an acid
  Sauerkratkraut—2–3% salt/lb cabbage
  Dill pickles—1 lb salt/gal water
Medium brine—to check fermentation and to store fermented products; 1 1/2 lb salt/gal water
Strong brine—used when no fermentation is desired; 2 lb salt/gal water
See Part 2: Brine, Meat Curing; Meat Curing Ingredients; Salt, Brine; Salt, Brine Table; Salt Penetration Rate; Salt Solution, Freezing

brine injection  The injection of brine into muscle tissue. It is a more rapid curing technique than brine soaking.

brine soaking  Placing meat in a mixture of water, salt, and cure (nitrate or nitrate) until the brine penetrates the total tissue

brine strength  Proportion of salt to water; no other ingredients are included in determining strength. See salimeter

bringall (brinjal)  See eggplant
See Part 2: Vegetable Storage

bringupyls  A moist, cooked, smoked Icelandic sausage made from finely chopped, medium-seasoned beef and pork, with pork fat added, stuffed into an artificial casing

brinsen  See klenza cheese

briny  A salty or sour taste

brinza (brizin; brinsen)  A Hungarian (Carpathian mountains), white, brined cheese, also known as Liptau, made from ewe's milk or the mixed milk of sheep and goats and rennet
See Part 2: Vitamin A, Milk and Milk Products

brioche  A soft, sweet, yeast breakfast roll. A rice and wheat-flour bread that is high in eggs and fat and sometimes contains dried fruit

briol  See limburger cheese

brioler  A soft to semisoft, strongly flavored, surface-ripened (bacterial) cheese made from cow's milk

brisegout  A low-fat, pale green cheese made from cow's milk and often eaten fresh

brisk  A lively taste; the opposite of a flat or soft taste

brisket  The front of the breast of quadruped animals. It may be cooked fresh, or cured for corned beef.
See Part 2: Beef, Boneless Cuts; Beef Chart; Beef Cuts; Beef Cuts and Uses; Beef Retail Yield; Beef Wholesale Cuts; Bone in Retail Cuts; Meat Identification; Riboflavin, Food

brisaling (Scandinavian sardine)  A small, smoked, sardinelike food fish of the herring family; a smoked sardine See sprat

brittle  A stiff hair, e.g., hog hair

britch  A stiff hair, e.g., hog hair

brittle wool  A medium-sized (500 g) excelsior-type cheese

brittle-green bile broth  A liquid medium for coliform test
See Part 2: Intestinal Microorganisms; Microbiological Media; Microorganism, Selective and Differential Broths and Media, Water Filtration Plant

brittle-green agar  See Part 2: Intestinal Microorganisms; Microbiological Media; Microorganism, Selective and Differential Broths and Media, Water Filtration Plant

brittle-green bile  See Part 2: Microorganism, Culture Media, Water and Sewage; Standard Methods; Microorganism, Selective and Differential Broths and Media, Water Filtration Plant

brittle-green bile broth  A liquid medium for coliform test
See Part 2: Microbiological Media; Microorganism, Culture Media, Dairy and Food Products

brittle-green lactose  See Part 2: Microbiological Examination of Dairy Products

brittish gum  See dextrin

british Landrace  A white breed of British swine

British pharmaceutical codex  See Part 2: Minerals (Trace), Limits

British pharmacopoeia  See Part 2: Minerals (Trace), Limits

British Proof Spirit  An alcoholic beverage that contains 57.07% alcohol by volume (49.24% by weight) at 15.6°C

British Saddleback  The Essex and the Wessex groups of hogs

British thermal unit (B; Btu)  A measure of heat, energy, and work

1 Btu = heat required to raise the temperature of 1 lb of water 1°F
= 1054.90 joules (J; 107 erg)
= 775.159 foot-pounds (ft-lb)
= 252 gram-calories (cal)
= 107.577 kilogram meters (kg-m)
1 Btu = 1.0550 ergs
  = 0.252 kilogram-calorie (thermal units)
  = 0.003984 metric horsepower-hours (75 kg-m-h)
  = 0.003980 U.S. horsepower-hours (hp-h)
  = 0.0002830 kilowatt-hours (kw-h)

**British thermal unit per hour (Btu/h)** A measure of power, rate of energy, and heat
1 Btu/h = 0.2931 watts (W)
  = 0.2162 foot-pounds per second (ft-lb/s)
  = 0.07 gram-calorie per second (cal/s)
  = 3.929 x 10^-4 horsepower (hp)

**British thermal unit per minute (Btu/min)** A measure of power, rate of energy, and heat
1 Btu/min = 17.57 watts (W)
  = 12.96 foot-pounds per second (ft-lb/s)
  = 0.02356 horsepower (hp)
  = 0.01757 kilowatts (kW)

**British thermal unit per second (Btu/s)** A measure of power rate of energy, and heat
1 Btu/s = 1054.90 watts (10^7 erg/s)
  = 778.104 foot-pounds per second (ft-lb/s)
  = 1.43436 metric horsepower (75 kg-m/s)
  = 1.41474 U.S. horsepower (550 ft-lb/s)
  = 1.05490 kilowatt (kW)
  = 0.3 tons of refrigeration
  = 0.25200 kilogram-calorie per second (thermal unit per second)

**British thermal unit per square foot per minute (Btu/ft^2-min)**
1 Btu/ft^2-min = 12.2 watts per square inch (W/in.^2)

**British wines** Wines containing 16% alcohol by volume

**brittle** 1) Easily broken, leaving sharp edges. 2) A hard, brown, noncrystalline candy, including butter-scotch, nut brittle, and toffee; a hard syrup or molasses candy, usually containing nuts (often peanuts), that is easily broken; a hard nut candy See candy

**Brix** A scale for measuring sugar (sucrose) content; percentage by weight of sugar in a sucrose solution; each degree of Brix equals 1% sucrose. The scale in degrees refers to the percentage by weight of soluble solids. A hydrometer is used for testing the sugar content of syrups
See Part 2: Brix Table; Brix, Temperature Correction; Cherry Brix; Sugar Solutions

**BRL 35135**

\[
\begin{align*}
&\text{OH} \\
&\text{CH}=\text{CH}_2\text{NHC}—\text{CH}_2—\text{OCH}_2\text{CO}_2\text{CH}_3 \\
&\text{C}_1
\end{align*}
\]

A beta-agonist that is orally active and stimulates lipolysis

**broccoli** A sour, ricotta-type, fresh or semidry cheese made from ewe's or goat's milk

**broccoli (calabrese; asparagus broccoli; Italian sprouting broccoli; Brassica oleracea botrytis)** An annual, 2- to 3-ft, cool-weather, sulfur-containing vegetable (variety of cauliflower) whose stalks, leaves, and flower clusters are used as food; winter cauliflower. 9000–10,500 seed/oz; germination period 5–10 days; plant 2 ft apart in rows 2½ ft apart; matures in 70–80 days and will continue to produce buds for 30–45 days; yields ½ bu/plant.

Types:
- Green sprouting (calabrese)—loose terminal head of green flower buds; may be boiled; used in soups and purées; often quick-frozen or canned
- Heading—curd is white and compact, like cauliflower; difficult to grow
- Nine Star Perennial—sprouting broccoli with a head like cauliflower
- Sprouting (Brassica oleracea var. botrytis or italic-a)—produces a number of loose terminal, white or purple (turns green on cooking) heads, rather than a compact head

Frozen styles available:
- Broccoli cuts or pieces
- Chopped broccoli
- Short spears or florets (head with a short portion of the stalk)
- Whole spears or stalks

Canned, asparagus-style:
- Normally with two heads per can
- Can be served raw in a salad, but usually boiled briefly (boil or steam 10–15 min or until tender) and served with a sauce or butter; will become tender with only a few minutes of cooking

Defect action level (frozen broccoli): average of 60 aphids, thrips, and/or mites per 100 g

Refuse: 50% leaves and tough stalks

Can be served raw in a salad, but usually boiled briefly (boil or steam 10–15 min or until tender) and served with a sauce or butter; will become tender with only a few minutes of cooking

Defect action level (frozen broccoli): average of 60 aphids, thrips, and/or mites per 100 g

Refuse: 50% leaves and tough stalks

Can be served raw in a salad, but usually boiled briefly (boil or steam 10–15 min or until tender) and served with a sauce or butter; will become tender with only a few minutes of cooking

- 1 crate, fresh = 25 lb
- 1 bunch, fresh = 1–3 lb
- 2 lb, fresh = 1 qt, frozen
- 1 pound, fresh = 2 cups, cooked
- 9–10 oz, frozen = 3 servings

1 stalk, boiled, drained = 6.3 oz

**broad bean** (dhal; faba; fava; field; fool; horse bean; mazagan; tic; tick; Windsor; Vicia faba)
A large-podded (4–30 cm) bean; young pods are cooked whole or sliced, or the bean may be harvested when fully grown, shelled, and cooked. Seeds are buff, brown, green, purple, or black, 2–6 per pod, 1100–6500/kg. Can be used as silage; animal feeds should not contain over 30% of this bean because it contains a trypsin inhibitor.
<table>
<thead>
<tr>
<th>Variety</th>
<th>Where grown (U.S.)</th>
<th>Growth habits</th>
<th>Plant</th>
<th>Head</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlantic</td>
<td>Northeastern Atlantic Coast and U.S.</td>
<td>Fast-developing</td>
<td>Dwarf</td>
<td>Med.-large, round and compact</td>
</tr>
<tr>
<td>Bravo</td>
<td>Eastern Canada and U.S.</td>
<td>Early, 65–110 days, 50–80 days after transplanting</td>
<td>16 in.</td>
<td>9 in.; blue-green</td>
</tr>
<tr>
<td>Calabrese Coastal</td>
<td>West; Central; East</td>
<td>Standard, fast-growing</td>
<td>Short, compact</td>
<td>Little division, small buds; good color</td>
</tr>
<tr>
<td>DeCicco (Italian Green—Calabrese)</td>
<td>Central; East</td>
<td>Standard early, 60 days</td>
<td>Med.</td>
<td>Light green, cauliflower-like head; freezes well</td>
</tr>
<tr>
<td>Early One</td>
<td>Central; East</td>
<td>Standard, fast-growing</td>
<td>Early, 65–110 days, 50–80 days after transplanting</td>
<td></td>
</tr>
<tr>
<td>Gem</td>
<td></td>
<td>Very early, 65–110 days, 50–85 days after transplanting</td>
<td>Large, 7 in., 1 lb; uniform; used fresh; freezes well</td>
<td></td>
</tr>
<tr>
<td>Green Comet</td>
<td>South</td>
<td>Very early, 65–110 days, 50–85 days after transplanting</td>
<td>Large</td>
<td>Large, compact head; side heads</td>
</tr>
<tr>
<td>Green Sprouting Late (Italian Green—Calabrese)</td>
<td>California; Central; East</td>
<td>Long season, 55 days</td>
<td>Large</td>
<td>Large, compact head; side heads</td>
</tr>
<tr>
<td>Green Sprouting Medium (Italian Green—Calabrese)</td>
<td>Pacific Southwest; Central; East</td>
<td>Standard, midseason</td>
<td>Large</td>
<td>Large, compact head; side heads</td>
</tr>
<tr>
<td>Pacifica Premium Crop</td>
<td>West</td>
<td>Standard</td>
<td>22–24 in. tall</td>
<td>Large, 8 in.; firm; medium green; used fresh; freezes well</td>
</tr>
<tr>
<td>Spartan Early</td>
<td>Central, East</td>
<td>Standard early, 76 days, 46 days after transplanting</td>
<td>Compact</td>
<td>6–8 in.; later, lateral heads</td>
</tr>
<tr>
<td>Topper</td>
<td>West</td>
<td>Standard</td>
<td>Large, stocky</td>
<td>Broad central head; side heads; blue-green</td>
</tr>
</tbody>
</table>

1 serving = ½ bunch  
= 0.5 lb
1 cup, finely chopped = 0.3 lb
1 cup, frozen, chopped = 10 oz
1 cup, flowerets = 0.3 lb
1 cup, cooked = 165 g (5.8 oz)
Composition (raw spears): moisture 89%; protein 4%; fat 0.3%; carbohydrate 6%; ash 1%; pH 6.5
Composition (cooked): fiber 2.1%; pH 5.6–6.5
Storage: refrigerator crisper (32°F) or plastic bag; 90–95% relative humidity; use in 1–7 days; frozen (0°F) storage 1 yr; also kept in pit or cold cellars

See Part 2: Ascorbic Acid; Cabbage Looper; Calcium, Daily Recommendations; Calories, Daily Recommendations; Food, Composition; Frozen Food Storage; Iron; Microwave Cooking, Frozen Vegetables; Microwave Processing Time; Minerals, Food; Niacin; Nitrate, Vegetables; Phosphorus; Plant Foods, Composition; Planting Density; Potassium; Riboflavin; Storage; Sugar, Vegetables; Thiamin; Vegetable Boiling; Vegetable Composition; Vegetable Cooking; Vegetable Frozen Yield; Vegetable Plants; Vegetables, Boiling Time, Frozen; Vegetables, Cooking Frozen; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Servings; Vegetable Storage; Vegetable Yield; Vegetable Yield, Canned and Frozen; Vegetable Yield, Frozen, Canned, and Fresh; Vegetable Yields; Vitamin A; Vitamin A, Daily Recommendations; Vitamin C

broccoli raab See raab
broch Fermented wheat or rice bran
brochette, en Cooked on a skewer or spit
brocotte A ricotta-type cheese made from cow's milk
brocq A panir-type cheese made from cow's milk
brodokono Chindanda made with maize and plantain
broil  To grill See broiling
broiled  Cooked by broiling
broiler  1) A young chicken, from 1-3 lb, that is tender-meated with soft, pliable, smooth-textured skin and flexible breastbone cartilage. 2) A device for grilling
See Part 2: Bone Age; Poultry Composition; Poultry Dressing Percentage; Poultry Roasting; Poultry Yield
broiler-fryer  1) A chicken of either sex from 9-12 weeks old
   1 cut-up and skinned broiler-fryer = 2.5-5 lb
   2) A duck of either sex about 8 weeks old
broiling  A dry-heat method of cooking used for the more tender cuts; the meat is exposed directly to the heat.
See Part 2: Beef, Cooking; Beef Cuts; Broiling Griddle, Meat; Broiling Meat; Broiling Time and Temperature; Lamb Broiling; Lamb Cuts; Lamb Cuts and Uses; Pork; Cooking; Pork Cuts; Pork Cuts and Uses; Pork Loin Cooking; Poultry Class; Variety Meat, Cooking; Variety Meat Preparation; Veal Cuts and Uses; Vitamin Retention, Meat
broken mouth  A sheep having some missing teeth
bromate  To treat with calcium or potassium bromate, e.g., calcium bromate (dough conditioner), potassium bromate (bread improver)
bromatology  The science of foods and dietetics
bromcresol green  \( \text{C}_2\text{H}_14\text{Br}_4\text{O}_5\text{S} \) A pH indicator that has a pH range 3.8-5.4. It is yellow in acid and blue in the base direction. Use 0.1 g in 250 ml ethyl alcohol
bromcresol purple  An indicator that is yellow at pH 5.2 and purple at pH 6.8; 0.1 g in 9.25 ml NaOH; dilute to 250 ml
bromegrass  (Bromus) A type of oat; some species are considered weeds. Used for silage and hay; 14 lb/bu; plant 6 lb/acre
   Field (annual) bromegrass (B. arrensis)—winter cover or green-manure crop
   Smooth bromegrass (B. inermis)
bromelin  (bromelain) An enzyme found in pineapple and used to tenderize meat
brominated vegetable oil (BVO)  An oil made by addition of bromine (iodine value of 16 max.) to unsaturated fatty acids; used in citrus-flavored soft drinks as a flavoring agent and/or beverage stabilizer; also used in ice cream and bakery goods

<table>
<thead>
<tr>
<th>Iodine no.</th>
<th>Made from</th>
<th>Sp. gr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>80-90</td>
<td>Olive</td>
<td>1.24</td>
</tr>
<tr>
<td>105-115</td>
<td>Sesame</td>
<td>1.33</td>
</tr>
<tr>
<td></td>
<td>Corn</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cottonseed</td>
<td></td>
</tr>
</tbody>
</table>

Because this produce accumulates in body fat, it has been removed from the GRAS list and specific levels have been established. It was banned in Sweden in 1968 and in Great Britain in 1970. Storage: well-closed container
bromine  (Br)  A liquid halogen element; at. no. 35; at. wt. 79.916; Group VIIA of the Periodic Table; electron configuration \( 2-8-18-7 \) orbit K L M N oxidation states +1, +5, +3, -1 See Part 2: Normal Solutions; Sanitizers
bromphenol blue  \( \text{C}_{19}\text{H}_{10}\text{Br}_4\text{O}_5\text{S} \) A pH indicator with a pH range 3.0-4.6. It is yellow in the acid and purple in the base direction. Use 0.10 g in 7.45 ml of \( \text{H}_2\text{O} \) NaOH and dilute with water to 250 ml
bromphenol purple  An indicator that is yellow below pH 6.0, green between 6 and 7, and blue above 7; 0.1 g in 100 ml of 50% alcohol
bronte  A sweet liqueur flavored with honey
bronx cocktail  A mixed drink similar to the martini
bronze  See Part 2: Turkey Varities
bronze beauty lettuce  Leaf lettuce with reddish-tinted leaves See lettuce
bronzing  See citrus rust mite
broodiness  Willingness to sit on eggs and incubate them, as in chickens and ducks
broodkaas  A loaf-shaped type of gouda cheese
broodkaase  A hard, flat Dutch cheese
brood sow  A sow kept for the production of pigs
broody  Describes a hen during the time she sits on eggs to incubate them. (No eggs are laid during this time.)
brook trout  (Salvelinus fontinalis)  A finnish used for food, with light meat and a very light, delicate flavor See trout
broomcorn  Seed 44-50 lb/bu See millet; sorghum
See Part 2: Poisonous Plants; Seed, Germination
brome, yellow  The buds, in vinegar, are used as a substitute for capers
broomweed  Several species of plants have this common name

<table>
<thead>
<tr>
<th>Genus</th>
<th>Region of growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corchorus siliquosus</td>
<td>Tropical</td>
</tr>
<tr>
<td>Gutierrezia texana</td>
<td>Southwest United States</td>
</tr>
<tr>
<td>Scoparia dulcis</td>
<td>Tropical and subtropical</td>
</tr>
<tr>
<td>Sida or Triumphetta</td>
<td>Tropical</td>
</tr>
</tbody>
</table>

See Part 2: Poisonous Plants
brose  An oatmeal dish to which water and butter are usually added, and sometimes also cabbage, honey, meat, milk or cream, mussels, or whiskey
brötchen  A wheat-flour roll
broth  A thin, clear soup. An extract from meat, vegetables, or grain, cooked in water
Storage (leftovers): highly perishable; cover and refrigerate; use in 1-2 days See bouillon
See Part 2: Microorganism, Selective and Differential Broths and Media, Water Filtration Plant
brotwurst  A moist, cooked, smoked American sausage made from medium-chopped, mildly seasoned beef and pork, sometimes with cereal and non-fat dry milk (NFDM), stuffed into a pork or an artificial casing
Composition: moisture 51%; protein 14%; fat 28%; carbohydrate 3%; ash 3.7%; 315 mg Na/oz
brouilly A fruity, red wine
brosse du rove A ricotta-type cheese made from sheep's milk; usually consumed fresh but sometimes matured
brousses A cheese made from ewe's milk
broux de noix A French liquor made from wine and crushed walnuts
brown To make food brown by cooking (baking, broiling, frying, sautéing); to seal the surface of meat with heat
brown ale Dark and sweet beer; a stout
brown-and-serve See precooked breakfast link
brown-and-serve sausage Fully cooked (precooked) pork sausage that can be heated and served
Composition: max. fat 30% (at formulation 35% fat); moisture 10% added water; moisture-protein ratio 3.7:1; yield (weight) not more than 80% of fresh sausage
See Part 2: Meat Composition
brown-and-serve sausage, canned A cooked sausage, usually without cure; max. 8% added water
brown betty 1) A hot or cold drink made from ale. 2) A pudding made from fruit and bread crumbs
brown bread Bread made from a high-extraction wheat flour
brown butter sauce A well-cooked butter flavored with herbs, capers, and lemons; used as a sauce
brown gravy

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dehydrated</th>
<th>Prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>5.1</td>
<td>99.1</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>11.0</td>
<td>0.1</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>7.9</td>
<td>0.1</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>59.7</td>
<td>0.6</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0.5</td>
<td>0</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>16.3</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Brownian movement Continuous zigzag motion of small particles in a suspension caused by bombardment of molecules of the dispersion medium
brownie A rich and chewy chocolate cookie made of baking powder, butter, eggs, and flour
Composition: 90 calories per 1 ½ × 1 ½ × ½-in. brownie with nuts; 69 mg Na/32 g (iced)
browning 1) Darkening of the cut surface of some fruits (e.g., apples, peaches, pears) and vegetables (e.g., potatoes) and darkening of some fruits (e.g., peaches) during frozen storage
2) The change of color with age of red wine to brown

browning reaction (Maillard reaction; nonenzymatic browning) A nonenzymic reaction involving amino acids and reducing sugars that determines the color of many processed foods. It causes discoloration of freshly peeled fruits and vegetables and occurs in some canned fish products. It also causes flavor changes (e.g., in maple syrup flavor, the caramelized flavor of canned milk, caramel candy). It may be inhibited by ascorbic or citric acid.
brown leaf spot (Helminthosporium oryzae) A rice disease caused by a fungus that attacks the seedlings and the leaves and heads of older plants. It may be controlled by cultural practices.

brown mite (Bryobia rubrioculus) A pest of pears; adult is dull red to greenish and flattened, with long legs; damaged foliage is bronze in appearance and interferes with normal fruit development.

brown rice Hulled, unpolished grain; contains more minerals and vitamins than polished white rice. 80% of paddy rice See also rice; unpolished rice
brown roll A roll made from whole-meal or high-extraction wheat flour
brown rot (bacterial fruitlet rot; black rot; black spot; exogenous brown discoloration; fruitlet black rot; fruitlet brown rot; fruitlet core rot; marbled fruit; ripe fruit rot; Monilinia fructicola; M. laxa) 1) A fungus that affects peach, apricot, nectarine, plum, and cherry blossoms, fruit, spurs, and shoots. Infected blossoms wilt andturn brown, small cankers are formed on spurs and shoots, branches and twigs. Fruit will decay starting with light brown spots on the surface and often ending with a velvety growth on the surface.
Control: Destroy all blighted material; use a fungicide spray; handle fruit carefully and cool after harvest. 2) Rotten brown spots that develop on pineapple, caused by Penicillium spp., Fusarium spp., or bacteria (Erwinia ananas; Pseudomonas ananas), usually not detectable from the outside of the fruit but eyes may become brown or sunken as fruit develops. The fruitlet is brown, moist, firm, and mottled. 3) A fungal disease of nectarines that produce ash-gray powdery spores on infected parts. 4) Citrus fruit rot caused by several Phytophthora species. The first symptom is a slight olive drab or brownish tan rind color; later the color is dark greenish brown. The decay is usually firm and leathery. The fungii grow very slowly below 50°F.
brown sauce (espagnole) A beef-stock sauce that is the base for most special sauces See beed molasses
brown sherry A sherry made by blending olorosos with sweetening and coloring wines
brown spot (Helminthosporium oryzae) A fungal disease that causes brown spots on the leaves of rice
brown staining A diffuse, irregular, tan to brown, superficial discoloration of the peel of citrus fruit stored at 32–34°F. It usually fades after removal to room temperature.
brown sugar (Ivory to dark brown) Sugar made from sugar cane or beets that has not been as highly refined as white sugar; still contains some of the molasses
**Brussels sprouts** (*Brassica oleracea var. gemmifera*)

**Brown Swiss** A dairy-type breed of cattle that originated in Switzerland; solid color from light to dark brown.

See Part 2: Dairy Cattle Breeds; Gestation Periods; Milk Breeds, Composition; Milk Composition

**brown trout** (*Salmo trutta*) A food fish. See trout.

**browse** The twigs, stems, leaves, fruit, or pods of woody plants that are eaten by animals.

**Brucella** A genus of nonmotile, short, rod-shaped to coccoid, Gram-negative, encapsulated microorganisms; causes brucellosis, contagious abortion (Bang’s disease), and undulant fever (Malta fever).

See Part 2: Microbiological Media; Microorganism, Culture Media, Dairy and Food Products; Microorganism, Media

**brucellosis (Bang’s disease; contagious abortion; undulant fever in humans)** A cattle disease caused by *Brucella abortus*, *B. suis*, or *B. melitensis* that destroys cotyledons and causes a loss of a large percentage of calves; calfs'hood vaccination is available. The human disease is called undulant fever, or Malta fever. The organism is destroyed by Pasteurization.

See Part 2: Diseases, Food-Borne; Illness from Food; Infectious Diseases, Food-Borne; Microbiological Media

**bruise** An injury causing swelling and discoloration.

**brule** A rich (milk, egg, cream) frozen dessert; food served with caramelized sugar.

**Brunoise** 1) Finely dried vegetables. 2) Finely shredded vegetables. 3) A mixture of vegetables. 4) Diced vegetables used for flavoring.

**Brunswick stew** A meat (chicken, rabbit, or squirrel) and vegetable (tomato) stew.

**Brunnhweurz (roast bratwurst)** A moist, cooked, unsmoked East German sausage made from fine- or medium-chopped, medium-seasoned beef stuffed into a beef or an artificial casing. See lunchwurst.

**brui_corse** A processed cheese made from cow’s milk, sometimes with chopped ham added.

**brühpolnische** A moist, cooked, smoked East German sausage made from medium-seasoned, medium-chopped beef and pork stuffed into a pork casing.

**brunello** A dry, full-bodied, strong red wine.

**brunello di Montalcino** A great red Italian wine produced from Sangiovese grapes and matured for many years.

**bruin** A midmorning meal that has some of the characteristics of breakfast and some of lunch.

**bruschetta’s** A moist, cooked, unsmoked Belgian sausage made from heavily seasoned beef and pork stuffed into beef casings.

**brusselskaas** A low-fat, high-protein, semisoft cheese (150-200 g) made from cow’s milk and washed with water during maturing.

**Brussels sprouts** (*Brassica oleracea var. gemmifera*) The firm, compact, green auxiliary buds, or sprouts (average 100/plant, 1-1.5 in. diam.), on long stalks (as much as 30 in.) of this plant resemble miniature cabbages and are used as a green vegetable; a sulfur-containing vegetable whose whole leaf is used as food. The plant originated in Belgium and is in season from Sept. through March. 8000-11,200 seed/oz; germinates in 12 days. Plant 2 ft apart in rows 2.5 ft apart; matures in 100-120 days; yields 5/4 qt/plant. Sprouts are firm, unwrinkled, and vivid green when fresh.

To cook: Boil 10-15 min or until tender.

25% stalks and outer leaves as refuse

- 4 1-qt boxes, fresh = 6 pt, frozen
- 2 lb, fresh = 1 qt, frozen
- 1 lb, fresh = 4 cups
- 10 oz, frozen = 3 servings
- 1 cup, fresh = 100 g (3.6 oz)
- 1 cup, cooked = 180 g (6.4 oz)
- 1 cup, boiled, drained = 6-8 sprouts

1 servings = 0.5 pt
 = 0.25 lb

Size:

<table>
<thead>
<tr>
<th>Variety</th>
<th>Yield and size</th>
<th>Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catskill</td>
<td>Large; elliptical</td>
<td>105 days</td>
</tr>
<tr>
<td>Early Morn</td>
<td>Heavy; med. size; oval; dark green</td>
<td>Early or late 80 days</td>
</tr>
<tr>
<td>Jade Cross (P1)</td>
<td>med. size; globe; med. green; med. size</td>
<td>Fall 90 days</td>
</tr>
<tr>
<td>Long Island</td>
<td>1-1.5 in.</td>
<td></td>
</tr>
<tr>
<td>Improved</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Composition (raw): moisture 85%; protein 5%; fat 0.4%; carbohydrate 8%; ash 1%; pH 6.3

Storage: May be quick-frozen. If fresh, place in refrigerator crisper (32°F) or plastic bag (90-95% relative humidity); use within 1-21 days.

See Part 2: Ascorbic Acid; Frozen Food Storage; Iron; Microwave Cooking, Frozen Vegetables; Minerals, Food; Nicacin; Phosphorus; Plant Foods, Composition; Planting Density; Potassium; Potassium-Rich Foods; Riboflavin; Storage; Sugar, Vegetables; Thiamin; Vegetable Boiling; Vegetable Composition; Vegetable Cooking; Vegetable Frozen Yield; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Plants; Vegetables, Boiling Time, Frozen; Vegetables, Canning Dates; Vegetables, Classification; Vegetables, Cooking Frozen; Vegetable Servings; Vegetable Storage; Vegetable Yield, Frozen, Canned, and Fresh; Vegetable Yields; Vitamin C
brut (nature) champagne  A very dry (i.e., not sweet), unsweetened, light wine, with a piquant yet delicate flavor, made in France.

bruxelles cheese  A soft, fermented Belgian cheese made from skimmed cow's milk.

bryndza  A white, brined cheese made from goat's or sheep's milk.

B.T.U. (board of trade unit)  1 B.T.U. = 100 watt-hours

Btu  See British thermal unit

bual (boal)  See British thermal unit

Benchner funnel  A porcelain funnel with a fixed, horizontal, perforated plate, which supports filter paper, allowing a large area of supported filtration.

buck  An uncastrated male sheep, goat, deer, antelope, hare, or rabbit.

bucket (British dry)  A measure of volume; 1 bucket = 1.8184 x 10^3 cubic centimeters (cm^3)


Buckeye (chicken)  An American class of chickens that lays a brown-shelled egg. Color: mahogany, undercolor red; tail feathers, black.

buck-kneed  Knees bent slightly forward.

buckling (pickling)  1) A salted, hot-smoked (at 212°F, which also cooks) herring. See Part 2: Fish, Smoke-Cured  2) A can defect that results in permanent distortion of the end; sidewalls of a can in convex position, which is caused by too low a vacuum during processing; condition may become bad enough to burst seams.

buck shad  See shad.

buckshoat soil (gumbo)  Limestone land in Texas, Oklahoma, and a few other states that contains large quantities of lime and becomes very sticky when wet but crumbles into small particles when dry.

buckthorn plantain  See hartshorn.

buckthorn bark  A dried, seasoned (2 yr) bark, that has a sweet to bitter taste; this product is used as a tonic.

buckwheat (beechwheat; blé sarrasin; saracen wheate; Fagopyrum esculentum, F. tartaricum, or F. emarginatum). A hardy, grass-like herb that produces a three-cornered seed (kasha or buckwheat groats); used principally for pancakes. It is usually supplemented by other flours to bake bread; it has a bitter flavor and does not keep well. Seed 1–1.25 lb/acre 1 bu = 48–52 lb  1 qt = 1.6 lb  1 cup, sifted = 3.5 oz Composition (whole grain): moisture 10%; protein 11%; fat 2.5%; carbohydrate 75%; ash 2%; fiber 10.4%

buckwheat bran  The covering of buckwheat; 1 lb/qt; 29 lb/bu.

buckwheat cake  Buckwheat pancakes, usually consumed with maple syrup.

buckwheat flour  A gray flour, speckled with black (part of the hull), made from buckwheat; obtained by sifting buckwheat meal. It is mixed with other flour (often wheat) when used for pancakes (some are fermented) and cakes, due to its strong flavor. 100 lb buckwheat flour = 3.5 bu buckwheat Composition: moisture 12%; protein 6–15%; fat 1–3%; carbohydrate 68–80%; ash 1–2%.

buckwheat grits  Coarsely ground buckwheat.

buckwheat groats  Whole-kernel buckwheat that has been cracked without grinding.

Storage: tightly closed container in a cool place; freeze for longer storage.

buck wool  Wood from rams; coarser and with higher shrink than wether or ewe wool.

buco  Dried flour made from fermented pseudostem of ensete or false banana.

bucwala  A sorghum beer.

bud  1) Conical swelling found at each node. 2) An undeveloped shoot, stem, flower, or leaf. 3) Young bovine animal. See Part 2: Vegetable Classification.

budapest salami  A dry, uncooked Australian sausage.

budding  A reproduction method used by yeast; asexual reproduction in which a small amount of protoplasm and some nuclear material pinches off from a cell.

budding stick  A young shoot of one season's growth.

bud moth  See pecan bud moth.

bud rot  A leaf disease of strawberries that is caused by a fungus (Rhizoctonia spp.). There is no known way to prevent bud rot.

budu  1) A fish sauce made from anchovies (Stolephorus), sugar, and sometimes tamarind (Tamorindus indica). 2) Fermented, salted, dried whitebait or anchovies.

budworm  Any of several worms that eat plant buds. See Part 2: Insect Control.

buff  See goose.

buffalo  1) American buffalo or American bison (Bison bison), also called Indian cattle; a type of cattle, usually humped, native to the western United States; weighs up to 3000 lb and has 14 pairs of ribs. 2) Heavy oxen of the Old World (domesticated in the...
bulrush (family Cyperaceae)

bulb and stem nematode (Ditylenchus dipsaci) An extremely small worm that sometimes attacks strawberries.

bulbourethral (Cowper’s) gland A gland at the root of the penis, with a function similar to that of the prostate.

Bulgarian buttermilk High-acid (2–3% lactic acid) fermented buttermilk.

Bulgarian white A white, brined cheese made from sheep’s milk.

bulgur Cracked wheat that retains the bran and germ of the grain; sometimes called parboiled wheat; it is cooked, dried, partly debranned, and cracked; in nutrition it resembles whole wheat; it is faster-cooking than cracked wheat.

bulimia Abnormal hunger.

bulk Indigestible carbohydrate (in fruit, leafy vegetables, and whole-grain cereals) that is useful in stimulating passage of food in the large intestine.

bulk cheese Canadian cheddar.

bulk comb honey See chunk honey.

bulke A tea bread containing fruit and nuts.

bulk index Number of cubic centimeters required for

bulk stock Product stored to moderate extreme price fluctuations.

bulfeet A meal in which the dishes are placed on a sideboard, the diners serving themselves and eating either standing up or seated informally.

buhobe A sour-dough, fermented cassava (with or without cereal) dumpling.

buhoko A sorghum beer.

bulwurst A finely to coarsely chopped, cooked, smoked or unsmoked American, large-diameter, link or ring sausage.

builder’s lime (plastering lime; hot lime) Pulverized limestone rock that is burned to drive off the calcium dioxide. A liming material composed of 85% CaO; each pound has the neutralizing equivalent of 1.5–1.75 lb of CaCO₃ (or approximately this quantity of dolomitic limestone).

bukella A moist flour made by fermenting the pseudostem of ensete or false banana.

bulb The resting state of a plant with a subterranean bud composed of scale-like overlapping leaves that contains food for regrowth (e.g., onion).

See Part 2: Vegetable Composition; Vegetables, Classification.

Orient) that feed on water plants; in India, Bos bubalos; See also bison.

See Part 2: Meat and Meat Products, Composition; Milk and Cheese Composition; Milk, Mammals, Composition.

buffalo berry or currant (Nebraska currant; rabbit berry; Elaeagnaceae; Shepherdia argentea) A North American shrub or tree that has a small, round, yellow or red, tart, acidic, edible, one seeded, fruit used for pies, sauce, jellies, preserves and a meat sauce.

buffalo fish (winter carp; Megastomatobus cypri- nella) A Mississippi freshwater, large (10 lb), sucker-type finfish that is used for food and has light meat, firm flesh, med. fat content (5.9%), and light to moderate flavor.

Types:
Black
Largemouth
Smalemouth.

buffalo fish, bigmouth (Iciobus cyprinellus) A food fish with an average fat content and white flesh.

buffalo treehopper (Stictocephala bubulus) An insect that injures the bark of pear trees.

buffer A mixture of compounds that, when added to a solution, protects it from any substantial change in pH. Such mixtures are usually in solution form and contain either a weak acid and its related salt or a mixture of two acid salts. Buffering compounds often used are carbonates phosphates, and ammonium salts. The acid-base balance of the blood is controlled by the presence of carbonic (a weak acid) and bicarbonate (its related salt).

See Part 2: Buffer Solutions; pH, Buffer Solutions.

buffer capacity The ability of a substance (e.g., food) to resist change in pH values.

buffer stocks Product stored to moderate extreme price fluctuations.

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buffer stocks Product stored to moderate extreme price fluctuations.

bullhide A hide of a mature male uncastrated cattle; has secondary sexual characteristics.

bulls Flour made from fermented pseudostem of ensete [Abyssinian banana (Ensete ventricosum)] or false banana.

bullace A plumlike tree and its fruit, which is used to make jam.

bull blood A red wine.

bullhead A number of types of catfish See catfish.

bull hide A hide of a mature male uncastrated cattle weighing from 60 to over 100 lb.

bullis A wild purple grape used for jams and jellies.

bullish An upward price trend on the market.

bull meat Boneless beef tissue from bull carcasses; boneless beef.

bulllock A young bull; a mature steer, ox, or stag.

bullock beef Muscle tissue from young (usually under 24 months) male cattle.

bullock’s heart See annonaceous fruit; custard apple.

“bull’s blood” (ergi bikavar) A robust, full-bodied, deep-red, mildly dry Hungarian wine.

bull’s eye A mixed drink made from brandy, hard cider, and ginger ale.

bully beef Salted and spiced beef; corned beef.

bulochki A rye bun.

bulochnaya White bread.

bulrush (family Cyperaceae) An aquatic plant; leaves and shoots are used as salad; the starchy root is also edible.
bummalotel An Indian fish that is often dried and canned

bung A round, sweet, soft-baked product; usually leavened; usually made from wheat but sometimes from rye; may contain fruit. 1) A soft, round roll used to make a sandwich. 2) Glazed cake. 3) Small, sweet cake See roll

bung Doke; an embankment

bundle of His (Wilhelm His, Jr., German physician) Connecting length in the heart between the atrioventricular nodes

bundner beiwurst A moist, semidry or dry, cooked or uncooked, smoked Swiss sausage made from coarsely chopped, medium seasoned beef and pork stuffed into a beef casing

bundnerfleisch Dried, smoked beef

bung A natural casing used in the meat trade; in beef it comes from the caecum and in hogs it comes from the terminal end of the large intestine. See Part 2: Casings, Animal; Casings, Hog and Beef; Casings, Hog Bungs; Casings, Terms

bun loaf Tea bread rich in eggs but with no fruit

bunt and dwarf bunt (stinking smut; Tilletia spp.) A disease of wheat that causes gray or black smut balls smaller than wheat kernels. Wheat must be washed or scoured before milling.

bunuelos Fried, round pastries

burbos A soft cheese made from ewe’s milk

burbot (cusk; eelpout; ling; Bota lota; Lota lascutris) A codlike, river finish with light meat and light to moderate flavor

Europe, L. lota

Northeastern United States, L. maculosa

Russia, nalim

See eelpout

burdock (gabo; Arctium lappa; Xanthium) A perennial plant with burrs; it has edible shoots (used like celery) and roots (which may be eaten like carrots or used as a vegetable or in soup or preserved or canned) that are used in the Orient.

burger See hamburger

burgoo 1) A flavored vegetable (predominantly tomato stew made with beef and chicken or game). 2) A porridge, gruel, or pudding

burgos A high-fat, soft cheese made from sheep’s milk

Burgundies of China tea A good-quality black tea from Northern China

Burgundies of the Gironde See St. Emilion

Burgundy wine A red or white table wine with a robust, fruity flavor produced in the valleys of Saône and Yonne in France. A region in east-central France famous for its wine.

Regions:

Côte de Beaune—red and white wines (soft, supple, develop quickly)

Côtes de Nuits—red wines (generous, full-bodied, keep well)

14% alcohol by volume

See Chablis; Chardonnay; Côte de Beaune; Côtes de Nuits; Maconnois; Pineau Noir; sparkling Burgundy

Burgundy cheese (fromage de Bourgogne) A loaf-shaped, soft, white cheese

Burgundy white A dry wine that should be consumed young and fresh; produced in Côte de Beaune and Chablis

Burgundy wine In California, a ruby wine produced from Gamay and Mondeuse grapes

buritta A soft, brick cheese

burrini A 200- to 300-g, pear-shaped, provola-type cheese made from buffalo’s or cow’s milk

burrito A large, flour tortilla that is filled, folded, and rolled

burro A species of ass that is small in size

bursa Synovial sac of connective tissue between moving parts in joints

burukutu A sorghum beer

busa See kumiss

busaa A sorghum, millet, or maize beer
bush apple  See Australian native plum

bushel (bu; U.S.; Winchester bushel) A dry measure of volume and capacity

1 bu = 2150.42 cubic inches (in.³)
= 64 pints (pt; U.S., dry)
= 64 pints (U.S.)
= 37.2368 U.S. liquid quarts
= 35.2393 cubic decimeters (dm³)
= 35.238 liters (l)
= 32 U.S. dry quarts (d. qt.)
= 9.30920 U.S. liquid gallons
= 8 U.S. dry gallons (d. gal)
= 4 pecks (U.S.)
= 3.52383 dekaliters (dal)
= 1.24446 cubic feet (ft³)
= cubic feet divided by 5
= 0.35238 hectoliter (hl)
= 0.04609 cubic yard (yd³)
= 0.03524 cubic meters (m³)

See Part 2: Saturated Fatty Acids

butane  (C₄H₁₀) A gaseous, aliphatic hydrocarbon derived from petroleum and used as a fuel and refrigerant

See Part 2: Refrigerant

butanoic See Part 2: Saturated Fatty Acids

2-butanoic (methyl ethyl ketone)  
(CH₃COCH₂CH₃)

Used as a food-flavoring agent

Storage: tight container

butter One who slaughters, dresses, cuts, and/or sells meat

butter cattle  Cattle having good flesh

butter's pepper Coarsely ground black pepper

butter's round  Round of beef without the rump

butter's wrap  A hand-wrapping or packaging procedure in which the object is laid diagonally on paper close to one corner; this corner is placed over the object and the object is rolled to the diagonal corner, bringing the ends of the paper over the object while rolling it

butifarra  1) A moist, cooked, unsmoked Argentinian paste made from finely chopped, medium-seasoned (with salt, white pepper, nutmeg, and grated lemon peel) beef, pork, and veal; it is scalded, not encased, and made with back fat or soft fat. 2) A moist, cooked, unsmoked Uruguayan sausage made from finely chopped, mildly seasoned beef and pork with flour and stuffed into a beef or pork casing

bust  1) A measure of volume; 1 butt = 2 hogsheads.

2) The larger end, upper portion (e.g., pork shoulder or ham), or farthest from the foot See boston butt.

3) Wine container; 1 butt = 108 gal sherry. 4) Container for dry salted fish; 1 butt = 500 lb of fish. 5) Various flatfishes

butt end sirloin  First sirloin taken from the rump end of the wholesale cut loin end

butter  1) Class name for butter, butter oil, and anhydrous butterfat. A food-spread emulsion. Cultured milk (usually cow's) with most of the water (5.9–16% remaining is necessary for spreadable consistency), protein (0.5–1.5% of dry matter), and carbohydrates (trace) removed. Fractionation of cream in which fat is separated from the rest of the milk solids and water; made from both sweet and sour (natural or by addition of a bacterial culture) cream; a colorless semisolid consisting of the glycerides of the fatty acids of cow's milk. It contains a high percentage of butyric acid, from which the word “butter” is derived. It is made by mechanical agitation of milk or cream, which disrupts the protective layer of protein on the fat particles, allowing them to coalesce. After churning, the product is washed and usually salted. Permissible colorants are also added. Whipped butter has increased quantities of air incorporated; it spreads more easily and is less dense. (Add butter first to sandwiches; it adds flavor and helps to keep the filling from soaking in the bread.)

<table>
<thead>
<tr>
<th>Composition</th>
<th>Regular</th>
<th>Whipped</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>9.5–16</td>
<td>15.9</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>0.4–0.85</td>
<td>0.8</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>81–88 (min. 80</td>
<td>81.1 (milk fat)</td>
</tr>
<tr>
<td>Carbohydrate</td>
<td>0.06–0.4</td>
<td>0.06</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>0.5–5 (2.5 ash,</td>
<td>2.1 (salted)</td>
</tr>
<tr>
<td>Sodium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salted (mg/tbsp)</td>
<td>116 tbsp (14 g); 74 tbsp (9 g)</td>
<td></td>
</tr>
<tr>
<td>Unsalted (mg/tbsp)</td>
<td>2 tbsp (14 g)</td>
<td></td>
</tr>
<tr>
<td>Oleic (%)</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>Linoleic (%)</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Cholesterol</td>
<td>35</td>
<td></td>
</tr>
</tbody>
</table>

Regular butter; energy value 860–870 kcal per 100 g dry matter (3.6 MJ per 100 g dry matter); coefficient of digestibility 97%; curd 0.5–1.5%; pH 6.1–6.4; mp 97°F (36°C)

21–23 lb milk yield 1 lb butter
1 qt cream yields 1 lb butter
2 chubs = 1 lb
1 lb = 48 (½-oz) squares
1 lb = 2 cups
= 3 cups (whipped)
1 stick = ½ cup = ¼ lb butter
1 stick, whipped = ¼ cup = 2.7 oz
1 cup = 225 g (7.9 oz)
1 cup butter = 1 cup margarine
= ½ cup hydrogenated fat or lard
+ ½ tsp salt
1 cup, whipped = 150 g (5.4 oz)
1 oz = 2 tbsp butter
1 tbsp = 1/8 stick
= 0.5 oz
= 100 calories
1 tablespoon, whipped = 1/8 stick
= 10 g
1 pat = 1-in. square, 1/8 in. thick (90/lb)
= 35 calories
= 5 g
1 pat, whipped = 1.25 x 1.25 x 0.33 in. (120/lb)
= 3.8-4 g

To remove stain from cloth, scrape off excess, use laundry pretreatment spray or cleaning fluid, rinse in cool water, and wash in hot water.
Storage: refrigerate; use within 2 weeks; wrap tightly and protect from light.

Temperature Relative humidity Storage life
32-36°F 80-85 2 months
-10 to -20°F 80-85 1 yr

2) A fruit spread made from strained fruit pulp. Butters are often of a higher concentration and finer consistency than jams and are highly spiced. See butter, fruit; churning

See Part 2: Animal Foods, Composition; Butter and Butter Products, Composition; Butter Grade; Calories, Daily Recommendations; Cholesterol Control; Creams, Butter, and Frozen Desserts; Dairy Products, Composition; Fats and Oils, Composition; Flavor Ingredients, Taste and Flavor Type; Food, Composition; Melting Points, Fats and Oils; Microbiological Standards, Dairy; Milk and Milk Products, Vitamin Content; Minerals, Food; Oils and Fats, Composition; Spoilage, Fat in Foods; Storage Times; Unsaturated Fatty Acids; Vitamin A, Daily Recommendations; Vitamin A, Food; Vitamin A, Milk and Milk Products; Vitamin D, Food

butter bean (lima; Madagascan bean; Phaseolus lunatus) A tropical bean with a large white seed; harvesting begins about 100 days after planting.

butter, black Cooked butter with or without other additives (e.g., capers, parsley, or vinegar)

butter bun A bun that may contain jam

butter cheese A creamy, semisoft, surface-bacteria-ridden, mildly flavored cheese made from cow’s milk, sometimes with irregular holes

butter cream Butter icing; mixture of butter and sugar

buttercup 1) A perennial weed (Ranunculus acris L.). 2) A Mediterranean class of chickens that lays a white-shelled egg

buttercup squash A drum-shaped, thick-fleshed winter squash that is green with gray stripes or flecks. See squash, winter

butter, Danish Cultured butter that is slightly acid

butterfat The natural fat in cow’s milk (glycerides of fatty acids); it has the following characteristics:
- Iodine value 26-38
- Melting point 28-35°
- Refractive index (60°C) 1.445-1.449
- Saponification value 221-233

butterfish (gunnel; Poronotus triacanthus) A small (8 in., 8-16 oz), flat-bodied, silver-blue, saltwater food fish of the mackerel family, with white meat, light to moderate flavor, slight oily taste, and soft texture; market name for sablefish

Atlantic (sheepshead), Pogonias cromis
Australia, Selenotoca multifasciata
New Zealand, Coriodax pullus
Pacific, Psenopsis anomala

butterflied lamb roast Leg of lamb that has been boned so that it can be laid flat for roasting

butterfly A double slice of boneless meat hinged on one side

butterfly chop A thick, boneless pork chop that is folded open to double the original surface area
See Part 2: Pork Cuts; Pork Loin Cooking

butterfly fillet A double fillet

butter, fruit Usually made of large fruits cooked until soft and the pulp passed through a sieve (0-1/2 lb sugar/lb fruit); min. 43% soluble solids; less sugar than jam; preservatives are permitted.
Examples: apple; apple and grape; apple and plum; apple and quince; apricot; grape; plum; quince
See butter

butter grade

<table>
<thead>
<tr>
<th>USDA grades</th>
<th>Made from</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>Top-quality sweet cream</td>
</tr>
<tr>
<td>A</td>
<td>Lesser-quality sweet cream</td>
</tr>
<tr>
<td>B</td>
<td>Sour sweet cream</td>
</tr>
</tbody>
</table>

butterhead A variety of head lettuce. See also Boston lettuce; lettuce

butterkäse A soft, full-cream, unsalted cheese

butter leaves See orache

buttermilk Class name for sweet-cream buttermilk, concentrated sweet-cream buttermilk, and dried sweet-cream buttermilk. A milk beverage expressed from the churning of butter or fermenting skim milk with a starter culture; slightly curdled milk from
which fat has been removed

![Image of a button]

<table>
<thead>
<tr>
<th>lactose</th>
<th>Streptococcus lactis or S. cremoris</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.75-0.85% lactic acid</td>
<td>(desired)</td>
</tr>
</tbody>
</table>

![Image of a button]

The liquid that remains after milk or cream (sweet or sour) is churned

<table>
<thead>
<tr>
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<th>Liquid</th>
<th>Dehydrated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry matter (%)</td>
<td>90-92</td>
<td>92</td>
</tr>
<tr>
<td>Moisture (%)</td>
<td>3-3.6</td>
<td>2-3</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>8.25-8.5</td>
<td>32-35</td>
</tr>
<tr>
<td>Milk solids, nonfat (%)</td>
<td>0.1-0.9</td>
<td>4.7-6</td>
</tr>
<tr>
<td>Fat (%) if cultured from whole milk</td>
<td>3.5</td>
<td></td>
</tr>
<tr>
<td>Lactic acid (%)</td>
<td>&lt;0.5</td>
<td></td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>4.7-5.0</td>
<td>48.5-49.5</td>
</tr>
<tr>
<td>Lactose (%)</td>
<td>3.5-4.5</td>
<td></td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0.7-0.9</td>
<td>7.6-9.1</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Calories (per cup)</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Cholesterol (mg/cup)</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

1 cup = 245 g (8.5 oz)
1 cup buttermilk = 1 cup sour milk = 1 cup sweet milk + 1 tbsp lemon juice (let stand for 5 min) = 1 cup sweet milk + 1 tbsp vinegar (let stand for 5 min) = 1 cup sweet milk + 1 1/2 tsp cream of tartar

See also buttermilk, cultured

Storage: 40°F; use in 4–6 days
See Part 2: Animal Foods, Composition; Cultured Dairy Products, Composition; Dairy Products, Composition; Dairy Terms; Fluid and Fermented Milks, Composition; Glutamate; Milk and Cheese Composition; Milk and Milk Products, Vitamin Content; Milk, Concentrated Products; Milk, Dry Products; Minerals, Food; Vitamin A, Milk and Milk Products

buttermilk, acid Made from skim milk or buttermilk by
1. Heating 82–88°C for 30 min
2. Cool to 37°C
3. Innoculate with Lactobacillus bulgaricus
4. Acidity, greater than 1% lactic acid

buttermilk cheese A cheese made from the curd of buttermilk

buttermilk, cultured Made by artificially souring pasteurized skimmed or part skimmed milk with a special culture of lactic bacteria. It has the flavor of buttermilk but is thinner.

Procedure:
1. Heat to 82–88°C for 30 min
2. Cool to 21°C
3. Innoculate with Streptococcus lactis and S. lactis var. diacetylactis or S. cremoris and Leuconostoc citrovorum

4. Final acidity is 0.8–0.9% lactic acid
5. May have 3% sugar
6. May have flavor added

Composition:
- Salted—257 mg Na/cup (245 g)
- Unsalted—122 mg Na/cup (245 g)

Nonfat milk solids—min. 8.25%

See buttermilk; lactic acid

buttermilk, dried A dried by-product of butter making; used in pancakes and bakery products

Composition (sweet cream): moisture 3.0%; protein 34.3%; fat 5.8%; carbohydrate 49.0%; ash 8.0%

See buttermilk

butternut (long walnut; white walnut; Caryocar butyrosum; Juglans cinerea) 1) A tall (30–75 ft) North American tree that produces an edible nut; the shell is hard, rough, and ridged and the kernel has a rich, pleasant flavor. The tree bears a crop in 2–3 yr. The nut (white meat, butty flavor) is eaten fresh and used for baking and confectionery. Nut meat gets rancid quickly after shelling; 85% refuse See souari nut; walnut

Composition (kernel): moisture 4%; protein 24%; fat 61%; carbohydrate 8%; ash 3%
2) A creamy orange, bottom-heavy, pear-shaped winter squash

See Part 2: Minerals, Food; Protein Factors

butternut squash A long, cylindrical, creamy to light tan winter squash with a bulbous end See squash, winter

butter oil 1 cup = 7.2 oz

butter oil, anhydrous Composition: moisture 0.2%; protein 0.3%; fat 99.5%; carbohydrate 0%; ash 0%

butter pea Bush lima bean

butter, process Low-grade butter from which objectionable odor has been removed and the butter rechurned

butter, renovated Low-grade butter from which objectionable odor has been removed and then butter rechurned

butter, savory A flavored butter (often for seafood)

butterscotch A confection made from butter, brown sugar, lemon juice, and sometimes cream; brown sugar and butter flavoring often found in pies and candy; a hard noncrystalline candy of this flavor

butter sole (Isopsetta isolepis) A food fish

butter, sweet Unsalted butter made from either sweet or sour cream See butter, unsalted

butter, unsalted (sweet) Butter without salt; some people prefer its flavor; sometimes called sweet butter

butter, whipped Regular butter that is whipped to incorporate 50% air or inert gas, which increases its volume and makes it easier to spread; may be salted or unsalted; min. 80% milkfat. Use 1/2 more than regular butter if measurement is by volume.

buttiri A mixture of butter and cheese

buttons White, cartilagenous area on the ends of the feather bones of young animals
butt tenderloin  Iliopsoas (iliacus and psoas major) muscle; lies ventral to the shaft of the ilium in cross section of sirloin; is the psoas major and psoas minor in pin bone area and lies ventral to the lateral process of lumbar vertebrae

butyl acetate  \((\text{CH}_3\text{COOCH}_2\text{CH}_2\text{CH}_2\text{CH}_3)\) Used as a fruity flavoring agent in food
Storage: tight container in a cool place

butyl alcohol  \([\text{CH}_3(\text{CH}_2)_2\text{CH}_2\text{OH}]\) Used as a vinous flavoring agent in food
Storage: tight container in a cool place

butylated hydroxyanisole (BHA) Predominately 3-\(\text{CH}_3\text{(CH}_2\text{OH)}\text{CH}_2\text{O}C\text{H}_3\) with varying amounts of 2-\(\text{CH}_3\text{(CH}_2\text{OH)}\text{CH}_2\text{O}C\text{H}_3\) (2-BHA)

\[
\text{OH} - \text{C(CH}_3\text{)}_3
\]

\[
\text{O} \quad \text{CH}_3
\]

An antioxidant that needs a synergist to be very effective; it will carry through to the baked product; 0.01% in fat (total antioxidant, 0.02% in combination); 0.003% in smoked dry sausage
Storage: well-closed container
See Part 2: Antioxidant Activity; Antioxidant Mixtures; Antioxidants, Formulas; Antioxidant Structure

butylated hydroxymethylphenol

\[
(\text{CH}_3)_2\text{C} - \text{OH} - \text{C(CH}_3\text{)}_3
\]

\[
\text{CH}_2\text{OH}
\]

Used as an antioxidant in food
Storage: tight container

butylated hydroxytoluene (BHT)

\[
(\text{CH}_3)_3\text{C} - \text{OH} - \text{C(CH}_3\text{)}_3
\]

\[
\text{CH}_3
\]

An antioxidant; 0.01% in fat (total antioxidant, 0.02% in combination). Prohibited in England
Storage: well-closed container
See Part 2: Antioxidant Activity; Antioxidant Mixtures; Antioxidants, Formulas; Antioxidant Structure

butyl butrylactate

\[
\begin{align*}
\text{CH}_3\text{CH}_2\text{CH}_2\text{COO} & - \text{COO(CH}_3\text{)}_2\text{CH}_3 \\
\text{CH}_3\text{CH} & - \text{COO(CH}_3\text{)}_2\text{CH}_3
\end{align*}
\]

Used as a butterlike flavoring agent
Storage: full, tight, glass container in a cool, dark place

1,3-butylene glycol  \((\text{CH}_2\text{OH}\text{CH}_2\text{CHOHCH}_3)\) Solvent for flavoring agents
Storage: tight container

butylparaben

\[
\begin{align*}
\text{HO} & - (\text{CH}_2\text{)}_3\text{CH}_3 \\
\text{O} & - \text{CH}_3
\end{align*}
\]

An antimicrobial food additive used in beverages, cake-type pastries, relishes, and salad dressings

butyl rubber  See isobutylene-isoprene copolymer

butyraldehyde  \([\text{CH}_3(\text{CH}_2)_2\text{CHO}]\) Used as a flavoring agent in food
Storage: tight container

butyric acid

\[
\begin{align*}
\text{CH}_3\text{(CH}_2\text{)}_2\text{C} & - \text{O} \\
\text{OH} & - \text{O}
\end{align*}
\]

An aliphatic fatty acid occurring in milk fat; used as a rancid-butter-like flavoring agent
Storage: tight container.
See Part 2: Fatty Acids; Fatty Acids and Their Properties; Fatty Acids, Fats and Oils; Milk, Fatty Acids, Seasonal; Saturated Fatty Acids

buyer code  A code used to identify the buyer responsible for a given item and/or purchase order

buying direct  Purchasing directly from the manufacturer's plant

buzbag  A red wine

BVD  Bovine Viral Diarrhea

BVO  See brominated vegetable oil

bwiru  Poi made from breadfruit (Artocarpus) that is soaked in seawater and then fermented

by-product  Secondary products, both edible and inedible, e.g., hide, bone, fat, blood, and viscera. Sausage labeled with by-product consists of less than 15% of one or more kinds of raw skeletal muscle meat.
See Part 2: Packinghouse By-Products Composition

byrrh  An orange- and quinine-flavored, red, aperitif wine

Byssochlamys fulva  A heat-resistant (30 min at 85°C) mold that causes spoilage and swells in canned fruit
See Part 2: Rot Spoilage; Spoilage, Carbohydrate Foods

byte  A byte is to a bit as a word is to a letter. Usually, one byte is from 8 to 32 bits long.
C Symbol for the element carbon. Also the symbol used for a capacitor

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Ca Symbol for the element calcium
c. Circa; about

cabanos (kabanos) Pork pepperoni seasoned with caraway, coriander, garlic, and paprika

cabanossi 1) A semidry, cooked, smoked Australian sausage made from coarsely chopped, heavily seasoned (with garlic) beef, pork, and veal stuffed into artificial casings. 2) A dry, cooked, smoked medium-chopped, heavily seasoned (with nitrite) beef and pork stuffed into pork casings with a diameter of less than 30 mm

cabanossy A dry, uncooked, Australian sausage

cabate (Volvariella volvacea) Straw mushroom

Cabbage (Brassica oleracea capitata) A sulfur-containing vegetable whose leaf is used as food; a plant whose enlarged terminal bud (2–5 lb) is used as a green vegetable, salad greens; fresh (in cole slaw), boiled, or fermented (sauerkraut); originally from the Mediterranean and Middle East; matures in 100 days; outer leaves are called wrapper

<table>
<thead>
<tr>
<th>Type</th>
<th>Seed/oz</th>
<th>Germination period (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>7000</td>
<td>12</td>
</tr>
<tr>
<td>Red</td>
<td>8400</td>
<td>12</td>
</tr>
<tr>
<td>Savoy</td>
<td>7000</td>
<td>12</td>
</tr>
</tbody>
</table>

Seed 4–8 oz/acre (150–300-ft bed space); spacing 12 in. apart in rows 3 ft apart

Types:

Crinkly or savoy—has a round shape, yellowish wrinkled leaves, mild flavor; makes good coleslaw. Loose-headed cabbage (winter type, B. oleracea bullata major)

Early—flat (Cornell Early Savoy)

Late—flat (Perfection Drumhead Savoy)

Danish—tight, white, compact heads

Drumhead (white Dutch cabbage)—large, white, and hard

New—sold fresh

Old—sold from storage

Purple or red—has strong flavor, tight head, deep purple hue (anthocyanin pigments); used for pickling and in salads

Smooth

Round (Danish Round Red, Mammoth Red Rock, Red Acre, Red Head, Ruby Ball)

Smooth

Early, or new, varieties—conical or pointed (Jersey Wakefield, Yellow Resistant); flat (Early Flat Dutch, Improved Allhead); round (Copenhagen, Golden Acre); spring cabbage (young cabbage at any time of year)

Late—conical or pointed (Charleston Wakefield); flat (Late Flat Dutch, Wisconsin Hollander); round (Danish Ballhead)

To cook: Green cabbage can be shredded and cooked for 4–8 min, quartered and cooked for 6–10 min, or wilted with bacon. Red cabbage has tougher leaves; using pickling acid gives a lighter shade and boiling, a purple color. (Cook with apple, onion, wine, lemon juice, or vinegar to retain red color.)

Refuse: 15–25%, outer leaves and core

100 lb fresh cabbage = 8–10 lb dry cabbage

Western crate (13 x 18 x 21.6 in.) = 80 lb

Wire-bound crate = 50 lb

1 med. head = 2.5 lb

= 16 one-in. slices

= 9 cups, shredded, raw

= 7 cups, cooked

1 small head = 5–6 cups, shredded

1 lb, fresh = 0.5 small head

= 3½–4½ cups, shredded

= 5–7 raw servings

= 2 cups, cooked

= 4 cooked servings

1 lb, raw, shredded = 9–12 servings

1 lb, red, fresh = 3–4 servings

1 lb, cooked = 4–5 servings

1 cup, shredded = 80 g (2.8 oz)

1 cup, cooked = 145 g (5.2 oz)

1 serving = 1/2 lb

Composition

Cooked     Dried     Raw

Moisture (%) 4 92

Protein (%) 14 1

Fat (%) 2 0.2

Carbohydrate (%) 72 5

Fiber (%) 2.2 2.8

Ash (%) 7 0.7

pH 5.2–5.4

Storage: Leave stem on head, remove injured leaves; keep cool (32°F); place in moderately moist place, e.g., pits or cold cellars, crisper, or plastic bag (90–95% relative humidity); freezing point 31°F; use within 1 week–2 months
<table>
<thead>
<tr>
<th>Variety</th>
<th>Fusarium resistant</th>
<th>Hybrid</th>
<th>Season</th>
<th>Head</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chieftain Savoy</td>
<td></td>
<td>Standard</td>
<td>Early; 55–70 days after transplant</td>
<td>Solid, long, tapered</td>
</tr>
<tr>
<td>Chinese Michihili</td>
<td></td>
<td>Standard</td>
<td>Early to midseason; 68 days after transplant</td>
<td>Round; 6 in.; 4–10 lb</td>
</tr>
<tr>
<td>Copenhagen Market</td>
<td></td>
<td>Standard</td>
<td>Late; 110–120 days after transplant</td>
<td></td>
</tr>
<tr>
<td>Danish</td>
<td>Yes</td>
<td>Standard</td>
<td>Late; 110–120 days after transplant</td>
<td></td>
</tr>
<tr>
<td>Danish Ballhead</td>
<td></td>
<td>Standard</td>
<td>55 days after transplant</td>
<td>4 in.</td>
</tr>
<tr>
<td>Dwarf Modern</td>
<td></td>
<td>Standard</td>
<td>60 days after transplant</td>
<td>5 in.; 2 lb</td>
</tr>
<tr>
<td>Earliana</td>
<td></td>
<td>Standard</td>
<td>Early; 63 days after transplant</td>
<td>Solid, sweet, tender, pointed head; 7 in.; 5 lb</td>
</tr>
<tr>
<td>Early Jersey Wakefield</td>
<td></td>
<td>Hybrid</td>
<td>Early; 65 days after transplant</td>
<td>Round, solid, dark green; 5 in.; 3.5 lb</td>
</tr>
<tr>
<td>Early Marvel</td>
<td></td>
<td>Standard</td>
<td>Early; 65 days after transplant</td>
<td>Slow-bolting</td>
</tr>
<tr>
<td>Early Round Dutch</td>
<td></td>
<td>Standard</td>
<td>Early; 63 days after transplant</td>
<td>Round, compact; 6 in.; 5 lb</td>
</tr>
<tr>
<td>Emerald Cross</td>
<td></td>
<td>Hybrid</td>
<td>Late; 90 days after transplant</td>
<td>Flat, solid</td>
</tr>
<tr>
<td>Excel</td>
<td></td>
<td>Hybrid</td>
<td>Midseason</td>
<td>Round</td>
</tr>
<tr>
<td>Flat Dutch</td>
<td>Yes</td>
<td>Standard</td>
<td>Early; 56–70 days after transplant</td>
<td>Firm, round; 6.5 in.</td>
</tr>
<tr>
<td>Globe</td>
<td>Yes</td>
<td>Standard</td>
<td>64 days from seed; early</td>
<td>Small; 6 in.; 4 lb</td>
</tr>
<tr>
<td>Golden Acre (resistant)</td>
<td></td>
<td>Hybrid</td>
<td>70 days from transplant</td>
<td>Round, blue-green; 5 in.; 4 lb</td>
</tr>
<tr>
<td>Gourmet</td>
<td>Yes</td>
<td>Standard</td>
<td>Mid.–late</td>
<td>Solid; 5 lb</td>
</tr>
<tr>
<td>Greenback</td>
<td>Yes</td>
<td>Hybrid</td>
<td>55–70 days from transplant; early</td>
<td>8 in., 15 lbs., hard, cabbage rolls, kraut</td>
</tr>
<tr>
<td>Harvester Queen</td>
<td></td>
<td>Standard</td>
<td>78 days from transplant; early</td>
<td>Round, blue-green, white interior; 7 in.; 5 lb</td>
</tr>
<tr>
<td>Jumbo</td>
<td></td>
<td>Hybrid</td>
<td>Mid.; 68 days from transplant</td>
<td></td>
</tr>
<tr>
<td>King Cole</td>
<td>Yes</td>
<td>Hybrid</td>
<td>Midseason</td>
<td>Round</td>
</tr>
<tr>
<td>Market Prize</td>
<td>Yes</td>
<td>Hybrid</td>
<td>Early</td>
<td>2 lb</td>
</tr>
<tr>
<td>Marion Market</td>
<td>Yes</td>
<td>Hybrid</td>
<td>Mid.; 76 days from transplant</td>
<td>Red, round, med. size; 4 lb</td>
</tr>
<tr>
<td>Park's Earliana</td>
<td></td>
<td>Standard</td>
<td>Mid.; 85 days from transplant</td>
<td>Globe, red; 7 in.; 3 lb</td>
</tr>
<tr>
<td>Red Acre</td>
<td></td>
<td>Hybrid</td>
<td>Early; 68 days from transplant</td>
<td>Firm, round; cooked or raw; 6–7 in.; deep purple; pickling</td>
</tr>
<tr>
<td>Red Head</td>
<td></td>
<td>Hybrid</td>
<td>Late; 75–85 days from transplant</td>
<td>Round, firm; 7 in.; 4 lb; crumpled, dark green</td>
</tr>
<tr>
<td>Ruby Ball</td>
<td></td>
<td>Hybrid</td>
<td>Mid; 86–90 days from transplant</td>
<td>Semi-flat; 4 lb; slaw, salads; dark green</td>
</tr>
<tr>
<td>Savoy Ace</td>
<td></td>
<td>Hybrid</td>
<td>Early; 67 days from transplant</td>
<td>Solid; round; 6 in.; 4 lb; small</td>
</tr>
<tr>
<td>Savoy King</td>
<td></td>
<td>Hybrid</td>
<td>Early–mid.</td>
<td>Round; 12 lb; kraut cabbage</td>
</tr>
<tr>
<td>Stonehead</td>
<td>Yes</td>
<td>Hybrid</td>
<td>Mid.–late</td>
<td></td>
</tr>
<tr>
<td>Wakefield</td>
<td>Yes</td>
<td>Standard</td>
<td>Early–mid.</td>
<td></td>
</tr>
<tr>
<td>Wisconsin All Season (kraut)</td>
<td>Yes</td>
<td>Standard</td>
<td>Mid.–late</td>
<td></td>
</tr>
<tr>
<td>Wisconsin Hollander</td>
<td>Yes</td>
<td>Hybrid</td>
<td>Early</td>
<td></td>
</tr>
</tbody>
</table>
Trench storage: Place roots in bottom of trench, cover with straw to prevent freezing, cover with boards to shed water.

See Chinese cabbage; pickle; sauerkraut

See Part 2: Ascorbic Acid; Cabbage Looper; Calcium, Daily Recommendations; Calories, Daily Recommendations; Food, Composition; Fruit and Vegetables, Diseases; Microwave Processing Time; Minerals, Food; Minerals, Plant or Animal Tissue; Nicotinic Acid, Food; Nitrate, Vegetables; Nutrients in Crops; Pentosans; Phosphorus; Plant Foods, Composition; Planting Density; Portion Size; Rot Spoilage; Storage; Sugar, Vegetables; Vegetable Boiling; Vegetable Composition; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Plants; Vegetables, Canning Dates; Vegetables, Classification; Vegetable Servings; Vegetables, Panned; Vegetable Storage; Vegetable Yield, Frozen, Canned, and Fresh; Vegetable Yields; Vitamin A, Food; Vitamin C

cabbage aphid (Brevicoryne brassicae) A grayish green aphid with a powdery, waxy covering over its winged (or wingless) body. It feeds on broccoli, cabbage, cauliflower, cole crops, collards and kale. In the South, 30 or more generations of females, both winged and wingless, are produced throughout the year.

Cabbage Chinese
1 large head = 2 lb
See Part 2: Planting Density; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Yields

cabbage, dried See Chungking cabbage

cabbage group (cole) Includes broccoli, Brussels sprouts, cabbage, Chinese cabbage, cauliflower, and kohlrabi

cabbage looper (Trichoplusia ni) The moths are ¾ in. long and gray-brown with a silvery spot on the middle of the forewing. Larvae have black heads and develop into green caterpillars about 1 in. long that move in "inchworm" fashion and feed on lettuce foliage.

See Part 2: Cabbage Looper

Cabbage maggot The larvae of small flies that chew the stems and bore into the roots of plants

cabbage, nonheading See collards

cabbage palm Any palm whose terminal bud or shoot is used as food, in salads or cooked like a vegetable; a tree whose leaves are used in salads or as greens and the pith of the stem may be boiled or pickled

cabbage, red See cabbage
See Part 2: Vegetable Composition, Part I

cabbage root fly Plant cabbage in a hole in tared felt for control

cabbage, salted See Chungking cabbage

cabbage sprout Green cabbage stalks that grow after the cabbage head has been removed

cabbage turnip See kohlrabi

cabbage white fly A prolific, small white fly that attacks all members of the brassica family

cabbage, white mustard See Part 2: Vegetable Composition, Part I

cabbageworm (caterpillar and white butterfly) A cabbage pest; there are both large ad small species. See Part 2: Insect Control

cabecou A small, disk-shaped, sometimes strong-flavored, valençay-type cheese made from goat's, sheep's, or mixed milk; sometimes pressed to give a firm texture

cabernet 1) A variety of bluish black grapes that is fermented to yield the red wines of Bordeaux (clarets); also grapes grown in Italy and used to make a red wine. 2) A medium-bodied Italian red table wine whose flavor is between claret and burgundy

cabernet sauvignon A flavorful, aged wine

cabillaud See codfish

cabinet A designation that used to mean "finest wine" but now has little significance

caboc A cylindrical cream cheese made from cow's milk and covered with toasted oatmeal

cabob See kebab

cabrales A blue or blue-veined cheese made from goat's milk or goat's with sheep's or cow's milk

cabraliego A blue cheese made from goat's milk or goat's with sheep's or cow's milk and matured in caves

cabreiro A mild to sharp, soft, white cheese made from mixed ewe's and goat's milk; often cured in brine

cabrilla (family Serranidae) Name used for a number of sea perches See groupers

cabrion A cheese made from goat's or cow's milk and flavored with grapes

cabron du forez A valençay-type cheese made from goat's milk or cow's and goat's milk

cacao Raw chocolate beans See chocolate; cocoa
See Part 2: Fatty Acids, Fats and Oils; Iodine and Saponification Values; Melting Points, Fats and Oils; Refractive Indices, Fats and Oils; Titer, Fats and Oils; Unsaponifiable Matter

cacao mit nüss A brown-white liqueur flavored with chocolate, hazelnuts, and almonds

eacciatore Meat or poultry cooked with onion, garlic, herbs, wine, and tomatoes

eacciatore, alla Cooked in hunter style

eacciatori 1) Salami made from medium-chopped beef and pork; a dry, uncooked, unsmoked Italian sausage medium-chopped, medium-seasoned beef and pork that is fermented and stuffed into a beef casing. 2) A dry, uncooked Australian sausage

eaccio cavallo cheese A dry, hard, sharp Italian cheese

eaccio romano See chiavari

eaccetti A provola-type cheese, made from buffalo's or cow's milk, that is pear-shaped (200–300 g), dipped in wax, and matured 10 days

echaca A crude, light rum

echar An Indian black tea

echat A soft, white cheese, made from ewe's or goat's milk, that is sometimes cured
cachexia  Ill health and lack of nutrition

caziatore An Italian, dry sausage (meat–protein ratio should not exceed 1.9:1)

caciocavallo A firm, gourd-shaped provolone-type cheese made from whole or skinned cow's and sometimes goat's milk.

caciocavallo cheese A cheese with a salty, sometimes smoky (but usually not smoked), robust flavor similar to provolone; a dinner or grating cheese in ten-pin shape and bound by cord; tan surface, light interior; made from goat's or cow's milk; ripening time 3 months min.; 12 months or more for grating. See Part 2: Cheese Characteristics; Milk and Cheese Composition

cacio fiore A creamy, yellow (saffron), Italian rennet cheese, made from sheep's or goat's milk; it is sweet, semisoft, surface-bacteria-ripened, and may be flavored with liqueur

caciotta (caciottto) A creamy, semisoft, surface-bacteria-ripened cheese made from cow's, sheep's, or goat's milk, usually flavored with liqueur

CACM Central American Common Market

cactus Several types are used for food:
1. Barbados gooseberry (Perskia esculenta)—fruit eaten
2. Nopal—leaves eaten fresh or canned
3. Prickly pear; tuna (Opuntia tuna Ofinesque)—fruit eaten raw or stewed

Cactus leaves (nopales) A succulent vegetable, similar to green beans but with slightly harder texture and flavor

cade A small barrel used to measure fish

cadiz A semisoft, mildly acidic, smooth cheese made from goat's milk and pressed into plaited baskets

cadmium (Cd) A metallic element; at. no. 48; at. wt. 112.41; Group IIIB of the Periodic Table; oxidation state +2; electron configuration 2–8–18–18–2. orbit K L M N O

Cadmium and its compounds are poisonous. Acid fruit may dissolve the metal from cadmium plated utensils. Body function: interferes with the function of iron, copper, and calcium. See Part 2: Water Drinking Standards

caecum See cecum

caeerphilly A mild (matured 2–5 months), semisoft to hard, flat, circular, white, crumbly, salty, fresh cow's milk, English cheese that is soaked in brine

caeerphilly cheese A creamy white, moist cheese from Wales with a mild, delicate flavor

Caesar salad A salad made of the following ingredients:
1. Bacon
2. Bread cubes browned in butter and garlic
3. Lettuce (romaine)
4. Mustard cream sauce
5. Olive oil
6. Parmesan (grated) cheese
7. Parsley

A raw egg is broken over these before final mixing.

café Coffee

café au lait Equal parts of hot coffee and scalded milk (French)

café noir Black coffee (French)

caffeine A plant alkaloid that acts as a stimulant; it occurs in coffee, cola, tea, etc. It increases pulse rate, accelerates heart action, and sometimes causes high blood pressure.

\[
\begin{align*}
\text{CH}_3 & \quad \text{N} \\
\text{O} & \quad \text{N} \\
\text{N} & \quad \text{N} \\
\text{CH}_3 &
\end{align*}
\]

Used as a flavoring agent (bitter taste) and stimulant in cola and root beer (0.02%)

Caffeine content

<table>
<thead>
<tr>
<th></th>
<th>Millograms per fluid ounce</th>
<th>In plant (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chocolate milk</td>
<td>0.6–1.4</td>
<td></td>
</tr>
<tr>
<td>Cocoa</td>
<td>0.3–0.8</td>
<td></td>
</tr>
<tr>
<td>Coffee</td>
<td>16–18</td>
<td>1</td>
</tr>
<tr>
<td>Cola beverage</td>
<td>4–6</td>
<td>1.5</td>
</tr>
<tr>
<td>Decaffeinated coffee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.6</td>
<td>Instant coffee</td>
<td></td>
</tr>
<tr>
<td>0.4</td>
<td>Instant coffee</td>
<td>11</td>
</tr>
<tr>
<td>2</td>
<td>Tea</td>
<td>13</td>
</tr>
</tbody>
</table>

Caffeine in chocolate:

- Chocolate-flavored syrup 4 mg/oz
- Dark chocolate, semisweet 20 mg/oz
- Milk chocolate 6 mg/oz

The mp is 235–237°C

Storage: hydrous form (one molecule of water)—tight container; anhydrous form—well-closed container

caidan Colorful eggs

caillebotte A soft, white cheese made from cow's milk

caimito (Chrysophyllum cainito) Star apple, from the word cayomito; a tropical 500–1000-g berry; a West Indies small tree grown for its apple-shaped, greenish purple edible fruit. See Part 2: Fruit Classification; Fruit Storage

cajnij Teekvass

Cajun bean (congo; pigeon pea; (Cajanus indicus) Tropical shrub that produces pods that may be consumed green or used as ripe seed

Cajun seasoning A spice blend: black pepper, red pepper, and white pepper

cake 1) A mixture of flour, milk, egg, sugar or shortening, and flavoring, with or without fat and a leavening agent, packed into a mass and baked; one
three-layer cake (10-in. diam.) = 50 servings

<table>
<thead>
<tr>
<th>Type</th>
<th>Special ingredients</th>
<th>Shortening</th>
<th>Leavening</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angel food</td>
<td>Egg whites</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Butter</td>
<td>Milk or other liquid</td>
<td>Used Baking</td>
<td>Baking powder</td>
</tr>
<tr>
<td>Chiffon</td>
<td>Liquid vegetable oil</td>
<td>Baking vegetable powder</td>
<td></td>
</tr>
<tr>
<td>Fruit</td>
<td>Fruit</td>
<td>Used</td>
<td>Baking powder</td>
</tr>
<tr>
<td>Sponge</td>
<td>Whole eggs</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Cake classifications:
- Butter cakes, which contain fat ingredients (butter or fat used)—flour, egg, fat, leavening, liquid, and sugar
- Chocolate cake
- Cupcake
- Devil's food
- Fruit cake
- Pound cake
- White cake
- Sponge cakes, which contain no fat ingredients (i.e., without fat)—egg, a little acid, flour, and sugar
- Chocolate feather
- White sponge or angel food, containing egg whites
- Yellow sponge, containing whole eggs

Storage: container with tight cover; cake with cream or custard fillings or frostings must be refrigerated.
Storage (frozen): 0°F storage life 4–6 months

See Part 2: Baked Products, Frozen Storage Life; Calories, Daily Recommendations; Frozen Food Storage; Grain Products, Composition; Portion Size; Stabilizers, Thickeners; Thiamin, Food

2) Mass resulting from pressing of seed, meat, or fish.
3) Fish cake is raw flaked fish shaped into patties.

Cake flour See soft-wheat flour

Cake icing See Part 2: Grain Products, Composition; Sugars and Sweets, Composition

Cake lardy A fatty tea bread with fruit and spices

Cake mix A commercially prepared mixture containing most cake ingredients; only water and sometimes eggs need be added. See also cake

Storage: room temperature away from heat, e.g., from the range or refrigerator

Cake, plain Composition:
- Without icing
  - 3 x 3 x 2-in. slice = 315 calories
  - 2 1/2-in.-diam. cupcake = 115 calories
- With chocolate icing
  - 1 1/2-in. sector of 9-in. round layer cake = 240 calories
  - 2 1/2-in.-diam. cupcake = 170 calories

Cala Cured and smoked picnic (lower portion of pork shoulder)

Calabash See bottle gourd

Calabrese (green or purple sprouting broccoli; Brassica oleracea var. italica) See broccoli

Calabrese salami A coarsely chopped pork chorizo. 1) A dry, uncooked Australian sausage. 2) A dry, uncooked, unsmoked Italian-salami-style American sausage made from coarsely chopped, heavily seasoned (with hot peppers) pork that is fermented and stuffed into a pork casing; the product is air-dried for 60–100 days. 3) A southern Italian dry salami (meat–protein ratio of 1.9 : 1 or less) pork seasoned with hot peppers and produced in the Calabria region

Calaloo See spinach

Calalou (malanga; yauta) A tropical plant whose pods are used like okra

Calamansi A small, round, acid fruit often used to flavor a beverage

Calamari Cuttlefish; squid

Calamary (Loligo vulgaris) An edible squid; an edible 10-tentacled cephalopod

Calamint (Calamintha officinalis) A perennial herb with an odor similar to peppermint

Calamondin (Citrus blancoi; C. mitis) A small tree that produces a small, loose-skinned, acid orange that is used in drinks and marmalade

See Part 2: Fruit Storage

Calamus (sweet flag; myrtle flag; sweet cane) A pungent and bitter herb; the root is chewed; also used to make tea

Calappa (box crab) A crablike crustacean

Calas A deep-fat-fried rice fritter sprinkled with sugar

Calavalo (California avocado) See avocado

Calciferol (C_{29}H_{40}OH) Vitamin D_{2}, which can be produced by ultraviolet irradiation of ergosterol; used as a nutritional supplement

Calcification Organic tissue becomes hardened by a deposit of calcium salts

Calcifuge Intolerant to lime

Calcite Purified calcium carbonate (CaCO_{3}); limestone

Calcium (Ca) An alkaline-earth element; at. no. 20; at. wt. 40.08; Group II A of the Periodic Table; oxidation state +2; electron configuration 2–8–8–2; orbit K L M N

Daily requirements 0.8–2 g; 900 mg/day for adults and children (2.75 cups milk per day); 1200 mg/day for adolescents and pregnant or lactating females (4.25 cups milk per day)
Body functions: bone and tooth formation, contraction of muscles, clotting of blood, irritability of nerves. Deficiency is known as osteomalacia; calcium is needed for bone and tooth formation (90%) in animals. In plants it is used to bind cells and deficiency will cause inhibition of bud development, death of the tap root, and anemic foliage; deficiency occurs most commonly in acid soil.

Occurrence in foods:

<table>
<thead>
<tr>
<th>High</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Egg yolk</td>
<td></td>
</tr>
<tr>
<td>Milk &amp; milk products</td>
<td></td>
</tr>
<tr>
<td>Vegetables</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Low</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lean meat</td>
<td></td>
</tr>
<tr>
<td>Seed</td>
<td></td>
</tr>
</tbody>
</table>

Calcium levels:

- 2 oz Swiss cheese = 544 mg
- 2 oz blue cheese = 340 mg
- 1 cup cottage cheese = 154 mg
- 1 cup plain lowfat yogurt = 415 mg
- 1 cup whole milk = 291 mg
- Calcium equivalent to 1 cup milk
  - 2 1-in. cuts of cheddar cheese
  - 1 1/2 cups cottage cheese
  - 2 cups ice cream

See Part 2: Beans, Peas, and Nuts; Calcium; Calcium, Daily Requirements; Calcium Equivalents for Milk; Cereal Fortification; Cereal, Nutrient Content; Cereals, Vitamin and Mineral Content; Cheese Composition; Composition of Food; Concentrated and Dried Milk Products; Creams, Butter, and Frozen Desserts; Dairy Products, Composition; Egg Composition; Egg Products, Nutritive Value; Fats and Oils, Composition; Fish and Shellfish, Composition; Fluid and Fermented Milks, Composition; Food, Composition; Fruit Composition; Grain Analysis; Grain Products, Composition; Lemon Juice Composition; Lime Juice Composition; Macaroni and Noodles, Composition; Manure Analysis; Maple Syrup Composition; Meat Composition; Meat, Nutritive Value; Milk Composition; Minerals, Food; Minerals, Plant or Animal Tissue; Normal Solutions; Nutrients in Crops; Olives and Pickles, Composition; pH and Availability of Plant Nutrients; Plant Foods, Composition; Poultry Composition; Recommended Daily Dietary Allowance; Sausage Composition; Soups, Composition; Sugars and Sweets, Composition; Sweet Potato, Nutritive Value; Tomato and Tomato Products, Composition; Variety Meat, Percentage of Daily Recommended Allowances; Vegetable Composition; Water Drinking Standards; Wheat, Minerals

**calcium acetate** [(CH₃COO)₂Ca • H₂O] Used as a source of acetic acid and as a sequestrant and mold-control agent in baked goods. Storage: well-closed container

**calcium acid phosphate (acid calcium phosphate)** [Ca₃(PO₄)₂] Used in baking powder and self-rising flour; same as superphosphate

**calcium alginate (algin)** [(C₆H₇O₆)₂Caₙ] Used as a stabilizer, thickener, texture modifier, and emulsifier; eq. wt. 196.2. Storage: well-closed container

**calcium arsenate** [Ca₃(AsO₄)₂] A poisonous insecticide

**calcium ascorbate** (C₁₂H₁₄CaO₁₂ • 2H₂O) Used as a food antioxidant. Storage: tight container in a cool, dry place

**calcium bromate** Used as a maturing and bleaching agent and dough conditioner

**calcium caprate** A general-purpose food emulsifier

**calcium caprylate** A general-purpose food emulsifier

**calcium carbonate** (CaCO₃) Used in foods as an alkali, a nutrient supplement, a dough conditioner, a firming agent, an agent to prevent sticking and to promote creaming, a yeast food, a white food dye, and a neutralizer. It is also used in baking powder and in animal feed. The calcium salt of carbonic acid (H₂CO₃). Rocks of the sedimentary class are chiefly composed of CaCO₃; it is thus one of the most abundant inorganic materials on earth. It is the primary source of lime.

Composition: dry matter 100%; Ca 39.4%; Mg 0.05%; P 0.04%; K 0.06%; Na 0.06%; Fe 0.03%; Mn 0.03%

Storage: well-closed container

See Part 2: Fertilizer Materials; Liming Materials; Normal Solutions

**calcium carbonate equivalent** A value used in calculating soil sweetening efficiency: equals %CaCO₃ + 1.19(%MgCO₃)

**calcium caseinate** A complex molecule that may be considered the calcium salt of the protein casein, present in cow's milk in about 3% concentration. Used in cheese making

**calcium chloride** (CaCl₂ • 2H₂O) Approved as a sequestrant, a firming agent, an aid to coagulation, and a general-purpose food additive; used in evaporated milk up to 0.1% by weight. Calcium chloride added to firewood produces an orange flame.

Storage: tight container

See Part 2: Boiling Points, Sodium Chloride, Calcium Chloride; Normal Solutions

**calcium citrate** [Ca₃(C₆H₅O₇)₂ • 4H₂O] Found in citrus fruit; used to neutralize acid and as a food sequestrant, buffer, and firming agent

Storage: well-closed container

**calcium cyanamide** (CaCN₂) A nitrogenous compound used as a fertilizer ingredient

See Part 2: Fertilizer Materials

**calcium cyclamate** See cyclamate

**calcium cyclamate** Ethylenediaminetetraacetate (EDTA)

\[
\text{NaOOCCCH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{COONa} \quad 2\text{H}_2\text{O}
\]

Used as a food preservative and/or sequestrant

Storage: well-closed container
calcium gluconate \((\text{CH}_2\text{OH}(\text{CHOH})_4\cdot\text{COO})_2\text{Ca}\)  
Used as a food sequestrant, buffer, firming agent, and sequestant and as a general-purpose food additive  
calcium glycerophosphate \((\text{C}_3\text{H}_7\text{CaO}_6\text{P})\)  
Used as a nutrient and a dietary supplement  
Storage: tight container  
calcium hydrate  
See calcium hydroxide  
calcium hydroxide (slaked lime) \([\text{Ca(OH)}_2]\)  
Hydrated lime, made by adding water to calcium oxide. Used in foods as a buffer, neutralizing agent, firming agent, and general-purpose additive; also used as a fertilizer ingredient  
Storage: tight container  
See Part 2: Liming Materials; Normal Solution  
calcium hypochlorite \([\text{Ca(OCl)}_2]\)  
An inorganic chemical used for chlorination of water, bleaching, and as a disinfectant; chloride of lime, chlorinated lime, and HTH have a high content of this compound.  
See Part 2: Chlorine Availability; Chlorine Compounds; Sanitizers  
calcium iodate \([\text{Ca(IO}_3\text{)}_2\cdot\text{H}_2\text{O}]\)  
Used as a maturing agent or dough conditioner  
Storage: well-closed container  
calcium lactate  
\[
\text{Ca}([\text{CH}_3\text{CH}____\text{C}____\text{O}____\text{H}___\text{O}____\text{H}]_2\cdot\text{xH}_2\text{O}
\]
An antimicrobial food additive used in beverages, cheese, frozen desserts, and olives; also used as a food additive to control pH and as a buffer, a preservative, a dough conditioner, and as yeast food  
Storage: tight container  
calcium lactobionate  
A complex salt of the polysaccharide pectin, derived from citrus or apple sources; can be used as an edible gel coating for meat products.  
See also pectin  
calcium peroxide (calcium dioxide, calcium superoxide) \((\text{CaO}_2)\)  
A white, tasteless powder used in food as a dough conditioner or as an oxidizing agent for bakery goods  
Storage: tight container; observe precautions on original container  
calcium pectinate  
A complex salt of the polysaccharide pectin, derived from citrus or apple sources; can be used as an edible gel coating for meat products.  
See also pectin  
calcium phosphorus \((\text{CaP})\)  
A hydrated compound existing in several modifications  
1. Calcium phosphate, dibasic; dicalcium phosphate; \(\text{CaHPO}_4\cdot2\text{H}_2\text{O}\): used in animal feeds, as a fertilizer ingredient, dough conditioner, nutrient supplement, and yeast food  
Composition (dibasic): dry matter 97%; Ca 21.3%; Mg 0.6%; P 18.7%; K 0.7%; Na 0.05%; S 1.1%; F 0.18%; Fe 1.4%  
Storage: well-closed container  
2. Calcium phosphate, monobasic, monocalcium phosphate; calcium biphosphate; acid calcium phosphate; \(\text{CaH}_4(\text{PO}_4)_2\cdot\text{H}_2\text{O}\): used as an ingredient of baking powders, in fertilizers, and as a buffer, dough conditioner, firming agent, nutrient, dietary supplement, yeast food, and sequestrant  
Composition (monobasic): dry matter 97%; Ca 15.9%; Mg 0.6%; P 21%; K 0.08%; Na 0.06%; S 1.2%; F 0.2%; Fe 1.5%  
Storage: well-closed container  
3. Calcium phosphate, tribasic; tricalcium phosphate; precipitated calcium phosphate; \(\text{Ca}_3(\text{PO}_4)_2\cdot\text{H}_2\text{O}\): used as an anticaking agent, a buffer, a nutrient, a dietary supplement, a fertilizer ingredient, and a tenderizer  
Storage: well-closed container  
calcium propionate \([\text{Ca(CH}_3\text{CH}____\text{COO})_2]\)  
A food preservative; a mold, microorganism, and rope inhibitor; a calcium supplement
128 calcium propionate

Storage: tight container
See propionic acid

calcium pyrophosphate (Ca$_2$P$_2$O$_7$) Used in food as a buffer, neutralizing agent, nutrient, and dietary supplement
Storage: well-closed container

calcium saccharin (C$_{16}$H$_{22}$CaN$_2$O$_6$S$_2$ • 3.5 H$_2$O) A non-nutritive sweetener that is 500 times as sweet as sucrose
Storage: well-closed container

calcium silicate A mixture of Ca$_2$SiO$_4$, Ca$_3$Si$_2$O$_7$, Ca$_3$(Si$_3$O$_9$), and Ca$_4$(H$_2$Si$_4$O$_{13}$). Varying proportions of CaO and SiO$_2$ are found; used as an anticaking compound in baking powder and table salts
Composition (average): CaO 19%; SiO$_2$ 67%; moisture 7%
Storage: well-closed container

calcium silicate slag A liming material that is equal to 0.8 lb of dolomitic limestone per each pound used

calcium sorbate

\[
\begin{align*}
\text{[CH}_3\text{CH=CHCH=CHC} & \text{—O—}_2\text{—Ca} \\
\text{[CH}_3\text{CH=CHCH=CHC} & \text{—O—}_2\text{—Ca} \\
\text{[CH}_3\text{CH=CHCH=CHC} & \text{—O—}_2\text{—Ca} \\
\end{align*}
\]

An antimicrobial food additive used in beverages, cakes, cheeses, fruit products, margarine, mayonnaise, processed meat, and syrups

Storage: tight container in a cool, dry place

calcium stearate Calcium with variable proportions of stearic and palmitic acid; used in food as an anticaking agent, binder, or emulsifier.
Storage: well-closed container

calcium stearoyl-2-lactylate Primarily calcium salt of stearoyl lactic acid; used in food as a dough conditioner, stabilizer, and whipping agent
Storage: tight container in a cool, dry place

calcium sulphate (gypsum) (CaSO$_4$ • xH$_2$O) Used in food as a nutrient, dietary supplement, dough conditioner, firming agent, jelling ingredient, sequestrant, and yeast food; also used in animal feed
Storage: well-closed container

calcium sulphate, anhydrite (CaSO$_4$) Used in cement, paper, laboratory desiccant, and building materials; also used to neutralize alkali carbonates in soil Composition (anhydrous): dry matter 85%; Ca 22%; Mg 2.2%; S 20%; Fe 0.2%

calculi Concretions (usually inorganic except gallstones) formed in the body, e.g., kidney stones

calf A young animal of a bovine species (e.g., cattle), of either sex, usually under 12 months old. Dressing percentage 55.5%. The animal has subsisted in part on food other than milk and the meat is known as veal.
See Part 2: Cattle; Cholesterol Control

calf carcass The body of a bovine animal 3–8 months old at slaughter

calf foot Cooked for several hours for the jelly content

calf grade
Prime
Choice
Good
Standard
Utility

calf knees Knees bent too far to the rear

calf liver Liver from young beef; milder in flavor than that of mature beef

calf liverwurst A moist, cooked, unsmoked Australian sausage made from finely chopped, medium-seasoned veal stuffed into artificial casings

calf’s foot jelly Jelly made by simmering calf’s foot in water. It may be flavored.

calf’s head Calf’s head is boiled, meat removed and chopped, and the chopped meat and whole tongue are placed in a mold and the cooking liquid is allowed to jell around it

Calgon Proprietary name for sodium hexametaphosphate. Used for water softening and corrosion and scale prevention. See also hexametaphosphate

cali (picnic) Cured and smoked pork foreleg See picnic

calibration Etched line on glassware to indicate volume

calices (Plural of calix) Cup-shaped objects

calico scale (Lecanium cerasorum) A pest of the pear (\(\frac{1}{2}\)- to \(\frac{3}{4}\)-in. diam.) that produces convex, brown, irregular white marks on limbs and leaves; the scale produces honeydew on which black fungus grows.

California green A chile pepper. When fresh it is bright green, 6–8 in. long, 1.5–2.0 in. diam. at the top, and tapered to the bottom. When canned it is soft, moss green and mild to mildly hot in flavor

California green chile See Anaheim green chile

California pear sawfly (Pristiphora abbreviata) An insect that feeds on pear leaves

California steak Steak cut from the chuck

California tokay Normally, an equal mixture of port sherry and angelica

californium (Cf) A synthetic radioactive element of the actinide series; Group IIIB of the Periodic Table; at. no. 98; mass number of most stable isotope 249; oxidation state +3; electron configuration 2–8–18–32–28–8–2

orbit K L M N O P Q

calipash Fatty, greenish flesh from the green turtle

caliper See vernier

caliper inch Thickness of paper in thousandths of an inch, or points, i.e., 0.020 inch = 20-point caliper

calissay A quinine-flavored herb liqueur

calissaya (Chinchona calisaya) The very bitter bark of the chinchona tree; used in bitters

callaloo 1) type of spinach. 2) A food made of simmered salted meat, okra, and several vegetable leaves

calliste A sweet, heavy, Greek wine
call option purchase The right, but not the obligation, to buy a futures contract of a commodity at a specific price during a specified period of time. The purchaser pays a fixed amount of money to the seller for this right, and the amount is the most that can be lost if the option contract turns out unfavorably.

calnitro A neutral fertilizer material made from two-thirds ammonium nitrate (NH₄NO₃) and one-third dolomitic limestone; 20:5-0-0

caloric punch An alcoholic drink made from rum and syrup

Calorie (C; kcal) A unit of heat used to indicate an energy equivalent. See kilocalorie.

calorie (cal; gram-calorie; small calorie; standard calorie) The heat required to raise the temperature of 1 gram of water from 15 to 16°C; the guideline for women (23–50 years old) is 2000 calories per day average energy allotment.

1000 gram-calories = 1 kilocalorie (kcal)
1 cal = 4.186 x 10⁷ ergs (erg) = 4.186 joules (J) = 3.087 foot-pounds (ft-lb) = 3.968 x 10⁻³ British thermal units (Btu) = 0.001 kcal

See Part 2: Beans, Peas, and Nuts; Beef, Percentages of Daily Recommended Allowances; Calories, Basil, Per 24 Hours; Calories, Daily Recommendations; Calorie Utilization; Cereal, Nutrient Content; Cherry Composition; Composition of Food; Dairy Products, Composition; Egg Composition; Egg Products, Nutritive Value; Fats and Oils, Composition; Fish and Shellfish, Composition; Flour, Extraction Rates; Food, Composition; Fruit Composition; Grain Analysis; Grain Products, Composition; Lamb, Percentages of Daily Recommended Allowances; Lime Juice Composition; Macaroni and Noodles, Composition; Meat and Meat Products, Composition; Meat Composition; Meat, Nutritive Value; Milk and Cheese Composition; Oils and Fats, Composition; Plant Foods, Composition; Pork, Percentages of Daily Recommended Allowances; Poultry Composition; Pulses, Nuts, and Seeds, Composition; Recommended Daily Dietary Allowance; Sausage Composition; Sausage, Nutritive Value; Soups, Composition; Starchy Roots, Composition; Sugars and Sweeteners Composition; Sugars and Syrups, Composition; Tomato and Tomato Products, Composition; Turkey Composition; Variety Meat, Percentage of Daily Recommended Allowances; Vegetable Composition; Wheat, Parts of Grain

calorimeter An instrument used to measure heat generated or emitted or energy value; a bomb calorimeter measures direct heat generated by burning food; a respiration calorimeter measures the amount of oxygen (O₂) used in an activity, which is an indirect method of calculating energy use.

calory (calorie) See Part 2: Olives and Pickles, Composition; Sweet Potato, Nutritive Value

calory, large (C; kcal) 1 kcal = 1000 calories (cal) see calorie

calpis Sour, diluted milk

caltrop See water chestnut

calvados A strong, aged apple brandy See cider

calyx The outer portion of flowering parts of plants

calza See Part 2: Iodine and Saponification Values

camambu A South American gooseberry-type shrub

camargue A fresh cheese made from cow’s milk

cambium The tissue between the bark and the wood

cambric tea A weak tea diluted 50% with hot milk

cambridge A creamy, full-fat, soft, unsalted cheese made from cow’s milk; consumed fresh or after short maturation

cambridge cheese A soft, English rennet cheese made from cow’s milk

cambridge sauce An English mayonnaise substitute; a variation of mayonnaise flavored with herbs, anchovy, capers, and mustard

cambridge sausage A lean, dry sausage with little seasoning, made primarily from beef (little pork)

camden tablet Potassium metabisulphite, used to generate sulphur dioxide (SO₂) as a food preservative

camel A large ruminant quadruped with a characteristic hump (Arabian or dromedary) or two humps (Central Asiatic) used for work and food (meat and milk). Jews do not eat camel meat; Arabs are permitted to eat camel meat. See Part 2: Gestation Periods; Milk and Cheese Composition; Milk, Mammals, Composition

camembert A very soft ripened, full-fat, dry-cured dessert cheese having a creamy yellow interior, an edible, thin, whitish crust, a delicate flavor, and a pungent aroma; made from whole cow’s milk that is pasteurized and inoculated, with rennet added, and is not scalded; the cheese is not pressed and is ripened by external molds (Oidium lactis in early stages of ripening and Penicillium camemberti or P. candidum in later stages); it is wheel-shaped, with a 4-in. diam., and 1 in. thick, smaller in size than coulommiers, and ripened 4-5 weeks. It may run at room temperature.

Composition: moisture 50-52%; protein 17-20%; fat 25-26%; carbohydrate 2%; ash 4%; salt 2.5%; 239 mg Na/oz; pH 7.4

Storage: Refrigerate, tightly covered; use within 2 weeks; can be frozen (0°F) if no more than 1 in. thick, use within 6 months. Dries out quickly if not protected.

See Part 2: Cheese Characteristics; Cheese Composition; Cheese, Vitamin Content; Glutamate; Milk and Cheese Composition; Milk and Milk Products, Vitamin Content; Vitamin A, Milk and Milk Products

camembert cheese One wedge of a 4-oz package containing three wedges has 115 calories

camerano A semisoft, mildly acidic, smooth cheese made from goat’s milk

camomile (Anthemis nobilis) A perennial herb of the daisy family that is grown for the drug camomile, which is used to season beverages and as a medicine, usually in the form of a bitter or herbal tea. See chamomile

camosun A soft to semisoft, crumbly textured cheddar cheese that is cured 1-3 months and coated with paraffin
camouflage coating  A transparent olive drab coating required on some military food cans

campari  A bitter, quinine-flavored, red, vermouth, Italian aperitif wine containing 16–18% alcohol

campenac  A medium-flavored, semisoft cheese

campesino  A semisoft, mildly acidic, smooth, lightly pressed cheese made from cow's milk

camphor  Obtained by distilling the wood or leaves of *Cinnamomum camphora*

can (tin can)  A metal container of various sizes used for preserving heat-processed foods; made of steel coated with an extremely thin electropolished layer of tin and a further coating of a lacquer or enamel composed of a polymerized natural or synthetic resin (for acid or sulphur-containing foods or for brightly colored foods); the body is lap-jointed and soldered (on the outside).

<table>
<thead>
<tr>
<th>Size</th>
<th>Measure (cups)</th>
<th>Weight lb</th>
<th>Weight oz</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 10</td>
<td>13</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>No. 5</td>
<td>7</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>No. 3 cyl.</td>
<td>5 1/2</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>No. 3 special</td>
<td>4</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>No. 2</td>
<td>3 1/2</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>No. 2</td>
<td>2</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>No. 303</td>
<td>2</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>No. 1 tall</td>
<td>2</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>No. 300</td>
<td>1 1/2</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>12 oz</td>
<td>1 1/2</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>No. 1</td>
<td>1 1/2</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Picnic</td>
<td>1 1/4</td>
<td>10 1/2</td>
<td></td>
</tr>
<tr>
<td>8 oz</td>
<td>1</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>No. 1/2 (8 oz)</td>
<td>1</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

Type of can and recommended use:
- C enamel (corn enamel)—corn hominy
- R enamel (sanitary, or standard, enamel)—beets, red berries, red or black cherries, plums, pumpkins, rhubarb, and winter squash
- Plain tin—most other fruits and vegetables

To check can seals:
1. Place a small amount of water in the can.
2. Seal the can.
3. Submerge the can in boiling water for a few seconds.
4. If air bubbles rise from around the can, the seal is not tight.

See also canning and entries under canned; collar can; compartment can; composite can; container code; container specification code; sanitary can; tin can

See Part 2: Canned Food, Processing; Canned Spoilage Manifestations; Canned Spoilage Related to pH; Canned Yield; Cans, Construction; Cans, Conversion Table; Cans, Equivalent Sizes; Cans, Sizes; Cherries, Canned Weights; Frozen Food Containers; Fruit and Vegetables, Cost Per Serving

**Canada thistle** (*Cirsium arvense*) A perennial weed

**Canadian bacon**  Pork sirloin muscle that has been cured, placed in an artificial casing, and smoked; sometimes flavored with maple syrup

See Part 2: Broiling Time and Temperature; Pork, Cooking; Pork, Cooking Methods; Pork Cuts; Pork Cuts and Uses; Pork Loin Cooking; Roasting, Time and Temperature

**Canadian cheddar** (bulk; store)  A white or yellow, mild to sharp cheese made from unpasteurized cow's milk.

**Canadian whiskey**  A light whiskey distilled from rye and malted rye with maize and malted barley; it is always a blend and is usually aged for 6 years.

**cananga** (*ylang-ylang oil*)  An essential oil obtained by distilling flowers of the *Cananga odorata* plant native to Java; used as a flavoring agent

Storage: full, tight, glass container in a cool, dark place

See Part 2: Essential Oils

**canapé**  A small, shaped, toasted white, rye, or brown bread or cracker covered with a well-seasoned spread; it is usually garnished with brightly colored food and served as an appetizer.

**canary creeper**  See nasturtium

**canary grass** (*peppergrass; Phalaris cana iensis, Lepidium*)  Any of a number of grass seeds used to feed birds

See Part 2: Seed, Germination

**cancellated bone tissue**  A tissue found inside most bones; it has the appearance of a sponge.

**cancer** (*carcinoma*)  Malignant neoplasm cells proliferate uncontrollably, often forming tumors that eventually interfere with a vital function

**cancoillote**  A cheese made from skimmed cow's milk and made into a spread by adding butter, wine, and seasonings

**candelilla**  A light brown wax obtained from the underside of the leaves of certain plants (e.g., *Euphorbia antisiphilitica*) in Latin America and Texas; used in chewing gum as a masticatory substance and as a surface-finishing agent; also used for waterproofing, paper coating, etc. Acid value 12–22; saponification value 43–65; sp. gr. 0.983

Storage: well-closed container

See Part 2: Wax

C and F  See cost and freight

**Candida albicans**  A yeastlike fungus that may cause human infection

See Part 2: Microorganism, Media

**candida BCG agar**  See Part 2: Microorganism, Media

**candied**  Describes fruit or nuts that have been coated with sugar syrup to improve flavor and to preserve

**candied fruit** (*crystallized fruit; glacé*)  Fruit (or citrus peels) impregnated with syrup until sugar concentration is high enough to inhibit bacterial growth; the fruit is then washed and dried.

1 lb candied fruit and peel = 2.5 cups
**candied peel** Citrus peel that is cooked in syrup until it is crystallized

**candied vegetables** Vegetables glazed with butter and brown sugar

**candle** An early method of illumination; made from tallow, wax, or spermaceti

**candleberry** See bayberry

**candlefish** (*Thaleichthys pacificus*) A type of smelt; a saltwater fish, used for food

**candle nut** An oily, hard-shelled nut used in cooking

**candle per square centimeter (candle/cm²)**
1 candle/cm² = 3.146 lamberts

**candle per square inch (candle/in.²)**
1 candle/in.² = 0.4870 lamberts

**candlepower** Illumination power of a standard sperm oil candle
1 candlepower (spherical) = 12.566 lumens
See also foot-candle; lux

**candle wax** To remove stain from cloth, scrape off excess, press cloth between paper towels or facial tissue with a warm iron, sponge with cleaning fluid, sponge with alcohol diluted with two parts of water, and rinse.

**candling** Looking at the inside of an egg to determine its quality, with the aid of a light (candlelight was used previously); placing an egg in front of a light source to determine the interior quality. The presence or quality of the following can be determined:
- Blood clots
- Developing embryo
- Meat spots
- Molds
- Position of the yolk
- Size of the air cell

**candre des riceys** A ricordi-type cheese matured in wood ashes

**candy (sweets)** 1) To cook in sugar or syrup. 2) A sugar-flavored confection

<table>
<thead>
<tr>
<th>Temperature of syrup</th>
<th>Description</th>
<th>°F</th>
<th>°C</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syrup</td>
<td></td>
<td>220–230</td>
<td>104–110</td>
<td></td>
</tr>
<tr>
<td>Thread (spins thread when dropped from fork)</td>
<td></td>
<td>230–234</td>
<td>110–112</td>
<td>Syrup</td>
</tr>
<tr>
<td>Soft ball (ball in cold water; flattens when removed)</td>
<td></td>
<td>234–238</td>
<td>112–114</td>
<td>Fondant, fudge, panocha</td>
</tr>
<tr>
<td>Medium ball</td>
<td></td>
<td>238–244</td>
<td>114–118</td>
<td>Caramels</td>
</tr>
<tr>
<td>Firm (stiff) ball (firm in cold water, does not flatten in fingers)</td>
<td></td>
<td>244–248</td>
<td>118–120</td>
<td>Caramels</td>
</tr>
<tr>
<td>Hard ball (pliable but holds shape)</td>
<td></td>
<td>248–254</td>
<td>120–123</td>
<td>Divinity, Marshmallows</td>
</tr>
<tr>
<td>Very hard ball</td>
<td></td>
<td>254–265</td>
<td>123–124</td>
<td>Popcorn balls</td>
</tr>
<tr>
<td>Light (soft) crack (threads are hard but not brittle in cold water)</td>
<td></td>
<td>265–285</td>
<td>124–141</td>
<td>Butterscotch, Taffy</td>
</tr>
<tr>
<td>Hard crack (threads are hard and brittle in cold water)</td>
<td></td>
<td>290–300</td>
<td>143–149</td>
<td>Brittle Glacé</td>
</tr>
</tbody>
</table>

**candy (sweets)**

<table>
<thead>
<tr>
<th>Type</th>
<th>Varieties</th>
<th>Ingredients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Candy bars</td>
<td>Individually wrapped</td>
<td>Chocolate and nuts, compound center (coated with chocolate); plain center; plain chocolate</td>
</tr>
<tr>
<td></td>
<td>Caramel nut roll</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coconut bar</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nougat bar</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Peanut butter crisp</td>
<td></td>
</tr>
<tr>
<td>Caramel or toffee</td>
<td>Caramel—soft and chewy</td>
<td>Sweeteners (corn syrup, dextrose, invert sugar, sugar)</td>
</tr>
<tr>
<td></td>
<td>Toffee (cooked longer)—harder</td>
<td>Other ingredients (fat, milk)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chocolate min. 10%; 12% whole-milk solids</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35–50% sugar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chocolate min. 15%; 40–60% sugar</td>
</tr>
<tr>
<td>Chocolate</td>
<td>Milk</td>
<td>Coating, flavor, powdered milk, pulverized chocolate, sugar</td>
</tr>
<tr>
<td></td>
<td>Sweet</td>
<td></td>
</tr>
<tr>
<td>Coated</td>
<td>Chocolate coated</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Almond</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bon bon</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Filbert</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maraschino cordial cherry</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Marshmallow</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Peanut</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Raisin</td>
<td></td>
</tr>
</tbody>
</table>

Continued
<table>
<thead>
<tr>
<th>Type</th>
<th>Varieties</th>
<th>Ingredients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coconut</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cream candies</td>
<td>Crystallized cream or French cream</td>
<td>Coating (chocolate, crystallized, fondant, iced, sugared)</td>
</tr>
<tr>
<td>(fondant)</td>
<td>Centers with consistency of fudge; coated with sugar crystals, glazed cream, or firm cream</td>
<td>Coconut (finely shredded, desiccated) Syrup (corn syrup, invert sugar, sugar)</td>
</tr>
<tr>
<td></td>
<td>Centers with consistency of fudge; coated with soft thin glaze; Cream centers and usually chocolate-coated</td>
<td>Aerating substances (egg white gelatin, soy protein) Corn syrup Cream of fondant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sugar Other ingredients (fruit acid, salt)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other sweeteners (dextose, invert sugar)</td>
</tr>
<tr>
<td>Fudge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gums or jellies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hard</td>
<td>Anise square</td>
<td>Sweeteners (corn syrup, dextrose, invert sugar, sugar)</td>
</tr>
<tr>
<td></td>
<td>Brittle</td>
<td>Other ingredients (milk products)</td>
</tr>
<tr>
<td></td>
<td>Butterscotch waffle</td>
<td>Sometimes used—corn starch, egg white, fat, flour, fruit, gelatin, nuts</td>
</tr>
<tr>
<td></td>
<td>Candy tablet</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clear mint</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cut rock candy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Filled hard candy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lemon drop</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ribbon candy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stick candy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sucker</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Taffies</td>
<td></td>
</tr>
<tr>
<td>Licorice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marshmallow</td>
<td>(Fluffy texture due to incorporated air)</td>
<td>Extract from root of licorice plant, molasses, starch, sugar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Binders (egg white, gelatin)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flavoring (vanilla)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sweeteners (corn syrup, dextrose, sugar)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other ingredients (corn syrup, dextrose, sugar)</td>
</tr>
<tr>
<td>Nougat</td>
<td>Chewy</td>
<td>Whip or frappe whipping sugar and corn syrup with one or more of the following: cooked syrup, egg white, gelatin, soy protein</td>
</tr>
<tr>
<td>Panned</td>
<td>Easter egg</td>
<td>Other ingredients (oil)</td>
</tr>
<tr>
<td></td>
<td>French burnt peanut</td>
<td>Sometimes added—fruit, nuts</td>
</tr>
<tr>
<td></td>
<td>Jelly bean</td>
<td></td>
</tr>
<tr>
<td>Sugar lozenge or pressed tablet</td>
<td></td>
<td>Bonding substances (corn syrup, dextrose, powdered sugar)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other ingredients—cocoa, malted milk, powdered malt, powdered milk, syrup</td>
</tr>
</tbody>
</table>
caramel; confection
See Part 2: Candy Storage; Storage Times; Sugars and Sweets, Composition

candy cane
1 cup, finely crushed = 6 oz

candy corn
See Part 2: Sugars and Sweets, Composition

candy, hard
See Part 2: Sugars and Sweets, Composition

candy, marshmallow
See Part 2: Sugars and Sweets, Composition

candy, peppermint
1 cup, finely crushed = 6 oz

cane
Mature shoots of the current season or dormant growth of the preceding season

cane and maple syrup
See sugar and maple syrup

cane blight (Leposphaeria coniothyrium)
A fungus that develops in cut ends of raspberry and blackberry canes. Canes appear brown and purple near the cut area; brown black cankers appear and extend down the cane or encircle it, and branches above it will wilt.
Control: well-drained area; keep weed-free, prune at least 3 days before an anticipated rain; remove and burn infected canes; use fungicide spray

canella (Canella alba)
A tree whose inner peel is used to make an aromatic condiment

cane spirit
Rum

canestrato
1) A hard, strong, basket-molded cheese made from ewe's or goat's milk; an esbareich-type cheese pressed in a wicker mold. 2) A wicker mold press for cheese

cane sugar
See sucrose; sugar cane

cane syrup (cane ribbon syrup)
A light syrup made from cane sugar juice that has been boiled down to the consistency of syrup
1 cup sugar = 1 cup cane syrup – ¼ cup water
See sugar cane syrup; top syrup

canistel (Pouteria campechiana)
A tropical American, sweet fruit with orange flesh

canker
See bacterial canker

cankerworm
An insect; the adult males are gray moths and the females are wingless, plump, and gray. Larvae are slender, light to dark brown "measuring worms," yellowish on the sides. They cause defoliation.

can manufacturer's end
See factory end

canned condensed soup
Store below 70°F; shelf life 1 yr

canned fish
Store below 70°F; shelf life 1 yr

canned fruit
A fruit, such as peaches, pears, grapefruit, etc., that has been packed in cans and heat-treated. There are three grades: A (Fancy); B (Choice); C (Standard).
1 (16-oz) can, contents with liquid = 4 servings
1 (16-oz) can, contents drained = 2–3 servings

Storage (canned): room temperature; below 70°F will give a shelf life of 1 yr
Storage (opened): Refrigerate in original containers or, for better flavor retention, store in glass or plastic container.

See also canning
See Part 2: Fruit Servings Per Pound; Storage, Dry

canned fruit juice
Fruit juice that has been placed in a can and heat-treated.
Storage (canned): room temperature; below 70°F will give a shelf life of 1 yr
Storage (opened): Refrigerate in original container or, for better flavor retention, store in glass or plastic container.

canned goods
Any food product that has been preserved by canning

Advantages:
Available all year
Easy and economical storage
Fast preparation
Nutrient content is stable

Disadvantages:
Color change
Loss of texture
Sugar and salt often added

See also canning

See Part 2: Storage Times; Thermophiles; Vegetables, Canned Grades; Vegetables, Canning Dates

canned ham
A ham that has been preserved by canning; cooking shrinkage 7–15%
See Part 2: Pork Storage

canned meat
A meat or meat product that has been preserved by canning.
Storage: below 70°F, shelf life 1 yr
See Part 2: Meat and Meat Products, Composition; Meat Composition

canned milk
See condensed

canned pork
A pork product that has been preserved by canning. Maximum increase in weight is 8% over fresh, uncured weight. See also canning

canned poultry
Store below 70°F; shelf life 1 yr

canned shelf stable
Products that are commercially sterilized or pasteurized (heated to 150°F internal temperature) and should be kept refrigerated

canned vegetables
Vegetables (beans, peas, corn, beets, etc.) that have been preserved by canning. Grades often used are:
Grade A or Fancy
Grade B or Extra Standard
Grade C or Standard
Below Grade C, Substandard, or below standard

Most vegetables yield 3–4 servings per can (16 oz)
Greens, such as kale or spinach, yield 3–4 servings per can (16 oz)

Storage (unopened): cool (below 70°F), dry, use within 1 yr (safe if seal is not broken)
Storage (open): may be left in can; refrigerate; use within 2–3 days. Acid vegetables may react with can lining to produce a harmless metallic taste.

See Part 2: Storage, Dry; Vegetables, Canned Grades; Vegetables, Canning Dates; Vegetable Yield, Canned and Frozen; Vegetable Yield, Frozen, Canned, and Fresh

cannelloni
Big tubes of pasta filled with spiced meat
canner Thin, aged cattle used for boneless beef and canning
See Part 2: Grades, Meat
canner's end See cover
cannery A factory devoted to canning food products, often with a high degree of automation
See Part 2: Wastes, Agricultural and Industrial
cannibalism 1) The act of an animal pecking or eating another animal of its own kind. 2) Desire or need for blood
canning Preservation of a foodstuff by enclosing it in a sealed airtight container and heating under high-pressure steam for specified periods of time at temperatures from 190°F for acidic foods to 250°F for other types. The heat treatment is essential to destroy bacterial spores (sterilization). See also can
cannocchie (Squilla mantis) An edible crustacean used for soup
cannoli Pastry filled with cheese and cream and flavored with Marsala, chocolate, vanilla, or fruit and sprinkled with sugar
cannon Live animal area on front legs below knee and above fetlock; on rear legs below hock and above fetlock; carcass. See also shank bone
cannonau Dry, full-bodied red and rosé wines produced in Sardinia
cannula Tube that can be inserted into the body to connect internal structures to the outside of the body
canola An oil seed related to rapeseed; plant 8 lb/acre
can, sanitary Double-seamed can with a bottom lid attached and with a full open top that is double-seamed after filling
can size See can
cantal (auvergne; auvergne bleu; fourme; fourme de Cantal) 1) A semihard rennet cheese made from skimmed cow's milk. 2) A tall, cylindrical (30–45 kg, 14-in. diam.) dry, pressed cheese, made from cow's milk, that has a hard rind, is fairly strong in flavor, and matures after 2 to 3 months. 3) Pressed but uncooked French cheese that contains very little water and is sometimes made from unskimmed cow's milk
See Part 2: Cheese, Vitamin Content; Milk and Milk Products, Vitamin Content; Vitamin A, Milk and Milk Products
cantala (Agave cantala) A plant similar to sisal
cantalon A smaller (10 kg) cantal-type cheese
cantaloupe (basket muskmelon; muskmelon; Cucumis melo reticulatus) The words cantaloupe and muskmelon are often used interchangeably, but cantaloupe is usually used for a small muskmelon; a species of muskmelon; 50 lb/bu; seed 2–3 lb/acre; ½ oz/100-ft row; space in hills 2 ft apart in 5-ft rows; thin to two plants per hill.
Types:
Green-meated—round, early maturing; good shipper
Pink-meated—usually elongated with light netting
Salmon-tinted—usually round, with good netting and flesh; salmon color in center and green close to rind
A clean stem indicates melon was picked when ripe. Used as a breakfast food, appetizer, salad, or dessert; 4–6-in. diam.; 10 ribs (others lacking); matures in 100 days; gray-green skin color, which turns yellow when ripe. Full maturity:
1. Full slip—stem is gone, and a smooth shallow basin remains.
2. Netting is thick, coarse, and corky.
3. Skin ground color is yellowish.
Variety and common name:
Cantalupensis (true cantaloupe of Europe, rock melon)—not netted; rough, warty surface
Chito (mango melon)—used for preserves and pickles
Conomon (Oriental pickling melon)—used in pickling and cooking
Dudaim (Queen Anne's pocket melon)—small; highly scented used for preserves and pickles
Flexuosus (snake melon)—3 X 48 in.
Inodorus—honeydew type, casaba group, and Persian melon

<table>
<thead>
<tr>
<th>Variety</th>
<th>Size</th>
<th>Shape</th>
<th>Appearance</th>
<th>Flesh color</th>
<th>Netting</th>
<th>Shape</th>
<th>Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burpee Hybrid</td>
<td>4 lb</td>
<td>Slightly oval</td>
<td>Netted, ribbed</td>
<td>Orange; excellent</td>
<td>Covers melon</td>
<td>Round</td>
<td>72–82 days</td>
</tr>
<tr>
<td>Bushwopper Hybrid</td>
<td></td>
<td></td>
<td>Thin skin; short vine; small seed cavity</td>
<td></td>
<td></td>
<td></td>
<td>70 days</td>
</tr>
<tr>
<td>Chaca Hybrid</td>
<td>3.5 lb</td>
<td>Oval</td>
<td>Dark greenish yellow</td>
<td>Salmon</td>
<td>Light</td>
<td>Elongated</td>
<td>80 days</td>
</tr>
<tr>
<td>Crenshaw</td>
<td>5–6 lb</td>
<td>Oval</td>
<td>Faintly netted; slightly ribbed</td>
<td>Orange</td>
<td></td>
<td>Round</td>
<td>86 days</td>
</tr>
<tr>
<td>Delicious</td>
<td>6.5 x 7 in.; 5 lb</td>
<td>Oval</td>
<td></td>
<td>Salmon; high sugar</td>
<td>Covers melon</td>
<td>Round</td>
<td>95 days</td>
</tr>
<tr>
<td>Dulce Edisto</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Luscious Golden Perfection Gold Star</td>
<td>4.5 lb</td>
<td>Oval</td>
<td>Thin rind</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variety</td>
<td>Size</td>
<td>Shape</td>
<td>Appearance</td>
<td>Flesh</td>
<td>Season</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------</td>
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<td>-----------------------------</td>
<td>--------------</td>
<td>-----------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Granite State</td>
<td>6 x 5.5 in.</td>
<td>Oblong</td>
<td>Small seed cavity</td>
<td>Deep orange</td>
<td>80 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gulf Stream</td>
<td>4 lb</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hale's Best</td>
<td></td>
<td></td>
<td></td>
<td>Deep orange</td>
<td>80 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hale's Best Jumbo</td>
<td>2.5 lb</td>
<td>Oval</td>
<td></td>
<td>Salmon</td>
<td>90 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harper Hybrid</td>
<td>5.5 in.</td>
<td>Round</td>
<td>Netted</td>
<td>Deep orange</td>
<td>74 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harvest Queen</td>
<td>Med.</td>
<td>Oval</td>
<td>Thick netting;</td>
<td>Thick</td>
<td>90 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hearts of Gold</td>
<td>5 x 6 in.</td>
<td>Round</td>
<td>Well-netted</td>
<td>Orange; sweet</td>
<td>95 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Honey Rock</td>
<td>5.5 in.</td>
<td>Round</td>
<td>Hard rind;</td>
<td>Salmon</td>
<td>74-85 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minnesota Midget</td>
<td>4 in.</td>
<td></td>
<td></td>
<td>Yellow;</td>
<td>60 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>high sugar</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Osage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perlita</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PMR 45</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pride of Wisconsin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Queen of Colorado)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rocky Ford (type)</td>
<td>2.5 lb</td>
<td></td>
<td></td>
<td>Green</td>
<td>84 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Samson Hybrid</td>
<td>6 in.; 5.5 lb</td>
<td>Oval</td>
<td></td>
<td>Deep orange</td>
<td>90 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saticoy Hybrid</td>
<td>4 lb</td>
<td>Oval</td>
<td>Slightly ridged;</td>
<td>Deep orange</td>
<td>90 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>fine netting;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>firm, hard rind</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schoon's Hard Shell Scoop</td>
<td>Large</td>
<td>Oval</td>
<td>Short vine</td>
<td>High sugar</td>
<td>75 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short 'n' Sweet</td>
<td>5 in.</td>
<td>Round</td>
<td>Ridged;</td>
<td>light brown</td>
<td>90 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Super Market</td>
<td>4-5 lb</td>
<td></td>
<td></td>
<td>Deep orange</td>
<td>90 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surprise</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweet Air (Knight)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Composition: moisture 94%; protein 0.6%; fat 0.2%; carbohydrate 5%; fiber 1.2%; pH 6.1-7.1; vitamin A (in deep colored varieties) 3420 IU/100 g; 33 mg/100 g ascorbic acid

Jumbo crate (13 x 13 x 22.1 in.) = 83 lb
1 doz, fresh = 28 lb
   = 22 pt, frozen
1 large = 6.5 cups, coarsely chopped
5-in. diam. = 1 1/2 lb
1 small = 1.75 cups, cubed
   = 2.5 cups, balls
1 pt, frozen = 1-1.25 lb, as purchased
1 cup, cubed = 5.8 oz
   = 160 g

See Part 2: Calcium, Daily Recommendations; Food, Composition; Fruit and Vegetables, Diseases; Fruit, Availability; Fruit Composition, Part 1; Fruit, Frozen Yield; Minerals, Food; Plant Foods, Composition; Potassium-Rich Foods; Protein Factors; Storage; Transit Temperature; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Storage; Vitamin A; Vitamin A, Daily Recommendations; Vitamin C

cantaxanthin A food additive (natural and synthetic) used to color (orange-red) food

Cantilno PYG agar See Part 2: Microorganism, Media

Cantonese pig See Pearl River Delta Pig
canton oolong A Chinese oolong tea
canton shrimp Sweet-sour fried shrimp
cap 1) See closure. 2) A natural casing used in the meat trade, made of pork caecum
See Part 2: Casings, Animal; Casings, Hog and Beef; Casings, Terms; Glass Jar Tops
capacitance The ability to store an electrical charge

capacitor (C) Two conductors separated by an insulator; circuit symbol \( \pm \)
\[ q = \text{quantity of electricity necessary to charge the capacitor, in coulombs} (q = Ce) \]
\( C = \text{capacitance of capacitor in farads, ratio of charge to voltage} \)
\( \varepsilon_r = \text{potential across capacitor} \)
The larger the conductors and the thinner the insulator, the higher the capacitance value

capacola (capicola; capicolla; cappicola) A dried meat product made from boneless cala butts and seasoned with red pepper pods. See also capocollo
See Part 2: Sausage Identification; Sausage, Types
cap corse A vanilla- and fruit-flavored, dark, red-brown aperitif wine
cape gooseberry See gooseberry
capelin A small, edible, smeltlike food fish
Arctic, *Mallotus castorarius*
Atlantic, *M. villosus*
Capelin (Pacific), *M. socialis*
caper (Capparis spinosa) A green, pea-sized, four-angled, unopened bud of the Mediterranean shrub (caperbush); used as flavoring in cooking, pickles, and as a sauce. They are dried and placed in strong vinegar. They are graded according to size: the smaller the capers, the more delicate the flavor; they have a peppery taste and are pickled in vinegar or crushed in butter. The green, firm capers are salted and preserved in vinegar.

Types:
- Capuchins or capotes—large buds
- Mountain pepper—seed
- Nonpareils—small buds are placed in bottles
- Pickles—fruit and/or seed

caper sauce A sauce flavored with capers and used on lamb or seafood

caper spurge (Euphorbia lathyris) A biennial herb whose fruit is sometimes used as a substitute for capers

capibara (capybara) A South American animal similar to a large guinea pig that has been suggested as a meat-producing animal

capicola See capacola

capicolla See capacola

capillary A small vein, 0.0007-in. diam.

capital gains The difference between the purchase price and the sale price of property after all expenses are paid

caplin (capelin; icefish; Mallotus villosus) A small smelt See capelin; icefish; smelt

capocollo Products from the commune of Parma, Italy.
- Capocollo items:
  - Beef bung casing—dry-cured in vats; natural beef bungs, semidry
  - Coppa—trimmed center portion of a pork shoulder, dry-cured for several weeks, rolled in paprika and red pepper, heat-processed (may be smoked), and air-dried; may or may not be cooked See also capacola
  - Ham—center section of ham
  - Ham, sweet—ham and black pepper
  - Vacuum-packaged sausage—liquid-cured; artificial casing

capon A desexed, young male chicken (less than 8 months old) that was castrated when 6 weeks old or implanted with a female sex hormone; poultry that has tender meat, with soft, pliable, smooth-textured skin. See Part 2: Poultry Dressing Percentage; Poultry Roasting; Poultry Yield

caponata Fish salad

capon pick Long feathers of wing and lower feathers of leg are not removed

capote See caper

capper vacuum efficiency The ability of can capper to produce vacuum in a sealed container

cappicola See capacola

capri A cheese made from goat's milk

capric acid (decanoic acid)

\[
\text{CH}_3(\text{CH}_2)_8\text{C} \quad \text{OH}
\]

A 10-carbon saturated fatty acid (glyceride) found in butter, coconut, and palm oil.

See Part 2: Fat and Oils, Fatty Acid Composition; Fatty Acids; Fatty Acids, Fats and Oils; Fatty Acids and Their Properties; Milk, Fatty Acids, Seasonal; Saturated Fatty Acids

caprice des dieux A semisoft, mild, double-cream (high fat), white, mold-covered cheese made from cow's or goat's milk

capricet des dieux Rich, soft, ripened cheese made from cow's milk; contains 72% fat on a dry-weight basis

capricornia A citrus liqueur

caprino Pertaining to goats

caproic acid (hexanoic acid)

\[
\text{CH}_3(\text{CH}_2)_4\text{C} \quad \text{OH}
\]

A six-carbon saturated fatty acid found in butter, coconut, and palm oil.

See Part 2: Fatty Acids; Fatty Acids, Fats and Oils; Fatty Acids and Their Properties; Milk, Fatty Acids, Seasonal; Saturated Fatty Acids

caproleic acid An unsaturated fatty acid found in vegetable oils.

See Part 2: Unsaturated Fatty Acids

caprylic acid

\[
\text{CH}_3(\text{CH}_2)_4\text{C} \quad \text{OH}
\]

An eight-carbon saturated acid found in butter, coconut, and palm oil.

See Part 2: Fat and Oil, Fatty Acid Composition; Fatty Acids; Fatty Acids, Fats and Oils; Fatty Acid Properties; Milk, Fatty Acids, Seasonal; Saturated Fatty Acids

capsaicin \[N(4\text{-hydroxy-3-methoxybenzyl})-8\text{-methylnon-6-enamide}\]

\[
\text{CH}_2\text{NHC}-(\text{CH}_2)_4\text{C}=\text{CHC} \quad \text{CH}_3
\]

O—\text{CH}_3

H

Responsible for heat fraction in capsicums; pungent flavor is detectable in dilutions of $1:17 \times 10^8$.
capsanthin  Major pigment of red forms of Capsicum annum

\[ \text{OH} \]
\[ \text{OH} \]

capsicum (Capsicum)  A classification that includes many essential spices: cayenne pepper, chili pepper (Japanese, Turkish), chili powder, hot red pepper, paprika (Hungarian, Spanish), pimiento, and tabasco. General nomenclature often uses the word capsicum to mean the larger-fruited, mildly to moderately pungent types; sometimes used interchangeably with chili; botanically, it denotes any of the red-podded peppers; however, some use it to include only the hot peppers. The peppers may be used whole or ground; fixed oil 12–22%

Classification based on type and use:

Bird (C. frutescens)—small, extremely pungent; used in Tabasco sauce

Cayenne—often improperly labeled as cayenne pepper or red pepper; blends of ground chili and capsicums; most pungent

Chili pepper—used whole or powdered; pungent; usually a blend of moderately pungent Mexican (chili ancho) and milder California (Anahiem) capsicums

Paprika (C. annuum)—sweet or mildly pungent; medium size and fleshy; always ground to produce red paprika (See paprika); used as a coloring agent

Hungarian—more pungent

Spanish—mild

Pimiento (not pimento)—used for pimiento cheese and stuffed olives

Red pepper—blends of ground chili and capsicums; large-fruited; pungent, but milder than cayenne; pungency adjusted by small quantities of chili

Sweet (mild C. annuum)—green or bell pepper; mild flavor; usually used when green, but sometimes allowed to ripen and turn red or yellow; often stuffed or pickled; used more like a vegetable than a spice

Standards:

Acid-insoluble ash max. 1.25–1.6%

Ash max. 8–10%

Capsaicin min. 0.5%

Crude fiber max. 28%

Foreign organic matter max. 1%

Moisture max. 11%

Nonvolatile ether extract, dry basis, min. 5%

Starch max. 1.5%

Total nitrogen, dry basis, min. 2%

See pepper (capsicum)

capsicum oleoresin (African capsicum oleoresin)  A clear red to dark red liquid made by solvent-extraction from small-fruited, very pungent chilies (fat-soluble product—ether, hexane, chloroform; water-soluble product—acetone, ethanol) Scoville units 480,000–1,800,000; capsaicin 3.9–14%; ASTA color units up to 3500 max.; decolorized types, 400 max.

1 kg of 500,000 Scoville units = 20 kg good-quality cayenne

Available as a free-flowing product or on carriers

capsule 1) A thick, viscous, mucilaginous, jellylike, polysaccharide (or sometimes polypeptide) slime layer structure that surrounds some bacterial species. 2) A sacklike structure, e.g., the pod of a pea

capsule ink  India ink used to stain bacteria—the unstained capsule is delineated by the ink; material used in the differentiation and serological identification of Klebsiella microorganisms

See Part 2: Microorganism, Media

cap tilt  A can cap should be level with transfer bead or shoulder

capuchin See caper

causes  Salted herring

carabao  Water buffalo

See Part 2: Meat and Meat Products, Composition; Milk and Cheese Composition; Milk, Mammals, Composition

carambola (Averrhoa carambola)  A small south-east Asian tree that bears a 3- to 5-in. long, ribbed (five-angled), yellow to orange fruit; the juice and flavor vary from sweet to acid; it is consumed fresh, as tarts, in preserves, and as a drink; the acid-sweet fruit is star-shaped in cross section.

Composition (raw): Moisture 90%; protein 0.7%; fat 0.5%; carbohydrate 8%; ash 0.4%

Varieties:

Golden Star

Mih Tao

See bilimbi

caramel (burnt sugar)  1) An amorphous, water-soluble, brown material obtained by heating carbohydrates (fructose 100°C, galactose, glucose, and sucrose 170°C, maltose 180°C) or by treating carbohydrates with a small amount of alkali or mineral acid, used for soft drinks, food, candy, and bakery products. Often used as a coloring (brown) and flavoring (pungent, bitter, less sweet than the sugar from which it was made). A sugar and water mixture that is heated until it turns brown. 2) A confection cooked to a stiff paste; a firm, chewy, noncrystalline candy with a waxy texture

1 cup = 22 caramels

3 med. caramels (1 oz) = 115 calories

See candy

See Part 2: Colors Permanently Listed; Minerals (Trace), Limits; Sugars and Sweets, Composition

caramelization  Sucrose (sugar) heated past the melting point (170–180°C) so that it decomposes, gives off water, and turns slightly brown

carabao  Water buffalo

carapace  One-piece shell covering the head and thorax (body and tail) of a lobster or turtle

caravela  A dry, amber wine

caraway (Carum carvi L.; C. carvi linn)  A dried fruit (tiny, crescent-shaped seed) of an annual or biennial (70 days) plant of the parsley family; it has a
distinctive, tangy, slightly sweet, sharp flavor (aromatic) and is used as a spice. It is available whole and in a medium grind. The seed is hard, with five ridges, gray-brown in color, \( \frac{1}{8} \) to \( \frac{3}{16} \) in. length, and curved and tapered at the ends; used in pastries, soups, and salads; also used to make tea, breads, cheese, and kummel liqueur and to flavor vegetables and meat dishes; the roots, similar to parsnip, are used as a vegetable when immature; immature leaves are used in soup. Thin the thick-rooted herb to 7-in. apart in rows 18 in. apart. Oil is sometimes obtained by distilling crushed leaves. Volatile oil is often obtained by distilling the fruit.

Sources: Egypt, Poland, and the Netherlands
Composition (seed): moisture 9–10% (9% max.); protein 18–21%; fat 14–15%; average volatile oil 2.5% (v/w) min.; total carbohydrate 49–50%; fiber 12–13%; ash 5–6 (8% max.); HCl-insoluble ash 1.5% (max.)
Storage (seed): cool, dry, and dark place
Storage (oil): full, tight container in a cool, dark place
See Part 2: Essential Oils; Flavoring Agents, Natural

caraway cheese A cheese served with crackers or snacks.
Composition: moisture 39–40%; protein 25–25.5%; fat 28–30.5%; carbohydrate 3–4%; fiber 0%; ash 3–3.5%; salt 1.7%

caraway oil A colorless to light yellow oil obtained by steam-distillation of the dried, ripe fruit of caraway
Carvone content not less than 50%
Optical rotation +70° to +80°
Refractive index 1.484–1.489 at 20°C
Sp. gr. 0.914–0.940 g/ml

caraway seed extract Flavor extracted from caraway seed by boiling water

carawaywurst See kummelwurst

carbadox See kummelwurst

carbamide A drug used to promote growth, to increase feed efficiency, and to control swine dysentery enteritis

carbocyclic A ring structure containing only carbon atoms in the ring

carbohydrate \( [C_6(H_2O)_6] \) Literally, “hydrated carbon” or “carbon and water.” 75% of the dry weight of a plant is composed of this class of substances; it is composed of C, H, and O and contains the saccharose group

![Saccharose Group](image)

The hydrogen and oxygen occur in the same ratio as in water. Carbohydrates include all sugars and polysaccharides, starches, and all forms of cellulose, (fibrous material) and glycogen. Their major function is to supply energy for the body but they are also the raw material for the manufacture of some B-complex vitamins and are part of the structure of many biological compounds. They also add flavor to food. Generally, they are divided into two categories (all monosaccharides, disaccharides, starch, and dextrin available for glycogen formation) and indigestible (cellulose, hemicellulose, peptic substances, lignin, mucins, gums, and other polysaccharides). The coefficient of digestibility normally ranges from 85 to 98% for various foods.

See Part 2: Manure Analysis

carbohydrate equivalent A value that measures the fattening power of a ration: \( = \% \text{ protein}(1.9) + \% \text{ fat}(2.5) + \% \text{ carbohydrate} \)

carboxylic acid See phenol

carbon (C) A nonmetallic element; at. no. 6; at. wt. 12.011; Group IVA of the Periodic Table; electron configuration 2–4; orbit K L
oxidation states +2, +4, −4. Carbon is present in all organic matter; it has the unique ability to form four covalent bonds, thus readily combining with itself and other nonmetallic elements to form hydrocarbons, carbohydrates, alcohols, amino acids, and many other types of organic molecules. See also photosynthesis

See Part 2: Manure Analysis

carbon, activated (active carbon; activated charcoal; amorphous carbon; carbon black; decolorized carbon) A pure form of carbon that has been made porous by destructive distillation of carbonaceous materials followed by treatment with steam or \( \text{CO}_2 \) —a process called activation. Cellulose residues, coal, coconut shells, coke, lignite, peat, or sawdust are used. It is used to decolorize, clarify, filter, or deodorize food; the tremendous surface area (small particle size, 3000 ft² of surface per gram) of the microporous carbon serves to adsorb molecules of odors and colors in colloidal suspension. It is also used to concentrate organic matter for waste treatment analysis.
Storage: well-closed container

carbonara A sauce for pasta

carbonate A salt or ester of carbonic acid (\( \text{H}_2\text{CO}_3 \)) characterized by the divalent \( \text{CO}_3 \) group

carbonated beverage A supersaturated solution of \( \text{CO}_2 \) and \( \text{H}_2\text{O} \) under pressure; a beverage made by
absorbing carbon dioxide (15–75 lb of gas pressure per square inch which is 1–5 volumes of gas) in potable water; other ingredients include sweetening agents (dry or liquid sugars, invert sugar, dextrose, fructose, corn syrup, glucose, sorbitol, or non-nutrient sweeteners), acids (acetic, adipic, citric, fumaric, gluconic, lactic, malic, tartaric, and phosphoric), flavors (derived from fruit, vegetables, bark, roots, and leaves, or artificial flavor), color (food or artificial color), preservatives, and numerous optional ingredients.

<table>
<thead>
<tr>
<th>Calories</th>
<th>8-oz glass</th>
<th>12-oz can or bottle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cola type</td>
<td>95</td>
<td>145</td>
</tr>
<tr>
<td>Fruit flavors</td>
<td>115</td>
<td>170</td>
</tr>
<tr>
<td>(10–13% sugar)</td>
<td>75</td>
<td>115</td>
</tr>
<tr>
<td>Ginger ale</td>
<td>100</td>
<td>150</td>
</tr>
</tbody>
</table>

1 fl. oz = 30.5 g
= 9.6 calories

See Part 2: Beverage, Carbonated, Ingredients; Microbiological Media
carbonated water See club soda
carbon black A food color, no longer approved by the Food and Drug Administration See carbon, activated
carbon dioxide (CO₂) An inorganic compound; a colorless, odorless gas at room temperature, 1.5 times as dense as air; a volatile colorless liquid at −37°C; a white, snowlike solid at −78°C that volatilizes directly into gas at room temperature (sublimes). It is nontoxic and noncombustible and is the end product of combustion and respiration. It is present in air in concentrations from 0.02 to 0.04%. It is essential in the photosynthetic reaction. Its uses and properties are:
1. Food preservation (refrigeration storage of fresh fruits and meats)
2. Carbonation of beverages
3. Leavening agent in baked goods, resulting from acid–carbonate reaction in baking powders
Critical temperature 87.9°F (31.0°C); pressure 1071 psia; bp (sublimes) 212°F. Used as a solvent and fumigant
See Part 2: Fumigants
See Part 2: Carbon Dioxide Dissolved in Water; Carbon Dioxide, Weight and Volume; Refrigerant
carbon disulfide (CS₂) Highly flammable, inorganic liquid; has lowest autoignition point of any liquid (212°F). Used as a solvent and fumigant
See Part 2: Fumigants
carbonic acid (H₂CO₃) A weak acid formed by the combination of CO₂ and H₂O; the CO₂ may be removed from H₂O by boiling.

\[
\begin{align*}
H_2CO_3 & \rightleftharpoons H^+ + HCO_3^- & K_1 &= 4.2 \times 10^{-7} \\
HCO_3^- & \rightleftharpoons H^+ + CO_3^{2-} & K_2 &= 4.8 \times 10^{-11} \\
H_2CO_3 & \rightarrow 2H^+ + CO_3^{2-} & K_T &= 2 \times 10^{-17}
\end{align*}
\]
carbon monoxide (CO) A highly toxic, inorganic gas resulting from incomplete combustion, as in automobile exhausts; it combines with hemoglobin in the blood 200 times as readily as oxygen.
carbon tetrachloride (CCl₄) A liquid chlorinated hydrocarbon that may be used as a fumigant. Its toxicity has caused it to be prohibited from household use as a cleaning agent or as a fire extinguisher.
See Part 2: Fumigants
carbonyl group

\[
\begin{align*}
-C=O
\end{align*}
\]

Occurs in aldehydes, ketones, and organic acids. Also forms coordination compounds with metals; nickel carbonyl is extremely poisonous because it gives off carbon monoxide.
carborundum Silicon carbide; an abrasive used (can be used dry) to sharpen knives
carboxyl group

\[
\begin{align*}
-C-OH
\end{align*}
\]

Occurs in carboxylic and fatty acids; usually written COOH
carboxymethylcellulose (cellulose gum; CMC; sodium carboxymethylcellulose) A synthetic water-soluble gum (polymer), in the form of a white powder or granules; it is an anionic cellulose derivative that is used as a stabilizing and thickening agent in such foods as ice cream, dairy substitutes, puddings, fruit concentrates, sauces, and baked and frozen products; it prevents sugar from crystallizing in candy.
Mixed with:
Gelatin—cold-water solubility
Nonionic polymers (hydroxypropylcellulose or hydroxyethylcellulose)—viscosity is increased
Because the reaction occurs in an alkaline medium (Na) it is also called sodium carboxymethylcellulose.
See Part 2: Stabilizers, Thickeners
carboy A large, bottle-shaped container made from glass, clay, earthenware, metal, or plastic; often encased in outer wooden crates.
carcass (carcase) The dressed body of a slaughtered animal, offal having been removed. MID definition: all parts, including viscera, of a slaughtered animal that are capable of being used as human food
See Part 2: Edible Meat and Chilled Carcass; Pork Carcass, Retail Yield; Pork Chart
carcavelos A dry or sweet dessert wine
carcinogen A substance (natural or synthetic) that causes cancer in experimental animals or in humans for example, benzopyrene, benzidine, and phenanthrene. The list of known or suspected carcinogens includes several hundred compounds (some of which are insecticides) and is constantly increasing. A cancer-producing initiator (usually) and/or promoter agent.
carcinogenic Cancer producing
**carcinoma** A malignant new growth of epithelial cells

**cardamine** *lady's smock* A plant used in salads

**cardamom** (cardamon; *seed of paradise*; *Elettaria cardamomum Maton*) Tiny, black, angular seeds of a reedlike plant (10 ft tall) of the ginger family used for spices (taste of anise, aromatic, pungent); buff-colored pods (3/4 x 3/4 in., three cells) have been bleached but the dark ones have not. Seeds containing the spicy essence are enclosed in a capsule (which is discarded). They are harvested and carefully dried to prevent splitting of this protective covering.

**Terms used:**
- Bold—large, well-formed seed
- Bleached—pods that have been bleached (by sunlight or chemicals) to improve color (final color is straw to white)
- Decorticated—seeds (strongest flavor) removed from pods
- Greens—natural color of pods

**Forms sold:**
- Decorticated—whole seed
- Essential oil—3.5-7% of seed
- Ground—pods and seed ground together
- Ground seed (ground, decorticated; available in medium to fine grind)—used in baking

**Oleoresin**
- Pods with seed inside
- Volatile oil—distilled from seed

**Types available:**
- Decorticated—capsules removed
- Malabar—mellow aroma and flavor; 18.5 mm long
- Mysore—harsh aroma and flavor; used for the whole green spice; 21 mm long
- Whole, bleached—mature, picked after green color has faded; bleached with sulphur dioxide
- Whole, green—Guatemala; mature, picked while green; dried in tumblers; color preserved by treatment; not as aromatic as white
- Whole, straw-colored—mature; sun-dried
- Whole, white—Middle Eastern; sun-dried; less aromatic

**Cardamom substitutes (false cardamom): *Aframomum spp.*; *Amomum spp.*
- 1 kg seed = 44,000 seeds

**Storage (seed):** cool, dry, dark place; in pods

<table>
<thead>
<tr>
<th>Composition</th>
<th>Whole</th>
<th>Seed</th>
<th>Husk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acid-insoluble ash</td>
<td>3-3.5% max.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ash</td>
<td>6-9.2% max.</td>
<td>31%</td>
<td></td>
</tr>
<tr>
<td>Crude fiber</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moisture</td>
<td>11-13% max.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Starch</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volatile oil</td>
<td>3-7%</td>
<td>4-11%</td>
<td>1%</td>
</tr>
<tr>
<td>Weight</td>
<td>59-79%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Cardamom substitutes:**
- Mysore: 18.5 mm long
- Whole, green—Guatemala; 12-16 days.
- Whole, bleached—mature, picked after green color has faded; bleached with sulphur dioxide
- Whole, green—Guatemala; mature, picked while green; dried in tumblers; color preserved by treatment; not as aromatic as white
- Whole, straw-colored—mature; sun-dried
- Whole, white—Middle Eastern; sun-dried; less aromatic

**Used to flavor cookies, pastries, confectionery, curries, Danish baked goods, Indian curry, and soups, and to make tea. Oil of cardamom is obtained by distilling crushed seed.

**cardoon** *beet-chard; cardoni; chard; *Cynara cardunculus*) A perennial plant similar to the artichoke that is grown for its 2- to 3-ft, grayish-green to grayish white leaf-stalks (ribs), which are blanched and (1 month required) eaten as celery, in salads and soups, and as a boiled vegetable. The leaves are used like spinach (cooked like sea kale) and the roots as a winter vegetable. The main root is also cooked (boiled) and used in salads. 650 seed/oz, germination period 12-16 days.

**Varieties:**
- French (Tours)—long stem, prickles, good flavor
- Spanish—spineless, average flavor, run to seed easily

**Storage:** like celery, in the refrigerator

See Part 2: Vegetable Plants

**CARE** Cooperative for American Relief Everywhere

**carentan** A camembert-type cheese made from cow's milk

**cargo container** A metal container (20 ft or longer) used to consolidate smaller packages for transfer to ships, flat-bed trucks, or trains

**cargo preference** A certain percentage of goods exported from the United States to be shipped in American ships

**Caribbean cabbage** The root of the arum plant, used like a turnip

**caribou** Reindeer

**caries** Decay and softening of bone (often teeth)

**carignane** 1) A wine grape. 2) A red table wine. 3) A French dessert wine

**carinthian** See limburger cheese

**cariocca** A Cuban rum

**carload lot** A shipment that qualifies for a reduced freight rate because it is greater than a specified minimum weight
carmine: A substance used to relieve or expel digestive tract gasses.
carmine: A brilliant red or purplish coloring substance obtained from cochineal (insect) and used to color food and stain biological specimens; can be de-

\[
\begin{align*}
&\text{H}_3\text{C} &\times& \text{CH}_3 \\
&\text{CH}=\text{CH} &\times& \text{CH}=\text{CH} \\
&\text{CH} &\times& \text{CH}=\text{CH} \\
&\text{CH} &\times& \text{CH} \\
&\text{CH}\times& & \text{CH} \\
\end{align*}
\]

colorized with 0.1-1% HCl; aluminum lake of carminic acid

carminic acid: \( \text{C}_{22}\text{H}_{20}\text{O}_{13} \) The compound responsible for the color of cochineal

carnauba: The hardest wax known, obtained from a Brazilian palm (Copernicia cerifera); melting range 82–86°C; sp. gr. 0.997; unsaponifiable matter 50–55%; used as a candy glaze and polish.

Storage: well-closed container

See palm

See Part 2: Wax
carne de sol: Dried beef

carne seca: Dried beef
carnitas: Pork that is boiled, then baked, and then shredded
carnivores: Animals that must consume almost entirely flesh of other animals to survive, e.g., preying insects (praying mantis), birds (hawks, owls), fish (base, marlin), and mammals (lions, mink)
carob (caroub; locust bean; Ceratonia siliqua): 1) A small, Mediterranean leguminous tree that produces brown, leathery pods that are high in sugar and are used as a chocolate substitute in confections. 2) A West Indian tree that produces a gum from its bark.

See bean, locust; locust bean gum
carob bean: The fruit of the carob tree used as a substitute for chocolate; it contains only 2% fat but is high in sugar.
carob bean gum: A food stabilizer, thickener, and texture modifier. See locust bean gum
carob gum: A vegetable gum containing polysaccharides.

See Part 2: Gums and Gelling Agents; Gum Distribution
carob pod (honey bread; locust bean; Saint John’s bread): The flat, leathery seed pods of the carob tree, used as a chocolate substitute. The pods are \( \frac{3}{4} \times \frac{1}{2} \times 5 \) in. and contain 10 small, hard seeds. They are eaten fresh, dried, baked into hot cakes, or pressed into a thick, molasses-like syrup. See locust bean gum
carob powder: A flourlike powder made from ground carob pod; it resembles cocoa and is used as a chocolate substitute.

3 tsp carob powder + 2 tbsp water or milk = 1 square of unsweetened chocolate

Composition: moisture 11%; protein 4%; fat 1%; carbohydrate 81%; ash 2%
carob seed gum: See locust bean gum
caroid: A digestive powder made from papaya or paw-paw

\[
\begin{align*}
&\text{CH}_3 \\
&\text{CH}=\text{CH} \\
&\text{CH}=\text{CH} \\
&\text{CH}=\text{CH} \\
&\text{CH} \\
&\text{CH}_3 \\
\end{align*}
\]

\( \beta \)-carotene: A yellow organic pigment found in green plants, carrots, and milk; it can be converted by the animal body to vitamin A.

Used as a nutrient, dietary supplement, or for color.

Storage: tight, light-resistant container

See also beta-carotene
See Part 2: Colors Permanently Listed; Histochemical Test; Lime Juice Composition; Vitamin Sources, Functions, and Stability
carotenemia: A yellow discoloration caused by excessive carotene in the blood
carotenoid: A class of pigments, e.g., carotene (carrots), xanthophyll (yellow corn), lycopene (tomatoes), also found in apricots, lobster, and oranges. There are many kinds of carotenoids and some have vitamin A activity
carotid artery: A major artery in the neck (severed at slaughter)
caroube: See bean, locust; carob
carp: An edible finfish (2–8 lb) with average to high fat content, light to moderate flavor, and light, firm meat; there are many varieties in a large family of freshwater food fish.

Types:
- Common carp, Cyprinus carpio
- Crucian carp (synonym, German, or Prussian, carp), Carassius carassius
- Europe and Asia, Carassius carassius
- Furope and North America, Cyprinus carpio
- Japan, Carassius auratus

Varieties: golden or winter; leather; mirror
carpal bone: Forefoot bones located above the metacarpal bones

See Part 2: Bone
carpal joint: Wrist or corresponding joint
carpet: A one-celled ovary or fruit
carpel: A one-celled ovary or fruit
carpet grass: A perennial plant used for lawns

See Part 2: Seed, Germination
carpet shell: Edible bivalve molluscs found in Europe and North America (e.g., clams)
carpet wool: A rough, coarse wool; classification of breeds that produce this type of wool, e.g., Blackfaced Highland breed

See Part 2: Sheep Breeds
carrageen (carragheen; Iberian moss; Irish moss; Irish sea moss; pearl moss; sea moss; Chondrus crispus; Gigartina stellata): A red algae seaweed that grows in the North Atlantic and from which carrageenan is produced. It is washed, bleached (white) by the sun and dried. The gum extracted is used as an emulsifier in many foods, including blancmange; it may form both aqueous and milk gels.
carrageen

Types: *Chondrus crispus*; *C. ocellatus*; *Eucheuma cottonii*; *E. spinosum*; *Gegartina acicularis*; *G. pistillata*; *G. radula*; *G. stellata*

See Part 2: Gum Characteristics; Gums and Gelling Agents; Gums, Physicochemical Properties; Minerals (Trace), Limits; Stabilizers, Thickeners

carrageenan (carrageenin) A phycocolloid extracted from carrageen and used in foods as a stabilizer, thickener, texture modifier, emulsifier, and gelling agent

Types:
- Kappa—forms a brittle gel
- Iota—forms an elastic, syneresis-free gel
- Lambda—nongelling

Storage: well-closed container

See also carrageen; phycocolloid

carré de bonneville A semisoft, strong-flavored (matured 2–4 months) cheese that has small holes, weighs 800 g, and has an orange and white rind

carré de bray A small, camembert-type cheese made from cow’s milk

carré de l’est A soft, mild-tasting, camembert-type, square-shaped, French cheese, with a floury rind, usually made from pasteurized cow’s milk; packed in wooden chip, square boxes; dries out quickly if not protected

Types:
- Carré de l’est fleurie
- Carré de l’est lavé

carré demi-sel A creamy-textured, mild-flavored, slightly salted cheese made from pasteurized cow’s milk and cream

carrier 1) Edible material to which ingredients are added. 2) A relatively tasteless liquid or solid material used to dilute or encapsulate active ingredient, i.e.

<table>
<thead>
<tr>
<th>Carrier</th>
<th>Flavor form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>Liquid</td>
</tr>
<tr>
<td>Gum arabic</td>
<td>Spray-dried flavors</td>
</tr>
<tr>
<td>Propylene glycol</td>
<td>Liquid</td>
</tr>
</tbody>
</table>

3) An individual who harbors and may disseminate an infectious agent but does not show any signs of the disease. 4) The portion of container-conveyor chair that keeps a stick of containers in a fixed place during transfer through a hydrostatic retorting cooker

carrot (*Daucus carota; D. carota sativa*) A biennial herb that has an orange (some varieties; reddish purple, white) cylindrical to spherical root; the root is high in vitamin A (carotene) and sugar (5–15%) content and is used for human food and livestock feed.

Originally from the Mediterranean and Middle East; 25,000 (cleaned) seed/oz; 7–20 days germination period; thin to 2 in. apart in rows 15–18 in. apart; harvest when root is ½ in. or larger at shoulder (becomes tougher with age); yield 1 bu/50-ft row.

<table>
<thead>
<tr>
<th>Types</th>
<th>Root shape</th>
<th>Color</th>
<th>Days to maturity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smallest</td>
<td>Almost as thick as long; orange, red</td>
<td></td>
<td></td>
</tr>
<tr>
<td>French Forcing</td>
<td></td>
<td></td>
<td>60–68</td>
</tr>
<tr>
<td>Earliest Short Horn</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ozhart</td>
<td>½ longer than wide; gradual taper; 3 in.</td>
<td>Orange, red</td>
<td>70–80</td>
</tr>
<tr>
<td>Chantenay</td>
<td>2½ times longer than wide; tapers to blunt tip; 4 in.</td>
<td>Orange, red</td>
<td>78</td>
</tr>
<tr>
<td>Danvers Half Long</td>
<td>Tapers to a sharp point; 7 in.</td>
<td>Orange, red</td>
<td>75–80</td>
</tr>
<tr>
<td>Nantes Half Long</td>
<td>Cylindrical; 8 in.</td>
<td>Orange, red</td>
<td>70</td>
</tr>
<tr>
<td>Long Slender</td>
<td>Slight taper; 11 in.</td>
<td>Orange, red</td>
<td>85–95</td>
</tr>
</tbody>
</table>

When thinly sliced and soaked in ice water, the carrot will curl. To cook, boil or steam until tender.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Shape</th>
<th>Length</th>
<th>Uses</th>
<th>Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Danvers (Processing)</td>
<td>Broad, tapered</td>
<td>7 in.</td>
<td>Table, frozen, storage</td>
<td>75 days</td>
</tr>
<tr>
<td>Gold-Pak</td>
<td>Slender</td>
<td>8 in.</td>
<td>Table, frozen, canned</td>
<td>76 days</td>
</tr>
<tr>
<td>Hipak</td>
<td>Tapered</td>
<td>8 in.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hutchinson</td>
<td>Long, slender</td>
<td>11 in.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Imperator</td>
<td>Cylindrical to tapered</td>
<td>8–11 in.</td>
<td>Garden, frozen</td>
<td>75 days</td>
</tr>
<tr>
<td>Little Finger</td>
<td>Long, slender</td>
<td>11 in.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mores Bunching</td>
<td>Cylindrical</td>
<td>7 in.</td>
<td>Raw, cooked, frozen</td>
<td>70 days</td>
</tr>
<tr>
<td>Nantes</td>
<td>Cylindrical</td>
<td>8 in.</td>
<td>Salads, cooked</td>
<td></td>
</tr>
<tr>
<td>Parks Munchy Hybrid</td>
<td>Cylindrical</td>
<td>5 in.</td>
<td>Frozen</td>
<td>70 days</td>
</tr>
<tr>
<td>Red Cored Chantenay</td>
<td>Tapered to stump end</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Goldinhart)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Continued
### Variety, Shape, Length, Uses, Season

<table>
<thead>
<tr>
<th>Variety</th>
<th>Shape</th>
<th>Length</th>
<th>Uses</th>
<th>Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Royal Chantenay</td>
<td>Broad shoulder</td>
<td>6 in.</td>
<td>Frozen, garden</td>
<td>60-68 days</td>
</tr>
<tr>
<td>Royal Cross Hybrid</td>
<td>Broad shoulder</td>
<td>7 in.</td>
<td>Table, frozen, cooked</td>
<td>70 days</td>
</tr>
<tr>
<td>Short ‘n’ Sweet</td>
<td>Short taper</td>
<td>2 × 4 in.</td>
<td>Garden, frozen, canned</td>
<td>68 days</td>
</tr>
<tr>
<td>Streamliner</td>
<td>Long, slender</td>
<td>11 in.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweetheart</td>
<td>Slender cylinder</td>
<td>6 in.</td>
<td>Very sweet</td>
<td></td>
</tr>
<tr>
<td>Tendersweet</td>
<td>Uniform</td>
<td>9 in.</td>
<td>Sweet, coreless</td>
<td>75 days</td>
</tr>
<tr>
<td>Tiny Sweet</td>
<td>Broad, tapered</td>
<td>3 in.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Composition

<table>
<thead>
<tr>
<th>Moisture (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Carbohydrate (%)</th>
<th>Fiber (%)</th>
<th>Ash (%)</th>
<th>Sodium (mg/100 g)</th>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>92</td>
<td>0.5</td>
<td>0.2</td>
<td>6</td>
<td>2.1</td>
<td>0.9</td>
<td>236</td>
<td>5.2-5.8</td>
</tr>
<tr>
<td>93</td>
<td>0.4</td>
<td>0.2</td>
<td>5.5</td>
<td>2.1</td>
<td>0.8</td>
<td>236</td>
<td>4.9-5.3</td>
</tr>
<tr>
<td>91</td>
<td>0.4</td>
<td>0.2</td>
<td>7.1</td>
<td>2.1</td>
<td>0.6</td>
<td>33</td>
<td>4-6</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>1.4</td>
<td>5</td>
<td>1.2-3.7</td>
<td>6</td>
<td>6</td>
<td>8-1</td>
</tr>
<tr>
<td>88</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>0.8-1</td>
<td>4</td>
<td>268</td>
<td>47</td>
</tr>
</tbody>
</table>

### Canned styles available:

- Diced (⅛- or ⅓-in. cubes)
- Julienned (sliced lengthwise)
- Pureed
- Quartered
- Round slices (also called cuts; max. ⅛ in. thick)
- Shoestring
- Small baby
- Strips
- Whole

### Frozen styles:

- Chips
- Diced
- Quartered
- Round slices (also called cuts)
- Strips
- Whole

### Canned

<table>
<thead>
<tr>
<th>1 cup carrots (form)</th>
<th>Raw</th>
<th>Boiled and drained</th>
<th>Drained</th>
<th>Solid and liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chunks</td>
<td>4.8 oz</td>
<td>5.8 oz</td>
<td></td>
<td>5.6 oz</td>
</tr>
<tr>
<td>Diced</td>
<td>4 med.; 5 oz</td>
<td>5.0 oz</td>
<td></td>
<td>8.6 oz</td>
</tr>
<tr>
<td>Grated or shredded</td>
<td>2-3 med.; 3.8 oz</td>
<td>4.0 oz</td>
<td>carrots</td>
<td>4.0 oz</td>
</tr>
<tr>
<td>1-in. julienne</td>
<td>1.5-2 carrots</td>
<td>4.0 oz</td>
<td></td>
<td>5.2 oz</td>
</tr>
<tr>
<td>Slices</td>
<td>2-3 med. 5.4 oz</td>
<td>4.0 oz</td>
<td></td>
<td>5.2 oz</td>
</tr>
<tr>
<td>(¼ in.)</td>
<td>4-6 oz</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Storage:

Dig before ground freezes; cut tops ⅛ in. from crown; store in a cool place, covered with sand or paper; can be stored in a pit or cold cellar. Removing tops increases storage life; can be stored covered (90-95% relative humidity) in refrigerator (32°F); use within 1 week to 4 months; frozen (0°F) storage life 1 year.

---

**Vegetable grade**

See Part 2: Calories, Daily Recommendations; Canned Yield; Essential Oils; Food, Composition; Frozen Food Storage; Fruit and Vegetables, Diseases; Glutamate; Microwave Cooking, Frozen Vegetables; Minerals, Food; Nicacin; Nicotinic Acid, Food; Nitrate, Vegetables; Organic Acids in Fruits and Vegetables; Pectin Content; pH Values of Biological Materials; Plant Foods, Composition; Planting Density; Portion Size; Potassium; Root Crop Characteristics; Rot Spolagel; Standards, Processed Fruit and Vegetable Products; Storage, Sugar, Vegetables; Tocopherols; Vegetable Boiling; Vegetable Composition; Vegetable Cooking; Vegetable Frozen Yield; Vegetable Plants; Vegetables, Boiling Time, Frozen; Vegetables, Canning Dates; Vegetables, Classification; Vegetables, Cooking Frozen; Vegetable Servings; Vegetables, Panned; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Storage; Vegetable Yield; Vegetable Yield, Canned and Frozen; Vegetable Yield, Frozen, Canned, and Fresh; Vegetable Yields; Vitamin A; Vitamin A, Daily Recommendations; Vitamin A, Food

**Carrot fly** A carrot pest, attracted by the scent of the foliage

**Carrot oil** A natural food additive used to color food (orange)
carrot seed oil  A volatile, yellow to amber oil used for flavoring in food; steam-distilled from the seed of *Daucus carota*; saponification value 9–58; sp. gr. 0.90–0.94;
Storage: full, tight, glass containers in a cool, dark place

Carr's  A cracker
Types: Table Water; Wheat Meal

carrying capacity  The number of animals per unit of area (including area to produce winter feed) that can be supported

carryover (end-of-year stocks)  The supply of a farm commodity not yet used at the end of a marketing year

cartel  An arrangement among enterprises in the same field aimed at securing an international monopoly

cartilage  Strong, elastic connective tissue (softer than bone) associated with the bony system of the body; *Precursor to same bone*
See Part 2: Bone Age

cartridge  A unit of use; a container made to be inserted into a dispensing device

carvacrol

\[
\begin{array}{c}
\text{H}_3\text{C} \\
\text{CH}_3
\end{array}\]

Used as a food flavoring agent
Storage: full, tight, glass container in a cool, dark place

carvelat  A mildly seasoned, smoked, semidry (or summer) sausage

carving  Cutting a cooked roast or fowl into portions for serving
See Part 2: Beef Rib Carving; Ham Carving; Lamb Crown Roast Carving; Lamb Leg Carving; Pork Loin Carving

carvone

Steam-distilled from caraway oil and used as a caraway-like flavoring agent
Storage: full, tight glass container in a cool, dark place

caryophyllene

Uses in clove oil and used as a clove-like flavoring agent
Storage: full, tight glass container in a cool, dark place

caryopsis  A grain in which the seed coat is attached to the ovary wall, the fruit and seed forming a single grain (i.e., wheat, barley)

casaba  A large, globular to round, slightly ribbed, wrinkled, late melon that is slightly pointed, is greenish yellow to white, has a tough rind, and weighs 4–7 lb; the stem does not separate; the flesh is sweet, juicy, soft, light green to white, and similar to a honeydew melon. The casaba belongs to the muskmelon family. *See melon*
See Part 2: Storage

casalinga  A large, Italian salami made from chunk pork seasoned with garlic and black pepper

casal Mendes  A carbonated white grape-juice wine

casamino acid  Casein hydrolyzed by acid to amino-acid state

cascade  A variety of bird's-foot trefoil

cascarilla oil (sweetwood bark oil)  A volatile essential oil obtained by steam-distillation of the bark of *Croton cascarilla* or *C. eluteria*; saponification value 8–20; sp. gr. 0.89–0.91; used as a spicy flavoring agent in food.
Storage: full, tight, glass container in a cool, dark place

Case  An enclosure, usually of standard size, to hold a given quantity of units
See Part 2: Cans, Equivalent Sizes

case bearer  An insect; the adults are gray moths with fringed wings; the larvae are dark and form cases that are cigar- or pistol-shaped, brown or gray, and up to \( \frac{1}{2} \) in. long. The larvae make many small holes in buds and leaves.
Control: remove bags and burn

case hardening  A crusty, outside layer formed on a food product by heat and chemical action

casei factor  *See folic acid*

casein  A protein that is coagulated and precipitated from milk by rennin and/or acid to form cheese. A phosphoprotein in milk; major protein fraction of milk; 3% of milk; purest dairy form is low-fat cottage cheese; vitamin-free casein is produced by hot alcohol extraction and is used as a protein basis to study vitamin deficiencies; protein efficiency ratio is 2.5. Time and temperature needed for coagulation are as follows:

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>100°C</td>
<td>12 h</td>
</tr>
<tr>
<td>135°C</td>
<td>1 h</td>
</tr>
<tr>
<td>155°C</td>
<td>3 min</td>
</tr>
</tbody>
</table>

2.5 lb can be obtained from 100 lb skim milk.
Composition (dehydrated): moisture 8–12%; protein 83–84%; crude fiber 0.2%; fat 0.6–1.5%; ash 2.1–2.2%; pH 4.6 (isoelectric point)
It is clearly associated with calcium. See also calcium caseinate

See Part 2: Dairy Products, Composition; Glutamate; Milk, Amino Acids; Milk and Milk Products, Vitamin Content; Milk Composition; Milk, Species

caseinate Casein solubilized with an alkaline substance, e.g., sodium caseinate and calcium caseinate. Caseinates improve smoothness and texture of foods.

casein soy peptone agar See Part 2: Microbiological Examination of Dairy Products

caserta pepperoni A meat product consisting of 75% pork and 25% beef; it originated in Italy

cashcaval A provolone-type cheese

cashew butter Ground cashew nuts See cashew nut butter

cashew nut (Anacardium occidentale) A hard-shelled kidney-shaped nut used for food and oil; originally from Central and South America; a medium-sized tree that will grow in dryer areas and produces a large, fleshy "apple" below which hangs a single nut; the nut kernel must be roasted and shelled. The apple, or pear, has a tart, pleasant flavor and is used in preserves and beverages; kaju is a fermented liquor made from the cashew apples. Cashew shells contain an oil that is used in varnishes, resins, etc.

1 lb shelled cashew nuts = 4.6 lb, unshelled
1 cup = 5 oz
1 large nut = 2.3 g
1 med. nut = 1.4 g
1 fresh nut = 2.1 g

Composition: moisture 5%; protein 17%; fat 46%; carbohydrate 29%; ash 3%
11–12 med. nuts (2 tbsp) = 100 calories
Dry-roasted, salted, 1200 mg Na/cup (140 g)

See Part 2: Beans, Peas, and Nuts; Fruit Classification; Fruit Storage; Iodine and Saponification Values

cashew nut butter A spread made from ground and homogenized cashew nuts See cashew nut butter

cash flow The total funds generated by a firm for covering costs and investment

cashmere A breed of fleece goats native to Tibet; the fleece is used to make cashmere fiber or goods. The goats have a white, black, blue, gray, dark brown, light coffee, or variegated outercoat (moderately long, straight, and course) and a white, gray, or tan cashmere undercoat (soft, fine, and nonmedullated, Bradford wool count from the 70s to the 80s). The goats are also milked. Both sexes have horns and beards and are currently found in Kashgar, Inner Mongolia, Tibet, Sinkiang (Xinjiang, northwest China), and Tsinghai Province.

cash price The price in the marketplace for items to be delivered via normal market channels

casiglione A provolone-type cheese made from cow's milk

casing 1) A membranous case (outer sheath) used to encase sausages and various processed meats; it may be natural or artificial. Colors used in casings are FDA-approved colors.

Hog bung casing grade Width (in.) No. pieces per tierce

| Export | Over 2 1/8 | 400 |
| Large prime | 1 15/16 – 2 1/3 | 500 |
| Medium prime | 1 13/16 – 1 7/8 | 550 |
| Special prime | 1 7/8 – 1 9/16 | 580 |
| Small prime | 1 7/16 – 1 1/16 | 600 |
| Skips | 1 1/16 – 1 1/8 | 700 |
| No. 1 broken shorts export and large primes | Over 1 15/16 | 800 |
| No. 2 broken shorts medium, special, and small primes | 1 15/16 – 1 7/16 | 1050 |

Natural casing (small hog casing) Width (mm) Length of hank (yd)

| Grade | (mm) |
| Extra narrow | Under 28 |
| Narrow medium | 28–32 |
| Selected medium | 32–35 |
| English medium | 35–38 |
| Wide | 38–42 |
| Extra wide | Over 42 |

Sheep casing grade Width (mm) Length of hank (yd)

| Grade | (mm) |
| Narrow | 16–18 |
| Narrow mediums | 18–20 |
| Special mediums | 20–22 |
| Wide | 22–24 |
| Extra wide | 24–26 |

2) A thin layer of soil covering compost used for growing mushrooms

See Part 2: Casings, Animal; Casings, Hog Casings, Hog and Beef; Casings, Hog Bungs; Casings, Sheep; Casings, Terms

casitone Pancreatic digest of casein

casitone starch agar See Part 2: Microorganism, Media

casizzolu A large, pear-shaped, mozzarella-type cheese made from cow's milk

cask A variable-sized wine container, often made of wood

Casman medium base A noninfusion medium developed for use as a single blood medium instead of fresh blood agar plus chocolate blood plate; used for growth of fastidious pathogens

See Part 2: Microorganism, Media

caspian lamprey (Caspio myzon wagneri) A food fish

caspian roach (Rutilus rutilus) A food fish

Cassabanana (curuba; Sicana odorifera) A fast-growing vine of the cucumber family that produces long, cylindrical, orange yellow fruit
Cassave (guacamote; mandioca; manioc; sagu; cassia (Cinnamomum cassia Blume)) is a woody, South American, tropical plant (originally from Central and South America) from the roots of which starch is extracted. There is a bitter type (poisonous—hydrocyanic acid) and a sweet type; cyanide is released by grating and cooking. A shrub that produces swollen tuberous roots; the tubers are high in starch and low in protein, and must be cooked before eating; the tuber may be made into meal; the starch is extracted and dried, and fermented into liquor.

Types:
- Bitter (contains hydrocyanic acid, 0.02–0.03% available HCN)—boiled, fermented, dried to a flour (farinha)
- Sweet (0.005–0.01% available HCN)—baked and eaten

The plant is 9 ft tall and matures in 8–16 months; its growth period averages 330 days. The root is boiled or fried, or a beverage is made from its juice; also used in soup or dried for flour or starch; the root (“staff of life”) remains usable when left in ground.

The leaves are used as a cooked vegetable. Edible energy value 6.3 MJ/kg

1 lb = 3 cups
1 cup = 150 g (5.4 oz)

Composition (tubers): carbohydrate 33%; protein 1%; fat 0.3%
Composition (dried tubers): moisture 13–20%; protein 0.4–0.6%; fat 0.1–0.2%; carbohydrate 86–95%; starch 40%; glucose 30%; tapioca 10%; ash 0.2%
Composition (fresh leaves): protein 4–11%
Composition (dry leaves): protein 20–36%

See also tapioca flour

See Part 2: Starches and Starchy Roots, Composition

Cassava bread is a steamed or baked round, flat bread made from fermented cassava (Manihot utilissima) dough.

Casseroles:
1) A dish prepared as a mixture of meats, fish, vegetables, flavoring, etc. and baked in a glass or ceramic container, usually with a cover.
2) A cooking dish with a lid and two handles

See Part 2: Microwave Processing Time; Portion Size

Cassette (boulette) is a semisoft to soft, fermented cheese made from cow’s milk; shaped into balls and wrapped in walnut leaves.

Cassia (Cinnamomum cassia Blume) is the dried bark (ground or stick form) of the cassia tree, related to the cinnamon tree; used as a spice; essential oil is oil of cinnamon or cassia, containing not more than 5% total ash or more than 2% acid-insoluble ash; bark, buds, leaves are used for flavoring. Cassia is very similar to cinnamon (different species) in the ground form and the terms are often used interchangeably. Both cassia and cinnamon may be called cinnamon but cassia has a thicker bark and refers to the species that produces a darker, stronger, more pungent flavored spice (most popular in the United States); protein 3-4%

C. c. Presl:
  Canton cassia
  Cassia lignea

China junk cassia
Chinese cassia
Honan cassia
Kwantung cassia
Yunnan cassia
C. burmannii:
  Batavia cassia/cinnamon
  Cassia vera
  Indonesian cassia
  Java cassia
  Korintji cassia/cinnamon
  Macassar cassia
  Padang cassia
  Timor cassia

C. loureirii:
  Annam cassia
  Danang cassia
  Saigon cassia
  Tonkin cassia
  Vietnam cassia

C. tamala:
  Indian cassia

Producing countries: China; Indonesia; Vietnam

Defect action level (whole cassia): average 5% moldy pieces by weight; average 5% insect-infested pieces by weight; 1 mg excreta per pound

See cinnamon

See Part 2: Essential Oils; Flavoring Agents, Natural

Cassia bark oil (Cinnamomum cassia) is a yellow-brown liquid obtained by steam-distillation of cassia bark; contains 60–98% cinnamaldehyde eugenol

Cassia bud (Cinnamomum cassia) is the dried, immature or unripe fruit or flower buds of the cassia tree, used as a spice and in pickling; flavor similar to the combination of cinnamon and cloves. Obtained from the same tree as cassia bark and has a similar flavor.

Cassia leaf oil (Cinnamomum cassia) is a dark brown liquid (cassia oil of commerce) obtained by steam-distillation of the leaves and twigs of cassia; similar composition to bark oil; contains 70–93% cinnamaldehyde

Cassia oil is a light to dark reddish brown oil obtained by steam-distillation of the leaves and bark of cassia; yellow to yellow-green oil may be obtained on redistillation.

Oil and redistilled oil:
  Optical rotation –1° to +1°
  Refractive index 1.602–1.614 at 20°C
  Specific gravity 1.045–1.063 g/ml

Storage (oil): full, tight container in a cool, dark place

Cassis is a sweet liqueur made from macerated black currants in brandy
1. Red, rosé, and white French wines
2. Black currant
3. Alcoholic beverage or flavoring agent made from black currants and brandy

Casoulet is a large, dark red, kidney-shaped bean

See also haricot bean

CAST 1) Council for Agricultural Science and Technology. 2) Calf antibiotic sulfonamide test
Castel del Monte  An area in southeastern Italy and
the wines produced there:
Red (dry and tannic)
Rosé (dark and fragrant)
White (fresh, well-balanced)
castellblanch  A sparkling wine
casteller  A rosé Italian wine
castello  A sharp cream cheese
castelmagno  A strong-flavored blue cheese made
from cow's milk
castelo branco  A strong, peppery, fermented,
semisoft, esbareich-type cheese made from ewe's or
goat's milk
caster  See sugar, castor
cast iron  The heaviest metal used for cooking con-
tainers. It heats slowly, retains heat well, does not
heat as evenly as aluminum or copper; will rust if not
seasoned and dried
castle  See schloss cheese
castle cheese  See schloss
castor bean (castor-oil plant; christi palma)  The
fruit (large, flat) or seed pod of the castor plant
(Ricinus communis); it is not a true bean or a food
crop; source of castor oil and other drugs. Both plant
and seed contain a poisonous alkaloid; meal can be
detoxified and used as livestock feed. Seed—45% oil,
1–3 seed/pod, obovoid-shaped, resembles a bean,
mottled, striped, or solid gray-brown color; 46 lb/bu
See Part 2: Oils, Seed and Fruit; Poisonous Plants;
Protein Factors
castor cake (castor pomace)  Contains 5.4% nitro-
ogen, 1.8% phosphate (P₂O₅), 1% potash (K₂O), and
0.75% lime oxides (CaO + MgO)
castor oil  The nondrying oil expressed from castor
beans (Ricinus communis); used as a laxative and in
other pharmaceuticals. Used in food as an antistick-
ing agent, release agent, and component of protective
coatings.
Flash point 230°C
Iodine number 82–90
Refractive index (15.5°C) 1.479–1.481
Saponification number 175–185
Specific gravity 0.945–0.967
Storage: tight container in a cool place
See Part 2: Fats and Oils, Physical and Chemical
Properties; Fatty Acids, Fats and Oils; Oil or Fat,
Characteristics; Refractive Indices, Fats and Oils;
Specific Gravities, Fats and Oils; Unsaponifiable Mat-
terial

castor oil meal  Used as a rather complete fertilizer

castor sugar  Granulated sugar refined to a finer
grain; 2 cups = 1 lb
castration  Removal of the testicles from a male or
sex glands from a female. It enhances fattening, i.e.
steer, barrow, wether
Desired age: calves, 2 weeks to 2 months; pigs, 3 to 4
weeks; lambs 1 to 2 weeks
Methods: knife (use a fly-repellent, e.g., pine tar, and a
disinfectant around wound); elastrator (rubber rings);
emasculatome (clamp)
catabolism  The process of breaking down or destruc-
tion. Release of energy and the burning of materials,
a biochemical process of degradation that takes place
in the body
Catalana  A Mediterranean class of chickens that lays
a white-shelled egg
catalase  An enzyme that breaks down hydrogen per-
oxide to water and oxygen
catalyst  A substance that speeds up a reaction with-
out undergoing permanent chemical change. En-
zymes are organic catalysts. Most catalysts used in
industry are inorganic, e.g., metals or their oxides.
Nickel is a catalyst for hydrogenation of vegetable oils
to solid fats used in cooking, e.g., Crisco.
Catawba  1) A variety of American grape; 2) An am-
ber, full-bodied wine

catchup (catsup; ketchup)  1) A tomato sauce with
vaccine, sugar, and spices
1 cup = 275 g (9.6 oz)
Composition: moisture 69%; protein 2%; fat 0.4%; car-
bohydrate 25%; ash 4%; 155 mg Na/tbsp
Also sauces made from other fruits, vegetables, or
nuts (e.g., cranberries, cucumbers, grapes, walnuts)
Storage: After opening, cover and refrigerate.
2) A salty extract of fish, walnuts, mushrooms, and
especially tomatoes
See Part 2: Standards, Processed Fruit and Vegetable
Products; Tomato and Tomato Products, Composi-
tion; Vegetable Composition
catering  Preparing and serving snacks and meals for
groups of people
caterpillar  See red-humped caterpillar; walnut
caterpillar, yellow-necked caterpillar
catface  Occurs wherever tomatoes are grown; af-
ected fruits are malformed and have cellular inden-
tations on their stem.
Control: grow locally recommended varieties
catfish (bullhead; blue channel; channel catfish;
dogfish; flathead; fiddler; ocean catfish; sea
wolf; wolffish; Ictalurus)  A lean fish caught in
rivers and used for food; it is scaleless and has catlike
1 cup = 275 g (9.6 oz)
Composition: moisture 69%; protein 2%; fat 0.4%; car-
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catfish (bullhead; blue channel; channel catfish;
dogfish; flathead; fiddler; ocean catfish; sea
wolf; wolffish; Ictalurus)  A lean fish caught in
rivers and used for food; it is scaleless and has catlike
teeth. A large class of fish; a few of the more impor-
tant ones are the following:
Atlantic (Anarhichas lupus)
Banded—See Atlantic wolfish
Bering wolfish (A. orientalis)
Blue catfish (I. furcatus)—forked tail, small head,
anal fin with more than 30 rays
Blue Sea Cat or Northern wolfish (A. denticula-
tus)
Bullhead (I. spp.)
Channel (freshwater) catfish (I. punctatus)—
forked tail, rounded anal fin with fewer than 30
rays; raised commercially; albino type also avail-
able
Freshwater I. spp. (synonym, Pilodictis olivaris)
Spotted Sea Cat (A. minor)
White catfish (I. catus)—large head
Other species include the following:

Amiuridae lacustris
Amiurus nebulosus
I. ponderosus
Parasilurus aristotelis
Silurus glanis

Commercially raised channel catfish weigh 1-4 lb and have firm but soft white meat that does not flake, a high fat content (5.2%), and light to moderate flavor.

Small fillets = 0.3-0.4 lb
Skinned and dressed = ½ lb
Pan dressed = 5-6 oz

Water quality for growth:

pH 6.5-8.5
Hardness 20-200 ppm
Oxygen 3 ppm min.
Temperature—4 months above 70°F

See Part 2: Bone

cattalo A buffalo-bison hybrid

cattle Bovine ruminant animals raised for milk, beef, and work: Bos taurus, Europe; B. indicus, Indian and Africa; dressing percentage 54.9. Weight at maturity 500-2500 lb; age at puberty 6-9 months; 15-60 females served by one male; 800 X 10⁶ sperm/ml semen; 5 ml semen per ejaculation; frequency of ovulation 20-21 days; duration of estrus 14-18 h; time of ovulation 14 h after end of estrus; gestation period 283 days; one offspring per gestation. The male is called a bull; female is called a cow. See beef dairy cattle; dual-purpose cattle

See Part 2: Cattle; Muscle and Body Weight; Reproductive Cycle; Teeth Eruption
catty A weight of tea
1 catty = 1 ½ lb avdp.
catupiri A semisoft, mildly acidic smooth cheese made from cow's milk (rennet is used)
caudal Associated with or relating to the tail or coccyx of an animal

See Part 2: Bone
caudal vertebrae Tail bones located to the rear of the sacral vertebrae; number varies with species and individual animals in the same breed See also vertebrae
cauldle sauce A sweet rum or brandy sauce flavored with lemon
caul (mesenteric; web) The membrane enclosing the intestines
caul fat (omentum) A loop of fat that supports the stomach and surrounds the viscera See also web fat
cauliflower (heading broccoli; Brassica oleracea; B. oleracea botrytis; B. oleracea capitata) A sulfur-containing vegetable whose flower is used for food. A single-stem plant with a compact, white head, or curd (there is also a purple type, sometimes called cauliflower broccoli, that loses its color upon cooking), composed of flower buds and surrounded by green leaves (jacket leaves); may be eaten raw but is usually cooked or pickled. Originally from the Mediterranean and Middle East; 9000-14,000 seed/oz; transplant 18 in. apart in rows 30 in. apart; germination period 4-7 days; matures in 100 days.

To cook: Boil or steam 5-25 min or until tender; lemon juice in cooking water will maintain white color; if frying, oil temperature should be 190-196°C (375-385°F). When frozen, it is separated into florets (freezing point 30.3°F). A slightly granular texture of curd is called ricey; it will not hurt eating quality if surface is compact.

Types:
Purple, long season (cauliflower broccoli)
Early Purple Head
St. Valentine
White, late season
Dry weather
Vietches Autumn Giant
White, short season
Dwarf Erfurt
Snowball (A; Imperial; X)

Winter cauliflower—broccoli

Types:
Christmas (early)
Early Pearl (early)
February (mid-season)
Late Pearl (late)
March (mid-season)
Mayflower
November-December (early)
St. Valentine (late)
Variety | Maturity (after transplanting) | Plant | Leaves | Curd appearance | Curd color | Use
---|---|---|---|---|---|---
Burpeeana | Early; 58 days | Long jacket | Round | White | Frozen
Danish Giant (dry weather) | 70–80 days | | | | |
Early Snowball (Snowball) | 50–60 days | Dwarf | Med.-green | Uniform, solid, med. size | Ivory white
Imperial 19-6 Purple-headed type (purple head) | Late; 80–85 days | Holds longer | Large; cover head No need to tie leaves to blanch | 6.5 in.; loose head | Turns green upon cooking (good flavor)
Self-Blanch | Late; 68 days | Curl over head | Large; 7 in.; solid; fine texture | | White
Snow Crown | Early; 53 days | Vigorous | Upright leaves protect curd | Smooth; over 2 lb | White
Snowdrift | 60–65 days | Large | Protect curd in early development | Large; free of defects | |
Snowflower | Early | Erect | Short stems | Over 2 lb; compact head | Pure white
Snow King | 55 days | | | | |
Super Snowball | Early; 55–60 days | Dwarf | Blue-green; protect head | 6.5 in.; compact, solid | White

Grades:
A—white or creamy white
B—slightly gray or brown but turns white when cooked

Composition: fiber 1.2% (cooked), 1.8% (raw)

Composition: %
- moisture 91%; protein 3%; fat 0.2%; carbohydrate 5.2%; ash 1%; pH 5.6

Storage: in pits or cold cellars; in refrigerator (32°F), in crisper or plastic bag (85–90% relative humidity); use within 3–14 days; frozen (0°F) storage 1 yr

See pickle

See Part 2: Cabbage Looper; Calories, Daily Recommendations; Frozen Food Storage; Fruit and Vegetables, Composition; Fruit and Vegetables, Diseases; Frying Time; Iron; Microwave Cooking, Frozen Vegetables; Microwave Processing Time; Minerals, Food; Niacin; Nitrate, Vegetables; Organic Acids in Fruits and Vegetables; Phosphorus; Plant Foods, Composition; Planting Density; Portion Size; Riboflavin; Storage; Sugar, Vegetables; Thiamin; Vegetable Boiling; Vegetable Composition; Vegetable Cooking, Frozen; Vegetable Frozen Yield; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Plants; Vegetables, Boiling Time, Frozen; Vegetables, Classification; Vegetables, Cooking Frozen; Vegetable Servings; Vegetable Storage; Vegetable Yield; Vegetable Yield, Canned and Frozen; Vegetable Yield, Frozen, Canned, and Fresh; Vegetable Yields; Vitamin C

cauliflower, soup

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dehydrated</th>
<th>Prepared with water</th>
</tr>
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<tbody>
<tr>
<td>Moisture (%)</td>
<td>4.4</td>
<td>92.9</td>
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<tr>
<td>Protein (%)</td>
<td>15.3</td>
<td>1.1</td>
</tr>
<tr>
<td>Lipid (%)</td>
<td>9.1</td>
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<tr>
<td>Carbohydrate (%)</td>
<td>56.6</td>
<td>4.2</td>
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<tr>
<td>Fiber (%)</td>
<td>1.0</td>
<td>0.07</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>14.6</td>
<td>1.1</td>
</tr>
</tbody>
</table>

cauldron lime A liming material composed of 85% CaO; each pound has the neutralizing equivalent of 1.5–1.75 lb of CaCO₃ (or approximately this quantity of dolomitic limestone).

caulustic potash (KOH) Potassium hydroxide

caulustic soda (sodium hydroxide) (NaOH) A strong, alkaline cleaner with high germicidal and dissolving action but with poor deflocculating and emulsifying action.
150 caustic soda (sodium hydroxide)

power; it is very corrosive and will burn skin; usually available in solutions of various concentrations
See Part 2: Concentration of Commercial Strengths of Acids and Bases; Detergent Properties; Normal Solutions; pH, Standard Solutions; Reagents, Normal Solutions; Sodium Hydroxide Solution
cavadar A creamy, semisoft, surface-bacteria-ripened, mild-flavored cheese
caveat emptor "Let the buyer beware." The purchaser buys at his or her own risk.
caveat venditor "Let the seller beware." The responsibility for defective goods lies with the seller.
caviar (caviare) Roe (eggs) of sturgeon (black caviar) or other fish (e.g., bream, carp, catfish or paddlefish, coalfish, codfish, haddock, lake herring, lumpucker, mullet, pike, salmon, spoonbill, tuna, or whitefish); prepared by a special process (maturation and salting); should be labeled to indicate type of fish; red caviar is roe of salmon; pH 5.4

cayenne (Capsicum frutescens L.) Pods of the red pepper (Capsicum) plant used as seasoning. Extremely "hot," burning taste. Cayenne pepper is hotter and has a duller color than red pepper and is made from different varieties of hot pepper.
1 part freeze-dried weight
= 15 parts fresh weight
See capsicum; pepper (Capsicum); pitanga; Tabasco sauce; tobasco
cayo verde A citrus liqueur made with lime
c Cubic centimeter
CCC See Commodity Credit Corporation
CCTI Composite Can and Tube Institute
Cd Symbol for the element cadmium
CDC Centers for Disease Control of the U.S. Public Health Service
CDLB Food Safety and Inspection Service (FSIS), Science, Chemistry Division, Chemistry Division Laboratory Branch, Beltsville, Maryland
Ce Symbol for the element cerium
cebbero A semisoft, mildly acidic, smooth, mushroom-shaped cheese that is made from cow's milk and is matured 3–4 days; a sharp, creamy, slightly blue cheese with a fine texture and yellow rind
cebu A rennet or fermented cheese that is made from buffalo's milk and is soaked in brine and consumed fresh
Cecidomyia viticola A small midge causing trumpet or grape tube galls

<table>
<thead>
<tr>
<th>Moisture (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Carbohydrate (%)</th>
<th>Ash (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Granular</td>
<td>46–57</td>
<td>27</td>
<td>15</td>
<td>0–3</td>
</tr>
<tr>
<td>Pressed</td>
<td>36</td>
<td>34</td>
<td>17</td>
<td>5</td>
</tr>
</tbody>
</table>

Forms:
Beluga—large-grained, from Beluga sturgeon
Bulgua—from large sturgeon
Dried pressed—pressed to remove liquid (keeps longer)
Grainy (dry)—eggs easily separated
Malossol—best quality, made during winter, mildly salted (3–4% salt)
Osetr—from med. to small sturgeon
Paste
Payasnaya—course-grained heavily salted, black caviar damaged in the sieving process
Salted (approximately 10%)
Sevruga—small-grained, from small sturgeon

cervid power: it is very corrosive and will burn skin; usually available in solutions of various concentrations
See Part 2: Concentration of Commercial Strengths of Acids and Bases; Detergent Properties; Normal Solutions; pH, Standard Solutions; Reagents, Normal Solutions; Sodium Hydroxide Solution
cavadar A creamy, semisoft, surface-bacteria-ripened, mild-flavored cheese
caveat emptor "Let the buyer beware." The purchaser buys at his or her own risk.
caveat venditor "Let the seller beware." The responsibility for defective goods lies with the seller.
caviar (caviare) Roe (eggs) of sturgeon (black caviar) or other fish (e.g., bream, carp, catfish or paddlefish, coalfish, codfish, haddock, lake herring, lumpucker, mullet, pike, salmon, spoonbill, tuna, or whitefish); prepared by a special process (maturation and salting); should be labeled to indicate type of fish; red caviar is roe of salmon; pH 5.4

cayenne (Capsicum frutescens L.) Pods of the red pepper (Capsicum) plant used as seasoning. Extremely "hot," burning taste. Cayenne pepper is hotter and has a duller color than red pepper and is made from different varieties of hot pepper.
1 part freeze-dried weight
= 15 parts fresh weight
See capsicum; pepper (Capsicum); pitanga; Tabasco sauce; tobasco
cayo verde A citrus liqueur made with lime
c Cubic centimeter
CCC See Commodity Credit Corporation
CCTI Composite Can and Tube Institute
Cd Symbol for the element cadmium
CDC Centers for Disease Control of the U.S. Public Health Service
CDLB Food Safety and Inspection Service (FSIS), Science, Chemistry Division, Chemistry Division Laboratory Branch, Beltsville, Maryland
Ce Symbol for the element cerium
cebbero A semisoft, mildly acidic, smooth, mushroom-shaped cheese that is made from cow's milk and is matured 3–4 days; a sharp, creamy, slightly blue cheese with a fine texture and yellow rind
cebu A rennet or fermented cheese that is made from buffalo's milk and is soaked in brine and consumed fresh
Cecidomyia viticola A small midge causing trumpet or grape tube galls

Type by maturity

<table>
<thead>
<tr>
<th>Term</th>
<th>Maturity</th>
<th>Curing method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kegged</td>
<td>Not fully mature</td>
<td>Regular salt</td>
</tr>
<tr>
<td>Malossol</td>
<td>Fully mature</td>
<td>Very little salt</td>
</tr>
<tr>
<td>Pressed</td>
<td>Overmature</td>
<td>Soft; very small amount of salt; pressed in linen bag</td>
</tr>
</tbody>
</table>

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Type by fish and location caught

<table>
<thead>
<tr>
<th>Location caught</th>
<th>Label</th>
<th>Fish</th>
<th>Natural color</th>
<th>Color added</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alaska, Washington state</td>
<td>Salmon, Red</td>
<td>Salmon</td>
<td>Red or orange</td>
<td>Red (most of the time)</td>
</tr>
<tr>
<td>Caspian Sea</td>
<td>Russian, Iranian</td>
<td>Sturgeon</td>
<td>Gray-black to black</td>
<td>None</td>
</tr>
<tr>
<td>Iceland</td>
<td>Lumpfish</td>
<td>Whitefish</td>
<td>Tan</td>
<td>Black</td>
</tr>
<tr>
<td>United States, Canada, Great Lakes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
celery (ache; smallage; *Apium graveolens*)

*Seed—used as a flavoring*

Canned style available—hearts are cut in half and placed in a light brine.

Blanching improves tenderness and palatability (removes bitterness). Pascal celery is tender without bleaching. Place narrow strips in ice water to curl and chill; 60,000–84,000 seed/oz; 12-day germination period; transplant 7 in. apart in rows 24 in. apart; often 120 days to maturity

**Varieties:**
- **Green**
- **Beacon**
- **Florida**
- **Fordhook**
- **Giant Pascal—135 days to maturity**
- **Golden Crisp—135 days to maturity**
- **Greenlight or Golden Utah**
- **Yellow (self Blanching)—milder flavor**
  - **Cornell-19**
  - **Easy Blanching—125 days to maturity**
  - **Golden—114 days to maturity**
  - **Golden Detroit**
  - **Golden Plume**
  - **Michigan Golden**
  - **Summer Pascal (Waltham Improved)**
  - **White Plume—113 days to maturity**

**Type** | **Aroma** | **Flavor**
---------|----------|----------
French   | Sweet, herbal, tenacious, citrus | Bitter, pleasant |
Indian   | Lemonlike, sweet, herbal, tenacious | Sweet, pleasant, bitter |

To cook: Steam or braise 10–16 min or until tender.

Freezing point 31.6°F

Refuse: 35% tops and trimmings

1 crate = 60 lb
7 bunches = 50 servings

---

**Composition (raw root):** moisture 88%; protein 2%; fat 0.3%; carbohydrate 8%; ash 1%

See Part 2: Planting Density; Root-Crop Characteristics; Storage; Vegetable Planting and Maturity Chart; Vegetable Plants; Vegetable Yields

**celery (ache; smallage; *Apium graveolens*)** A shallow-rooted, biennial vegetable whose leaf stem is used as food

Leaf Stalk—eaten raw or boiled and used as a condiment (in soups, stews, and green salad)

Outer branches and leaves—used in soups and broth, and as a substitute for celery seed;

Root—grated and eaten raw or used as a vegetable (boiled, 20–25 min)

---

**Maturity (days) | Root flesh | Use**
--------------|------------|---------
Alabaster     | White;     | Boiled, soups, stews |
              | 120        | 2 x 4 in. raw, stored |
Large Smooth Prague; Giant Prague (turnip-rooted celery) |               |
              | 110        |                     |

1 part freeze-dried weight = 23 parts fresh weight
1 lb = 2 bunches
1 lb, raw, chopped or diced = 5–8 servings = 4 cups, diced and cooked
1 lb, cooked = 4–7 servings
1 med. bunch = 4.5 cups, chopped
1 cup, chopped = 2 med. stalks
1 cup, raw = 40 g
1 cup chunks, raw = 4.2 oz
1 cup slices, raw = 2 stalks = 3.8 oz
1 cup chunks, boiled and drained = 5.4 oz
1 cup slices, boiled and drained = 6 oz
1 cup, cooked = 150 g
Variety | Season | Growth habits | Use
---|---|---|---
Cornel-19 | 130 days from seed | Self-blanching Green; stocky, compact; 16 in. | Stores well
Fordhook | | Green; tall, thick | Fresh; stores well
Giant Pascal | 135 days from seed | Self-blanching | 
Golden Detroit | Early crop | Self-blanching | 
Golden Plume | Early crop | Self-blanching | 
Golden Self-Blanching | 118 days from seed | No need to blanch; compact, stringless; fresh | 
Green Light | Late crop | Self-blanching | 
Michigan Golden | Early crop | | 
Summer Pascal (Waltham Improved) | | | 
Tendercrisp | 105 days from seed | Tall, thick; | Relish
Utah 52-70 | Late crop | dark green | Green

1 stalk = 0.5 cups, chopped or thinly sliced
= 25 g
8 × 1.5-in. (roast end) outer stalk = 1.4 oz
1 serving = 0.25 med. to large bunch
Composition (raw): moisture 94%; protein 0.9%; fat 0.1%; carbohydrate 4%; ash 1%; pH 5.7–6.0; 151 mg Na/cup (diced); fiber 3% (raw), 2.4% (cooked)
Storage: In refrigerator (31–32°F), in crisper or plastic bag (90–95% relative humidity); use within 3 days to 2 months.

See Part 2: Essential Oils; Flavoring Agents, Natural; Fruit and Vegetables, Diseases; Minerals, Food; Nitrate, Vegetables; Plant Foods, Composition; Planting Density; Potassium; Rot Spoilage; Soups, Composition; Storage; Sugar, Vegetables; Transit Temperature; Vegetable Boiling; Vegetable Composition; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Plants; Vegetables, Classification; Vegetable Servings; Vegetable Storage; Vegetable Yields

celery, cabbage
See Chinese cabbage

celery, cream of, canned soup

| Composition | Condensed, prepared with |
| --- | --- | ---
| Moisture (%) | Condensed Milk | Water |
| 85.0 | 86.5 | 92.3 |
| Protein (%) | 1.3 | 2.3 | 0.7 |
| Fat (%) | 4.5 | 3.9 | 2.3 |
| Carbohydrate (%) | 7.0 | 5.9 | 3.6 |
| Fiber (%) | 0.3 | 0.1 | 0.1 |
| Ash (%) | 2.2 | 1.5 | 1.1 |

celery, cream of, soup

| Composition | Dehydrated Prepared with water |
| --- | --- | --- |
| Moisture (%) | 4.6 | 93.4 |
| Protein (%) | 15.0 | 1.0 |
| Fat (%) | 9.3 | 0.6 |
| Carbohydrate (%) | 55.9 | 3.8 |
| Fiber (%) | 1.1 | 0.1 |
| Ash (%) | 15.2 | 1.0 |

celery, dehydrated

The following types are available (source—California):
Crosscut—from the ribs
Diced and flaked—from both ribs and leaves
Minced and diced—from the ribs
Powdered—from the ribs

Celery flake
Flaked leaves and stalks of celery that have been dehydrated

Celery fly
A pest that attacks celery, parsnips, and parsley. The adult fly lays eggs on underside of leaves and these eggs develop into maggots that enter the leaves.

Celery knob
See celeriac

celery, oleoresin
A dark green to greenish black product obtained by solvent extraction of celery seed, containing the following:
Propylene glycol 20.0% max.
Resin 73.5% min.
Volatile oil 6.5% min.

Celery salt
A mixture of salt and ground celery seed; used in seasoning

Celery seed (Apium graveolens L.)
The tiny (1/4 in. long), brown, dried fruit and seed (whole or ground) of a plant related to but not the same as the vegetable, or common, celery; used as a spice (has a pronounced fresh celery flavor); India is the source.
Types: whole; ground (medium grind); celery salt (ground seed mixed with salt)
Used for pickling and in salads and salad dressing
Composition: moisture 6–7% (10% max.); protein 18–19%; fat 25–26%; carbohydrate 41–42%; fiber 11–12%; ash 8–10% (10% max.); acid-insoluble ash 2%; average volatile oil 1.75% (v/w) min.; average non-volatile extract 16% min.
Storage (seed): cool, dark, dry place
See Part 2: Spices, Microbial Content

Celery-seed oil
A volatile oil obtained by steam-distillation of the seed of Apium graveolens; used as a flavoring agent in food; saponification value 35–75; sp. gr. 0.871–0.910
Storage: full, tight, glass container in a cool, dark place
celery root
1 cup, peeled and cut into thin strips = 8 oz

celiac Pertaining to the belly or abdomen; a disease in which fats are not absorbed

celiacgia Pain in the abdomen; abdominal colic

cell A unit of living matter. A muscle cell is called a fiber.

cellar, wine Best temperature for wine storage is 55 ± 6°F

cellophane A transparent film made of regenerated cellulose and coated or treated with lacquers or polymers; relatively permeable to air and moisture when wet, less permeable when dry.
See Part 2: Frozen Food Containers; Film Gauge

cellular glass A porous glass used as an insulating material.
See Part 2: Insulating Value

cellular transformation A normal cell changes to a malignant growth by changes in form, structure, or function.

cellulose \([C_6H_{10}O_5]_n\) A carbohydrate polymer made up of glucose units joined in the form of long chains; the links are 1 and 4 as in starch, but the linkage to carbon 1 is beta (linear chain) in cellulose and alpha (helical or spiral chain) in starch. It occurs in plants (one-third of all vegetable matter) and is not digestible by humans. Some cellulose derivatives are used as food stabilizers, thickeners, or texture modifiers.
Cellulose content: wood 40–50%; annual plants 35–40%; cotton fiber 98%
See Part 2: Cellulose Formula; Histochemical Test; Wheat, Parts of Grain

cellulose acetate A cellulose ester, used as a packaging material.
See Part 2: Plastic Permeability

cellulose gum See carboxymethylcellulose

 cellulose, microcrystalline (cellulose gel) Purified, partially depolymerized cellulose used as an anti-caking agent, binding agent, tableting aid, disintegrating agent, or dispersing agent.
Storage: well-closed container.

cellulosics Cellulose material esterified with thermoplastics.

cell wall A rather heavy structure in plants that is outside the cell membrane and gives the cell rigidity and strength. It is composed primarily of cellulose.

Celotex A proprietary product made from sugar-cane waste (bagasse) and used as insulating board.
See Part 2: Insulation

Celsius Temperature scale also known as the centigrade scale in which one degree is equivalent to \(\frac{10}{9}\) the difference between the temperature of melting ice and boiling water at standard atmospheric pressure.

celtuce (Lactuca sativa asparagina) A vegetable salad plant; young leaves are eaten as lettuce or "greens;" stems (12 inch) are peeled and eaten like celery, raw or cooked. A plant that looks like a cross between celery and lettuce and matures in 90 days.

cement A mixture of alumina, silica, and lime (often with sand) that will harden when water is added. Such mixtures are called hydraulic cements, the water entering into a chemical reaction to form a hydrate. Portland cement is of this type.

1 barrel = 4 bags = 376 lb
See Part 2: Insulation, Conductivity Values
c-enamel can coating See zinc oxide can coating

cendawen jerami Straw mushroom

cendré A blue-colored cheese, obtained by maturing in wood ashes

cendré d'Argonne A rocroi-type cheese matured in wood ashes

cendré de Champagne A rocroi-type cheese matured in wood ashes

cendré de la Brie Cow's-milk cheese

cendré de l'aisy A soft cheese made from cow's milk with washed rind; matured in ashes from vines

centare A measure of area equivalent to 1 square meter.

1 centare = 1550 square inches (in.\(^2\))
centaury A bitter-tasting herb

center Middle point or place.
See Part 2: Pork Loin Nomenclature; Pork Yield

center slice A slice cut no more than 1 in. on either side of the center

centi- (one-hundredth; 0.01) A prefix for quantities 100 times as small as the base unit.

centigrade (°C) A temperature scale in standard scientific use invented by Celsius and now generally called by his name: boiling point of water = 100°C; freezing point of water = 0°C

\[ ^\circ C = \frac{9}{5}(^\circ F - 32) \quad ^\circ F = \text{Fahrenheit} \]

\[ ^\circ C = R(\frac{4}{5}) \quad R = \text{Réaumur} \]

\[ ^\circ K = ^\circ C + 273.15 \quad K = \text{kelvin} \]

\[ ^\circ F = (^\circ C \times \frac{9}{5}) + 32 \]

\[ ^\circ R = ^\circ C \times \frac{4}{5} \]
See Part 2: Temperature

centigram (cg) A unit of metric weight

1 cg = 10 milligrams (mg) = 10 cubic millimeters (mm\(^3\)) of water = 0.01 gram (g)
centiliter (cl) A unit of metric volume

1 cl = 10 milliliters (ml) = 10 cubic centimeters (cm\(^3\)) = 2.705 drams = 0.6103 cubic inch (in.\(^3\)) = 0.338 fluid ounce (oz; U.S.) = 0.3382 ounce (oz; 4 g fluid) = 0.01 liter (l)
centimeter (cm) A unit of metric length

1 cm = \(1 \times 10^8\) angstroms (Å) = 10,000 microns (μm) = 393.7 mils = 10 millimeters (mm) = 0.3937 inch (in.; U.S.) = 0.01094 yard (yd) = 10\(^{-2}\) meter (m) = 0.032808 foot (ft; U.S.) = 1 \(\times 10^{-5}\) kilometer (km) = 6.2137 \(\times 10^{-6}\) statute U.S. mile

2.54 cm = 1 in.
30.48 cm = 1 ft
Centrifugal force (grams)

\[ \text{Centrifugal force (grams)} = 1.118 \times \text{(weight in grams)} \times \text{(radius in centimeters)} \times (\text{rpm})^2 \times 10^{-5} \]

Centrifugal force (pounds)

\[ \text{Centrifugal force (pounds)} = \frac{32.16 \times (\text{weight of body in pounds})}{\text{(velocity in feet per second)}^2} \]

\[ = \frac{\text{(velocity in feet per second)}^2}{\text{(velocity in feet per second)}^2} \times (\text{radius of circle in feet})^2 \]

Centrifuging

Spinning a mixture and using the centrifugal force to separate ingredients of differing densities; used to clarify extracts. Separation by centrifugal force, e.g., separating cream from milk

Centriole

A division center of a cell; meiotic pole

Centro Internacional de Agricultura Tropical (CIAT)

An agricultural research center, located in Columbia, that concentrates on the common bean, rice, beef, cassava, and maize; part of the Consultative Group for International Research (CGIAR)

Centro Internacional de la Papa

See Potato center

Centro Internacional de Mejoramiento de Maíz y Trigo See Wheat and Corn Center

century plant

A Mexican Agave plant that flowers once and dies

See Part 2: Poisonous Plants

tc (Boletus edulis)

An edible fungus with a smooth brown cap, white flesh, tinged with pink, and a stout stalk; often 6-in. diam. with a strong flavor; often canned in olive oil or sauce

tce

A species of Boletus mushroom; edible fungus

tcephalin

A phospholipid associated with lecithins in egg yolk and some animal tissues; a compound of fatty acids and phosphorus

tcephalopod

Octopus; squid

tcerasella

Cherry brandy

tcercospora leaf spot (angular leaf spot)

A fungal disease of muscadine grapes; it can be easily controlled by the application of a fungicide

tcercospora spot (blotch)

An avocado disease caused by Cercospora purpurea; small, scattered, slightly sunken, greenish white areas that develop into brown spots that may increase in size to a hard, brown, cracked, dead tissue. The disease does not penetrate the flesh but allows other fungi to do so

tcereal

Dry fruit of certain grasses (e.g., barley, buckwheat, corn, oats, rice, rye, and wheat); used in several forms (e.g., flour, flaked, granulated, malted, meal, puffed, and shredded) for making breakfast food, bread, flour, meal, alimentary paste, and starch. Rice and wheat are used primarily for humans, barley and oats for livestock.

1 cup oatmeal or cereal, not puffed

\[ = \frac{3}{8} \text{ cup farina} \]

\[ = 1 \frac{1}{2} \text{ cups dry cereal, popped or puffed} \]

Storage (breakfast-type): at room temperature, in tightly closed containers; inspect often for weevils.

See Part 2: Calcium, Daily Recommendations; Calories, Daily Recommendations; Cereal By-Products, Composition; Cereal Composition; Cereal Enrichment; Cereal Fortification; Cereals, Vitamin and Mineral Content; Cereal, Nutrient Content; Food Guide; Iron, Daily Recommendations; Niacin, Daily Recommendations; Nicotinic Acid, Food; Portion Size; Protein Factors; Riboflavin, Daily Recommendations; Riboflavin, Food; Spoilage, Carbohydrate Foods; Stor
cereal grains  Grains used for human food; e.g. wheat, rice, or rye

cereal leaf beetle  (Oulema malanopus L.) An insect; the larvae and adults skeletonize leaves of wheat plants

cerebellum  The rear portion of the brain that directs coordination of movements

cerebrum  The front area of the brain that consists of two hemispheres and is responsible for consciousness

Cerelose  Glucose, prepared commercially from starch

Cerelose  A semi-
certosina  A creamy, semisoft, surface-bacteria-ripened, dry sausage made chiefly from finely chopped beef or all beef; it is given a heavy smoke and allowed to dry. 2) A batter-type, cooked, smoked, American sausage made from medium- to coarse-chopped beef and pork, usually with little pork (sometimes equal pork and beef) that is fermented and/or dried or semidried, available in links, rings, or large-diameter casings; max. moisture-protein ratio (MPR) of 3.7:1 and dry MPR of 1.9:1 or less

Cerelose  A variety of alfalfa

Cerelose  A variety of alfalfa

certosa  A creamy, semisoft, surface-bacteria-ripened, mild-flavored, cheese made from cow's milk

certosina  A creamy, white cheese made from cow's milk

cervelat (cervelat; cervelat; cervelet)  1) A semidry sausage made chiefly from finely chopped beef (or all beef) with a little pork; it is given a heavy smoke and allowed to dry. 2) A batter-type, cooked, smoked, American sausage made from medium- to coarse-chopped beef and pork, usually with little pork (sometimes equal pork and beef) that is fermented and/or dried or semidried, available in links, rings, or large-diameter casings; max. moisture-protein ratio (MPR) of 3.7:1 and dry MPR of 1.9:1 or less

Cervelat, Irish  A dry, uncooked, smoked Irish sausage made from medium- to coarse-chopped, medium-seasoned beef and pork that is fermented and stuffed into an artificial casing

Cervelat, Swiss  A moist, cooked, unsmoked French sausage made from medium-chopped, medium-seasoned beef and pork that is fermented and stuffed into a 30- to 40-mm beef casing

Cervelat, French  A moist, uncooked, smoked French sausage made from finely chopped, mildly seasoned beef and pork stuffed into a 30- to 40-mm beef casing

Cervelat, Irish  A dry, uncooked, smoked Irish sausage made from medium- to coarse-chopped, medium-seasoned beef and pork that is fermented and stuffed into an artificial casing

Cervelatwurst  A dry, uncooked, smoked Australian sausage made from medium-chopped, mildly seasoned beef that is stuffed into artificial casings

Cervera  High-fat, soft, hand-pressed discs of sheep's milk cheese

Cervical vertebrae  Neck bones in all mammals, numbered from front to back

Cervix  The opening into the uterus from the vagina

Cesium (Cs)  An alkali metal element; at. no. 55; at. wt. 132.91; Group IA of the Periodic Table; oxidation state +1;

cetoletic  An unsaturated fatty acid occurring in vegetable oils

Cetrizine  See Part 2: Microorganism, Media

cervabcici  Grilled rolls of ground meat
cevitamic acid  See ascorbic acid
Ceylon moss  See agar-agar
Ceylon tea  Black tea grown on the island of Sri Lanka
Cf  Symbol for the element californium
ef.  Confer (compare)
CFR (Code of Federal Register)  Code of federal regulations, which is a codification of the general and permanent rules published in the Federal Register by the executive department and agencies of the federal government
CFTRI  Central Food Technological Research Institute
CGIAR  See Consultative Group for International Agricultural Research
cha  1) A fish sauce. 2) tea
cha (bacha; cha; chaa; char; chaw; ocha)  Tea
chaa  See cha
chabichou  A small, mild, soft, French valencay cheese made from goat’s or cow’s and goat’s milk; shape ranges from a cone to a cylinder. It is aged 1–3 weeks and weighs about 3 oz.
Chablis  A region in Burgundy (east-central France) that is famous for dry, fresh, white wine. A dry, full-flavored, white to straw-colored, fruity, French wine
chabris  A camembert-type cheese made from goat’s milk
Chaetomium  See Part 2: Molds, Mycotoxins
chafer  See rose chafer
chaff  The inedible portion of wheat or other grain that remains after threshing. Glumes, husks or other seed covering, and other plant parts separated from seed in threshing. Storage: full, tight, glass container in a cool, dark place
chaldron  A dry measure; 36 bushels (U.S.) or 32 bushels (Br.) = 1 chaldron
chalef  Knife used by the shochet for slaughtering animals
chalk  Calcium carbonate (CaCO₃)
chalybon  A Greek wine
chambarand  A medium-flavored semisoft cheese
chamberat  A dark-colored, light-textured, French variety of Port du Salut cheese
chambertin  A red Burgundy table wine
chambery  A light, very dry vermouth
chamosis (chammy)  1) A soft leather made from the inner layer of sheepskin; formerly from chamosis (antelope). 2) An edible, horned, hoofed, ruminant mammal
chamosis d’or  A camembert-type cheese made from cow’s milk
chamomile (camomile; Anthemis nobilis; Matricaria recutita)  An Egyptian herb used as tea. Storage: full, tight, glass container in a cool, dark place
Champana  A white-sparkling wine
champenois  A cheese made from cow’s milk
champagne  A white sparkling wine (a restricted name). A blend (cuveé) of wines (10–13% alcohol) from various black and white grapes; a second fermentation in the bottle produces the natural sparkle. Types are brut (driest); extra dry (less dry); sec (sweet); demi-sec (sweeter); doux (sweetest); pink (grape skins removed later in fermentation process) Grapes and growing areas: Black grapes, Montagne de Reims White grapes, Côtes des Blance Other vineyards, River Marne valley Pressings: First pressing—best wine Second pressing Third pressing Fourth pressing—more tannin, more color Bottle = 24–26 oz ½ bottle = 12–13 oz See also brut champagne; Chardonnay; dry champagne; pink champagne; wine
champagne cider  A sparkling cider
champagne glass  1 glass = 5 oz
champagne of teas  Formosa oolong tea
champagna  A white-sparkling wine
champanois  A cheese made from cow’s milk
champignon  Mushroom
champoleon A hard, French rennet cheese
chanar (chanra) The fruit of a South American tree; may be eaten raw or used to make an alcoholic beverage
chance cause A factor caused by random variation in the raw material, the equipment, the process, and personnel
chanco A semisoft, mildly acidic, smooth cheese made from cow’s milk
chang (chhang) A rice beer
chang aa (Nuban gin) A local gin distilled from sorghum beer
change order Purchaser’s written authority to the supplier to modify a purchase order
Changli A black pig with upturned snout and small erect ears, native to Hebei Province and northeast China
Changshan A prolific, black pig that originated in Chekiang Province, China
chanklich Dried, hard spheres of fermented milk or milk curds with herbs and spices and stored under olive oil
channa ki wari Yellow, dried chick-pea (Cicer arietinum) and black gram (Phaseolus mungo) balls that are deep-fat fried
channel cat (Ictalurus punctatus) River catfish
chanra See chanar
Chantecler An American breed of chicken that lays a brown-shelled egg. Varieties; white, partridge
chantelle A creamy, semisoft, mild-flavored cheese made from cow’s milk and ripened by surface bacteria
chanterelle (rzhik; Cantharellus cibarius) A yellow, funnel-shaped, edible mushroom (fungus) that is available fresh or dried
chantilly A dessert, served with cream or whipped cream; sweet, vanilla-flavored whipped cream
chantilly sauce A thick cream, white sauce
chao Sufu soybean curd
chao-ching-yu A rice wine
chao-tsiu A rice beer
chao-source A soft, rich, large, camembert-type, unpasteurized, French cheese, with a fruity flavor and cylindrical shape, made from whole cow’s milk
chap The lower jowl of pig
chapati A flat, round, unleavened, Indian bread
Chapman Stone medium Selective medium for the isolation of staphylococci that uses sodium chloride as the selective agent.
See Part 2: Microorganism, Media
chapon 1) A saltwater redfish (Scorpaena scrofa). 2) Bread seasoned with garlic, olive oil, and vinegar. 3) A cube of bread or bread crust that is saturated with olive oil, vinegar, and garlic, that is tossed with a green salad to impart flavor, and that is often removed before serving
chapon à l’ail Bread crust flavored with garlic See chapon
chaptalisation The addition of sugar to wine to increase fermentation and the alcoholic content
ciaquebitou A soft, white cheese made from goat’s milk and flavored with garlic and herbs
char (Scorpaena salvelinus) 1) Several types of fish ranging from 1 to 30 lb that belong to the salmon family. 2) A freshwater food fish. 3) Red-fleshed trout (Salvelinus spp.). 4) River salmon. 5) Great Lakes fish (Salvelinus namaycush) See Arctic char; ch'a
character A property of a wine that is attributed to the area where the grapes are grown
characteristic See logarithm
character note The separate taste and aroma properties in a single substance
Charbray A cross of French Charolais (\(\frac{4}{5}\)) and Brahman (\(\frac{1}{5}\)) beef cattle, white to cream in color See Part 2: Beef and Dual-Purpose Cattle
charcoal A dark, porous fuel (carbon) made by destructive distillation of wood (wood is covered by soil and a slow fire started underneath the mass which drives off volatile gasses and chars the wood); carbon made from animal or vegetable products by incomplete combustion; 6 lb hardwood yields 1 lb charcoal. Various types are lump (odd size just as it comes from retorts) and briquettes (lump charcoal that is ground, mixed with a starch binder, and pressed into blocks of uniform size). 2 lb charcoal for average size grill; 20 min burning required before ready to cook See carbon, activated
See Part 2: Insulation, Conductivity Values
charcoal agar See Part 2: Microorganism, Media
charcoal rot See Part 2: Sorghum Diseases
charcuterie The art of preparing meat
chard (leaf beet; leaf chard; seakale beet; silver beet; spinach beet; strawberry spinach; Swiss chard; white beet; white leaf beet; Beta vulgaris cicla) Mistakenly called the seakale beet. 1) A beet whose leaf (green, yellow, or red) and stalk are used as food; also, blanched artichoke leaves and cardoon. Young leaves are cooked like spinach, older leaves are used as greens, and stalks are cooked like asparagus; the roots are not edible. 1200 multiple seeds (1-6 plants per seed) per ounce; transplant 12 in. apart in rows 2 ft apart; harvest 50-60 days after planting seed. To cook: Steam 5-12 min or until tender.
Varieties:
Green leaves and red midribs
Rhubarb
Green leaves and white midribs
Fordhook giant
Large white rib
Lucullus
1 bu (12 lbs), fresh = 8-12 pt, frozen
1 pt, frozen = 1-1 1/2 lb, fresh
1 lb = 2 servings
1 serving = 0.5 lb
Composition: moisture 92%; protein 1.4%; fat 0.2%; carbohydrate 4.5%; 125 mg Na/cup
chard

Storage: Wash and drain well; refrigerate in crisper or plastic bag; use in 1–5 days. 2) Inner leaves of cardoons See sea kale; beet; Swiss chard

See Part 2: Minerals, Food; Planting Density; Sugar, Vegetables; Cooking Composition; Vegetable Cooking; Vegetable Frozen Yield; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Plants; Vegetables, Cooking Frozen; Vegetable Yields;

Chardonnay (pineau blanc) 1) A variety of yellowish green grape that is fermented to yield white Burgundy or champagne. 2) A rich, dry, full-bodied white wine See also wine

charlock See wild mustard

charolles A cheese made from goat's milk

charolais (Charolais) 1) A French white breed of beef cattle that is known for its growth rate and ability to survive on sparse rangeland. 2) A soft cheese made from cow's and/or goat's milk; may be consumed fresh or matured

See Part 2: Beef and Dual-Purpose Cattle; Gestation Periods

charolais A cheese made from goat's milk

charqui Flat sheets of beef, sheep, llama, or alpaca jerky See jerked beef

Chartreuse 1) A green, herb liqueur with a high alcohol content. 2) A sweet, yellow, herb liqueur with a low alcohol content

char tsai A slightly hot, pickled vegetable

car siu Roasted, sweet, pork that has been barbecued with spices and honey

chashol de chaschos A hard, rennet cheese made from skim milk

chascol A Swiss cheese made from cow's or goat's milk

chashire A cantal-type cheese made from waxed or oiled rind

cha-soh kook Vegetable soup

Chassagne-Montrachet A full-bodied, dry, red or white wine

chasseur (hunter style) 1) A tomato–wine sauce with mushrooms, peppers, olives, and garlic. 2) A coarse-chopped salami made from beef, pork, or goat meat. 3) A dry, uncooked, unamoked French sausage made from coarsely chopped, medium-seasoned beef, pork, and goat (sometimes made with horse or donkey meat), fermented and stuffed into pork or artificial casings

chasseur, à la 1) A sauce. 2) Poultry or game cooked with white wine, mushrooms, and shallots

chasseur sauce A white sauce containing meat glaze, butter, mushrooms, shallots, and parsley

cha sui See chop suey

château A wine-producing estate

château-bottled Put in the bottle at the chateau where the wine was made

chateaubriand Thick (min. 3 in.) beef; French porterhouse steak; boneless center cut of the tenderloin covered with a small amount of fat

See Part 2: Portion Size

Châteauneuf-du-Pape A dark red, strong wine

chats The tailings or rejects in a mining operation

See Part 2: Fertilizer Materials

chau A rice wine

chau vont A brown sauce, made from meat stock and sherry, set with aspic or gelatin; also a white sauce set with aspic or gelatin

chaumoing oil A vegetable oil used for treatment of leprosy; composed of glycerides of chaumoing and hydnocarpic acids

See Part 2: Fatty Acids and Their Properties

chaumes A cow's-milk cream cheese that has matured and has a yellow-brown rind

chaumont A munster-type cheese made from cow's milk

chaunay A valencay-type cheese made from goat's milk

chaux d'Abel A Swiss cheese made from cow's milk

chau yau A soy sauce that sometimes contains sugar

chavignol Soft, small cheese made from goat's milk

chaw See ch'a

chayote (chayotli; christophine; chuchu; custard marrow; mango squash; mirliton; vegetable pear; Sechium edule swartz) A herbaceous, perennial vine whose fruit may differ in shape (often pear-shaped or round), size (3–8 in. long) and color (white to dark green); has a furrowed surface. The fruit quality is similar to a squash; it has white flesh and contains a single seed, often 2 in. long.

Parts of plant that are used:

Fleshy root (up to 20 lb): used like a yam, sometimes candied

Fruit—cooked (boil 15–20 min until tender; retains firmness) in sauces, puddings, tarts, and salads

Seed—edible in young fruit; boiled or sliced and fried in butter

Young shoots and leaves—used as a vegetable

Fresh fruit (up to 2 lb):

1 serving = \( \frac{1}{2} \) large chayote

Composition (raw): moisture 92%; protein 0.6%; fat 0.1%; carbohydrate 7%; ash 0.4%

Storage: in refrigerator, like summer squash

See vegetable pear

See Part 2: Vegetables, Classification; Vegetable Storage

CHC Chlorinated hydrocarbons See chlorinated hydrocarbon

cheat (Bromus secalinus L.) An annual weed

checharron Brown lard that is highly flavored

checkerberry An evergreen shrub with a red berry from which oil of wintergreen is obtained

See wineberry

checkerberry extract See wintergreen
**checking** The pattern formed when a coating cracks into many small segments

**check-off** A small amount of money per unit of product is deducted from the proceeds of a farm commodity when it is sold by the first buyer for the purpose of supporting research or promoting sales of that product

**cheeky** A cow's-milk cheese

**cheddar cheese (American; American cheddar)** An American and English cheese made from cow's milk; it is smooth, white or orange, semihard to hard, aged (mild, medium or mellow, aged or sharp), matured for 3 months to over 1 yr, ripened by bacteria (*Lactobacilli* and *Streptococcus lactis*), and is cylindrical or block-shaped (4–30 kg, often in a red or black wrapper. The cheese is made from pasteurized, inoculated, whole milk (10 lb milk per 1 lb cheese), with rennet added; the curd is cooked at 98–106°F and pressed for 15–20 h; cured at 35–55°F; the cheese is used in sandwiches, cooked, or as a dessert cheese; its shape is often a 13½ - 15-in. diam. cylinder, 10–12 in. high, weighing 40–50 lb.

4 cups, grated = 1 lb
1-in. cube = 6 oz
1 cup, diced = 4.6 oz
1 cup, grated = 3.9 oz
1 cup, shredded = 4 oz

Composition: moisture 39% max. (37% av.); solids contain not less than 50% milk fat; calcium chloride 0.02% max.; protein 22–25%; fat 32–33% (min. 50% in solids or min. 30.5% in cheese); carbohydrate 2%; ash 4%; salt 1.5–2% (regular 176–240 mg Na/oz; low-sodium 6 mg Na/oz); calcium 0.7–0.75%; pH 5.9

Natural:
- 1 oz = 115 calories
- 1-in. cube = 70 calories
- ½ cup, grated (2 oz) = 225 calories

USDA grades:
- U.S. Grade AA
- U.S. Grade A

Other cheddar types:
- Colby (softer body, open texture, milder flavor)
- Monterey Jack (white, higher moisture, soft, open texture)
- New England and Vermont (traditionally white)
- Stirred or granular curd (more open texture)

Storage: Wrap tightly and refrigerate; will keep several months unless mold develops (it can be cut off). Can be frozen (0°F) if no more than 1 in. thick; use within 6 months.

See Part 2: Cheese Characteristics; Cheese Composition; Cheese, Vitamin Content; Food, Composition; Milk and Cheese Composition; Milk and Milk Products, Vitamin Content; Vitamin A, Food; Vitamin A, Milk and Milk Products

**cheddar cheese, sharp** The original apple-pie cheese

**cheddar, English** An "all-purpose" cheese that has a rich, nutty taste and a creamy texture

Types:
- Mature (stronger flavor)
- Mild (nutty, bland flavor)

**cheddam** An edam-type cheese

**cheese-fan** Small cubes of sufu that are cured and aged in wine

**cheek meat** Meat from the jaw area, used in sausage; 5 lb cheek and head meat per 1000-lb steer

**Cheerios** A ready-to-eat cereal made by General Mills

1 cup = 0.8 oz
Composition: sugar 3%; 330 mg Na/oz

**cheese** 1) A food made from milk (from many kinds of mammals); pressed curds, obtained in several ways: casein with some of the fat and some of the salts separated by rennet from milk; from the concentrated curd of milk; obtained from milk by coagulating (with an enzyme or acid); separating most of the milk solids from the milk by curdling with rennet, bacterial culture, or both; the curd is separated from the whey by heating, stirring, and pressing; fermented milk in which the protein is formed into curds (fresh soft cheese), may be pressed to make harder and matured for various lengths of time to intensify flavor.

Essential processing steps:
1. Adjust temperature to 86–96°F.
2. Add starter culture (lactic acid and flavor-producing varieties).
3. Color may be added or removed.
4. Add rennet when proper acidity is reached.
5. Culturing or ripening, usually 15–90 min
6. Curd is cut.
7. Stir.
9. Remove curd from whey.

Ten pounds of milk are required to make 1 lb of cheese. In surface-ripened cheese, microorganisms are added to the exterior of the cheese.

- Types of cheese:
  - Amount of moisture
    - Semihard
    - Soft
  - Extent of ripening
    - Mild
    - Strong
  - Fermented
    - Hard
    - Soft
    - Fermented curds—fresh; eaten soon after manufacturing
  - Kind of ripening
    - Bacteria
    - Mold
    - Scalded curds
    - Semihard (brick, Roquefort)
    - Soft (cream cheese, camembert, cottage cheese)—not pressed and salted

- Categories:
  - Cooking
    - Grating (parmesan, romano)
  - Eating
    - Blue-veined (gorgonzola, roquefort, stilton)
    - Chèvre (goat)—strong flavor
    - French creamy (cottage cheese, cream cheese, neufchâtel)
    - Processed (American cheese, canned cheese, cheese spread)
    - Semihard (cheddar, Swiss)
Semisoft (monastery cheese)
Soft-ripened (brie, camembert, double- and triple-crèmes)—oozes at room temperature
The USDA grade "Quality Approved" is used for cheeses that have no official grade standards. Cheese grading considers the following qualities: body, color, finish and appearance, flavor, and texture.

Flavors:
Mild—aged 1–2 months
Mellow—aged 2–6 months
Nippy—aged 6–12 months
Sharp—aged over 12 months

Degree of flavor: mild, or current-aged; mellow, or medium-aged; sharp, or aged
To serve: Let stand covered 30 min at room temperature for full flavor (2 h for spreading)

4 oz cheese = 1 cup, shredded
1 cup, grated = 110 g (4 oz)

Composition: moisture 52.5%; protein 14%; fat 29%; carbohydrate 1.5%; ash 3%

cheese, 10% added moisture, 30% fat)
Composition: moisture 52.5%; protein 14%; fat 29%; carbohydrate 1.5%; ash 3%

cheese grade U.S. Grade AA has a fine, pleasing flavor, a smooth, compact texture, a uniform color, and an attractive appearance

cheese, grating Any hard-ripened cheese that is ground, grated, or shredded and dried; used as a condiment; e.g., asiago, parmesan, provolone, romano

cheese, lactic Cheese made by pasteurizing and inoculating whole milk

cheese, mold Mold on cheese usually does not hurt the cheese, just trim it off.

cheese, natural Cheese made from milk with no further processing
Classes: unripened, soft-ripened, semisoft-ripened, firm-ripened, very hard ripened, mold-ripened

cheese, potted Cheese mixed with butter and sometimes herbs and/or wine

cheese, process See process cheese; process cheese food; process cheese spread

cheese, salami A moist, cooked, unsmoked Australian sausage made from medium-chopped, medium-seasoned beef with chunks of cheese, stuffed into artificial casings

cheese, fruit See fruit cheese

cheesefurter (cheese smokie) 1) A frankfurter-type product made with pork and placed in a casing with sufficient cheese to give a definite characteristic cheese taste, or cheese mixed with a meat emulsion. 2) A moist, cooked, smoked American sausage made from finely chopped, mildly seasoned beef, pork, and veal with cheese stuffed into pork, sheep, or artificial casings. A batter-type product available in medium-to-large-diameter links or large-diameter casings for slicing. (Contains max. 3.5% additives exclusive of cheese, 10% added moisture, 30% fat)

cheese, American See cheddar cheese

cheese, appetizer For example, boursin, brie, colby, mild cheddar

cheese, blue See blue

cheese bread See bread, cheese

cheeseburger Composition: 709 mg Na/burger (111 g)

cheesecake One of many varieties of cake that contain cheese

cheese, cheddar See cheddar cheese
See Part 2: Cholesterol Control

cheese cracker See Part 2: Fermented Ingredients

cheese, cream See cheese; cream cheese

cheese, curd 2 ounces per serving

cheese dog (Cheese Dog) A cheese center surrounded by a frankfurter emulsion

cheese food A mixture of cheese, milk solids, and other homogeneous ingredients; a processed cheese made from cow's milk, with added cream or whey

Composition: 337–440 mg Na/oz
Storage: After opening, store in refrigerator and use within 1–2 weeks

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cheese sauce

<table>
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<tr>
<th>Composition</th>
<th>Moisture (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Carbohydrate (%)</th>
<th>Fiber (%)</th>
<th>Ash (%)</th>
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<tr>
<td>Dehydrated</td>
<td>4.1</td>
<td>22.7</td>
<td>25.4</td>
<td>33.7</td>
<td>0.1</td>
<td>14.1</td>
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<td>Prepared with milk</td>
<td>77.4</td>
<td>5.7</td>
<td>6.1</td>
<td>8.3</td>
<td>0.01</td>
<td>2.4</td>
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cheese skipper See ham skipper
See Part 2: Cheese Skipper

cheese soufflé A foamy omelet made with eggs and white sauce and flavored with cheese
cheese soup, canned

<table>
<thead>
<tr>
<th>Composition</th>
<th>Condensed</th>
<th>Condensed, prepared with</th>
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<tbody>
<tr>
<td></td>
<td>Milk</td>
<td>Water</td>
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<td>Moisture (%)</td>
<td>77.1</td>
<td>82.4</td>
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<td></td>
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<td>88.1</td>
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<td>Protein (%)</td>
<td>4.2</td>
<td>3.8</td>
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<td>2.2</td>
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<tr>
<td>Fat (%)</td>
<td>8.1</td>
<td>5.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.2</td>
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<tr>
<td>Carbohydrate (%)</td>
<td>8.2</td>
<td>6.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.3</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.3</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.2</td>
</tr>
</tbody>
</table>

cheese spread A processed cheese made from cow's milk, that has been heated to 87-90°C
Composition: 381 mg Na/oz
Storage: After opening, cover and store in refrigerator; use within 1-2 weeks

dairy cheese A white, salty, hard or crumbly cheese, made from sheep's, goat's, or cow's milk, that is stored in a salt brine and whey mixture

Cheese Dog See cheese dog
deneo A white or red wine
dela The claw of a crustacean, e.g., crab or lobster
delate (claw) A structure in which an organic compound attaches to a metal ion
delsea bun A yeast bun containing fruit, currants, and butter, sprinkled with coarse sugar crystals
delchemical acidulant An additive used to increase the acidity of a product to which it is added
delchemically pure (CP) A grade of chemical purity that is suitable for routine use; CP indicates absence of any detectable impurity
delchemical migration Movement of chemicals from packaging material into food. These chemicals are considered as an additive by the Food and Drug Administration and are subject to regulatory control
delchemical oxygen demand (COD) A test to measure the total organic matter that can be oxidized by a strong oxidizing agent (e.g., potassium dichromate)
delchemical poisoning Poisoning due to the presence of a toxic substance in the body, resulting from ingestion, inhalation, or skin absorption
See Part 2: Chemical Poisoning
delchemical score (of a protein) The content of each essential amino acid in a food protein is expressed as a percentage of the content of the same amino acid in the same quantity of a protein selected as a standard. The amino acid scoring the lowest percentage is called the limiting amino acid; this percentage is the chemical score.
delchemical swell Swelling of a can gas produced in the can by the action of food on the container (hydrogen) or by the decomposition of food (carbon dioxide). No viable organisms can be found.
delmchemical clearance The concept that foods of similar chemical composition irradiated under similar conditions will generate radiolytic products similar in type and extent and for regulatory purposes can be treated generically
delchemise, en Unpeeled, boiled potatoes
delchemoreceptor Reception organs that respond to chemical stimuli, e.g., taste buds, olfactory nerve...
<table>
<thead>
<tr>
<th>Type</th>
<th>Variety</th>
<th>Pollination</th>
<th>Ripens</th>
<th>Color</th>
<th>Size</th>
<th>Quality</th>
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</thead>
<tbody>
<tr>
<td>Bird</td>
<td>Dalmatian (small fruit)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Sour (P. cerasus), or cooking (acid; tart; lighter red and softer than sweet cherries)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Sweet (P. avium), or table</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flavoring rum</td>
<td>Maraschino liqueur</td>
<td></td>
<td></td>
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<tr>
<td>Baking, cooking, dessert, distilling, jam, liqueurs, maraschino</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Fruit</td>
<td></td>
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<th>Quality</th>
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<tbody>
<tr>
<td>Bush</td>
<td>Hansen’s (P. besseyi)</td>
<td>Two or more needed; 4–5 ft tall</td>
<td>Black</td>
<td>Jam, jelly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nanking (P. tomentosa)</td>
<td></td>
<td>6–8 ft tall</td>
<td>Red</td>
<td>0.5 in.</td>
<td>Eating, jam</td>
<td></td>
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<tr>
<td>Duke*</td>
<td>Brassington</td>
<td>With sweet</td>
<td>Early</td>
<td>Red</td>
<td>Low yield; med.</td>
<td></td>
</tr>
<tr>
<td>Reine Hortense</td>
<td></td>
<td>With sweet</td>
<td>Midseason</td>
<td>Light red</td>
<td>Large</td>
<td>Sweet, soft, poor keeper</td>
</tr>
<tr>
<td>Royal Duke</td>
<td></td>
<td>With sour</td>
<td>Late</td>
<td>Dark red</td>
<td>High yield; med.</td>
<td>Sour</td>
</tr>
<tr>
<td>Sour†</td>
<td>Early Richmond (Kentish; May Pie)</td>
<td>Self-fruitful</td>
<td>Early</td>
<td>Light red; white flesh; firm</td>
<td>Small-med.</td>
<td>Fair</td>
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<tr>
<td>English Morello</td>
<td></td>
<td>Self-fruitful</td>
<td>Late</td>
<td>Almost black; red flesh; red juice; white flesh; firm</td>
<td>Low yield; med.</td>
<td>High in sugar and acid (tart); good</td>
</tr>
<tr>
<td>Montmourency (most popular)</td>
<td>Self-fruitful</td>
<td>Midseason, July</td>
<td>Bright red; white flesh; firm</td>
<td>Large; high yield</td>
<td>High; rich flavor; fresh, pies, preserves</td>
<td></td>
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<tr>
<td>Shook</td>
<td>Cross-pollination</td>
<td>Early</td>
<td>Deep red</td>
<td>Med.</td>
<td>High; mildly acid; sauces, pies, dessert</td>
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<tr>
<td>Meteor</td>
<td></td>
<td>Midseason</td>
<td>Light; bright red</td>
<td>Med. small</td>
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<tr>
<td>Sour DWark</td>
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<td></td>
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<tr>
<td>Sweet†</td>
<td>Bing</td>
<td>Cross-pollination</td>
<td>Midseason</td>
<td>Dark red</td>
<td>Small-med.</td>
<td>Med.</td>
</tr>
<tr>
<td>Black Tartarian (most popular)</td>
<td></td>
<td></td>
<td></td>
<td>Dark red-black</td>
<td>Large</td>
<td>High; firm</td>
</tr>
<tr>
<td>Emperor Francis Gold</td>
<td>Cross-pollination</td>
<td>Late</td>
<td>Pink-yellow</td>
<td>Large</td>
<td>Ideal for dipping</td>
<td></td>
</tr>
<tr>
<td>Hedelfinger</td>
<td>Cross-pollination</td>
<td>Late</td>
<td>Light yellow</td>
<td>Small</td>
<td>Canning</td>
<td></td>
</tr>
<tr>
<td>Napoleon (Royal Anne; bigarreau type)</td>
<td>Cross-pollination</td>
<td>Midseason</td>
<td>Light yellow; pink blush</td>
<td>Large</td>
<td>High; firm</td>
<td></td>
</tr>
<tr>
<td>Rainier</td>
<td>Cross-pollination</td>
<td>Mid.-late</td>
<td>Dark red-black</td>
<td>Large; firm</td>
<td>High; firm</td>
<td></td>
</tr>
<tr>
<td>Schmidt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seneca (heart type)</td>
<td>Cross-pollination</td>
<td>Very early</td>
<td>Red</td>
<td>Med.</td>
<td>Good; soft</td>
<td></td>
</tr>
<tr>
<td>Van</td>
<td>Cross-pollination</td>
<td>Late</td>
<td>Dark red</td>
<td>Large</td>
<td>High; firm</td>
<td></td>
</tr>
<tr>
<td>Vega</td>
<td>Cross-pollination</td>
<td>Early</td>
<td>Light yellow; red blush</td>
<td>Large</td>
<td>For brining</td>
<td></td>
</tr>
<tr>
<td>Victor</td>
<td>Cross-pollination</td>
<td>Early</td>
<td>Light; pink blush</td>
<td>Med.-large</td>
<td>Firm</td>
<td></td>
</tr>
<tr>
<td>Windsor (bigarreau type)</td>
<td>Cross-pollination</td>
<td>Med.-late</td>
<td>Dark black</td>
<td>Med.-firm</td>
<td>Firm</td>
<td></td>
</tr>
<tr>
<td>Yellow Spanish</td>
<td>Cross-pollination</td>
<td>Midseason</td>
<td>Yellow; pink blush</td>
<td>Small</td>
<td>Good</td>
<td></td>
</tr>
</tbody>
</table>

* Hybrid between sweet and sour does not ship well
† Tart; used in pies
†† Heart tender (heart-shaped, soft-fleshed, good flavor); bigarreau (round, firm)
Dessert, or sweet (cont.)
Queen Anne
White and Black Hearts
Geans (guignes)—sweet, tender, juicy; dark flesh; light and dark skin
Black Tartarian
Elton Heart
Frogmore
Sour (P. cerasus):
Amarelles—red flesh
Morellos—black flesh
Duke:
Hybrids between sweet and sour cherries; light and dark flesh; use for dessert, cooking, brandy
May Duke
Royale
Varieties available canned (color and styles):
Sour—pitted, in syrup; pitted, in water
Sweet
Black Bing (purplish black)—pitted, in syrup; pitted, in water; unpitted, in syrup
Lambert (black)—pitted, in syrup; pitted, in water; unpitted, in syrup
Royal Anne (white with red cheek, turns brown on cooking)—pitted, in syrup; unpitted, in syrup; unpitted, in water

Pitted means not more than 1 pit/20 oz
Canned styles available:
Dark (often used for cherry jubilee)
Pitted
Maraschino (cocktail cherries)—flavored and artificially colored sweet cherries with pits removed; with or without stems
Red tart or pie cherries
In water
Ready-to-use pie filling mix
Sweet
Light (most are Royal Anne)
Not pitted (most)

Drained weight of cherries:
No. 1 can 10.5 oz
No. 2 can 12–13 oz
No. 2 ½ can 18–19 oz
No. 10 can 68–72 oz

Composition: Vitamin A 620 IU/100 g; ascorbic acid 8 mg/100 g; fiber (pitted) 1.1%

<table>
<thead>
<tr>
<th>Moisture (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Carbohydrate (%)</th>
<th>Ash (%)</th>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sour</td>
<td>84</td>
<td>1.3</td>
<td>14</td>
<td>0.5</td>
<td>3.1–4</td>
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<tr>
<td>Sweet</td>
<td>80</td>
<td>1.3</td>
<td>17</td>
<td>0.5</td>
<td>3.5–4.4</td>
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</tbody>
</table>

Count in no. 2 ½ can

<table>
<thead>
<tr>
<th>Type</th>
<th>Fancy</th>
<th>Choice</th>
<th>Standard</th>
</tr>
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<tbody>
<tr>
<td>Black</td>
<td>100</td>
<td>115</td>
<td>155</td>
</tr>
<tr>
<td>Royal Anne</td>
<td>80</td>
<td>95</td>
<td>110</td>
</tr>
</tbody>
</table>

Refuse: pits 5–6%
Not pitted:
1 case (24) No. 2 ½ cans = 0.023 ton fresh cherries
1 bu, fresh = 56 lb
= 36–44 pt, frozen

cherry, candied (glacé cherry) 163

1 crate, fresh = 24 qt
= 45–55 lb
= 18–22 qt, canned
1 (25-lb) lug = 22 pt, canned
1 crate, 16-qt chip box = 22 lb
1 lug (4.1 x 11.5 x 14 in.) = 16 lb
1 pt, frozen = 1.25–1.5 lb, fresh
20 oz, frozen = 4–5 servings
1 ½ qt, fresh = 1 qt, canned
1 lb, fresh = 4–7 servings
= 4 cups
1 lb = 120 med. cherries
6–8 cups, fresh = 1 qt, canned
2–2.5 lb, fresh = 1 qt, canned
1 qt, fresh = 2 cups, pitted
= 1 lb, frozen
= 6 servings
1 pt, frozen = 1.25–1.5 lb, fresh
1 serving = 0.5 cups

Pitted:
1 bu, fresh = 56 lb = 25 qt, canned
1 ½–2 ½ lb, fresh = 1 qt canned
1 ½–2 qt, fresh = 1 qt, canned
1 lb, fresh = 2 ½ cups
1 lb, pitted = 1 qt
= 3 servings
1 cup, pitted = 5.4 oz, fresh sour
= 5.8 oz, fresh sweet
1 cup, canned, pitted, heavy syrup = 9.2 oz, sour
= 8.4–8.6 oz, sweet
1 cup, canned, water-pack, pitted, solids and liquid = 8–8.6 oz, sour
= 8.8 oz, sweet
1 cherry, pitted = 7 g

Storage: Keep whole, unstemmed; uncovered (85–90% relative humidity), or can be covered if moisture loss is a problem; unwashed; refrigerate (31–32°F); use within 1–10 days; freezing point 24–28°F

See chokecherry; wild cherry

See Part 2: Calories, Daily Recommendations; Canned Yield; Cherries, Canned Weights; Cherry Brix; Cherry Composition; Flavor Ingredients, Taste and Flavor Type; Flavors, Beverage; Frozen Food Storage; Fruit and Nut Rootstock; Fruit and Vegetables, Composition; Fruit, Availability; Fruit Harvest Dates; Fruit Classification; Fruit Composition; Fruit, Cooking; Fruit Frozen Yield; Fruit, Growing Season, Storage Life; Fruit Sauces; Fruit Servings per Pound; Fruit Storage; Minerals, Food; Organic Acids in Fruits and Vegetables; Plant Foods, Composition; Standards, Processed Fruit and Vegetable Products; Storage; Sugar, Fruit; Transit Temperature; Vitamin A; Wine, Sweet

cherry, acerola  See acerola cherry

cherry, American (Prunus) An astringent cherry that grows on a bushlike tree

cherry brandy A dry to sweet liqueur flavored with cherry or cherry kernel

cherry, candied (glacé cherry)
1. Royal Anne cherries are repeatedly cooked in colored syrup until saturated with sugar.
2. Drained
cherry, candied (glacé cherry)

3. Dried
   1 cup, red or green = 6 oz
   See candied fruit

cherry, canned In addition to cherries, may also contain natural and artificial flavors, spice, vinegar, lemon juice, or organic acid

<table>
<thead>
<tr>
<th>Percentage of sucrose in syrup</th>
<th>Sweet</th>
<th>Red Tart</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extra light</td>
<td>&lt; 16</td>
<td>&lt; 18</td>
</tr>
<tr>
<td>Light</td>
<td>16–20</td>
<td>18–22</td>
</tr>
<tr>
<td>Heavy</td>
<td>20–25</td>
<td>22–28</td>
</tr>
<tr>
<td>Extra heavy</td>
<td>25–35</td>
<td>28–45</td>
</tr>
</tbody>
</table>

Varieties:
Maraschino (cocktail cherry)—sweet cherry; artificially colored; flavored syrup; pits removed; with and without stems
Red tart (pie)—pitted; packed in water; ready-to-use pie filling mix
Sweet
Light (Royal Anne)—usually not pitted (some pitted)
Dark—usually pitted

cherry dessert See cherry, maraschino

cherry flavoring Essential oil of sweet cherry mixed with bitter almond oil, synthetic flavor, alcohol, and water

cherry fruit fly The adult is black with yellow bands around the body and wings marked with dark bands; about one-half the size of a house fly. The maggot is white and legless, up to ⅛ in. long; host plants are sweet and sour cherries.

Damage: Adult female lays eggs in the fruit. Larvae feed on the cherry flesh, beginning near the pit, making the pit separate from the pulp, which looks decayed.

Control: spray

cherry fruit worm The adult is a small, grayish black moth with a wing span of about ½ in. The larva is a whitish pink worm with a black head; up to ⅛ in. long.

Damage: Larva bores into fruit and feeds on pulp

cherry gum A gum similar to arabic exuded from Prunus species

See Part 2: Pentosans

cherry herring A cherry brandy

cherry jam Jam made from cherries

Defect action level: average microscopic mold count of 30%

cherry, Jamaica The fruit of a West Indian fig tree

cherry juice Juice extracted from sour cherries and sweetened with sugar

cherry laurel A toxic plant of the cherry family See also bay leaves

See Part 2: Poisonous Plants

cherry leaf spot A disease caused by a fungus that affects the leaves (causing small purple spots, which later turn brown and then yellow, and then the leaves drop) and petioles of cherry trees

Control: fungicide spray

cherry, maraschino (dessert cherry) A Royal Anne cherry that is processed in the following manner:
1. Picked before ripe (before red cheek appears)
2. Placed in brine
3. Bleached with sulfuric acid or sulfur dioxide
4. Stemmed and pitted
5. Washed
6. Put in syrup of increasing density
7. Artificial red or green dye added
8. Artificial flavor added
9. Packed in syrup

cherry pie Composition:
⅛ of 9-in. pie = 310 calories
   = 169 mg Na/⅛ pie (71 g)

See Part 2: Baked Products, Frozen Storage Life

cherry pie, frozen No artificial sweeteners may be used; not more than 15% cherries may be blemished

cherry rocher A cherry brandy

cherry salmon (Oncorhynchus masou) A food fish

cherry sauce A fruit sauce made from cooked sweet or sour cherries and sugar; sometimes cinnamon, nutmeg, or grated lemon rind is added.

cherry slug See pear slug

cherrystone A small, hard-shelled clam See also clam

cherry, Surinam A dark red, 8-ribbed, acid, slightly bitter fruit (1-in. diam.)

cherry, sweet 1 cup, dark or light = 0.3 lb

See cherry

cherry tomato See tomato

cherry, wild A subtropical fruit with sour, purple skin and sweet, maroon flesh

cherry wine A cherry brandy

chervil (sweet cicely; Anthriscus cerefolium L. Hoffm; Chaerophyllum tuberosum) A small, parsnip-rooted (parsley family), annual or biennial herb with delicate, white flowers and a root that looks like a brownish carrot with yellow flesh, used like carrots; it has a parsleylike flavor and a taste slightly suggestive of licorice; its leaves are used whole or ground; curled leaves used fresh for salads and soups and garnishing. Matures in 80 days and should be used fresh.

Types: salad chervil; turnip-rooted chervil

Varieties: curled leaf; straight leaf

Composition (fresh): moisture 81%; protein 3%; fat 1%; carbohydrate 12%; ash 3.5%

Composition (dried): moisture 7–8%; protein 23–24%; fat 3–4%; carbohydrate 49–50%; fiber 11–12%; ash 16–17%

See Part 2: Planting Density

chervil, bulbous A biennial plant with an aromatic, tuberous root

cheshire cheese (chester cheese) A full-cream, hard pressed, cow’s-milk cheese made in England; it resembles cheddar and when aged it has a sharp flavor; 45% fat on a dry-weight basis; there are red,
white, or blue versions; used in salads, sandwiches, dessert, and in cooking. It is made from whole pasteurized and inoculated milk, with rennet added, that is scalded, textured, and pressed; aged 12-18 months

Types:
- Blue (matured)
- Red (colored with annatto)
- White (pale yellow)

Composition: moisture 37-38%; protein 23-24%; fat 30-31%; carbohydrates 4-5%; fiber 0%; ash 3-4%

See Part 2: Cheese, Vitamin Content; Milk and Milk Products, Vitamin Content; Vitamin A, Milk and Milk Products

**chestnut** (marron; sweet, or Spanish, chestnut (Castanea sativa; C. crenata; C. dentata; C. mollissima; C. vesca))

1) A hard-shelled nut enclosed in prickly buns; requires cooking before eating (C. sativa) and may be dried or made into flour

Types:
- American—destroyed by bark parasite
- Australian (Moreton Bay)
- Chinkapin—small tree or shrub
- Japanese
- Oriental (primarily Chinese)—blight-resistant
- Spanish (Sweet)

Available forms: sweet, pureed; glazed with sugar; fresh; dried

*See sweet chestnut*

2) *C. vesca* — because of its tannic acid content, should not be eaten raw but should be boiled or roasted. It may be substituted for potatoes or grain and can be ground into flour (15% sugar) that can be used in making bread.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Blight resistance</th>
<th>Tree characteristics</th>
<th>Nut</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese</td>
<td>Resistant</td>
<td>Rapid growth;</td>
<td>Sweet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35 ft tall;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>hardy</td>
<td></td>
</tr>
</tbody>
</table>

To remove the skin:

- Roast — Cut an X on the flat side; apply medium heat (400°F) for 15–20 min; peel while warm.
- Oven — Cut an X on the flat side, bake at 400°F for 15 min; peel while warm.
- Boil —Cut an X on the flat side; boil for 5 min; cover with lukewarm water; peel while warm.

Dried chestnuts yield 24% refuse.

1 lb, in shell = 2 cups of shelled meat

Storage: Refrigerate (storage life 6 months) or freeze (storage life 12 months)

3) A horny growth on the inside of a horse’s leg.
4) A sorrel (reddish brown) color of horses

*See Part 2: Minerals, Food; Pulses, Nuts, and Seeds, Composition*

**cheveux d’ange**

1) Good vermicelli. 2) Shredded carrots seasoned with sugar and vanilla and used as a filling for tarts

**Cheviot**

1) A medium-wool, mutton-type breed of sheep originating in Scotland; its face, ears, and legs are white and have no wool.
2) A mild-flavored cheddar cheese with chopped chives

*See Part 2: Sheep Breeds*

**chevon**

The flesh of goats

**chèvre**

A cheese made from 100% goat’s milk, covered with mold; curd is close and white, and flavor is mild; minimum of 45% fat

1 cup, crumbled = 6 oz

*See also cheese*

**chèvre à la feuille**

A goat’s-milk, camembert-type cheese that is matured for 2 weeks between vine or tree leaves

**chevre (chevreton)**

A soft cheese made from goat’s milk

**chevreton d’ambert**

A valencay-type cheese made from goat’s or cow’s and goat’s milk

**chevrette**

A semisoft, double-cream, garlic- and herb-flavored cheese made from goat’s milk and covered with white mold

**chevrotin**

A French cheese made from goat’s milk

**chevrotton de Mâcon**

A cheese made from goat’s milk

**chevru**

A sharp-flavored, camembert-type cheese made from cow’s milk

**chewing gum**

A sweetened, flavored gum that is chewed to obtain flavor

1 stick — 3 g

Composition: chicle gum (latex of sapodilla) 17–30%; glucose 46–59%; water 18–23%; glycerol; flavor ingredients; 0.5 tsp sugar per stick; colorants

To remove stain from cloth, harden with ice and scrape, saturate with cleaning fluid, and repeat if necessary.

Storage: below 70°F, will keep for 6 months

*See also sapodilla*

**chewy**

Characteristic of a food (usually candy) that resists breaking up by the teeth, but slowly dissolves in the mouth

*See also confection*

**Chex**

A ready-to-eat cereal

Corn — 4% sugar

Rice — 4.4% sugar

Wheat — 3.8% sugar

**Cheyenne steak**

Steak cut from the chuck

**chhana**

A panir-type cheese made from cow’s milk

**chhang**

*See chang*

**chhantelle**

*See chantelle*

**chi** (χ, X)

A Greek letter with an English equivalent of x

**chiang**

A flavorful paste made from soybeans, often mixed with wheat flour

**chiang-yu**

A soy sauce made with wheat or barley

**chiani bottle**

30 oz

**Chianina**

An extremely large, white, Italian breed of cattle used for work and beef production; claimed to
be the world’s largest cattle and a very old breed

<table>
<thead>
<tr>
<th>Height at withers (ft)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mature bull</td>
<td>6</td>
</tr>
<tr>
<td>Mature cow</td>
<td>6</td>
</tr>
<tr>
<td>13-month bull</td>
<td></td>
</tr>
</tbody>
</table>

Chianti  
A dry, fruity, Italian red table wine produced between Florence and Siena (central Italy) made from a mixture of Sangiovese and Canaiolo (red) and Trebbiano and Malvasia (white) grapes
Types:  
Used when young (in straw-covered flask)  
Aged 3 years (Riserva; in claret-shaped flask)  
See also wine

Chiaretto  
An Italian pale-red or rosé wine produced near Lake Garda and Verona (northern Italy) See also wine

Chia seed  
Black seeds from the wild sage that can be used as food

Chiavara  
A creamy, semisoft, mild-flavored, cheese made from cow’s milk and ripened by surface bacteria

Chiavari (caccio romano)  
A hard, sour rennet cheese made from cow’s milk

Chicago dog (frank)  
A frankfurter served on a poppy-seed bun with yellow mustard, dark-green relish, chopped raw onion, tomato slices, and a sprinkle of celery salt

Chicago round  
A cut of beef  
See Part 2: Beef Rounds

Chicago style  
A method of cutting beef; the forequarter is divided into chuck, rib, shank, brisket, and short plate; the hindquarter is divided into round, rump, loin end, short loin, and flank; the sirloin tip (obtained in the National style of cutting) is left on the loin end in the Chicago style.

Chicha  
Fermented corn or other plants. A sour, effervescent, yellow to red, alcoholic beverage usually made from maize

Chicha cebada  
A sour, alcoholic beverage made from barley

Chicha de jova  
Chicha made from germinated maize

Chicha de maiz rojo  
Chicha made from purple maize

Chicha de soja  
Chicha made from soy

Chicha de yuca  
Chicha made from cassava

Chicha de jora  
A yellow, cloudy chicha

Chick antidermatitis factor  
A vitamin-related complex  
See also pantothenic acid

Chickasaw plum (Prunus angustifolia)  
A mountain cherry

Chicken (Gallus domesticus)  
A monogastric domesticated fowl (poultry) that is raised for eggs and meat production

Classes:  
Broiler or fryer  
Capon  
Cock, or rooster  
Cornish game hen  
Fowl—hen or baking or stewing hen  
Roaster  
Rock Cornish fryer, roaster, or hen

Parts:  
Back  
Boneless breast  
Breast  
Drumsticks  
Giblets  
Neck  
Thighs  
Wings

<table>
<thead>
<tr>
<th>Composition</th>
<th>Water (%)</th>
<th>Protein (N x 6.25) (%)</th>
<th>Fat (%)</th>
<th>Ash (%)</th>
<th>Total carbohydrates (%)</th>
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</thead>
<tbody>
<tr>
<td>Broilers and fryers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dark meat without skin, cooked, fried</td>
<td>55.70</td>
<td>22.99</td>
<td>11.62</td>
<td>1.08</td>
<td>2.59</td>
</tr>
<tr>
<td>Dark meat with skin, cooked, fried, batter-dipped</td>
<td>48.82</td>
<td>21.85</td>
<td>18.64</td>
<td>1.31</td>
<td>9.38</td>
</tr>
<tr>
<td>Dark meat without skin, raw</td>
<td>75.99</td>
<td>20.08</td>
<td>4.31</td>
<td>0.94</td>
<td>9.04</td>
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<tr>
<td>Dark meat with skin, raw</td>
<td>65.42</td>
<td>16.69</td>
<td>18.34</td>
<td>0.76</td>
<td>0.0</td>
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<tr>
<td>Light meat without skin, cooked, fried</td>
<td>60.14</td>
<td>32.82</td>
<td>5.54</td>
<td>1.09</td>
<td>0.42</td>
</tr>
<tr>
<td>Light meat without skin, raw</td>
<td>74.86</td>
<td>23.20</td>
<td>1.65</td>
<td>0.98</td>
<td>0.0</td>
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<tr>
<td>Light meat with skin, cooked, fried, batter-dipped</td>
<td>50.23</td>
<td>23.55</td>
<td>15.44</td>
<td>1.29</td>
<td>9.50</td>
</tr>
<tr>
<td>Light meat with skin, raw</td>
<td>68.60</td>
<td>20.27</td>
<td>11.07</td>
<td>0.86</td>
<td>0.0</td>
</tr>
<tr>
<td>Flesh and skin, cooked, fried, batter-dipped</td>
<td>49.39</td>
<td>22.54</td>
<td>17.35</td>
<td>1.30</td>
<td>9.42</td>
</tr>
<tr>
<td>Flesh and skin, raw</td>
<td>65.99</td>
<td>18.60</td>
<td>15.06</td>
<td>0.79</td>
<td>0.0</td>
</tr>
<tr>
<td>Flesh and skin, roasted</td>
<td>59.45</td>
<td>27.30</td>
<td>13.60</td>
<td>0.92</td>
<td>0.0</td>
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<tr>
<td>Flesh only, raw</td>
<td>75.46</td>
<td>21.39</td>
<td>3.08</td>
<td>0.96</td>
<td>0.0</td>
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<tr>
<td>Flesh only, fried</td>
<td>57.53</td>
<td>30.57</td>
<td>9.12</td>
<td>1.09</td>
<td>1.69</td>
</tr>
</tbody>
</table>
Water
Chicken food products

<table>
<thead>
<tr>
<th>Age</th>
<th>Weight (lb)</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>4–6 weeks</td>
<td>Up to 2.5</td>
<td>Broiler</td>
</tr>
<tr>
<td>Under 8 months</td>
<td>3.5–5</td>
<td>Rooster</td>
</tr>
</tbody>
</table>

Normal life span 3–4 yr; age at puberty 4.5–6 months; 8-20 females served by one male; 4000 x 10^6 sperm/ml semen; semen volume per ejaculation 1.5 ml; egg laying 8 months; good hens produce 240–260 eggs/yr (500 eggs in a lifetime of 32 months); frequency of ovulation 1 day; duration of estrus—frequently during egg-laying period; molts at 18–20 months; ovulation occurs 24 h before egg is laid; gestation period 20–22 days; broiling or frying market weight (3–4.5 lb) is reached at 8–12 weeks; dressing percentage 72%; 8–18% fat absorption during frying

Sodium and cholesterol content:
- Breast with skin 69 mg Na/98 g
- Canned products 714 mg Na/142 g
- 3 oz chicken, no skin 65 mg cholesterol (white meat)
- 77 mg cholesterol (dark meat)

Canned pH 6.2

USDA grades: U.S. Grade A poultry; Grade B; Grade C
- 5.5–6.2 lb ready-to-cook chicken = 1 qt, canned without bones
- 3.5–4.2 lb ready-to-cook chicken = 1 qt, canned with bones
- 3 lb dressed chicken = 4 1/2 cups chopped cooked meat
- 1 lb, ready to cook = 2–3 servings
- 1 cup, cooked, cubed = 5 oz
- 1 cup, stewed, chopped = 5 oz
- 1 cup, stewed, diced = 4.8 oz
- 1 cup, stewed, ground = 4 oz

Storage: Keep in coldest part of refrigerator; use within 1–2 days.

See poultry entries

**Chicken broth**

<table>
<thead>
<tr>
<th>Composition</th>
<th>Moisture (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Carbohydrate (%)</th>
<th>Fiber (%)</th>
<th>Ash (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canned soup</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condensed</td>
<td>92.0</td>
<td>4.4</td>
<td>1.0</td>
<td>0.7</td>
<td>Trace</td>
<td>1.8</td>
</tr>
<tr>
<td>Condensed, prepared</td>
<td>95.9</td>
<td>2.0</td>
<td>0.6</td>
<td>0.4</td>
<td>Trace</td>
<td>1.0</td>
</tr>
<tr>
<td>Dehydrated, cubed</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Dehydrated</td>
<td>2.5</td>
<td>14.6</td>
<td>4.7</td>
<td>23.5</td>
<td>54.7</td>
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<tr>
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<td>0.1</td>
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<tr>
<td>Soup mix</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td>2.3</td>
<td>16.7</td>
<td>13.9</td>
<td>18.0</td>
<td>0.2%</td>
<td>49.2</td>
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<tr>
<td>Prepared with water</td>
<td>96.8</td>
<td>0.6</td>
<td>0.4</td>
<td>0.6</td>
<td>0.01</td>
<td>1.6</td>
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</table>

See Part 2: Bacteria on Chickens at Various Holding Temperatures; Bone; Calories, Daily Recommendations; Cholesterol Control; Egg Incubation Periods; Food, Composition; Frozen Food Storage; Frying Time; Glutamate; Glutamate Addition; Iron, Daily Recommendations; Liver; Meat and Meat Products, Composition; Microwave Processing Time; Minerals, Food; Portion Size; Poultry Breeds and Varieties; Poultry Class; Poultry Composition; Poultry Cooking, Frozen; Poultry, Dressing Percentage; Poultry Roasting; Poultry Yield; Soups, Composition; Spoilage, Protein Foods; Turkey Composition

**chicken à la king** Ingredients include chicken meat, mushrooms, red peppers, and celery, cooked in a sauce made from chicken broth, cereal, egg yolk, milk, cream, salt, and spices
See Part 2: Poultry Composition

**chicken and dumplings, canned soup**

<table>
<thead>
<tr>
<th>Composition</th>
<th>Condensed with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>83.8</td>
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<tr>
<td>Protein (%)</td>
<td>4.6</td>
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<tr>
<td>Fat (%)</td>
<td>4.51</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>4.9</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.2</td>
</tr>
</tbody>
</table>

**chicken and ham roll** A moist, cooked, unsmoked Irish sausage made from medium-chopped, medium-seasoned pork and chicken stuffed into an artificial casing

**chicken breast**
- 1 whole breast = 0.5–0.75 lb
- 1 average breast, skinned and deboned = 5 oz
- Halves, skin and bone = 0.25 lb

**chicken broth** Available as a canned soup and in dehydrated forms (cubed and soup mix)
chicken cacciatore  A skillet dish prepared with chicken, onion, garlic, tomatoes, wine, noodles, and olive oil

chicken chow mein  See Part 2: Poultry Composition

Chicken, Chunky  A ready-to-serve canned soup
Composition: moisture 84.1%; protein 5.1%; fat 2.6%; carbohydrate 6.9%; fiber 0.1%; ash 1.3%

chicken, cream of, soup  Available canned and dehydrated

chicken gumbo soup  Soup made from chicken stock and tomato base, with added chicken pieces, rice, and okra

chicken leg
1 small chicken leg = 6.6 oz
1 skinned and deboned leg = 5 oz
See poultry legs

chicken, milk-fed  A chicken that has been fed milk or milk products in addition to grain for 2 weeks

<table>
<thead>
<tr>
<th>Composition</th>
<th>Canned</th>
<th>Dehydrated</th>
<th>Prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>86.3</td>
<td>3.8</td>
<td>91.4</td>
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<tr>
<td>Protein (%)</td>
<td>1.9</td>
<td>11.3</td>
<td>1.0</td>
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<tr>
<td>Fat (%)</td>
<td>5.7</td>
<td>62.1</td>
<td>5.5</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>5.4</td>
<td>0.3</td>
<td>0.03</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>1.6</td>
<td>14.5</td>
<td>1.3</td>
</tr>
<tr>
<td>Ash (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

chicken fat  Fat removed from the carcass of chickens; smoke point 400–430°F
See Part 2: Iodine and Saponification Values

chicken grade  See poultry grades

chicken gravy  Available canned and dehydrated

chicken gumbo, canned soup
Composition: moisture 88.0%; protein 2.1%; fat 1.1%; carbohydrate 6.7%; fiber 0.2%; ash 2.1%

chicken mushroom, canned soup  Composition:
Condensed—protein 3.5%; total lipid 7.3%;
Prepared with water—protein 1.8%, total lipid 3.7%

chicken noodle, Chunky  A ready-to-serve canned soup
Composition: protein 5.3%; total lipid 2.5%

chicken noodle soup  Available canned (condensed) and dehydrated

<table>
<thead>
<tr>
<th>Composition</th>
<th>Condensed</th>
<th>Prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>8.5</td>
<td>92.0</td>
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<tr>
<td>Protein (%)</td>
<td>3.2</td>
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<tr>
<td>Fat (%)</td>
<td>1.8</td>
<td>1.0</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>7.6</td>
<td>3.9</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0.1</td>
<td>0.4</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.2</td>
<td>1.2</td>
</tr>
</tbody>
</table>

chicken noodle with meatballs  A ready-to-serve canned soup
Composition: moisture 90.7%; protein 3.3%; fat 1.4%; carbohydrate 3.4%; fiber 0.2%; ash 1.2%

chicken, potted (deviled chicken)  A spreadable canned product made from finely ground chicken and spices

Chicken Rice, Chunky  A ready-to-serve canned soup
Composition: moisture 86.8%; protein 5.1%; fat 1.3%; carbohydrate 5.4%; ash 1.4%

chicken rice soup  Available canned (condensed) and dehydrated
chicory 169

### Composition

<table>
<thead>
<tr>
<th>Chicken rice soup</th>
<th>Moisture (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Carbohydrate (%)</th>
<th>Fiber (%)</th>
<th>Ash (%)</th>
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</thead>
<tbody>
<tr>
<td>Condensed</td>
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<td>5.8</td>
<td>0.1</td>
<td>1.9</td>
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<tr>
<td>Prepared with water</td>
<td>93.8</td>
<td>1.5</td>
<td>0.8</td>
<td>3.0</td>
<td>Trace</td>
<td>0.9</td>
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<td>Dehydrated</td>
<td>3.9</td>
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<td>57.1</td>
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<td>Prepared with water</td>
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<td>0.6</td>
<td>3.7</td>
<td>Trace</td>
<td>1.0</td>
</tr>
</tbody>
</table>

### Chicken roll

A restructured, light-meat chicken product.

Composition: moisture 68.5%; protein 19.5%; fat 7.4%; carbohydrate 2.5%; ash 2%

### Chicken salad

A salad made from cooked chicken meat tossed with other ingredients, such as mayonnaise, chopped celery, etc.

5 chickens for salad = 50 servings

### Chicken spread

A chicken product mixed with other ingredients to a spreadable consistency; often canned.

### Chicken thigh

1 thigh = 2 oz

### Chicken Vegetable, Chunky

A ready-to-serve canned soup.

### Chicken vegetable soup

Available canned (condensed) and dehydrated.

### chicory

A perennial herb used as a substitute for or mixed with coffee; used in moderate amounts (10–20%, or 1 oz/lb coffee) with a good coffee it adds a sweet piquant flavor; however, if used to excess it adds a bitter flavor. Commercial chicory is processed from endive roots. The root is chopped, roasted, ground and then used in soups, stews, or soups. The leaves and shoots are usually blanched to reduce bitter taste and are used as salads or vegetables. The hearts are blanched and used as a cooked vegetable. Witloof is forced and harvested when leaves are approximately 6 in. long in salads. 19,500–27,000 seed/oz; 7–14 days germination time.

### Types:

- French endive (Witloof chicory)—large-rooted; by forcing the roots the blanched salads called Barbe de Capucin (Monk's beard) and Belgian endive are obtained.
- Summer chicory or escarole—crisp salad with bitter taste.
- Curly endive (greens with a somewhat bitter taste)

### Composition

<table>
<thead>
<tr>
<th>Chicken vegetable soup</th>
<th>Moisture (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Carbohydrate (%)</th>
<th>Fiber (%)</th>
<th>Ash (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condensed</td>
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<td>2.9</td>
<td>2.3</td>
<td>7.0</td>
<td>0.1</td>
<td>2.2</td>
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<tr>
<td>Prepared with water</td>
<td>92.6</td>
<td>1.5</td>
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<td>0.05</td>
<td>1.1</td>
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<tr>
<td>Dehydrated</td>
<td>4.7</td>
<td>19.0</td>
<td>5.6</td>
<td>55.0</td>
<td>—</td>
<td>15.7</td>
</tr>
<tr>
<td>Prepared with water</td>
<td>94.6</td>
<td>1.1</td>
<td>0.3</td>
<td>3.1</td>
<td>—</td>
<td>0.9</td>
</tr>
</tbody>
</table>
170 chicory

Terms:
Belgian endive (French endive, witloof)—cigar-shaped, bleached; crisp, bitter
Brussels witloof chicory—used for salad
Cichorium endivia—a vegetable; leaves cluster like cos lettuce
Chicons (tight buds)—salads
C. intybus—leaves are bitter; root used as a coffee substitute
Curly endive (chicory, chicory endive)—robust, green head; pungent leaves with crisp, white ribs and ragged edges; yellowish heart has a milder flavor
Escarole—bitter, broad-leaved, strap-shaped; firm texture
Frisee—a white endive, similar to curly
Leaf—spinachlike
Magdeburg chicory—used in coffee
Radicchio—small, round head; leaves pink to red with cream-colored ribs
Wild chicory—root used as a replacement for coffee
Witloof chicory—roots are forced and leaves form a solid head known as a witloof

<table>
<thead>
<tr>
<th>Variety</th>
<th>Inner color</th>
<th>Head</th>
<th>Season</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Snowflake</td>
<td>Creamy</td>
<td>2–3 lb</td>
<td>75 days</td>
<td>Salad</td>
</tr>
<tr>
<td>Sugar Hat</td>
<td>Light</td>
<td>2 lb elong.</td>
<td>86 days</td>
<td>Greens, salada</td>
</tr>
<tr>
<td>Verona</td>
<td>Red</td>
<td>5–6 in.</td>
<td>110 days</td>
<td>Chicons (tight buds) for salads</td>
</tr>
<tr>
<td>Witloof</td>
<td>Blanched</td>
<td>5–6 in.</td>
<td>110 days</td>
<td></td>
</tr>
</tbody>
</table>

1 cup, trimmed, cut = 1.8 oz
Composition: moisture 95%; protein 1%; fat 0.1%; carbohydrate 3%; ash 0.6%

See French endive
See Part 2: Minerals (Trace), Limits; Planting Density; Vegetable Composition; Vegetable Plants

chicouangue A soft cassava dumpling
chicuva An herb liqueur made from very old sherry, brandy, and herbs
chiffonade Shredded vegetables or meat; green plants cooked in butter and usually used as a garnish
See Part 2: French Dressing Variations
chiffon cake See Part 2: Baked Products, Frozen
Storage Life
chihili See Chinese cabbage
chihuahua A semi soft, mildly acidic, smooth cheese made from cow’s milk
chikewo A fermented, yellow-brown, salty (20–25%), fish-paste condiment
chikuwa A cylindrical, fish-jelly product produced by baking kneaded fish meat wrapped around a stick

Child Care Food Program A program that offers nutritional benefits similar to school food programs on a year-round basis in Day Care centers, Head Start centers, and Family Day Care homes. Funds are also available for food service equipment. See Child Nutrition Programs

Chilean nut (Chile hazel) The red fruit (with a hazelnut flavor) of a shrub

Chile Hazel See Chilean nut

Chile pine nut Large cone has 100 to 200 seeds that may be eaten when ripe or may be roasted

Chile salt peter (NaNO₃) Sodium nitrate derived from guano on islands off the coast of Chile

chili (chile; chilli; Guinea pepper; Capsicum frutescens var. longum) The strongest (fiery and pungent) fruit (pepper) of herbaceous plants belonging to the genus Capsicum; has a hot and pungent flavor; used in chili con carne, chili sauce, cayenne pepper, chili vinegar, and pickles. Chili is the dried, small, ripe fruit of the more pungent hot cultivars of capsicum peppers [C. annuum, tabasco (which is
China pea

C. frutescens), C. baccatum, C. Chinese, C. pubescens; sometimes used interchangeably with capsicum. Handle with gloves; will burn the skin; fixed oil 15–22%

Standards:
- Acid-insoluble ash 1.25–1.6% max.
- Ash 8–10% max.
- ASTA color units 70 min.
- Crude fiber 28% max.
- Moisture 11% max.
- Total nitrogen, dry basis, 2% min.

See capsicum; chili

Part 2: Wastes, Agricultural and Industrial

chili, Asian A generic term covering several explo­

sive, hot, small bright green chili peppers with an

elongated shape; the seeds and veins are often re­

moved.

chili beef A canned soup

Composition

<table>
<thead>
<tr>
<th>Moisture (%)</th>
<th>Condensed (%)</th>
<th>Prepared with water (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>70.9</td>
<td>84.7</td>
<td></td>
</tr>
</tbody>
</table>

chili con carne (chili peppers with meat) A Mexican dish made of 40% (min.) meat [computed on fresh meat wt., 25% (max.) of meat as hearts, cheek meat, head meat or, weasand meat], 8% (max.) cereal or soya flour, and flavored with hot chili; also contains peppers, onions, garlic, beans, and seasoning

See Part 2: Meat Composition; Microwave Processing Time; Portion Size

chili con carne with beans Made with 25% (min.) meat; 25% (max.) of meat may be head, cheek, or heart meat

chili, dried red A 1-in., thin, red, wrinkled, very hot chili pepper; often blackened in oil before using

chili pepper 1) A collective term for many peppers; available fresh, dried, canned, and pickled; 1–9 in. long; color may be green, yellow, or red (red are ripened green peppers and are sweeter); 2) A mixture of Mexican and Californian capsicums; available in a medium grind (coarser than paprika); moisture 10–12%; Scoville heat units 675–900

Storage (fresh): wrap in paper towels and refrigerate; will keep 3–4 weeks

Storage (dried): in a cool, dry place; will keep for 1 yr

chili pod A 5- to 7-in., dark reddish brown, dried chili pepper (several varieties)

chili powder (chile powder) A preparation for seasoning that contains relatively mild chili pepper (80%), cumin, oregano, garlic, salt, and sometimes other spices (clove, allspice, anise, or coriander); color is red to mahogany.

Frequently used formula:
- 83% red pepper
- 9% cumin
- 4% oregano
- 2.5% salt
- 1.5% garlic powder

Used in Chili con carne, gravies, hash, meat, meat sauces, rice, spaghetti, stews, and tamales

Terms:
- Bright (or other equivalent terms)—untoasted peppers (bright red) are used.
- Dark—chili pepper in blend is toasted to caramelize the natural sugars which darkens the color, and alters the flavor.

Composition: moisture 7–8%; protein 12–13%; fat 16–17%; carbohydrate 54–55%; fiber 22–23%; ash 8–9%; 25 mg Na/tsp (3 g)

chili sauce A hot, spiced tomato sauce that contains tomatoes (without skin and core), green peppers, vinegar, brown sugar, onions, salt, dry mustard, sugar, and spices

Storage: Cover and refrigerate after opening.

See Part 2: Standards, Processed Fruit and Vegetable Products; Tomato and Tomato Products, Composition

chili, yellow A wide variety of very mild to hot, smooth-skinned chili peppers that are pale yellow-green to orange and red

Popular types:
- Banana pepper
- Hungarian wax
- Long yellow
- Short caribe

chilled Cooled to 45°F (wine)

chilli See chili

chilling injury Damage caused by exposure to cold; the susceptibility of citrus fruit to chilling injury is very unpredictable and may occur in fruit stored at low temperature but above the freezing point. The symptoms take various forms, such as pitting, brown staining, oil-gland darkening, diffuse rind breakdown (scald), or albedo browning.

chilli pepper Available red or green, fresh or dried; African (hot) and Japanese (mild) varieties See chili pepper

chilli powder A blend of spices: cloves, coriander, cumin, garlic, pepper (hot), and oregano See chili powder

chill room A refrigeration area for meats and vegetables; regulation temp. 38 ± 2°F; tolerance of 10°F for reasonable time after the entry of fresh food; ideal temp. 30 ± 2°F

chilver A ewe lamb, from birth to weaning

chimaja A finely ground, mild spice made from the dried root of a wild cherry tree

chime See double seam

chimela Germinated, dried grains of sorghum, millet, or maize; malt

chimichanga A large flour tortilla filled, folded, and rolled like a burrito and fried

chinaberry A berry containing a toxic principle See Part 2: Poisonous Plants

China-china An herb liqueur

China orange A large tangerine

China pea Similar to sugar pea but smaller; the pods are eaten and are often used in oriental dishes. See cowpea
China wood oil  See tung oil

Chinch bug (Blissus leucopterus) An insect that sucks the sap from corn and other small grains after they have been harvested
Control: segregate corn and small grains

Chinachwan cattle  Red (a few are yellow), large, draft cattle with a distinct hump; originated in Central China

Chindanda  A steamed or baked cereal or cereal and starch dough; often flavored with onions and peppers

Chine bone  Body of cervical, thoracic, lumbar, and sacral vertebrae
See Part 2: Beef Rib Nomenclature; Beef Wholesale Cuts; Bone; Lamb Wholesale Cuts; Meat Identification; Pork Wholesale Cuts; Veal Wholesale Cuts

Chinese apricot plum  A plum similar to a small nectarine

Chinese artichoke (Stachys affinis) A plant that produces white tubers that can be cooked or used raw in salads

Chinese bean  See bean, mung

Chinese bitter melon (Momordica charantia) A warty, ornamental fruit with tangy flavor used in cooking

Chinese broccoli (gai lon) A plant with a shank, big leaves, and a small flower bud at the end of the leaf
Storage: in the refrigerator

Chinese brown vinegar  A rice vinegar

Chinese cabbage (celery cabbage; chihili; crispy choy; flowering Chinese cabbage; michili; napa; nappa; petsia; siew choy; wong bok; Brassica chinensis; B. pekinensis) A salad green with a long (12–18 in.), oval, firm head and with a sweet cabbage taste; leaves resemble romaine lettuce; more like cos lettuce than cabbage; outer leaves green, inside and center of leaves white; may be cooked and does not have a strong odor.
Types:
   Celery cabbage (wong-nga-bok; B. chinensis)—like a tight head of celery
   Pe-Tsai (bok choy; B. pekinensis) like Swiss chard

Popular varieties:
Chi-bi-bi
Jade Pagoda
Pak Choi
Pe-Tsai

<table>
<thead>
<tr>
<th>Variety</th>
<th>Growth habits</th>
<th>Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burpee Hybrid</td>
<td>Blocky head</td>
<td>75 days</td>
</tr>
<tr>
<td></td>
<td>13 × 8 in.</td>
<td></td>
</tr>
<tr>
<td>Crispy Choy</td>
<td>Loose-leaf, nonheading, 8 in.</td>
<td>45 days</td>
</tr>
<tr>
<td>Hybrid G</td>
<td>Blocky head</td>
<td>70–90 days</td>
</tr>
<tr>
<td>Michihli</td>
<td>Tall, (12–18) × 4 in.</td>
<td></td>
</tr>
<tr>
<td>Wong-Bok</td>
<td>Blocky head</td>
<td></td>
</tr>
</tbody>
</table>

Storage: in pits or cold cellars
See also pak-choi; pe-tsai

Chinese celery (bok choy; celery cabbage; French celery; heung kunn; mustard cabbage; pak-choi; Apium graveolens; Brassica chinensis) An oriental, nonheading Chinese cabbage or loose-leaf celery that produces spicy-flavored, celery-like stalks topped with green leaves with a pleasing flavor; used in salads and as flavoring

Chinese chard (bok choy) Resembles Swiss chard but has smaller leaves and forms a head

Chinese cheese  Sufu soybean curd

Chinese chestnut (Castanea mollisima) A 30- to 40-ft tree that bears chestnuts that can be used for roasting and poultry stuffing

Chinese chive (Allium tuberosum) A plant whose flat, 6-in. leaves have a garlic flavor; the flower buds are also used in seasoning. See gow choy

Chinese cooking  Main schools are Canton, Fukien, Honan, Shantung, and Szechuan

Chinese cooking melon  A thick, crisp, apple-like melon that is steamed or boiled and has a sweet flavor; requires about 75 days for growth and weighs ½ lb at harvest

Chinese date (Zizphus jujuba) A tropical tree with long, pointed seed; may be eaten fresh or candied See jujube

Chinese eggplant  See eggplant

Chinese five spice mixture  Contains equal quantities of anise, cinnamon, cloves, fennel seed, and star anise

Chinese food habits
Animal products—eggs, fish, meat, shellfish
Grains—rice, cereal, noodles
Vegetables—many types; soybeans, sweet potatoes

Chinese goose  See goose

Chinese gooseberry (kiwi fruit; Actinidia chinensis) A green to brown, egg-shaped (3 × 1.5 in.), hairy, juicy fruit with green flesh and gooseberry-like seeds. It may be eaten raw or cooked in sugar. See kiwi

Chinese isinglass  See agar-agar

Chinese lantern  See gooseberry

Chinese long bean  An 18-in. string bean

Chinese mushroom  Straw mushroom

Chinese mustard (gai choy; mustard greens; mustard spinach; tender greens) A pungent green vegetable, similar to Chinese cabbage, with a loose habit of growth and used as a substitute for spinach. The leaves are eaten raw as a salad or cooked as spinach; the tuberous root is cooked like white turnips.
Storage: Wash and store in a plastic bag or crisper in the refrigerator.
See leaf mustard

Chinese mustard greens (goy choy; Brassica carinua) Slightly bitter greens, available fresh or salted and canned

Chinese okra  A large (up to 12 in.), dark green okra with deep ridges
Storage: refrigerate
Chinese olive (java almond) A stone fruit from which a fragrant resin is extracted; the fruit may also be eaten sweetened, dried, or salted.

Chinese parsley See cilantro; coriander

Chinese pea (snow pea) A young green pea pod, containing small peas, that is eaten whole See soybean

Chinese pork sausage Sausages that contain grain alcohol and soy sauce as characterizing ingredients

Chinese sausage (lup cheong) A sweet pork sausage that becomes translucent when heated; fermented, semidry pork sausage with liver See Chinese pork sausage

Chinese turnips (lo bok) Similar to radish or daikon in flavor
Storage: Wash, store in crisper in refrigerator

Chinese vegetables Usually include bamboo shoots, bean sprouts, celery, mushroom, onion, potatoes, sweet peppers, and water chestnut

Chinese vegetable tallow See Part 2: Iodine and Saponification Values

Chinese water chestnut (pi-tsi; Eleocharis tuberosa) A water plant and its tuber, which is sliced and used as food; it has a very crisp texture. Composition (raw): moisture 96%; protein 0.4%; fat 0.2%; carbohydrate 3%; ash 0.2%

Chinese watermelon (Benincasa hispida) A vine of the gourd family, originally from China and the East Indies. It has a large [(8-21) x (3-8) in.], multi-shaped (round to long and slender) fruit, with white flesh that keeps well and is eaten raw or used to make preserves.

Chinese white radish (lo bok) A big (9-12 in.), mild-tasting radish that is tapered like a carrot

Chinese winter melon A white and green, watermelon-sized marrow with white flesh and yellow seed; used in soup and preserved in sugar

Chinese yeast Gray-white, dried balls of starter; grown on starch or cereal base and used as an inoculum for fermented foods

ching hua ham A red, country ham

chingko A variety of wild highland barley

ching-tsaï A vegetable

chinic acid See quinic acid

chinoïs See cumquat

chinoxk A grade of Alaskan salmon See also salmon See Part 2: Salmon and Trout

chinquipin A shrub that produces a small, fruit-flavored nut in a mahogany shell
Types:
Dwarf chestnut (Castanea pumila)
Related tree (Castanopsis chrysophylla)

ching tui A fried, wheat-flour-dough pie filled with cheese, fish, meat, and sometimes fruit

chip 1) A deep-fat fried finger of potato. 2) A thin silicon wafer on which electronic components are deposited in an integrated circuit

chipboard (newsback, patent-coated) Recycled paperboard covered with a thin layer of bleached, virgin fiber and/or clay coating and used to manufacture convolute or spiral wound cans

chipolata A small, moist, uncooked, unsmoked French sausage made from medium-chopped, mildly seasoned pork fermented and stuffed into a pork casing

chipped beef (dried beef) Cured, smoked, dried beef sliced in paper-thin fragments; usually made from top round See Part 2: Meat Composition; Meat, Servings per Pound

chipped beef, creamed A mixture of thick white cream sauce and chipped beef, often served on buttered toast

chips 1) American (crisps)—thinly sliced, deep-fried potatoes. 2) British—American-style, French fried potatoes

chipumu A sorghum beer

chiri A fish soup

chi-square ($\chi^2$) A measure of deviation from a hypothesis

$$\chi^2 = \frac{\sum (f - F)^2}{F}$$

$F =$ no. found in sample
$F =$ no. expected by hypothesis
df = (total possible classes) - 1

E.g., df = 1 if there are two categories (e.g., yes and no). $\chi^2$ of 6.635 or larger, there is a 1% possibility of this taking place if the hypothesis is true; $\chi^2$ of 3.841, 5% possibility. Percentage values cannot be used without returning to a known sample size.

chitin A water-insoluble polysaccharide containing amine groupings; tends to form horny layers such as occur in protective coatings of shellfish. Its chemical structure is not unlike that of cellulose except for the presence of nitrogen.

See Part 2: Histochemical Tests

chitterling (chittlin') Intestine of swine; considered a food delicacy by some people; may be used as a sausage casing

chiu A rice wine

chiu niang (tien chiu niang) A sweet, slightly alcoholic, glutinous rice

chiu-yueh Gray-white, dried balls of starter, containing bacteria, molds, and yeast on starch or cereal base, used as inoculum for lao-chao

chive (schnittlauch; Allium schoenoprasum) A fish soup

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chive (schnittlauch; Allium schoenoprasum) A fish soup

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Chinese sausage (lup cheong) A sweet pork sausage that becomes translucent when heated; fermented, semidry pork sausage with liver See Chinese pork sausage
chive (schnittlauch; *Allium schoenoprasum*)

Composition: moisture 91%; protein 2%; fat 0.3%; carbohydrate 6%; ash 0.8%

See Part 2: Planting Density; Vegetable Planting Chart

chive butter Soften ½ stick unsalted sweet butter, add 1 tbsp finely minced fresh chive (or ½ tsp dried chive); cream together, adding a few drops of lemon juice.

chlamydospore agar See Part 2: Microorganism, Media

chloramine Refers to various compounds containing nitrogen and chlorine; chlorine combined with ammonia, e.g., monochloramine (NH₂Cl), dichloramine (NHCl₂); effective bactericides with a slow kill rate

chloramine T A topical antiseptic and sanitizer See Part 2: Chlorine Availability; Chlorine Compounds; Sanitizers

chlorдан(е) A toxic chlorinated hydrocarbon insecticide; its use on food crops has been prohibited.

chloramine demand The difference between amount of chlorine added and the total residual chlorine measured by the 5-min orthotolidine test

chlorine dioxide (ClO₂) An unstable combination of chlorine and oxygen; oxidizing gas prepared on site by adding chlorite to water containing excess chlorine; used as a sanitary agent

chlorine dosage Total amount of chlorine added

chlorine, free Uncombined chlorine (most effective bactericidal state); can only be obtained after entire chlorine demand has been satisfied

chlorobromuron See Part 2: Corn Herbicides

chloroform (CHCl₃) A chlorinated hydrocarbon that has anesthetic properties and is a solvent for fat; its use in cough medicines etc. has been prohibited because of its suspected carcinogenicity.

chlorophyll A green pigment present in all green plants; it is essential for the formation of carbohydrates by the plant because it acts as an energy converter.

R in chlorophyll a —CH₃
R in chlorophyll b —C—H

chloroplast Green organelles (in plants) that store energy trapped from the sun

Water + carbon dioxide + sunlight \[\text{chloroplast}\] \[\text{glucose} + \text{oxygen}\]
chlorosis 1) Abnormal yellowing of foliage, often due
to deficiency of nutrients, or lack of light. 2) Anemia
of young girls due to faulty nutrition
chlorotic leaf spot A viral disease of sweet potatoes,
similar to internal cork See internal cork
chlorophenol red A pH indicator with a range of
5.2–6.8; It is yellow in the acid and red in the basic
direction.
chlorotetraicycle A broad-spectrum antibiotic; used
to promote growth and improve feed efficiency, to
control diseases, to reduce liver abscesses, enterotoxemia, bacterial diarrhea, and respiratory infection, to
treat foot rot, as a wormer, and to increase egg
production and hatchability

See Part 2: Antibiotic Standards
chocolate A solid or semiplastic food made from
chocolate liquor derived from cocoa nibs, which are
obtained from the cocoa bean (a seed of the Theobroma cacao tree); originally from Central and South
America; the beans are dried, removed from the pod,
and fermented (tannin reduced to 1.9% at this step);
then the pulp is removed, washed, dried, and roasted
(146–300°C), which develops flavor. The kernels are
broken, removed from the shell, heated, and ground.
This product is called bitter chocolate; it contains not
less than 50% cocoa fat; max. 8% ash on fat-free
moisture-free basis; max. 0.4% ash insoluble in HCl
on fat-free moisture-free basis; max. 7% crude fiber
on fat-free moisture-free basis.
Composition (cooking chocolate): moisture 2–3%; pro-
tein 10–11%; ash 3–4%; 5–35 mg caffeine/oz (milk
chocolate) 6 mg caffeine/oz, baking chocolate 35 mg
caffeine/oz)
One ounce of chocolate can be substituted by 3 tsp
of cocoa plus 1 tsp of fat.
1-oz square unsweetened chocolate
= 3 tbsp cocoa + 1 tsp shortening
1-oz envelope liquid baking chocolate
= 3 tbsp cocoa + 1 tsp vegetable oil or melted
shortening

chocolate beverage May mean chocolate milk or
hot cocoa
Composition (homemade, with whole milk): moisture
81.6%; protein 3.6%; fat 3.6%; carbohydrate 10.3%;
fiber 0.08%; ash 0.8%

<table>
<thead>
<tr>
<th>Types</th>
<th>Chocolate liquor (%)</th>
<th>Milk solids (%)</th>
<th>Sweetened</th>
<th>Sugar (%)</th>
<th>Carbohydrate (%)</th>
<th>Fat (%)</th>
<th>Calories per gram</th>
<th>Calories per square</th>
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<tbody>
<tr>
<td>Bitter, or baking</td>
<td>100</td>
<td>0</td>
<td>No</td>
<td>5–20</td>
<td>28</td>
<td>50+</td>
<td>(usually 54)</td>
<td>5</td>
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<tr>
<td>Dark</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Milk (10 min.)</td>
<td>10</td>
<td>≥ 3.66 (milk fat), ≥ 12 (solids)</td>
<td>Yes</td>
<td>35–50</td>
<td>57</td>
<td>32–55</td>
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<tr>
<td>Semisweet or bitter</td>
<td>35</td>
<td>12 (max.)</td>
<td>Yes</td>
<td>57</td>
<td>32–39</td>
<td>4.8</td>
<td>135</td>
<td></td>
</tr>
<tr>
<td>Sweet (15 min.)</td>
<td>12 (max.)</td>
<td>Yes</td>
<td>40–65</td>
<td>34–36</td>
<td>5.3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

chocolate beverage 175
chocolate cake One 3/4-in. sector of 9-in. round layer cake (without chocolate icing) contains 235 calories. See Part 2: Baked Products, Frozen Storage Life

chocolate chip cookies One 2 1/2-in. cookie (1/4 in. thick) contains 50 calories. Composition: 69 mg Na in two cookies (21 g)

chocolate-coated peanut See Part 2: Sugars and Sweets, Composition

chocolate creams A candy (35 pieces/lb) 1 oz (2–3 pieces) = 125 calories

chocolate cream pie Composition: 107 mg Na/1/8 pie (66 g)

chocolate drink (chocolate low-fat milk) A beverage, normally made from skim or low-fat milk (less than 3.25% fat) to which sugar and chocolate have been added; nonfat milk solids may be added.

chocolate-flavored beverage See Part 2: Sugars and Sweets, Composition

chocolate-flavored drink A beverage, normally made from skim or low-fat milk (less than 3.25% fat) to which sugar and cocoa have been added; nonfat milk solids may be added.

chocolate-flavored milk Whole milk to which sugar and cocoa have been added; min. fat 3.25%

chocolate liqueur A sweet, white to brown liqueur flavored with chocolate

chocolate meringue pie 1/8 of a 9-in. pie = 285 calories

chocolate milk Whole milk to which sugar and chocolate have been added; min. fat 3.25%

<table>
<thead>
<tr>
<th>Composition</th>
<th>Low-fat milk</th>
<th>Whole milk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>84.5</td>
<td>83.6</td>
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<tr>
<td>Protein (%)</td>
<td>3.2</td>
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<tr>
<td>Fat (%)</td>
<td>1.0</td>
<td>2.0</td>
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<tr>
<td>Carbohydrate (%)</td>
<td>10.4</td>
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</tr>
<tr>
<td>Fiber (%)</td>
<td>0.06</td>
<td>0.06</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>0.8</td>
<td>0.8</td>
</tr>
</tbody>
</table>

20 mg cholesterol/cup (low-fat)
6 tsp sugar/8 oz
1 cup = 240 calories

chocolate milk shake One 12-oz container contains 405 calories.

chocolate mints A candy (20 pieces/lb) 1 oz (1–2 mints) = 115 calories

chocolate mousse A frothy mixture of beaten egg whites, chocolate, and sugar or brandy

chocolate sauce A sauce made from chocolate, milk, sugar, egg yolk, and vanilla

chocolate spot A disease of brood beans

chocolate, Swiss A chocolate liqueur containing floating pieces of chocolate

chocolate syrup Double strength syrup contains 2 times as much chocolate as single-strength
1 tbsp thin-type syrup = 45 calories
1 tbsp fudge-type syrup = 60 calories

It is made in the body, is important in the synthesis of certain hormones, and is an essential part of many cells. It is present in every animal cell and is a normal constituent of blood and tissue. In the diet, it is found only in foods of animal origin: high concentrations are found in organ meat (e.g., brain, liver, kidney, heart, sweetbread, and gizzard) and egg yolk; moderate concentrations in shrimp; smaller concentrations in other foods of animal origin. Foods of plant origin contain sterols called phytosterols.

Levels:
A human synthesizes 1–2 g cholesterol/day. Bile contains 0.6% cholesterol. Human blood plasma contains 0.25% cholesterol. Eggs contain 0.46% cholesterol. Other foods of animal origin contain cholesterol in varying amounts.

Recommended cholesterol intake is 300 mg or less per day; the guideline for women 23–50 years old is 200 mg/day
See Part 2: Cholesterol Control; Egg Products, Nutritive Value; Histochemical Test; Steroids

cholic acid

\[
\text{CH}_3\text{CH} - \text{CH}_2\text{CH}_2\text{COOH}
\]

Used as an emulsifying agent in food (e.g., dried egg whites)
Storage: Tight container

choline A water-soluble member of the vitamin B complex; deficiency causes "fatty livers" in rats, damage to kidneys in rats, damage to leg tendons in the chick, and reduced egg production in hens; it is widely distributed in biological material and is made synthetically.

\[
\text{HO} - \text{C} - \text{CH}_2 - \text{N}^+\text{CH}_3\text{CH}_3
\]

See Part 2: Egg Products, Nutritive Value; Grain Analysis; Milk and Milk Products, Vitamin Content; Wheat Products, Composition; Wheat, Vitamins

choline bitartrate 

\[
\left\{\text{HOCH}_2\text{CH}_2\text{N}^+\text{(CH}_3)_3\text{H}_4\text{C}_4\text{H}_4\text{O}_6\right\}
\]

Used as a nutrient or dietary supplement
Package: Tight container

choline chloride 

\[
\left\{\text{HOCH}_2\text{CH}_2\text{N}^+\text{(CH}_3)_3\text{Cl}^-\right\}
\]

Used as a nutrient or dietary supplement
Storage: Tight container

cholinesterase An enzyme that neutralizes the toxic effect of the acetylcholine formed by the nervous system

cholinesterase inhibitor An ester of phosphoric acid that has the effect of preventing the enzyme cholinesterase from functioning; thus causing serious illness and often death from acetylcholine poisoning; a number of insecticides of the parathion type act in this way, and though they are not persistent they are dangerous to handle.

cholla A tea bread rich in eggs but with no fruit

chondroprotein A glucoprotein found in connective tissue, tendon, and cartilage

chonggak-kimchi An acidic, carbonated vegetable pickle made with oriental radish

chontaruru A wine made from the sap of the chonta palm

chop 1) A slice (2 1/2-4 cm thick) of pork, veal, or lamb, including the bone; usually broiled or fried
Storage: Coldest part of refrigerator; in original wrapper, 1-2 days storage; unwrapped and covered loosely, 3-5 days storage
2) A 1- to 2-in.-thick slice. 3) To cut into small or fine pieces; to comminute food. 4) A seal or stamp used on some foods to authenticate them. 5) A grade of tea indicating good quality
See Part 2: Braising Time; Broiling Griddle, Meat; Broiling Meat; Broiling Time and Temperature; Lamb Cuts; Lamb Cuts and Uses; Meat Composition; Meat, Frozen Storage; Meat Identification; Meat, Servings Per Pound; Pork Chart; Pork Cooking; Pork Cooking Methods; Pork, Cooking Yield; Pork Cuts; Pork Loin Cooking; Pork Storage; Portion Size; Roasting Meat; Veal Chart

chops blanca (Kypnosus sectatrix) A food fish similar to the rudderfish

chop-chai A dish made from meat, vegetables, and vermicelli

chopped Food that has been reduced to small pieces with a chopping knife or mechanical food chopper See chop

chopped beef Ground beef made from fresh or frozen beef, with or without seasoning; with max. 30% fat (some manufacturers use max. 20% fat). No water, binder, or extenders added; max. 25% beef cheek meat

chopped food (junior food) Processed, canned foods that have been chopped for use by infants who are ready to graduate from strained foods

chopped ham A semisolid meat product in the form of a compact mass made from ham and curing ingredients See ham, chopped

chopped spiced ham or pork A medium- to coarse-chopped, cooked, unsmoked, American sausage that is canned sterile or shelf-stable

chopped steak Ground steak containing 20% fat

chopper 1) Medium-finished, aged ewes. 2) A high-speed machine used for cutting meat into fine particles (or bowl-chopper)

chop suey (cha sui) A thick, stewlike dish made with beef, pork, veal, and/or chicken, vegetables (bamboo shoot, bean sprouts, celery, mushrooms, onion, potato, and water chestnuts), soy sauce or special sauces, rice or noodles, and spices; served with cooked rice
See Part 2: Meat Composition; Microwave Processing Time; Pork Loin Cooking

chop suey greens (Chrysanthemum coronarium) 1) Used as greens in the Orient. 2) Spicy greens that are stir-fried or steamed and used for flavor or in salads; petals of the flowers are used in salads, soups, and rice.

chor- A prefix meaning green

chorek A sweet bun

chorizo (choriza; chourico) 1) A coarsely ground, highly spiced (paprika as the characterizing ingredient, pimiento, garlic, and red pepper) Spanish sausage in which pork predominates (sometimes a little beef
is used, but if made with all beef, it should be labeled beef chorizo); it is dried (moisture-protein ratio of 1.9:1 or less) and lightly smoked; may also contain vinegar and/or wine; sometimes packed hot with lard in a can. A heavily seasoned, pimento-colored, dried beef or pork sausage. A spicy, smoked, pork sausage. A dry, Spanish, Portuguese, or Mexican sausage that is highly seasoned with red peppers. 2) A semidry or dry, uncooked, smoked American sausage made from coarsely chopped, heavily seasoned (red pepper) pork and/or beef with Spanish pimento and stuffed into pork, sheep, or artificial casings.

Composition: moisture 32%; protein 24%; fat 38%

3) A dry or semidry, uncooked, smoked or unsmoked French sausage made from medium- to coarse-chopped, heavily seasoned beef, pork, and goat, fermented and stuffed into beef, pork, or artificial casings. 4) A dry, uncooked Australian sausage. 5) A moist, cooked or uncooked, fresh, smoked or unsmoked Uruguayan and American sausage made from medium- to coarse-chopped, medium-seasoned beef and pork stuffed into a beef or pork casing; available in fermented and/or dried or semidried links, rings, or large-diameter casings.

See Part 2: Sausage Identification

chorizo, fresh A moist, uncooked, unsmoked, uncured American sausage made from coarsely chopped or chunked, heavily seasoned (with white wine, vinegar, garlic, and spices) beef and pork stuffed into a large-diameter link or ring, or pork, sheep, or artificial casing

chorizo pamplona 1) Coarsely chopped beef and pork chorizo. 2) A dry, uncooked, unsmoked Mexican sausage made from coarsely chopped, heavily seasoned beef and pork, fermented and stuffed into an artificial casing

chorizo rama A semidry, uncooked, unsmoked Mexican sausage made from medium-chopped, heavily seasoned pork stuffed into a beef casing; dried approximately 1 week, and fried or cooked before consuming

chorizos frescos A moist, uncooked, unsmoked Argentinean sausage made from coarsely chopped, mildly seasoned beef, lamb, pork, veal, and wheat starch, with backfat (pork), stuffed in a pork casing

chorogi See artichoke, Japanese or Chinese

chorote A pozol made from maize dough and ground cocoa beans

chou See koji

chou caraibe (Arum esculentum) A plant cultivated for its root, which is prepared like suede

choum-choum A rice beer

chourico A medium- to coarse-chopped, cooked, smoked or unsmoked, American sausage available in large-diameter links, rings, or large-diameter casings for slicing See chorizo

chourisam Pork chorizo with liver

chou-tofu A mature sufu soybean curd with a strong odor

chovrica See linguica

chowchow A finely ground or cut sour pickle, sour cured cauliflower and onion mixed with mustard sauce and spices; used as a relish

See Part 2: Vegetable Storage

chowder 1) A large size of hard, soft, or surf clams. 2) A soup made with clams or fish boiled in milk.

Types:
- Maine—does not contain tomatoes
- Manhattan—contains tomatoes

chow fun Broad noodles made from rice flour

chow mein A dish whose ingredients (pork, egg, bean sprouts, celery, cabbage, vermicelli) are similar to chop suey but the dish is served by placing on fried noodles.

Types: dry; wet

chow mein noodles Thick, crisp, fat-fried spaghetti served with chow mein, chicken à la king, cream dishes, and as a snack

Chowpei Yellow, brown, and red, humped (male only), dual-purpose (draft and beef) cattle that originated in Hupeh (Hubei, central China) Province

christalinna A rennet hard cheese made in Switzerland from cow's milk

Christensen agar See Part 2: Microorganism, Media

christi palma See castor bean

christman porridge A porridge made from rice, milk, butter, and almonds

Christmas melon See Santa Claus melon

Christmas pudding A solid mixture of fruit, beef fat, nuts, eggs, bread crumbs, and brandy (which is lit during serving)

christophine See vegetable peas

-chrom- A word-element meaning color

chromatography A method of separating mixtures of chemicals based on preferential adsorption or differential rate of migration; some of the types currently used include gas, liquid, high pressure liquid, paper, and thin-layer chromatography

chrome tanning Making leather from hides using sodium dichromate (Na$_2$Cr$_2$O$_7$) as the tanning solution; it is converted to chromic sulfate, which combines with the protein of the hide.

chromium (Cr) A metallic element; at. no. 24; at. wt. 52.01; Group VIB of the Periodic Table; oxidation states +2, +3, +6; electron configuration 2−8−13−1

The 6-valent form is poisonous. The metal is hard, corrosion-resistant, easily cleaned, and used in plating utensils. It reflects rather than absorbs heat, which causes severe problems when cooking with electric elements.

Body function: Acting with insulin, it is required for glucose utilization.

Sources: brewer's yeast; whole-grain cereals; liver

chromoprotein A protein attached to a color group, e.g., hemoglobin

chromosome The location of DNA and the carrier of genetic material; DNA strand

Types: sex (XX = female, XY = male); autosome (which vary in number according to species)
Flour made by natural freeze-drying of bitter, chuno chunks. Pieces of honeycomb covered with extracted honey. Chungwei goat (tan goat). Strong-flavored, dark brown soy-chung-kook-jang. Chum salmon (Oncorhynchus keta). Columbia River—peamouth. North America—Leucichthys. See lake herring. 2) Meat packed into an oxygen-semipermeable roll stock tube that is clipped at both ends. Chub bologna. Bologna with bacon added. Chuck 1) Part of forequarter of beef consisting of the thick area of the first five ribs; about 36% of a choice steer carcass. See Part 2: Beef, Boneless Cuts; Beef Chart; Beef Chuck; Beef Cuts and Uses; Beef Retail Yield; Beef Roasting; Beef Wholesale Cuts; Beef Yields; Lamb Chart; Potassium-Rich Foods. 2) Part of the can-closing machine; fits inside the countersink end and acts as a support to the cover and body as the can is sealed. Chuck meat. Chuck minus the chuck roll. Chuck rib roast. A beef roast made from the chuck area (first five ribs). Chuck tender. See Scotch tender. See Part 2: Beef, Boneless Cuts. Chufa (aya; earth almond; rush nut; tiger nut; zulu nut; Cyperus esculentus). A perennial grass or reedlike plant (3 ft tall) that has very hard tubers about an inch in length (used like peanuts). The edible (raw or roasted) tubers of a sedge plant; may be eaten raw, ground, roasted, or cooked but used primarily for hog feed. Chuffy. Very compact and blocky. Chukkal. A fermented, yellow-brown, salty (20–25%), fish-paste condiment. Chum. See salmon. See Part 2: Salmon and Trout. Chumai. A red dessert wine. Chum salmon. A light-meat finfish with light to moderate flavor. Chungking cabbage. Pressed, dried, salted gai choy. Chung-kook-jang. Strong-flavored, dark brown soybeans in dark brown paste with rice straw. Chungwei goat (tao goat). A small, white, horned goat raised for its pelt and cashmere; found in Ningxia (Ningxia, north-central China) and Kansu (Gansu, north-central China) provinces. Chunk. See Part 2: Fish Forms. Chunk honey. Pieces of honeycomb covered with extracted honey. Chuno. Flour made by natural freeze-drying of bitter, high-altitude potatoes. Types: Blancho—white, without potato skins. Negro—black, with potato skins. Chupatty. An unleavened, coarse wheat-flour pancake. Chura. A dried mixture of fermented yak’s milk (2–3 parts) with wheat flour (1 part) and tea. Churgot. Yogurt. Churning. Mechanical agitation of whole milk or cream so that the fat globules stick together to form butter and are separated from the buttermilk. See also butter. Churro. A long doughnut made from wheatom. Chute. An inclined ramp used for loading and unloading. Chutney (chutnee). A spicy Indian relish composed of sweets, acids, and fruits (e.g., apple, banana, gooseberry, peach, or tomato); usually contains either apples, cucumbers, mangoes, or tomatoes with chilies, lemon juice, spices, and tamarind pulp; used with curries and stews. Chuyo. Gray white, dried balls of starter, containing bacteria, molds, and yeast on starch or cereal base; used as an inoculum for fermented foods. Chyle. Fluid from chyme; emulsified fat and lymph in the intestinal tract prior to absorption. Chyluria. Presence of chyle (fat) in urine. Chyme. The food material that leaves the stomach and enters the small intestine. Chymoelin. See rennin. Chymotrypsin. A proteolytic enzyme that attacks native proteins and is found in pancreatic juices in the small intestine; it is secreted in the inactive form called chymotrypsinogen. Chymotrypsinogen. Inactive form of chymotrypsin and the form in which it is secreted; it is activated by trypsin. CI. See color index. Ciaska drozdzowe. A rice- and wheat-flour bread that is high in eggs and fat and sometimes contains dried fruit. CIAT. See International Center for Tropical Agriculture; Centro Internacional de Agricultura Tropical. Ciboule. See onion. Cicro. See lake herring. -cid(e). A suffix meaning kill. Cider. Juice from apples; bitterness or astringency from tannins in the juice is desirable; the juice will ferment due to yeast in 24 h unless this action is stopped by pasteurization. A still or sparkling, alcoholic (2–8% alcohol), fermented apple juice. In the United States, the term means fresh, unfermented apple juice. Types: Champagne cider—sparkling cider. Distilled liquors from cider—apple brandy; calvados; applejack. Hard cider—fermented apple juice. Soft cider—unfermented apple juice.
Methods of preservation:
- Refrigeration—32–36°F; will keep 1–2 weeks without fermenting
- Freezing (10% expansion)—will retain quality for 1 yr
- Pasteurization (170°F for 10 min)—keeps indefinitely without fermenting
- Ultraviolet irradiation—destroys most but not all microorganisms; extends refrigerated shelf life
- Chemical—Potassium sorbate 70°F storage for several weeks—use 0.1% (max.)
- 50°F storage for several weeks—use 0.05%
- Benzoate of soda or other benzoate preparations are sometimes added as a preservative.

Cider normally is not pasteurized but a preservative is usually added. Apple juice is usually pasteurized.

Cider apple classification:
- Bittersharp (sharp with high tannin content)
- Bittersweet (sweet with high tannin content)
- Sharp (high acid content)
- Sweet (low acid content)

In making cider, usually two or more varieties are mixed. The following apple varieties are listed according to suitability as cider material.

Sweet subacid:
- Baldwin
- Cortland
- Delicious
- Grimes
- Hubbardston
- Rome Beauty
- Stark

Mildly acid to slightly tart:
- Jonathan
- Newtown-Pippin
- Northern Spy
- R. I. Greening
- Stayman
- Wealthy
- Winesap
- York Imperial

Aromatic:
- Delicious
- Golden Delicious
- McIntosh
- Ribston
- Winter Banana

Astringent and highly acidic (crabapple):
- Florence
- Hibernal
- Martha
- Red Siberian
- Transcendent

Composition (apple juice): moisture 88%; protein 0.1%; fat 0%; carbohydrate 12%; ash 0.2%; pH 2.9–4.0

1 bu apples = 3 gal apple juice or cider
1 cup = 8.8 oz
Pressure to squeeze = 24 ton/in.²

Storage: 32–36°F

CIF (cost, insurance, freight) A freight term indicating that the seller is responsible for cost, the ocean marine insurance, and the freight charges on an ocean shipment. See cost, insurance, freight

cilantro (Chinese parsley) Fresh Mexican or Chinese coriander, which has a leafy appearance similar to parsley, with a pungent lemon-flavored leaf and seed, used as an herb in pork, lamb, chicken, meatloaf, meatballs, hamburger patties, soup, stews, pickles, and salads. See coriander

cilia Small hairlike appendages or contractile fibers of a cell, used by unicellular organisms to propel themselves and by higher animals to move fluids through their body

cima rellena A moist, cooked, unsmoked Argentinian sausage made from medium-seasoned (with boiled eggs, spinach, carrots, peas, parsley, vinegar, chili, and marjoram) beef, stuffed into a sewn skin bag, which is rolled and tied

cimaterol

\[
\text{CIMMYT} \quad \text{See Wheat and Corn Center}
\]

cincho A high-fat, soft to hard, hand-pressed cheese made from ewe’s milk

cinnamaldehyde (cinnamic aldehyde)

\[
\begin{align*}
\text{CH} &= \text{CHCHO} \\
\text{H}_2\text{N}\text{-CHCH(NHCH(CH}_3\text{)}_2}
\end{align*}
\]

A beta-agonist that is orally active

CINNAMON [Cinnamomum aromaticum (C. Cassia); C. burmannii; C. loureiri; C. verum (C. zeylanicum)] A spice made from the dried inner bark of an evergreen tree of the genus Cinnamomum; may be in ground or stick form; bark is peeled and slowly dried into quills, which are folded together for packing. Cassia and cinnamon are from different trees but their flavor is similar and they have the same uses. Both cassia and cinnamon are called cinnamon but cinnamon is buff-colored and mild-flavored (popular in Mexico). Ceylon cinnamon is the mildest
variety. Cassia has almost entirely replaced cinnamon as a spice in the United States. Cinnamon is used in curry powders and confectionery, and as a food flavoring agent with a spicy, penetrating, and tenacious aroma and a sweet, warm, pleasant, and astringent flavor.

Composition: moisture 9-10% (10% max.); protein 3-4%; fat 3-4%; volatile oil 4% min.; carbohydrate 79-80%; fiber 24-25%; ash 3-4% (5% max.); acid-insoluble ash 2% max.; sp. gr. 1.011-1.031

Defect action level: average 5% moldy pieces by weight; average 5% insect-infected pieces by weight; 1 mg excreta/lb

Terms:
- Chips—inferior-grade trimmings that contain more woody material, such as root bark and the outer part of stem bark
- Feathering—inner bark of twigs; fragments
- Quillings—broken quills
- Thin quill—bark from small branches

Producing countries: Malagasy Republic (Madagascar); Seychelles; Sri Lanka

Types:
- C. Aeylanicum—Sri Lanka
- C. Cassia—China
- C. Culilawan—culilawan bark
- C. Loureirii—Indochina

Vernacular names: Ceylon cinnamon; Seychelles cinnamon; true cinnamon

1 tsp = 4 g

Storage: in tightly sealed container (short shelf life)

See also cassia

See Part 2: Essential Oils; Flavoring Agents, Natural; Flavor Ingredients, Taste and Flavor Type; Spices, Microbial Content

Cinnamon-bark oil (Cinnamomum verum) A pale yellow, liquid volatile oil obtained by steam distillation or hydrodistillation of the inner bark of cinnamon

Composition: alcohols; aldehydes; cinnamaldehyde 51-76%; esters; eugenol 5-18%; eugenol acetate; ketones; terpenes

Storage: full, tight, glass container in a cool, dark place

Cinnamon-fen Fern See fiddlehead fern

Cinnamon-leaf oil (Cinnamomum verum) A brownish yellow essential oil obtained by steam distillation of the leaf of cinnamon; used as a food flavoring agent. The composition is different from bark oil and is a source of eugenol (60-90%); other components are cinnamaldehyde (1-5%), benzyl benzoate (0-27%), linalol, and beta-caryophyllene.

Types: Ceylon (sp. gr. 1.03-1.05); Seychelles (sp. gr. 1.04-1.06)

Storage: full, tight, glass container in a cool, dark place

Cinnamon oil An essential oil distilled from broken cinnamon bark See cinnamon-bark oil

Cinnamon oleoresin Obtained by extraction with organic solvents from Cinnamomum burmannii, C. cassia, C. loureirii, or C. verum

Contains:
- Extracts
- Fixed oil
- Steam, volatile (essential) oil (16%)

Cinnamon-root-bark oil (Cinnamomum verum) A colorless to yellow-brown liquid; camphor is the major constituent (60%); other components are cinnamaldehyde (4-8%) and eugenol (trace to 5%).

Cinnamon vine See yam

Cinnamyl acetate

\[ \text{CH} = \text{CHCH}_2 \text{OOCCCH}_3 \]

Used as a food-flavoring agent

Storage: tight, light-resistant container

Cinnamyl alcohol

\[ \text{CH} = \text{CHCH}_2 \text{OH} \]

Used as a food-flavoring agent

Storage: full, tight, glass container in a cool, dark place

Cinnamyl anthranilate

\[ \text{CH} = \text{CHCH}_2 \text{OOCNH}_2 \]

Used as a fruity flavoring agent in food

Storage: full, tight, glass container

Cinnamyl formate

\[ \text{CH} = \text{CHCH}_2 \text{OOCH} \]

A balsamic-like flavoring agent in food

Storage: full, tight, glass container in a cool, dark place

Cinnamyl isovalerate

\[ \text{CH} = \text{CHCH}_2 \text{OOCCCH}_2 \text{CHCH}_3 \]

A spicy, fruity, floral-like flavoring agent in food

Storage: tight, light-resistant container

Cinnamyl propionate

\[ \text{CH} = \text{CHCH}_2 \text{OOCCH}_3 \]

A fruity, floral-like flavoring agent in food

Storage: tight, light-resistant container

Cinqueterre (five villages) An area of northwestern Italy that produces a full-flavored, dry white wine and a sweet white wine made from sun-dried grapes

Cinzano White and red types of Italian vermouth

Cioppino A highly seasoned soup made with shellfish, fish, tomato, onion, and garlic

CIP 1) Cleaned in place. 2) See potato center

circassian chicken A dish made from white chicken meat and chicken stock, flavored with walnuts and butter and colored with paprika
circuit breaker An automatic switch that opens when current flow exceeds a predetermined value. It also may be manually operated.

circular mil A measure of area
1 circular mil
= 0.7854 square mil
= 5.067 \times 10^{-6} \text{ square centimeters (cm}^2\text{)}
= 7.854 \times 10^{-7} \text{ square inches (in}^2\text{)}

circumference (C) The perimeter of a circle; 360°, or \(2\pi\) radians
\[ C = \pi D \]
\[ C = 2\pi R \]
ciro A wine from southern Italy
Types:
- Red (big and robust)
- Rosé
- White (dry, full, and flowery)
cirrhosis A disease characterized by the formation of connective tissue and wasting of organ tissue, e.g., liver damage due to chronic large intake of alcohol
ciruela See red mombin
cisco (lake herring; Coregonus artedi; Leucichthys artedi) Refers to many species of freshwater fish (including lake herring) similar to the chub that are available fresh or salted and smoked; a freshwater food whitefish See lake herring
cis-trans isomers So-called geometric isomers, in which the location of substituent groups in relation to double-bonded carbons is indicated by either cis-(Latin for “on this side”) or trans-(Latin for “on the other side”). In structures below, the cis form has both R groups on one side of the double bond, whereas in the trans form they are diagonally opposite each other:
\[
\begin{align*}
\text{cis} & : & \text{H} & \text{C} & \text{H} & \text{C} & \text{H} & \text{C} & \text{H} \\
\text{trans} & : & \text{C} & \text{H} & \text{C} & \text{H} & \text{C} & \text{H} & \text{C}
\end{align*}
\]
citeaux A cheese made from cow's milk
citral
\[
\text{CH}_2\text{COOH} \\
\text{HO}—\text{COOH} \\
\text{CH}_2\text{COOH}
\]
An ingredient in lemongrass oil but often prepared synthetically; used as a lemonlike flavoring agent in food
Storage: full, tight, glass container in a cool, dark place
citrange An acid-flavored citrus fruit that is a hybrid between sweet orange (Citrus sinensis) and trifoliate orange (Poncirus trifoliata); used in preserves and beverages
See Part 2: Fruit and Nut Rootstock
citrangequat Hybrid between citrange and kumquat
citrate A salt of citric acid. Sodium citrate (\(\text{C}_6\text{H}_5\text{Na}_3\text{O}_7 \cdot 2\text{H}_2\text{O}\)) combines with calcium to prevent blood from clotting (600 mg sodium citrate/100 ml blood) See citric acid
citrate azide agar See Part 2: Microbiological Examination of Dairy Products
citrate mannitol agar See Part 2: Microorganism, Media
citrate medium See Part 2: Microorganism, Media
citrate monoglyceride See Part 2: Antioxidant Mixtures
citric acid
\[
\begin{align*}
\text{CH}_2\text{COOH} \\
\text{HO}—\text{COOH} \\
\text{CH}_2\text{COOH}
\end{align*}
\]
A tricarboxylic acid formed in the cells of plants (found in most fruits and particularly in citrus fruits such as lemon, lime, orange, tangerine) and animals in a sequence of reactions known as the Krebs cycle; it acts as a catalyst of tissue oxidation. Obtained by fermentation of molasses and used in foods (cereals, fruits, instant potatoes, meat, oil, and snack foods) as an antioxidant, acidulant, firming agent, color brightener, sequestrate agent, dispensing agent, astringent, and flavoring agent; also used as an antimicrobial food additive in acid foods, in preserving fish, jam, beverages, and pastries, to neutralize residual lye after lye-peeling fruit, and to prevent darkening of frozen fruit. Citric acid in milk (0.01-0.2%) is converted by fermentation into diacetyl (flavor component). Citric acid and sodium citrate at levels of 0.1-0.2% are sometimes used for food fortification; 0.2% in fresh blood prevents clotting (sodium citrate is also used).
Storage: tight container
See also Krebs cycle
See Part 2: Acidulants; Antioxidants, Formulas; Antioxidant Mixtures; Maple Syrup Composition; Normal Solutions; Organic Acids in Fruits and Vegetables; Reagents, Normal Solutions
citridic acid See aconitic acid
citron (Citrus medica) A small citrus tree that produces an elongated fruit (up to 8 in.) with a rough, greenish yellow to golden yellow rind (which is preserved and dried and used in baking, e.g., fruit cake), under which is a thick, white, inner skin enclosing a sour pulp (similar to lemon but not as acid). The fruit is made into the candied citron of commerce and the fermented thick peel is candied or glacéed and used like orange or lemon peel. The oil used for flavoring and the fruit is made into marmalade, and is also used to make the alcoholic beverage cedratine.
See Part 2: Minerals, Food; Vegetable Plants
citron (Citrullus vulgaris citroides) A vine that produces a watermelon-type fruit that is light to dark mottled green and has a hard shell (8 in.) and a firm, white flesh that is candied and made into preserves (never eaten raw).
Varieties: Colorado
citronella (Cymbopogon nardus) An essential oil steam-distilled from a southeast Asian grass; contains geraniol, camphene, and dipentene. It has strong odor and is used as an insect repellent (especially mosquitoes).

See Part 2: Essential Oils

citronellal

\[
\begin{array}{c}
\text{CH}_2\text{O} \quad \text{C} = \text{O} \\
\text{H}
\end{array}
\]

Prepared synthetically and used as a lemon, citronella, roselle-like flavoring agent in food; sp. gr. 0.850–0.861

Storage: full, tight, glass container in a cool, dark place

citronellol

\[
\begin{array}{c}
\text{CH}_2\text{OH}
\end{array}
\]

May be obtained by reduction of citronellal or by distillation of geranium or citronella oil; used as a food-flavoring agent

Storage: full, tight, glass container in a cool, dark place

citronellyl acetate

\[
\begin{array}{c}
\text{CH}_2\text{O} \quad \text{C} = \text{O} \\
\text{CH}_3
\end{array}
\]

Used as a fruity flavoring agent in food

Storage: full, tight, glass container in a cool, dark place

citronellyl butyrate

\[
\begin{array}{c}
\text{CH}_2\text{O} \quad \text{C} = \text{O} \\
\text{CH}_2\text{CH}_2\text{CH}_3
\end{array}
\]

Used as a fruity, roselle-like flavoring agent in food; sp. gr. 0.872–0.884

Storage: full, tight, glass container in a cool, dark place

citronellyl formate

\[
\begin{array}{c}
\text{CH}_2\text{O} \quad \text{C} = \text{O} \\
\text{H}
\end{array}
\]

Used as a floral-like flavoring agent in food; sp. gr. 0.890–0.904

Storage: full, tight, glass container in a cool, dark place

citronellyl isobutyrate

\[
\begin{array}{c}
\text{CH}_2\text{O} \quad \text{C} = \text{O} \\
\text{CH(\text{CH}_2)_2}\text{CH}_3
\end{array}
\]

Used as a rose-like, fruity flavoring agent in food; sp. gr. 0.870–0.881

Storage: full, tight, glass container in a cool, dark place

citronellyl propionate

\[
\begin{array}{c}
\text{CH}_2\text{O} \quad \text{C} = \text{O} \\
\text{CH}_2\text{CH}_3
\end{array}
\]

Used as a fruity flavoring agent in food; sp. gr. 0.876–0.887

Storage: full, tight, glass container in a cool, dark place

citronen

A yellow liqueur made from lemon juice and lemon peel

citron melon

A watermelon that is used in making preserves

citriline

\[
\begin{array}{c}
\text{NH}_2\text{C} \quad \text{N} \quad \text{-(CH}_2)_3\text{CH} \quad \text{C} = \text{O} \\
\text{O} \\
\text{NH}_2\text{OH}
\end{array}
\]

A resin obtained from plants and used as a laxative

citrus fruit (citrous) Any of the Rutaceae family of plants. Fruit with sections divided by membranes; originally from eastern and southeastern Asia. Tropical or subtropical, small trees that contain a winged leafstalk, e.g., citrange, citrangequat, citron, clementine, grapefruit, kumquat (not a true citrus), lemon, lime, limequat, orange, orangequat, ortanique, papeda, pomelo (pumelo), shaddock, tangelos, tangerine, tangor, and ugli

Flowers and leaves (essential-oil source)

Fruit (citric acid; pectin source)

Juice (80–90% sugar and acid; high in vitamin C)

Skin (essential-oil source)

Storage: Unwrap; keep at lowest possible room temperature (60–70°F); use within 1 week; short-term refrigeration not harmful

See anthracnose; aspergillus black-mold rot

See Part 2: Citrus Fruit Storage; Flavor Ingredients, Taste and Flavor Type; Fruit and Nut Rootstock; Fruit and Vegetables, Diseases; Fruit Composition; Fruit Storage; Microbiological Media; Pectin Content; Rot Spoilage; Storage Times

citrus liqueur A beverage with medium to high alcoholic content, flavored with citrus fruit and sometimes sweetened

citrus peel Skin of orange or lemon; used candied or grated (in cakes, desserts, drinks, and flavoring)

citrus pomace Used as livestock feed

<table>
<thead>
<tr>
<th>Pomace</th>
<th>Composition</th>
<th>Silage (citrus pulp)</th>
<th>Without fines, dehydrated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dry matter (%)</td>
<td>21</td>
<td>91</td>
</tr>
<tr>
<td></td>
<td>Protein (%)</td>
<td>1.5</td>
<td>6.1</td>
</tr>
<tr>
<td></td>
<td>Fiber (%)</td>
<td>3.3</td>
<td>11.7</td>
</tr>
<tr>
<td></td>
<td>Fat (%)</td>
<td>2</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td>Ash (%)</td>
<td>1.2</td>
<td>6.0</td>
</tr>
</tbody>
</table>

citrus red No. 2 A synthetic food additive used to color orange skins

citrus rust mite [Phyllocoptruta oleivorus (Ashmead)] Causes russetting of citrus fruit; the
injury differs with variety and maturity and can be in the form of silvering of the peel (sharkskin), brown scarring and cracking, smooth brown stain (bronzing), or purple staining. Due to more rapid loss of moisture, this fruit should be stored no longer than necessary.

citrus syrup Molasses, sometimes used as animal feed
Composition: dry matter 68%; protein 5.5%; fat 0.2%; ash 5.3%

city chicken Alternate layers of veal and pork placed on a skewer
See Part 2: Veal Chart; Veal Cuts

ciu A local gin distilled from tape (slang for intoxicating liquor) with molasses

ciuppin A fish dish

civet A game ragout containing blood and flavored with wine, onions, cardoons, and mushrooms

civil defense agar See Part 2: Microorganism, Media

Cl Symbol for the element chlorine

clabber Milk soured to a point where a firm curd is formed but not to the point of whey separation

Cladosporium See Part 2: Mold, Food; Spoilage, Fat in Food

cladosporium spot A spotting of figs caused by Cladosporium herbarum that first shows as olive green specks, which later enlarge, become slightly depressed, and turn to a yellowish olive color; does not usually decay the fruit

clafouti A fruit and egg pudding

clam A lean, bivalve mollusk; a shellfish
Types and regions of occurrence
Butter, Washington (Saxidomus giganteus; s. nuttallii)—Atlantic; Pacific
Cherrystone—Atlantic
Coquina (Donax spp.)—Atlantic
Gapar, horse neck—Pacific
Geoduck—Pacific
Gulf (Tritaria cordata)—Gulf of Mexico
Hard (round, 1 ½-in. diam.), quahog or chowder (quahaug, Venus mercenaria), hard-shell, or cherrystone (Mercenaria mercenaria)—New England; Middle and South Atlantic
Littleneck, rock cockle, native, Japanese, Manila (Paphia staminea, Protothaca steminea)—Atlantic; Pacific
Pismo (Tivela stuttorum)—Pacific
Razor (5 × 2 × 1 ½ in.), hard-shell (Siliqua patula)—Pacific
Soft, soft-shell (long, Mya arenaria), or steamer—North and Middle Atlantic coast; Pacific
Surf, bar, or skimmer (Spisula solidissima)—Middle Atlantic
Clams are sold in the shell and should be alive with a tightly closed shell.

Consumed: young (eaten raw); older (used in soup)

<table>
<thead>
<tr>
<th>As purchased</th>
<th>Yield (%)</th>
<th>Quantity per serving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breaded</td>
<td>85</td>
<td>3.75</td>
</tr>
<tr>
<td>Canned</td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td>Cherrystone clams</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In shell</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hard</td>
<td>15</td>
<td>22</td>
</tr>
<tr>
<td>Soft</td>
<td>30</td>
<td>10</td>
</tr>
<tr>
<td>Shucked</td>
<td>48</td>
<td>6.5</td>
</tr>
</tbody>
</table>

Form (amount needed for one serving):
In shell as appetizer (6)
In shell as entree (15–20)
Shucked ¼–½ cup

Equivalents:
1 pt, shucked = 18 in the shell
= 15 oz in the can, minced
1 cup clam juice = 8.3 oz
1 cup, raw, meat only = 8 oz
1 cup, canned, meat only = 5.6 oz
1 round, raw, chowders = 1.1 oz
1 med., raw, meat only = 0.75 oz
1 large, raw, soft = 0.4 oz

Clams may contain a toxic substance derived from a plankton organism (Gonyaulax catenella) and should be periodically tested.

Storage: packed in ice in a refrigerator for a maximum of 7 days

See Part 2: Cholesterol Control; Fish and Shellfish, Composition; Fish, Storage; Frozen Food Storage; Frying Time; Minerals, Food; Portion Size; Soups, Composition

clam bouillon Broth from cooked clams
clam broth Diluted clam liquor
clam, canned Canned clam meat
Terms:
Juice—clam juice or diluted clam juice
Weight—weight of drained meat
Meat—white clam meat, dark organs removed

clam chowder A chowder made from clam juice, chopped clams, potatoes, onions, and sometimes other vegetables and seasoned with butter, salt, and pepper
Types:
Manhattan style (New York)—chopped clam meat, tomatoes, tomatoes, onions, sometimes other vegetables, and water; seasoned and boiled
### Composition of Manhattan clam chowder

<table>
<thead>
<tr>
<th></th>
<th>Moisture (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Carbohydrate (%)</th>
<th>Fiber (%)</th>
<th>Ash (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chunky (ready to serve)</td>
<td>86.0</td>
<td>3.0</td>
<td>1.4</td>
<td>7.8</td>
<td>0.2</td>
<td>1.7</td>
</tr>
<tr>
<td>Condensed</td>
<td>84.3</td>
<td>1.7</td>
<td>1.8</td>
<td>9.7</td>
<td>0.4</td>
<td>2.5</td>
</tr>
<tr>
<td>Prepared with water</td>
<td>89.5</td>
<td>1.7</td>
<td>0.9</td>
<td>5.0</td>
<td>0.2</td>
<td>1.5</td>
</tr>
<tr>
<td>Dehydrated</td>
<td>4.1</td>
<td>10.9</td>
<td>8.2</td>
<td>57.5</td>
<td>3.0</td>
<td>19.3</td>
</tr>
</tbody>
</table>

### Composition of New England clam chowder

<table>
<thead>
<tr>
<th></th>
<th>Moisture (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Carbohydrate (%)</th>
<th>Fiber (%)</th>
<th>Ash (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condensed</td>
<td>82.5</td>
<td>4.3</td>
<td>2.0</td>
<td>8.7</td>
<td>2.4</td>
<td></td>
</tr>
<tr>
<td>Prepared with milk</td>
<td>85.2</td>
<td>3.8</td>
<td>2.7</td>
<td>6.7</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>Prepared with water</td>
<td>90.5</td>
<td>2.0</td>
<td>1.2</td>
<td>5.1</td>
<td>0.1</td>
<td>1.2</td>
</tr>
<tr>
<td>Dehydrated</td>
<td>3.5</td>
<td>12.3</td>
<td>16.2</td>
<td>56.7</td>
<td>0.9</td>
<td>11.3</td>
</tr>
</tbody>
</table>

New England—chopped clam meat and milk, no tomatoes; boiled

**clam chowder, Manhattan** Available as a canned soup (condensed and ready to serve) and as a dehydrated soup mix See clam chowder

**clam chowder, New England** Available as a canned soup (condensed) and as a dehydrated soup mix See clam chowder

**clam, coquina** A small (1/2 in.), white, red, yellow, orange, purple, or patterned, wedge-shaped bivalve; used to make chowder

**clam extract** See clam liquor

**clam, hard-shell (littleneck)** Clams that are almost round and bulgy, with thick shells, e.g., quahog, razor; the flesh is superior to soft-shell clams See clam

**clam juice** Undiluted clam liquor

**clam liquor (clam extract)** The liquid obtained during cooking and opening clams

**clam nectar** Concentrated (by evaporation), natural juice removed from clams by heat; used in canning clam meat and making broth, bouillon, and chowder

**clam, soft (longneck)** Clams that are thin and oblong, with thin shells See clam

**clanrana** An herb liqueur

**claret** A dry, red, table wine; red wine of the Bordeaux (southwestern France) area:
- Graves—south
- Médoc—north (very good wine)
- Pomerol—east
- St. Emilion—east
- A low-alcohol (10% alcohol by volume) red wine See also cabernet; wine

**clarets of China tea** Black tea from China

**clarification** Purification of a liquid, such as drinking water, beef stock, melted butter, sugar solution, or vegetable oils, by adsorbing the suspended solid particles on activated clays or carbon, or by use of aluminum sulfate; impurities causing undesirable color, odor, and taste in the liquid are thus removed. Rendering a liquid or semiliquid clean of particles by distillation, centrifuging, or filtration. Fats are clarified by boiling with water and then allowing to separate. Meat broth and sugar solutions require egg whites to aid in clarification. See also colloid

**clarify** To make clear: stock, aspic, or other liquid by adding egg shell or egg white; melted butter by spooning off milk solids

**clarifying agent** A substance that aids the removal of small particles that cloud liquids

**clary (clear eye)** A biennial herb (related to sage) whose leaves are used as food and tips of young shoots and flowers are used in beverages, salads, and as seasoning in omelettes and meat dishes

Species:
- Hormium clary (Salvia hormium)
- Meadow clary (S. sclarea)

Types:
- Broadleaf
- Longleaf
- Wrinkled leaf

Storage: leaves are artificially dried, rubbed, and stored in an airtight container

**clary oil (clary sage oil; oil of muscatel; Salvia sclarea)** A yellowish essential oil used as a flavoring agent similar to sage; obtained by steam distillation; sp. gr. 0.886-0.930

Storage: full, tight, glass container in a cool, dark place

**classic** Describes an exceptional wine from a classic region

**classification** Dividing into categories; separating small solid units into groups of uniform size by passing them over a selective device such as a wide-mesh screen. Such fruits as peas, olives, etc., are graded in this way.
186 class mark

class mark The center value for a class interval (e.g., for class interval 12.5–17.5, class mark is 15)
clatite Pancake
clavicle See Part 2: Bone
clay 1) Aluminum silicate (Al₂O₃SiO₂ • H₂O); a firm, fine soil that is coherent when wet and hard when dry. Clay soils are at least 50% clay, less than 50% sand, less than 50% silt, and are often called heavy soils. See also kaolin. 2) A variety of cowpeas
See Part 2: Soil Classes
clean Describes a wine with no defects or the odor or aroma of wine that has no trace of decay, mold, or vinegar
clean cut A method of describing a live animal:
Bone—no puffy or meaty joints
   Cannon or Shank—free from coarseness or meatiness
   Head and neck—finely sculptured appearance, no coarseness

cleaning Removing objectionable matter; chaff, weed seed, dust, and other foreign matter removed from cereal grain
cleaning solution A solution made by adding 500 ml concentrated sulfuric acid to 25 ml saturated sodium dichromate; allow to cool before use; this red solution will turn green when oxidizing power has been exhausted.
clear Uncloudy; free of turbidity
clear cut shoulders (shoulder clod) A beef roast made from muscle on the foreshank, to the rear of the forearm bone

clear eye See clary
clear flour A grade of white flour that may be made from the poorer 5–60% of all the white flour milled; it is further subdivided into the following grades:
   Fancy clear or First clear
   First clear or Second clear
clearing agents See Part 2: Minerals (Trace) Limits
clear plate Back fat covering pork shoulder butt or Boston butt; 10% skin
See Part 2: Pork Shoulder
clear soup Clear consommé made from meat tissue
cleaver A heavy cutting knife or axe for cutting meat
cled agar See Part 2: Microorganism, Media
clementine (Citrus nobilis var. deliciosa) A hybrid cross between wild North African orange and a tangerine; between an orange and a tangerine in size, color, and ease of peeling
clenbuterol

\[
\begin{align*}
\text{Cl} & \quad \text{OH} \\
\text{H}_2\text{N} & \quad \text{CHCH}_2\text{NHC(CH}_3\text{)}_3
\end{align*}
\]

A beta-agonist that is orally active
climacteric period The period of development of some plant parts that involves a series of biochemical changes associated with a natural respiratory rise and autocatalytic production of ethylene
climax A variety of lespedea
climbing cutworm An insect; the moth has dark gray, marked forewings and the larvae are rounded, soft, smooth-bodied, and up to 1 1/2 in. long. The larvae curl up tight when disturbed and feed at night on the buds before leaves form.
climbing milkweed (Ampelianus albidus) A perennial weed
cloak fern A plant having a toxic principle
See Part 2: Poisonous Plants
cloche, sous Under a bell
clod The deltoideus and infraspinatus muscles of the chuck (shoulder); they lie lateral to the scapula and ventral to its spine; the large outside muscle from a beef chuck
See Part 2: Beef, Boneless Cuts
clod bone The humerus
clone Describes a population derived from a single cell or stock
clonovan A mild, creamy, firm, flat, full-cream, milk cheese
Clorox Proprietary name for sodium hypochlorite (NaClO • 5H₂O); percentage of available chlorine—2–6% home use, 10–18% industrial use
clos de Vougeot A red wine
close To seal or assemble a cap or cover to a can
closed side (beef) Close kidney or tight kidney side; the right side
closing machine (double seamer, seamer) A machine that double-seams the end and body of a can
closing price The price for a commodity futures contract generated by trading through open outcry at the close of a trading session
Clostridium A genus of spindle-shaped bacteria that are gram-positive, spore-forming rods with an enlarged central endospore
Clostridium botulinum A common soil bacterium (at least five types) that produce the toxin responsible for the food poisoning known as botulism; anaerobic bacteria that produce very heat resistant spores; botulism is the most serious but rarest type of food poisoning, with from 30 to 65% of the cases ending in death; it is a gram-positive rod; the bacteria should be heated to 250°F for at least 24 min to kill them; the spores are killed at 120°C for 4 min (type E spores are killed at 80°C for 10 min); the toxin is destroyed at 100°C for 10 min and vegetative cells are killed by pasteurization. Lethal dose of toxin is 0.00000035 g. See also Bacillus botulinus; botulism
See Part 2: Bacterial Food-Borne Illnesses; Microbial Toxins; Microbiological Media; Microorganism, Media; Spoilage, Carbohydrate Foods; Spoilage, Protein Foods; Thermophiles
Clostridium perfringens (Sometimes called C. welchii.) An anaerobic microbe that causes food poisoning; some spores have extreme heat resistance; it is universally prevalent, the greatest problem being heat-resistant spores that have survived the cooking process and germinate and multiply when the food is
left at an intermediate temperature. The key to safety is temperature control (danger range 65-122°F) after cooking. Implicated foods usually contain $1 \times 10^6$ per gram.

Media used for growth:
- Cooked meat medium
- Fluid thioglycollate medium
- SFP agar base
- SPS agar

See Part 2: Bacterial Food-Borne Illnesses; Food Poisoning, Bacteria; Illness from Food; Infectious Diseases, Food-Borne; Microbiological Media

Clostridium welchii See Clostridium perfringens

clostrisel agar See Part 2: Microbiological Media

closure (cap; cover; end; lid; seal) Usually refers to the top of a container (e.g., a can); the joint or seal that is made by attaching a cover, cap, or plug to a container

closure lug On lug twist caps, it fits under glass lug for security

clothing wool Wool that is too short to reach the combing grade

clothed cream Cream skimmed from scalded milk and then heated

cloudberry (baked-apple berry; yellow berry; Rubus chamaemorus) An orange-red berry that is often used like the blackberry; it grows in very cold climates and is of a golden color

cloud ear A Chinese mushroom that is often dried and must be softened in water before cooking

cloud-ear fungus A dark brown to black, gelatinous, crinkly mushroom

clouding agent An ingredient added to prevent the separation of insoluble flavoring oils (usually in citrus drinks)

See Part 2: Clouding Agents

clovey Not clear; turbid

clove (Caryophyllus aromaticus or Eugenia caryophyllata Thunb.) 1) The unopened flower bud (purplish brown) of the clove tree (an evergreen) is used for spices; buds are picked by hand and sun-dried. They have a round head, are spikelike in shape, and may be obtained ground or whole. The term "bold" means a large well-formed, clove bud; 4000-7000 dried buds/lb.

Sources: Brazil; Madagascar; Tanzania

Characteristics
- Aroma—rich, floral, balsamic
- Flavor—arresting, spicy, sour-fruit, penetrating, refreshing, very hot, and aromatic; increases in potency in frozen foods
- Grind—often medium

Import standards:
- Acid-insoluble ash 0.5% max.
- Ash 6% max.
- Clove stems 5% max.
- Crude fiber 10% max.
- Moisture 8% max.
- Total extraneous matter 1% max.

Volatile oil 15% min.

Composition (usual range): moisture 6-8%; protein 5-7%; fat 20-21% (not less than 15%); carbohydrate 61-62%; fiber 9-10% (not more than 10%); ash 5-6% (not more than 7%); not less than 12% quercitannic acid; not more than 0.5% acid-insoluble ash; aromatic steam-volatile oil 17-21% (ground spike loses oil on storage); fixed oil 5-10% (primarily stearic acid)

See Part 2: Essential Oils; Flavoring Agents, Natural; Flavor Ingredients, Taste and Flavor Type; Spices, Microbial Content

2) Segment of a bulb, e.g., a clove of garlic that is one-half the sphere sections of the garlic bulb

clove-bud oil A colorless to yellow liquid obtained by water or steam distilling the clove bud; superior in flavor to the other two clove oils

Contains:
- Eugenol 70-95%
- Eugenol acetate 17%
- Beta-caryophyllene 5-12%

See clove oil

clove-leaf oil A dark brown to pale yellow volatile oil steam-distilled from the whole leaves and twigs of the clove tree (Eugenia caryophyllata); used as a food-flavoring agent; contains eugenol (80-88%)

Storage: full, tight, glass container in a cool, dark place

See clove oil

Export standards

<table>
<thead>
<tr>
<th>Source and quality</th>
<th>Moisture (max. %)</th>
<th>Stems, mother cloves (%)</th>
<th>Khoker cloves (%)</th>
<th>Extraneous matter (%)</th>
<th>Headless clove (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malagasy Republic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General (tout-venant)</td>
<td>16</td>
<td>5</td>
<td>1</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Prime</td>
<td>16</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Standard (courant)</td>
<td>16</td>
<td>5</td>
<td>0</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Superior</td>
<td>16</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Zanzibar</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distillation</td>
<td>14</td>
<td>5</td>
<td>20</td>
<td>(and extraneous matter)</td>
<td></td>
</tr>
<tr>
<td>Special</td>
<td>14</td>
<td>4</td>
<td>4</td>
<td>(and extraneous matter)</td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>14</td>
<td>4</td>
<td>4</td>
<td>(and extraneous matter)</td>
<td></td>
</tr>
</tbody>
</table>
clove oil  A colorless to light yellow to light brownish yellow, natural essential oil steam-distilled from the buds, stalks, and leaves of the clove plant (Eugenia caryophyllata); used for making vanilla and as a clovelike flavoring agent in food

<table>
<thead>
<tr>
<th>Optical rotation</th>
<th>Bud</th>
<th>Leaf</th>
<th>Stem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refractive index</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>at 20°C</td>
<td>1.527-1.538</td>
<td>1.531-1.535</td>
<td>1.534-1.538</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>1.038-1.060</td>
<td>1.036-1.046</td>
<td>1.047-1.057</td>
</tr>
</tbody>
</table>

Storage: full, tight container in a cool, dark place
clove oleoresin  Obtained by extraction (often using acetone, benzene, or alcohol) of the spice with organic solvents; contains 70–92% volatile oil
clover  Many members of the pea family with trifoliolate leaves and flowers with a dense head; used as forage; 60 lb seed/bu; seed 6 qt/acre

- Alsike (Trifolium hybridum)
- Alyce (Alysicarpus vaginalis)
- Berseem (T. alexandrinum)
- Clustered (T. glomeratum)
- Crimson (T. incarnatum)
- Lappa (T. lappaceum)
- Large hop (T. campestris)
- Red (T. pratense)
- Rose (T. hirtum)
- Shaftal (T. repens)
- Strawberry (T. fragiferum)
- Subterranean (T. subterraneum)
- Tick (Desmodium spp.)
- White (T. repens)
- Yellow suckling (T. dubium)

Popular types:
- Alsike or Swedish (triennial)
- Crimson (annual)
- Red (biennial)
- White (perennial)

See Part 2: Seed Germination
clove-root oil  A pale yellow oil obtained by steam-distillation of clove roots; contains eugenol (85–96%)
clove-stem oil  A volatile white oil (darkens on aging) steam-distilled from the dried peduncles or stems of the spice (Eugenia caryophyllata); used as a clove-like flavoring agent in food; contains eugenol (83–95%)

Storage: full, tight container in a cool, dark place
See clove oil
clove steak (rib steak; top loin)  Steak cut from the rib end of the short loin, located in front of the T-bone steak; contains no tenderloin muscle

Clum Forest  A small, very prolific, speckle-faced breed of English sheep
clopanodon  A fatty acid
See Part 2: Fatty Acids, Fats and Oils; Fatty Acids and Their Properties; Unsaturated Fatty Acids
cluster bean (guar; Cyanopsis tetragonolobus)  A drought-tolerant legume whose green pods are used as vegetables; grown as a green manure and fodder crop; mucilage is extracted from the seed.
clutch  A nest of eggs; an egg-laying pattern in which a hen will lay one egg per day for one or more days in succession and then take a rest period, followed by another clutch

Cm  Symbol for the element curium
cm  See centimeter
cmc  See carboxymethylcellulose
CMI  Can Manufacturers Institute
Co  Symbol for the element cobalt
collen  Prefix meaning with or together
CO2  See carbon dioxide; dry ice
coagulant  A substance capable of removing colloidal material

coagulase  An enzyme that induces coagulation
See Part 2: Microbiological Media
coagulated  Describes material that has changed from a fluid to a thick mass; congealed; curled; clotted
coagulation (clotting)  Aggregation (curdling, clotting) of protein macromolecules into clusters or clumps of semisolid material; may be initiated by heat (egg white), by a change in pH (milk), or by enzymatic activation (blood). The change (denaturation) is usually irreversible.
coal  A mineral comprised of about 90% carbon; used as fuel and source of coke and coal tar

<table>
<thead>
<tr>
<th>Type</th>
<th>Hardness</th>
<th>Flame</th>
<th>Smoke</th>
<th>lb/ft³</th>
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<tbody>
<tr>
<td>Anthracite</td>
<td>Hardest</td>
<td>Slight, blue,</td>
<td>Little</td>
<td>53</td>
</tr>
<tr>
<td>Bituminous</td>
<td>Soft</td>
<td>Burns freely</td>
<td>Pitchy</td>
<td>48</td>
</tr>
<tr>
<td>Cannel</td>
<td>Bituminous but harder</td>
<td></td>
<td>Little</td>
<td></td>
</tr>
</tbody>
</table>

1 lb Equivalents

<table>
<thead>
<tr>
<th>Pounds of bituminous coal briquettes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coke</td>
</tr>
<tr>
<td>Crude petroleum and shale oil</td>
</tr>
<tr>
<td>Electric (kilowatt-hours)</td>
</tr>
<tr>
<td>Gasoline and fuel oil</td>
</tr>
<tr>
<td>Lignite and brown coal</td>
</tr>
<tr>
<td>Lignite briquettes</td>
</tr>
<tr>
<td>Manufactured gas (m³)</td>
</tr>
<tr>
<td>Natural gas (m³)</td>
</tr>
<tr>
<td>Pitch coal and black lignite</td>
</tr>
<tr>
<td>Refinery gas (m³)</td>
</tr>
</tbody>
</table>

See Part 2: Fuel, Heating Value
coalfish (Pollachius virens) A dark, pollack-type, saltwater, food fish that is similar to the cod; available fresh or salted and smoked. See pollock.

coalition A combination of organizations and groups working together to influence a government decision.

colour tar Contains aromatic hydrocarbons, phenol bodies, and organic bases. See petroleum.

colour tar dye A synthetic food-coloring additive derived from petroleum and identified by assigned initials, the shade, and a number, e.g., FD & C Red No. 40.

coarse 1) Describes a harsh flavor (of wine). 2) Large particles; not fine.

coarse grain See feed grains.

coarse hominy See hominy.

Coastal Bermuda A variety of Bermuda grass used for pastures.

colatepec See Mexican altura.

coating 1) Covering with flour, crumbs, or a wheat product and egg batter or other dry ingredients before frying. 2) A natural, hard, cellulosic layer on a seed or fruit. 3) A film on tongue and teeth often caused by tannins and the protein of saliva. 4) A thin layer of material applied to a product either mechanically or by dipping, as chocolate on candy or casein solution on paper. See Part 2: Coatings.

coating weight The weight of a coating in milligrams per 4 square inches.

coax An intermediate step performed in preparation for the next step.

cob 1) The fibrous, inner portion of the ear of corn (maize) from which the kernels have been removed; used for smoking meats and as fuel in some agricultural areas. 2) A short-legged horse. See also hazel.

cobalamine (cobalamin) Vitamin B_{12}, which cures pernicious anemia; contains trivalent cobalt. See vitamin B_{12}.

cobalt (Co) A metallic element; at. no. 27; at. wt. 58.94; Group VIII of the Periodic Table; oxidation states +2, +3; electron configuration 2-8-15-2; orbit K L M N.

It is necessary for hemoglobin formation and is an essential part of vitamin B_{12}. See Part 2: Grain Analysis; Normal Solutions; Wheat, Minerals.

cobalt carbonate (CoCO_{3}) Sometimes used in animal feed.

Composition: dry matter 99%; sulfur 0.2%; cobalt 45.5%; iron 0.06%.

cobbler 1) A deep-dish pie (usually fruit) with a top crust; may or may not have a bottom crust. 2) A sweet, alcoholic, cold fruit drink. 3) A whiskey-, rum-, wine-based drink.

cobia A finfish with white meat and light to moderate flavor.

coconut (Caryocar brasiliense) A type of hazelnut, very similar to a filbert. See filbert; hazel.

Cobol (common business-oriented language) A programming language designed for business applications.

coburg A round French bread.

cocoa The dried leaves of a shrub from which cocaine is produced; also used in cola drinks (cocaine is removed).

coca plum (coco; icaco; icaque) A white-fleshed, insipid plum that may be eaten raw or dried.

cocarboxylase A coenzyme (C_{12}H_{19}ClN_{4}O_{7}P_{2}S \cdot H_{2}O) See also thiamin pyrophosphate.

-cocc- A syllable meaning seed or pill.

cocci A subdivision of bacteria whose shape resembles that of a sphere (Greek, berry); usually gram-positive.

1. Diplococcus—occurs in pairs
2. Micrococcus (staphylococcus)—resembles a cluster of grapes

coccidia Organisms that are (usually) intestinal parasites.

coccus (berry) A spherical bacterium.

coccygeal vertebrae The vertebrae of the coccyx, or tailbone. See Part 2: Bone.

Cochin An Asiatic class of chickens that has feathered shanks, yellow skin, and long feathering and that lay a brown egg.

Varieties: buff*; partridge*; white*; black* (where an asterisk indicates there are also bantam varieties). See Part 2: Poultry Breeds and Varieties.

cochineal A purplish red coloring matter (with no taste or odor) made from dried bodies of the insect Coccus cacti. Made from the dried bodies of insects which lay a brown egg. See Part 2: Unsaturated Fatty Acids.

cochineal extract A food color additive.

cock (old rooster) Mature male chicken over 10 months of age; has a hardened breast bone, coarse skin, and toughened and darkened meat and is cooked by stewing, steaming, or braising. See also rooster.

cocked base plate A base plate on a can-sealing machine that is not parallel with the seaming chuck and creates a body hook of uneven length.

cocked cap An unlevel cap caused by the cap lug not being properly seated under the glass lug.

cockeral A young cock; male fowl. See also toms.

cockle 1) A small marine bivalve mollusk (Cardium edule) similar to an oyster; a shellfish; 20% edible (10-12% protein). Types (common name and species):

Atlantic (C. edule)
Pacific (C. corbis)
Knotted (C. tuberculatum)
Spring (C. aculeatum).
cocklebur (Xanthium pensylvanicum)  An annual weed having a toxic principle. See Part 2: Poisonous Plants.

cockroach  A pest; an insect that may carry disease-causing organisms.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Caused by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dyentery</td>
<td>Entamoeba histolytica</td>
</tr>
<tr>
<td>Food poisoning</td>
<td>Salmonella enteritidis</td>
</tr>
<tr>
<td>Food poisoning</td>
<td>S. oranienburg</td>
</tr>
<tr>
<td>Food poisoning</td>
<td>S. typhimurium</td>
</tr>
<tr>
<td>Gastroenteritis</td>
<td>Escherichia coli</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>Bacillus tuberculosis</td>
</tr>
<tr>
<td>Worms</td>
<td>Hookworms, roundworms</td>
</tr>
</tbody>
</table>

Types:
- American—lives in drains, sewers, and damp dirty places.
- German—lives in warm, moist places.

cockroach, American (palmetto bug)  Can live outdoors in the South; often found in basements in the North.

cockroach, German  The most common cockroach; produces 35,000 offspring/year.

cockroach, smoky brown  An insect that lives outdoors in firewood piles, tree knotholes, and mulch; will move indoors.

cocktail  1) A dish that may be made from fruits, vegetables, fruit or vegetable juices, or seafood products and that is served at the beginning of a meal as an appetizer. 2) A short, iced drink usually used as an appetizer and made with one or more alcoholic liquors and numerous flavoring ingredients, usually including bitters.
- Party—3–4 drinks per person
- Predinner—2–3 drinks per person
- 3) Fruit used as the first course of a meal. 4) Seafood used as the first course of a meal. 5) Fruit juices used as the first course of a meal.

cocktail frank  A moist, cooked, smoked American sausage made from finely chopped, mildly seasoned beef, pork, and veal stuffed into pork, sheep, or artificial casings and packed in brine solution. A batter-type product available in medium- to large-diameter links or large-diameter casing for slicing. See cocktail frankfurter; cocktail wiener.

cocktail frankfurter  A small frankfurter, usually 2 in. long and ½ in. diam. See cocktail frank; cocktail wiener.

cocktail glass  1 glass = 2 oz.

cocktail sauce  A sauce made with peppers, tomato, etc., usually served with seafood cocktails. See Part 2: French Dressing Variations.

cocktail wiener  A smoked, cooked, ready-to-eat sausage similar in flavor to frankfurters; may also be called Vienna sausage. See cocktail frank.

cocktailworst  A moist, cooked, smoked Dutch sausage made from finely chopped, medium-seasoned beef and pork stuffed into a sheep casing or not stuffed into a casing.

cocoa  See cocoa plum.

cocoa (Theobroma cacao; strains criollo, forastero, and trinitario)  A small (20–30 ft), broadleaf evergreen tree that produces long yellow or red (ripe) pods (3 x 8 in., 1 lb, 30–40 pods per tree) containing 20–50 white to purple beans per pod encased in white mucilage. Trees yield 200–3000 lb cocoa beans per acre; beans ripen in 5–6 months. The beans and mucilage are fermented (2–9 days), roasted, and ground, the fat is removed, and a water extract is prepared; the dull red beans are dried to 6% moisture (several days), shredded (waste material or fertilizer), roasted, and ground. Cocoa is made in much the same manner as chocolate except some of the fat is removed and the final product is ground; it contains less than 8% fat. The bean contains 50–57% cocoa butter (fat).
- 1 sack of dried beans = 130–200 lb.

Terms:
- Breakfast, or high-fat cocoa—min. 22% cocoa butter.
- Chocolate—extra cocoa butter, sugar, and milk added.
- Chocolate liquor—50% fat and in the forms bulk, slab, kiddled, and ribbon.
- Cocoa (drinking)—cocoa butter removed.
- Cocoa butter—separated from chocolate liquor.
- Pressing—separates cocoa butter from powder.
- Pulverized bean (cacao)—part of the cocoa butter has been removed.
- Sweet—breakfast cocoa (40%) and sugar (60%)
- Sweet milk—breakfast cocoa mixed with sugar and at least 12% whole milk solids.

Winnowing—separation of shells from nibs.

Equivalents:
- ⅓ oz cocoa = 1 oz chocolate
- 2–3 ⅓ tbsp cocoa + ⅓ tbsp butter = 1 oz, or one square, of chocolate.
- 4 cups = 1 lb
- 1 lb = 100 servings
- 1 cup = 3 oz
- 4 tbsp = 1 oz
- ⅓ cup = 1 oz (28 g)

Composition (without milk): moisture 1–4%; protein 4–9%; fat 2–22%; carbohydrate 31–89%; ash 2%; pH 5.2–5.9 (alkalized product 6.5–8.1); 10 mg caffeine/6-oz drink; 220 calories per cup.

To remove stain from cloth: first preswash in cold water, if necessary use pretreatment spray or clean-
ing fluid, bleach if needed and second soak in warm water with enzyme product
See also cacao
See Part 2: Cocoa, Composition; Cocoa Cultivation; Food, Composition; Minerals, Food; Minerals (Trace), Limits; Wastes, Agricultural and Industrial
cocoa blanco A sun-dried cheese that is coated with rancid butter, coffee grounds, and ground cocoa-bean shells
cocoa butter (cacao butter; theobroma oil) Fat expressed from cacao bean
Properties:
- Iodine no. 32-40
- Melting point 28-33°C
- Refractive index (60°C) 1.449-1.451
- Saponification no. 188-202
- Specific gravity 0.950-0.975
Acid composition: myristic 0.5%; palmitic 25%; stearic 35%; oleic 37%; linoleic 3%; linolenic 0.5%
Used for confectionery, soaps, and pharmaceutical products (suppositories)
See Part 2: Fats and Oils, Composition; Fats and Oils, Fatty Acid Composition; Fats and Oils, Physical and Chemical Properties; Fatty Acids, Fats and Oils
cocoa hulls Used as a mulch and cattle feed
cocoa, instant Store at room temperature (below 70°F, shelf life 1 yr).
cocoa nibs Broken kernels of the cacao bean
coco de mer A very slow-growing double coconut
cocoanut; Cocos nucifera) The hard-shelled nut of a palm that grows in tropical lowlands; begins fruiting in 6-9 yr; 50 nuts per year per tree; 23 lb copra per year per tree; originally from eastern and southeastern Asia
Tree growth requirements: fertilization to mature fruit 12-14 months; flower and mature fruit once per month; rainfall 60-80°F; temperature range 75-86°F; tree will bear for 70-80 yr
Parts of plant and their uses:
- Coconut milk—a thick liquid obtained by squeezing coconut flesh
- Husk (coir)—2-3 in. thick; ropes and coconut matting
- Leaves—house thatching
- Meat (copra)—residue after oil extraction (oil cake); livestock feed
- “Milk” (coconut juice)—from unripe fruit; used as a drink; contains sugar and oil
- Palm trunk—building timber
- Roots—tea and coffee substitute; fuel
- Tree sap—fermented to form palm wine
Types:
- Desiccated coconut—dried and grated meat
  Domestic
  - Short shred
  - Medium shred
  - Long shred
- Fine-grated, desiccated
- Flaked
- Partially domestic (reprocessed)
  - Short shred
  - Medium shred
  - Long shred
- Ready-toasted
Forms Shape Sweetened Pack
Chipped Thin, broad chips, 2 in. long
Desiccated Small coarse particles
Macaroon Very small particles
Thread Shorter thread Yes Dry; moist
Long thread Yes Dry; moist
Refuse: 37%
1000 lb coconuts
  = 500 lb copra
  = 25 gal oil
  = 170 lb desiccated or shredded coconut
1 lb unshelled coconut
  = 8.3 oz shredded coconut
  = 3 cups shredded coconut
1 lb = 5 1/8 cups shredded coconut
1 cup shredded coconut = 2 1/3 oz (80 g)
2 x 2 x 0.5, meat only = 1.6 oz, fresh
1 cup, shredded, firmly packed = 4.6 oz, fresh
1 cup, shredded, lightly packed
  = 2.9 oz, fresh
  = 3.2 oz, dried, canned
1 cup liquid from coconut = 8.5 oz fresh
1 cup, flaked = 2.6-2.7 oz, dried, canned
Fresh coconut contains 50% oil; shredded, 41% oil; 2 tbsp fresh shredded coconut contain 55 calories.
To remove shell: Make a hole through one of the “eyes;” drain and save milk; heat in a 350°F oven for 10-30 min; cool in freezer for 1 h and tap with a hammer; remove brown skin; grate meat (endosperm).
Storage (of milk): refrigerate; use within 24 h or freeze
See coconut custard pie One-eighth of a 9-in. pie contains 250 calories.
coconut kernels with coats (copra meat)
Desiccated coconut—dried and grated meat
Domestic
- Short shred
- Medium shred
- Long shred
Fine-grated, desiccated
Flaked
Partially domestic (reprocessed)
- Short shred
- Medium shred
- Long shred
Ready-toasted
Forms Shape Sweetened Pack
Dry matter (%) 92 91
Protein (%) 21 21
Fiber (%) 12 14
Fat (%) 6.4 6.2
Ash (%) 6.8 6.0
coconut meat Endosperm of coconut
coconut meat

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dried</th>
<th>Shredded</th>
<th>Unsweetened</th>
<th>Fresh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>3</td>
<td>3</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>Protein (%)</td>
<td>4</td>
<td>7</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Fat (%)</td>
<td>39</td>
<td>65</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>53</td>
<td>23</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Ash (%)</td>
<td></td>
<td>1.5</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

coconut milk 1) A smooth, rich, milky liquid pressed from the meat of fresh coconuts; used in sauces, desserts, and beverages; available in cans or can be made from fresh coconuts. 2) Water from inside the coconut See coconut

coconut oil (copra oil) A nondrying, highly saturated, white, very stable oil, with no characteristic flavor, that is pressed from the kernel, or coconut meat, of the coconut palm

<table>
<thead>
<tr>
<th>Fatty acid carbons</th>
<th>Unhydrogenated</th>
<th>Hydrogenated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturated</td>
<td>6</td>
<td>0.2 Trace</td>
</tr>
<tr>
<td>8</td>
<td>5–8</td>
<td>8</td>
</tr>
<tr>
<td>10</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>12</td>
<td>45–48</td>
<td>48</td>
</tr>
<tr>
<td>14</td>
<td>17–19</td>
<td>18</td>
</tr>
<tr>
<td>16</td>
<td>9–10</td>
<td>10</td>
</tr>
<tr>
<td>18</td>
<td>2–7</td>
<td>10</td>
</tr>
<tr>
<td>Monounsaturated</td>
<td>18</td>
<td>6 Trace</td>
</tr>
<tr>
<td>Polyunsaturated</td>
<td>2</td>
<td>Trace</td>
</tr>
</tbody>
</table>

Acid number (unhydrogenated) 0.01
Iodine value 7–10 (unhydrogenated), 23 (hydrogenated)
Melting point 37–39°C (unhydrogenated), 25°C (hydrogenated)
Saponification value 250–260 (unhydrogenated and hydrogenated)
Specific gravity 20°/4°C 0.9226 (unhydrogenated)
Unsaponifiable < 0.5% (unhydrogenated)
See Part 2: Fats and Oils, Characteristics; Fats and Oils, Composition; Fats and Oils, Fatty Acid Composition; Fats and Oils, Physical and Chemical Properties; Fatty Acids, Fats and Oils; Iodine and Saponification Values; Melting Points, Fats and Oils; Oil or Fat, Characteristics; Refractive Indices, Fats and Oils; Saturated Fatty Acids; Specific Gravities, Fats and Oils; Spoilage, Fat in Food; Titer, Fats and Oils; Tocopherols

coconut oil cake (copra meal) Ground cake after oil extraction of copra; used for livestock feed
Composition: moisture 5%; protein 23%; fat 8%; fiber 9%

coconut water (coconut juice; coconut milk) The liquid from the interior of the coconut
Composition: moisture 90–94%; protein 0.3–0.5%; fat 0–0.2%; carbohydrate 5–9%; ash 0.6%

cocoyam The large, edible tuber of a perennial plant

cocuy An herb liqueur made from sisal roots

COD 1) Cash on delivery. 2) See chemical oxygen demand

cod 1) The scrotum after removal of testicles on a steer; it usually contains fat. 2) A saltwater finfish (Gadus callarias) with very light, tender white meat and mild delicate flavor; may be used fresh, salted, or smoked; dry salt cod must be soaked to remove some of the salt to be palatable. The liver is a source of oil and vitamins.
Atlantic—A saltwater fish of the North Atlantic; weight ranges from 3 to 20 lb; flesh is white, firm, and lean.
Pacific—weight ranges from 5 to 10 lb; mild flavor and tender, soft, white meat
Composition: protein 17.6%; fat 0.3%
See also codfish; demersal fish

cod-burbot A codlike freshwater fish

coddle (soft cook) To cook slowly and gently; to cook (170–180°F) below the boiling point, as of eggs

coddling moth An insect pest whose hosts are apple, pear, quince, crab apple, English walnut and other fruit
Damage: worm in apple; entrance and exit holes
Control: insecticide spray

codequin A moist, uncooked, unsmoked Argentinean sausage made from coarsely chopped, medium-seasoned (with cinnamon, vanilla, cloves, ground garlic, white vinegar, and white pepper) beef, pork, and corn flour in a pork casing

codeine (C18H21NO3) A narcotic alkaloid derived from morphine (poppy) and used for relief of coughs; allergic reactions may occur.

codequin A moist, cooked, smoked Brazilian sausage made from medium-chopped, medium-seasoned beef and pork stuffed into beef casings

Codex See Committee of Food Protection of the National Academy of Science–National Research Council

Codex Alimentarius A group formed to set up food standards to be used in international trade; works cooperatively with FAO and WHO

cod fat A large piece of fat on the flank of both steers and heifers

codfish [cod; scrod (baby)] A soft-finned, lean, saltwater food fish caught in the Middle Atlantic and Pacific coasts
Atlantic (Gadus callarias, synonym G. morhua Linnaeus)
Cabillaud—fresh cod
Dry—salted and dried
Green—salted but not dried
Greenland (G. ogac)
Korean—See pollock (Alaska)
Ling (Ophidon elongatus)
Offshore—deep-water cod
Pacific (G. macrocephalus)
Polar (Boreogadus saida)
Poor (Trisopterus minutus)
Rock—shallow-water cod
Stockfish—dried but not salted
Wachna (Eleginus navaga)—North Atlantic
Wachna (E. gracilis)—North Pacific

Market forms:
Bits—small pieces of salted boneless tissue
Middle—thick chunks of salted boneless tissue from the middle of the fish
Precooked—unsalted, boneless
Ready-to-use—boneless; used like salmon
Strip—thick pieces of salted, practically boneless tissue from the side
Tablets—strips (6 x 3 x 1\frac{1}{2} in.) made up of 2-3 pieces of boneless tissue

Market classifications:
Snapper—up to 1½ lb
Scrod—1.5-2.5 lb, less than 50 cm
Market—2.5-10 lb, 50-75 cm
Large—10-25 lb, 75-100 cm
Whale—over 25 lb, over 100 cm

Yield: 43%
Composition (muscle): moisture 81%; protein 16-18%; fat 0.3%; ash 1%; pH 6.0
Available raw, canned, dehydrated, dried and salted, and frozen
Cakes (balls) made from the following:
  100 lb salt codfish
  125 lb potatoes
  10 lb onion
  13 lb beef tallow
  6 oz pepper or other spices

Usually fried and served hot See cod
See Part 2: Fish and Shellfish, Composition; Fish, Smoke-Cured; Fish, Storage; Frozen Food Storage; Glutamate; Minerals, Food; Riboflavin, Food; Thiamin, Food; Vitamin A, Fish; Vitamin D, Fish; Vitamin D, Food; Water Activity, Organisms and Food

Coding Embossing a code number or marking as a means of identification See commodity code; container code; container specification code

Codispensing Dispensing two components and mixing when they are ejected

Codling (Josser) A small cod (under 63 cm long)

Codling moth (Laspeyresia pomonella) An insect; the adult is a grayish brown moth with brown wing tips and ¼- to ½-in. wing span; the larva is white or pink with a brown head and is up to ½ in. long; young larvae burrow into fruit (e.g., pear) and cause wormy apples and blemishes or "stains" on the skin.

Cod-liver oil Oil expressed from livers of fish species of the family Gadidae
Properties:
- Iodine no. 135-180
- Refractive index (15.5°C) 1.479-1.485
- Saponification no. 180-190
- Specific gravity 0.922-0.930
- Vitamin A 400-4000 IU/g
- Vitamin D 40-400 IU/g

See Part 2: Fats and Oils, Physical and Chemical Properties; Iodine and Saponification Values; Titer, Fats and Oils; Unsaturated Fatty Acids; Vitamin A, Food

Coefficient of determination This is the correlation coefficient squared ($r^2$) and it indicates how much of one trait is associated with another; e.g., if $X$ and $Y$ are correlated at 0.8, then $r^2 = 0.64$, or 64% of the differences in $Y$ is associated with $X$

Coefficient of digestibility The percentage of protein (75-97%, varies with the food, 92% avg.), fat (90-95%, 95% avg.), and carbohydrate (85-98%, 98% avg.) that the body can absorb from food; a measure of digestibility expressed as a percentage

$$\text{Coefficient of digestibility} = \frac{(\text{quantity ingested food}) - (\text{quantity in feces})}{(\text{quantity in ingested food})}$$

Coefficient of variation ($C$) A measure of variation of observations that has been adjusted for sample magnitude so that variation between samples with different magnitude can be compared

$$C = \frac{s}{\bar{x}}$$

$s = \text{estimate of standard deviation (} \sigma \text{)}$
$\bar{x} = \text{sample mean}$
Sometimes expressed as a percentage:

$$\frac{\sigma}{\bar{x}} \cdot 100 = \%$$

Coenzyme (enzyme activator) A substance, often containing a vitamin, that is required by some enzymes in order to catalyze their reaction; a complex organic compound (nucleotide) that combines with and activates an enzyme system; an essential factor in such biochemical transformations as cellular oxidation, the Krebs cycle, and vitamin activation See also prosthetic group
COENZYMES

COENZYME A

\[
\begin{align*}
\text{HO—P—OCH}_2—C—\text{CHOH—CO—NHCH}_2—\text{CH}_2—\text{CO—NHCH}_2—\text{CH}_2\text{SH} \\
\text{CH}<\text{NH}_2
\end{align*}
\]

COENZYME I (CoI; cozymase; DPN) See diphosphopyridine nucleotide

COENZYME II (CoII; TPN) See triphosphopyridine nucleotide

COENZYME \( R \) See biotin

COEUR À LA CRÈME A molded sweet dish made from cream cheese, cream, egg white, and sugar

COEUR D'ARRAS A strong-flavored, heart-shaped cheese made from cow's milk

COEUR DE Bray A heart-shaped (100-300 g) camembert-type cheese, made from cow's milk, that is usually matured 3 months

COEURMANDIE A heart-shaped (2 kg) camembert-type cheese made from cow's milk

COFACTOR A metallic ion necessary for enzyme activity

COFFEE (COFFEA ARABICA; C. LIBERICA; C. ROBUSTA)

1) The berry (cherry), bean, or seed of the evergreen coffee tree or the bean obtained from the fermented "cherry" of a coffee shrub (COFFEA), originally from tropical Africa; must be roasted (230-250°C) before using as a drink; a tropical plant whose beans are roasted, ground, and brewed in hot water to yield a stimulating nonalcoholic drink; 1 lb green dried beans per tree; several species are used:

- **C. arabica**—a small tree that bears a green berry that turns red when ripe; each berry contains two beans
- **Mild coffee**—berry opened by a machine; beans fermented in water and sun-dried; bean retains parchment skin
- **Hard coffee**—sun-drying whole berry and removing pulp by machine; parchment skin removed
- **C. canephora**—yields a smaller bean; known as robusta
- **C. liberica**—very robust

<table>
<thead>
<tr>
<th>Origin</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>Ambriz</td>
</tr>
<tr>
<td>Arabia</td>
<td>Mocha</td>
</tr>
<tr>
<td>Brazil</td>
<td>Santos, paranas, minas, rios</td>
</tr>
<tr>
<td>Colombia</td>
<td>Medellins, armenias, mamizales (MAMs)</td>
</tr>
<tr>
<td>Congo</td>
<td>Ocre</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>Djimmas, harrars</td>
</tr>
<tr>
<td>Guatemala</td>
<td>Antiguas</td>
</tr>
<tr>
<td>Hawaii</td>
<td>Kona</td>
</tr>
<tr>
<td>Honduras</td>
<td>Copans</td>
</tr>
<tr>
<td>Mexico</td>
<td>Coatepecs, oaxacas, tapachulas</td>
</tr>
</tbody>
</table>

Color classification:
- Light roast
- Medium roast
- Dark roast
- Italian or French roast

<table>
<thead>
<tr>
<th>Roasting name</th>
<th>Color</th>
<th>Roasting time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light, cinnamon</td>
<td>Light</td>
<td>Short</td>
</tr>
<tr>
<td>Standard, American</td>
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<td></td>
</tr>
<tr>
<td>Full, full city</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viennese, New Orleans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>French, Cuban</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Italian, espresso</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Roasting: 400°F internal temperature to develop aroma and taste; 10-12% moisture removed; caramelization of sucrose; pyrolysis of carbohydrate and protein; 16% weight loss

Grinding: to facilitate water extraction; sizes—regular (1 mm); drip (0.75 mm); fine (0.38 mm)

Terms:
- Blend—a mixture of varieties to give desired beverage
- Peaberry coffee—an almost round berry (1 per pod) usually produced on the top of the bush
Steel-cut—ground by a special steel cutting machine that also removes the chaff

Quantity:
- 1 bag = 132.28 lb
- 1 bag (El Salvador) = 152.12 lb

Regular:
- 1 lb = 4 1/2-5 cups
  = 70-80 tbsp
- 1 cup = 85 g (3.0 oz)
- 1 serving, regular grind = 1.5 tbsp

Instant:
- 10-12 cups = 1 lb
- 1 cup = 40 g (1.4 oz)
- 1 lb yields 480 cups

Yield [for 50 people (2 cups each)]: 6 oz instant coffee to 4 gal water; steep for 5 min; 40-50 servings = 1 lb regular coffee and 1 qt cream

2) A beverage made by infusion (185-203°F, 85-95°C) of roasted, ground coffee beans

To remove stain from cloth: If coffee contains cream, spray with cleaning fluid, soak fresh stain in cool water, soak in warm water with enzyme product, and then wash.

Coffee substitute:
- Mocha

<table>
<thead>
<tr>
<th>Composition</th>
<th>Green</th>
<th>Roasted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caffeine (%)</td>
<td>1.3</td>
<td>1.3</td>
</tr>
<tr>
<td>Water extract (%)</td>
<td>31</td>
<td>30</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>22</td>
<td>15</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Moisture (%)</td>
<td>9</td>
<td>3</td>
</tr>
</tbody>
</table>

Caffeine content:
- Brewed—83 mg/6 oz
- Drip method—110-150 mg/5 oz
- Percolated—64-124 mg/5 oz
- Decaffeinated—3 mg/6 oz, 2-5 mg/5 oz
- Instant—60 mg/6 oz, 40-108 mg/5 oz
- Instant decaffeinated—2 mg/5 oz

Beverage coffee has no nutritional value; stimulating value 1.1-1.2% caffeine

Storage limits

<table>
<thead>
<tr>
<th>Bean</th>
<th>Ground</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room temperature</td>
<td>3-4 weeks</td>
</tr>
<tr>
<td>Refrigerator</td>
<td>Do not store</td>
</tr>
<tr>
<td>Freezer</td>
<td></td>
</tr>
</tbody>
</table>

See also caffeine

See Part 2: Coffee Berry; Coffee Composition; Coffee Granule Designation; Coffee Particle Size; Coffee Yield; Minerals, Food; Minerals (Trace), Limits; Portion Size; Wastes, Agricultural and Industrial

Coffee bean The seed or bean of the coffee tree (Coffee arabica)

See Part 2: Poisonous Plants

Coffee blend A mix of two or more coffees to obtain a desired aroma, body, flavor, and taste

Coffee cake Refers to several styles:
- Apple—a round, flat cake topped with apple, raisins, sugar (powdered) and syrup
- Braided—a ring-shaped cake with vanilla icing
- Filled—a ring-shaped cake filled with citron, lemon peel, nuts, and orange peel
- Form—filled with citrus, ground almond, lemon peel, and mace
- Honey—a round, flat cake topped with honey, butter, and ground almonds
- Stollen—rich in
  - Cherries
  - Citron
  - Lemon peel, candied
  - Orange peel, candied
  - Raisins

Streusel—a square, flat cake topped with crumbly streusel (whose ingredients are sugar, butter, flour, and spices)

See Part 2: Grain Products, Composition

Coffee creamer 1) A container to hold cream (coffee cream is 16-30% fat). 2) Coffee whitener (a more modern term), usually made from corn syrup solids, casein, vegetable fat, sodium caseinate, emulsifiers, and gums; can also be a nondairy whitener

See Part 2: Cultured Dairy Products, Composition

Coffee, decaffeinated Coffee from which approximately 97% of the caffeine has been extracted

Coffee, Gaelic A beverage containing coffee, whiskey, and thick cream

Coffee, instant (coffee, soluble) Made from concentrated liquid coffee from which the water has been evaporated

Storage: room temperature (below 70°F, shelf life 1 yr)

Coffee liqueur A liqueur flavored with coffee

Coffee liquid Concentrated (to one-tenth the original volume) liquid coffee
- 1 lb = 40 cups

Coffee substitutes Roasted beans, chicory roots, dandelion roots, figs, and grains

Coffee, Turkish A thick coffee made by boiling pulverized coffee beans, sugar, and water

Coffee whitener (nondairy) Imitation, nondairy, fabricated cream and half-and-half substitutes; they are generally made from vegetable oil, carbohydrate, and a low level of protein; the term can also include cream; the liquid (frozen) form contains hydrogenated vegetable oil and soy protein or lauric acid oil and sodium caseinate

<table>
<thead>
<tr>
<th>Composition</th>
<th>Liquid (frozen)</th>
<th>Powdered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>77-78</td>
<td>2-3</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>0.9-1.1</td>
<td>4-5</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>9-10</td>
<td>35-36</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>11-12</td>
<td>54-55</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>0.3-0.4</td>
<td>2-3</td>
</tr>
</tbody>
</table>

See Part 2: Coffee Whitener, Composition

Cognac A brandy (distilled wine) from the Cognac region of France; letters on bottles have the following meanings: E, especial; F, fine; O, old; S, superior; P,
pale; X, extra; V, very; C, cognac. Pure wine brandy distilled from fermented grape juice; 68–70% alcohol

<table>
<thead>
<tr>
<th>Stars</th>
<th>Age</th>
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</thead>
<tbody>
<tr>
<td>*</td>
<td>3 yr old</td>
</tr>
<tr>
<td>**</td>
<td>4 yr old</td>
</tr>
<tr>
<td>***</td>
<td>5 yr old</td>
</tr>
</tbody>
</table>

The best age is 20–40 yr old
Name and alcohol content:
Cognac—up to 72%
Esprit—72–84%
Alcohol—over 84%

See Part 2: Flavor Ingredients, Taste and Flavor Type

**Cognac oil, green (wine-yeast oil)** Wine-yeast oil obtained by steam distillation of wine lees; has odor of cognac; sp. gr. 0.864–0.871; used as a cognac-like flavoring agent in food
Storage: full, tight container in a cool, dark place

**Cohesion** The attraction between particles of the same substance

**Cohesive** Describes a gummy, rubbery texture or a product that holds together on handling

**Cohesiveness** A textural property related to the strength of bonds between structures

**Coho** *(Oncorhynchus kisutch)* A type of Pacific salmon
See also salmon
See Part 2: Salmon and Trout

**Cohobation** A technique used in water or water-steam distillation to reduce the loss of the more volatile water-soluble constituents in the distilled essential oils; it involves returning condensed water from the collection vessel back to the still

**Coho salmon** A member of the trout family with orange-pink flesh and very rich flavor

**Cohune** A nut obtained from a Central American palm; the oil contains 45% lauric, 17% myristic, and 10% oleic acids; it is edible and nondrying.
See Part 2: Iodine and Saponification Values

**Cointreau** A clear, after-dinner, cordial liqueur (alcohol content 40%) made from wine spirits and the peel of small green oranges

**Coir** Coconut-husk fiber used for padding and fiber-type products; approx. 23% of the nut

**Coke** A light substance that resembles charcoal; the residue of thermal decomposition (destructive distillation) of coal or petroleum; it is 90% carbon; one ton of coal yields about 0.7 ton coke.

**Cold** Cost-of-living adjustment

**Cola** *(kola)* The kola nut or an extract prepared from it; used in beverages; nut contains 1.5% caffeine
100 lb per tree per year
40–72 mg caffeine/6-oz drink
1 oz cola-type beverage = 30.75 g = 12 calories

See also kola nut
See Part 2: Beverage, Carbonated, Ingredients; Calories, Daily Recommendations; Flavor Ingredients, Taste and Flavor Type; Flavors, Beverage

**Colada** An alcoholic beverage prepared as follows:
Place in a shaker ¾ cup crushed ice, 1 jigger (1 ½ oz) bourbon, 1 oz cream of coconut, 2 oz unsweetened pineapple juice; shake and pour into tall glass filled with ice cubes; add cherry.

**Colares** A dark red wine that is rich in tannins

**Colbeck EY agar** See Part 2: Microorganism, Media

**Colby** A deep yellow cheese with open, granular curd

**Colby cheese** A hard (softer than cheddar), light yellow to orange cheese made from whole milk; cylindrical in shape, with mild to mellow flavor; ripens in 1–3 months by bacteria; used as a sandwich and snack cheese
Composition: moisture 30–39%; protein 21–24%; fat 31–32%; carbohydrate 2.5%; fiber 0%; ash 3–4%; salt 1.7% (171 mg Na/oz)
See Part 2: Cheese Characteristics; Cheese, Vitamin Content

**Colcannon** A mixture of cabbage and potatoes cooked together

**Cold cuts** Comminuted, cooked meat products that are often served without further cooking; sliced cold meat with or without cheese, e.g., bologna, salami
Storage: in original wrapper; refrigerate; use within 3–5 days of opening; unopened, 2 weeks
See Part 2: Storage Times

**Cold-pack** A processing method in which raw, unheated food is placed in containers and covered with boiling syrup, juice, or water

**Cold-pack cheese (club cheese)** A blend of fresh and aged natural cheese that is mixed without heating; the flavor is that of natural cheese but the texture is softer. A cheese made by mixing two or more types of cheese with water, vinegar, citric acid, herbs, and spices

**Cold-pack cheese food** Similar to cold-pack cheese but also includes other dairy products and sweetening agents and has a higher moisture content.
Composition (American): moisture 43.1%; protein 19.7%; fat 24.5%; carbohydrate 8.3%; ash 4.4%

**Cold shortening** Occurs in meat subjected to rapid chilling, which causes muscles to contract; if the tissue goes into rigor in this shorter state, it will be much tougher than if chilled less rapidly.

**Cold slaw** Cold cabbage See cole slaw; slaw

**Cold soap (semiboiled soap)** A soft soap made from tallow and grease using a potash base; glycerin fraction remains in the soap; it is less harsh than boiled soap.

**Cold sterilization** A process that uses irradiation to preserve food

**Cold storage** Storage at refrigerated temperatures

**Cold test** A test for evaluation of winterization of an oil. The oil is held in ice water and the time required for first cloudiness to appear is noted.
Time required for first cloudiness at 32°F:
A few hours—oil and solid will separate on low temperature storage
Minimum of 5½ h—winterized salad oil
See salad oil; winterization
cold unit A drop of one degree (4-in. depth between 8:30 and 9:30 A.M.) below 49°F and above 28°F per day
cold-water vacuum test A method for checking the vacuum efficiency of a capper
cole Refers to members of plant species of the genus Brassica and specifically to collard; closely related, frost-tolerant vegetables such as cabbage, cauliflower, Chinese cabbage, collard, brussels sprouts, broccoli, kale, kohlrabi, and mustard See cabbage group; kale; rape
coleoptile The first leaf (seed leaf or primary leaf) in the germination of monocotyledon, which forms a protective sheath
See Part 2: Wheat Kernel; Wheat Kernel Parts
coleorhiza The sheath surrounding the radicle (primary root) that the roots grow through
See Part 2: Wheat Kernel; Wheat Kernel Parts
coleseed See rape
cole slaw A mixture of shredded cabbage and salad dressing or mayonnaise and many different varieties of seasoning
See Part 2: Portion Size
colewort See collard
coli A type of bacterium
See Part 2: Microorganism Reactions on Differential Tube Media
colic Cramps or abdominal pain often caused by swallowing air or gas or from bacterial fermentation
coliform Sievelike; resembling the Escherichia coli; coliform group—all aerobic and facultative anaerobic, gram-negative, non-spore-forming bacilli that ferment lactose and produce gas. This bacterial group is used as an indicator of fecal contamination. Most are not pathogens, but their presence suggests the possibility of enteric pathogens originating in the intestine. Good sanitation conditions are usually found when this type of bacteria is absent.
Culture media: brilliant green lactose bile broth 2%; EC medium; Koser citrate medium; lauryl tryptone broth; Levine EM agar; MR–VF medium; tryptone broth; violet red bile agar
See Part 2: Egg Specifications; Intestinal Microorganisms; Intestinal Microorganisms in Triple-Sugar Agar; Microbiological Media; Microbiological Standards, Dairy; Microorganism, Culture Media, Dairy and Food Products; Microorganism, Culture Media, Water and Sewage, Standard Methods; Microorganism, Media
colin (colin-loui) Bobwhite quail
colitis Inflammation of the colon
collaborative study A study conducted before the designation of an analytical method as “official” by the Association of Official Analytical Chemists or other recognized authority; it involves a minimum of six participating laboratories that determine if a specific method will perform within a set of acceptable statistical requirements for analytical results (reported values); if successful, this results in the acquisition of “official” status for the method under study.
collagen Proteinaceous connective tissue of meat made up of parallel fibers that can be converted to gelatin (gelatinized) by boiling in water

<table>
<thead>
<tr>
<th>Variety</th>
<th>Growth habit</th>
<th>Leaf</th>
<th>Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cabbage-collard</td>
<td>Dark green</td>
<td>heads short</td>
<td>80 days</td>
</tr>
<tr>
<td>Georgia</td>
<td>Nonheading, 33 in. tall</td>
<td>Large, blue-green</td>
<td>60 days</td>
</tr>
<tr>
<td>Green glaze</td>
<td>Heading</td>
<td>Morris</td>
<td></td>
</tr>
<tr>
<td>Yates (Improved Georgia Type)</td>
<td>2–3 ft tall, compact, crumpled</td>
<td>65–80 days</td>
<td></td>
</tr>
</tbody>
</table>

Available canned and frozen
1 bu, fresh = 12 lb
1 lb = 8–12 pt, frozen
1 pt, frozen = 1–1 1/2 lb, fresh
1 cup, boiled, drained = 6.8 oz
Composition (raw): moisture 87%; protein 4%; fat 0.7%; carbohydrate 7%; ash 1.6%
Storage: Wash and drain; store in refrigerator crisper or plastic bag; use within 1–2 days.
See Part 2: Minerals, Food; Plant Foods, Composition; Planting Density; Vegetable Boiling; Vegetable Composition; Vegetable Frozen Yield; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Plants; Vegetable Yields

collar rot A disease caused by a fungus (Phytophthora cactorum) that forms cankers in the root and crown area of apple and pear trees, causing poor growth
Control: good drainage and less-susceptible rootstock
collective fruit See multiple fruit
coller Adding gelatin
Colletotrichum A type of mold
See Part 2: Mold, Food
colli albani A white wine produced in the region of Rome
colli lanuvini A white wine produced in the region of Rome
collins A family of alcoholic drinks made by mixing liquor or spirits with lemon or lime juice and carbonated or soda water.

colloid A macromolecular dispersion; a particle whose size range lies between the lower limit of resolution of an optical microscope (1 μm) and the size of an average molecule (1 x 10^{-2} μm). Such particles are too large to pass through a parchment membrane, but they remain suspended in dispersions because they are too small to settle out by gravity. Colloidal systems may be of several types: solid in liquid (casein in milk); solid in gas (smoke); gas in solid or liquid (foam); liquid in gas (fog); liquid in liquid (emulsion), etc. Many protein molecules are of colloidal dimensions; when they form a coating on a fat particle, as in milk, they are called protective colloids. See also dispersed phase; continuous phase.

colloidal clay (soft rock phosphate) Some may be used in animal feed.
Composition: dry matter 99%; calcium 17%; phosphorus 9%; fluorine 1.5%; iron 1.9%

colloidal phosphate [Ca₅(PO₄)₂] Calcium phosphate; a fertilizer material; 20% total P₂O₅

collars Pieces of meat.

colmar See munster

Colocasia Tuberous-rooted aroids, e.g., the taro whose rootstock is an edible, starchy staple in the tropics and which can be fermented into poi; the leaves are used like cabbage. See Part 2: Vegetable Storage.

cologne spirit See silent spirit

Colombian aged A smooth-bodied coffee with a sharp, tangy flavor.

Colombian Excelso A Colombian coffee that has strong body, mellow aroma, and is smooth and rich-tasting.

Colombian 5-Year Aged A very smooth, aged coffee.

colombiére A medium-flavored, semisoft cheese.

colon The large intestine (4–6 ft long) from the ilium to the rectum.

colonche A white, alcoholic, viscous beverage made by fermentation of the fruit of the prickly pear (Opuntia).

Colonial Bent (Rhode Island Bent; Agrostis tenuis) A grass used for pasture or lawns.

colonial goose A stuffed and roasted leg of mutton.

color (colour) Sensation of different wavelengths as perceived by the eye; often defined by hue, saturation, and brightness. See colorant.

Colorado hide A hide branded on rump or side.

colorant Any substance that imparts color; broadly classified as either pigments or dyes, although the distinction is not precise, e.g., chlorophyll is an organic pigment and lakes are organic pigments precipitated on an inorganic base. Most food colorants (FD & C colors) are synthetic coal-tar dyes and lakes and require approval by the FDA before use. Many natural colorants are vegetable-derived, e.g., alkanet, annatto, carotene, chlorophyll, saffron, and tumeric. See coal-tar dye.
n objects taken r at a time:

\[ C_r^n = \frac{n!}{r!(n-r)!} \]

combination of w, x, y, z taken three at a time:

\[ C_r^3 = \frac{1 \times 2 \times 3 \times 4}{(1 \times 2 \times 3)(1)} = 4 \]

wx yz wy wz wx

sum of all combinations from 1 to n at a time in a group:

\[ S_C = 2^n - 1 \]

w x y z
wx wy wz xy xz yz
wxyz

See also permutations

combined residual chlorine The amount of chlorine that is combined with nitrogenous matter

combined residual chlorine

= (total residual chlorine) − (free residual chlorine)

combing wool Wool that is both long-stapled and strong-fibered

combustion A chemical reaction, usually caused by heat, between oxygen and another substance; oxides result from inorganic combustion (water is the product of combustion of hydrogen). Combustion of organic materials always yields carbon dioxide and water as end products, with evolution of heat. It can be considered the opposite of photosynthesis.

comestible Edible

come-up period The time between the introduction of steam into a retort and when the retort reaches required processing temperature

comfit A candy, sweetmeat, or jam

comfort zone Temperature at which optimum performance can be acquired

comfrey (blackwort; consolida; knitchone; niptone) An herb whose leaves and roots are used as a pot herb

cominos Spanish for cumin seed see cumin seed

Comitrol A meat flaking machine

commercial grade see technical or commercial

See Part 2: Grades, Meat; Meat Grade Stamps

commercial sterility Free of viable microorganisms of public health significance and non-health significance capable of reproducing under normal storage conditions

commumute To reduce to a very small particle size

commminated cheese see cold-pack cheese

commission cheese A skim-milk cheese similar to edam

Committee on Food Protection of the National Academy of Sciences–National Research Coun-

cil (NAS–NRC) An independent body of scientists who advise governmental agencies on matters of national importance and publish a quasiofficial guide for food ingredients (The Chemical Codex)

commodities Usually used to refer to widely traded raw materials and agricultural products, such as wheat or corn

Commodities Futures Trading Commission (CFTC) The agency responsible for regulating and overseeing all futures contract markets

commodity code A four-digit code that identifies the product packaged

Commodity Credit Corporation (CCC) A government-owned and -operated corporation that operates price and income support programs and that manages government-owned stocks of agricultural commodities

Commodity Credit Corporation sales price The Commodity Credit Corporation may not sell wheat, corn, sorghum, barley, oats, rye, or cotton at less than 115% or rice at less than 105% of the current national average loan rate of each commodity. If loan repayments are permitted at lower than loan rate levels, the resale price is 115% and 105% of the average loan repayment rates for these crops.

commodity program Price support programs for corn and other feed grains, wheat, cotton, rice, peanuts, tobacco, sugar, and dairy products

Commodity Supplemental Food Program Provides nutritious foods to supplement the diets of low-income pregnant, postpartum, or breast-feeding women, infants, and children under 6 years of age; nutrition education is an essential part of the program.

Common Lespedeza A variety of lespedeza (sericea)

Common Agricultural Policy (CAP) The agricultural policy of the European Economic Community

common bass see sea bass

Common Bermuda A variety of Bermuda grass used for lawns

Common Market see European Economic Community

common root rot (dryland rot; Cochliobolus sativus and Fusarium sp.) Crown rot; an early-ripening disease of wheat

communicable Capable of being transmitted from one individual to another

compact bone The outer, hard, brittle, white shell of bones

compaction Tightly packed material in the stomach or intestines, causing digestive disturbances and/or constipation

comparative advantage The situation when a farm or a country produces and sells those goods and services that it can produce at relatively low cost and buys those products and services that others can produce at relatively less cost

comparisons see Part 2: Paired Comparisons
compartment can A can in which the bottom acts as a closure for the can below

compensatory gain The abnormal gain made after a period in which no gain was made, e.g., the weight gain of a hog on full feed after a period of prolonged starvation

compensatory growth Accelerated growth following a period of limited food intake

compiler A special program that converts English-like computer instructions written in a "high-level" language, such as Fortran, Basic, or PL/1 into instructions a computer can read and execute

complete protein A protein that when used alone in the diet is adequate for normal growth

complexus Triangular muscle in the neck area between the ligamentum nuchae and the cervical vertebrae

See Part 2: Beef Rib Nomenclature

compliance The conformity of a product to the specification under which it was produced

Compositae A large family of plants including the aster

See Part 2: Vegetables Classification

composite can A can with a fiber body and one or both ends made of metal

composition The substances included in a given mixture, by name and percentage

See Part 2: Composition of Food

compost Treating organic material so that it will decompose and can later be incorporated into the soil or used as mulch; a mixture of soil and partially decomposed plant material; a compost pile should be kept moist and include the following layers:

- 6-12 in. organic matter or refuse
- Light sprinkling of fertilizer (10-10-10) and lime
- 1-2 in. soil

Repeat these layers and mix frequently.

compote 1) A dessert or appetizer consisting of stewed fruit, sliced and served in natural juice or cooked in syrup. 2) A mixture of dried fruit (usually apricots, peaches, pears, and prunes)

compound 1) A substance, either organic or inorganic, that is composed of two or more elements; compounds are homogeneous and can be separated only by a chemical reaction. See also mixture. 2) A water-solvent dispersion of rubber placed in the curl of a can end to provide a hermetic seal (when the can is sealed) by filling voids in the double seam

compressed chlorine gas Liquid chlorine gas under pressure, usually in a portable cylinder

compressed yeast A moist mixture of yeast and cornstarch, usually in a 3 oz cake

Shelf life: refrigerated (31°F), 2 weeks; frozen, 2 months

Activation temperature 105°F

Compudose A growth-promoting implant used on slaughter steers

computer-assisted axial tomography (CAT) An imaging process that can produce a three-dimen-
sional image of the whole subject and is useful in diagnostic work

commercial See commercial

comité A large (75 kg), French, yellow, wheel-shaped, hard Swiss cheese, made from cow's milk, with small holes and a tan rind

con- A prefix meaning with or together

coñac Brandy distilled from fermented grape juice

concannon A dry, fortified, alcoholic wine

concasser Coarsely chopped

concentrate 1) Remove most of the volatile solvent from the miscellany. 2) A product from which water has been removed and that will be reconstituted prior to use; milk from which two-thirds of the water has been removed

See Part 2: Dairy Terms; Milk, Concentrated Products

3) Feed substances high in energy and low in crude fiber

concentrated A wine with a lot of bouquet and aroma

concentrated milk See plain condensed milk; plain condensed skimmed milk

See Part 2: Concentrated and Dried Milk Products

concentrated skimmed milk See plain condensed skimmed milk

concentrated solution A solution containing all of the solute that a solvent will solubilize

concentration The percentage of solute dissolved in a given amount of solvent

conception The point at which the egg becomes fertilized and pregnancy begins

conch (Strombus) A saltwater snail used to make chowder; cooked like a scallop

conches A semihard cheese, made from cow's milk with a full, fruity flavor

Concord A variety of grape, dark blue in color

concrete Portland cement (hydraulic cement) containing various percentages of aggregate (gravel, cinders, fly ash, etc.) See also cement

See Part 2: Insulation; Insulation, Conductivity Values

condemned Something that has been declared unwholesome, e.g., an animal carcass or parts of carcass that an inspector has found unfit for human consumption

condensed Reduced to denser consistency by removal of moisture

condensed milk Milk preserved by evaporation (approximately 50% of moisture removed) and the addition of sugar (at least 40% by weight); sp. gr. 1.16; not sterile

Composition: milk fat and solids 30%; sugar 42%; water 28%

- 2.3 lb milk = 1 lb condensed milk (whole)
- one 15 oz can
  - = 1 1/2 cups
  - = 2 2/3 cups milk + 8 tbsp sugar

1/2 cup, sweetened, undiluted = 490 calories

Storage: unopened containers at room temperature, will keep for several months; opened, refrigerate and cover tightly, and use within 1 week.
See also plain condensed milk; sweetened condensed milk

See Part 2: Condensed-Milk Dressing; Dairy Terms; Milk and Cheese Composition; Milk and Milk Products, Vitamin Content; Milk Composition; Milk, Concentrated Products; Vitamin A, Milk and Milk Products

condensed soup Soup that requires the addition of an equal quantity of water or milk prior to consumption

condiment A flavoring agent (seasoning or sauce, spice or herb) having a sharp, spicy taste; an additive used to enhance or add flavor; a seasoning; a seasoning and appetizer added to food; adjunct added to food that supplies little nourishment but is stimulating to taste or secretion; e.g., mustard, pepper, salt, vinegar

See Part 2: Stabilizers, Thickeners

condition 1) The amount of flesh (of meat animals or draft horses) or degree of fatness; fitness to race (of race horses) and general health. 2) Predetermined moisture and/or temperature

conditioner A material that improves the properties of the product to which it is added, e.g., dough becomes less sticky and easier to extend

conditions of purchase The terms or provisions in a purchase order

condol A tropical vegetable

See Part 2: Vegetable Storage

conductance \(G\) The reciprocal of resistance in an electrolytic solution

\[
G = \frac{1}{R} \\
R = \text{resistance in ohms} \\
G = \text{in reciprocal ohms}
\]

conductivity The ability of a material to conduct electricity (the opposite of resistivity), heat, or light

See Part 2: Insulation, Conductivity Values

cone wheat See wheat

confection A cooked mixture of sugar, flavoring, fruits, and the like having a predominantly sweet taste; candy

Aerated or whipped confections—agitation with incorporation of air

Chewy confections

Grained—supersaturated, sugar solutions, such as fudges, cream centers, pulled grained mints, rigid grained marshmallows, and hard and soft panned centers

Nongrained—unsaturated sugar solutions, e.g., marshmallows, taffies, nougats, caramels, jellies, gums, and kiskeys

Hard candies (high-boiled sweets)—highly saturated, super-cooled sugar solutions

See Part 2: Minerals (Trace), Limits

confectioner's coatings See Part 2: Coatings

confectioner's custard See crème patisserie

confectioner's sugar (icing sugar) 1) A highly refined sugar made into a very fine powder, suited to confectioner's use; \(3 \frac{1}{2} \text{ cups} = 1 \text{ lb; powdered sugar; fine (XXXXX)}\). 2) Sugar that is extra-coarse in size (sometimes called manufacturer's sugar)

confirmation An analytical method resulting in a specific identification and/or value that is undisputable and that corroborates an analytical finding previously arrived at by a different analytical procedure

confiture Jam; a sweetmeat of fruit

conformation The shape, form, or relationship of parts; thickness in relation to dimension of skeleton; shape of a carcass that indicates proportion of meat and bone and proportion of desirable cuts

congealing point (c.p.; set) The temperature at which a liquid oil becomes solid; used to follow hydrogenation
See also freezing point

congee A rice beer

congeners Flavorful substances generated with alcohol during fermentation

congenital Present before or at birth

conger eel A seafood animal

North Atlantic (Conger oceanicus; C. conger)

North Pacific (Astoconger myriaster)

congo bean See pigeon pea

congou Black China tea

conjugation The act of temporarily joining together and exchanging nuclear material

connective tissue A tough, proteinaceous material associated with muscles, collagen, elastin, and reticulin fibers

See Part 2: Connective Tissue, Composition; Connective Tissue Proteins

conservation reserve Highly erodible land that is retired from crop production and planted to grass or trees for a period of years, for which the owner receives an annual payment

See highly erodible cropland

conservation use Land use that protects soil from erosion by planting to grasses or legumes or to small grains that are not allowed to mature

conserve A combination of several fruits, usually including citrus fruits and often raisins and nuts, cooked until thick and clear; a blend of two or more fruits and nutmeats in a thick syrup or jelly (\(\frac{1}{2} - \frac{3}{4} \text{ lb sugar/lb fruit}\))

See jellied products

considered planted In calculating base acreage, land is considered planted to a program crop if any of the following hold: it was used for conservation acreage under an acreage reduction or set-aside program; the producer was prevented from planting the program crop because of drought, flood, or other natural disaster or other conditions beyond the control of the producer; it was planted under a program or other conditions beyond the control of the producer; the producer was permitted to be planted to the program crop; it is any acreage on the farm that the secretary of agriculture determines is necessary to be included in establishing a fair and equitable crop acreage base

consistency 1) A measure of firmness, density, or viscosity; a penetrometer is used to measure the consistency of fats; for oils and other thick liquids a viscometer is used. 2) The harmony of parts; uniformity, congruity
consommé A clarified, highly seasoned, thin soup made by simmering meat (usually beef) and vegetables (usually carrots, leeks, onions, parsley, and turnips) and condiments; can be jellied by chilling

consommé madrilène A clear, amber-colored soup made from beef stock and strained tomatoes, served hot or jellied

consommé with gelatin added Available canned (as a condensed soup) or as a dehydrated soup mix

<table>
<thead>
<tr>
<th>Composition</th>
<th>Condensed Prepared with water</th>
<th>Dry Prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>92.6</td>
<td>96.2</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>4.4</td>
<td>2.2</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>1.4</td>
<td>0.7</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>1.6</td>
<td>0.8</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.6</td>
<td>0.01</td>
</tr>
</tbody>
</table>

conspersé stink bug (Euschistus conspersus) A ½-in.-long, shield-shaped, gray-brown sucking bug covered with white dots

constipation Faulty excretion of or lack of the ability to excrete feces

constitutional formula See structural formula

Consultative Group for International Research (CGIAR) A network of public and private institutions that support international agricultural research programs aimed at increasing the quantity and quality of world food production

consumer An individual who obtains and uses a commodity

consumer panel A group of individuals representative of a specific population

consumer’s risk The probability of accepting a lot whose percentage of defectives is equal to the rejectable quality limit; the risk of a bad lot of product being accepted by a sampling plan

consumer subsidy equivalents The level of subsidy that would be necessary to compensate consumers for the removal of government programs

consumption The act of consuming or ingesting

consumption unit Requirements of different sex and age groups expressed as a fraction of the adult male requirement

contagious Transmitted by direct or indirect contact or through the air without direct bodily contact

container code A group of five digits that identify the size and style of a container

container-conveyor chain A conveyer that moves cans through a hydrostatic retort

container specification code (six-digit code; spec. code) A six-digit code to identify the plate and inside and outside enamel of a container

contamination Direct or indirect transmission of objectionable matter; containing foreign matter

contango A market situation in which prices are progressively higher in the future delivery months than in the nearest delivery month
convergence (halo effect) The tendency to rate a sample similarly to a prior sample
converted rice A patented process for transferring some of the B vitamins from the outer layer of the rice grains into the interior before milling

**Convolvulaceae** The large, morning-glory family of plants
See Part 2: Vegetable Classification

**cook** 1) To prepare food for consumption, usually by heating. 2) One who cooks

**cook before eating** Heat to 160°F before serving

**cooked** 1) (On a meat label: fully cooked; ready-to-eat; ready-to-serve; thoroughly cooked) A meat product that must have a cooked appearance, which usually requires an internal temperature of at least 148°F. See also smoked meat 2) Warmed or heated to 140°F. 3) Describes flavor of milk after exposure to heat

**cooked dressing** See Part 2: Cooked Dressing

**cooked meat** See Part 2: Meat Storage

**cooked meat medium** A medium used to grow *Clostridium perfringens*
See Part 2: Microorganism, Media

**cooked salad dressing** A thickened sauce containing the following:
- Acid (vinegar or acid fruit juice)
- Fat (butter, lard)
- Liquid (water or milk)
- Seasoning (sugar, salt, etc.)
- Thickening agent (flour, starch, or eggs)

**cooked salami** See **salami cotto**

**cooked sausage** A sausage made from fresh meat (some cured meat may be used) that is cooked and ready to serve; a sausage made from uncured meat that is ground, seasoned, stuffed into casings, and cooked but not smoked; usually consumed cold, e.g., braunschweiger, liver sausage, and liver cheese

**cooked smoked sausage** A sausage made from fresh or cured meat that is chopped, seasoned, stuffed into casings, smoked, and cooked; requires only heating before serving, e.g., berliner, bologna, cotta salami, frankfurter, smokie links, and wiener

**cooker** A retort

**Cooke Rose Bengal agar** See Part 2: Microorganism, Media

**cookie** A small, dry, sweet, filled or unfilled, flat cake

Types:
- Cookie bar—baked in a thin sheet and cut
- Butter cake
- Sponge cake
- Dropped—stiff batter
- Icebox cookie—high fat content
- Rolled
- Crisp
- Soft

The English equivalent is a sweet biscuit.

16 sandwich-type, crushed = 1 cup
Storage: Airtight container; wax paper should be put between layers of soft cookies; frozen (0°F) storage 4–6 months
See Part 2: Calories, Daily Recommendations; Grain Products, Composition

**cookie, chocolate wafer**
1 cup, crushed = 4.2 oz

**cookie, cream-filled**
1 cup, crushed = 12 cookies

**cookie mix** 1) A dry, commercially prepared mixture containing most of the cookie ingredients; only liquid items need to be added.
Storage: room temperature, away from the heat of the range or refrigerator unit
2) A moist, refrigerated, commercially prepared mixture containing cookie ingredients; needs to be cooked before serving

**cook-in bag** There are two types:
1. For roasting meat
2. For boiling vegetables
Do not use plastic bags for cooking unless they were designed for this purpose.

**cooking** The preparation of food by exposure to heat (baking, frying, roasting, boiling)

See Part 2: Beef, Cooking; Beef, Degrees of Doneness; Braising Meat; Cooking in Liquid, Time; Fruit, Cooking; Frying Time; Lamb Braising; Lamb Brouil; Lamb Roasting; Lamb Simmering; Microwave Cooking, Fresh Vegetables; Microwave Cooking, Frozen Vegetables; Microwave Cooking, Fruit; pH, Post Mortem; Pork, Cooking; Pork Loin Cooking; Poultry Cooking, Frozen; Variety Meat, Cooking; Variety Meat Preparation; Vegetables, Cooking Frozen; Vitamin Retention, Meat

**cooking oil** A vegetable oil that has been refined, bleached, and deodorized but not winterized
Storage: short-term, at room temperature; long-term, refrigerate; if it becomes cloudy or solid, this is not harmful and the oil will clear when heated.

**cooking temperatures**

<table>
<thead>
<tr>
<th>Meat and cut to be roasted</th>
<th>Weight (lb)</th>
<th>Oven (°F)</th>
<th>Meat (°F)</th>
<th>Total time (h)</th>
<th>min/lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standing rib</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Well-done</td>
<td>5–7</td>
<td>325</td>
<td>170</td>
<td>2(\frac{3}{4})</td>
<td>27-30</td>
</tr>
<tr>
<td>Medium</td>
<td>5–7</td>
<td>325</td>
<td>160</td>
<td>2(\frac{1}{4})</td>
<td>22-25</td>
</tr>
<tr>
<td>Rare</td>
<td>5–7</td>
<td>325</td>
<td>140</td>
<td>2–2(\frac{1}{4})</td>
<td>18-20</td>
</tr>
<tr>
<td>Meat and cut to be roasted</td>
<td>Weight (lb)</td>
<td>Cooking temperature</td>
<td>Total time (h)</td>
<td>min/lb</td>
<td></td>
</tr>
<tr>
<td>----------------------------</td>
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<td>---------------------</td>
<td>----------------</td>
<td>--------</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oven (°F)</td>
<td>Meat (°F)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beef (con't)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rolled rib</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Well-done</td>
<td>5-7</td>
<td>325</td>
<td>170</td>
<td>4 1/2-5 1/2</td>
<td>48-52</td>
</tr>
<tr>
<td>Medium</td>
<td>5-7</td>
<td>325</td>
<td>160</td>
<td>3 1/2-4</td>
<td>33-38</td>
</tr>
<tr>
<td>Rare</td>
<td>5-7</td>
<td>325</td>
<td>140</td>
<td>3-3 1/2</td>
<td>30-32</td>
</tr>
<tr>
<td>Chicken</td>
<td>2-3</td>
<td>350</td>
<td>185</td>
<td>1 1/2-1 1/2</td>
<td>30-40</td>
</tr>
<tr>
<td>Lamb</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shoulder, rolled</td>
<td>4-6</td>
<td>325</td>
<td>175</td>
<td>3-4</td>
<td>40-45</td>
</tr>
<tr>
<td>Shoulder</td>
<td>5-7</td>
<td>325</td>
<td>175</td>
<td>3-3 1/2</td>
<td>30-35</td>
</tr>
<tr>
<td>Leg</td>
<td>6-7</td>
<td>325</td>
<td>175</td>
<td>3 1/2-4</td>
<td>30-35</td>
</tr>
<tr>
<td>Pork</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shoulder, rolled</td>
<td>4-5</td>
<td>300-350</td>
<td>170</td>
<td>1 1/2-3 1/2</td>
<td>35-40</td>
</tr>
<tr>
<td>Shoulder</td>
<td>5-8</td>
<td>300-350</td>
<td>170</td>
<td>2 1/4-4 1/2</td>
<td>30-35</td>
</tr>
<tr>
<td>½ loin</td>
<td>5-7</td>
<td>300-350</td>
<td>170</td>
<td>3-4 1/2</td>
<td>35-40</td>
</tr>
<tr>
<td>½ fresh ham (bone-in)</td>
<td>5-8</td>
<td>300-350</td>
<td>170</td>
<td>3-6</td>
<td>30-35</td>
</tr>
<tr>
<td>Pork, cured*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>½ ham*</td>
<td>6-8</td>
<td>325</td>
<td>130</td>
<td>1 1/2-1 1/2</td>
<td>14</td>
</tr>
<tr>
<td>Ham,* boned</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ham,* canned</td>
<td>8-13</td>
<td>325</td>
<td>130</td>
<td>2-2 1/2</td>
<td>10-15</td>
</tr>
<tr>
<td>Turkey</td>
<td>6-8</td>
<td>325</td>
<td>185</td>
<td>3 1/2-4</td>
<td>30-35</td>
</tr>
<tr>
<td>Veal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rump</td>
<td>4</td>
<td>325</td>
<td>175</td>
<td>2 1/2-3</td>
<td>40</td>
</tr>
<tr>
<td>Leg, whole</td>
<td>6-8</td>
<td>325</td>
<td>175</td>
<td>3 1/2-4</td>
<td>30-35</td>
</tr>
<tr>
<td>½ leg</td>
<td>3</td>
<td>325</td>
<td>175</td>
<td>2</td>
<td>40</td>
</tr>
</tbody>
</table>

**“Cook-before-eating” hams and picnics should be cooked to meat temperature of 160°F; this will take approximately one-third more cooking time.**

**cool tankard** A beverage made from wine, water, lemon, sugar, and borage

**Cool Whip** A commercial whipped topping
1 cup = 2.3 oz

**coomys** See **koumiss**

**coon** A tangy, yellow, dry, crumbly, cheddar-type cheese

**coon cheese** A subdivision of cheddar cheese

**cooperative** A business owned by the customers

**cooperative group** A wholesale grocery operation owned by the retailers

**Cooperatives des Producteurs et Affineurs de Munsters des Hautes Vosges** Indicates that a munster cheese was manufactured at its place of origin

**Cooperative State Research Service (CSRS)** See **Science and Education Administration**

**coorg** Mandarin-type citrus orange
See Part 2: Fruit Storage

**copaiba** A type of balsamic resin from Brazil and Venezuela, used as a flavoring and odorant
See Part 2: Flavoring Agents, Natural

**copaiba oil** Obtained by steam distillation of the exudate from trees of the genus *Copaifera*; sp. gr. 0.881-0.909; used as a flavoring agent in food
Storage: full, tight, glass container in a cool, dark place

**copate** Small, thin cakes

**Copenhagen salami** A dry, uncooked, smoked Australian sausage made from finely chopped, medium-seasoned beef that is fermented and stuffed into artificial casings

**coppa** A cured pork shoulder similar to Parma ham but higher in fat See **capocollo**

**coppa di piacenza** A mild, soft, aromatic, cured ham

**coppa picante** Square-molded, cala butts that have been cured and covered with black pepper

**copper (Cu)** A metallic element; at. no. 29; at. wt. 63.54; Group IB of the Periodic Table; electron configuration 2–8–18–1
Stated +1, +2;
orbit K L M N

Body function: necessary for utilization of iron in hemoglobin synthesis

**Copper content of food:**
High—cereals, fish, liver, meat
Low—milk

Copper is a good heat conductor for cookware and is only slightly soluble in food in the absence of air. It is usually lined with stainless steel, tin, or a nonstick coating to keep it from reacting with food and causing a color change. It is undesirable for use with some foods in the presence of air. Copper-covered outer surfaces of cookware cause no hazard because the copper does not come in contact with the food. If the
copper is on the inside and comes in contact with acidic foods, the resulting copper salts could cause stomach upsets. Deficiency in plants causes leaves to become dark green and twisted and causes the appearance of spots.

See Part 2: Egg Products, Nutritive Value; Grain Analysis; Minerals, Food; Minerals, Plant or Animal Tissue; Minerals (Trace), Limits; Normal Solutions; Nutrients in Crops; pH and Availability of Plant Nutrients; Water Drinking Standards; Wheat, Minerals

copperas Ferrous sulfate (FeSO₄ • 7H₂O) 
See Part 2: Fertilizer Materials
copper gluconate 
$$\left(\left[\text{CH}_2\text{OH} \left(\text{CHOH}\right)_4\text{COO}\right]_2\text{Cu}\right)$$

Used as a nutrient or dietary supplement
Storage: well-closed container
copper oxide CuO or Cu₂O 
See Part 2: Fertilizer Materials; Normal Solutions
copper (cupric) sulfate (bluestone) (CuSO₄) Used in animal feeds and fertilizers and as an algicide
Composition [copper sulfate pentahydrate (CuSO₄ 5H₂O)]; dry matter 100%; sulfur 12.8%; copper 25.5%
See Part 2: Fertilizer Materials; Normal Solutions
copper sulfate solution Used as a test solution for determining breaks in coating on can parts
copperweed A plant having a toxic principle 
See Part 2: Poisonous Plants
copra Dried coconut meat used for food in tropical countries See palm
copra meal See coconut kernels with coats
coprophagy Ingestion of fecal material
copulation Sexual act in which insemination occurs
coqueret See gooseberry
coquille, en Served in a shell
coquille-Saint-Jacques Scallops
cinquas Small clams that are used for broth
corito (Jubaea spectabilis) A palm tree that is used to make cordage (from the fiber), palm honey (from the sap), and sweetmeats (from the seeds) See palm
corito de San Juan See palm
coracid A cartilage or bone extending from the scapula toward the sternum 
See Part 2: Bone
coral The ovary, gonads, or eggs of edible crustaceans; the green (turns red on cooking) roe of hen lobster found in the ovaries and used to make lobster sauce
cord A measure of volume of cut wood equivalent to a stack 8 × 4 × 4 ft
1 cord = 128 cubic feet (ft³)
= 80-90 cubic feet of solid wood
= 8 cord-feet
See also wood
cord-foot 1 cord-foot = 16 cubic foot (ft³)
= 1⁄8 cord
cordial [(American term), liqueur (European term)] A general term for liqueur, an alcoholic bev-
206  coriander oil

drum sativum and used as a coriander-like flavoring agent in food; refractive index 1.462–1.472 at 20°C; sp. gr. 0.861–0.876 g/ml; optical rotation +8° to +15°

Storage: full, tight container in a cool, dark place

See coriander essential oil

coriander oleoresin  A dark brown, slightly viscous liquid obtained by steam distillation and/or solvent extraction of the dried fully ripe fruit of coriander; essential oil is often added.

Composition: fatty oil 90%; resin 88% max.; volatile oil 12–13.5%; steam-volatile oil 5%

See corium

Corium  A genus of viruses

cork  The bark of an oak tree (Quercus suber) native to Spain and cultivated in California; used for insulation, bottle stoppers, life belts, etc.

<table>
<thead>
<tr>
<th>Approx. diam. of large end</th>
<th>Approx. diam. of large end</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size no.</td>
<td>Size no.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>000</td>
<td>000</td>
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<tr>
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<td>00</td>
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<tr>
<td>0</td>
<td>10</td>
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<tr>
<td>1</td>
<td>11</td>
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<tr>
<td>2</td>
<td>12</td>
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<td>3</td>
<td>14</td>
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<td>4</td>
<td>15</td>
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<td>17</td>
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<td>20</td>
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<td>8</td>
<td>22</td>
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<td>24</td>
</tr>
<tr>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>11</td>
<td>27</td>
</tr>
</tbody>
</table>

See Part 2: Insulation; Insulation, Conductivity Values

corkboard  An insulating layer or panel made of cork

See Part 2: Insulation

corkiness  See granulation

corkscrew macaroni  Corkscrew-shaped pasta

cork spot  A physiological disease of apple and anjou pear fruit that appears as an external, sunken, greenish area under which is a brown, dry, “corky” necrotic area

Control: calcium chloride spray

corky  1) Describes a tough, elastic texture. 2) Describes the unpleasant odor and flavor produced by a defective cork, e.g., wine ruined by an odoriferous cork

corm  A short bulblike underground stem where reserve materials are stored; it does not contain an embryo and is not layered like a bulb.

cormandel  gooseberry  See bilimbi

corn (Indian corn; maize; mealies; Zea mays)  1) A grain crop of Central and South American origin grown in tropical, subtropical, and temperate regions; an annual vegetable whose seed is used as food; seed 8–12 qt/acre; ~½ lb/100-ft row. Thin sweet corn 10–24 in. apart in rows 36 in. apart; 1 ear per foot of row, requires 3–5 months to mature; size 1–8 m tall; stalk 1.5–4 cm diam. The characteristic protein of corn is zein. The meaning of the term corn varies depending on country: in England it means wheat, in Scotland oats, and in the United States maize or Indian corn.

Types and characteristics:

- Dent—“normal” type; large kernels that shrink on drying, producing the dent at the tip of the seed
- Extra sweet—has even higher sugar levels than sweet corn and a prolonged edible state; recessive gene (shrunken 2; sh 2)
- Field corn (Z. mays rugosa)
- Flint—large, smooth kernels; grains are harder and somewhat translucent
- Flour—large, smooth kernels; soft grains
- Hybrid—higher yield
- Pod—each grain is covered with a husk, in addition to the outside covering of the ear
- Pop—small, smooth kernels; hard grains that burst on heating
- Popcorn—hard starch in kernels
- Sweet corn (Z. mays saccharata)—wrinkled seed when dried; recessive gene (sugary — 1; su 1);

Composition

<table>
<thead>
<tr>
<th>Dry matter (%)</th>
<th>Protein (%)</th>
<th>Fiber (%)</th>
<th>Fat (%)</th>
<th>Ash (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensiled, 30–50% dry matter</td>
<td>37</td>
<td>3.1</td>
<td>9.5</td>
<td>1.1</td>
</tr>
<tr>
<td>Ensiled, well eared; 30% min. to 50 max. dry matter</td>
<td>33</td>
<td>2.7</td>
<td>7.9</td>
<td>1.0</td>
</tr>
<tr>
<td>With ears, sun-cured, fodder</td>
<td>82</td>
<td>6.6</td>
<td>18.6</td>
<td>1.9</td>
</tr>
<tr>
<td>Without ears or husk, sun-cured (stover, straw)</td>
<td>85</td>
<td>5.6</td>
<td>29.3</td>
<td>1.1</td>
</tr>
<tr>
<td>Without ears or husk, silage (staklage, stover)</td>
<td>31</td>
<td>1.9</td>
<td>9.6</td>
<td>0.7</td>
</tr>
</tbody>
</table>
corn (Indian corn; maize; mealies; Zea mays) 207

large kernels; wrinkled and translucent when dry

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Approx. amount used for growth (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100 bu grain 3 ton stover</td>
</tr>
<tr>
<td>N</td>
<td>90 70</td>
</tr>
<tr>
<td>P₂O₅</td>
<td>35 25</td>
</tr>
<tr>
<td>K₂O</td>
<td>25 95</td>
</tr>
</tbody>
</table>

Color: Controlled by male tassel; white, yellow (contains carotene), red, purple, and black

Uses: Human food; animal feed; silage; meal; flour; hominy; starch; sugar; oil; alcohol

Food value: Good source of starch; protein has lower nutritional value than other grains (lysine is the first limiting amino acid and tryptophan is the second)

Sweet corn varieties:
- Bicolor
- Butter and Sugar
- Sprite
- Sugar and Gold
- Sweet Sue
- Golden
- Bravo
- Earlibelle
- Extra Early Super Sweet
- Gold Cup
- Golden Queen
- Golden Security
- Illini Xtra-Sweet
- Lachief
- Merit
- NK 199
- Northern Belle
- Seneca Beauty
- Seneca Chief
- Seneca Scout
- Spring Gold
- Stylpack
- Sundance
- Tri-Gold
- White
- Country Gentleman Hybrid
- Silver Queen
- Silver Sweet

Terms:
- Cream—upper portion of kernel is cut, and creamy portion of lower kernel is scraped
- Whole grain or whole kernel—kernel is cut deep
- Corn on the cob—Golden Bantam variety usually used
- Shoe peg—long, slender kernel from shoe peg variety of corn
- Tidbit—Golden Bantam kernels cut high
- Spanish—tidbits canned with red and green sweet peppers

Grades (shelled corn) and maximum moisture content:
- No. 1, 14%
- No. 2, 15.5%
- No. 3, 17.5%
- No. 4, 20%
- No. 5, 23%

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dent, yellow (dry)</th>
<th>Sweet (raw)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>10–14</td>
<td>73–75</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>8.9–11</td>
<td>3.1–3.5</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>3.7–5</td>
<td>1–1.1</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>64–80</td>
<td>20–22</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>2–3.3</td>
<td>3.8</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>1.2–1.6</td>
<td>0.7–1</td>
</tr>
<tr>
<td>pH</td>
<td></td>
<td>6.0–6.5</td>
</tr>
</tbody>
</table>

Refuse: 61% (husks and cob)

Components of kernel: germ 12% (contains 80% of the oil and 20% of the protein); endosperm 82%; pericarp (bran coat) 5%; tip cap 1%

15.2 MJ kg⁻¹ edible energy value
- 1 case (24) no. 2 cans = 0.038 ton, fresh
- 100 lb, fresh = 26–33 lb dry corn
- 1 bu, whole ears = 70 lb
- 1 bu, shelled = 56 lb
- 1 bu, ground ears = 45 lb
- 1 bu, fresh, sweet, in husk
  - 35 lb
  - 3 ½ ft²
  - 14–17 pt, frozen
  - 8–12 ½ qt, canned
- 1 bu husked ear corn = 2 ½–2 ½ ft³
- 6–20 (12 avg.) ears, cut = 1 qt, canned
- 12 med. ears, fresh = 2.5 cups cooked kernels
- 3–6 lb, fresh, in husk = 1 qt, canned
- 1 qt, cut from cob = 10 ears
- 4–4 ½ lb, fresh, in husk = 1 qt, frozen
- 8 med. ears, fresh = 16 oz, cut frozen
- 4 med. ears, fresh = 3 cups, cut
- 2 cups, canned = 1 lb
- 1 lb cut corn = 5 servings
- 9–10 oz frozen whole kernels = 3 servings
- 1 cup, canned, solids and liquid = 7.4–9 oz
- 1 cup, canned, drained solids = 6–8.2 oz
- 1 cup, boiled kernels cut from cob, drained
  - 5.9–6.6 oz
- 1 ear, fresh = 0.4–0.5 cups cut kernels
- 1 ear (5 × 1 ½ in.), boiled whole = 4.9 oz
- 1 ear, frozen = 3.5–4.9 oz
- 1 serving = 1–2 med. ears

<table>
<thead>
<tr>
<th>lb/qt</th>
<th>lb/bu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn and cob meal</td>
<td>1.4</td>
</tr>
<tr>
<td>Cracked</td>
<td>1.6</td>
</tr>
<tr>
<td>Husked ear</td>
<td>-</td>
</tr>
<tr>
<td>Meal</td>
<td>1.6</td>
</tr>
<tr>
<td>Shelled</td>
<td>1.8</td>
</tr>
</tbody>
</table>

To cook: Boil or steam on cob 4–6 min; roast on cob 10–20 min; off cob, sauté.

Defect action level (sweet, canned): Two larvae, cast skins, and larvae or cast skin fragments, 3 mm or longer (aggregate length of such larvae, cast skins, and larvae and cast skin fragments exceeding 12 mm) of corn earworm or corn borer in 24 lb (24 No. 303 cans or equivalent)
<table>
<thead>
<tr>
<th>Type (sweet corn)</th>
<th>Days to maturity</th>
<th>Varieties</th>
<th>Kernels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black Medium to late (ears 7–8 in.)</td>
<td>85</td>
<td>Black Mexican</td>
<td>8–10 rows</td>
</tr>
<tr>
<td>White Early (ears 6–7 in.)</td>
<td>65–73</td>
<td>Burlington County; Growers; Mayflower; Minnesota; Red Cob Cory; White Cob Cory</td>
<td>8 rows</td>
</tr>
<tr>
<td>Medium to late (ears 7–10 in.)</td>
<td>75–90</td>
<td>Corsby; Country Gentlemen (or Shoe Peg); Stonewall’s Evergreen</td>
<td>12–20 rows Small Long; irregular Big; long ear</td>
</tr>
<tr>
<td>Yellow Early (ears 7–10 in.)</td>
<td>60–70</td>
<td>Golden Sunshine; Ioana; Marcross; Spancoss</td>
<td>8–12 rows</td>
</tr>
<tr>
<td>Medium to late (ears medium to large)</td>
<td>80–90</td>
<td>Bantam Evergreen; Golden Bantam</td>
<td>10–20 rows Waxy, highest quality Irregular</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Golden Colonel; Golden Cross Bantam; Top Cross Bantam; Whipcross; Whipples Yellow</td>
<td>Broad, deep (long ears)</td>
</tr>
</tbody>
</table>

Storage (sweet corn): unhusked and uncovered (85–90% relative humidity); refrigerate (31–32°F); use within 1–8 days; frozen (0°F) storage life of cut corn, 1 yr; corn on the cob requires longer defrosting and longer blanching time than cut corn; sugar in sweet corn converts to starch after picking, so fresh corn should be cooked as soon as possible after picking; dry corn contains 10–12% moisture.

See corn, sweet

See Part 2: Calories, Daily Recommendations; Canned Spoilage Related to pH; Canned Yield; Cereal Composition; Cereal Nutrient Content; Cereal Enrichment; Cereal Fortification; Cereals, Vitamin and Mineral Content; Corn; Corn, Amino Acids; Corn Herbicide; Corn Kernel; Corn Kernel Composition; Corn Plant Growth; Corn Production Area; Food, Composition; Frozen Food Storage; Fruit and Vegetables, Composition; Frying Time; Glutamate; Glutamate Addition; Grain Analysis; Grain Products, Composition; Iron; Microwave Cooking, Frozen Vegetables; Microwave Processing Time; Minerals, Food; Niacin; Niacin, Daily Recommendations; Nicotinic Acid, Food; Nitrate, Vegetables; Nutrients in Crops; Pentosans; Phosphorus; Plant Foods, Composition; Planting Density; Portion Size; Potassium; Protein Factors; Riboflavin; Seed, Chemical Composition; Seed Composition; Seed, Germination; Standards, Processed Fruit and Vegetable Products; Starch, Microappearance; Starch, Modified; Starch, Storage; Sugars and Syrups, Composition; Sugar, Vegetables; Sweetening Agents; Sweetness of Sweeteners; Thiamin; Tocopherols; Unsaponifiable Matter; Vegetable Boiling; Vegetable Composition; Vegetable Cooking; Vegetable Frozen Yield; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Plants; Vegetables, Boiling Time, Frozen; Vegetables, Canning Dates; Vegetables, Cooking Frozen; Vegetables, Panned; Vegetable Storage; Vegetable Yield; Vegetable Yield, Canned and Frozen; Vegetable Yield, Frozen, Canned, and Fresh; Vegetable Yields; Vitamin A; Vitamin A, Food; Vitamin C

2) To cure meat

corn, aerial part See: corn

corn and cob meal A mixture of finely ground corn and corn cobs; cob is 20–25% of weight, grain is 75–80% of weight; 70 lb/bu; 1.4 lb/qt Composition: dry matter 37%; protein 7.8%; fiber 8.2%; fat 3.2%; ash 1.7%

corn belt Midwestern United States, where large quantities of corn are grown

corn bread A baked (30–35 min at 400°F), flat bread (approximately 2 cm thick) made from cornmeal, maize flour, or maize flour and some wheat flour (sometimes omitted), baking powder, sugar, salt, eggs, and milk

2.5 × 2.5 × 1\(\frac{3}{8}\) in. = 2.9 oz
Composition (enriched, degermed corn meal): moisture 50%; protein 7%; fat 6%; carbohydrate 34%; 58 mg cholesterol/oz

corn-can coating  See zinc oxide can coating
corn, candy  See Part 2: Sugars and Sweets, Composition
corn cereal  Refers to several ready-to-eat breakfast foods
  1 oz (approx. 1 cup), puffed, presweetened
    = 115 calories
  1 oz (approximately 1 1/4 cups), shredded
    = 110 calories
Flakes = 256 mg Na/cup
corn chip
  1 oz/serving
  1 cup = 230 calories
corn cob  Composition (ground): dry matter 90%; protein 2.8%; fiber 32%; fat 0.7%; ash 1.5%
corn cockle  (Agrostemma githago L.)  An annual weed having a toxic principle  See Part 2: Poisonous Plants
corncrake  (landrail; Crex crex)  A small, edible, migratory bird
corn, dent  See corn, field
corn dog  (korn dog)  Batter (65% max.) wrapped around franks (35% min.) on a stick; a frankfurter on a wooden stick, dipped in a mixture of flour, cornmeal, eggs, and seasonings, and deep-fat fried
corn, ear  The fruit (seed) unit of the plant  Zea mays, covered with cellulosic husk lined with silklke fibers
  74 lb corn in ear with husk per bushel
  70 lb shucked corn per bushel (bushel = cubic feet of volume x 0.4)
  1 dozen ears = 2 1/2 cups, cooked
  1 cup, cooked = 165 g (5.8 oz)
Composition (silage, with husk): dry matter 44%; protein 3.9%; fiber 5.1%; fat 1.7%; ash 1.2%
corn earworm  (bollworm; Heliothis zea)  An insect; the larva is a 1-in.-long, yellow-headed worm (of various colors and striped along its lateral surface) that destroys the leaves of young corn plants and feeds in the top of ears of older plants; also eats pods or beans of soybeans, can penetrate the interior of lettuce heads, and damages cotton and peanuts. The moth is 3/8 in. long, brown, and has a dark line across its wings.
Control: Plant resistant varieties with tight husk.
corned In reference to meat, salted; from the word "korn," which means grain (grain salt); usually brisket, plate, chuck, or round
corned beef  Beef that has been dry- or brine-cured (usually with but sometimes without nitrite) with salt and some of the following: sugar, baking soda, salt peter, or cream of tartar; a typical corned beef cure is the following (using 1 oz per pound of meat):
  8 lb salt
  3 lb sugar
  3 oz salt peter (or 4 oz cream of tartar)
  4 oz baking soda
Apply one-third of this on each of the 1st, 4th, and 10th days; cure 2–3 weeks; for brine cure, add 4 1/2 gal water. Corned beef is not smoked. See also dried beef; max. gain in weight on curing is 10% over fresh uncurved weight; sold cooked (min. internal temperature 145°F) or uncooked;
Cuts usually used:
  Brisket
  Outside round
  Eye
  Flat
  Plate
  Rump
Spices:
  Allspice
  Bay leaves
  Cloves
  Garlic
Composition: 280 mg Na/oz (28 g)
See Part 2: Beef Cuts and Uses; Cooking in Liquid, Time; Meat and Meat Products, Composition; Meat Composition; Meat Storage; Portion Size; Sausage, Types; Simmering Meat
corned-beef hash  A semisolid food product in the form of a compact mass that is usually a mixture of beef (36%), potatoes (60%), onions (3%), and seasoning (1%); a medium- to coarse-chopped, cooked, unsmoked, American sausage that is canned sterile or shelf-stable  See Part 2: Meat Composition
corned beef, jellied  Sausage made from precooked, lean, corned beef that is shredded, combined with gelatin, formed into a loaf or roll, and cooked

corned-beef loaf  A jellied loaf made from corned beef
Composition: moisture 67%; protein 23.7%; fat 6.8%; ash 2.8%
cornel  (cornelian cherry)  A red, olive-shaped, tasteless berry that is pickled like olives and made into jelly
cornelian cherry  See cornel
corn endosperm  A natural additive used to color (red-brown) food and chicken feed
cornet  (ice cream cone)  Conical pastry that is filled with cream or ice cream
corn-fed  Describes cattle that have been fattened on corn
corn, field  (dent corn; Indian corn)  A type of corn that is high in starch and is used for making corn flour or hominy  See corn
corn, flaked  Crushed whole corn kernels  See Part 2: Food, Composition; Grain Products, Composition
Corn Flakes  A ready-to-eat breakfast cereal made from toasted flakes of corn; produced from corn grain (endosperm) by precooking, flaking, and toasting; flavored with barley malt, sugar, and salt
  1 cup = 1 oz
  1 cup, crushed = 2.5 oz
  1 cup, frosted = 1.4 oz
Composition: moisture 4%; protein 7–8%; fat 0.4%; carbohydrate 85–89%; sugar 5.3%; ash 3%; 320 mg Na/oz
  1 oz (approximately 1 1/4 cups), plain
    = 110 calories
  1 oz (approximately 2 1/4 cups), sugar-coated
    = 110 calories
See Part 2: Grain Products, Composition
corn flour (cornstarch) Finely ground kernels of white, yellow, or blue corn; finely ground (finer grind than cornmeal) starch from maize (corn) meal; used as pancake flour, dusting material, and thickening agent, and also to make bread and to mix with other flours.

1 cup, sifted = 3.9 oz
Composition: moisture 12%; protein 8%; fat 3%; carbohydrate 77%; ash 1%

corn gluten A light tan, slightly water-soluble isolate that is 90% protein; it can absorb three times its weight in water and bind one times its weight in fat. It is low in lysine and tryptophan and high in methionine and cystine.

corn gluten feed Corn gluten with bran
See Part 2: Cereal By-Products

corn gluten meal Composition: dry matter 91%; protein 43%; fiber 4.4%; fat 2.2%; ash 3.1%

corn grits (grits; hominy grits) Ground white or yellow corn from which germ and bran have been removed; coarser ground than corn meal; also called ground hominy; the following are added to form enriched grits:
- Iron 13–26 mg/lb
- Niacin or niacinamide 16–24 mg/lb
- Riboflavin 1.2–1.8 mg/lb
- Thiamine 2–3 mg/lb
See Part 2: Grain Products, Composition

corn, ground Comminuted corn whose volume is 25 lb per cubic foot

corn, high-lysine A mutant corn (opaque-2) that contains a floury endosperm and higher levels of lysine and tryptophan, making it much more nutritional than common corn

corn-hog ratio The number of bushels of corn that is equal in value to 100 lb of live hog:

\[
\text{corn-hog ratio} = \frac{\text{price per cwt of hogs}}{\text{price per bushel of corn}}
\]

Below 11.4 = high corn prices, low hog prices, loss to feeder
11.4 = normal, break-even point
Above 11.4 = low corn prices, high hog prices, profit to feeder

cornhusker A mild, high-moisture, heavy-bodied cheddar-type cheese made from cow's milk, with a soft texture and holes
See Part 2: Cheese, Vitamin Content

cornification Hardening of tissue due to keratin formation See also keratinization

corn, Indian See corn, field

corning Preserving beef by salting

Cornish A class of English chickens that has a yellow skin, pea comb, and lays a brown egg
Varieties: Dark*; White*; White laced red*; Buff* (where an asterisk indicates that there is also a bantam variety)
1 dressed hen = 1–1.5 lb
See Part 2: Poultry Breeds and Varieties; Poultry Cooking, Frozen

Cornish game hen See rock Cornish game hen

cornish pastry Half-moon-shaped pies or pastry squares filled with meat, onions, and vegetables and cooked

corn leaf aphid (Rhopalosiphum maidis) An insect that attacks sorghum as well as maize

cornmeal A meal made from white or yellow corn; a variety of coarseness of grind is available (“bolted” is a finer grind). The old process (water-ground or stone-ground) used the entire grain, including the germ (which contains the oil). This gives the product a superior flavor and added food value, but it does not keep as well as corn ground by the new process. The new process (degemmed) uses corn from which the bran and most of the germ (and consequently oil) have been removed, and thus it keeps better. Cornmeal contains little gluten. It is used for making corn bread, fritters, hotcakes, mush, scrapple, and quick breads. The following are added to make enriched cornmeal:
- Iron 13–26 mg/lb
- Niacin or niacinamide 16–24 mg/lb
- Riboflavin 1.2–1.8 mg/lb
- Thiamine 2–3 mg/lb
Equivalents:
- 100 lb degemmed cornmeal = 3.16 bu corn
- 100 lb nondegemmed cornmeal = 2 bu corn
- 1 bu = 50 lb cornmeal
- 2–3 cups = 1 lb
- 1 cup, cooked = 8.5 oz
- 1 cup, dry = 4.3–6 oz
- 5.5 cups, cooked

Defect action level: average 1 whole insect (or equivalent) per 50 g; average 25 insect fragments/25 g; average 1 rodent hair/25 g; average 1 fragment of rodent excreta per 50 g

Composition (whole grain, unbolted): moisture 12% (max. 15%); protein 9%; fat 3–5% [original corn fat content, (+0.3% is permissible range)]; carbohydrate 74%; crude fiber not less than 1.2% (not more than original corn)

Composition (whole grain, bolted): protein 9%; fat 3%; carbohydrate 75%; ash 1%

Composition (degemmed): fat 2.25% max.; ash 1.3%

The chief protein of cornmeal is zein.

Storage (whole grain): tightly covered; refrigerate in dry place (storage life 5 months); freeze for longer storage
See Part 2: Food, Composition; Grain Products, Composition; Minerals, Food; Storage, Dry

cornmeal agar See Part 2: Microorganism, Media

cornmeal, whole-ground A whole-grain product containing the germ and outer layers of the grain, where the minerals and B vitamins are concentrated

corn muffin A coarse-textured, maize-meal muffin; a small cake made of cornmeal, milk, egg, and leavening agent See muffin
See Part 2: Grain Products, Composition

corn oil A polyunsaturated, golden yellow oil obtained by extraction of the germ of corn; it contains a slight, very pleasant, corn flavor and odor until refined and then becomes very bland and is used as a salad and cooking oil; free fatty acid content 0.113%;
iodine no. 103–130; melting point –20 to –10°C; unsaponifiable matter 1–2.2%; refractive index (15.5°C) 1.475–1.477; sp. gr. 0.916–0.927; titer 16–20°C. The oil comprises 5% of whole, moisture-free grain and contains the following fatty acids: myristic 1 ± 0.9%; palmitic 10 ± 3%; stearic 3.5 ± 1%; hexadecenoic 1 ± 0.8%; oleic 34 ± 15%; linoleic 48 ± 15%

<table>
<thead>
<tr>
<th>Smoke point</th>
<th>Flash point</th>
<th>Fire point</th>
</tr>
</thead>
<tbody>
<tr>
<td>(°F)</td>
<td>(°C)</td>
<td>(°F)</td>
</tr>
<tr>
<td>Crude</td>
<td>352</td>
<td>178</td>
</tr>
<tr>
<td>Refined</td>
<td>440</td>
<td>227</td>
</tr>
</tbody>
</table>

See Part 2: Fats and Oils, Characteristics; Fats and Oils, Composition; Fats and Oils, Fatty Acid Composition; Fats and Oils, Physical and Chemical Properties; Fatty Acids, Fats and Oils; Free Fatty Acid, Smoke, Flash, and Fire Points; Iodine and Saponification Values; Oils, Seed and Fruit; Oil, Triglyceride Mole Percent Composition; Refractive Indices, Fats and Oils; Specific Gravities, Fats and Oils; Spoilage, Fat in Foods; Titer, Fats and Oils; Tocopherols

corn-on-the-cob The unripe (white seeds are still milky) fresh, sweet fruit stalk of the corn plant; it is cooked (max. 5 minutes if fresh, longer if not fresh) in rapidly boiling water and eaten from the cob; butter and salt are often added for eating.

corn pone Corn bread; small cakes made from cornmeal

Composition (white, whole-ground cornmeal): moisture 52%; protein 4%; fat 5%; carbohydrate 35%

corn, pop (Zea mays everta) An annual plant used for food, with small ears and tiny kernels that may be round or pointed; consumed as a whole grain after popping. The harder (more corneous matter (some years are superior to others)) the endosperm, the more violent the popping and the larger and lighter the popped kernel; 13.5% moisture needed for electric popping; 60 lb/bu

<table>
<thead>
<tr>
<th>Type</th>
<th>Variety</th>
<th>Ear</th>
<th>Kernel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dwarf</td>
<td>Tom Thumb</td>
<td>2 in.</td>
<td>Round and golden</td>
</tr>
<tr>
<td>Large</td>
<td>Fireside</td>
<td>6 in.</td>
<td>Round, smooth, white</td>
</tr>
<tr>
<td></td>
<td>Purdue</td>
<td>8 in.</td>
<td>Long, pointed, white</td>
</tr>
<tr>
<td></td>
<td>White Pearl</td>
<td>6 in.</td>
<td>Round, smooth, white</td>
</tr>
</tbody>
</table>

Defect action level: one rodent pellet in one or more subsamples of ten 225-g subsamples or six 10-oz consumer-sized packages and one rodent hair in other subsamples; two rodent hairs per pound; rodent hairs in 50% of subsamples; 30 gnawed grains/lb and rodent hairs in 50% of subsamples

Storage: should not be stored in a warm place

corn, puffed A breakfast cereal made by heating grain (corn) under pressure and rapidly releasing pressure, causing the superheated steam and the kernel to expand

Composition: moisture 4%; protein 8%; fat 4%; carbohydrate 86%

See Part 2: Grain Products, Composition
corn relish A condiment made from yellow sweet corn, pimiento, chopped cabbage, vinegar, and spices

corn rootworm An insect that is a corn and peanut pest

corns 1) A British term for grains. 2) An old term for coarse salt

corn salad (fetticus; lamb’s lettuce; shepherd’s purse; Valerianella locusta alitoria) A small, hardy, annual, mild salad plant that looks like smooth-leaved spinach and is a substitute for lettuce; can be eaten either raw in salads or cooked like spinach; also called winter salad See field salad See Part 2: Planting Density; Vegetable Plants
corn, shelled 56 lb/bu; plant 10–15 lb/acre
corn, shredded A breakfast cereal

Composition: moisture 3%; protein 7%; fat 0.5%; carbohydrate 86%
corn silk A sweet-tasting herb sometimes used as tea
cornstalk The stalk remaining after ears are removed

Uses: alcohol; cellulose; forage for animals; feed; mulch (if shredded pieces are 1 in. or less); oil; paper; pasteboard; syrup
cornstarch A starch made from the endosperm of corn and used as a transparent thickening agent in gravies, puddings, etc. and as a filler in baking powders; readily digestible

<table>
<thead>
<tr>
<th>Types</th>
<th>Process</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flavored</td>
<td>Sugar and flavoring</td>
<td>Puddings;</td>
</tr>
<tr>
<td>Instant</td>
<td>Dehydrated gelatinized starch, sugar, and flavoring</td>
<td>Pie fillings</td>
</tr>
<tr>
<td>Waxy</td>
<td>Waxy corn (amylopectin)</td>
<td>Frozen sauces; pie fillings</td>
</tr>
</tbody>
</table>

3 tbsp = 1 oz
3 cups = 1 lb
1 cup, stirred = 130 g

For thickening: 1 tbsp cornstarch = 2 tbsp flour

Composition: moisture 12%; protein 0.3%; carbohydrate 88%; ash 0.1%; pH 4–7

See also corn flour See Part 2: Cornstarch Pudding Variations
corn stick (chipmunks) Corn bread (made from flour, cornmeal, sugar, eggs, milk, oil, baking powder, and salt) baked in the shape of ears of corn, usually in a cast-iron pan
corn stover Cured, mature cornstalk from which ears have been removed; used as livestock feed

Composition: moisture 40%; protein 3.8%; crude fiber 20%; nitrogen-free extract 31.5%; fat 1.1%; ash 3.4%
corn sugar (dextrose) The glucose obtained by complete hydrolysis of cornstarch; occurs naturally in honey, some fruits, and vegetables
**corn-sugar vinegar**  Made by alcoholic and subsequent acetic fermentation of glucose or cornstarch sugar or corn syrup derived from corn; it is dextrorotatory.

**corn, sweet**  85-150 seed/oz; plant 1 lb/400 ft; germination time 7 days; harvest when silk turns dry and brown; maturity may be judged by the juice:
- Clear, watery—immature
- Milky, thin—ready to harvest
- Thick—overmature; less sweet, starchy

Available canned or frozen (mostly yellow or golden varieties but some is white); either may contain peppers or pimientos

Canned styles:
- Cream style—large or small pieces of kernel in a thick, creamy sauce (corn, salt, sugar, water, and sometimes starch)
- Shoe peg—whole-grain (small, narrow kernels) white corn
- Vacuum-packed whole grain—whole kernels in little or no liquid
- Whole-grain style—whole kernels in a relatively clear liquid

Storage: store only if you must—unhusked, wrapped in damp paper towels, and stored in the coldest spot in the refrigerator

See Part 2: Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Yields

**corn sweetener**  A class name for sweeteners derived from corn; includes dextrose (derived from corn), glucose syrup, and high-fructose corn syrup

<table>
<thead>
<tr>
<th>Color and pollination</th>
<th>Variety</th>
<th>Ear length</th>
<th>Rows of kernels per ear</th>
<th>Plant height</th>
<th>Season</th>
<th>Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Hybrid</td>
<td>Country Gentleman</td>
<td>8 in.</td>
<td>Nonrowering</td>
<td>7 ft</td>
<td>92 days</td>
<td>Frozen; canned</td>
</tr>
<tr>
<td></td>
<td>Evergreen</td>
<td>8 in.</td>
<td>14-18</td>
<td>9 ft</td>
<td>90 days</td>
<td></td>
</tr>
<tr>
<td>Open-pollinated</td>
<td>Silver Beauty</td>
<td>8 in.</td>
<td>14-18</td>
<td>9 ft</td>
<td>84 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Silver Queen</td>
<td>8 in.</td>
<td>14-18</td>
<td>9 ft</td>
<td>90 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Country Gentleman</td>
<td>8 in.</td>
<td>Irregular</td>
<td>7 ft</td>
<td>Midseason, Late</td>
<td>Canned; frozen</td>
</tr>
<tr>
<td></td>
<td>Shoe Peg</td>
<td>8 in.</td>
<td>14-18</td>
<td>9 ft</td>
<td>90 days</td>
<td></td>
</tr>
<tr>
<td>Yellow Hybrid</td>
<td>Corneli's Gold Rush</td>
<td>8.5 in.</td>
<td>12-14</td>
<td>9 ft</td>
<td>Early</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Early Sunglow</td>
<td>8.5 in.</td>
<td>12-14</td>
<td>9 ft</td>
<td>Early, 58 days</td>
<td>Garden</td>
</tr>
<tr>
<td></td>
<td>Early Xtra Sweet</td>
<td>9 in.</td>
<td>12-16</td>
<td>9 ft</td>
<td>Early, 70 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Golden Beauty</td>
<td>7 in.</td>
<td>12-14</td>
<td>9 ft</td>
<td>Midseason, 54 days</td>
<td>Garden; canned</td>
</tr>
<tr>
<td></td>
<td>Golden Cross Bantam</td>
<td>8 in.</td>
<td>10-14</td>
<td>9 ft</td>
<td>Mid.—late, 85 days</td>
<td>Garden; canned</td>
</tr>
<tr>
<td></td>
<td>Honeycross</td>
<td>8 in.</td>
<td>16 or more</td>
<td>9 ft</td>
<td>Midseason, 87 days</td>
<td>Frozen; canned</td>
</tr>
<tr>
<td></td>
<td>Illini Xtra Sweet</td>
<td>8 in.</td>
<td>14-18</td>
<td>9 ft</td>
<td>Late, 85 days</td>
<td>Frozen</td>
</tr>
<tr>
<td></td>
<td>Ioana</td>
<td>8 in.</td>
<td>12-16</td>
<td>9 ft</td>
<td>Late, 87 days</td>
<td>Frozen</td>
</tr>
<tr>
<td></td>
<td>Iochief</td>
<td>8 in.</td>
<td>14-18</td>
<td>9 ft</td>
<td>Mid.—late, 87 days</td>
<td>Frozen; canned</td>
</tr>
<tr>
<td></td>
<td>Marcross</td>
<td>8 in.</td>
<td>16</td>
<td>9 ft</td>
<td>Mid.—late, 66 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Midget</td>
<td>5 in.</td>
<td>12-16</td>
<td>9 ft</td>
<td>Mid.—late, 66 days</td>
<td></td>
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<tr>
<td></td>
<td>Pennfresh Adx</td>
<td>8 in.</td>
<td>12-16</td>
<td>9 ft</td>
<td>Mid.—late, 66 days</td>
<td></td>
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<tr>
<td></td>
<td>Seneca Chief</td>
<td>8 in.</td>
<td>14-16</td>
<td>9 ft</td>
<td>Mid.—late, 66 days</td>
<td></td>
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<tr>
<td></td>
<td>Silver Queen</td>
<td>8 in.</td>
<td>14-16</td>
<td>9 ft</td>
<td>Mid.—late, 66 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Span-Cross</td>
<td>8 in.</td>
<td>14-16</td>
<td>9 ft</td>
<td>Mid.—late, 66 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tastyvee</td>
<td>8 in.</td>
<td>12-14</td>
<td>9 ft</td>
<td>Mid.—late, 66 days</td>
<td></td>
</tr>
<tr>
<td>Open-pollinated</td>
<td>Early Yellow-Dent</td>
<td>8 in.</td>
<td>16</td>
<td>9 ft</td>
<td>Midseason, 76 days</td>
<td>High-sugar</td>
</tr>
<tr>
<td></td>
<td>Golden Bantam</td>
<td>6 in.</td>
<td>8</td>
<td>9 ft</td>
<td>Midseason, 76 days</td>
<td>High-sugar</td>
</tr>
<tr>
<td></td>
<td>Golden Midget</td>
<td>2 in.</td>
<td>2-3 ft</td>
<td>9 ft</td>
<td>Midseason, 76 days</td>
<td>High-sugar</td>
</tr>
<tr>
<td></td>
<td>Trucker's Favorite</td>
<td>9 in.</td>
<td>8</td>
<td>9 ft</td>
<td>Midseason, 76 days</td>
<td>High-sugar</td>
</tr>
<tr>
<td>Yellow and White Hybrids</td>
<td>Butter 'N Sugar</td>
<td>8 in.</td>
<td>12-14</td>
<td>9 ft</td>
<td>Early, 70 days</td>
<td>Garden; roasted</td>
</tr>
<tr>
<td></td>
<td>Pearls 'N Gold</td>
<td>7 in.</td>
<td>12-14</td>
<td>9 ft</td>
<td>Midseason, 80 days</td>
<td>Garden; roasted</td>
</tr>
</tbody>
</table>
corn, sweet, process residue (cannery residue)

### Composition

<table>
<thead>
<tr>
<th>Composition</th>
<th>Fresh</th>
<th>Silage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture</td>
<td>23</td>
<td>68</td>
</tr>
<tr>
<td>Protein</td>
<td>7</td>
<td>2.4</td>
</tr>
<tr>
<td>Fat</td>
<td>2</td>
<td>1.6</td>
</tr>
<tr>
<td>Fiber</td>
<td>17</td>
<td>11</td>
</tr>
<tr>
<td>Ash</td>
<td>2.5</td>
<td>1.6</td>
</tr>
</tbody>
</table>

corn syrup A syrup (containing saccharides), with a dextrose equivalent (DE) of at least 20, made by partial hydrolysis (cooking under pressure or with an enzyme, acid, or enzyme–acid) of cornstarch; contains dextrose, maltose, and dextrins. Light and dark forms are available: the light form has had clarifying and decolorizing treatment; the dark is a mixture of corn syrup and refiner’s syrup (pH = 5.0).

1 cup = 328 g (11.6 oz)

= 1 cup sugar + 1 cup liquid

**Uses:**
- Candies
- Frosting
- Meat curing—total cannot exceed 2% (dry basis) of all ingredients in meat product
- Corn syrup solids
- Corn syrup
- Glucose syrup

Crystal-type (does not crystallize on cooking) is available colorless and white (85% corn syrup, 15% sugar syrup).

Classifications: type I (20–38 DE); type II (38–58 DE); type III (58–73 DE); type IV (73 DE and up)

Higher saccharide content contributes the following to food:
- Adds cohesive and adhesive properties
- Increases chewiness
- Increases water-holding capacity

Corn syrup is a humectant and this capacity increases with dextrose equivalent. See glucose; humectant

See Part 2: Sweetening Compounds
corn syrup, dried (glucose syrup, dried) Corn syrup that has been dried to 5% moisture
corn syrup, high-fructose (HFCS) Corn syrup containing dextrose and fructose, obtained by isomerization of glucose to fructose using glucose isomerase; made by hydrolysis of cornstarch with varying quantities of fructose (e.g., syrups with 42, 55, and 90% fructose (with most of the rest being dextrose) are available)
corn vinegar Vinegar made from maize
corn whiskey Whiskey distilled from fermented maize and aged in uncharred barrels
corolla Colored petals of a flower
coronet A horse’s leg at the top of the hoof
corporate farm A farm business that is legally incorporated under state law. The stock may be held by a farm family, closely held and not available for public purchase, or listed on a public stock exchange.
corpuscle A cell in a fluid, e.g., red and white blood corpuscles in blood
corpus luteum (yellow body) The tissue on the ovary that produces hormones if pregnancy occurs and otherwise simply degenerates; granulose cells of the graafian follicle following ovulation
corrected wine See modified wine
correlation (r) A mathematical value that measures the degree of relationship between two variables:

\[
r = \frac{\sum xy}{\left[\left(\sum x^2\right)\left(\sum y^2\right)\right]^{1/2}}
\]

\[
r = \frac{\sum XY - \frac{(\sum X)(\sum Y)}{n}}{\sqrt{\left[\frac{\sum X^2 - \frac{(\sum X)^2}{n}}{n}\right]\left[\frac{\sum Y^2 - \frac{(\sum Y)^2}{n}}{n}\right]^{1/2}}}
\]

**r** ranges from -1 to 0 to +1
-1 and +1 are perfect correlations
0 is no correlation

t test:

\[
t = r \left(\frac{n - 2}{1 - r^2}\right)^{1/2}
\]

**H_0:** r = 0, probability of greater |r| value if r were drawn from a normal population in which r = 0

n = no. of Xs or Ys
df = n - 2

Check levels of significance tables for df = n - 2

Confidence limits (CL) can be set only by transformation to a quantity which is distributed normally.

See Part 2: Correlation Significance
Corriedale A medium-wool breed of sheep that originated in New Zealand, primarily from the crossing of Merino ewes with Lincoln rams; has white face with dark nostrils and hooves and has no horns; the wool fleece grade is usually 5.
See Part 2: Sheep Breeds
corrosion Chemical attack by oxygen or acids on metal
corrugated Having alternate ridges and furrows, or a ribbed effect; a sandwich construction of layers of paperboard where a fluted medium is attached to flat sheets
cortex 1) The outer portion or bark of a tree. 2) The protective covering of the cerebrum or of the adrenal glands
corticosterone A hormone obtained from the adrenal cortex
See Part 2: Steroids
cortisol A steroid hormone obtained from the adrenal cortex or made synthetically
See Part 2: Steroids
cortisone  A steroid hormone obtained from the adrenal cortex or made synthetically
See Part 2: Steroids
Cortland  A variety of apple that is in season from September to December; makes excellent sauce and is a good eating and cooking apple
Corton  A strong, full-bodied red wine
Corton-Charlemagne  A dry white wine
corvo di salaparuta  A Sicilian wine
Types:  
Pale white  
Red—fine; good aroma  
White—full-bodied
Corynebacterium  A genus of slightly curved rods, usually aerobic microorganisms, that includes both nonpathogenic and organisms that cause animal or plant diseases, e.g., diphtheria-type organisms
See Part 2: Microorganism, Media
Cos  A variety of head lettuce See also lettuce; romaine lettuce
cosecant  A trigonometric function
\[
cosecant = \frac{\text{hypotenuse}}{\text{ordinate}}
\]
cosine  A trigonometric function
\[
cosine = \frac{\text{abscissa}}{\text{hypotenuse}}
\]
cossettes  Sugar-beet slices
costae  Ribs (Latin)
costal  Pertaining to the ribs or their cartilage
See Part 2: Bone
costal cartilage  Rib cartilage on the lower ends (opposite ends that are attached to backbones) of the ribs
cost and freight (C and F)  The seller provides the cargo, pays loading costs, and charters the vessel for a specific destination; the buyer pays for discharge.
See cost, insurance, freight
Costa Rican hard-bean  A hearty, strong coffee from Costa Rica, with a balance between aroma, flavor, and body
Costa Rican semi-hard-bean  A rich, light-flavored, smooth coffee
cost, insurance, freight (CIF)  The seller provides the cargo, pays loading costs, insures the cargo until it reaches the destination, and charters the vessel for a specific destination; the buyer pays for discharge.
See cost and freight
costmary  A plant that is used for flavoring See alecost
cost-of-production  The average amount (in dollars per unit) needed to grow or raise a farm product, including all purchased inputs and sometimes including allowances for management and use of land owned by the farm operator; may be expressed in units of bushels, pounds, tons, or acres
cost plus  A pricing method where the purchaser agrees to pay an amount determined by the cost incurred by the vendor plus a fixed percentage of that cost for profit
costs per serving  See Part 2: Fruit and Vegetables, Cost per Serving
cost sharing  A practice where the government shares the cost of certain farm conservation practices with the farm owner or operator
costus root oil  A volatile oil obtained by steam distillation or solvent extraction followed by vacuum distillation of the root of Saussurea lappa; sp. gr. 0.994–1.040; used as a flavoring agent in food
Storage: full, tight glass container in a cool, dark place
cotangent  A trigonometric function
\[
cotangent = \frac{\text{abscissa}}{\text{ordinate}}
\]
coteghino  A Portuguese fresh sausage made from pork and pork skins
Côtes de Nuits  A region in Burgundy (east-central France) that is famous for its red wine; a red wine
Côtes de Nuits  A region in Burgundy (east-central France) that is famous for its red wine; a red wine

<table>
<thead>
<tr>
<th>Commune</th>
<th>Vineyard or Wine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aloxe Corton</td>
<td>Aloxe, Carton, Clos Charlemagne, Corton Charlemagne</td>
</tr>
<tr>
<td>Beaune</td>
<td>Delicate body</td>
</tr>
<tr>
<td>Chassagne Montrachet</td>
<td>Fine, amber-colored white</td>
</tr>
<tr>
<td>Meursault</td>
<td>Dry, green-yellow white</td>
</tr>
<tr>
<td>Pommard</td>
<td>Firm</td>
</tr>
<tr>
<td>Puligny Montrachet</td>
<td>Fine, amber-colored, white</td>
</tr>
<tr>
<td>Santenay</td>
<td>Mellow</td>
</tr>
<tr>
<td>Volnay</td>
<td>Well-balanced</td>
</tr>
</tbody>
</table>

cotechno zampone  A moist or semidry, cooked or uncooked, unsmoked Italian sausage made from medium-chopped pork stuffed into a pork or an artificial casing
Côte de Beaune  A region in Burgundy (east-central France) that is famous for its red and white wines

<table>
<thead>
<tr>
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<th>Vineyard or Wine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chambolle Musigny</td>
<td>Bonnes Mares</td>
</tr>
<tr>
<td>Flagey Echezeaux</td>
<td>Clos de Beze, Clos de Lambrays, Le Chambertin</td>
</tr>
<tr>
<td>Gevrey Chambertin</td>
<td>Clos de Tart</td>
</tr>
<tr>
<td>Morey</td>
<td>Premeaux</td>
</tr>
<tr>
<td>Nuits St. Georges</td>
<td>La Romanée Conti, La Tache, Malconsorts, Richebourg, Romanée St. Vivant,</td>
</tr>
<tr>
<td>Vosne Romanée</td>
<td>Clos de turquoise</td>
</tr>
<tr>
<td>Vougeot</td>
<td>Clos de Vougeot</td>
</tr>
</tbody>
</table>
Côtes du Rhône  A robust, full-bodied, dry red, rosé, or white wine from southern France

cotherstone (Yorkshire stilton)  A rennet, sharp-flavored, double-cream blue cheese made from cow’s milk See stilton

cotriade  A fish soup

cotronese (crotonese)  A provolone-type cheese made from ewe’s or goat’s milk

cotswold  A Gloucester-type double cheddar cheese flavored with onions and chives

Cotswold  A long-wool breed of sheep originating in England
See Part 2: Sheep Breeds

cottage cheese (Dutch cheese; pot cheese)  1) A soft, moist, delicate, nonripened, perishable, creamy, and white cheese made from pasteurized skim milk by lactic acid fermentation (Streptococcus lactis), scalding (the cheese is not pressed), and adding cream dressing; it is mild and slightly acid. 2) A soft, white, mild, low-fat, high-moisture fresh cheese, with large or small curds, made by acid coagulation of skimmed milk (direct set or curd set with food-grade acid added to develop acidity and to coagulate milk); rennet may or may not be added; curds may (creamed) or may not (uncreamed) contain added cream; curdled and compressed casein; 20% milk solids

Manufacturing steps:
1. Let milk stand until it thickens (often starter culture is added, and sometimes rennet).
2. Gently heat until the whey (clear liquid) rises to the top.
3. Strain.
4. Chop.
5. Add butter, cream, and salt.

Forms:
Cottage cheese—min. 4% milk fat obtained by adding cream
Creamed (both small and large curd)—2–3 oz (4–6 tbsp) cream per pound of curd; increases smoothness and improves flavor and texture; adds calories and lowers protein content
Dry—no cream added (less than 0.5% milk fat); more than 80% moisture
Large curd—low acid content; made with rennet
Partially creamed or low-fat—between 0.5 and 2% milk fat (as labeled)
Small curd—high acid content; made without rennet

USDA grade is “Quality Approved” (good quality and manufactured in a clean plant).

1 gal milk = 8.25 lb milk  
= 1 lb cottage cheese  
= 1 qt cottage cheese

6.25 lb skim milk = 1 lb cottage cheese
1 lb cottage cheese = 2 cups
1 cup = 4 3/4 oz
1 tbsp = 1 oz
1 tsp = 1/2 oz

Creamed:
2 tbsp (1 oz) = 30 calories
1 cup, packed = 250 calories

Uncreamed:
2 tbsp (1 oz) = 25 calories
1 cup, packed = 170 calories
24 mg cholesterol/0.5 cup (4% fat); 12 mg cholesterol/0.5 cup (1% fat); 116 mg Ca/0.5 cup (creamed); 90 mg Ca/0.5 cup (dry)

Salt: 1 tsp salt per pound of curd; sodium 0.4% (uncreamed); 115 mg Na/oz (regular); 4 mg Na/oz (unsalted)

Storage: Refrigerate, tightly covered; use within 3–5 days.

See also curd
See Part 2: Calcium, Daily Recommendations; Calories, Daily Recommendations; Cheese Characteristics; Cheese Composition; Cheese, Vitamin Content; Cholesterol Control; Cottage Cheese Shield; Food Composition; Microbiological Standards, Dairy; Milk and Cheese Composition; Milk and Milk Products, Vitamin Content; Minerals, Food; Riboflavin, Daily Recommendations; Stabilizers, Thickeners; Vitamin A, Milk and Milk Products

cottage cheese grade  "USDA Quality Approved" indicates good quality, made under USDA supervision

cottage pie  A potato-crust pie with meat filling

cottage roll (cottage butt; smoked pork shoulder roll)  A boneless, cylinder-shaped piece of pork cut from the top of the Boston butt; may be fresh, cured, or cured and smoked

cotted fleeces  Wool that is tangled and will require special processing; characteristic of certain breeds and of illness in some breeds

cottenham  A blue cheese made from cow’s milk

cotton (Gossypium)  An annual plant whose vegetable fiber is composed primarily of cellulose and is used for cloth; seed 30 lb/bu; pH 6–6.5; seed 1–3 bu/acre

Species used:
Upland cotton (G. hirsutum)

<table>
<thead>
<tr>
<th>Cottage cheese</th>
<th>Moisture (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Carbohydrate (%)</th>
<th>Fiber (%)</th>
<th>Ash (%)</th>
<th>Salt (%)</th>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creamed</td>
<td>78–90</td>
<td>12.5–14</td>
<td>4–5 (4 min.)</td>
<td>2.7–3</td>
<td>Trace</td>
<td>1.4–2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>With fruit</td>
<td>72.1</td>
<td>9.9</td>
<td>3.4</td>
<td>13.3</td>
<td></td>
<td>1.3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Dry curd</td>
<td>79–80</td>
<td>15–17</td>
<td>0.4 (0.5 max.)</td>
<td>1.8–3</td>
<td>Trace</td>
<td>0.7–2</td>
<td>1</td>
<td>5.0</td>
</tr>
<tr>
<td>Low-fat</td>
<td>82.5 (max.)</td>
<td>13.7</td>
<td>1.9 (labeled)</td>
<td>3.6</td>
<td>0</td>
<td>1.4</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2%</td>
<td>79.3</td>
<td>12.4</td>
<td>1.0</td>
<td>2.7</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
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<td></td>
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1 lb cottage cheese = 2 cups
1 cup = 8.25 lb milk
1 gal milk = 8.25 lb milk
1 tsp = 1 oz
1 tbsp = 1 oz

6.25 lb skim milk = 1 lb cottage cheese
1 lb cottage cheese = 2 cups
1 cup = 240 g (8.3 oz)
1 tsp = 1 oz
1 tbsp = 1 oz

Creamed:
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Composition

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<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
American and Egyptian (G. barbadense)  
Asiatic (G. arboreum; G. herbaceum)  

Equivalents:  
1 net bale = 480 lb  
1 gross bale = 500 lb  
3.25 lb seed cotton (including trash)  
  = 1 lb ginned cotton  
32 lb cotton seed = 1 bu  
1 metric ton seed, with hulls  
  = 200 kg oil  
  = 800 kg cake  
1 metric ton seed, without hulls  
  = 330 kg oil  
  = 670 kg cake  

Boll (pod) contains 27-45 seeds; seed cotton is 33% lint.  
Seed components: hull 25-30%; kernel 60%; linters 5%; trash 5% (kernel is 32-38% edible oil)  

Approx. amount used to produce  

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>500 lb lint</th>
<th>1000 lb lint</th>
<th>1500 lb lint</th>
<th>1500 lb plants</th>
</tr>
</thead>
<tbody>
<tr>
<td>N, lb</td>
<td>1.4</td>
<td>36</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>P₂O₅, lb</td>
<td>0.5</td>
<td>15</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>K₂O, lb</td>
<td>3</td>
<td>15</td>
<td>27</td>
<td></td>
</tr>
</tbody>
</table>

Composition  

- Meat, without hulls  
  - 41% protein  
  - Whole, pressed seed  
  - Solvent-extracted  
    - 41% protein  
    - Without hulls (50% protein)  

Cottonseed meal  

Composition (%)  

- Dry matter  
- Protein  
- Fiber  
- Fat  
- Ash  

- 43  
- 93  
- 93  
- 93  
- 91  
- 93  

- 41  
- 41  
- 41  
- 50  
- 50  

- 12  
- 12  
- 12  
- 8  
- 8  

- 12  
- 12  
- 12  
- 8  
- 8  

- 5  
- 5  
- 5  
- 5  
- 5  

- 6.1  
- 6.3  
- 6.5  
- 6.6  
- 28  

See Part 2: Fertilizer Materials; Insulation  

Cottonseed oil  
A light yellow, mild, sweet-flavored, semidrying vegetable oil obtained from cottonseed by pressing. After refining it is very bland. This oil contains glycerides of oleic, palmitic, and linoleic acids and is a good source of linoleic acid; used for shortening and margarine and often used as a substitute for olive oil; may be hydrogenated; sardines are often packed in this oil.  

5.88 lb cottonseed = 1 lb cottonseed oil  
1 qt = 4 cups  
1 cup = 210 g (7.4 oz)  

Number of carbon atoms:  

- Saturated  
  - 14 (1%)  
  - 16 (23%)  
  - 18 (2%)  

- Monounsaturated  
  - 18 (24%)  

- Polyunsaturated  
  - 18-2 (50%)  

Iodine no. 97-115; sp. gr. 0.9187 (20°/4°C); saponification no. 189-200; unsaponifiable matter 0.5-1.5%; cloud point 40-50°F; melting point -2 to +2°C; smoke point 410-430°F; acid number 14.24; titer 31-37°C; refractive index (15.5°C) 1.473-1.476  

See Part 2: Oil, Seed and Fruit; Oils and Fats, Composition; Pentosans; Protein Factors; Refractive Index; Fats and Oils; Seed Composition; Unsaponifiable Matter  

Cotton candy  
Produced by spinning sugar that has been boiled at a high temperature  

Cottonseed  
The seed of the cotton plant; cotton plants yield 170 lb cottonseed per 100 lb fiber; cottonseed yield is 850 lb/acre.  

Components: linters 10%; hull 35%; kernel 55%  
1 bu = 32 lb  

Composition (%)  

- Dry matter  
- Protein  
- Fiber  
- Fat  
- Ash  

- 7  
- 30  
- 30  
- 5  
- 24  

- 8-10  
- 18-22  
- 16-23  
- 18-23  
- 24.7-25  

See Part 2: Oil, Seed and Fruit; Oils and Fats, Composition; Pentosans; Protein Factors; Refractive Index; Fats and Oils; Seed Composition; Unsaponifiable Matter  

Cottonseed flour  
Flour made from ground cottonseed specially processed to minimize the toxic properties of gossypol  

Composition: moisture 6%; protein 48-50%; fat 7%; carbohydrate 33%; ash 6%  

Cottonseed hulls  
The waste remaining after processing the seed; 0.3 lb/qt  
Composition: moisture 91%; protein 3.7%; fat 1.5%; fiber 43%; ash 2.6%  

See Part 2: Fertilizer Materials; Insulation  

Cottonseed meal  
The product remaining after expression of the oil; contains toxic gossypol, which should be removed during processing; used for both animal feeds (as a protein supplement) and as fertilizer (5.7-2.5-1.5 or 6.6-2.5-1.5); acid in nature and would require 0.1 lb dolomitic limestone to neutralize each pound applied  

2.10 lb cottonseed = 1 lb cottonseed meal  
1 qt = 1.5 lb  

See Part 2: Insulation; Nutrients in Crops; Seed, Chemical Composition; Seed Germination  

See Part 2: Oil, Seed and Fruit; Oils and Fats, Composition; Pentosans; Protein Factors; Refractive Index; Fats and Oils; Seed Composition; Unsaponifiable Matter
See Part 2: Fats and Oils, Characteristics; Fats and Oils, Composition; Fats and Oils, Fatty Acid Composition; Fats and Oils, Physical and Chemical Properties; Fatty Acids, Fats and Oils; Free Fatty Acids, Smoke, Flash, and Fire Points; Iodine and Saponification Values; Oil or Fat, Characteristics; Oil, Triglyceride Mole Percent Composition; Specific Gravities, Fats and Oils; Spoilage, Fat in Foods; Titer, Fats and Oils; Tocopherols

cottonseed stearin  A fat obtained from cottonseed; iodine no. 89–103; melting point 26–40°C; saponification no. 194–195; sp. gr. 0.918–0.923

cottonwood  A tree that is fair for firewood (16 × 10^6 Btu/cord, 20% moisture), easy to start, and easy to split and produces medium smoke, good coals, and few sparks

cottony maple scale  (Pulvinaria innumerabilis)  A pest of maple and sometimes pear; produces a cottony egg sac

cottony rot  A citrus fruit rot spread by contact and caused by the fungus *Sclerotinia sclerotiorum* (Lib) de By.; the fruit softens slowly but the skin is first leathery and pliable. In dry atmosphere, decayed areas are yellow to greenish brown. In moist atmosphere, the fruit is covered by a cottony white mycelium. Moderate temperature, high humidity, and stagnant air favor growth of the fungus.

cotyledon  1) The rudimentary form of the leaf of seed plants; some types have one (monocots); others have two (dicots).  See Part 2: Wheat Kernel Parts 2) Full, fat flake

couch grass  A plant whose rhizome is used as an herb

coule verac  A valencay-type cheese made from goat’s milk and covered with tree leaves (plain or chestnut)

coulis (bisque)  1) A thick seafood soup. 2) Thickened, strained juices from meat

coulomb (C)  A charge of approximately 6.24 × 10^-18 electrons passing a point in one second when the current is one ampere; an electrical measurement; \(x\) (in amperes) times \(y\) (in seconds) equals \(xy\) (in coulombs)

\[ 1 \text{C} = 2.998 \times 10^8 \text{statcoulombs} = 1.036 \times 10^{-5} \text{faraday} \]

coulomb, international  1) The measurement of electric charge; 2) The amount of electric charge in one coulomb

coulomb per square centimeter  \((\text{C/cm}^2)\)

\[ 1 \text{C/cm}^2 = 10,000 \text{ coulombs per square meter (C/m}^2) = 6.454 \text{ coulombs per square inch (C/in.}^2) \]

coulomb per square inch  \((\text{C/in.}^2)\)

\[ 1 \text{C/in.}^2 = 1550 \text{ coulombs per square meter (C/m}^2) = 0.1550 \text{ coulomb per square centimeter (C/cm}^2) \]

coulomb per square meter  \((\text{C/m}^2)\)

\[ 1 \text{C/m}^2 = 6.452 \times 10^{-4} \text{ coulomb per square inch (C/in.}^2) = 1 \times 10^{-4} \text{ coulomb square centimeter (C/cm}^2) \]

coulohmier  A round, flat, light-colored French cheese, with a flowery rind and creamy interior, made from pasteurized, inoculated cow’s milk, with rennet added; it is not scalded, not pressed, not mold-ripened, weighs about 1 lb, and is packed in a wood chip box; it is larger than a camembert and smaller than a brie.

Storage: dries out quickly if not protected  See brie de Coulommiers

coumarin

\[ 
\begin{align*}
\text{O} & \quad \text{O} \\
\end{align*}
\]

A chemical with an odor similar to the vanilla bean; no longer approved by the FDA for use as a flavoring  See bean, tonka

counterfeit  Poorly bred cattle that give an impression of good breeding

country cure  See dry cure

countersink depth  The distance from the top edge of the double seam to the end panel adjacent to the chuck wall

country ham  A dry-cured ham prepared in the country; dried, salt-cured pork, usually uncooked, often smoked and matured several months

country hides  Hides removed by an unconventional pattern, containing cuts, and handled under various storage conditions

country-style pork sausage  A sausage, made from coarsely ground pork, that contains 10–20% beef  See also pork sausage

country-style spareribs  A blade or rib end of a pork loin split lengthwise

coupe  An ice-cream-based frozen dessert

coupling  The area on the back of a quadruped between the dorsal vertebrae and the pelvis

courant  A dry, uncooked, smoked Belgian sausage made from medium-chopped, medium-seasoned beef and pork fermented and stuffed into artificial casings

courgette  A tender, baby marrow  See marrow

court bouillon  A fish- and vegetable-based broth, containing spices, vinegar, salt, and sometimes wine, that is used for poaching fish or cooking seafood

couve tromchuda  (braganze cabbage; Portugal cabbage)  A cabbage; the thick, white, tender midrib, of the larger leaves is cooked and eaten

coumarin

counosperm  A dry, uncooked, smoked Belgian sausage made from medium-chopped, medium-seasoned beef and pork fermented and stuffed into artificial casings

cover  1) The end applied to a can by the packer after filling (also called canner’s end, lid, packer’s end, top)  See closure. 2) Linen, silver, glassware, and china* for one person; a 20- to 24-in. space is needed (15 in. deep).

cover crop  A grass or legume that is grown to protect and improve soil between periods of regular crops (also used in orchards and vineyards)

covered kernel smut  See Part 2: Sorghum Diseases

cover hook  The portion of the double seam resulting from the curl of the can lid; the portion of the edge of
the end that is turned back between the body hook in the formation of the end seam of a can.

cover pickle (cover brine)  The pickle in which meat is placed to cure; usually contains the same level of ingredients as the pumping pickle except that no phosphates are included.

cover skirt  The flange on a slip cover; the side of a can below the double seam that remains with the top after opening a can with a key.

cow  A female of a bovine species (e.g., cattle) after she has dropped her first calf; gestation period 283 days (range 240–311); duration of heat period 12–24 h; normal recurrence of heat 18–24 days.

See Part 2: Milk, Mammals, Composition; Milk, Species; Muscle and Body Weight.

cow beef  A female bovine having eight permanent incisors.

cowberry (mountain cranberry)  An evergreen shrub with fruit similar to the cranberry See cranberry.

cowfish  A saltwater food fish, with an exoskeleton (shell) belonging to the skate family.

cow-hocked  Hocks closer together than ankles and rear toes pointed out; hocks bent in on rear view.

cow parsley  A plant whose leaves are cooked like spinach.

cowpea (black-eyed cowpea; black-eyed pea; China bean; China pea; Chinese pea; pea bean; protopea; southern pea; white-eyed pea; Vigna sinensis; V. unquiculata)  Usually a whitish bean (more of a bean than a pea) with a black spot at the eye, the seed of an annual leguminous plant that is used for hay and human food (leaves used as spinach); 10–15 seed/pod; 3500–9500 seed/kg; pod (15–25 cm) is cylindrical and curved; seeds are bean-shaped but short (6 x 4 mm) and vary in size and color; plant is harvested by cutting when first pods have matured; seed 2–5 peck/acre; plant 5 in. apart in rows 30 in. apart.

Types (black and white):
- Blackeye
- Cream
- Crowder
- Pole type (asparagus bean, yard-long bean)
- Purple hulls

Seed color [often darker around the hilum (seed attachment, or eye)]; black; buff; clay; marbled; meroon; purple; speckled; spotted; white.

Country and use:
- China—young, tender pods eaten
- Sudan—starchy root used for food
- United States—mature seeds dried and eaten; green manure and forage.

Varieties and characteristics:
- Big Boy—used for canning and freezing
- Black
- Black-Eyed—cream-colored seed, with dark eye
- Brabham
- Brown Crowder
- California Blackeye
- Clay
- Couch
- Dixille—pod matures late

Extra Early Blackeye
Iron
Knuckle Purple Hull
Lady
Louisiana Purchase
Magnolia Black Eye—used for canning and freezing
Mekan
Mississippi Purple—pod is green when young, purple when mature
Mississippi Silver—pod is long, round, and medium green; used young and dried; turns brown when cooked
Monarch Blackeye—pod is heat-resistant
Pink Eye Purple Hull
Princess Anne
Purple Hull—white seed
Texas Purple Hull 49
Whipporwill
White Acre

Consumed as dried peas or fresh, as shelled peas or shelled peas mixed with immature pods; canned when mature and dry (has more starch and different flavor) or when immature; frozen when immature

1 bu = 60 lb, dried
1 qt = 1.9 lb, dried
1 cup, raw, shelled = 5 oz
1 cup, boiled and drained = 5.8 oz
1 cup, raw, dry, seed = 6 oz
1 cup, boiled, drained, dry seed = 8.8 oz

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dry, mature</th>
<th>Immature, raw</th>
<th>With young pod, raw</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>10</td>
<td>67</td>
<td>86</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>23</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>1.5</td>
<td>0.8</td>
<td>0.3</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>57–62</td>
<td>22</td>
<td>9</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>3.5</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

See Part 2: Minerals, Food; Nutrients in Crops; Seed, Chemical Composition; Seed, Germination; Sugar, Legumes; Vegetable Composition; Vegetable Plants; Vegetables, Classification.

cowpea hay  Composition (dry): moisture 11%; protein 16.5%; crude fiber 20%; nitrogen-free extract 42%; fat 2.2%; ash 7.5%.

Cowpeai  A breed of fat-tailed, white-fleeced (carpet grade) sheep used for wool and mutton and found in Hupeh (Hubei, central China) Province.

cowpox  A contagious cattle disease in which the udder and teats redden and eruption appears; this area is surrounded by purplish skin; when given to humans, it protects against smallpox.

Cowslip  An herb used in wine making and to flavor vinegar.

coyolito  A munster-type cheese made from cow’s milk and matured for 3 weeks.

cozymase  See diphosphopyridine nucleotide.

CP  See chemically pure.

CPF  See Part 2: Swine Breeds.
CPI  1) Consumer Price Index. 2) Center for Industrial Protein Development

cpm  Cans per minute

CP/M  A general-purpose operating system developed by Digital Research Corporation that has become the standard of the microcomputer industry

cps  Cycles per second

CPU (central processing unit)  The portion of a computer that controls the interpretation and execution of the program instructions

Cr  Symbol for the element chromium

Crab  A crustacean with five pairs of legs; a shellfish; 50% edible (average 20% protein)

Atlantic crabs:
  Blue (hard and soft)
  Jonah
  Red
  Stone

Pacific crabs:
  Alaskan king crab
  Dungeness
  Morro (common and large)
  Rock
  Snow, tanner, or queen

Market forms:
  Brown meat—liver and gonads
  Canned
  Cooked legs, claws, and body meat
  Frozen, cooked
  Live
  Pea (oyster)—a small crab
  Soft-shell
  Blue
  Shedder—a hard-shelled crab that has just shed its shell during molting season (April–Oct.)
  White meat—muscle
  Whole, cooked

Freshness: main joints should be stiff when bent; claw meat more tender than body meat

<table>
<thead>
<tr>
<th>Crab types</th>
<th>Species</th>
<th>Location caught</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>Callinectes sapidus</td>
<td>West Indies</td>
<td>0.5–2 lb</td>
</tr>
<tr>
<td>Blue (common)</td>
<td>Neptunus spp.</td>
<td>Atlantic (U.S.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Charybdis spp.</td>
<td>Pacific (Japan)</td>
<td></td>
</tr>
<tr>
<td>Common shore (green shore)</td>
<td>Carcinus maenas</td>
<td>Gulf of Mexico (U.S.)</td>
<td></td>
</tr>
<tr>
<td>Dungeness (market)</td>
<td>Cancer magister</td>
<td>N. Pacific</td>
<td>1.2–2.5 lb</td>
</tr>
<tr>
<td>Edible</td>
<td>Cancer pagurus</td>
<td>Europe</td>
<td></td>
</tr>
<tr>
<td>European spider, long-legged thornback</td>
<td>Paralithodes brevipes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hanasaki</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hermit (lives in abandoned shells)</td>
<td>Limulus spp.</td>
<td>N. America</td>
<td></td>
</tr>
<tr>
<td>Horseshoe (king)</td>
<td>Cancer borealis</td>
<td>N. America</td>
<td></td>
</tr>
<tr>
<td>Jonah</td>
<td>Erimacrus isenbeckii</td>
<td>Japan</td>
<td></td>
</tr>
<tr>
<td>Kegani</td>
<td>Paralithodes; camtsachaticus; P. platypus</td>
<td>N. Pacific, Atlantic (U.S.)</td>
<td></td>
</tr>
<tr>
<td>King (horseshoe, casserole, giant)</td>
<td>Erimacrus isenbeckii</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Korean</td>
<td>Scylla serrata</td>
<td>Australia</td>
<td>1 inch</td>
</tr>
<tr>
<td>Mud</td>
<td>Geryon quinquedens</td>
<td>Atlantic, N. America</td>
<td></td>
</tr>
<tr>
<td>Mussel</td>
<td>Cancer irroratus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red</td>
<td>Portunus pelagicus</td>
<td>Australia</td>
<td></td>
</tr>
<tr>
<td>Rock</td>
<td>Chionoecetes opilio; C. bairdii; C. tanneri; C. angulatus</td>
<td>N. Pacific</td>
<td></td>
</tr>
<tr>
<td>Sand</td>
<td>Portunus puber</td>
<td>Mediterranean</td>
<td></td>
</tr>
<tr>
<td>Snow (tanner, queen)</td>
<td>Maia squinado</td>
<td>Europe</td>
<td></td>
</tr>
<tr>
<td>Soft-shell (must be obtained alive)</td>
<td>Menippi mercenaria</td>
<td>Atlantic, N. America</td>
<td></td>
</tr>
<tr>
<td>Spinous spider</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stone</td>
<td>Portunus puber</td>
<td>Europe</td>
<td></td>
</tr>
<tr>
<td>Swimming</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Crabmeat resembles lobster in flavor and texture and is often substituted for it.

To cook: boil in salt water for 20–25 min.

Amount for one serving:
- Crabmeat 4 oz
- Whole blue crab 2–4 oz
- Whole dungeness crab ½–1 oz

Equivalents:
- 8–10 oz King crab leg in shell = 6 oz frozen crabmeat = 7½ oz canned crabmeat = 1 cup, cooked and flaked
- 1 cup crabmeat = 165 g (5.7 oz)
- 1 cup, steamed, meat only = 4.4 oz

Amount to purchase

<table>
<thead>
<tr>
<th>As purchased in shell</th>
<th>Amount to purchase per serving (oz)</th>
<th>Yield (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td>22</td>
<td>12–16</td>
</tr>
<tr>
<td>Dungeness (meat is)</td>
<td>½ body meat, ½ leg meat</td>
<td>12</td>
</tr>
<tr>
<td>King</td>
<td>–</td>
<td>20–26</td>
</tr>
<tr>
<td>King crab legs</td>
<td>6</td>
<td>52</td>
</tr>
<tr>
<td>Soft shell</td>
<td>4.5</td>
<td>65</td>
</tr>
</tbody>
</table>

Blue crab grade

| Premium | Lump | Large muscle controlling swimming legs | 25 |
| Second  | Regular or flake | Remainder of body muscle | 50 |
| Lowest  | Claw meat | Claw | 25 |

King crab: leg meat 70%; shoulder meat 15%; body meat 15%

Fat 2.7%; 85 mg cholesterol per 3 oz canned crab

See Part 2: Cholesterol Control; Fish and Shellfish Composition; Frozen Food Storage; Minerals, Food crab apple (Malus pumila) The parent species for most cultivated apples; many varieties (sizes 1 in. and larger), planted for decorative value and used to make excellent jams and jellies, and often pickled; has a harsh, acid taste

Popular hybrids:
- Pyrrus malus (apple) x P. baccata
- P. baccata—Siberian crab apple

<table>
<thead>
<tr>
<th>Variety</th>
<th>Flowers</th>
<th>Apples</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Callaway</td>
<td>Single, pinkish fading to white</td>
<td>Red, persistent</td>
<td></td>
</tr>
<tr>
<td>Cardinal</td>
<td>Pink</td>
<td>Red, large (2 in.)</td>
<td>Jellies, jams, preserves</td>
</tr>
<tr>
<td>Dolgo</td>
<td>Single white</td>
<td>Red</td>
<td></td>
</tr>
<tr>
<td>Hopa</td>
<td>Pink</td>
<td>Red, deep</td>
<td>Fresh, jellies, preserved</td>
</tr>
<tr>
<td>Hyloph</td>
<td>White</td>
<td>Yellow, red</td>
<td>Jelly</td>
</tr>
<tr>
<td>Katherine</td>
<td>Double pink</td>
<td>Red, purple</td>
<td></td>
</tr>
<tr>
<td>Vanguard</td>
<td>Crimson</td>
<td>Red, ½ in.</td>
<td></td>
</tr>
</tbody>
</table>

Canned styles: whole; stem on; in heavy syrup; sweet pickled; spiced

Number per can: 12 in No. 2½; 48 in No. 10

12 large apples = 1 lb

1 lb, fresh = 1 qt, canned

Composition (raw): moisture 81%; protein 0.4%; fat 0.3%; carbohydrate 18%; ash 0.4%

crab, ghost (sand crab) A small (up to 2 in.), pale white and almost square-shaped crab with four pairs of legs

crab, hermit (family Paguridae) A crustacean with no shell; can be cooked like shrimp

crabmeat The edible meat obtained from various crabs:
- King crab (Paralithodes camtschatica, P. platypus)
- Korean variety crab or kegani crab (Erimacrus isenbeckii)
- Snow crab (Chionoecetes opilio, C. tanneri, C. bairdii, C. angulatus)

Canned white meat is often canned in brine; cooking oil temperature 177–190°C (350–375°F)

1 serving = 4–6 oz

Composition: 425 mg Na/3 oz (85 g, canned and drained); 314 mg Na/3 oz (85 g, steamed); pH 6.8–7.0

See also crab

crab, mole (sand bug; sand flea) An egg-shaped crustacean, ½–1 in. long, used for fish bait

crab soup Available as a ready-to-eat canned soup

Composition (ready-to-serve): moisture 91.5%; protein 2.2%; fat 0.6%; carbohydrate 4.2%; fiber 0.2%; ash 1.4%

cracked Particle size reduced by breaking, crushing, or grinding

cracked wheat Used in breads and quick breads and combined with flour; usually soaked in 2 volumes of water for 24 h prior to use

cracker A crisp, flaky, usually thin, nonsweet biscuit (yeast and chemical aeration) made from refined wheat flour (using a drying process)

Ship cracker (hard tack, pilot biscuit)—hard, unleavened type

Ingredients (relative proportions based on flour as 100):
- Emulsifier 0.1–0.3
- Flour 100
- Salt 1.75
- Shortening 5
- Sugar 1
- Water 56
- Yeast 1.5

Saltines (British equivalent is a dry biscuit):

1 lb = 130–160 crackers (2-in. square)

1 cup, finely crushed = 23–28 crackers = 22 wafers

1 cup, coarsely crushed = 20–21 crackers

Soda:

1 lb = 82 crackers = 7 cups crumbs

= 6.8 cups fine crumbs
1 cup fine crumbs = 70 g (2.5 oz)
Rich round:
1 cup, finely crushed = 24–27 crackers
Graham:
1 lb = 66 crackers
= 4.3 cups crumbs
1 cup crumbs = 85 g (3 oz)
= 12–14 crackers

<table>
<thead>
<tr>
<th>Composition</th>
<th>Sandwich type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>Graham</td>
</tr>
<tr>
<td>Protein (%)</td>
<td></td>
</tr>
<tr>
<td>Fat (%)</td>
<td></td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td></td>
</tr>
<tr>
<td>Ash (%)</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td></td>
</tr>
</tbody>
</table>

Cracker types and calorie content:
Butter (one, 2-in. diam.)—15 calories
Cheese (one, 2-in. diam.)—15 calories
Graham (two 2 1/2-in. squares)—55 calories
Matzo (one 6-in. diam. piece)—80 calories
Oyster (10)—35 calories
Pilot (one)—75 calories
Rye (two, 1 1/2 x 3 1/2 in.)—45 calories
Saltines (four 1 1/2-in. squares)—50 calories
Storage: in metal container at temperature below 70°F; will keep for 6 months
See Part 2: Calories, Daily Recommendations; Fermented Ingredients; Grain Products, Composition

Cracker crumbs
1 cup saltine cracker crumbs = 20 crackers

Cracker meal
Crushed, sifted crackers used for coating food, as a topping, and as a thickener

Cracker, round buttery
1 cup, crushed = 26 crackers

Crackling
1) Petillant (slightly effervescent). 2) The residue left from rendered pork fat that has had the lard extracted. 3) Crisp, baked or roasted skin on a piece of pork

Crackling wine
A general term for carbonated grape-juice wine

Cracknel
A biscuit that is boiled and then baked

Cradle roast
See Part 2: Pork Loin Cooking

Cranberry variety

<table>
<thead>
<tr>
<th>Berry</th>
<th>Shape</th>
<th>Color</th>
<th>Size</th>
<th>Season</th>
<th>Keeping ability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bennett</td>
<td>Oval</td>
<td>Light red</td>
<td>Large</td>
<td>Late</td>
<td>Good</td>
</tr>
<tr>
<td>Centennial</td>
<td>Globose</td>
<td>Light red</td>
<td>Very large</td>
<td>Medium</td>
<td>Poor</td>
</tr>
<tr>
<td>Early Black</td>
<td>Pear to oval</td>
<td>Dark</td>
<td>Medium</td>
<td>Early</td>
<td>Fair</td>
</tr>
<tr>
<td>(also called Late Red)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Howes</td>
<td>Oval</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Good to fair</td>
</tr>
<tr>
<td>(also called Late Howe)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Searl</td>
<td>Oval</td>
<td>Dark</td>
<td>Large</td>
<td>Medium</td>
<td>Fair</td>
</tr>
<tr>
<td>(also called Searl's Jumbo)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Vitamin A 40 IU/100 g; ascorbic acid 12 mg/100 g
Storage: 36-40°F; 85-90% relative humidity; storage life 1–3 months; freezing point 27°F

See Part 2: Fruit, Availability; Fruit, Canning Dates; Fruit Classification; Fruit Composition; Fruit Cooking; Fruit, Frozen Yield; Fruit Sauces; Microwave Cooking, Fruit; Minerals, Food; Organic Acids in Fruits and Vegetables; Plant Foods, Composition; Salad Dressing and Mayonnaise Variations; Standards, Processed Fruit and Vegetable Products; Storage; Transit Temperature

**cranberry juice cocktail** A beverage made by straining cranberries cooked in water and sweetening with sugar

**cranberry sauce** A fruit sauce made from cooked (until berries pop) cranberries and sugar; grated lemon rind sometimes added

Types: Strained, jellied
Whole—made with whole berry and parts of berries; jellied
1 tbsp, canned = 25 calories

**cranial** Of or pertaining to the head or brain

**crepe fish** Salted and pressed cod fish

**crappie** (*Pomoxis* spp.) A freshwater food fish and the name used for sunfish
Black (*P. nigromaculatus*)
White (*P. annularis*)
1 crappie, pan-dressed = ½ lb

**crequelin** A tea bread, split on one side, that may or may not contain raisins

**crawfish** rock lobster; spiny lobster; *Palinurus vulgaris*) 1) The sea crawfish is a large (smaller than lobster), saltwater crustacean; a saltwater lobster that is sometimes referred to as crayfish (although the term crayfish should be reserved for freshwater species) from the following locations:

Rock:
Australia
Eastern rock (*Jasus verreauxii*)
Southern rock (*J. novahollandiae*)
New Zealand
Packhorse rock (*J. verreauxii*)
Spiny rock (*J. edwardii*)
South Africa (*J. lalandii*)

Spiny:
Africa (*P. mauretanicus*)
Australia
Painted crayfish (*P. oinatus*)
Western crayfish (*P. longipes cygnus*; *P. versicolor*)

Spiny (continued)
Europe (*P. vulgaris*)
Japan (*P. regius*; *P. japonicus*)
North America
Atlantic, north and south (*Panulirus argus*)
Pacific (*Palinurus interruptus*)
2) A small, freshwater crustacean (properly called a crayfish)

Types:
Freshwater crayfish
Western crayfish

Available forms: canned; fresh; frozen; potted

See **crayfish; lobster**

**crawfish butter** Cooked crawfish or crawfish meat mixed with butterfat

**crawfish flour** A powder made from finely ground crawfish

**crawfish meal** Crawfish shells, claws, and meat that have been dried and ground

**crawfish powder** Made from dehydrated crawfish meat or ground claws

**crawfish soup** Prepared from crawfish meat or ground claws

**crayfish** Small, freshwater ("crawfish" refers to saltwater species), lobsterlike crustaceans (*Cambarus* spp. and *Astacus* spp.) found in the following locations:

Australia
Marrow (*Cherax tenuimanus*)
Murray (*Euastacus armatus*)
Yabbie (*Cherax destructor*)

Eastern North America (*Cambarus* spp.)
England (*A. pallipes*)
Europe (*A. astacus*; *A. fluviatilis*)
New Zealand (*Paranephrops*)
United States (*Cambarus affinis*)

Western North America (*Astacus* spp.)

Sometimes sold under the following names: frozen lobster tails; langoosta; rock lobster; South African lobster tails; spiny lobster

1 serving = 2–3 crayfish

See **lobster**

**crayfish bisque** A soup prepared from crayfish meat, butter, flour, and seasoning

**crazy top** See Part 2: Sorghum Diseases

**cream** 1) The class name for fluid creams, dried creams, plastic creams; the fat of milk (butterfat)
obtained by gravity separation on long standing or by a separator

| Milk fat | Range | % (| %) |
|----------|-------|------|
| Half-and-half | 10–12 |  |
| (½ milk, ½ light cream) |  |
| Half-and-half sour cream | 10–12 |  |
| Heavy cream | 36–40 |  |
| Light cream (coffee, table) | 20 | 18–30 |
| Light whipping cream (will whip but not freeze) | 30–36 |  |
| Plastic cream | 80 |  |
| Sour cream, salad cream, cream dressing | 18–20 |  |

Whipped cream (in aerosol can)—light cream, light whipping cream, or heavy whipping cream with added sugar, stabilizer, and emulsifier packaged in an aerosol can.

Imitation cream (coffee whiteners)—a liquid or dry product used as a substitute for cream; may be made from (but not limited to) products derived from milk.

Whipping cream—increases in volume by a factor of 2.

Equivalents:
1 qt (light cream) = 50 servings for coffee
1 qt light whipping cream = 4 cups
1 pt cream = 2 cups
1 cup coffee cream (20%) = 3 tbsp butter + ½ cup milk
1 cup heavy cream (40%) = ½ cup butter + ¾ cup milk

<table>
<thead>
<tr>
<th>Specific gravity</th>
<th>Weight per cup</th>
</tr>
</thead>
<tbody>
<tr>
<td>20% cream</td>
<td>240 g (8.5 oz)</td>
</tr>
<tr>
<td>40% cream</td>
<td>0.99</td>
</tr>
<tr>
<td>100% cream</td>
<td>0.54</td>
</tr>
<tr>
<td>Half-and-half</td>
<td>240 g (8.5 oz)</td>
</tr>
<tr>
<td>Sour cream</td>
<td>240 g (8.5 oz)</td>
</tr>
</tbody>
</table>

1 lb dry cream = 19 lb milk
1 tbsp light (coffee or table) cream = 30 calories
One tablespoon of heavy cream contains 21 mg cholesterol.

Storage: Temperature 40°F; keep out of direct sunlight and keep tightly closed; use within 3–5 days unless ultrapasteurized, in which case it will keep longer.

2) To beat, blend, stir shortening or butter (with or without sugar) until fluffy; the fluffiness is caused by incorporation of air.
3) To soften with a spoon or beater; to work food until smooth.
4) Heating cooked vegetables with white sauce.
5) A rich filling for pastries.
6) A syrupy liquor See also cordial

See sour cream; sour cream, acidified; sour half-and-half; sour half-and-half, acidified

See Part 2: Animal Foods, Composition; Calories, Daily Recommendations; Cholesterol Control; Creams, Butter, and Frozen Desserts; Dairy Products, Composition; Dairy Terms; Fluid and Fermented Milks, Composition; Milk and Cheese Composition; Milk and Milk Products, Vitamin Content; Milk, Dry Products; Minerals, Food; Sour Cream Dressing; Spoilage, Fat in Foods; Stabilizers, Thickeners; Vitamin A, Milk and Milk Products

cream (liquor) A full-bodied, sweet, alcoholic beverage or cordial, e.g., cream sherry, crème de menthe, etc. See cream liqueur

cream, acidified Light cream to which food-grade acids have been added; (milk fat 18–30%)
cream, acidified sour Cream to which food-grade acids have been added to produce an acid flavor and semiliquid to semisolid body

cream candy See candy

cream cheese A soft to semisoft, white, mild, perishable, high-fat (added cream), fresh cheese (nonripened or short maturation) made from cow's cream and whole milk; often whipped or combined with fruit, herbs, or other flavoring (e.g., chocolate, peach, or orange); the milk and cream are pasteurized and coagulated by a lactic acid starter or lemon; it is foil-wrapped in rectangular portions; its flavor is mild and slightly acid; texture is buttery.

3-oz package (2 2/3 x 1 in.) = 6 2/3 tbsp
1 cup = 230 g (8.1 oz)
1 in. cube = 0.6 oz
1 tbsp = ⅛ oz
1 tsp = ⅛ oz

<table>
<thead>
<tr>
<th>Cream type</th>
<th>Moisture (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Carbohydrate (%)</th>
<th>Fiber (%)</th>
<th>Ash (%)</th>
<th>pH</th>
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</thead>
<tbody>
<tr>
<td>Half-and-half</td>
<td>80</td>
<td>3</td>
<td>12</td>
<td>5</td>
<td>0.6</td>
<td>0.6</td>
<td>10.5 (18 max.)</td>
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<tr>
<td>Half-and-half sour cream</td>
<td>10.5 (18 max.)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Light (coffee, table)</td>
<td>71–74</td>
<td>2.7–3.0</td>
<td>19–21</td>
<td>3.6–4.0</td>
<td>0</td>
<td>0.5–0.6</td>
<td>18</td>
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<tr>
<td>Medium</td>
<td>68–69</td>
<td>2–3</td>
<td>25</td>
<td>3–4</td>
<td>0</td>
<td>0.55</td>
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<tr>
<td>Sour</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
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<tr>
<td>Heavy</td>
<td>57</td>
<td>2</td>
<td>38</td>
<td>3</td>
<td>0.4</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>Light</td>
<td>62–63.5</td>
<td>2.2–2.5</td>
<td>30.5–31</td>
<td>3–4</td>
<td>0.4–0.5</td>
<td>6.5</td>
<td>30</td>
</tr>
</tbody>
</table>
Composition: moisture 51–54%; fat 35% [33% min. (38% avg), 20% min. for Neufchatel]; protein 8–9%; carbohydrate 2%; ash 1–2%; salt 1%; pH 4.9; 31 mg cholesterol/oz; 84 mg Na/oz
1 oz = 100 calories
1-in. cube = 55 calories
Storage: Refrigerate, tightly covered; use within 2 weeks.
See Part 2: Cheese Characteristics; Cheese, Vitamin Content; Salad Dressing and Mayonnaise Variations; Stabilizers, Thickeners; Vitamin A, Milk and Milk Products

cream cheese

See also 
baking powder
\(\frac{1}{2}\) volume cream of tarter + \(\frac{1}{4}\) volume baking soda
= 1 volume baking powder
1 tsp cream of tarter = 3.1 g
2) Lees in wine

Cream of Wheat Proprietary name of a breakfast cereal made of wheat flour (endosperm) with added vitamins and minerals
1 cup, dry = 1 9 oz
See Part 2: Portion Size

cream pea See pea, black-eyed

cream puff A pastry shell made of flour (1 volume), water (1 volume), fat (1 volume), eggs, sugar, salt, and seasoning] filled with whipped cream or custard; more tender than popovers due to additional quantities of fat and eggs
Storage: refrigerate immediately
See Part 2: Storage Times

cream-sauce dressing A dressing made with cayenne pepper, cream, lemon juice, salt, and vinegar

cream (crème) sherry A wine of special richness, e.g., sweetness

cream soda A flavor of carbonated beverage; a caramel colored soft drink flavored with sugar and vanilla

cream soup A vegetable soup containing, e.g., 1 tsp flour 1 2 cup milk 1 2 cup vegetable cooking water or cooking water and pulp 1 tbsp fat Salt and seasoning to flavor
See Part 2: Calcium Equivalents for Milk

cream, sour Made by adding bacterial culture to a fresh light cream; the (lactic) acid produced will sour the cream and give it a characteristic flavor and a semifluid to semisolid body; min. 18% milk fat

cream, sour, dressing See Part 2: Dairy Products, Composition II

cream, whipping See cream, whipping cream

creamy 1) Describes a texture that is smooth and oily, similar to an emulsion of fat or cream. 2) Describes a flavor, apparent fat content, or richness

creamy dressing Cream added to French dressing, salad dressing, or mayonnaise and used on greens and vegetables
See Part 2: French Dressing Variations; Salad Dressing and Mayonnaise Variations

creasing Mature and overripe oranges and mandarin-type citrus fruit sometimes show furrows (\(\frac{1}{2}\) in. by \(\frac{1}{2}\)–2 in.) caused by a weakness or uneven thickness of the albedo; a furrow may be longitudinal, crosswise, or both. In some cases the sunken area may be yellowish green to gray and in some cases the skin will split (the cause is unknown).

creatin(e) A nitrogenous constituent [NH\(_2\):(CH\(_3\))\(_2\):CH\(_2\):COOH] found in muscles, muscle fluid, brains, and blood, that combines with phosphate to produce creatine phosphate See phosphocreatine

creatinine A basic derivative of creatine, found in urine

Crécy, à la Cooked with carrot
creep feed  A supplementary feed given and consumed by young animals in a creep area (an area that larger adults cannot enter) usually prior to weaning of young

creeping bent (Agrostis palustris)  A grass used for turf, pasture, and hay

crema   A soft cream cheese, made from cow's milk, that has matured for 1 week

crema de Léna   A citrus liqueur

crema danica   A bar-shaped (150–200 g) camembert-type cheese made from cow's milk

crème   A term used to describe a very sweet liqueur; cream

crème brûlée   Custard with caramelized sugar See burned cream

crème d’amandes   A sweet liqueur flavored with almonds

crème d’ananas   A pale yellow pineapple liqueur

crème de bananes   A sweet, yellow to white, banana-flavored liqueur

crème de cacao   A syrupy liqueur flavored with cocoa (from the cacao plant) See also cacao; liqueur

crème de café   A coffee liqueur

crème de cassis   A black currant (Ribes nigrum) liqueur

crème de fraises   A strawberry (Fragaria) liqueur

crème de framboises   A raspberry (Rubus) liqueur

crème de genièvres   A liqueur made with macerated juniper (Juniperus) berries

crème de gruyère   A processed cheese made from various types of cheeses that are melted together and to which butter, milk, or cream is added

crème de mandarines   A liqueur made from brandy and the peel of blood oranges

crème de menthe   A green or white digestive liqueur flavored with mint See liqueur

crème de moka   A sweet liqueur made from spirits and oil of coffee

crème de noisettes   A liqueur with floating hazelnuts

crème de noix   A sweet liqueur flavored with walnuts

crème de noyau (noyau)   A sweet, pink-yellow liqueur flavored with peach and apricot kernels or fruit stones (e.g., sloe cherry)

crème d’oranges   A liqueur made with brandy, cherries, and oranges

crème de prunelles   A sloe berry (Prunus spinosa) liqueur

crème de roses   A liqueur flavored with oil of rose petals, vanilla, and sometimes citrus oils

crème de vanille   A vanilla-flavored liqueur

crème de violette   A sweet liqueur flavored with violet petals

crème fraîche   An acidic, high-fat cream made from cow's milk and used as a dressing

crème pâtissière (baker’s custard; confectioner’s custard)   A custard made of flour, eggs, sugar, milk, and vanilla and used as a filling

cremet   A cheese made from cow's milk

Crème Yvette   The proprietary name of a purple-colored violet-flavored liqueur

crenshaw   A large melon that is rounded at the blossom end and pointed at the stem end, with a smooth, shallow-furrowed, deep golden yellow rind and pale orange, juicy flesh

creole cheese   An unripened cream cheese made from cottage cheese curd and cream

creosote   A substance, found as chimney deposits, that is initially liquid but dries to a solid or flaky form and is made from condensed organic vapors or condensed tar fog

creosote, coal-tar   A distillate made from bituminous coal; used to treat wood for protection against rot and worms; wood creosote, not coal-tar creosote, is usually used for medical purposes. See also fence post treatment

crêpe   A thin pancake made with fruit and flaming liqueur sauce

crépes suzettes   Thin pancakes, rolled with or without creamed meat filling and seasoned with brandy sauce

crépinette   A small sausage encased in fat; a moist, uncooked, unsmoked French sausage made from medium-chopped, mildly seasoned pork stuffed into a pork casing

crepy   A white French table wine

crescent   A crescent-shaped breakfast roll

crescenzia   A soft, creamy, uncooked, milky, sweet, yellowish cheese made from cow's milk, with rennet; it is square-shaped, surface-bacteria-ripened, and cured 10–14 days, and is similar to Bel-Paese. See Part 2: Cheese, Vitamin Content

cresol   A disinfectant that is a coal-tar product mixed with lye; phenol coefficient of 2; used at levels of 2–4%

Advantages: effective against bacteria and most viruses; nonirritating
Disadvantages: odor absorbed by food; poor solubility in hard water; should be used hot

cresol purple   A pH indicator with a range of 7.4–9.0; it is yellow in the acid and purple in basic direction

cress (family Cruciferae)   Several species of pungent-flavored vegetables whose leaf is used as food (in salads or sandwiches, as a garnish or condiment, or cooked like spinach); 15,000 seed/oz; germination time 1–3 days

Types:
American or land (Barbara praecox)
Australian—pointed leaves
Belle Isle
Curled or double
Indian (nasturtium; Tropaeolum majus)—used in salads and as a substitute for capers
Varieties—Dwarf Mixed; Golden Glove; Tall Mixed
Plain-leaved (common, garden, golden, or pepper grass; Lepidium sativum)—easy to grow; leaves
cress (family Cruciferae)

are broad or divided and celled; mildly pungent and used as a garnish

Varieties—Cardamine; Fine Curled; Peppergrass; Pepperwort

Upland (B. verna)—somewhat bitter; used in salads and on sandwiches

Water (Nasturtium officinale)—small, round leaves, mildly pungent; used in salads

Variety—Rotundifolia See water cress

Winter (B. vernepraecox)—used in salads and with sandwiches

Variety—Upland

1 cup garden cress, boiled and drained = 6.3 oz

See Part 2: Planting Density; Vegetable Planting Chart; Vegetable Plants

cress, American (bank cress; Belle Isle cress; hedge mustard; land cress; upland cress) Used like water cress in salads

cress, meadow (lady’s smock) A plant with a peppery flavor, used as a salad

cress, water (Lepidium sativum) A strong-tasting salad food

crest Top of the neck of a male animal; the comb on the head of a bird

cresta blanca A dry, fortified, alcoholic wine

cresyl acetate

\[ \text{CH}_3 - \text{C} = \text{OOCCH}_3 \]

Used as a floral-like, food flavoring agent; sp. gr. 1.044–1.052

Storage: full, tight, glass container in a cool, dark place

cresylic acid A commercial disinfectant with properties of phenol or cresol solution

cresse A soft, rennet cheese made with skimmed milk

crevalle jack A finfish with light meat and light to moderate flavor

cribber A horse that will set his teeth against an object and “suck air” or “wind”

crimp 1) Waves in wool fiber. 2) Crisp or brittle. 3) To seal or to form the edges of a pie, e.g., by using a fork. 4) To cut the sides of a fish prior to soaking to firm the flesh. 5) To press into place, e.g., to seal the end of a can by a series of folds.

crimped Describes grain that has been rolled with corrugated rollers

crimson clover (Italian; Trifolium incarnatum) An annual plant used for hay and pasture; seed 60 lb/bu; seed 20–25 lb/acre; pH 6.0; approximate amounts of nutrients used for 1 ton of hay: N 65 lb; P2O5 14 lb; K2O 60 lb

crin-erin A leafy vegetable that is used like spinach

crinkle A viral disease of strawberries that affects the leaves

Control: Plant virus-free stock and use insecticides.

crinkleroot (Dentaria diphylla) A plant with an edible root that is boiled and used like a turnip

crinogenic Stimulating the production of secretions

Crisco Smoke point 448°F (231°C)

crisp Brittle; firm; crumbles easily; friable texture

crispbread A thin, low-fat, low-moisture biscuit made from high-extraction wheat or rye flour

crispy choy See Chinese cabbage

critical control point A quality attribute related to product safety or public health, obtained through a hazard analysis (critical control point review)

critical defect A defect that could result in failure or malfunction involving safety of personnel or failure of the end product to perform its intended function

critical factors Any parameter that, when varied, may affect the process and particularly sterility

critical temperature Temperature below which energy must be used to maintain body temperature

CRO Central Research Organization

croaker (crocus; drum; golden croaker; hardhead) A fin fish, with lean, light meat and light to moderate flavor, that makes a croaking sound

Atlantic croaker (Micropogon undulatus)—caught on the Atlantic and Gulf coasts

Black (Argyrosomus nibe)—Pacific

Corb (Umbrina cirrosa)—Atlantic and Mediterranean

West African (Otholitus nebulosus)

West South American (Paralichthys peruanus)

White (A. argentatus, Genyonemus lineatus)—Pacific

Yellow (Pseudosciaena manchurica)—Pacific

Yellowfin (Umbrina oncor)—Pacific

Composition: moisture 79%; protein 18–19%; fat 1–3%; ash 1.3%

crockery cooker See slow cooker

croissant 1) A light, crescent-shaped, high-fat breakfast roll that is high in milk and made with wheat flour 2) A soft French cheese

crone An old ewe that is past breeding

crook See nubbin

crookneck A variety of yellow summer squash with a curved neck

Types:

Summer

Mammoth—yellow, warded skin; yellow flesh

Straightneck—golden, watery flesh

Yellow—warded skin; tender, cream-colored flesh

Winter—yellow, warded, thick skin

See squash

crop 1) In a beef animal, from topline to halfway down the side and just behind upper half of the shoulder. 2) First stomach of a bird. 3) A riding whip. 4) To cut or trim. 5) Forequarter (less shanks and brisket), from which either or both ribeye roll (cube roll) and chuck tender may be removed

crop acreage base The average number of acres planted to and considered planted to a program crop for harvest in the previous 5 years

crop insurance Given by a federal crop insurance corporation from which farmers can purchase insurance against crop disasters

crop meat The forequarter (less shank and brisket), from which either or both ribeye roll (cube roll) and
chuck tender may be removed, with no more than one of the following removed: clod, chuck, or neck (clod and sticking)

crop residue The forage remaining after harvesting a seed or grain crop
croque-monsieur A deep-fried ham-and-cheese sandwich
croquette A meat, fish, or vegetable that is chopped, shaped, rolled in crumbs, and deep fried (at 190–196°C or 375–385°F)
cross A tuber that is used for food; may be cooked or used as a salad
cross To breed two varieties (of a plant or an animal)
cross-bred An animal whose sire and dam come from different breeds; of mixed parentage
See Part 2: Sheep Breeds
cross cells The layer of a kernel beneath the mesocarp
See Part 2: Corn Kernel; Rice Kernel; Wheat Kernel Parts
cross compliance A requirement that a farmer who wishes to participate in a price support program must also meet the program provisions for other major program crops that the farm grows. See offsetting compliance
crosscut shank A coarse-grained cut of meat made by cutting across the foreshank
cross-fertilization The fertilization of the flower of one plant by pollen from another plant
cross-firing Hitting a front foot with an opposite hind foot
crossover The part of the double seam at the junction with the side seam of the body of a can
cross-pollination The transfer of pollen from one flower to another of a different variety; necessary for fertilization and fruit growth and development
cross rib roast See arm roast
cross Vermont A cracker containing no sugar
crotalaria Several species (of the genus Crotalaria) of an annual green manure crop; seed 60 lb/bu; use 20 lb/acre; pH 6; crotalaria seed may injure livestock Species:
- Lace leaf (Crotalaria lanceolata) —Showy (C. spectabilis) —contains an alkaloid
- Slenderleaf (C. intermedia)
- Striped (C. striata)
See Part 2: Poisonous Plants; Seed, Germination
crotch fat Fat from the scrotal or pubic region
crottin A French cheese, made from goat’s milk, with a natural rind
crottin de chavignol A small, dry French cheese, made from goat’s milk, with a white-mold rind (sometimes dark brown or black) and with a close, white curd and a mellow to sharp, salty flavor
croup On a horse, between hips and tailhead; called the rump on other species of farm livestock
coupon Strip of hide from the back of a hog carcass containing the bristles
croup On a horse, between hips and tailhead; called the rump on other species of farm livestock
crown The area of the union of root and stem or root and leaves
crown gall 1) A bacterial (Agrobacterium tumefaciens) disease of blackberries and raspberries; on black and purple raspberries wartlike growths appear on canes and on red raspberries wartlike growths occur just below the soil level on roots and on crown. Control: plant gall-free raspberries; wait 2–3 yr before replanting raspberries in location where gall occurred; dig up and burn diseased plants. 2) A root and trunk disease of American bunch grapes; cannot be controlled by spraying because the organism lives in the soil. 3) A bacterial infection of apricot trees that infects large roots or crowns and produces irregular gall enlargements
crown roast A roast made from an unsplit rib rack: the backbone is removed, opposite end ribs are tied together, and the tip of the ribs are frenched. See Part 2: Lamb Crown Roast Carving; Lamb Cuts and Uses; Lamb Roasting; Pork, Cooking; Pork Cuts; Pork Loin Cooking; Veal Chart; Veal Cuts
crown rot A decay (from wound parasites) of the crown surfaces of boxed bananas (the area darkens in color), caused by several fungi:
- Botryodiplodia theobromae
- Deightoniella torulosa
- Fusarium roseum
- Gloeosporium musarum
- Thielaviopsis paradoxa
- Verticillium theobromae
See armillaria root rot
crown vetch (Coronilla varia) A deep-rooted perennial legume that requires a special inoculant; used for pasture and erosion control
Crozes-Hermitage A dry white or red wine
CRT Cathode ray tube; used to denote a television set intended for use as a monitor to display computer program instructions and data
 crucible A small platinum or porcelain container that can stand high heat and is used in chemical analysis
 Cruciferae Mustard, watercress, cabbage, and radish family
See Part 2: Vegetables Classification
 crude fat See fat analysis
 crude fiber (crude fibre) The unprocessed cellulosic component of a plant. Analysis is an attempt to measure the nondigestible carbohydrate material; the sample is freed of fat and boiled in weak acid and then in weak alkali; the residue thus contains crude...
crude fiber (crude fibre)

fiber and ash, and thus the loss in weight by ashing is reported as crude fiber. The quality of some pure spices can be determined by the amount of tasteless lignin and cellulose found in the plant materials.

See Part 2: Sodium Hydroxide Solution; Sulfuric Acid Solution

**crude oil** Unrefined petroleum, used as an insecticide for hogs

**crude protein** A measure of protein content:

\[
\text{crude protein} = \text{nitrogen content} \times 6.25
\]

(The factor 6.25 is an average value and needs to be adjusted for some foods.) This includes true protein plus the protein equivalent of nonprotein nitrogen (NPN)

**crude protein determination** See Kjeldahl determination

**cruller** A cake made from doughnutlike dough flavored with nutmeg and ginger and fried in deep fat

**crumb** To dip food in milk or eggs and to coat with bread or cracker crumbs

**crumble** To break with the hands into small pieces

**crumbles** Pelleted feed reduced to granular form

**crumbly** Describes the ease with which a substance can be separated into smaller particles

**crumpet (pikelet)** An English breakfast or tea cake that is baked on a griddle and toasted prior to serving; a muffin made in hoop (circular) molds; toasted and butter-soaked round tea muffins that contain holes

**crunchy** Describes food that makes a grinding or crushing sound as it is being masticated

**crushed lug** A lug or cap that was forced over glass lug, causing the cap lug not to seat under the glass lug

**crust** 1) The outer, high-temperature baked portion of bread. 2) The browned external surface of any cooked item (e.g., bread, a casserole, or meat). 3) Sediment in wine, composed of salts; wine with sediment needs careful decanting. 4) The shell of a crustacean

**crustacean** A member of a class of shellfish (Crustacea) that have a segmented, crustlike shell and jointed appendages, i.e., crab, crayfish, lobster, prawn, and shrimp

See Part 2: Fish and Shellfish Composition

**crustas** An alcoholic drink similar to a cocktail but the glass is lined with lemon peel and the rim frosted with sugar

**crusty** Having a coarse, dry, hard surface

**crusty bread** French bread

**cryogenic freezing** Freezing using a liquid of low boiling point, e.g., dry ice (−195°C), liquid nitrogen (−195°C), or liquid nitrous oxide (−78°C)

**cryolite** (Na₃AlF₆) An inorganic insecticide

**Cryovac** Trademark of organic chemicals division of W. R. Grace & Co.; a vinylidene chloride–vinyl chloride film that can be heat-shrunk

**cryptorchidism (ridgling)** Retention of one or both of the testes within the abdomen (not in scrotum)

**crystal** That structure of matter that is characteristic of the solid state: the constituent atoms are arranged in a geometric pattern called a lattice, which may be of many different shapes (cubic, rhomboid, etc.). Identification can be obtained by X-rays, which are diffracted by the lattice at various angles. See also amorphous

**crystalline** Describes the systematic arrangement of atoms in space; resembling a crystal; transparent; clear

**crystallization** See granulation

**crystallize** To cause the formation of sugar crystals in food

**crystallized cream** See candy

**crystallized fruit** Fruit heated (230°F) in thick syrup, soaked, and drained See candied fruit

**crystallized honey** Honey that has naturally hardened or has been made to harden (crystals have formed)

**crystallizing** Forming a sugar coating

**crystal violet broth** See Part 2: Microorganism, Selective and Differential Broths and Media, Water Filtration Plant

**crystal violet strain** See Part 2: Gram Stain

**Cs** Symbol for the element cesium

**csabai csapos** Hot pepperoni made from beef or pork

**csabai salami** Pepperoni made from beef and pork; a dry, uncooked, smoked Australian sausage made from coarsely ground, heavily seasoned (with paprika) beef, fermented and stuffed into artificial casings

**csalamade** A salad made from cabbage, green pepper, onion, shallot, sour cream, tomato, and vinaigrette

**csemege saalami** A pepperoni made from beef and pork

**CSIR** Council for Scientific and Industrial Research

**CSIRO** Central Scientific and Industrial Research Organization

**CSMA** Chemical Specialties Manufacturers’ Association

**csopaki olaszrizling** A light Hungarian wine

**CSRS** See Cooperative State Research Service

**CT** Cellar trimmed

**Cu** Symbol for the element copper

**cuajada** A semisoft, mildly acidic, smooth cheese made from cow’s milk and wrapped in maize or banana leaves

**cuarenta-y-tres** A golden-colored herb liqueur flavored with vanilla plus 43 herbs, with a brandy base

**Cuba libre** A rum drink

**Cuban roast** See French roast

**cube** To cut into small cubes (larger than dice)

**cubeb** (Piper cubeba L.) The pepperlike berry of a climbing plant, used mainly medicinally and some-
times as a spice or flavoring agent in food; a volatile oil obtained by steam distillation of the fruit; an essential oil used in flavorings; sp. gr. 0.897–0.928
Storage: full, tight, glass container in a cool, dark place
See Part 2: Essential Oils

cube steak A thin slice of beef that has been passed through a machine that reduces toughness by partially disintegrating the fibers

cubic centimeter (cc; cm³; cu. cm) A measure of volume

\[
1 \text{ cm}^3 = 0.999972 \text{ milliliter (ml)}
\]

= 0.27051 dram (U.S., liquid)
= 0.0610234 cubic inch (in.³; U.S.)
= 0.0338 ounce (oz; U.S., fluid)
= 0.002113 pint (pt; U.S., liquid)
= 0.001057 quart (qt; U.S., liquid)
= 0.001 liter (l)
= 2.6417 × 10⁻¹⁰ gallon (gal; U.S., liquid)
= 2.1977 × 10⁻¹⁰ gallon (gal; Imperial)
= 3.5314 × 10⁻³ cubic foot (ft³; U.S.)
= 2.83776 × 10⁻⁵ bushel (bu; U.S.)
= 1.3079 × 10⁻⁶ cubic yard (yd³; U.S.)
= 1 × 10⁻² cubic meter (m³)

A cubic centimeter of water weighs approximately 1 gram.

cubic decimeter (dm³) A measure of volume

\[
1 \text{ dm}^3 = 1000.0 \text{ cubic centimeters (cm³)}
\]

= 0.0610234 cubic inches (in.³)
= 1.05668 liquid quarts (liquid qt; U.S.)
= 0.99997 liter (l)
= 0.90808 U.S. dry quart (dry qt)
= 35.31477 cubic feet (ft³; Br.)
= 27.03 cubic feet (ft³; U.S.)
= 2.64173 gallons (gal; Br.)
= 2.20462 cubic yards (yd³; Br.)
= 0.57895 cubic yard (yd³; U.S.)
= 0.5541 ounce (oz; U.S., fluid)
= 0.03463 pint (pt; U.S., liquid)
= 0.01732 liquid quart (liquid qt; U.S.)
= 0.01639 cubic decimeter (dm³)
= 0.0163868 liter (l)
= 0.014881 dry gallon (dry gal; U.S.)
= 0.0094634 cubic yard (yd³; U.S.)
= 0.0094686 cubic yard (yd³; Br.)
= 0.004650 bushel (bu; U.S.)
= 0.001308 cubic yard (yd³; Br.)

A cubic decimeter weighs 1 kilogram.

cubic feet per minute (cfm; ft³/min) A measure of flow

\[
1 \text{ ft}^3/\text{min} = 472.0 \text{ cubic centimeters per second (cm}^3/\text{sec})
\]

= 62.39 pounds of water per minute (lb water/min)
= 0.4720 liter per second (l/s)
= 0.0297932 millimeter of water per second (mm H₂O/sec)

A cubic centimeter per second is called a milliliter per second (ml/sec).

cubic feet per second (ft³/s) A measure of flow

\[
1 \text{ ft}^3/\text{s} = 0.06461 × 10^8 \text{ gallons per day (gal/day)}
\]

= 448.841 gallons per minute (gal/min)

A cubic foot per second is called a cubic yard per minute (yd³/min).

cubic foot (cu ft; ft³) A measure of volume

\[
1 \text{ ft}^3 \text{ (Br.)} = 2.831677 × 10^4 \text{ cubic centimeters (cm}^3)
\]

\[
1 \text{ ft}^3 \text{ (U.S.)} = 28317.016 \text{ cubic centimeters (cm}^3)
\]

= 2.8316 × 10⁴ milliliters (ml)
= 7600.60 drams (U.S., fluid)
= 1728 cubic inches (in.³)
= 997.37 ounces (oz; Br., fluid)
= 857.368 ounces (oz; U.S., fluid)
= 220.75 board feet
= 219.99 pounds of water at 4°C (lb water, 4°C)
= 59.84 pints (pt; U.S., liquid)
= 29.9221 liquid quarts (liquid qt; U.S.)
= 28.3170 cubic decimeters (dm³)
= 28.31625 liters (l)
= 25.7140 dry quarts (dry qt; U.S.)

= 7.48055 liquid gallons (liquid gal; U.S.)

\[
1 \text{ ft}^3 \text{ (U.S.)} = 6.42851 \text{ dry gallons (dry gal; U.S.)}
\]

= 6.229 gallons (gal; Br.)
= 0.80357 bushel (bu; U.S., dry; approx. 3 bu)
= 0.2832 hectoliter (hl)
= 0.23743 barrel (bbl; U.S.)
= 0.118739 hogshead (U.S.)
= 0.03704 cubic yard (yd³; U.S.)
= 0.02831701 cubic meter (m³)

27 ft³ (U.S.) = 1 cubic yard (yd³; U.S.)

1 ft³ water = 62.4 lb

cubic inch (cu. in.; in.³) A measure of volume

\[
1 \text{ in.}^3 \text{ (Br.)} = 16.3870253 \text{ cubic centimeters (cm}^3)
\]

= 0.003606 gallon (gal; Br.)

\[
1 \text{ in.}^3 \text{ (U.S.)} = 276.842 \text{ minims (Br.)}
\]

= 256.976 minims (U.S.)
= 16.387162 cubic centimeters (cm³)
= 16.3868 milliliters (ml)
= 4.4329 drams (U.S., fluid)
= 0.57651 ounce (oz; Br., fluid)
= 0.5541 ounce (oz; U.S., fluid)
= 0.03463 pint (pt; U.S., liquid)
= 0.01732 liquid quart (liquid qt; U.S.)
= 0.01639 cubic decimeter (dm³)
= 0.0163868 liter (l)
= 0.014881 dry quart (dry qt; U.S.)
= 0.0094634 cubic yard (yd³; U.S.)
= 0.004650 bushel (bu; U.S.)
= 0.001308 cubic yard (yd³; Br.)

A cubic inch weighs 1/231 of a pound.

cubic meter (cu. m; m³) A measure of volume

\[
1 \text{ m}^3 = 1 \times 10^6 \text{ cubic centimeters (cm}^3)
\]

= 61023.8 cubic inches (in.³; U.S.)
= 2113 pints (pt; U.S., liquid)
= 1057 quarts (qt; U.S., liquid)
= 999.973 liters (l)
= 264.173 gallons (gal; U.S., liquid)
= 220.75 board feet
= 219.99 gallons (gal; Br.)
= 35.3144 cubic feet (ft³; Br.)
= 35.3144 cubic feet (ft³; U.S.)
= 28.3776 bushels (bu; U.S., dry)
= 1.307954 cubic yards (yd³; Br.)
= 1.3079428 cubic yards (yd³; U.S.)

A cubic meter weighs 1,000 kilograms.

cubic millimeter (mm³) A measure of volume

\[
1 \text{ mm}^3 = 0.000061023 \text{ cubic inch (in.}^3)
\]

= 1 × 10⁻⁹ cubic meter (m³)

A cubic millimeter weighs 1/1000 of a gram.

cubic yard (cu. yd; yd³; U.S.) A measure of volume

\[
1 \text{ yd}^3 = 7.466 \times 10^6 \text{ cubic centimeters (cm}^3)
\]

= 46.656 cubic inches (in.³)
= 1615.9 pints (pt; U.S., liquid)
= 807.896 liquid quarts (liquid qt; U.S.)
= 764.559 cubic decimeters (dm³)
= 764.54 liters (l)
230 cubic yard (cu. yd; yd^3; U.S.)

1 yd^3 = 694.279 dry quarts (dry qt; U.S.)
= 201.974 liquid gallons (liquid gal; U.S.)
= 173.570 dry gallons (dry gal; U.S.)
= 168.17 gallons (gal; Br.)
= 27 cubic feet (ft^3)
= 21.6962 bushels (bu; U.S.)
= 0.764559 cubic meter (m^3)

**cubic yard per minute (yd^3/min)** A measure of flow

1 yd^3/min = 12.74 liters per second (l/s)
= 3.367 gallons per second (gal/s)
= 0.45 cubic foot per second (ft^3/s)

**cubing** Compressing hay into cubes (1.25 × 1.25 × 2 in.)

1 ft^3 = 30–32 lb of hay cubes

**cucheole** A rice and wheat-flour bread that is rich in eggs and fat and sometimes contains dried fruit

**cucumber (Cucumis sativus)** An annual vegetable (originally from the Mediterranean and Middle East) whose fruit is used as food; a climbing plant (10 ft); different varieties produce fruit of different shapes, sizes, and rind textures; the rind color of mature fruit is usually green (orange to yellow in some varieties); immature fruit may be red, green, or white; some reach 15-in. length; cucumbers may be eaten raw in salads (large), pickled (usually small), in soup, fried (5–10 min), boiled, or stuffed and baked; 48 lb/bu; seed 2–3 lb/acre; 1000–1100 seed/oz; 1 oz per 100-ft row; plants 12 in. apart in rows 6 ft apart; germination period 3 days; matures in 70 days

Uses:
- **Pickling**—2–6 in. long; picked every second day at desired size
- **Slicing**—up to 12 in. long; medium size

<table>
<thead>
<tr>
<th>Cucumber type</th>
<th>Variety</th>
<th>Fruit</th>
<th>Vine</th>
<th>Season</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Greenhouse (European)</strong></td>
<td>Toska 70</td>
<td>14 in.; deep green</td>
<td>8% male blooms</td>
<td>53 days</td>
</tr>
<tr>
<td></td>
<td>Brilliant</td>
<td>16 in.</td>
<td>6% male blooms</td>
<td></td>
</tr>
<tr>
<td></td>
<td>La Reine (The Queen)</td>
<td>15 in.</td>
<td>No male blooms</td>
<td></td>
</tr>
<tr>
<td><strong>Pickling (mature fruit is small)</strong></td>
<td>Burpee Pickler</td>
<td>Med. green; black spine; warted</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chicago Pickling</td>
<td>Med. size; cylindrical; warted; black spine; dark green</td>
<td>Early;</td>
<td>54–65 days</td>
</tr>
<tr>
<td></td>
<td>Liberty Hybrid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>National Pickling</td>
<td>Long; tapering; dark green</td>
<td>Compact</td>
<td>48–50 days</td>
</tr>
<tr>
<td></td>
<td>Peppi Hybrid</td>
<td>3 in.; dark green</td>
<td>Compact</td>
<td>50 days</td>
</tr>
<tr>
<td></td>
<td>Pioneer Hybrid</td>
<td>5 in.; multipurpose</td>
<td>Vigorous</td>
<td>55 days</td>
</tr>
<tr>
<td></td>
<td>Saladin Hybrid</td>
<td>3 in.</td>
<td>Compact</td>
<td>55 days</td>
</tr>
<tr>
<td></td>
<td>Spartan Dawn Hybrid</td>
<td>2–3 in.; oval; tender spine; white flesh</td>
<td>Low</td>
<td>60 days</td>
</tr>
<tr>
<td></td>
<td>Tiny Dill</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>West Indian Gherkin</td>
<td>8 in.; dark green</td>
<td>Long-lived</td>
<td>58 days</td>
</tr>
<tr>
<td><strong>Salad (used long for slicing, can be used for pickles when young)</strong></td>
<td>Burpessena Hybrid</td>
<td>8 in.; white spine; dark green; white flesh</td>
<td>Vigorous; long-lived</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Burpee Hybrid</td>
<td>8 in.; white spine; dark green; white flesh</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Burpee's M &amp; M Hybrid</td>
<td>8 in.; dark green; white flesh</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Refuse: 15–30% (parings)

1 bu cucumbers, 4–6 in. long
= 40 lb
= 20 qt dill pickles
18 lb, 3–5 in. long
= 7 qt dill pickles (7–10 per quart)
5 qt, 1.5–3 in. long = 7 lb
= 7 pt gherkins
4 qt, sliced, med. size
= 6 lb
= 7 pt crosscut pickle slices
1 gal, med. size = 5 lb
1 med.-sized cucumber
= 1.2 cups, peeled, seeded, and chopped
1 med.-sized cucumber, seeded, shredded
= 1 cup
1 cucumber, 7 in. long = 200 g
1 cucumber, 7 1/2 × 2 in. = 10 oz, unpared
= 7.3 oz, pared
1 cup, pared and diced = 5 oz
1 cup, thinly sliced = 0.39 lb
= 1/2 med. cucumber
1 slice, 2 × 1/4 in. = 0.3 oz
1 serving = 1/2 med.-sized cucumber

Types:
- Green long English—15–36 in. at maturity; grown in greenhouses
- Green long slicing—8–12 in. at maturity
- Green pickling—5–7 in. at maturity; larger than green short pickling
- Green Russian—10–12 in. at maturity; smooth and green, with a coat of fine hair
- Green short pickling—4–5 in. at maturity; picked at 2 in. for pickles
- Orange-fruited—immature fruit is orange with black spines
- West Indian (C. anguria) White-fruited

(Continued)
Burpless Hybrid  
24 in. (harvest at; 10–12 in.) slender; can be pickled  
Vigorous  62 days
Bush Whopper  
7 in.  
Dwarf  55 days
Cherokee 7 Hybrid  
7 in.  
Compact  60 days
Gemini Hybrid  
8 in.; long; dark green  
57–60 days
Lemon  
Large; white flesh; yellow skin  
65 days
(Garden Lemon)  
8–10 in.; white spine; dark green  
68 days
Marketer  
8 in.; dark green; straight  
65 days
Marketmore 70  
8 in.; dark green; Long; green  
50 days
Park’s Comanche Hybrid  
8 in.; white spine; dark green  
Early
Park’s Emerald  
8 in.; deep green; straight  
Multipurpose  51 days;
(Damascus) Hybrid  
68 days  
Tablegreen  
68–80 days
Patio Pik Hybrid  
Multiflora  51 days;
Multipurpose  Early
Spartan Valor Hybrid  
8 in.; cylindrical  
Long; dark green  
58 days
Straight Eight  
8 in.; deep green  
58 days
Surecrop Hybrid  
10–12 in.  
Vigorous  62 days
Sweet Slice Hybrid  
8 in.; straight; cylindrical;  
58 days
Tablegreen  
10–12 in.  
52–60 days
Victory Hybrid  
8 in.; straight;  
52–60 days
dark green
White Spine

Composition (pared): moisture 96%; protein 0.6%; fat 0.1%; carbohydrate 3.2%; fiber 1.5%; ash 0.4%; pH 5.1

Storage: 45–50°F; 90–95% relative humidity; 10–14 days

See also gherkin; pickle entries

See Part 2: Cucurbit Crops, Spacing and Depth of Planting; Fruit and Vegetables, Diseases; Fruit Classification; Minerals, Food; Minerals, Plant or Animal Tissue; Nitrate, Vegetables; Olives and Pickles, Composition; pH Values of Biological Materials; Plant Foods, Composition; Planting Density; Spoilage, Carbohydrate Foods; Standards, Processed Fruit and Vegetable Products; Storage, Sugar, Vegetables; Tocopherols; Transit Temperature; Vegetable Composition; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Plants; Vegetables, Canning Dates; Vegetables, Classification; Vegetable Storage; Vegetable Yields

See Part 2: Cucurbit Crops, Spacing and Depth of Planting

Cucurbitaceae A family of herbaceous tendril-bearing vines; e.g., cucumber, gourd, muskmelon, pumpkin, squash, and watermelon

cud (bolus) The portion of feed that ruminating animal returns to its mouth from its first stomach to be chewed a second time See bolus

cuissot de chevreuil rôti Roast venison that has been marinated in wine

cull 1) Stock (usually inferior) that is separated from a group and sold separately. 2) Any damaged or defective part. 3) To sort out defectives

See Part 2: Grades, Meat; Lamb Quality Guide

culloo A sweet, cloudy, white palm wine

cultivar A contraction of cultivated variety, now used in place of the word variety (but often used interchangeably with variety) to indicate a specific type of horticultural plant; hybrids or varieties produced under cultivation; cultivars may differ in growth habit, season of maturity, fruit color, fruit shape, etc. See variety

culture 1) A growth or cultivation of microorganisms. 2) A nutrient medium inoculated with specific microorganisms. 3) Microorganisms used to inoculate food. (A pure culture contains only one type of organism.)

cultured buttermilk Skim milk that has been fermented with a starter culture

cultured cream A low-fat sour cream

cultured dairy product Produced by bacterial cultures specific to the product (e.g., skim milk, buttermilk)
232 cultured dairy product

See Part 2: Cultured Dairy Products, Composition; Dairy Terms
cultured half-and-half The same as sour half-and-half
cultured pearl A pearl made by inserting foreign material into an oyster and allowing the oyster to deposit a coating called nacre on the material
culture media Nutritive substances such as agar that promote the growth of bacteria
See Part 2: Culture Media
cumberland A cold meat sauce of orange and lemon juice and peel, port wine, and red-currant jelly
Cumberland 1) A variety of red clover. 2) A large, white breed of British pigs
cumberland ham A country ham
cumin (cummin; Cuminum cyminum) An annual herb related to parsley, with a flavor similar to caraway, that is grown for its leaves, seeds (which are used in flavoring soups, pickles, and cheeses), and flowers (which are used as a garnish)
cumin (cummin) oil A volatile oil obtained by steam distillation of Cuminum cyminum; sp. gr. 0.904–0.926; used as a flavoring agent in food Storage: full, tight, glass container in a cool, dark place
cuminseed (comino seed; cumminseed; Cuminum cyminum L.) A small (¼–½ in. long), dried, yellowish brown, oblong seed from a Mediterranean annual plant (related to parsley); used as a culinary spice with a distinctive, aromatic, hot, slightly bitter flavor, somewhat similar to caraway; available whole or ground; used in making curry powder, in Mexican cookery, in chili powder, and for flavoring cordials; similar to caraway seed but larger and lighter in color.
Uses: anchovies; bread; cheese; chili powder; cordials; curry powder; sausages; soups; stews
Composition: moisture 8–9%; protein 14–18%; fat 20–25%; carbohydrate 44–45%; fiber 9–11%; ash 7–8%; not more than 9.5% total ash; not more than 1.5% HCl-insoluble ash; not more than 5% harmless foreign matter
Storage: cool, dark, dry location
cumquat (Chinois; kumquat) A small citrus fruit; available fresh or packed in syrup, vinegar, or alcohol
See kumquat
cunic A treatment for internal parasites; mix 1 oz copper sulfate (bluestone) in 3 qt water, add ¾ oz of a 40% solution nicotine sulfate (Black leaf 40)
Dose per sheep: 1–4 fluid oz, depending on size
cunner (Crenilabrus melops; Tautogolabrus adspersus) A small, saltwater food fish
cup 1) A container used as a measuring vessel
See also measuring cup
1 cup = 16 tsp
= 48 tsp
See Part 2: Ladle Size; Volume
2) A cool, alcoholic, summer drink. 3) Fruit or liqueurs served hot or cold
cupcake A small cake made by cooking cake batter in a muffin tin
See Part 2: Grain Products, Composition
curaçao A sweet red or white liqueur flavored with peels of bitter Seville oranges and made from brandy or gin
curassow A game bird
curb 1) Unsoundness. 2) A chain on a bit used to restrain a horse
curculio Any of several beetles (¼ in. long, with long curved snouts, prominent humps, and ridged wing covers) that feed on newly formed nuts and new foliage See plum curculio
curcuma A plant whose dried rhizome is used in curry powder and in English mustard
See turmeric
curcumin The major pigment of turmeric (Curcuma longa)
curd 1) Semisolid casein mass obtained by coagulation of milk with acid or the enzyme rennin; it is primarily protein, with some fat, sugar, and whey, the gel or precipitate (casein) of sour milk caused by the action of lactic acid on calcium caseinate forming free casein; the solid or casein portion of milk separated from the liquid (whey) by action of rennet or lactic acid; used in cottage cheese. 2) The edible, white portion of cauliflower
See Part 2: Vegetables Classification
curd cheese A general term for panir-type cheeses
curdy Describes the texture of the thickened, coagulated portion of milk
cure 1) A process to prepare for storage; to preserve; to treat with sodium or potassium nitrite or nitrate; the chemical or physical changes caused by heat, time, salt, nitrite, etc.; also applied to commercially blended cures (which contain salt and/or coloring agents and buffers in addition to nitrite(s) or nitrate(s))
Types:
Commercial sausage cure (e.g., Prague powder or modern cure)—sodium chloride (93.75%) and sodium nitrite (6.25%)
Injected primal cure—salt, phosphate, nitrite, and erythorbate (buffered) blend
Sausage cure—salt and nitrite blend
2) A medium-flavored, semisoft cheese made from cow’s milk
cured and smoked pork A ham, picnic, or loin that has been cured and smoked, but that requires additional heating and should be refrigerated
cured beef tongue Max. gain in weight on curing is 10% over fresh uncured weight; smoked beef tongue should not exceed green weight
cured cheese Cheese that has been ripened by long aging; the flavor and texture characteristics of cheese are determined by the following:
Enzymes that develop
Microorganisms that develop
Length of storage time (ripening)
Mild cheese is cured 2–3 months and has slight flavor and a slightly rubbery body. Medium-aged cheese is cured up to 6 months and has a mellow body and smooth texture. Sharp (or aged) cheese is cured over 6 months and has a richer flavor.

**Cured Meat** Meat that has been processed in pickle or dry-cured with salt and nitrite and/or nitrate; after curing it may be given a smoke treatment.

**Curie (Ci)** The amount of radioactivity produced by 1 g of radium; defined as $3.7 	imes 10^{10}$ atomic disintegrations per second; it is the basic unit used to describe the intensity of radioactivity of a radionuclide.

$$1 \text{ Ci} = \text{quantity of radioactive material that produces } 3.7 \times 10^{10} \text{ disintegration/s}$$

$$= \text{approximately 1 g radium}$$

$$= 3.7 \times 10^{10} \text{ becquerel (Bq)}$$

**Curing** Subjecting food to a preservation process involving various physicochemical changes in such food products as meats, fish, and cheese; meat may be cured by addition of certain chemicals such as sodium nitrite, salt, and sugar; some types are also subjected to the action of smoke. Curing can be used to impart flavor and/or to stabilize color.

**Curium (Cm)** A radioactive element of the actinide series; Group III B of the Periodic Table. at. no. 96; mass number of most stable isotope 247; oxidation state +3; electron configuration 2–8–18–32–52–9–2; orbit KLMNOPQ

**Curl** The extreme edge of the can cap that is turned inward when the double seam is formed

**Curled Cress (Peppergrass)** A plant whose bright green leaves are added to salads or used as a garnish

**Curled Mint (Mentha aquatica crispa)** A 3-ft mint that is used as flavoring

**Curly Dock (Rumex crispus L.)** A perennial weed

**Curly Endive** A salad green with a large head composed of ragged, bitter-flavored leaves

**Current (Ribes sativum)** 1) A shrub that produces a round, acid berry, with a thin skin, juicy flesh, and a number of seeds; fruit colors may be black, red, or white; available June–August; used in jams, jellies, juices, and pies and eaten raw. (This is a different fruit from “dried currant,” which is a seedless raisin.)

Types:
- Black (Ribes nigrum)—very sour; used in cooking, syrups, jams, and cordials
- Golden, buffalo, Missouri (yellow or black)—distinctive taste
- Indian—sweeter
- Red—sweeter; used raw and in jams, jellies, pastries, and syrups; bearing age 2 yr; yield/plant = 9 lb
- White—sweeter, less acid; used in jellies, syrups, and desserts and eaten raw and in salads

Equivalents:
- 1 qt, fresh = 1.5 lb
- = 2 pt, frozen

Cultivar | Fruit | Skin | Flavor |
--- | --- | --- | --- |
Improved | Large | Good | |
Perfection | | | |
Red Lake | Red | Tough | Good, tart |
Wilder | Large; dark red | Tender | Good, tart |

Composition (raw): moisture 84–86%; protein 1–1.7%; fat 0.1%; carbohydrate 12–13%; ash 0.6%; pH (red) 2.9–3.1

Composition (dried fruit): protein 2%; carbohydrate 63%

Storage: 32°F; 80–85% relative humidity; keeps 10–14 days

2) “Dried currant” refers to the small dried form of a specific large, seedless black grape or raisin. It is smaller, darker, and more tart than a seedless raisin.

3) The Sultana raisin is also called a currant in some areas.

- 1 qt = 3.75 cups
- = 4–6 servings
- 1 lb, dried = 3–3½ cups

See Part 2: Flavor Ingredients, Taste and Flavor Type; Fruit Classification; Fruit Composition; Fruit, Frozen Yield; Minerals, Food; Organic Acids in Fruits and Vegetables; Plant Foods, Composition; Riboflavin, Food; Sugar, Fruit

**Currant Bun** A bun containing currants and candied citrus-fruit peel

**Currant Jam** Jam made from currants

Defect action level: average microscopic mold count of 75%

**Current (I; i)** Rate of movement of electronic charge from one point to another; measured in amperes (A)

**Curry** A stew made of meat, rice, etc. seasoned with curry powder (the “salt of the Orient”)

See Part 2: Minerals (Trace), Limits

**Curry Dressing** Dressing made with curry powder, garlic, lemon juice, olive oil, onion, peppers, and salt

**Curry Powder** A highly seasoned condiment that is a blend of many spices (e.g., allspice, black pepper, cardamom, cinnamon, cloves, coriander, cumin, fenugreek, ginger, mace, turmeric, red pepper, white pepper); used in seasoning; the flavor increases in potency in frozen foods; contains turmeric, which gives it color. (Tamarind pod is used in curry paste.) Formulas and quantities differ widely.

Frequently used formula:
- Coriander seed (36%)
- Turmeric (28%; for color)
- Cumin (10%)
- Fenugreek seed (10%)
- White pepper (5%)
- Allspice (4%)
- Yellow mustard (3%)
- Red pepper (2%; for hotness)
- Ginger (2%; for hotness)
curry powder

Other spices sometimes added are cardamom seed, cinnamon, cloves, garlic, mace, nutmeg, onion, peppercorn (black), poppy seed, and tamarind. Curry powder is used with fish, meat, poultry, and rice.

Composition: moisture 9–10%; protein 12–13%; fat 13–24%; carbohydrate 58–59%; fiber 16–17%; ash 5–6%

See also pepper (capsicum)

curry sauce

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dehydrated</th>
<th>Prepared with milk</th>
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</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>4.2</td>
<td>79.3</td>
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<tr>
<td>Protein (%)</td>
<td>9.4</td>
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<tr>
<td>Fat (%)</td>
<td>23.1</td>
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<tr>
<td>Carbohydrate (%)</td>
<td>50.6</td>
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<tr>
<td>Fiber (%)</td>
<td>1.3</td>
<td>0.14</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>12.7</td>
<td>2.0</td>
</tr>
</tbody>
</table>

curtailed sampling A sampling procedure where inspection is terminated as soon as a decision to accept or reject a lot is reached

curuba See cassabanana

cush A soup made with corn bread, milk, pork sausage, and seasoning

cushion 1) The most meaty portion, below the tail, of the rear leg of a meat carcass. 2) Meat cut in such a manner as to leave a pocket for stuffing

cusk (Brosme brosme) A large, saltwater, codlike finfish, used for food, that has white meat and a very light, delicate flavor

custard A dessert consisting of a thick mixture of eggs, milk, sugar, and flavoring; a thickening agent may be added. The liquid type is cooked at low heat in an open pan, but the solid type is oven-baked.

See Part 2: Calcium Equivalents for Milk; Calories, Daily Recommendations; Stabilizers, Thickeners; Storage Times

custard apple (Annona reticulata) A tropical fruit from trees of the genus Annona

Varieties:

- Alligator, monkey apple—usually considered to be a poor variety
- Bullock’s heart—large, with soft prickles
- Cherimoya (Peruvian)—usually considered to be the best variety
- Llama—good flavor
- Soncoya—very aromatic
- Soursop, prickly West Indian—elongated; purple skin
- Sweetsop, Indian, scaly apple, sugar apple—sour-sweet taste

See anonaceous fruit

See Part 2: Fruit Composition; Fruit Storage

custard marrow (chayote; Cucurbita pepo var. ovifera) A squash; skin color may be green, orange, striped, or yellow and may be warty See marrow

custard pie \( \frac{1}{8} \) of a plain 9-in. pie = 250 calories

custom blend A unique formula produced for a food manufacturer

customs duty An EEC trading term that means a fixed percentage charge made on imported products

cut 1) Of shellac, the number of pounds of shellac gum dissolved in each gallon of pure alcohol. 2) To reduce to small pieces using a knife or scissors. 3) To blend. 4) To incorporate (coarse) fat into flour and other dry ingredients, usually with a knife

cutability Describes the following: the amount of usable meat in a carcass; yield; freedom from waste (e.g., fat and bone); the proportion of lean to fat in a carcass that can be used as trimmed, boned or partially boned, retail cuts. USDA cutability grades range from 1 (most lean) to 5.

See Part 2: Grades, Meat

cut code A fracture in the lid of a metal can due to improper embossing

cut in To work shortening into a flour mixture until a coarse meal texture is obtained

cutlet A small slice (boneless or bone-in) of veal or other meat cuts from the ribs or leg; often coated with bread crumbs

See Part 2: Braising Time; Meat Composition; Meat, Frozen Storage; Meat Identification; Pork Loin Cooking; Portion Size; Veal Chart; Veal Cuts and Uses

cut-out An animal separated from the group

cutter One grade better than canner

See Part 2: Grades, Meat

cutover A one grade better than canner

See Part 2: Grades, Meat

cut water treatment Application of herbicide to cuts in the trunk of a woody plant

cutthroat trout (Salmo clarki) A food fish of the Pacific coast

cut through Damage to a can gasket caused by excessive vertical pressure

cutting Dividing with a knife and/or saw

cutting yield See Part 2: Beef Carcass, Cutting Yield

cuttlefish (inkfish) A 10-armed (or tentacled) marine mollusk with a calcified internal shell and a squidlike taste

Cuttlefish (Sepia officinalis) Little, or lesser, cuttlefish (Sepiola rondeleti) Ross cuttle (Rossia macrosomus)

See squid

cut-up poultry Any cut-up or disjointed portion of poultry or any edible part thereof

cutworm 1) The caterpillar of the turnip moth (Agrostis segetam), which feeds on plant stems at ground level. 2) Worms that feed at night on sugar beet plants, at or just below the soil surface, producing cut and/or wilted beet tops; in the daytime they are curled up beneath the soil.

Control: insecticide; parathion methyl; carbaryl

3) A peanut pest See climbing cutworm

cvicek A dark rosé wine

cwt Hundredweight (100 lb)
-cyan- A syllable meaning blue
cyanamid (cyanamide) (CaCN$_2$) A fertilizer material; 21-0-0; nitrogen goes through several states such as urea, ammonium, and nitrate; cyanamid is basic in nature and each pound is equivalent to 0.63 lb of dolomitic limestone
cyanazine See Part 2: Corn herbicides
cyanide A compound containing the CN group, such as HCN (hydrogen cyanide)
See Part 2: Water Drinking Standards
cyanidin One of the anthocyanidins responsible for the red color in fruits and vegetables

cyanocobalamin (C$_{63}$H$_{88}$CoN$_{14}$O$_{14}$P) An active form of vitamin B$_{12}$ See Part 2: Vitamins
cyanogen (C$_2$N$_2$) A toxic gas used as a fumigant
See Part 2: Normal Solutions
cyanogenic glycoside See amygdalin
cyclamate Any of a group of non-nutritive sweeteners derived from cyclamic acid (C$_6$H$_{11}$NHSO$_4$H); because of their tendency to form a toxic and possibly carcinogenic compound, hexylamine, their use was prohibited in soft drinks and other food products by the FDA in 1970. The sodium form has a relative sweetness of 2500-3500 (where sucrose equals 100).
cyclamen aldehyde
\[ \text{H}_2\text{C} = \text{CH} - \text{CH}_2 - \text{CH} - \text{CHO} \]

Used as a flavoring agent in food; sp. gr. 0.945-0.952
Storage: full, tight, glass container in a cool, dark place
cyclic 1) Moving in cycles. 2) A chemical closed-ring formation
cyclic compound An organic compound in which the carbon atoms are arranged in a closed ring See also alicyclic; aromatic; heterocyclic
cycloalkane [(CH$_2$)$_n$] A saturated cyclic series of compounds See also alicyclic
cycloalkene An unsaturated cyclic series of compounds See also alicyclic
cyder See cider (fermented)
cyder royal A brandy distilled from cider
cymling A summer variety of squash
cyst A sac containing dead material (encapsulated necrotic material)
cysteine A nonessential, sulfur-containing amino acid

\[ \text{HS} - \text{CH} _2 - \text{CH} - \text{C}=\text{O} \]

Can be oxidized to cystine; added to baked products to enhance the dough-improving effects of flour-treatment agents and as a nutrient
See Part 2: Amino Acids
cysteine monohydrochloride
\[ \text{HSCH}_2\text{CHCOOH} \cdot \text{H}_2\text{O} \]
\[ \text{NH}_2 \cdot \text{HCl} \]

Used as a nutrient or dietary supplement
Storage: well-closed, light-resistant container
cysticercosis Infestation by tapeworm larvae (Cysticercus bovis); causes a "measles"-like appearance in beef
cystic fibrosis A disease that causes diminished secretion of digestive enzymes by the pancreas
cystine A nonessential, sulfur-containing amino acid that is used as a nutrient or dietary supplement
Storage: well-closed container
cystine heart agar See Part 2: Microorganism, Media
cystine tryptic agar See Part 2: Microbiological Media
cystitis Inflammation of the urinary bladder
cyt- A prefix meaning vessel or cell
cyte A suffix meaning cell, e.g., erythrocyte (red cell)
cytidylic acid  An RNA nucleotide

[Chemical structure of cytidylic acid]

cytosine  A base found in nucleic acids (both in DNA and RNA)

[Chemical structure of cytosine]

cytoto-  A prefix meaning vessel, cell, tube, or cover, e.g., cytoplasm

cytochrome  An iron-containing protein that transfers electrons along an oxidative pathway; there are many separate cytochromes in cells; they can be oxidized and reduced and play a major role in transporting hydrogen from substrate to atmospheric oxygen.

cytology  The microscopic study of cells

cytoplasm  Part of the internal portion of cell, which is divided into the following:
1. Cytoplasmic area—granular; high in RNA; involved in cell metabolism
2. Chromatinic, or nuclear, area—high in DNA; contains the genetic material
3. Fluid portion with dissolved nutrients

cytoplasmic membrane  A thin structure located between the cell wall and the cytoplasm

cytosporina  A fungal disease of apricot trees that occurs at pruning wounds and causes cankers

cytrynowa (lemon)  A moist, cooked, double-smoked Polish sausage made from medium- or coarse-chopped, medium-seasoned beef and pork stuffed into an artificial casing

Czechoslovakian Food habits
Dairy products—cheese, milk
Fats—only small quantities used
Sweets—only small quantities used
Vegetables—cabbage, carrots, legumes, potatoes, tomatoes
D Designates the right-handed (dextro) enantiomer (optical isomer) of a compound containing an asymmetric carbon atom; although such compounds (e.g., glyceraldehyde) are optically active, the D indicates only the structure of the compound, not the direction of optical rotation, which is shown by either d or a plus sign (+). See also dextrorotatory; enantiomer; optical isomers; asymmetric carbon atom.

2,4-D (2,4-dichlorophenoxy acetic acid) An organic phenoxy herbicide that is moderately toxic and to which broadleaf plants are more susceptible than monocotyledinous species.

\[
\begin{align*}
\text{Cl} & \quad \text{Cl} \\
\text{OCH}_2\text{COOH} & \quad \text{(2,4-D formula)}
\end{align*}
\]

da’a A sorghum beer

da’am A sorghum beer

da’b A small, saltwater, flounderlike flatfish; refers to any of several species of flounder:

- Dab
  - Limanda limanda—Europe
  - Rhombosolea plebeia—Oceania
- Longhead dab (Pleuronectes ferruginea)—Atlantic
- Long rough dab, American plaice—United States
- Sand dab, rusty dab (L. ferruginea)—United States
- Yellowfin sole—Western Pacific
  See plaice

da’bokolo A scone

da’boo Yogurt

da’cca A small, lightly pressed, cheese made from cow’s milk, that is often smoked and is matured for 2 months

da’ce (Rhinichthys atronatus; Tribolodon hakonensis hakonensis) A small, freshwater, carplike food fish

D-activated A sterol that has been vitamin-D-activated by ultraviolet light or by other means

da’daddawa A type of dawadawa

da’dhisara A sour cream that is used for making butter

da’dih A yogurt made from buffalo’s milk

da’ge Press cake of oilseed, legumes, or peels of starch plants that have been fermented

Dage bengook—bengook seed (Mucuna pruiens), a legume

Dage karet—karet seed (Horea brasiliensis)
Dage moonchang—moonchang or kemeree seed (Aleurites moluccana)
Dage peechong—peechong seed ( Panicum edule)
Dage soo-oek—groundnut seed (Arachis hypogea)

dagger nematode (Xiphinema americanum) A parasitic nematode that reduces the yield and quality of sweet potatoes

dagwood A multilayered sandwich made from many ingredients

da’hi A yogurt or curd made from cow’s or buffalo’s milk

da’hi kusum A sweetened yogurt

da’hi puri A flat, fermented, deep-fried, wheat bread

da’hl See lentil

da’hlia An edible tuber with a flavor similar to an artichoke

da’hm kook Chicken soup

da’ikon (dikon) A Japanese white, hot radish with a large (3 ft by 4 in.) root (may be eaten raw); a large turnip; it is often preserved by drying and fermentation used as a relish, in soup or part of a vegetable tray.

Storage: Wash and store in refrigerator.
See radish

da’iquiri An alcoholic beverage that is made from the juice of \(\frac{1}{2}\) lime or \(\frac{1}{4}\) lemon, 1 tsp sugar, and 1 \(\frac{1}{2}\) oz (1 jigger) light rum, shaken with ice until frosty, and strained.

da’iry An establishment in which milk and its products are processed
See Part 2: Microbiological Standards, Dairy

da’iry cattle A collective term for commercial milk-producing animals

<table>
<thead>
<tr>
<th></th>
<th>Many cows</th>
<th>Some cows</th>
<th>U.S. average</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>25,100</td>
<td>36,000</td>
<td>8,600</td>
</tr>
</tbody>
</table>

Desirable first breeding age is 16–18 months; desirable age for having first calf 24–27 months; subsequent breeding 2 months after parturition; dry period 2 months prior to calving

See Part 2: Dairy Cattle Breeds

da’iry character The points of the body that distinguish a dairy cow from any other type of cow

Dairy Herd Improvement Association (DHIA) An association that will assist dairymen in testing the production of a herd; milk weights are recorded and milk samples are taken from each cow.
A pale gray insect that resembles the damsels bug Damietta A white, brined cheese made from cow’s milk Damming-off A soil-borne disease that affects tomatoes, causing decay of seed or seedlings in the soil Control: treat seed with thiram or dichloflam Damiana An herb used for tea

dairy Herd Improvement Registry (DHIR) A program that supports prices by government purchases of manufactured dairy products; maintains the minimum price for milk established by Congress

dairy products Milk, cream, cheese, and products made directly from them (e.g., ice cream)

See Part 2: Animal Foods, Composition; Calories, Daily Recommendations; Dairy Products, Composition; Dairy Terms; Glutamate; Microbiological Examination of Dairy Products; Microbiological Media; Micro-organism, Culture Media, Dairy and Food Products; Mold, Food; Riboflavin, Food; Storage Times; Thiamin, Food; Vitamin A, Food; Vitamin D, Food

daisy 1) An iced alcoholic drink similar to the collins. 2) A shape of cheese with a diam. of 14-15 in.; height 4-6 in.; weight 18-24 lb

daisy cheese A type of cheddar cheese See also cheddar cheese

dal See dhal; lentil dalaki A thick porridge gruel made from sorghum or millet

dalapylsa A moist, cooked, smoked Icelandic sausage made from finely chopped, medium-seasoned beef and lamb, with pork fat added, stuffed into an artificial casing

dalia A provolone-type cheese made from cow’s milk

Dallis grass (Paspalum dilatatum) A perennial bunch-type grass used for pasture; seed 15 lb/bu; 12-15 lb/acre; soil pH 5-5.6

See Part 2: Seed, Germination

daklo See burong manga

dalton (Da) A measure of weight 1 Da = 1.650 x 10^-24 gram (g)

dam 1) A female parent (of animals). 2) A wine made from the flowers of the mallow tree

damages Compensation given for injury to goods, persons, or property

d’Ambert See forez cheese

dambu A thick porridge gruel made from sorghum or millet

damen A soft, rennet cheese made from cow’s milk

damënkase A tilsit-type cheese

Dam, H. The Danish biochemist who discovered Vitamin K

damiana An herb used for tea

damietta A white, brined cheese made from cow’s or buffalo’s milk (whole or skimmmed)

damping-off A soil-borne disease that affects tomatoes, causing decay of seed or seedlings in the soil Control: treat seed with thiram or dichloflam

damsel bug A pale gray insect that resembles the assassin bugs (2 in. long) and uses its forelegs to capture prey

Benefits: It feeds on aphids, flea hoppers, and small larvae of other insects

danemon (Prunus domestica; P. institia) See plum

danahlu A salty, sharp, blue-veined Danish cheese made from homogenized cow’s milk See Danish blue

danbo A gouda-type cheese that is sometimes flavored with caraway seed

dandelion (priest’s crown; swine’s snout; Leonotodon taraxacum; Taraxacum officinale) A plant whose leaves are used as greens and tea by some; the flowers are used for wine; a perennial herb whose ground root is used for dandelion coffee; seed ½ oz./100-ft row; plants 6 in. apart in rows 15 in. apart; matures in 95-100 days; yield one bu./50-ft row

Composition (raw greens): moisture 81-86%; protein 2-3%; fat 0.7-1%; carbohydrate 9-11%; ash 2-5%

Varieties:

American Improved
French Large Leaf
Red-Seeded

Thick-leaved—95-day season; has large, thick, dark green leaves; used raw and for greens

Equivalents:

1 lb leaves = 4 servings
1 lb ½-in. pieces = 8 cups
1 cup, boiled and drained = 6.4 oz

Storage (leaf): in crisper in refrigerator; use within 1-4 days

dandelion-root extract Used as a flavoring agent

DANIDA Danish International Development Agency

Danish agar See furcellaran

Danish blue (danablu) A white, salty, sharp, blue-veined cheese made from cow’s milk

Danish blue cheese A hard blue cheese similar to Roquefort

Danish bread See Part 2: Fermented Ingredients

Danish frankfurts A moist, cooked Australian sausage

Danish Landrace See Landrace

Danish pastry Bread with a layer of raisins between rolls of dough

Danish salami 1) A salami made from medium-seasoned, finely chopped beef or pork, usually with red color added and sometimes with cereal added. 2) A dry, uncooked, smoked Australian sausage made from finely chopped, mildly seasoned beef, fermented and stuffed into artificial casings

Danmo A white, brined cheese, made from sheep’s milk, that is matured in whey

Danmooji Acidic, sweetened, carbonated Oriental radish

danni A white, brined cheese, made from sheep’s milk, that is matured in whey

Danskrull A moist, cooked, unsmoked Norwegian sausage made from medium-chopped, mildly seasoned beef and pork, not stuffed into a casing

dansk schwesterost cheese A Danish cheese
danziger goldwasser A white alcoholic beverage that contains pieces of gold leaf
dao A full-bodied, dry white or red wine
daqno Sour diluted milk with millet and honey
darassun A millet beer
darieole A cylindrical food mold
darjeeling See black tea
dark cutter A dark condition in the muscle of a fresh beef carcass caused by high pH (5.7–6.3) resulting from low muscle glycogen at the time of slaughter; no flavor of health hazard seems to be associated with this condition. See Part 2: pH, Post Mortem
dark-field microscope A microscope equipped with a condenser that transmits only a thin cone of light, which reflects on small or slender objects and shows them against a black field

d’Aries See arles
darne A wedge of fish
darter See perch
Dartmoor A hill breed of British sheep
dash An approximate measure of volume: \(\frac{1}{6}\) tsp of dry material, or 4–6 drops of liquid
dasheen (Colocasia esculenta) See taro
Dasineura vitis An insect, commonly called a gnat or midge, that causes irregular, succulent galls known as tomato galls
daso See fra-fra
data (plural) Information, often referring to numerical information, e.g., carcass weight See also datum
date An oblong fruit with a grooved seed See also date palm
Types:
Dry and hard
Fibrous
Large—the only one that travels well
Equivalents:
1 cup, without pits, chopped = 5–8 oz
1 cup whole dates, pitted = 5.3–7 oz
1 domestic date, whole = 0.8 oz
1 imported date, whole = 0.22 oz
4.5 teaspoon sugar = 3–4 dried dates
date honey A syrup made from the juice of fresh dates
date palm (Phoenix dactylifera) A tall palm, originally from the Mediterranean and Middle East, that produces fruit (86% edible) in bunches (30 lb) that contain about 40 strands, each strand containing 25–35 dates; trees average 100 lb fruit per year.
Types of fruit:
Date sap—fermented to make palm wine or toddy; also used for sugar production
Dry dates—hard; can be ground into flour (70% sugar)
Semidry dates—sold in boxes, still attached to strand
Soft dates—sold in pressed masses; eaten raw or in confectionery (60% sugar); type usually exported

<table>
<thead>
<tr>
<th>Type</th>
<th>Classification</th>
<th>Variety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry (bread)</td>
<td>Cane sugar</td>
<td>Kenta</td>
</tr>
<tr>
<td>Dry</td>
<td>Cane sugar</td>
<td>Theory</td>
</tr>
<tr>
<td>Semidry</td>
<td>Cane sugar</td>
<td>Deglet Noor</td>
</tr>
<tr>
<td></td>
<td>Invert sugar</td>
<td>Halawy; Saidy; Sayer; Zahidi</td>
</tr>
<tr>
<td>Soft</td>
<td>Invert sugar</td>
<td>Barhee; Brain; Dayri; Hayany; Khadrawy; Kustawy; Maktoom; Rhars</td>
</tr>
</tbody>
</table>

Domestic variety:
Deglet Noor—large; picked without artificial drying; light color (red brown), soft texture; less sugar than imported dates, moist and not as sticky; usually sold fresh

Imported varieties:
Fard—firm, sweet; mahogany-colored; thin skin; meaty with strong aftertaste
Hallowi (Halawy, Hallows)—golden color; medium size; mild-flavored and very sweet
Khadrawi (Kshdrawi, Khadrawy)—golden color; medium size; mild-flavored and very sweet
Sair—light mahogany color and thin skin; medium size; meaty and sweet

Equivalents:
1 lb whole dates, dried = 60 dates
1 lb, not pitted = 4–5 servings
1 lb pitted dates = \(2\frac{1}{3}–2\frac{2}{3}\) cups
= 6–8 servings
1 cup, pitted = 180 g (6.3 oz)
Composition (dry date): moisture 15–22%; protein 2%; fat 0.5%; total solids 75–88%; carbohydrate 64–80%; sugar 60–65%; ash 2%; pH 6.2–6.4; water activity 0.6–0.65
See palm
See Part 2: Fruit Availability; Fruit Classification; Fruit Composition; Fruit Storage; Minerals, Food; Plant Foods, Composition; Potassium-rich Foods; Storage; Transit Temperature
date-palm flour Flour made from the pith of the date palm tree
date plum A dried persimmon See persimmon
date sugar palm See palm
dating A method of granting extended credit terms that is used by the seller to induce buyers to receive goods in advance of required delivery date
datou Dark, brown, fermented balls of oil-rich seed; used in soups and stews
datum (sing.) A bit or item of information (“The datum is . . .”); the plural form is data—more than one item of information (“The data are . . .”)
daube Meat braised and flavored in stock
daerwurst A firm-textured salami See bierworst, Dutch
dauphin A French cheese made from cow’s milk and flavored with cloves, peppers, tarragon, or parsley; made in various shapes
davalagyajsky See bgug panir
daventry A rich, dark, green cheese
Davie A variety of barley
dawadawa The fermented, dried seed of a leguminous tree (*Parkia biglobosa*); used as a flavoring

Dawetze A prolific, lop-eared, pork- and lard-type hog that is black with white feet; from Hunan (south central) province China

2,4-DB [4-(2,4-dichlorophenoxy) butyric acid] An organic phenoxy herbicide that is converted to 2,4-D by an enzyme system in the plant

DBMS (data base management system) The software that manages the relationship between the data in a data base and the computer programs that use the data

de Direct current

DDD See TDE

DDT (dichlorodiphenyltrichloroethane) A chlorinated hydrocarbon insecticide that is toxic to fish and some birds; content in foods is limited to 5 ppm. Largely because of its ecologically damaging effects, it has been prohibited from use on food crops; it is highly persistent and not biodegradable. It is widely used in some foreign countries (e.g., India).

![DDT molecule](https://example.com/dtt-molecule.png)

FDA maximum limits: fruit and vegetables 5 ppm; meat and milk 1 ppm

DE See dextrose equivalent; digestible energy

de- A prefix meaning down or from

deacon A young calf sometimes considered too young for food

deacon skin Skin from bob veal

deactivated serum Blood serum that has been heated to 56°C for 30 min so that it can be used for culture or cells of any species

dead-arm A fungal disease of American bunch grapes that occurs throughout the northeastern states

Control: A delayed dormant spray of bordeaux mixture (8:8:100) or two sprays of captan will protect against this disease.

deadhead (skidder; slip; spinner) An incomplete seam caused by slippage of the chuck in the end countersink portion of the lid during sealing See skidder

dead weight (dressed weight) Weight after slaughter

dead wool Wool taken from sheep shortly after death

deamination Removal of an amino (—NH₂) group from a compound

d'Aries See salami, d'Aries

dead The cessation of physiological activity; the absence of life

dead camas A plant having a toxic principle See Part 2: Poisonous Plants

debaking Removing part of the beak of chickens to prevent cannibalism

debilitating Weakening

debitter To remove a bitter taste

deboned Describes meat or fish from which the bones have been removed; boneless

deboniccka A semidry, uncooked, hot-smoked Polish sausage made from medium- or coarse-chopped, medium-seasoned pork stuffed into a beef casing

Debouillet A breed of sheep See Part 2: Sheep Breeds

debreziner A moist, cooked, smoked Austrian sausage made from medium-chopped, heavily seasoned (with nitrite) beef and pork stuffed into pork and sheep casings with a diameter of less than 30 mm

debriciner A dry, uncooked Australian sausage

debro A sweet white wine

debri harslevelu A heavy-vintage, medium-dry Hungarian wine

debt-asset ratio A measure used to determine financial soundness

decaffeinated coffee Coffee that has been treated with solvents to remove the caffeine (stimulating properties and bitterness)

decalactone

\[
\text{CH}_3\text{(CH}_2\text{)}_4\text{CHCH}_2\text{CH}_2\text{CH}_3\text{H}_2
\]

Used as a coconut-like, fruity, and butterlike flavoring agent in food

Storage: tight container

decalcifying solution A solution used to dissolve calcareous matter: 1 part nitric acid and 9 parts 70% alcohol

decanal [\(\text{CH}_3\text{(CH}_2\text{)}_8\text{CHO}\)] Used as a fat- to floral-like artificial flavoring agent in food; also occurs naturally in many foods

Storage: full, tight, glass container in a cool place

decanoic acid (capric acid) [\(\text{CH}_3\text{(CH}_2\text{)}_8\text{COOH}\)] A saturated fatty acid found in coconut oil and used as a defoaming agent and as a raw material for other food-grade additives

Storage: well-closed container

See Part 2: Saturated Fatty Acids

1-decanol (deyl alcohol) [\(\text{CH}_3\text{(CH}_2\text{)}_8\text{CH}_2\text{OH}\)] Used as an orange- and floral-like flavoring agent; sp. gr. 0.825–0.830

Storage: full, tight, glass container in a cool, dark place

decant To transfer (pour) a liquid (e.g., wine) carefully from one container to another, often leaving behind impurities or sediment

decanting Pouring wine from one container into another, often separating it from sediment

decarboxylase An enzyme that removes CO₂ from carboxylic acids

See Part 2: Microorganism, Media; Microorganism, Selective and Differential Broths and Media, Water Filtration Plant
defrost 241

decay The aerobic decomposition of organic matter due to bacteria or fungi

decenoic acid An unsaturated fatty acid
See Part 2: Milk, Fatty Acids, Seasonal; Unsaturated Fatty Acids

deci- (one-tenth; 0.1) A prefix for quantities that are one-tenth the size of the base unit

deciduous 1) Woody plants that lose their leaves at the end of each growing period (shed their leaves). 2) Falling off at maturity; e.g., fruits (apple, cherry, peach, pear, plum, etc.)

decigram (dg) A metric unit of weight
1 dg = 100 milligrams (mg)
= 10 centigrams (cg)
= 1.54324 grams (weight)
= 0.1 grain (g)

deciliter (dl) A metric unit of volume
1 dl = 100.003 cubic centimeter (cc)
= 100 milliliters (ml)
= 10 centiliters (cl)
= 6.1022 cubic inches (in.3)
= 3.3815 ounces (oz; U.S., fluid)
= 0.845 gill
= 0.1 cubic decimeter (dm3)
= 0.1 liter (l)

decimal reduction (D10) The treatment or the radiation dose [in grays (Gy)] necessary to reduce a population (e.g., of bacteria) by a factor of 10, or one log cycle (10% survivors)

decimal reduction time (D; sometimes Z) The time required (in minutes) to kill 90% of the bacterial cells of a population at a given temperature

decimeter (dm) A linear measure
1 dm = 100 millimeters (mm)
= 10 centimeters (cm)
= 3.937 inches (in.; U.S.)
= 0.1 meter (m)

decize A French cheese made from cow’s milk

deckle The inner layer of meat and fat from a brisket
See Part 2: Beef, Boneless Cuts

decoction The liquid and soluble components that result from boiling a solid in liquid

decolorization The removal of pigments, often by passing through carbon filters

decomposition The breakdown into simpler compounds; rotting or decaying

decoquinate A drug used to prevent coccidiosis

decortication The removal of bark, husk, hull, or shell from a plant, seed or root; the removal of cortical substances of a structure or organ

deepe-dish pie A fruit pie with a pastry top

deepe-fat fry To cook in fat (at 350–360°F) deep enough to cover the product

deepe-freezing Storing frozen foods, usually at temperatures of −18 to −40°C

deepe-sea fillet See hake and pollock

deer (family Cervidae) A ruminant quadruped mammal that usually has antlers and whose meat is more lean than beef
Terms:
Buck—male (of any species)
Doe—female

Stag—male of the European red deer
Venison—deer meat

Types:
Caribou—Newfoundland
Fallow (yellow-brown, small)—Europe
Moose—North America
Red—Europe
Reindeer—Scandinavia
Roe—Europe
Whitetail—North America
See Part 2: Gestation Periods; Meat and Meat Products, Composition

defatted Describes a product from which fat has been partially or wholly removed

defatted soy flour The primary flour made from soybean; chemical extraction of the fat has reduced it to less than 1%; protein 52–55%; crude fiber 2.5%; ash 6%

defecation 1) The voiding of fecal material from the rectum. 2) Clarification or purification, usually by coagulation of protein

defect An undesirable or substandard characteristic
See critical defect; major defect; minor defect

defect classification Categorization of standards to reflect degree of seriousness

defective Describes an item of substandard quality or appearance
See Part 2: Defectives in Lot

deficiency An inadequate amount, usually of a dietary nutrient

deficiency disease (nutritional deficiency disease) A pathological state that is characterized by clinical signs and is due to insufficient intake of energy or essential nutrient(s)

deficiency payments Payments made by the federal government to farmers when farm prices are below the target price

definition A measure of the sharpness of an optical image

defluorination The process of reducing fluorine to an acceptable level

defoamer (antifoamer; foam inhibitor) A substance that inhibits foam formation, e.g., glycerides

defrost To remove frost from a refrigeration unit; to allow frozen food to thaw

<table>
<thead>
<tr>
<th>Meat</th>
<th>Thickness</th>
<th>In refrigerator temperature</th>
<th>At room temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef, pork, veal</td>
<td>1 in.</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>and lamb</td>
<td>1 ½ in.</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>2 in.</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>2 ½ in.</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Poultry</td>
<td>Split chicken</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Split turkey</td>
<td>(3 ½–6 lb)</td>
<td>14</td>
</tr>
<tr>
<td>Seafood</td>
<td>Cook from frozen state</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

See Part 2: Defrosting Time
degredation A change from a better to a worse state
degermed Describes a product that has undergone the process of separating the embryo of a seed from the starchy endosperm
deglaze To add liquid to a pan in which meat has been cooked
deglazing Adding liquid to a pan in which meat has been cooked and then scraping up the cooked particles to make a gravy for serving meat au jus
deglutition The act of swallowing
dégorgement The removal of sediment formed during the second fermentation in a champagne bottle; it may be removed frozen or unfrozen
degrease To remove excess fat by skimming
degree (deg; °) 1) A measurement used for angles
   = 3600 seconds (of arc)
   = 60 minutes (of arc)
   = 0.0175 radian (rad)
   = 0.01111 quadrants
   circle = 360°
2) A unit of temperature measurement See also absolute temperature; absolute zero; Celsius; centigrade; Fahrenheit.
3) Percentage of sugar used to make syrup, e.g., a 45-degree syrup is 45 lb sugar and 55 lb water.
degree of polymerization (DP) The number of anhydro-D-glucose units per molecule
degree per second (angular) The speed of angular motion
   1 degree per second
   = 0.1667 revolution per minute (rev/m)
   = 0.0175 radian per second (rad/s)
   = 2.778 X 10^-3 revolution per second (rev/s)
degrees of freedom The number of unrestricted variables
degum To remove unwanted oxidation products See Part 2: Margarine Production
degustation The act of tasting
dehair To remove hair in hog slaughter; to remove hair from hides by using a solution of 8 lb dehydrated lime in 4 gal water; the enzyme trypsin is also used
dehiding Removing hide or skin
dehorn To remove horns from animals; age (preferable) 1 week to 2 months
   Methods:
   Chemical—1-3 weeks old; clip hair and roughen skin until irritated; apply ring of Vaseline around the budding horn; apply caustic (stick, paste, or liquid)
   Caution: the caustic will burn—keep off of body
   Electric—age 2 weeks to 3 months
   Mechanical—use fly repellent (e.g., pine tar)
dehulled Describes grain or seed from which the outer covering has been removed
dehydrated beet A natural food additive used for color
dehydrated food A food that has been dried naturally or in artificially heated and mechanically circu-
lated air to less than 5% moisture content (some products up to 8-10%)
See Part 2: Meat and Meat Products, Composition
dehydrated soup Store at room temperature (below 70°F) in a metal container; shelf life of 1 yr
dehydration The removal of 95% or more of free water from a material by thermal means
dehydrator A dryer; a device for removing water
dehydrated soup See Palm
   H3C
   O
   O
   COCH3
   Used as a food preservative
   Storage: well-closed container
dehydrated beet Describes a product from which a portion of the moisture has been removed and the product then frozen for storage
dehydrogenase An enzyme that can oxidize a substrate by removal of hydrogen
dehydrogenation The removal of hydrogen from a compound (a type of oxidation)
deidesheimer A highly flavored white wine
deionizer A device that removes minerals from water using an ion exchange resin
de jour Of the day
deka- (ten; 10) Prefix for quantities ten times larger than the base unit
dekagram (dag) A metric unit of weight
   1 dag = 10 grams (g)
dekaliter (dal) A metric unit of volume
   1 dal = 10 cubic decimeter (dm³)
   = 9.08 quarts (qt)
   = 2.6417 gallon (gal)
   = 1.135 pecks
dekameter (dam) A metric unit of distance
   1 dam = 393.7 inches (in.)
   = 10 meters (m)
Delaine Merino A breed of sheep See also Merino-C type
Delaney amendment Provides that no additive shall be deemed to be safe if it is found to induce cancer when ingested by humans or animals and that no such additive may be used in animal feeds unless no residue of it can be found in food products obtained from the animal
Delaney clause Provides that any substance shown to cause cancer in humans or animals may not be added to food in any amount
Delaware 1) A variety of grape. 2) An American class of single-combed chicken that lays a dark-shelled egg; color, white to white and black bars
deleb palm See palm
delft A semihard, reduced-fat cheese made from cow's milk; usually wheel-shaped and sometimes flavored with cumin, clove, or caraway seed

delicatessen A shop that sells food that is ready for the table

delice de Saint Cyr A medium-sized (500 g) excel-
sior-type cheese

Delicious See Red Delicious and Golden Deli-
cious

delikateleberwurst A moist, cooked, unsmoked East German sausage made from finely chopped, mediumseasoned pork liver sausage stuffed into a pork casing
delinquent order A line item on the customer's open order that has a scheduled delivery date prior to the current date
deliquescent Descriptive of a substance (usually water-soluble salts) that pick up water vapor from the air and gradually liquefy, e.g., sodium hydroxide
delivery The satisfaction of a futures contract position through the tendering and receipt of the material
delivery month The month specified in each futures contract for delivery of the material
Delmonico A cut of beef; a steak cut from the beef ribeye in some areas of the country, and cut from the chuck in other areas of the country
See Part 2: Beef Cuts; Roasting, Time and Temperature
delphinidin One of the anthocyanidins responsible for the red color in fruits and vegetables

\[
\begin{align*}
\text{OH} & \quad \text{OH} \\
\text{OH} & \quad \text{OH}
\end{align*}
\]

delta (Δ, δ) Greek letter with English equivalent of “d”
deltoides A muscle of the chuck filling the angle between the scapula and the humerus; it lies lateral to the triceps and attaches to the upper part of the humerus.
dem- A syllable meaning people or district
demand The buyer's desire to possess a certain volume of goods; but the term also refers to the buyer's willingness and ability to buy
Good demand—buyers are more aggressive than usual or large or increased supplies are bringing prices that are unchanged or higher
Poor demand—buyers are less aggressive than usual or decreased supplies are selling at prices that are unchanged or lower
demerara rum A heavy, dark rum
demersal fish (white fish) Fish that live on the sea bottom; 40% edible portion; average analysis of the edible portion, 16% protein; most are less than 1% fat (halibut 4%), 80% water, 80 calories/100 g; types include bream, cod, dogfish, flounder, haddock, halibut, sole, whiting
demestica A white or red wine
demeton A poisonous insecticide; a cholinesterase inhibitor that is a mixture of

\[
S \\
(\text{CH}_3-\text{CH}_2-O)_2-P-O-(\text{CH}_2)_2-S-\text{CH}_2-\text{CH}_3
\]

and

\[
O \\
(\text{CH}_3-\text{CH}_2-O)_2-P-S-(\text{CH}_2)_2-S-\text{CH}_2-\text{CH}_3
\]
demijohn A large (up to 10 gal) glass, often straw-covered, wine container
demilivarot A soft to semisoft, strongly flavored, bacterial surface-ripened cheese made from cow's milk
demisel A soft, light, foil-wrapped French cream cheese made from whole cow's milk; the curds are homogenized and pressed.
See Part 2: Cheese, Vitamin Content
demulcent A protective substance used to coat and relieve irritations of membranes
demulsification The separation or breaking up of an emulsion; results from the coalescence of oil droplets
demurrage Detention of a vessel or railroad car beyond the agreed time by a delay in loading or unloading
denaturation 1) Causing a change in the molecular structure of a protein due to exposure to heat, pH modification, or contact with certain detergents; this is an irreversible process that results in reduction of the protein's enzymatic activity and solubility properties; also, it no longer performs its natural biological function. 2) A process that causes a change of form from the natural state
denatured alcohol Industrial alcohol to which has been added a low percentage of methyl alcohol or a number of other substances to make it unfit to drink (for taxation purposes)
deningding (dinengdeg) A boiled mixture of eggplant, long bean, meat or fish, squash, and tomato, with fermented seafood as a flavoring
denitrification A process that breaks down oxidized forms of nitrogen to nitrogen gas
denjang (doenjang; tenjan) A flavorful paste made from soybeans and rice or brandy
Denominazione di Origine Controllata (DOC) The law that controls the names and origins of Italian wines
densimetric analysis Determination of concentration by determination of density
density The weight (in vacuum) per unit volume at a specific temperature

\[
density = \frac{\text{weight}}{\text{volume}}
\]

See also specific gravity
See Part 2: Planting Density
dent corn See corn
deo\-dorant 1) A compound, such as aluminum chlorohydrate, that neutralizes the acids in perspiration. 2) A highly porous solid, such as activated carbon, that absorbs molecules of odorous gases
deo\-odorization The removal of odor, e.g., by steam distillation of a fat under reduced pressure; reduces odor, free fatty acids, and color
See Part 2: Margarine Production
deo\-x\-adenylic acid A DNA nucleotide

deoxy\-cy\-tidylic acid A DNA nucleotide

deo\-xy\-gu\-anylic acid A DNA nucleotide
derby cheese A close-textured, hard-pressed, English cheddar-type cheese, made from cow’s milk, with a pale honey color (sometimes with color added); it is mild when young but has a tang when matured (often for 6 months). Sage derby is flavored with sage leaves and other types are flavored with spinach. See derbyshire cheese
derbyshire cheese A hard, round, English rennet cheese made from whole milk See derby cheese
Derbyshire Gritstone A hill breed of British sheep
derinding Removing the rind of a cheese
derived protein A protein obtained by breaking up the large amino acid polymers (native protein) into smaller fragments
dermatitis An inflammation of the skin
dermatophyte A parasitic fungus of the skin, hair, or nails
DES Diethylstilbestrol
desalination Removal of salts from seawater or brine to make irrigation water and potable water; some form of distillation (flash distillation) and reverse osmosis are in general use.
desertny bely A medium-sized (500 g) camembert-type cheese made from cow’s milk and cured for 1 week
desiccate To dry completely
desiccation The removal of moisture; drying; dehydrating
desiccator A laboratory device for maintaining a dry (or constant humidity) atmosphere for experimental samples; it is a sealed container in which has been placed an absorptive material, such as silica gel or calcium chloride
desirability Having pleasing or advantageous properties; often used in sensory evaluation
desolventization Removal of a volatile solvent to a specific maximum level
desoxycholate agar See Part 2: Microorganism, Culture Media, Dairy and Food Products; Microorganism, Media
desoxycholate citrate agar See Part 2: Microorganism, Selective and Differential Broths and Media, Water Filtration Plant; Microorganism, Media
desoxycholate lactose agar See Part 2: Microbiological Media; Microorganism, Culture Media, Dairy and Food Products; Microorganism, Media; Microorganism, Selective and Differential Broths and Media, Water Filtration Plant
desert wine A wine, usually sweet, made from the fermented juice of grapes, with a high alcohol content and fortified with spirit
destructive distillation (pyrolysis) Decomposition by heating a solid material out of contact with air; destructive distillation of coal yields coal tar and coke; destructive distillation of wood yields turpentine.
detergent A surface-active organic compound that aids emulsification by lowering the surface tension of water, which makes water more efficient at dislodging and carrying away contaminants; common soap is an effective detergent; alcohol and linear alkyl sulfonates also have this effect.
Requirements for effective cleaning:
Corrosion resistance—inhibits the detergent from attacking metals
Emulsification—ties up contaminants to prevent redeposition

\[
\text{desoxycholic acid (deoxycholic acid)}
\]

\[
\begin{align*}
\text{HO} & \quad \text{CH}_3 \\
\text{CH}_3 & \quad \text{HO} \\
\text{CH}_2-\text{(CH}_2)_4\text{COOH}
\end{align*}
\]

Used as an emulsifying agent in food, e.g., in dried egg whites
Storage: tight container
desoxycorticosterone A steroid hormone
See Part 2: Steroids
dessert The final course of a dinner or luncheon, usually a sweet dish such as pie, pudding, cake, or ice cream
Usual desserts:
America—sweets; frozen fruit
England—nuts; fruit; port wine
Europe—cheese; fruit; sweets
See Part 2: Portion Size; Stabilizers, Thickeners
dessert date A fruit that is similar to a date but bitter-sweet and grown on a small tree
dessertspoon 1 dessertspoon = 2 tsp
dessert topping (nondairy) A dry nondairy product that may be mixed with milk, or a semisolid (frozen) nondairy product used on dessert

<table>
<thead>
<tr>
<th>Composition</th>
<th>Moisture (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Carbohydrate (%)</th>
<th>Fiber (%)</th>
<th>Ash (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frozen</td>
<td>50-51</td>
<td>1-2</td>
<td>25-26</td>
<td>23-24</td>
<td>0</td>
<td>0.1-0.2</td>
</tr>
<tr>
<td>Powdered</td>
<td>15</td>
<td>4.9</td>
<td>39.9</td>
<td>52.5</td>
<td>0</td>
<td>1.2</td>
</tr>
<tr>
<td>Prepared with whole milk</td>
<td>68-67</td>
<td>3-4</td>
<td>12-13</td>
<td>16-17</td>
<td>0</td>
<td>0.5-0.9</td>
</tr>
<tr>
<td>Pressurized</td>
<td>60-4</td>
<td>1.0</td>
<td>22.3</td>
<td>16.1</td>
<td>0</td>
<td>0.3</td>
</tr>
</tbody>
</table>

dessert wine A wine, usually sweet, made from the fermented juice of grapes, with a high alcohol content and fortified with spirit

desoxocholic acid (desoxocholic acid)
Penetration—allows the detergent to reach the surface
Sequestrants—prevent deposition of water scale from hard water
Suspension—envelops emulsified contaminants, making them more stable in solution
Wetting action (surfactant, or surface-active agent)

<table>
<thead>
<tr>
<th>Classification</th>
<th>pH</th>
<th>Detergent pH</th>
<th>Material removed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acid</td>
<td>1</td>
<td>Phosphate and carbonate scales, water scale</td>
<td>Proteins, Starches, Pectins</td>
</tr>
<tr>
<td>Neutral</td>
<td>7</td>
<td>Animal and vegetable fat</td>
<td>Proteins, starches, cellulose, Bacteria</td>
</tr>
<tr>
<td>Base</td>
<td>14</td>
<td>Modified vegetable oils</td>
<td></td>
</tr>
</tbody>
</table>

See Part 2: Detergent Properties; Detergents

detergent sanitizer A substance having properties of both a cleaner and a sanitizer

detinning A reaction between a product and the tinplate of a can, causing the tin to dissolve, exposing the base metal, and resulting in an off taste

detoxification (detoxication) The act or process of reducing toxic properties

deuterium (D; H\textsuperscript{2}) Heavy hydrogen, at. wt. 2.0147

deveined shrimp Shrimp from which the shell and black sand veins have been removed

development The series of processes from the initiation of growth to death

deviations $x_i$ Individual variations from the sample means, e.g., $x_i = X_i - \bar{x}$, where $X_i$ is observation number 1, $\bar{x}$ is sample mean, $\Sigma x = 0$

devil To place a seasoned paste on food before cooking; to season with mustard, pepper, or other spicy ingredients

Types:
- Prunes rolled in bacon
- Rich chocolate cake
- With sauce
  - Brown sauce—made from butter, flour, mustard, and beef
  - Wet sauce—made from poultry, butter, and cream
- White sauce—made from poultry and cream

See deviled; potted meat

deviled A highly seasoned, usually chopped or ground food See devil; potted meat

deviled ham Finely ground and seasoned ham; a finely chopped, cooked, unsmoked American sausage that is canned sterile or shelf-stable; used alone or as a base for dips or spreads See deviled meat food

deviled meat food A finely chopped, cooked, unsmoked American sausage that is canned sterile or shelf-stable See deviled ham

devilfish Angler fish

devil-in-the-bush See nigella

devil’s food cake A rich chocolate cake

Composition: 402 mg Na/4 cake (67 g)

Devon A dual-purpose type of cattle, red in color, originally from southwest England

Types:
- Devon (North Devon, Red Rubies)—more compact and higher quality beef than South Devon; primarily used for beef
- South Devon (Hams)—large, somewhat coarse; primarily used for dairy production

See Part 2: Beef and Dual-Purpose Cattle

devon A moist, cooked, unsmoked Australian sausage made from finely chopped, mildly seasoned pork stuffed into artificial casings

Devon Longwool A British breed of longwool sheep

devonshire cream Cream and coagulated albumin skimmed from scalded (150°F max.) milk

devonshire cream cheese A small English cheese made from cow’s milk

devonshire dough cake A heavily fruited tea bread

Devon, South A British breed of longwool sheep

dewberry (Rubus alleghaniensis) A berry similar to the blackberry except fruit is smaller, less compact, and ripens before the blackberry (ripe May through July)

Variety:
- Lucretia—large, sweet, coreless berry

Frozen whole, with or without sugar or syrup
- 1 crate (24 qt), fresh = 32–36 pt, frozen
- 1 pt, frozen = $\frac{1}{2}$–$\frac{1}{2}$ pt, fresh

Composition: moisture 85%; protein 1%; fat 1%; carbohydrate 13%; ash 0.5%

See Part 2: Fruit Classification; Fruit, Frozen Yield; Storage

dewberry, canned In addition to dewberries, may also contain natural and artificial flavors

Sucrose content of syrup: Extra light < 14%
- Light 14–19%
- Heavy 19–24%
- Extra heavy 24–35%

dewclaw In cattle, sheep, and swine, a horny growth at the rear of the pastern

See Part 2: Bone

dewlap Loose skin in the brisket and neck of cattle

dexpanthenol

HOCH\textsubscript{2}C(CH\textsubscript{3})\textsubscript{2}CH(OH)CONH(CH\textsubscript{2})\textsubscript{2}CH\textsubscript{2}OH

Used as a nutrient or dietary supplement

Storage: tight container

Dexter A small breed of English beef cattle, entirely red or black

See Part 2: Beef and Dual-Purpose Cattle

dextran (macrose) A polysaccharide produced by bacteria, particularly those using sucrose; made of glucose units linked $\alpha$-1(1 $\rightarrow$ 6)
dextrin(e) (British gum; starch gum) 

\[ (C_6H_{10}O_5)_n \]

An intermediate product in the hydrolysis (by heat, roasting, or heat and acid) of starch to maltose, made up of glucose polymers (linear and branched); it is soluble in cold water, is low in viscosity; often used to prevent sugar crystallization, to encapsulate flavor, to stabilize foam, as a thickening agent, and as an adhesive; it has less thickening power than starch. See Part 2: Stabilizers, Thickeners; Sweetening Agents

dextro- Right; right-handed See also enantiomer; optical rotation

dextrorotatory (d; +) Rotating polarized light to the right See also optical rotation

dextrose See corn sugar; glucose See Part 2: Microorganism, Media; Minerals (Trace), Limits; Sweetening Agents; Sweetening Compounds

dextrose, anhydrous Dextrose crystallized without water

dextrose equivalent (DE) The reducing-sugar content of a sweetener calculated (in percentage of total dry substance) as if it were all dextrose

dextrose monohydrate Dextrose crystallized with one molecule of water per dextrose molecule

dextrose proteose agar See Part 2: Microbiological Media

dextrose salt agar See Part 2: Microbiological Media

dextrose tryptone agar See Part 2: Microbiological Media; Microorganism, Culture Media, Dairy and Food Products

dexin To remove zinc, e.g., by the chemical reaction of food with a C-enamel film that removes the zinc oxide

dhal (dal; dholl) Lentils See broad bean; lentil; pigeon pea

dhanya See coriander

DHHS Department of Health and Human Services [formerly the Department of Health, Education, and Welfare (DHEW)]

DHIA See Dairy Herd Improvement Association

dhokla A yellow bread made from rice and bengal gram (Cicer arietinum)

dholl See dhal

di- A prefix meaning two

diabetes mellitus A disorder that causes the body to lose some of its ability to oxidize sugar, due to poor supply of insulin from the islands of Langerhans in the pancreas, resulting in increased quantities of sugar in the urine

diabetin (d-fructose; levulose) See fructose

diable sauce A sauce made from meat stock and tomato flavored with shallots, pepper, cayenne pepper, and wine

diacetate (sodium and calcium) 

\[ CH_3COONa \cdot CH_3COOH \]

A compound that inhibits mold

diacetyl (CH_3CO \cdot COCH_3) Used as a flavoring agent in butter, cultured dairy products, and other dairy products; has a buttery or nut-meat-like flavor; can also be produced by bacteria:

\[
\begin{align*}
\text{citric acid} & \quad \text{(naturally 0.01–0.2\%)} \\
\text{Leuconostoc citrovorum} & \quad \text{diacetyl} \\
\text{in milk 0.1–0.2\%} & \quad \text{by fortification} \\
& \quad [0.3–5 \text{ ppm}]
\end{align*}
\]

diacetyl reductase acetyl methyl carbinol

\[
\begin{align*}
\text{diacetyl} & \quad \text{[(AMC, or acetoin)} \\
& \quad \text{lacks flavor}]
\end{align*}
\]

Used as a flavoring agent in food; sp. gr. 0.978–0.985

Storage: full, tight, light-resistant, glass container

diacetyl tartaric acid ester A food emulsifier used in blends of vegetable and animal fat; diacetyl tartaric acid esters of monoglycerides and diglycerides are also used as food emulsifiers

Storage: well-closed container

diakon (dikon) See daikon

diaksmege A salami made from beef or pork and high in connective tissue

dialysis The separation technique by which smaller molecules are passed through a semi-permeable membrane; separation of molecules by difference in the rate of diffusion through a membrane; e.g., removal of salts from sugar or protein solutions

\[ \alpha,\beta\text{-diaminocaproic acid} \]

See lysine

\[ \text{diammonium phosphate} \quad (NH_4)_2HPO_4 \]

See Part 2: Fertilizer

diamond round A cut of beef See Part 2: Beef Rounds

diaphragm A sheet of muscle and connective tissue that separates the thoracic from the abdominal section of the body and is used in respiration See Part 2: Beef Rib Nomenclature

diaphyseis The shaft of a long bone

Diaporthe A genus of sac fungi responsible for rot or blight in potatoes and beans See Part 2: Mold, Food

diarrhea An intestinal disorder causing loose and watery stools See Part 2: Infectious Diseases, Food-Borne

diastase An enzyme that hydrolyzes starch to malt sugar (maltose) and is important in ripening fruits and vegetables See Part 2: Honey Composition

diastole Muscle expansion

diatomaceous earth (diatomite; kieselguhr) A siliceous earth of low specific gravity used as a clarifying and refining agent

diatomaceous silica Used as an aid to filtration in food processing

Storage: well-closed container
diazinon A poisonous insecticide of the cholinesterase-inhibiting type

\[(C_2H_5—O)_2—P—O—N—CH(CH_3)2\]

See Part 2: Insect Control
diazo Containing two nitrogen atoms combined with a hydrocarbon group and another atom or group
dibasic acid An acid with two replaceable hydrogens, e.g.,

\[H_2SO_4 \rightarrow H^+ + HSO_4^-\]
\[HSO_4^- \rightarrow H^+ + SO_4^{2-}\]
dicalcium phosphate \((CaHPO_4 \cdot 2H_2O)\) A neutral fertilizer material; 0-40-0; also a good source of calcium and phosphorus; low in fluoride (toxic)
dicamba See Part 2: Corn Herbicides
dice To cut into small cubes or small pieces, as potatoes, carrots, etc.
dichlorobenzene A chlorinated hydrocarbon insecticide, used especially for moth control

dichlorodifluoromethane \((CCl_2F_2)\) A chlorofluorocarbon refrigerant; formerly used as an aerosol propellant; a nonflammable gas
See Part 2: Refrigerants
dichlorodimethyl hydantoin See Part 2: Chlorine Availability; Chlorine Compounds
dichloroethylene \((CICHCHCl)\) An unsaturated, flammable liquid used as a solvent
See Part 2: Refrigerants
dichloroisocyanuric acid \((OCNC1CONC1CONH)\) A sanitizer used in dishwashing compounds, bleaches, etc.; has 70% available chlorine
See Part 2: Chlorine Availability; Sanitizers
dichloromethane \((CH_2Cl_2)\) Used as solvent, fumigant, and refrigerant
See Part 2: Refrigerants
dichloromonomfluoromethane \((CHCl_2F)\) A nonflammable gas used as a refrigerant
See Part 2: Refrigerants
dichlorotetrafluoroethane \((CCl_F_2CCIF_2)\) A nonflammable gas used as a refrigerant
See Part 2: Refrigerants
dichlorvos A drug that promotes growth and improves litter production, and is used as a wormer; also used as a slow-release insecticide used with foods

diclinous Having stamens and pistils produced on separate flowers on the same plant, e.g., cucumbers
dicoumarol (dicumarol) \((C_{13}H_{23}O_8)\) A substance found in spoiled sweet clover that increases the clotting time of blood; an anticoagulant
dicycisteine See cystine
dieldrin A poisonous, chlorinated hydrocarbon insecticide; its use on food crops is prohibited

\[
\begin{array}{c}
\text{Cl} \\
\text{Cl}
\end{array}
\]

The dielectric constant measures the distance between charges in a molecule and is decreased with increasing temperature. See also nonpolar; polar
dielectric heating Heating by establishing a high-frequency alternating electric field within a material (electrical nonconductor)
die-off See foot rot
diepoise, à la A method of cooking saltwater fish
diet 1) The food (including water) consumed. 2) The total or normal amount of solid and liquid foods taken in by an individual or population group; food intake. 3) A special schedule for consuming solid and liquid foods to meet specific nutritional requirements (often for but not limited to weight loss); may include or exclude certain types of foods. 4) A restricted food intake to reduce fat or counteract a functional disorder. 5) Food regularly consumed or a nutritional regime
See Part 2: Sodium-Restricted Diet
dietary Relating to food consumption or to diet
dietary protein The protein from animal or plant products consumed in the diet
diet, balanced A diet in which food is consumed in the proper amounts and relationships for good health
diet, bland A diet from which irritating foods have been removed
dietetic Pertaining to or related to the dietary characteristics of a food
dietetics The science of nutrition involving feeding humans; Pertaining to or related to the dietary characteristics of a food
diethyl malonate
\[
\begin{array}{c}
\text{COOCH}_2\text{CH}_3 \\
\text{CH}_2 \\
\text{COOCH}_2\text{CH}_3
\end{array}
\]
Used as a fruitlike flavoring agent; sp. gr. 1.052–1.057 Storage: full, tight, glass container in a cool, dark place
diethyl pyrocarbonate (DEPC)
\[
\begin{array}{c}
\text{C}_2\text{H}_5\text{O—C—O—C—O—C}_9\text{H}_5 \\
\text{O} \\
\text{O}
\end{array}
\]
A chemical used to retard mold growth in food; it hydrolyzes in aqueous solutions to ethanol and CO\(_2\)
diethyl sebacate
\[
\begin{array}{c}
\text{CH}_3\text{CH}_2\text{OOC(CH}_2)_4\text{COOCH}_2\text{CH}_3 \\
\end{array}
\]
Used as a flavoring agent in food Storage: light-resistant, glass container in a cool place
dillweed; Anethum graveolens L.)

- Dill (Anethum graveolens L.)
  - A small (3 ft), hardy, annual shrub with threadlike leaves (which are parsley-flavored), yellow blooms, and small oval-shaped tan seeds with a pungent, strong flavor (similar to caraway). The leaves and stems are used as an herb in seasoning; the seeds and leaves are used in pickling cucumbers and in making pastries, soups, and sauces. The seed is ridged (brown with yellow ridges) and flattened, sold whole or ground, and used to flavor cabbage, cauliflower, and turnips; sow 5 lb seed/acre; 70 days to maturity. The leaves are used fresh, dried, or freeze-dried (1–3% moisture, with a fresh-weight replacement of 1:8); (young) leaves are used in salads, soups, and sauces.
  - 1 tbsp fresh dill = $\frac{1}{3}$ tsp dried dill

Terms:
- Dewhiskered—seed with the hairlike stem removed
- Weed—leaves

- Diethylstilbestrol (DES) See stilbestrol
- Diethyl succinate
  \[ \text{CH}_3\text{CH}_2\text{OOC(CH}_2\text{)}_2\text{COOCH}_2\text{CH}_3 \]
  - Used as a flavoring agent in food
  - Storage: tight container
- Dietitian
  - An individual who specializes in nutrition and institutional management
- Dietkaas
  - A low-fat, low-salt type of gouda cheese
- Diet recall
  - Recalling in an interview the food consumed by an individual or a household, generally over a 24-h period
- Dietitian
  - An individual who specializes in nutrition and institutional management

- Diiodotyrosine
  - An iodine-containing amino acid

- Diglyceride
  - Glycerol esterified with two molecules of an acid; has good emulsifying properties; used as an anti-staling agent in yeast-raised baked goods and as an opacifier in cosmetics See also fatty acid

- Dihydric alcohol
  - An alcohol whose molecule contains two hydroxyl groups; collectively, these are called glycols; an example is ethylene glycol (CH₂OHCH₂OH).

- Dihydrogenphosphate group
  \[ \text{—O—P(—O)—(OH)}_2 \]

- Dihydroxystearic acid
  - \([\text{C}_{17}\text{H}_{33}(\text{OH})_2\text{COOH}]\)
  - A hard fatty acid
  - See Part 2: Fatty Acids, Fats and Oils; Fatty Acids and Their Properties

- Diiodotyrosine
  - An iodine-containing amino acid

- Dikon
  - See daikon

- Dikoya
  - A Sri Lankan black tea

- Dilan
  - A chlorinated organic insecticide

- Dilution
  - Expansion; enlargement

- Dilatometry
  - A method of determining the solid-liquid ratio in a fat based on the specific volume of the liquid and solid phases

- Dilauryl thiodipropionate
  \[ \text{(C}_{12}\text{H}_{25}\text{OOCCH}_2\text{CH}_3)\text{S} \]
  - An antioxidant used in fats, oils, and packaging materials
  - Storage: well-closed container
  - See Part 2: Antioxidant Structure

- Dillya dosa
  - An oat dosa

- Dill (dillweed; Anethum graveolens L.) A small (3 ft), hardy, annual shrub with threadlike leaves (which are parsley-flavored), yellow blooms, and small oval-shaped tan seeds with a pungent, strong flavor (similar to caraway). The leaves and stems are used as an herb in seasoning; the seeds and leaves are used in pickling cucumbers and in making pastries, soups, and sauces. The seed is ridged (brown with yellow ridges) and flattened, sold whole or ground, and used to flavor cabbage, cauliflower, and turnips; sow 5 lb seed/acre; 70 days to maturity. The leaves are used fresh, dried, or freeze-dried (1–3% moisture, with a fresh-weight replacement of 1:8); (young) leaves are used in salads, soups, and sauces.
  - 1 tbsp fresh dill = $\frac{1}{3}$ tsp dried dill

Terms:
- Dewhiskered—seed with the hairlike stem removed
- Weed—leaves
250 dill (dillweed; *Anethum graveolens* L.)

Types:
- European or American (*A. graveolens*)
- Indian (*A. sowa*)

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dillweed (dried)</th>
<th>Seed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>7–8</td>
<td>7–8 (9 max.)</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>19–20</td>
<td>14–16</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>4–5</td>
<td>14–15</td>
</tr>
<tr>
<td>Volatile oil (%)</td>
<td>2 (min.)</td>
<td>55–56</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>11–12</td>
<td>6–7 (10 max.)</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td></td>
<td>21–22</td>
</tr>
<tr>
<td>Ash (%)</td>
<td></td>
<td>12–13</td>
</tr>
<tr>
<td>HCl-insoluble ash (%)</td>
<td>3 (max.)</td>
<td></td>
</tr>
</tbody>
</table>

Storage (seed): cool, dark, dry place

See Part 2: Essential Oils; Flavoring Agents, Natural

dill butter Soften ½ stick unsalted sweet butter and add 1 tbsp finely minced fresh dill or ½ tsp dried dill; cream together, adding a few drops of lemon juice.

dilsk (dillsk) See dulse

dill oil A light to medium yellow oil obtained by steam distillation of the leaves, stalks, and seed of the dill plant; carvone content min. 35% by volume; optical rotation +84 to 95°; refractive index 1.480–1.485 at 20°C; sp. gr. 0.884–0.900 g/ml

dill pickle A cucumber that has been pickled with salt and dill and allowed to ferment

<table>
<thead>
<tr>
<th>Dill pickle types</th>
<th>Made from</th>
<th>Curing time</th>
<th>Cure contains</th>
<th>Flavor</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genuine</td>
<td>Fresh cucumbers</td>
<td>4 weeks</td>
<td>Dill flowers and leaves, spices, vinegar, light salt brine</td>
<td>Excellent, dill</td>
<td>Poor, 6 months (max.)</td>
</tr>
<tr>
<td>Kosher</td>
<td>Other dill pickles</td>
<td></td>
<td>Garlic; pepper also added</td>
<td>Garlic, pepper</td>
<td></td>
</tr>
<tr>
<td>Overnight</td>
<td>Fresh cucumbers</td>
<td>2 days</td>
<td>Dill flowers and leaves, spices, vinegar, light salt brine</td>
<td>Fresh cucumber, mild dill</td>
<td></td>
</tr>
<tr>
<td>Pasteurized (Polish style)</td>
<td>Fresh cucumber (whole or sliced)</td>
<td>1 week</td>
<td>Canned in a dill solution</td>
<td>Fresh cucumber, mild dill</td>
<td>Good</td>
</tr>
<tr>
<td>Processed</td>
<td>Desalted pickles that were cured 4–6 months in brine</td>
<td></td>
<td>Brine, acid, dill, spices</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>Sweet</td>
<td>Genuine or processed dill (cut lengthwise or crosswise)</td>
<td></td>
<td></td>
<td>Slightly sweetened</td>
<td></td>
</tr>
</tbody>
</table>

Composition: moisture 93%; protein 0.8%; fat 0.2%; carbohydrate 2.2%; ash 4%; pH 3.2–3.5; 928 mg Na/pickle (65 g)

Dillseed oil A volatile oil obtained by steam distillation of the seed of *Anethum graveolens* or *A. sowa*; sp. gr. 0.891–0.916; used as a flavoring agent in food

Dill vinegar A flavored vinegar made by bruising dillseed and steeping them in vinegar for several weeks: Rinse dill and pat dry; fill jar lightly with dill; heat (but do not boil) good cider or wine vinegar and pour over dill; cover and store at room temperature for 2 or 3 weeks; strain through cheesecloth and bottle.

Used as a flavoring agent in food; sp. gr. 1.125–1.133 Storage: full, tight, glass container in a cool place

dimethyl benzanthracene A carcinogenic agent thought to be the initiator of breast tumors in rats

Dimethyl benzyl carbinol

Used as a floral-like flavoring agent in food
Storage: full, tight, glass container in a cool, dark place
dimethyl benzyl carbaryl acetate

\[
\begin{align*}
\text{CH}_3 & \quad \text{CH}_3 \\
\text{CH} & \quad \text{C—OOCCH}_3 \\
\text{CH} & \quad \text{CH}_3
\end{align*}
\]

Used as a fruity, floral-like flavoring agent in food
Storage: full, tight, glass container in a cool, dark place

**dimethyl octanol**

\[
\begin{align*}
\text{CH}_3 & \quad \text{OH} \\
\end{align*}
\]

Used as a sweet, roselike flavoring agent in food; sp. gr. 0.826–0.842
Storage: full, tight, glass container in a cool, dark place

**dimethyl polysiloxane (dimethyl silicone)** Repeating units [(CH₃)₂SiO] stabilized with [(CH₃)₃SiO—]; used as a defoaming agent in food
Storage: tight container

**dimetridazole** A drug used in poultry to improve feed efficiency and to promote growth

**dimiat** A dry white wine

**dim sum** A filled, bite-sized dumpling

**dinardaraan** A mixture of pig's blood, vinegar, and garlic

**dinengdeg** See deningding

**dingac** A heavy, sweet red wine

**dinkum oil** Eucalyptus oil

**dinner** The main, or principal, meal of the day; may be the noon or, usually, evening meal

**dinner roll** A wheat-flour roll with a crisp crust and soft interior

**dioctyl sodium sulfosuccinate (DDS)**

\[
\begin{align*}
\text{CH}_2\text{CH}_3 & \\
\text{COO—CH}_2 & \quad \text{CH} & \quad \text{CH}_3 \\
\text{CH} & \quad \text{SO}_3\text{Na} \\
\text{CH} & \quad \text{COO—CH}_2 & \quad \text{CH} & \quad \text{CH}_3 \\
\text{CH}_3\text{CH}_3
\end{align*}
\]

Used as an emulsifying agent in food, to solubilize trace minerals in some cocoa products, as a wetting agent, and as a solubilizing agent; also used as a stabilizer in gelatin desserts and fruit-juice drinks
Storage: well-closed container

**diode** An electrical component that has a much higher resistance to current passage in one direction than in the other

**dioecious** Having the stamens and pistils produced in blossoms on separate plants, e.g., asparagus

**diolefin** See alkadiene

**diose** See disaccharide

**dip** A soft, savory, food mixture for use at a party; guests serve themselves, using crackers, chips, celery, or carrots as spoons
diples A fried, doughnutlike pastry dipped in honey
and raisins
diplo- A prefix meaning double
diplococci Pairs of cocci cells
diploid Having two sets of chromosomes
diplomat sauce A fish sauce with lobster butter and
brandy
dipotassium phosphate (K₂HPO₄) Used as a
buffering agent, sequestrant (in food), and food emul-
sifier and is used in some cheeses
diquat (diquat bromide) 1,1-ethylene-2,2'-dipyri-
dylium dibromide; an herbicide that destroys the nor-
mal photosynthetic process and causes desiccation of
the green parts of a plant
direct purchases Purchases that can be identified
and charged to a specific job
directs Stock purchased directly by packers
dis- A prefix meaning apart or away from
disaccharide (dios; discarcharid) A sugar con-
structed from two monosaccharides by the removal of
water, e.g., sucrose; lactose; maltose
disaster payment A payment made to a farmer par-
ticipating in certain government programs when the
farmer is prevented from planting or when the crop
yield is abnormally low
discharge leg The portion of a hydrostatic retort
that follows the pressure section
discoloration The presence or formation of undesir-
able color
discrimination 1) The perception of a difference be-
tween two objects. 2) A differential response (differs
either quantitatively or qualitatively)
disease A malfunctioning of an organism, usually ac-
companied by fever and caused by bacteria or viruses
See Part 2: Diseases, Food-Borne; Fruit and Vegeta-
bles, Diseases
disgorge To remove unwanted portion of a food
disgorging Removing unwanted sediment from a
champagne bottle
dishcloth gourd See loofah gourd
disinfect To free from infection, especially with re-
ference to disease-causing and harmful microorgan-
isms; the term is often used for an action that kills
the growing forms but not the resistant spore forms of
bacteria
disinfectant An agent that kills all vegetative mi-
croorganisms but not necessarily resistant spores; an
agent destroys the infectious agents of disease and
putrefaction, e.g., a bactericide, germicide, or viricide;
a substance used on inanimate objects (e.g., food
processing equipment) to kill or inhibit bacteria See
also antiseptic
See Part 2: Microbiological Media
disinfection The inactivation (as by irradiation) of
food-borne insects or parasites
disodium ethylenediaminetetraacetate
\[
\begin{align*}
\text{NaOOCCH}_2 & \quad \text{CH}_2\text{COONa} \\
N & \quad \text{CH}_2\text{CH}_2-
\end{align*}
\]
A food preservative, stabilizer or sequestrant
Storage: well-closed container
disodium guanylate
\[
\text{Na}_2\text{O}_3\text{POH}_2\text{C}
\]
Used as a flavor enhancer in food
Storage: well-closed container
disodium inosinate
\[
\text{Na}_9\text{O}_3\text{POH}_9\text{C}
\]
Used as a flavor enhancer in food
Storage: well-closed container
disodium phosphate (Na₂HPO₄) A food emulsifier,
used in some cheeses
See Part 2: Phosphate
dispersed phase (internal phase) The finely di-
vided particles of a colloidal system that remain in
continued suspension See also continuous phase
dispersion medium See continuous phase
dissection Precise and systematic separation or cut-
ing apart of a living or recently living organism, as
practiced by biologists and surgeons
dissimilation The intracellular breakdown of food
materials
dissociation (ionization) The separation of an elec-
trolyte into positive and negative ions when in aque-
ous solution, e.g., sodium chloride, sulfuric acid

\[
\text{CuSO}_4 \quad \text{ionization in water} \quad \text{Cu}^{2+} + \text{SO}_4^{2-}
\]
**dissociation constant** \((k_1)\)  A value resulting from the reaction \(HAc \rightleftharpoons H^+ + Ac^-\)

\[
k_1 = \frac{(H^+)(Ac^-)}{(HAc)} \text{ (in moles per liter)}
\]

\(k_1\) values (mol/l):
- Acetic acid \(1.8 \times 10^{-5}\)
- Carbonic acid
  - First hydrogen \(1 \times 10^{-7}\)
  - Second hydrogen \(5 \times 10^{-11}\)
- Chloroacetic acid \(1.5 \times 10^{-3}\)
- Dichloroacetic acid \(5 \times 10^{-2}\)
- Formic acid \(2.1 \times 10^{-4}\)
- Water \(1 \times 10^{-16}\)

**dissolve**  To separate a crystalline solid into its component molecules or ions (dissociation) by immersion in water or other solvent; in cleaning, a reaction that produces water-soluble products from solids

**dissolved solids** (DS)  In true solutions, this term includes any material that is dissolved; however, although suspended solids (which consist of finely divided material or colloidal solids) may also be reported as “dissolved solids” or “total dissolved solids” (TDS), such material should be referred to as suspended solids.

**distal**  Farther away or remote from the point of attachment, as of a bone or muscle

**distillate**  The condensed vapor of distillation

**distillation**  An operation utilized for separating the components of a solution or of a mixture of liquids by heating the liquid to its boiling point and condensing the resulting vapor; thus, e.g., salt can be removed from a saline solution and mixtures composed of liquids of different boiling points can be separated (e.g., fractional distillation of petroleum). See also destructive distillation

**distilled gin**  See gin

**distilled vinegar (spirit vinegar; white vinegar)**  A vinegar made by fermentation of dilute distilled alcohol (min. 4% acetic acid); a vinegar made from diluted purified ethanol or fuel oils with crude spirit; also distilled from grain beer. It is colorless to very pale yellow and is used for pickling.

**distilled water**  Water that has been purified by condensation from the vapor phase, e.g., rain; all gases and minerals have been removed, which gives it a flat taste.

**distiller’s corn grain**  See Part 2: Cereal By-Products, Composition

**distiller’s corn soluble**  See Part 2: Cereal By-Products, Composition

**distiller’s grain**  Grain from which alcohol or alcoholic beverages have been removed after fermentation; 19 lb/bu; 0.6 lb/qt; it is deficient in lysine and tryptophane

**Composition**

<table>
<thead>
<tr>
<th>Distiller’s grains</th>
<th>Dry matter (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>TDN (%)</th>
<th>Fiber (%)</th>
<th>Ash (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dehydrated</td>
<td>94</td>
<td>28</td>
<td>9</td>
<td>11</td>
<td>2.3</td>
<td></td>
</tr>
<tr>
<td>With solubles, dehydrated</td>
<td>92</td>
<td>27</td>
<td>9.5</td>
<td>9</td>
<td>4.5</td>
<td></td>
</tr>
<tr>
<td>Solubles, dehydrated</td>
<td>93</td>
<td>27.5</td>
<td>9</td>
<td>4.5</td>
<td>7.2</td>
<td></td>
</tr>
<tr>
<td>Distiller’s grain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dry</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wet</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Second hydrogen \(5 \times 10^{-11}\)
Chloroacetic acid \(1.5 \times 10^{-3}\)
Dichloroacetic acid \(5 \times 10^{-2}\)
Formic acid \(2.1 \times 10^{-4}\)
Water \(1 \times 10^{-16}\)

distiller’s soluble  The dried liquor that is left from whiskey after distilling the spirit
  - 100 lb corn (14% moisture)
  - = 22 lb distiller’s grain, dry
  - = 7 lb distiller’s solubles, dry

distribution system  A one-way system to carry goods from the point of manufacture to the point of consumption

**ditali lisci**  See macaroni

**ditalini**  Small pieces of macaroni

**ditali rigati**  See macaroni

**dittany**  \((Cunila origanoides)\)  An herb of the mint family

**diurent**  A substance that will increase the discharge of urine e.g., beer, coffee, tea, or water

**diuretic**  A substance that increases or stimulates the flow or volume of urine, e.g., beer, coffee, tea, or water

**diva goa**  A coconut liqueur

**diversion payment**  A payment for diverting land from certain crops into conservation uses

**diverted acres**  Those areas that were taken out of production and converted to some conservation use

**diverticulum**  A saclike appendage found on a hollow organ

**divinity**  A white, crumbly, fudgelike confectionery made by cooking sugar and pouring it over beaten egg white

**divya**  A wine made from the bark of the kadamba tree \((Ancephalus cadamba)\)

**Dixired season**  The season for peach cultivars that ripen very early (5 weeks before the Elberta variety)

**djamur padi**  Straw mushroom
DNA  Deoxyribose nucleic acid  See deoxyribonucleic acid

DNA probe  A term used for small pieces of DNA that recognize specific genes, are usually fairly chemically stable, and are used to identify the genetic information of any organism

DNase  See Part 2: Microorganism, Media

do  A sorghum beer

Do  See mean lethal dose

do'a  A condiment containing salt, pepper mixed with marjoram, mint, or cumin, and either coriander, cinnamon, or sesame

dobosh torte  A seven-layer Viennese cake; a fine-textured butter cake with chocolate icing

dobrogea  A provolone-type cheese made from sheep's milk

dock  1) The part of the tail left on an animal after clipping or cutting; sometimes the region near the tail or the base of the tail. 2) A plant family (containing sorrel, rhubarb, and bloodwort), some of which are used as vegetables and some as flavoring or herbs, e.g., Rumex alpinus, R. crispus, R. pattentia, and R. sanguineus; plants of this family contain an alkaloid (rumicin) and chrysophanic acid. 3) Sorrel, a perennial vegetable whose leaves are used as salad or cooked greens

Varieties: Belleville sorrel; French sorrel; spinage dock

dockage  1) The weight deducted from stags and pregnant sows. 2) Foreign matter in wheat

docking  Removing the tail of an animal; methods include an elastrator, knife, or hot iron; best age for sheep is 1–2 weeks old; cut is made 1 in. from body.

docosanoic acid (behenic acid)

\[
\text{CH}_3\left(\text{CH}_2\right)_{20}\text{COOH}
\]

A saturated fatty acid found in peanut oil

See Part 2: Saturated Fatty Acids

docosapentaenoic acid  See Part 2: Unsaturated Fatty Acids

docosanoic acid (erucic acid)  A 22-carbon unsaturated fatty acid found in rapeseed oil

See Part 2: Unsaturated Fatty Acids

docosohexaenoic acid  A fatty acid, found in fish, that has been reported to reduce platelet aggregation and to lower serum triglyceride levels

Doddies  An early Scotch breed of black polled cattle

dodecalactone

\[
\text{CH}_3\left(\text{CH}_2\right)_5\text{CH}—\left(\text{CH}_2\right)_2\text{CH}_2
\]

0

\[\text{O}—\text{C}=\text{O}\]

Used as a butter- and coconut-like fruity flavoring agent

Storage: tight container

dodecanoic acid (lauric acid; lauric oil)

\[
\text{CH}_3\left(\text{CH}_2\right)_{12}\text{COOH}
\]

A saturated fatty acid found in milk fat and in coconut oil, laurel oil, and other vegetable fats; used as a defoaming agent or as a raw material for making other food additives

Storage: well-closed container

See Part 2: Fats and Oils, Fatty Acid Composition; Fatty Acids and Their Properties; Fatty Acids; Fatty Acids, Fats and Oils; Milk, Fatty Acids, Seasonal; Oils, Seed and Fruit; Saturated Fatty Acids

dodecenoic acid  A 12-carbon unsaturated fatty acid

See Part 2: Milk, Fatty Acids, Seasonal; Unsaturated Fatty Acids

dol  A jellylike sweetmeat made from rice flour, coconut milk, and manisan

doe  A female deer or goat

doenjang  See denjang

dog (grayfish; Squalus acanthias)  A 20-lb shark used for food, oil, and fertilizer; any of various small sharks

See Part 2: Salmon and Trout

dogey  A small, common-bred cattle

dogfish (rock salmon; Squalus spp.; Mustelus spp.)  Refers both to several species of small sharks (Squalus spp. and Mustelus spp.) whose flesh is called folkestone beef or grayfish and to other fish such as the dog salmon (Oncorhynchus keta), burbot (Lota lota maculosa), and mudfish; some of the more popular species are as follows:

American smooth dogfish (M. canis)
Atlantic and Pacific (Sq. acanthias, Sq. suckleyi)
Black (Centroscyllium fabricii)
Black-mouthed (Galeichthys marinus)
Chain (Scyliorhinus retifer)
Cuban (Sq. cubensis)
European smooth dogfish (M. mustelus)
Freshwater—bowfin
Greater spotted (Sc. stellaris)
Japanese (Sq. mitsukurii)
Large spotted (Sc. stellaris)
Lesser spotted (Sc. canicula)
Northern (Sq. blainvillei)
Picked, spiky, spiny, or spring dogfish (SQ. acanthias)
Rock salmon
Sharklike fish (Acanthias vulgaris)
Smooth dogfish (Cynias canis)
Smooth hound (Emissola antarctica, Mustelus spp.)
South African (Sc. capensis)
Spur dog

See demersal fish; dog; grayfish

dog goat  A black goat from southern China that is raised for meat and milk

dog rose (Rosa canina; R. rugosa)  A plant whose urn-shaped fruit (rose hip) is used to make rose-hip syrup, jellies, preserves, and sauces and is high in vitamin C and low in pectin

dog's mercury  See mercury

dohlou  A sorghum beer
dok  Pounded rice cake
doka  A wine made from raffia palm sap
dokon  An acidic, whole-meal, maize dumpling
dok-sa  A snake wine
Dolceacqua  An area of northwestern Italy that produces an elegant, dry red wine
dolcelatte  A blue cheese made from cow's milk
Dolcetto  1) A grape variety. 2) An Italian dry red wine
dolce verde  A blue cheese made from cow's milk
dolce-verdi cheese  A hard, rich, Italian cheese
dolci  A sweet dish
dolé  A red wine
dollarfish (Poronotus triacanthus)  A small (8-10 in.), oval, firm-fleshed, saltwater fish, of which butterfish is a variety
dolly  A small, wheeled truck used in moving heavy cases See runt
dolly varden (Salvelinus malma)  A food fish
dolma  Something that is stuffed; stuffed vegetables
dolo  A sorghum beer
dolomite  A type of limestone containing magnesium carbonate in which 40% or more of the neutralizing power is magnesium carbonate See also dolomitic limestone; limestone
See Part 2: Fertilizer Materials; Liming Materials
dolomitic hydrate  See Part 2: Liming Materials
dolomitic limestone (ground)  A liming material composed of 52% CaCO₃ and 42% MgCO₃ (must be 10-39.9% neutralizing value for dolomitic); each pound has the neutralizing equivalent of 0.95-1.08 lb CaCO₃; used on soil where magnesium is required as well as lime See also limestone and agricultural limestone
dolphin  The name given both to a marine mammal and to a fish (Coryphaena hippurus) that is used both as a game and food fish
dolphinfish See mahi-mahi
doluca  A white or red wine
DOM (deo optimo maximo)  Benedictine produced by monks of Fécamp, Normandy
domashny  A curd cottage cheese made from skimmed cow's milk with cream added
domatorizo  Tomato pilaf
domestic  1) Describes an animal that is tame or not wild. 2) Describes something sold in its country of origin
domestic sausage  Sausages that originated in or are now made in large quantities in the United States
domiaty  A soft, white, salty (brined) Egyptian cheese made from cow's or buffalo's milk (skimmed or whole) and it may be aged for darker color and stronger flavor. Composition: moisture 55%; protein 20%; fat 25%; salt 5%
domination  In genetics, the ability of one gene to express itself over another gene; the degree of expression varies.
Dominique  An American class of chicken with a rose comb that lays a brown-shelled egg: color, bluish slate with light and dark bars; undercolor is slate.
donburi  Food cooked in rice
donchini  An acidic, carbonated, Oriental condiment made from radish and juice
donjon aux amandes  A liqueur flavored with almond; high alcohol content
Donnax  An Italian red wine produced from Nebbiolo grapes
donum  A measure of area
1 donum = 2500 square meters (m²)
door  An Indian black tea
doodle bug See ant lion
doogh (dugh)  Sour diluted milk
doce  A substance used in a joint or seam to improve the tightness
Doppelbock  An extra-strong alcoholic beer
Doppelender (double muscle)  A mutation in beef cattle producing abnormally heavy muscle development; breeding of these animals is often difficult and therefore this is usually considered undesirable.
Doppelkorn  A schnapps-type spirit made from maize
Dorking  An English class of chickens with white skin and five toes that lays a white-shelled egg
Varieties: white; silver-grey; colored
Dorman  A variety of soybean
dormancy  The period during which plants cease visible growth due to unfavorable environmental conditions
dormant  The stage of maturity where plants have ceased to grow and have cured on the stem; inactive
dornecy  A creamy, semisoft, surface-bacteria-ripened, mild-flavored cheese made from goat's or goat's and cow's milk
doro  A seven-day beer
dorogobuchsky  A soft to semisoft, strong-flavored cheese, made from cow's milk, that is shaped into small cubes and ripened by surface bacteria
doro remuchero  A wine
dorsal  Located on the back, as a dorsal fin
Dorset  A medium-wool, mutton-type breed of sheep originating in southern England; a white-faced breed of sheep with both sexes having horns; this breed can lamb at almost any season of the year.
See Part 2: Sheep Breeds
dorset blue  A low-fat blue cheese made from cow's milk
dorset cheese  A blue cheese
dortmunder  A lighter-colored lager beverage
dosa  A light, shallow-fried, thin, cereal (usually rice and legume) pancake
dosage  The mixture of sugar and wine that is added to champagne during the final filling and corking
dose (D) The amount of ionizing radiation absorbed by a material
dosed Sweetening of wine when it is disgorged
dose-equivalent index (H) The index of biological effectiveness of different kinds of ionizing radiation relative to 200-keV X-rays; if the dose is in grays, the dose-equivalent index is in units of dose-equivalent. This replaces the previously used measure, the relative biological effectiveness (RBE)
dosimeter A device for measuring the radiation dose received during irradiation
dosimetry The process of measuring a dose of radiation
dot To place small quantities of butter or seasoning over the surface of a food to be cooked
dotriacontanoic A saturated fatty acid
See Part 2: Saturated Fatty Acids
dotter cheese A skimmed-milk cheese that contains egg yolks
double bond A type of linkage that occurs in unsaturated compounds in which not all the available valences of an atom are satisfied; such linkages occur most frequently between carbon atoms. Unsaturated compounds tend to be more reactive than saturated compounds, as one valence is free to attach itself to another atom.
See Part 2: Oil, Triglyceride Mole Percent Composition; Rapeseed Oil, Triglyceride Mole Percent Composition
double bone sirloin (flat bone) A sirloin steak found in the loin end wholesale cut; it is located between the round bone sirloin and the pin bone sirloin; in retail cuts, one of the bones is usually removed.
double crème A soft-ripened, delicate-flavored cheese with a white or golden powdery crust and min. 60% fat content; may run at room temperature
double-crop To plant a second crop after the major crop has been harvested from the same land
double-crust pie A fruit pie with top and bottom pastry crusts
double gloucester A hard to semihard, rich, smooth, orange to gold (colored with annato), cheddar-type English cheese, with pungent to mellow flavor, that is larger and sharper than single gloucester; used for dessert, cooking, and salads
double muscle See doppelender
double-muscling The presence of abnormally large muscules (muscular hypertrophy) See doppelender
double roti A wheat bread
double-sampling A sampling procedure by which a decision to accept or reject a lot may be reached after one sample and will always be reached after two samples
double seam (chime) The folds of metal that are used to attach the end of a can to the body; an interlocking can closure seam formed by compressing the curl of the end and the flange of the body
double seamer See closing machine

double Standard Polled Hereford Hornless Hereford cattle that originated from registered Hereford stock
Double Standard Polled Shorthorn Polled Shorthorn cattle that originated from registered Shorthorn stock
double superphosphate \(\text{Ca}(\text{H}_2\text{PO}_4)_2\) A neutral fertilizer material; 0-46-0; it is superphosphate from which the gypsum has been removed.
doufu-ru Sufu soybean curd fermented in wine
dough A moist or soft, pliable mass (a mixture of flour or meal, liquid, and other ingredients, often including yeast) that can be handled, rolled, or kneaded prior to baking (bread or pastries) See batter
dough cake A tea bread with currants, mixed citrus peel, and sultanas
dough conditioner A substance that is added to dough to accelerate the ageing process or to improve the baking qualities
doughnut A deep-fried (oil temperature 350°F) circular cake (usually with a hole in the center) made of a wheat-flour (white) dough (with water, sugar, shortening, and some form of leavening) and often coated with sugar, jam, or syrup
Terms: Jelly doughnut—contains jam in the center
Raised doughnut—contains yeast

<table>
<thead>
<tr>
<th>Types</th>
<th>Frying temp. (°F)</th>
<th>Sugar (%)</th>
<th>Shortening (%)</th>
<th>Frying fat (%)</th>
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</thead>
<tbody>
<tr>
<td>Cake-type (chemical leavening)</td>
<td>375–390</td>
<td>15</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td>Yeast-raised</td>
<td>375–390</td>
<td>3</td>
<td>5</td>
<td>15–25</td>
</tr>
</tbody>
</table>

4 tsp sugar per 3-in. plain doughnut; one plain cake-type doughnut (3 ⅛-in. diam., 1 ⅛ oz) contains 165 calories; one yeast-leavened, raised doughnut (3 ⅛-in. diam., 1 ⅛ oz) contains 175 calories; one plain Danish pastry (4 ⅛-in. diam.) contains 275 calories; 160 mg Na/32 g (cake-type), 99 mg Na/42 g (yeast-leavened) See Part 2: Calories, Daily Recommendations; Frozen Food Storage; Frying Time; Grain Products, Composition
dough stage The stage of maturity at which seeds are immature and soft
doughy Describes a soft, heavy, pasty texture (similar to an unbaked mixture of flour and water)
doux Sweet
doux de montagne A creamy, semisoft, ivory-colored cheese with a brown wax covering, small eyes, and a sweet, tangy flavor
dove (family Columbidae) A small, edible, pigeon-like bird
Dover slime sole (Microstomus pacificus) The same as Dover sole in the Pacific northeast
Dover sole A finish with a very light, delicate-flavored white meat See sole
dowitcher (Limnodromus griseus) A food bird of the seashore

Down breeds Breeds of sheep such as Hampshire, Oxford, Shropshire, and Southdown

down palm See palm
downy brome grass (Bromus tectorum L.) An annual weed
downy mildew 1) A fungus (Bremia lactucae) that causes irregular, angled spots on the underside of lettuce leaves; a white, fluffy, spore mass later covers the area. 2) A fungal disease of American bunch grapes; the fungus thrives in cool, moist weather. Control: several applications of a fungicide
See Part 2: Sorghum Diseases

DP See degree of polymerization

DPN See diphosphopyridine nucleotide
drabant A square-shaped, Swiss cheese made from cow’s milk
draceno A wine from southern Sicily
drachm (British) See dram (troy) for the measure of weight; also a measure of volume:
1 drachm = 60 minims = 3.55 milliliters (ml)
dragée A sugar-coated candy or sweetmeat
dragées de Verdun Almonds coated with sugar
dragonfish (weever; Trachinus draco) An edible saltwater fish
dragon’s eye See longan
drain To remove liquid or fat, e.g., from food
drained weight A standard measure of the amount of a canned product in a container, obtained in the following manner:
Products other than greens: Empty sample can onto dry sieve of the proper diameter (8 in. if can is smaller than No. 3 and 12 in. if larger than No. 3). The sieve should be U.S. standard No. 6, containing 8 openings per inch [0.0937-in. ± 3% (2.3-mm) square openings]. Distribute the product over the sieve. Incline the sieve 17–20°. Drain for 2 min and weigh. For greens: Use the same procedure except that product should not be spread over the sieve, the container is merely lifted away from the product.
dram (dr) 1) Apothecary’s (apoth.) or troy weight—a measure of weight used for gold, silver, and jewels
1 dr = 3.888 × 10³ milligrams (mg) = 60 grains (gr) = 3.8879351 grams (g) = 3 scruples (apoth.) = 2.5 pennyweights (dwt) = 2.194286 drams (dr; avdp.) = 0.1371429 ounce (oz; avdp.) = 0.1250 ounce (oz; troy or apoth.) = 3.888 × 10⁻² kilogram (kg) = 8.571429 × 10⁻³ pound (lb; troy or apoth.) = 4.284 × 10⁻⁶ ton (short) = 3.826 × 10⁻⁶ ton (long)
2) Avoirdupois (avdp.)—a measure of weight
1 dr = 1.77184 × 10³ milligrams (mg) = 27.34375 grains (gr)

Drambuie A sweet, rich, light brown, malt liquor made from Scotch whiskey
draw 1) To remove the viscera of a fowl in preparation for cooking. 2) To melt butter. 3) To form a can by forcing a flat metal blank into a die, producing a container with a formed body and bottom
drawback A refund of customs duties paid on material imported and later exported
drawn 1) Of animal and fish carcasses, eviscerated. 2) Of butter or other fat, melted
See Part 2: Fish, Drawn; Fish Yields
drawn butter Clarified or melted butter, often with added flavoring; served with lobster or other seafood
drawn poultry Dressed poultry from which the entrails, head, and feet have been removed; 30% less than live weight; 25% less than dressed weight
dredge 1) To coat meat with flour or a mixture of butter, and salt prior to baking, roasting, or frying. 2) To sprinkle food with a powder; the coating thickness should be between those meant by “coat thickly” and “dust.” 3) A container with a fitting on top whose movement to various positions will allow sifting or pouring of the contents or closure of the container.
dregs See grounds; sediment
drepano A wine from southern Sicily
dress To garnish or serve food in a pleasing manner
dressed 1) Prepared for cooking (of poultry, the bird has been killed and only the feathers removed). 2) Describes food to which dressing has been added
See Part 2: Fish, Dressed; Fish Forms; Fish Yields
dressed weight See dead weight
dressing 1) A stuffing for roast fowl, pork, etc., made with bread, oysters, chestnuts, etc., and seasoned

Dressing 257

<table>
<thead>
<tr>
<th>Conversion</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 dr = 62.451 minims (Brit.)</td>
<td></td>
</tr>
<tr>
<td>= 60 minims (U.S.)</td>
<td></td>
</tr>
<tr>
<td>= 3.6967 cubic centimeters (cm³)</td>
<td></td>
</tr>
<tr>
<td>= 3.6966 milliliters (ml)</td>
<td></td>
</tr>
<tr>
<td>= 0.22559 cubic inch (in³)</td>
<td></td>
</tr>
<tr>
<td>= 0.13011 ounce (oz; Brit. fluid)</td>
<td></td>
</tr>
<tr>
<td>= 0.125 ounce (oz; fluid)</td>
<td></td>
</tr>
<tr>
<td>= 0.0078125 pint (pt; U.S. fluid)</td>
<td></td>
</tr>
<tr>
<td>= 3.6966 × 10⁻³ liter (l)</td>
<td></td>
</tr>
<tr>
<td>= 9.7656 × 10⁻⁴ gallon (gal; U.S.)</td>
<td></td>
</tr>
<tr>
<td>= 8.13165 × 10⁻⁴ gallon (gal; Brit.)</td>
<td></td>
</tr>
<tr>
<td>= 1.3054 × 10⁻⁴ cubic foot (ft³)</td>
<td></td>
</tr>
<tr>
<td>= 3.1 × 10⁻⁵ barrel (bbl; U.S.)</td>
<td></td>
</tr>
</tbody>
</table>

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258 dressing

with herbs. 2) A sauce for salads made with vegetable oils, vinegar, and various herbs and spices. 3) Removing the feathers of poultry or the skin and intestinal tract of animals or fish.

See Part 2: Bacon Dressing; Calories, Daily Recommendations; Condensed-Milk Dressing; Cooked Dressing; Fats and Oils, Composition; French Dressing; French Dressing Variations; Fruit Dressing; Fruit Salad Dressing; Mayonnaise; Mayonnaise and Salad Dressing; Salad Dressing and Mayonnaise Variations; Sour-Cream Dressing; Stabilizers, Thickeners.

dressing percentage The carcass weight divided by the live weight and multiplied by 100 to give the percentage of live weight that is represented by chilled carcass weight:

\[
dressing\ percentage = \frac{\text{chilled carcass weight}}{\text{live weight}} \times 100
\]

\[
\text{carcass weight} = \text{live weight} \times \text{dressing percentage}
\]

\[
\text{live weight} = \frac{\text{carcass weight}}{\text{dressing percentage}}
\]

\[
\text{carcass value per hundredweight (cwt)} = \frac{\text{price per hundredweight (live)}}{\text{dressing percentage}}
\]

\[
\text{live value (cwt)} = \text{carcass value (cwt)} \times \text{dressing percentage}
\]

Cattle
- Prime 60–67%
- Choice 58–62%
- Good 52–59%
- Commercial 45–56%
- Utility 47–53%
- Cutter and canner 38–47%

Hogs (head and leaf fat on) 74–84%

Sheep
- Ewes 40–60%
- Fat lambs 48–52%

See Part 2: Poultry, Dressing Percentage.

dressing, Russian
- 10 oz undiluted tomato soup
- \(\frac{1}{2}\) cup oil
- \(\frac{1}{2}\) cup vinegar
- \(\frac{1}{2}\) cup sugar
- 1 finely chopped onion
- 1 tbsp Worcestershire sauce
- 1 tsp paprika
- 1 tsp dry mustard
- \(\frac{1}{2}\) tsp salt

dreux à la feuille A ricroi-type cheese wrapped in chestnut leaves.

dried A food product from which most of the water has been removed. See dried entries that follow. See also sun-dried food; dehydrated food.

See Part 2: Milk, Amino Acids; Milk and Milk Products, Vitamin Content; Milk Composition; Milk, Dry Products, Minerals, Food; Nicotinic Acid, Food; Storage, Dry; Storage Times; Vitamin A, Milk and Milk Products.

dried-algae meal Used as a color additive in food.

dried beef (beef hams) Beef that has been dry-cured sweet-pickle-cured with salt, sugar, and sodium nitrate and/or sodium nitrite and then smoked and allowed to dry; meat generally used is inside, outside, and knuckles of round; the cure may be as follows:

- Water 79.8% by weight
- Salt 14%
- Sugar 6%
- Sodium nitrate 0.2%

Pump to 5% of weight.

Composition: 1220 mg Na/oz

See also chipped beef; corned beef.

See Part 2: Meat Composition; Meat, Servings Per Pound.

dried blood Dehydrated blood; blood meal.

dried fish Salted, low-fat fish from which the moisture has been removed as a method of preservation, to prevent growth of bacteria (less than 25% moisture) and mold (less than 15% moisture).

dried fruit Fruit preserved by partial removal of water; most contain approximately 24% water.

Methods:
- Dehydration by artificial heat, controlled conditions
- Evaporation by artificial heat, less controlled conditions

Sun drying

To cook: cover washed fruit with hot water and place over low flame (to retain heat without boiling) for 2 hours.

Fruits that are often dried include apples, apricots, currants, dates, figs, peaches, and prunes.

Sizes: small; medium; large; extra large

1 cup = 3 oz

Storage: tightly closed container; refrigerate (35°F); 50–60% relative humidity; storage life 9–12 months; if weather is warm and humid, at room temperature (not above 70°F) for up to 6 months.

See Part 2: Calcium, Daily Recommendations; Calories, Daily Recommendations; Fruit, Servings Per Pound; Iron, Daily Recommendations; Niacin, Daily Recommendations; Storage; Storage, Dry; Storage Times.

dried meat Cured, semidry, uncooked meat (may be beef, lamb, mutton, goat, or other meat); it is often smoked and dried and has a long maturation period.

dried milk (powdered milk) Pasteurized whole milk from which the water has been removed or evaporated to an average moisture content of 3% (5% max.); it has a limited shelf life and is used by individuals without access to fresh milk and also in manufacturing.

Drying processes: roller; spray

1 cup = 1 qt, reconstituted

Storage: tightly sealed in a cool, dry place.

See binder.

See Part 2: Concentrated and Dried Milk Products.

dried skim milk (nonfat dry milk solids; NFDMS) Made by evaporating water from skimmed cow’s milk; contains not more than 1\(\frac{1}{2}\)% milk fat and not more...
drip room See green room

dry champagne See dry wine

dry cheese A name used for a number of long-cured, dried, hard German cheeses

dry cure A curing procedure for which the curing ingredients are dry powders that are rubbed on the meat; many variations in curing ingredients are used (most widely used formula is 8 lb salt, 8 lb sugar, 3 oz saltpeter)

Ham—1 oz cure/lb meat; 3 rubbings; 2 days/lb in cure
Bacon—1 oz cure/lb meat; 2 rubbings; 7 days per inch in cure

This produces a saltier and firmer ham that does not require refrigeration. The weight of the finished product should be at least 18% less than the fresh, uncured weight.

dry end See granulation
dry-heat cooking  A method of cooking tender meat by surrounding it with dry air; includes broiling, panbroiling, and roasting

dry ice  Compressed, solid carbon dioxide (CO\textsubscript{2}); \(-110^\circ\text{F} (-79^\circ\text{C});\) releases carbon dioxide gas upon melting
\[
1 \text{ in.}^3 = 0.045 \text{ lb}
\]
drying  1) Evaporating water or an organic solvent; removing water is used as a method of food preservation; some foods preserved by drying include the following: cereal grains; chocolate; coffee; crackers; milk; fats and oils (e.g., salad oils, shortening); flour; freeze-dried food; hard candy; meals; nuts; peanut butter; potatoes; potato chips; prepared cereals (e.g., corn flakes); pretzels; proteins (e.g., gelatin, purified soy protein); seeds (e.g., wheat, rice, beans); some cookies; spices; sugar. See also dehydration. See Part 2: Moisture, Drying
2) A process for ageing wine by which the sugar is reduced and tannin is increasing
drying oil  A vegetable oil that hardens to a film due to polymerization of its molecules when exposed to air; such oils were once widely used in the paint industry, but have been largely replaced by synthetic resins. Examples are linseed oil and tung oil.
drylot  A relatively small area where animals are confined
drymary  A plant having a toxic principle See Part 2: Poisonous Plants
dry matter  Moisture-free content
dry milk  Milk from which most of the water has been removed; the instant type dissolves easily.
\[
1 \text{ lb dry whole milk} = 7.6 \text{ lb milk}
\]

<table>
<thead>
<tr>
<th>Composition</th>
<th>Calcium-reduced</th>
<th>Instant</th>
<th>Regular</th>
<th>Whole</th>
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</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>4.9</td>
<td>4.0</td>
<td>3.2</td>
<td>2.5</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>35.5</td>
<td>35.1</td>
<td>36.2</td>
<td>26.3</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>0.2</td>
<td>0.7</td>
<td>0.8</td>
<td>26.7</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>51.8</td>
<td>52.2</td>
<td>52.0</td>
<td>38.4</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>7.6</td>
<td>8.0</td>
<td>7.9</td>
<td>6.1</td>
</tr>
</tbody>
</table>

See also whole dry milk
See Part 2: Dairy Terms
dry-milled  Describes grain that has been processed by tempering with a small amount (no significant free water) of water or steam to aid in separation during milling
dry or semidry sausage (summer sausage)  A sausage made from cured meat that is comminuted, seasoned, and stuffed, and may or may not be smoked and air-dried
Popular types: cappicola; chorizos; farmer cervelat; frizzes; German salami; Italian salami; Lebanon bologna; pepperoni; thuringer cervelat
See dry sausage
dry-pack  Describes sugar-free processed fruit
dry pea  See pea, dried
dry period  The time when a female is not secreting milk See dry
dry-processed lard  Lard that has been rendered in a steam-jacketed tank under vacuum
dry rendering  A process by which tissue is cooked in an open steam-jacketed vessel with water being evaporated and the fat being drained off so that the product is cooked in its own moisture by external application of heat, with stirring
dry rolling  A process by which material is compressed between rollers without added steam or moisture
dry room  A room that is used to dry sausage where temperature and humidity are controlled
dry rot (Diaporthe batatatis)  A brown fungal decay that starts at the end of a sweet potato during storage; the tissue under the skin is black
dry salt cure  A curing process by which only salt is rubbed on meat and fat products; 7-10 lb salt/100 lb meat
dry sausage  Any of various meat products that are dried (for more than 1 month) during manufacture; these sausages are made from beef and pork and are prepared by a complicated and carefully controlled drying process; they will keep for a long time and are ready-to-eat, e.g., pepperoni.
Moisture-protein ratio: dry sausage 1.9; genoa salami 2.3
See dry or semidry sausage
dry skim milk  See dried skim milk
dry solubles  Spice extractives that are on a dry carrier
dry sterilization  A term used in the spice industry to indicate gas sterilization
dry sugar cure  See dry cure
dry tip  See endoxerosis
dry-waxed  Paper or paperboard that has had wax removed from its surface, leaving only wax that was impregnated in the sheet
dry whole milk  See dry milk; whole dry milk
dry wine  A wine in which all the sugar that can be perceived by taste has been fermented
Contained in 100 cc (20°C):
- Less than 1 g sugar
- Not less than 0.16 g ash in red dry wine
- Not less than 0.13 g ash in white dry wine
- Not less than 1.6 g sugar-free grape solids in red dry wine
- Not less than 1.4 g sugar-free grape solids in white dry wine
dry yeast  A dry (5% moisture), granular mixture of yeast and a filler mixture (e.g., starch or cornmeal); its reaction rate is slower (\(\frac{1}{2}\)) than that of fresh yeast.
Composition: protein 42%; carbohydrate 42%
\[
1 \text{ tbsp} \text{ active dry yeast} = 1 \text{ package} \text{ active dry yeast} = 1 \text{ cake} \text{ compressed yeast}
\]
Storage: will keep its strength for several months when kept cool; activation temperature 115°F
dry-zero  See Part 2: Insulation
dsaudan  Fermented egg
DSS  Dioctyl sodium sulfosuccinate

DTM agar  See Part 2: Microorganism, Media

dual-purpose cattle  Cattle developed for the production of both milk and meat (triple-purpose cattle were developed for milk, meat, and draft)
See Part 2: Beef and Dual-Purpose Cattle

dual standard  A method of difference testing: two known samples are presented, two unknown samples are presented, and the observer is asked to identify the unknowns.
See Part 2: Taste Panel, Difference Tests

du barry  A cauliflower garnish

duberki  Dried, hard spheres of fermented milk or mild curds that may be stored under olive oil

Dublin bay prawn (Norway lobster)  A small lobster

Dubonnet  The proprietary name of a rich, French liqueur made from wine; a quinine and bitter-bark herb-flavored red, white, or clear aperitif wine

Dubos oleic agar  See Part 2: Microorganism, Media

Duchess  A variety of apple that is only fair for eating (due to acid flavor) but is good for pies, sauce, and jelly

duchesse potatoes  Potatoes with eggs and butter placed in a pastry tube

duck (Anas boschas; A. platyrhynchos)  An amphibious game bird used for food; domestic varieties are raised for food; scalding 3 min in 140°F water when preparing for cooking.

Classes:
- Broiler duckling (fryer duckling)—a young duck (usually under 8 weeks of age), of either sex, that is tender-meated and has a soft bill and soft windpipe
- Roaster duckling—a young duck (usually under 16 weeks of age), of either sex, that is tender-meated and has a bill that is not completely hardened and a windpipe that is easily dented
- Mature duck—over 16 weeks of age

USDA grades: U.S. grade A poultry; U.S. grade B poultry; U.S. grade C poultry
Duck is all dark meat and the small amount (2%) of fat is slightly strong in flavor.

Types:
- Aylesbury—large; similar to Rouennais
- Long Island—imported from China
- Mandarin—Chinese
- Nantais—3–4 lb; allowed to bleed when slaughtered
- Rouennais—5–6 lb; not bled when slaughtered
- White Pekin—an old Chinese bread
- Wild duck—mallard types; tougher than domesticated fowl

One ready-to-cook duck weighs approximately 4–5.5 lb.
1 5-lb duck = 4–5 servings
1 med.-sized dressed wild duck = 1–2.5 lb
1 lb duck meat, ready to cook = 2 servings

Duck is all dark meat and the small amount (2%) of fat is slightly strong in flavor.

Changing

duck egg  Incubation (turn 3 times per day) times are 35 days for Muscovy eggs and 28 days for other domestic duck eggs

Duck breed  | Color  | Market weight (lb) | Country where raised | Size  | Color  | No. laid per year |
---|---|---|---|---|---|---|
Aylesbury  | White  | 8  | England  | Large  | Tinted white  | 150 |
Muscovy  | White  | 7–10  | United States  | Large  | Tinted white  | 160 |
White Pekin  | White  | 7  | United States  | Large  | Tinted white  | 160 |

Duck breed  | Color  | Originated  | Adult weight (lb)  | Eggs laid per year |
---|---|---|---|---|
Indian Runner  | White  | East Indies  | 4 ½  | 300 (avg.) |
Khaki Campbell  | Khaki with bronze backs, tails, head, and neck  | England  | 4 ½  | 300 (avg.) |
Duck eggs, salted  Duck eggs that have been soaked in brine for 35 days; the egg white becomes salty and the yolk becomes firm and orange.

duckling  A young duck, usually 7-8 weeks of age
  1 duckling, dressed = 3.5-4.5 lb
  See duck

duck, Long Island  A young duck, with tender flesh, that has been force-fed on grain; grown at duck farms on Long Island, New York

duck, pressed (duck, crisp)  Boned, pressed pieces of duck that have been fried until crisp

duck rice  See wild rice

duck, western  A young duck

duck, wild  Various wild ducks are used for food:
  Black mallard (black)—a game duck used as food
  Canvasback—an excellent food duck
  Mallard—the most important wild food duck
  Pintail (sea pheasant)—a game and food duck
  Teal (puddle)—a small duck
  Chinese
  Cinnamon
  Green wing
  Widgeon—med. weight (2-3 lb); good flavor
  Wood duck—excellent for food
  Asian Mandarin
  North American Carolina

ducks  A creamy, semisoft, surface-bacteria-ripened, mild-flavored cheese made from cow’s milk

duct  A tube through which liquid or air flows

dud detector  A machine used to detect and reject containers with low vacuum

due date  The date when purchased material will be available for use

due-date rule  A dispatching rule that directs sequencing by the earliest due date

duel cheese  A small rennet cheese made from cow’s milk

dug  Teat; nipple

dugh  See doogh

duhat  See Part 2: Fruit Classification

dulce  Carrageen moss See dulse

dulcin (H$_2$NOCNHC$_6$H$_4$OC$_2$H$_3$)  A synthetic sweetener that has been restricted by the FDA
  See Part 2: Sweetness of Sweeteners

dull  Describes cloudy tea

dulse (dillisk; dillisk; Dilsea carnosa; Rhodymenia palmata)  A red-algae seaweed found along the New England coast and used for food (raw or cooked) and for making an alcoholic drink

dumpling  A small, moist piece of steamed or baked dough, often stuffed with fruit or sweets; irregularly shaped pasta ($\frac{3}{8}$ x $\frac{3}{4}$ in.)

dumpwurst  A moist, cooked Australian sausage

dumyati  A white, brined cheese made from (whole or skimmed) cow’s or buffalo’s milk

Duncan  A variety of early Florida grapefruit

dundee cake  A rich fruit cake covered with almonds

dung  Feces

dunginess  See crab

dunlop  A firm, hard, cheddar-type cheese See dunlop cheese

dunlop cheese  A moist, firm-textured cheese similar to cheddar

dunmow fitch  A side of bacon

dunnage  1) Platforms on which cartons are stacked, sometimes known as tare. 2) Bracing and packing material

dunphy's  A liqueur made from cream and Irish whiskey

duodenum  The first part of the small intestine attached to the stomach

duo-standard  A testing method by which two samples are presented as knowns and are given again as unknowns for identification

duo-trio  A testing method by which a panel is given three samples, one of which is labeled “reference;” the other two samples are coded. One of the coded samples is the same as the reference sample, the other is different. Panelists are asked to match the reference with the unknown or to identify the odd sample.
  See Part 2: Taste Panel, Difference Tests

duplex  Describes paper or paperboard made by laminating two pieces of paper with an adhesive

Du Puits  A variety of alfalfa

Durham  The name once used for the Shorthorn breed of cattle

durian (Durio zibethinus)  A large tree that produces a 6- to 8-lb dull yellow fruit covered with spines; a taste has to be acquired for the ivory-colored, custardlike, soft, creamy pulp (which is eaten fresh and made into drinks) because the fruit’s odor is unpleasant. The seeds may be roasted like chestnuts.
  See Part 2: Fruit Classification; Fruit Storage

duriff  A red burgundy-type table wine

Durnad, Peter (1810)  Invented glass and tin canisters for food

Duroc  A meat-type breed of hogs that originated in New England from several strains of red hogs (primarily the Jersey Reds of New Jersey and Durocs of New York); it is cherry red in color and has drooping ears.
  See Part 2: Swine Breeds

Duroc-Jersey  Early name of the hog association now known as Duroc

Durra  1) A type of sorghum. 2) A variety of corn used in India. 3) A plant having a toxic principle
  See Part 2: Poisonous Plants

durum flour  Flour made from durum wheat with a particle size of 140 $\mu$m or less; used to make noodles and, to a lesser extent, macaroni

Durum granular  A milled product from durum wheat that may contain 20% flour; used in macaroni products
durum wheat (Triticum durum) A hard wheat with high gluten content used in making macaroni products; the plant is resistant to cereal rust. See also wheat
düsseldörfer A dark-colored bitter ale
dust To cover lightly with a dry ingredient (often flour or powdered sugar)
dust tea Powdered green tea
dusty Describes a property of food suggestive of a drying or choking quality or of finely divided particles
Dutch See cottage cheese
Dutch Belted A dairy-type breed of cattle that is black with a large belt of white extending around the body
Dutch-brand loaf A meat-loaf product made from pork and beef
Composition: moisture 59%; protein 13.4%; fat 17.8%; carbohydrate 5.6%; ash 3.8%
Dutchess A variety of apples that are in season from July to Sept. and that make good pies and sauce but are only fair eating
Dutch gin A full-flavored gin, with a low alcohol content, distilled from mash high in malt and caraway seed
Dutch loaf See Part 2: Sausage, Nutritive Value
duty A tax levied by a government on the import, export, and consumption of goods
duxelles A flavoring mixture of mushrooms, shallots, herbs, and butter that is cooked to a paste and used in garnishes, sauces, or stuffings
D value See decimal reduction time
dwarf Of a tree, a small tree (6-8 ft tall) that produces fruit early (3 yr)
dwarf cape gooseberry See gooseberry
dwarf fruit tree A standard tree that has been grafted onto special rootstock to keep it from growing to a large size (10-12 ft tall) but that produces normal-sized fruit See dwarf tree
dwarfism The occurrence of small, midget-type animals; among domestic animals, usually associated with cattle (y is the gene for a dwarf and x is the normal gene):
1. Dwarf carrier (xy) x non–dwarf carrier (xx) → ½ carrier (xy) offspring and ½ noncarrier (xx) offspring
2. Dwarf carrier (xy) x dwarf carrier (xy) → ¼ dwarf (yy), ½ carrier (xy), and ½ noncarrier (xx) offspring

dwarf tree A grafted tree whose final size depends on the rootstock used See dwarf fruit tree
Advantages:
Ease of pruning, spraying, and harvesting
Bears fruit at a younger age
Fruit is the same size as on a full-size tree
Dwarving does not shorten tree life
dwojniack A sweet, honey-fermented, alcoholic beverage that is often flavored with fruit juice and spices
dwt See grain (troy)
Dy Symbol for the element dysprosium
dye A soluble organic substance that absorbs certain wavelengths of radiant energy in the visible spectrum See also colorant
dyne (dyn) A measure of force (e.g., weight)
1 dyn = 1.020 × 10⁻³ gram (g)
= 7.233 × 10⁻⁵ poundal
= 1.0 × 10⁻⁵ joule per meter [J/m, or newton (N)]
= 2.248 × 10⁻⁶ pound (lb)
= 1.020 × 10⁻⁶ kilogram (kg)
= 1.0 × 10⁻⁷ joule per centimeter (J/cm)
dyne-centimeter (dyn-cm) A measure of heat, energy, and work
1 dyn-cm = 1 erg
= 0.00101979 gram-centimeter (g-cm)
= 0.000000737612 foot-pound (ft-lb)
dyne per cubic centimeter (dyn/cm³) A measure of density
1 dyn/cm³ = 0.00118528 poundal per cubic inch
= 0.00101979 gram per cubic centimeter (g/cm³)
dyne per square centimeter (dyn/cm²) A measure of pressure
1 dyn/cm² = 0.01 erg per square millimeter (erg/mm²)
= 0.0010197 gram per square centimeter (g/cm²)
= 0.000466646 poundal per square inch
= 2.953 × 10⁻⁶ inch of mercury [in. Hg (at 0°C)]
= 1.0 × 10⁻⁶ bar
= 9.869 × 10⁻⁷ atmosphere (atm)
dys- A prefix meaning difficult or bad
dysentery An infectious disease of the intestines characterized by loss of water
See Part 2: Diseases, Food-Borne; Infectious Agents
dysgustia An impairment of the ability to taste
dysosmia Difficulty in the ability to smell
dyspepsia An impairment of digestion
dysphagia Difficulty in swallowing
dysprosium (Dy) A rare-earth element of the lanthanide series; at. no. 66; at. wt. 162.51; Group IIIb of the Periodic Table, oxidation state +3
Electron configuration 2–8–18–28–8–2
Orbit K L M N O P
dystrophy Defective nutrition, usually of muscles; often due to vitamin-E deficiency
E See volt
ear The fruiting head of corn, including only cob and
grain See corn
See Part 2: Corn; Pork Cuts and Uses
ear fungus A mushroom
Earl Gray tea A tea, scented with oil of Bergamot,
e.g., Sri Lankan black tea
early blight A leaf-spot disease that strikes leaves
that are frequently wet
Control: Apply maneb or zineb.
earlly bloom The stage of maturity between the initi­
ation of blooming to one-tenth of the plants being in
bloom
early leaf The stage of maturity at which plants
reach one-third of growth before blooming
early leaf spot (A fungal *Fabraea maculata*) disease
that causes dark brown spots on leaves and cankers
and cracks on pear fruit
early maturity Of a plant, quick attainment of full
development
Early Ohio An all-purpose variety of potato
earth almond See chufa; peanut; tiger nut
earthiness Describes a dusty or earthy taste some­
times found in wine
earthnut 1) A small truffle (*Bunium flexosum,
Conopodium denudatum*). 2) See peanut
earthstars A type of fungus
earth tongues A type of fungus
earthy Having the flavor or odor of earth or soil, e.g.,
a food flavor that suggests soil
earwig An insect that sometimes feeds on vegetable
leaves
earworm A pest that infests corn
See Part 2: Insect Control
Easter The Christian holiday that falls on the first
Sunday following the first full moon after the vernal
equinox; foods associated with Easter include the egg,
lamb or kid, and ham.
Easter bun A hot cross bun
Easter egg 1) A hen’s egg hat has been hard-boiled
and colored. 2) A candy See candy
Easter nola A dry (moisture–protein ratio 1.9 : 1 or
less) Italian salami made from coarsely chopped,
mildly seasoned (with black pepper and garlic) pork
See salami
Eastern style A method of cutting beef
easy-lift An indentation in the body of a can that will
aid in lifting the tongue
easy-open end A can end with a tab or other device
that allows it to be opened easily (e.g., a full-panel
easy-open or a spiral)
eat To consume food; to ingest
eating unit A group of people habitually sharing food
prepared in the same kitchen or in several common
kitchens
eau clairette A sweet, spicy liqueur that contains
small pieces of gold
eau-de-cidre A potable spirit made from cider
eau-de-grain A potable spirit made from grain
eau-de-marc A potable spirit made from the skin
and seeds left after pressing grapes
eau-de-prunelle A potable spirit made from black­
thorn fruit and gin
eau-de-vie A potable spirit made from wine; brandy
eau d’or Liqueur with gold particles
eba A porridge or past made from cassava (*Manihot*)
flour
ebonite Hard rubber
See Part 2: Insulation, Conductivity Values
EC European Community
eccles cake A cake made by wrapping a filling of
currants, butter, and sugar in puff pastry and baking
edysis Molting
echauvé A poached pastry that is dried by baking
echesaux A red wine
echinacea An herb used for tea
echourgnac A tilsit-type cheese
eclair (From French meaning “lightning.”) A
finger-shaped pastry filled with custard or whipped
cream and often covered with chocolate icing
Storage: refrigerate immediately
EC medium A selective broth for the growth of col­
iform bacteria at 37°C and for *Escherichia coli* at
45.5°C
See Part 2: Microorganism, Culture Media, Water and
Sewage, Standard Methods; Microorganism, Selective
and Differential Broths and Media, Water Filtration
Plant
eco- prefix meaning house
*E. coli* (*Escherichia coli*) An infective microorgan­
ism.
See Part 2: Microorganism, Media
ecology The study of the relationships between ani­
mals and plants and their whole environment
economic analysis A method of evaluating how much should be purchased and when, including consideration of what inventory levels should be maintained.

economic emergency disaster payment A payment when a disaster has reduced production and when the loss of production results in an economic emergency.

economic order quality (EOQ) A type of fixed-order quantity that determines the amount of an item to be purchased or manufactured at one time; the purpose is to minimize the combined costs of acquiring and maintaining inventory.

ecosystem An ecological system that is the sum of all physical and chemical reactions and all biological organisms interacting in a given space.

ecto- A prefix meaning outside.

eczema An inflammatory condition of the skin, some types of which are caused by a deficiency of essential fatty acids.

edam A mild-flavored, pale-colored, semisoft to semihard, pasteurized, inoculated cheese from Holland made from partly skimmed cow's milk with rennet added; the curds are scalded, not textured, and pressed; it is ball-shaped, slightly flattened at top and bottom, with a rind coating of red or pale gold wax and is a mellow cheese, softer than cheddar, with a cheddar-type flavor (that is mild and nutlike); it has a creamy, yellow interior; ripened 2 months; used as a dessert, cooking, snack, or sandwich cheese.

Sizes:
- Commissie—6–9 lb
- Edam—1–5 lb (usually 3–4 lb)
- Middelbare—10–14 lb

Composition: moisture 39–42%; protein 25–31%; fat 20–40%; carbohydrate 1–2%; fiber 0%; ash 4–5%; salt 2% (274 mg Na/oz); pH 5.4
Fat content is lower than gouda.
Storage: can be frozen (0°F) in pieces no more than 1 in. thick; use within 6 months.

See Part 2: Cheese Characteristics; Cheese Composition; Cheese, Vitamin Content; Milk and Cheese Composition; Milk and Milk Products, Vitamin Content; Vitamin A, Milk and Milk Products.

edamer An edamlike cheese.

edam, smoked A tangy, smoky, edam cheese that is used for sandwiches.

EDB Ethylene dibromide See ethylene dibromide.

eddo See taro.

edelkost A salami made from beef and pork; a dry, uncooked, smoked Belgian sausage made from medium-chopped, medium-seasoned beef and pork, fermented and stuffed into artificial casings.

edelpizkáše A full-cream, soft, blue-veined cheese, made from cow's milk, with a strong moldy flavor and shaped into a rectangular block.

edelweiss 1) A soft-ripened cheese from Germany. 2) A perennial herb growing in high mountain areas (Alps). 3) A liqueur flavored with flowers and sugar.

edelzwicker A white wine made from two or more different types of excellent grapes.

edema The retention of abnormal quantities of fluids in the tissue and the swelling due to accumulation of excess water; some types caused by excessive sodium in the diet.

EDF See European Development Fund.
edi A sour porridge made from sorghum or millet.
edible Fit for human consumption and able to be eaten.
edible oil A vegetable oil used as food, e.g., coconut oil, corn oil, etc.
edible-podded pea See sugar pea.
edible portion The portion of food consumed by an average person, e.g., boneless meat with 3/8-in. (1–2 in.) maximum fat cover.
edirne A soft, white, panir-type cheese made from ewe's milk.
editic acid See ethylenediaminetetraacetic acid.
edo miso A light red-brown, flavorful, low-salt paste made (with short fermentation) from soybeans (often mixed with cereals).
EDP Experiment and Demonstration Plant.
EDTA (Ethylenediaminetetraacetic acid) A food antioxidant that ties up metals See ethylenediaminetetraacetic acid.

EE broth An enrichment broth for the detection of enteric bacilli in foods; it is a brilliant green bile broth modified by incorporation of dextrose. See Part 2: Microbiological Media.

ECC The European Economic Community, formerly called the Common Market See European Economic Community.

eel Any of the elongated, snakelike finfishes with a smooth skin; some are strictly marine and others live in fresh water but descend to the ocean as they approach sexual maturity; eels used as a food fish have light meat (up to 30% fat) and light to moderate flavor; many kinds are important as a food source: American (Anguilla rostrata); Australia (A. aucklandii); Broad nose; Conger (Conger conger); European (A. anguilla); Grig; Japanese (A. dieffenbachii; A. japonica); Moray (Muraena helena); Sharp-nosed; Short-finned (A. dieffenbachii); Snig; Available forms: live; fresh; frozen; smoked (salted and dried); jellied; fried; vinegar-cured; canned. See also freshwater fish.
See Part 2: Minerals, Food.

eel brass mats A medium-density material sometimes used for its heat insulation value in refrigeration systems. See Part 2: Insulation.

eel, conger A large, edible saltwater eel with less fat then freshwater eel.
**eelgrass (Zostera marina L.)**

A flowering and seed-producing plant that grows fully submerged in seawater whose seed can be ground into flour.

**eel pie**
A mixture of fish (mostly eel), lemon, parsley, and shallots covered with puff pastry.

**eel pout (burbot; burbot)**
1) Barbot (*Lota lota*), a codlike freshwater fish. 2) *Zoarces viviparus*, and eel-like fish.

**eelworm**
A very small, eel-like pest that feeds on the roots and leaf tissue of many vegetable plants (e.g., lettuce, potatoes, and tomatoes).

**EFA**
Essential fatty acids See also essential (2)

**effervescence**
The rising of gas bubbles in a liquid.

**effervescent**
Containing gas bubbles induced by fermentation or carbonation.

**efflorescence**
The change induced in a compound by the loss of water of hydration.

**EFP**
See exchange for physical

**EFTA**
European Free Trade Association.

e.g. *Exempit gratia* (Latin, for example)

**egble**
Dumpling balls made from steamed degermed maize.

**egg**
The reproductive cell of the female (fish eggs are called roe); the term is used as the class name for whole eggs (liquid, dried, or frozen) produced by birds.

**USDA egg grades:**
- **U.S. Grade AA**—top quality; used for frying and poaching.
- **U.S. Grade A**—almost as good; used for frying and poaching.
- **U.S. Grade B**—used for general cooking and baking.

*See also egg grade.* Shell color (brown or white) depends on the breed of the hen and does not influence egg quality; yolk color is influenced by feed (e.g., green feed yields darker color). Eggs are generally considered pareve.

**Cooking:** Eggs cooked in the shell should be placed in cold water after cooking to aid shell removal.

**Coagulation temperature (°C):**
- **White**
  - Begins, 55–57
  - Jellylike, 60
  - Completed, 65
- **Yolk**
  - Begins, 62–65
  - Completed 70

**To pasteurize:**
- **White**—134°F for 2 min
- **Whole egg**—142°F for 2 min
- **Yolk**—142°F for 2 min

<table>
<thead>
<tr>
<th>Boiled</th>
<th>Coddled</th>
<th>Baked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water temp. (°F)</td>
<td>Time (min)</td>
<td>Water temp. (°F)</td>
</tr>
<tr>
<td>Cooked</td>
<td>Soft</td>
<td>212</td>
</tr>
</tbody>
</table>

**Equivalents:**
1 case or crate eggs, in shell = 30 dozen = 47–60 lb
1 case eggs, in shell
- = 39.5 lb whole eggs, liquid
- = 10.8 lb whole eggs, dried
1 lb = 8–10 eggs
1 lb egg white, dried = 7 1/2 lb egg white, liquid
1 lb egg yolk, dried = 2 1/2 lb egg yolk, liquid
2 oz egg = 1/4 oz shell + 1 1/2 oz white + 1/2 yolk
8 yolks = 1 cup
8 whites = 1 cup
1 cup whole eggs = 8.8 oz
1 cup yolks = 8.5 oz
1 cup white = 9 oz
1 cup, scrambled (with milk, cooked in fat) = 7.8 oz
1 small egg = 1.3 oz
1 med. egg = 1.6 oz
1 large egg = 1.8 oz
= 0.6 oz yolk + 1.2 oz white
1 extra-large egg = 2 oz
1 jumbo egg = 2.3 oz
1 large egg, boiled = 1.8 oz
1 large egg, fried in butter = 1.6 oz
1 large egg, in omelet (with milk, cooked in fat) = 2.2 oz
1 large egg, poached = 1.7 oz
1 large egg, scrambled (with milk, cooked in fat) = 2.3 oz

**Frozen eggs**

<table>
<thead>
<tr>
<th>Frozen eggs (1 lb)</th>
<th>Fresh (lb)</th>
<th>Dry egg solids (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>15 whites</td>
<td>0.12 + 0.88 water</td>
</tr>
<tr>
<td>Whole</td>
<td>9 eggs</td>
<td>0.25 + 0.75 water</td>
</tr>
<tr>
<td>Yolk</td>
<td>23 yolks</td>
<td>0.45 + 0.55 water</td>
</tr>
</tbody>
</table>

1 cup eggs, whole, white, or yolk = 240 g

**Equivalents:**
1 whole egg
- = 2 egg yolks
- = (3 tbsp + 1 tsp) frozen egg
- = (2 tbsp + 2 tsp) dry whole egg powder + equal amount water
1 egg yolk
- = 3 1/2 tsp thawed frozen egg yolk
- = 2 tbsp dry egg yolk + 2 tsp water
12–14 egg yolks = 1 cup
1 egg white
- = 2 tbsp thawed frozen egg white
- = 2 tsp dry egg whites + 2 tbsp water
7–10 egg whites = 1 cup

**Small eggs:**
3 small eggs = 1/3 cup = 2 med. eggs

**Medium eggs:**
5 med. eggs = 1 cup
3 med. eggs = 2 large eggs = 1/3 cup
2 med. eggs = 3 small eggs = 1/4 cup

**Large eggs:**
2 large eggs = 1/2 cup = 3 med. eggs
### Composition

<table>
<thead>
<tr>
<th>Egg</th>
<th>Percentage of egg</th>
<th>Moisture (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Carbohydrate (%)</th>
<th>Fiber (%)</th>
<th>Ash (%)</th>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicken egg, dried</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>8.5–15</td>
<td>77–82</td>
<td>0.04</td>
<td>4.2–4.4</td>
<td>4.2–4.5</td>
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<td></td>
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<tr>
<td>Whole</td>
<td>4.1</td>
<td>45.8</td>
<td>41.8</td>
<td>4.8</td>
<td></td>
<td>3.4</td>
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<tr>
<td>Yolk</td>
<td>4.6</td>
<td>30.5</td>
<td>61.3</td>
<td>0.4</td>
<td></td>
<td>3.2</td>
<td></td>
<td></td>
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<tr>
<td>Chicken egg, white*</td>
<td>57–58</td>
<td>87–88.1</td>
<td>10.1–11</td>
<td>Trace</td>
<td>0.8–1.3</td>
<td>0</td>
<td>0.5–1</td>
<td>7–9</td>
</tr>
<tr>
<td>Chicken egg, whole</td>
<td>88–89†</td>
<td>73–74</td>
<td>13</td>
<td>11–11.5</td>
<td>1</td>
<td>1</td>
<td>7–9</td>
<td></td>
</tr>
<tr>
<td>Fresh, frozen, or raw</td>
<td></td>
<td>74.6</td>
<td>12.1</td>
<td>11.1</td>
<td>1.2</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Fried</td>
<td>71.9</td>
<td>11.7</td>
<td>13.9</td>
<td>1.1</td>
<td>1.4</td>
<td></td>
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<tr>
<td>Hard-cooked</td>
<td>74.6</td>
<td>12.1</td>
<td>11.1</td>
<td>1.2</td>
<td>0.9</td>
<td></td>
<td></td>
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<tr>
<td>Omelet</td>
<td>76.3</td>
<td>9.3</td>
<td>11.1</td>
<td>1.2</td>
<td>1.2</td>
<td></td>
<td></td>
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<tr>
<td>Poached</td>
<td>74.3</td>
<td>12.1</td>
<td>11.1</td>
<td>1.2</td>
<td>1.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scrambled</td>
<td>76.3</td>
<td>9.3</td>
<td>11.1</td>
<td>2.1</td>
<td>1.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chicken egg, yolk†</td>
<td>30–32</td>
<td>48.7–51</td>
<td>16–16.4</td>
<td>31.2–32.9</td>
<td>0.2–1</td>
<td>0</td>
<td>1.7–2</td>
<td>6–6.8</td>
</tr>
<tr>
<td>Sugared and frozen</td>
<td></td>
<td>50.8</td>
<td>12.9</td>
<td>25.5</td>
<td>9.5</td>
<td>0</td>
<td>1.3</td>
<td></td>
</tr>
<tr>
<td>Other eggs, whole</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duck</td>
<td></td>
<td>70.8</td>
<td>12.8</td>
<td>13.8</td>
<td>1.4</td>
<td>0</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>Goose</td>
<td>70–71</td>
<td>13–14</td>
<td>13–14</td>
<td>1.3</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quail</td>
<td>74.3</td>
<td>13</td>
<td>11</td>
<td>0.4</td>
<td>1.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turkey</td>
<td>72–73</td>
<td>13–14</td>
<td>11.5–12</td>
<td>1.1–1.2</td>
<td>0.8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*White is 60% of edible portion.
†Shell is 11–12% of the egg.
‡Yolk is 40% of edible portion.

Compositions: Yolk protein is chiefly vitellin, white protein is chiefly albumin. The yellow pigment in yolk is chiefly xanthophyll. Sodium content—59 mg per whole egg (50 g), 50 mg per white (33 g), 17 mg per yolk (17 g). One large whole egg or yolk contains 252 mg cholesterol.

To remove stain from cloth: scrape excess and soak in cold water with enzyme product; wash in hot suds; use cleaning fluid if necessary.

Defective action level (frozen eggs): 2% shell by weight; two cans of a lot contain decomposed eggs (5,000,000 bacteria per gram).

Storage methods:
- Refrigerated in shell—large end up, 28–31°F; use within 1 week.
- Preserved by rubbing with fat or immersing in isinglass
- Shell treated—dipped in mineral oil to seal pores, retard evaporation, and protect quality; large end of shell should be pricked prior to cooking
- Flash hot treatment—dipped in boiling water for 5 s then cooled; this coagulates a thin layer of egg white (which sticks to the shell) that protects contents.
- Cold storage—45°F or lower

Yolks: Cover with cold water and refrigerate; use within 1–2 days.
- White—Cover and refrigerate; use within 1–2 days.
- Frozen (=10°F) storage life 1 yr.
- Dried: Refrigerate (35°F); relative humidity as low as possible; use within 6 months to 1 yr.

See egg size; water glass

See Part 2: Animal Foods, Composition; Calcium, Daily Recommendations; Calories, Daily Recommendations; Cholesterol Control; Egg Composition; Egg, Dried Equivalents; Egg Equivalents; Egg Incubation Periods; Egg Products, Nutritive Value; Egg Quality; Egg Quality and Size Label; Egg Quality, Broken; Egg Specifications; Egg Structure; Egg Volume; Food, Composition; Glutamate; Iron, Daily Recommendations; Minerals, Food; Minerals, Plant or Animal Tissue; Nicotinic Acid, Food; Pantethenic Acid Content; Protein Factors; Riboflavine, Daily Recommendations; Riboflavin, Food; Spoilage, Protein Foods; Storage Times; Thiamin, Daily Recommendations; Thiamin, Food; Unsaturated Fatty Acids; Vitamin A, Daily Recommendations; Vitamin A, Food; Vitamin D, Food

**egg albumin** (ovalbumin) Egg white

**eggs benedict** Ham, poached eggs, and Hollandaise sauce served on English Muffins

**egg-blossom soup** Made by adding raw egg to boiling chicken soup (which cooks the egg)

**egg cheese** A cow’s milk cheese made by mixing raw milk or dried curd with raw eggs and sometimes soda

**egg, dried** Store tightly covered in refrigerator.

<table>
<thead>
<tr>
<th>Egg</th>
<th>Whole powder</th>
<th>Yolk powder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition</td>
<td>Whole</td>
<td>Yolk</td>
</tr>
<tr>
<td>Moisture (%)</td>
<td>1.8–2.0</td>
<td>8–9</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>48–49</td>
<td>82–83</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>43–44</td>
<td>0.04</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>2.3–2.4</td>
<td>4.4–4.6</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>3.6–3.7</td>
<td>4.4</td>
</tr>
</tbody>
</table>

**egg-drop soup** See **egg-blossom soup**
**egg, duck**  Should be well cooked because of possible bacterial infection

1 egg = 2.8 oz

Composition: See egg

**egg, emu**  A food egg that contains a large amount of oil

**eggflip**  See eggnog

**egg-flower soup**  See egg-blossom soup

**egg foo yong**  An entrée containing eggs, beef, onions, tomatoes, water chestnuts, bean sprouts, mushrooms, soy sauce, and monosodium glutamate

**egg, freshness test**  An egg is placed in cold water; its resting position is used to judge freshness.

Egg’s resting position:
- Lying on its side, on bottom of container—fresh egg
- Standing at an angle, on bottom—4–5 days old
- Standing on end, on bottom—10 days or older
- Floating on the surface—quite old

**egg, goose**  Composition: See egg

1 egg = 5.8 oz

**egg grade**  A measure of firmness and height of yolk and thickness of white

USDA Grades: AA or fresh fancy quality; A; B; C

The USDA shield indicates the quality of the egg and that the egg has been certified under USDA supervision, has been packed in a plant under USDA sanitary requirements, and has been checked for size. Not considered in egg quality are egg size or shell color (which does not affect quality or nutritive value and is determined by the hen’s breed).

<table>
<thead>
<tr>
<th>USDA quality grade</th>
<th>Also known as</th>
<th>Egg qualities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Air cell</td>
</tr>
<tr>
<td>AA</td>
<td>U.S. special</td>
<td>Not more than</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/2 in. depth;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>regular</td>
</tr>
<tr>
<td>A</td>
<td>U.S. extra</td>
<td>Not more than</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/2 in. depth;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>regular</td>
</tr>
<tr>
<td>B</td>
<td>U.S. standard</td>
<td>Not more than</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/2 in. depth;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>unlimited</td>
</tr>
<tr>
<td></td>
<td></td>
<td>movement;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>free or bubbly</td>
</tr>
<tr>
<td>C</td>
<td>U.S. trade</td>
<td>Over 1/2 in.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>depth;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>free and bubbly</td>
</tr>
</tbody>
</table>

Terms:
- Check—broken shell but membrane intact
- Dirty—adhering foreign material; stains covering one-fourth of surface
- Leaker—contents leaking; cannot be used for human consumption
- Loss—contents lost

See egg size

**egg, guinea**  Incubation period is 26–28 days.

1 egg = 1.4 oz

**egg incubation time**  The time required for an egg to incubate:

<table>
<thead>
<tr>
<th></th>
<th>Days</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duck</td>
<td>28</td>
<td>Hen</td>
</tr>
<tr>
<td>Goose</td>
<td>30–35</td>
<td>Pigeon</td>
</tr>
<tr>
<td>Guinea</td>
<td>26–28</td>
<td>Turkey</td>
</tr>
</tbody>
</table>

**egg meat medium**  A liquid medium containing meat, egg white, and calcium carbonate; it is used for determination of microorganisms’ proteolytic activity and for carrying stock cultures of anaerobes.

See Part 2: Microorganism, Media

**eggnog (eggflip)**  An egg beaten with sugar, milk and cream, flavoring, emulsifier, stabilizer, and sometimes liquor (rum or sherry), vanilla, fruit juices

1 cup = 8.4–9.2 oz

Composition: moisture 74–75%; protein 2.6–4.5%; fat 4–8%; carbohydrate 13–14%; fiber 0%; ash 0.8%; milk fat 6% min.; total milk solids 29% min.; 8 tsp sugar/8 oz

See Part 2: Dairy Products, Composition II

**egg noodle**  A flat pasta made of wheat flour and eggs; contains min. 5 1/2% egg solids by weight of finished product

**egg, ostrich**  Two tablespoons of a mixture of 1 tbsp water and 1 tbsp beaten ostrich egg are equivalent to one chicken egg

---

**eggplant (aubergine; brinjal; bringall; mad apple; Solanum melongena; S. melongenaesculentum)**  A deep-rooted plant producing a glossy, deep purple (sometimes white, red, green, yellow, gray, or brown), firm-fleshed berry containing many seeds; this large berry is oblong, egg-shaped or sausage-shaped, and 4–12 in. long; 6000–6700 seed/oz; germination period 7 days; transplant 18 in. apart in rows 36 in. apart; harvest when 3–5 in. long (4–12 in. for oriental varieties) and skin is glossy; bitter when overripe and bruises easily; it is used as a
vegetable—sliced, freshened or exposed to the air, coated with batter, and cooked [fried in oil (190–196°C, 375–385°F), baked, broiled, or steamed].

<table>
<thead>
<tr>
<th>Color and variety</th>
<th>Fruit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purple</td>
<td></td>
</tr>
<tr>
<td>Black Beauty</td>
<td>Large, oval</td>
</tr>
<tr>
<td>Black Bell</td>
<td>Large</td>
</tr>
<tr>
<td>Black Magic</td>
<td>Oval</td>
</tr>
<tr>
<td>Burpee Hybrid</td>
<td>Med. size, oval</td>
</tr>
<tr>
<td>Dusky Hybrid</td>
<td>Oval</td>
</tr>
<tr>
<td>Early Beauty</td>
<td>Small, oval</td>
</tr>
<tr>
<td>Florida High Bush</td>
<td></td>
</tr>
<tr>
<td>Ichiban Hybrid</td>
<td>Long, narrow</td>
</tr>
<tr>
<td>Jersey King</td>
<td>Cylindrical</td>
</tr>
<tr>
<td>Long Tom</td>
<td>Long, slim</td>
</tr>
<tr>
<td>Mission Bell</td>
<td></td>
</tr>
<tr>
<td>Morden Midget</td>
<td>Med.</td>
</tr>
<tr>
<td>New York Improved</td>
<td></td>
</tr>
<tr>
<td>New Hampshire</td>
<td></td>
</tr>
<tr>
<td>Slim Jim</td>
<td></td>
</tr>
<tr>
<td>Red</td>
<td></td>
</tr>
<tr>
<td>Chinese, Tomato</td>
<td></td>
</tr>
<tr>
<td>Very dark</td>
<td></td>
</tr>
<tr>
<td>Black Pekin</td>
<td>Small</td>
</tr>
<tr>
<td>White (popular in Europe)</td>
<td></td>
</tr>
<tr>
<td>Blanche Longue de la Chine</td>
<td></td>
</tr>
<tr>
<td>Yellow</td>
<td></td>
</tr>
<tr>
<td>Oriental</td>
<td>Small, white; turns yellow at maturity</td>
</tr>
</tbody>
</table>

1 eggplant = 1–5 lb
1 medium eggplant = 1.5 lb
= 1–1.25 lb, peeled, diced, and chopped
1 small eggplant = 0.7 lb
1 lb, fresh = 1 pt, frozen
= 2¼ cups, diced
1 cup, boiled, drained, sliced = 7.1 oz
1 serving = ¼ med. eggplant

Storage: in cool room (45–50°F); 85–90% relative humidity; will keep several months below 60°F; will keep 1 week above 60°F.

Composition raw: moisture 92%; protein 1%; fat 0.2%; carbohydrate 6%; ash 1%; pH 4.5

See Part 2: Fruit Classification, Frying Time; Minerals, Food; Plant Foods, Composition; Planting Density; Storage; Sugar, Vegetables; Vegetable Composition; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Plants; Vegetables, Classification; Vegetable Storage; Vegetable Yields

**Egg Roll** A Chinese hors d’oeuvre or main course made from a pancakelike wrapper stuffed (with chicken, pork, prawns, shrimp, and vegetables).

**Egg Shell** 94% calcium carbonate; fertilizer notation 1.2-0.6-0.3

**Egg Size** Minimum required weight per dozen is as follows.

USDA grade:
- Jumbo 30 oz/doz
- Extra large 27 oz/doz
- Large 24 oz/doz
- Medium 21 oz/doz
- Small (pullet) 18 oz/doz
- Pee wee 15 oz/doz

Med. size is a good buy if weight is 1/8 less than large; small size, if weight is one-fourth less than large.

See Part 2: Egg Quality and Size Label

**Egg Spaghetti** A pasta containing min. 5½% egg solids by weight of finished product

**Egg Substitute** Available in the following forms: frozen (contains egg white, corn oil, and nonfat dry milk); liquid (contains egg white, hydrogenated soybean oil, and soy protein); powdered (contains egg white solids, whole egg solids, sweet whey solids, nonfat dry milk solids, and soy protein)

<table>
<thead>
<tr>
<th>Composition</th>
<th>Frozen</th>
<th>Liquid</th>
<th>Powdered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>73.1</td>
<td>82.7</td>
<td>3.1</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>11.3</td>
<td>12.0</td>
<td>55.5</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>11.1</td>
<td>3.3</td>
<td>13.0</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>3.2</td>
<td>0.6</td>
<td>21.9</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>1.3</td>
<td>1.3</td>
<td>5.8</td>
</tr>
</tbody>
</table>

**Egg, Turkey** Composition (whole, fresh, raw): moisture 72.5%; protein 13.7%; fat 11.9%; carbohydrate 1.1%; ash 0.8%

1 egg = 3.1 oz

**Egg White** Albumin; the class name for liquid, dried, or frozen egg white; contains min. 11.5% egg solids; max. 0.03% fat; coagulates at 135–160°F. Air beaten into egg white acts as a leavening agent in angel food cakes.

5–6 egg whites = 1½ cup

See also egg

**Egg White Factor** The antivitamin avidin See biotin

**Egg, Whole** Min. 25.5% egg solids

**Egg Yolk** The class name for liquid, dried, or frozen egg yolks; color does not influence nutritional value or flavor and is determined by the feed and the hen’s breed:

Factors that deepen color:
- Yellow corn—increases color
- Green feed—increases color
- Egg laid in summer—increases color

10% of egg yolk is saturated fat; 13% is oleic acid; 2% is linoleic acid

6 egg yolks = ¼ cup

**Egi** A red of white wine

**Egmont** A type of gouda cheese made from slightly ripened milk

**Egri** A white or red wine
Yogurt

Egyptian

Egyptian lotus An edible water lily whose fruit has a nutshelllike kernel and whose leaves and roots are used as vegetables

Egyptian onion

Tree onion; a hardy perennial that produces bulbs on the tips of long green shoots; the bulbs are used like ordinary onions, and the stalks may also be used. See onion, Egyptian; onion tree

Eh The oxidation-reduction (OR) potential, which is a measure of the ability of a reversible system to give or receive electrons:

\[ Eh = E_0 - \frac{RT}{nF} \ln \frac{[\text{red}]}{[\text{ox}]} \]

\[ E_0 = \text{a constant characteristic of the system} \]
\[ R = \text{gas constant} = 8315 \text{ volt-coulombs} \]
\[ T = \text{absolute temperature} \]
\[ n = \text{number of electrons involved} \]
\[ F = \text{faraday} = 96996 \text{ joules/volt} \]
\[ \ln = \text{natural logarithm (base e)} \]
\[ [\text{red}] = \text{concentration of reduced state} \]
\[ [\text{ox}] = \text{concentration of oxidized state} \]

At 30°C and constant pH, the formula becomes

\[ Eh = E_0 - 0.06 \ln \frac{[\text{red}]}{[\text{ox}]} \]
\[ Eh = E_0 + 0.06 \ln \frac{[\text{ox}]}{[\text{red}]} \]

where \( \ln \) is the common logarithm

Ehrlich Color reaction of the indole nucleus in such compounds as tryptophan

See Part 2: Protein and Amino Acid, Color Reactions

EI Electron impact

eicosanoic acid (arachidic acid)

\[ \text{CH}_3(\text{CH}_2)_{18}\text{COOH} \]

A saturated fatty acid found in peanut oil

See Part 2: Saturated Fatty Acids

eicosatetraenoic acid (arachidonic acid) A 20-carbon unsaturated fatty acid found in lecithin

See Part 2: Unsaturated Fatty Acids

eicosenoic acid An unsaturated fatty acid

See Part 2: Unsaturated Fatty Acids

eicosopentaenoic acid A fatty acid found in fish that has been reported to reduce platelet aggregation and to lower serum triglyceride levels

See Part 2: Fish and Amino Acid, Color Reactions

eidamska An edam-type cheese

eierkuckas A rich pancake

Eijkman, Christian A Dutch physician who proved that deficiency in the diet of polished rice causes beri-beri

Eijkman lactose medium A broth used for the differentiation of fecal strains of Escherichia coli from other coliform organisms

See Part 2: Microorganism, Selective and Differential Broths and Media, Water Filtration Plant

eilath An edam-type cheese

ein-geda A foil-wrapped camembert-type cheese made from cow's milk

einkorn (Triticum monococcum) A coarse wheat grain

einsteinium (Es) A radioactive element of the actinide series; at. no. 99; Group IIIb of the Periodic Table; mass number of the most stable isotope is 254; electron configuration 2⁸8¹⁸³²³⁹₈²

orbit K L M N O P Q

EIR Establishment Inspection Report

eish-shami A pocketed flatbread

eis-likore Liqueur on the rocks

eiswein A rare wine made from grapes harvested and crushed while still frozen

ekmek A wheat bread

ekko See agidi

ek-t A low-fat, high-moisture cheese made from sheep's milk

ekuck A pocketed flatbread

ekufigbemi A sour maize porridge

elephant An antelope that is often used for food

elastic Describes a material with the property of recovering its original shape after being stressed or otherwise deformed; glass is 100% elastic, but most organic materials are less than 95% elastic after rupture

elastic demand A market situation where the percentage change in price will bring about a greater proportional change in the amount purchased, so that total receipts will be larger with a lower price

elasticity A measure of the recovery rate when a material is deformed See elastic

elasticity of demand The tendency of demand to be influenced by factors such as price

elasticity of food demand The basic concept for food projections based on the ratio of the rate of change of consumption of a product to the rate of change of income of the consumer

elastin A connective-tissue protein (yellow elastic) of meat made up of branched fibers; cooking does not appreciably alter the properties of elastin fibers and they are indigestible

See Part 2: Connective Tissue, Composition; Connective Tissue Proteins

elestrator A tight rubber ring that is placed on an animal for docking or castration: it cuts off the blood circulation and results in sloughing off of the tail or scrotum. It is also used in the slaughter industry to seal the esophagus of beef carcasses

Elberta A variety of freestone peaches

Elberta season The season for peach cultivars that ripen in season
elixir d’Anvers

elbo  An oblong or loaf-shaped, 12-lb yellow paste with few eyes and a red-brown rind gouda-type cheese

elbow  The articulation joint between the humerus and radius-ulna

elbow macaroni  A curved pasta

elder (Sambucus nigra)  A small tree that produces small, dark, purple-black berries that are made into teas, wines, jellies, jams, and pies; the flowers (fresh or dried) are used as a flavoring.
Composition (raw berry): moisture 80%; protein 3%; fat 0.5%; carbohydrate 16%; ash 1%
See Part 2: Fruit, Frozen Yield

elderberry  A purplish black berry that grows on a 10-ft plant and is used in pies, jellies, jams, and wine making; bearing age 2 yr; yield 6 lb/plant
1 crate (24 qt), fresh = 36 pt, frozen
1 pt, frozen = 1.3-1.5 pt, fresh

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Season</th>
<th>Berry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams No. 2</td>
<td>Aug.</td>
<td>Large</td>
</tr>
<tr>
<td>Johns Improved</td>
<td>Aug.</td>
<td>Large</td>
</tr>
<tr>
<td>Kent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nova</td>
<td></td>
<td></td>
</tr>
<tr>
<td>York</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

elderberry tea  Tea made from the berries (sometimes the bark, roots, leaves, and flowers) of the elder tree See also elder

elderberry wine  See elder

electric ray (Torpedo spp.)  A food fish

electrode  1) A probe used with a meter to measure specific ions, e.g., hydrogen ions (for pH). 2) A device for making electrical contact between a solution and a conducting wire

electrolysis  The migration of ions in a solution through which an electrical current is being passed

electrolyte  A compound that ionizes in aqueous solution and thus increases the electrical conductivity of the solution; the term applies to acids, bases, and salts, e.g., sodium chloride

electrolytic capacitor  A metal foil with a dielectric metal oxide film in an electrolytic solution

electrometric method  A method for determining a pH value using a pH meter

electromotive force series (activity series; emf)  A list or table of elements arranged according to decreasing tendency to lose electrons and become positive ions:

- Potassium (K)
- Sodium (Na)
- Barium (Ba)
- Calcium (Ca)
- Magnesium (Mg)
- Aluminum (Al)
- Manganese (Mn)
- Zinc (Zn)
- Chromium (Cr)
- Iron (Fe)
- Cadmium (Cd)
- Cobalt (Co)

Nickel (Ni)
Tin (Sn)
Lead (Pb)
Hydrogen (H₂)
Antimony (Sb)
Bismuth (Bi)
Arsenic (As)
Copper (Cu)
Mercury (Hg)
Silver (Ag)
Platinum (Pt)
Gold (Au)

electron (e⁻)  A small, negatively charged particle that is a constituent of all atoms and orbits the nucleus of an atom
  negative charge on electron e⁻  
  = 1.6 × 10⁻¹⁹ coulomb (C)
  = 4.802 × 10⁻¹⁰ electrostatic unit (esu)
  Mass (at rest)  = 9.11 × 10⁻²⁸ gram (g)
  Radius  = 2.8 × 10⁻¹⁵ centimeter (cm)
See Part 2: Constants, Fundamental

electron valence  The type of valence of polar compounds

electron volt (eV)  The amount of kinetic energy gained by an electron accelerated through an electric potential difference of one volt
  1 eV = 1.6 × 10⁻¹⁹ joule (J)
  1 eV absorbed per gram = 1.6 × 10⁻⁸ gray (Gr)

electrophoresis  The movement of electrically charged particles in a dc current field

electropositive  Descriptive of an element that has a strong tendency to lose electrons and is, therefore, high in the electromotive force series, e.g., sodium

element  One of the distinct, basic types of matter that has characteristic chemical properties; 106 elements are known, 92 of which occur in nature
See Part 2: Elements; Equivalent Weights

elemi  A natural resin from a Philippine tree
See Part 2: Essential Oils

eleostearic acid  An unsaturated fatty acid found in vegetable oils
See Part 2: Fatty Acids, Fats and Oils; Fatty Acids and Their Properties; Oil, Seed and Fruit; Unsaturated Fatty Acids

elephant ear  A flat, round (jelly-roll-style), baked pastry made from yeast dough flavored with cinnamon and sugar See taro

elephant fish (Mormyrus oxyrhynchus)  A food fish of the Nile

eligible producer  An individual who signs an agreement to carry out certain practices

ELISA  Enzyme-linked immunosorbent assay

elisavetpolen cheese  A Russian cheese made from sheep’s milk

elixir amorique  A green herb liqueur

elixir d’Anvers  A yellow-green, bittersweet herb liqueur
elixir de Chine A sweet, aniseed-flavored herb liqueur
elixir de spa A sweet herb liqueur
elk Any of several species that are the largest members of the deer family: *Alces alces*—a large, flat-horned European deer, *Moose* (*Alces americana*)—a large North American elk, Wapiti—the American Indian name for a large North American deer that is also called an elk. Elk are used for human food.  
See Part 2: Gestation Periods
elp grass See bear grass
ell A measure of distance
1 ell = 114.30 centimeters (cm)
= 45 inches (in.)
ellbot See halibut
elliker broth A medium for the isolation and propagation of lactobacilli  
See Part 2: Microorganism, Media
elm A tree that is fair for use as firewood [20 × 10^6 Btu/cord (20% moisture)], medium-difficult to start, and difficult to split and produces medium smoke, good coals, and few to many sparks
El Salvadoran strictly high-grown A flavorful, winy-tasting coffee
eltviller A white wine
elubo A porridge or paste made from yam (*Dioscorea*) flour
elubo gbaguda A porridge or paste made from cassava flour
elubo paki A porridge or paste made from cassava flour
elution The removal of a substance by washing
elutriation The washing of sludge to promote compacting
Elvejhem, Conrad Recognized that nicotinic acid could cure pellagra
elver Very young eels; used as food and available live or canned (cooked in hot brine and covered with oil)
-em- A syllable meaning blood
emaciated Excessively thin
emaciation The state of being extremely thin or in a wasted condition
EMB agar See Part 2: Intestinal Microorganisms; Microorganism, Media
embryo 1) Of a seed, the germ, or sporophyte, located at one end of the endosperm; 2) Of an animal, a fetus  
See Part 2: Wheat Grain; Wheat Kernel Parts; Wheat, Parts of Grain; Wheat, Parts of Grain, Vitamins
embryology The study of the development of the embryo
embush A sorghum of millet beer
emden See goose
emek A loaf-shaped, edam-type cheese
emergency feeding The feeding of individuals or groups of people who are cut off from their normal food supplies
emergency loans Loans made to farmers under emergency credit programs, usually for conditions resulting from drought, floods, or other natural disasters
Emerson YpsS agar See Part 2: Microorganism, Media
emesis Vomiting
emf See volt; electromotive force series
-emia A suffix meaning blood
emiliano A hard, dry, low-fat, grating cheese that is made from cow’s milk and has a dark brown rind
émincé Thin-sliced beef
emjeo (kieserite) Magnesium sulfate (MgSO_4)  
See Part 2: Fertilizer Materials
emmental A pressed, wheel-shaped, hard French cheese with large holes
emmentaler 1) A moist, cooked, smoked Swiss sausage made from coarsely chopped, medium-sea­soned beef and pork stuffed into a pork casing. 2) A semihard, smooth-textured Swiss cheese made from cow’s milk and shaped into large wheels (80–100 kg); it has a mild to sharp nutty taste and large spherical holes and is called the grandfather of Swiss cheese  
See Switzerland Swiss
emmentaler cheese (emmental, emmenthal) A light yellow, semihard cheese made from cow’s milk, similar to Swiss in texture (with large holes), color, and taste; it keeps well and is good for export.  
See also Swiss cheese  
See Part 2: Cheese Characteristics; Cheese Composition
emmental (emmentaler; gruyère) A mild cheese made from cow’s milk, with rennet; it has a dark yellow rind and a sweetish nutty flavor and is aged 4 months; used in fondues See emmentaler cheese
emmersdorf See limburger cheese
emmer wheat See wheat
emollient A substance used to soften skin
em-pica A measure of length
1 em-pica = 0.4233 centimeter (cm)
= 0.167 inch (in.)
emrelettes Peeled seedless grapes that have been tinted green with crème de menthe
emu A sweet, cloudy white wine made from palm tree sap
emu dokon Steamed fermented rice balls
endive (Brussels chicory; chicory; curly endive; escarole; salad chicory) 273

**Emulsification** In cleaning, the mechanical action of breaking up fats and oils into small droplets and suspending them in a cleaning solution.

**Emulsification Power (Bind-to-Fat Ratio)** A measure of the amount of fat (in grams) emulsified per gram of protein.

**Emulsifier** A substance that prevents the separation of immiscible substances (e.g., oil and water) in an emulsion; helps to distribute evenly one substance in another; used to improve texture, homogeneity, consistency, and stability; e.g., monoglycerides, diglycerides, polysorbates, sorbitan monostearate, and lecithin. See *emulsifying agent*.

**Emulsify** To suspend fine particles or globules of one substance in another.

**Emulsifying Agent (Emulsifier, Stabilizer)** 1) A surface-active compound whose molecule is composed of a long-chain hydrocarbon terminating in a water-soluble group (OH or COOH), e.g., certain alcohols and fatty acids; when placed in a mixture of oil and water, the molecule orients itself with the water-soluble end in the water and the oil-soluble end in the oil, reducing the interfacial tension between the two liquids and enabling them to form a stable colloidal dispersion. Egg yolk, which contains lecithin, is used in making mayonnaise; other commonly used food emulsifying agents are albumin, agar, casein, gums, etc. 2) A substance that emulsifies by coating fat particles suspended in water, thus preventing them from cohering, e.g., albumin in milk, algin in ice cream. See also *protective colloid*.

**Emulsion** A dispersion of oil or fat particles in water (or water in oil) obtained by use of either a surface-agent (detergent) or a protective colloid; the particles may be of colloidal dimension, as in mayonnaise, or much larger (fat particles in milk or hydrocarbon particles in rubber latex). For flavoring agents, emulsion means the mixture of flavor oils in water globules. See Part 2: Margarine Production.

**Enantiomer (Enantiomorph)** Either of the two forms (dextro- and levo-) of an optical isomer. See also *optical isomer*.

**En brochette** Broiled on a skewer.

**Encapsulate** To form a protective film around.

**Encapsulation** The process of coating particles (liquid or solid) with a partially impermeable layer to delay evaporation or chemical reactions.

**En carafe** A beverage served in an open container (e.g., a pitcher).

**Enchilada** A fried, soft, corn tortilla that is filled with spiced meat, vegetables, and/or cheese, rolled, and baked, covered with sauce (alternating layers of tortillas and a meat sauce).

**End** See closure.

**End-** A prefix meaning within.

**Endamoeba histolytica** Parasitic amoebae found in the intestines and liver of higher animals, causing amoebic dysentery and liver abscesses. See Part 2: Microorganism, Media.

**En daube** A meat of seafood stew made with wine, vegetables, and herbs.

**Endemic** Native to an area or locality; a disease with a normally constant incidence in a population or area.

**Endergonic** Describes a reaction that absorbs or requires energy.

**Endive** (Brussels chicory; chicory; curly endive; escarole; salad chicory) A vegetable (Cichorium endivia) whose narrow, curled or plain, dark green to white leaves are used as food (cooked vegetable) or a salad green; a curled-leaf salad plant that is usually bitter until blanched; there is also a broadleaf variety (often marketed as escarole); endive is closely related to chicory. Witloof, or Belgian endive, is compact, cigar-shaped, and white (self-blanching). The term endive or French endive usually applies to witloof chicory. 19,500–27,000 seed/oz; seed ½ oz/100-ft row; 6 in. apart in rows 15 in. apart; germination time 3–6 days; matures in 70 days.

**Types:**
- Broadleaf (escarole)—broad, thick, smooth leaves with white midrib; loose head with blanched inner leaves
- Narrow, curled, or curly—narrow, med. green, fringed, curly leaves; loose head

Endive is fresh if the head is tightly curled, the stem is soft, and the leaves are white with yellow tips.
endive (Brussels chicory; chicory; curly endive; escarole; salad chicory)

is consumed raw, braised, sautéed, and stuffed and baked, and is used in salads, quiches, soups, and stews; usually served raw but may be braised until tender.

Available: raw; canned; frozen (freezing point 31.9°F)
1 small head = 4 cups, torn
1 serving = 0.8–0.9 med. head

Composition (raw): moisture 93%; protein 2%; fat 0.1%; carbohydrate 4%; ash 1%

Storage: 32°F; 90–95% relative humidity; covered with dark paper; use within 2–3 weeks.

See also chicory; escarole

See Part 2: Minerals, Food; Planting Density; Storage; Sugar, Vegetables; Vegetable Composition; Vegetable Planting Chart; Vegetable Plants

endo- A prefix meaning within, as in endosperm, endocrine, etc.

dermo agar See Part 2: Microbiological Examination of Dairy Products; Microorganism, Culture Media, Dairy and Food Products; Microorganism, Culture Media, Water and Sewage, Standard Methods; Microorganism, Media

dermo broth A broth for the detection of coliform and other enteric organisms; gram-positive organisms are inhibited by sodium sulfite and basic fuchsin.

See Part 2: Microorganism, Culture Media, Water and Sewage, Standard Methods; Microorganism, Media

dermoine Of or relating to an endocrine gland, the endocrine system, or their secretions, which pass directly into the bloodstream or lymphatic system

dermoine gland A ductless organ that secretes hormones into the bloodstream or lymph

dermoinology The study of the function and structure of endocrine glands and of the hormones they secrete

dermoenzyme An enzyme which acts in the cell that produced it

dermogastrioffs An inflammation of stomach lining

dermogenous Originating or arising from within the body concerned

dermomylyla Connective tissue separating the muscle fibers (myofiber), composed of thin basal lamina and associated reticular fibrils

dermophyte A plant growing within another plant

dermoplasmic reticulum The membrane system within the cytoplasm of a eucaryotic cell where energy activity is high and protein is synthesized

dermopepsis (soft rot) An internal mold rot of the fig; the decay progresses from the cavity of the fig outward and is caused by the fungus Fusarium moniliforme, whose spores are carried by the fig wasp (Blastophaga psenes)

endoysperm The large center (carbohydrate or starchy) portion of a cereal grain; containing gluten-forming proteins and starches (constitutes; e.g., 83% of wheat); the part of a seed that contains the plant’s nutritive tissue

See Part 2: Corn Kernel; Corn Kernel Composition; Rice Kernel; Wheat, Fatty Acids; Wheat Grain; Wheat Kernel; Wheat Kernel Parts; Wheat, Parts of Grain; Wheat, Parts of Grain, Vitamins

endoyspore A resistant body formed within the cell of certain bacteria See spore

dermotoxin A polysaccharide–protein–lipid material that is part of the gram-negative cell wall and is released upon death and autolysis of the cell; a toxin produced within and by the animal

dermoxeriosis (blossom-end decline; dry tip; internal decline; pink tip; tip deterioration; yellow tip) 1) An internal drying. 2) A physiological abnormality of lemons resulting in destruction of internal tissue, especially at the stylar end; affected tissue becomes pink-brown and a gummy substance is deposited next to the peel near the cavities. Affected fruit will float in water with the stylar end up. The disease develops only when lemons are on the tree and will not start or progress in storage.

dermo point (finish point) The moment during processing of a food product at which it has been cooked to the proper consistency for filling

dermo A poisonous cholorinated hydrocarbon insecticide that is an isomer of dieldrin; use may be prohibited on food crops

dermo See Part 2: Food Guide

dermo requirement The energy intake needed for an average healthy person in a specific category

dermo value of food The heat given off by burning a stated weight of food; the Atwater system assigns values of 9 calories to fat, 4 calories to carbohydrates, and 4 calories to protein. See also calorie

See Part 2: Recommended Daily Dietary Allowance

dermo d’Arvier An Italian wine produced from petit rouge grapes

dermofer Dried and powered injera (a soft bread baked from teff) mixed with stew or butter, green peppers, and fried onions

engadiine cheese A cheese made in Switzerland from whole milk, with rennet

engadiiner A moist or semidry, cooked or uncooked, smoked or unsmoked Swiss sausage made from medium-seasoned beef and pork stuffed into beef or pork casing

English bamboo Pickled young shoots of the elder tree

English breakfast tea Any of several blends of strong black teas from China

English chop A double lamb chop cut across the saddle area; it is usually boned, wrapped around a section of the kidney, and skewered.

See Part 2: Lamb Cuts and Uses

English cut A beef cut made from the thin ends of the fourth and fifth ribs

See Part 2: Beef Cuts

English dairy cheese An aged, sharp-flavored type of cheddar

English medium hog casing A hog casing 35–38 mm in width

English sole (Parophrys vetulus) A type of flounder often obtained from the northeast Pacific; a fish with white meat and light to moderate flavor See sole
**English-style side of pork**  See Wiltshire side

**English system**  A method of grading wool based on the number of hanks of yarn that can be produced from a pound of scoured wool

**English wheat**  See wheat

**enhancer**  A substance used to make greater, intensify, or heighten; as a substance added to a food to increase its flavor without contributing any taste of its own, e.g., monosodium glutamate

**enjera**  See injera

**ennoblement**  See enrichment

**en papillote**  Baked or served in parchment or brown paper

**en pension (American plan)**  Room price includes price of meals

**enrich**  To replace vitamins and minerals lost during processing

**enriched**  Describes a product that contains added nutrients that are naturally associated with a specific food; a product to which some of the nutrients lost in manufacturing have been restored

**enriched rice**  Rice that is enriched with iron, thiamin, riboflavin, and niacin  
See Part 2: Cereal Enrichment

**enrichment (ennoblement)**  Bringing a food up to a specified nutritional standard by adding nutrients during manufacture; for example, rice is enriched with iron, thiamin, riboflavin, and niacin. Federal regulations for cereal require the following enrichment levels (relative to unenriched flour):  
- B vitamins  
  - Thiamin—10 times  
  - Riboflavin—8 times  
  - Niacin—6 times  
- Iron—4 times  
- Calcium—optional

There are also federal standards for bread, buns, certain wheat flours, corn grits, cornmeal, farina, macaroni, noodle products, rice, and rolls.  
See also fortification  
See Part 2: Cereal Enrichment

**enrobe**  To dip a candy center into liquid chocolate or other coating mixture using a machine designed for this purpose

**ensete flour**  A dried flour made from the fermented pseudostem of ensete or false banana

**ensilage (silage)**  Anaerobically fermented (acid) green forage or fodder stored in a silo or trench

**enter**  A syllable meaning intestine

**enteric bacilli**  Rod-shaped microorganisms that infect the intestines  
See Part 2: Microbiological Media

**enteritis**  An inflammation of the intestine

**enterococci**  Spherical microorganisms that infect the intestines  
See Part 2: Microbiological Media

**enterococcus agar**  See Part 2: Microorganism, Culture Media, Water and Sewage, Standard Methods

**enterocrinin**  A hormone that is found in the intestinal mucosa and that stimulates small intestine activity

**Enterprise Seedless**  A variety of midsummer Florida orange

**entire**  Of a leaf, having the margins free of indentations

**entire wheat flour**  See graham flour

**ento-**  See endo-

**entomology**  The study of insects

**entraîlles**  Guts; internal parts; viscera; usually refers to stomach and intestine

**entrammes**  A semisoft cheese with medium flavor

**entrecôte**  1) Beef cut from between the ribs. 2) Beef sirloin

**entrecôte Bercy**  Sirloin steak and sauce

**entrecôte steak**  A 1-in. steak cut from between the ribs or from the sirloin

**entrecuisse**  A poultry thigh

**Encore Deux Mers**  A light, medium-sweet (some are dryer) white wine produced between the rivers Garonne and Dordogne in the Bordeaux region of southwestern France

**entrée**  A dish that can be served before the main course, between courses, or may be the main course; appetizer; meat, fish, or poultry not classed as a roast; food other than a roast served as the main course; the main course of a light meal

**entremés**  A Spanish hors d’oeuvre

**entremets**  1) A sweet course. 2) A side dish; anything in the second course except the roast

**entropion**  A condition where either or both eyelids roll inward soon after birth, resulting in eventual blindness

**environment**  All external influences, conditions, and surroundings affecting life or reactions

**Environmental Protection Agency (EPA)**  The government agency that registers pesticides and administers the Federal Insecticide, Fungicide and Rodenticide Act as amended; the EPA requires that the intended use of a pesticide must be on the label or be covered by a Pesticide Policy Statement (PEPS) issued by the EPA

**enzián**  A schnapps-type spirit with gentian

**enzyme**  An organic thermolabile proteinlike catalyst for metabolic reactions, produced by living cells; may consist of protein in combination with a vitamin or mineral; enzymes can often be separated from the cell that produces them and still retain their activity. Enzymes in food can cause loss of food quality if they remain active during storage; often destroyed by canning or blanching.  
See Part 2: Enzymes, Food Industry; pH Values of Biological Materials

**enzyme-linked immunosorbent assay (ELISA; double antibody sandwich technique)**  A technique used to measure antigens or antibodies, e.g., the following procedure:  
1. An antigen (e.g., virus) is immobilized in wells on a plastic plate.
276 enzyme-linked immunosorbent assay

2. A specific antibody is added and it forms a complex with the antigen.
3. A second antibody produced against the initial antibody is added.
4. The enzyme horseradish peroxidase or alkaline phosphatase is covalently linked to the second antibody.
5. Reagents are added that produce a color due to enzymatic action.

eosin methylene-blue agar See Part 2: Intestinal Microorganisms; Microbiological Examination of Dairy Products

EP Edible portion

EPA (Environmental Protection Agency) See Environmental Protection Agency

epautre (German wheat) A coarse grain used for macaroni

epazote (pigweed) A green leafy herb used in Southwestern cooking

epi- A prefix meaning upon or exterior, e.g., epidermis

epiblast (ectoderm) The outer layer of the gastrula or blastoderm See Part 2: Wheat Kernel; Wheat Kernel Parts

epicarp (exocarp) The outer layer of the pericarp See Part 2: Orange Structure; Rice Kernel; Wheat Kernel Parts

épice Spice

Epichloe typhina See Acremonium coenophialum

epicure A connoisseur of fine foods, wines, and liquors; a discriminating diner; a gourmet

epidemic The sudden occurrence of a large number of cases of an infectious disease

epidermis The thin, outer, pigmented layer of the skin; the outer layer of cells See Part 2: Corn Kernel; Hide; Layers; Hide, Salt Absorption; Wheat Kernel Parts

epididymis The elongated body or tube that receives sperm from the testicle and transports, concentrates, stores, and controls the maturation of the sperm

epigramme 1) Sliced lamb breast. 2) A lamb cutlet

epimysium The connective tissue surrounding an entire muscle

epinephrine A drug that is extracted from the inner portion (medulla) of the adrenal glands of cattle, hogs, and sheep and can be used for shrinking mucous membranes, as a heart stimulant, and a muscle relaxant; also made synthetically; also sold as a product with the trademark Adrenalin

epiphysis A rounded (usually an articulating surface) end of a bone

epithelial Refers to the outermost cells of the skin or other membrane

epithelium The cellular tissue covering a surface or lining a cavity See also epidermis See Part 2: Wheat Kernel Parts

epitsi See apitsi

E-plate Electrolytically coated tinplate

epluchage The sorting of picked grapes

epoisse A soft, fresh, mold-inoculated, munster-type French cheese (uncut curd) made from cow's milk, (skimmed or whole) with rennet, flavored with herbs

epoxy can coating A coating that has high heat stability, lacks discoloration at the side seam, and is free from off flavor; cross-linking (converters) is used to harden, e.g., amines and polyamides or phenolic-urea and melamine

epoxy group An organic group in which an oxygen atom lies outside the carbon chain:

$$\text{C} - \text{O}$$

epsilon (E, e) Greek letter with an English equivalent of è

epsom salts Magnesium sulfate (MgSO₄ · 7H₂O); named from Epsom, England See Part 2: Fertilizer Materials

equation A formula and symbols that represent, e.g., a chemical reaction

equilibrium A state of balance between reactants and products in a chemical reaction:

$$A + B \xrightarrow{r_1} \frac{r_1}{r_2} C + D$$

At equilibrium $$r_1 = r_2$$ ($$r$$ = rate of reaction); amounts of $$A$$, $$B$$, $$C$$, and $$D$$ remain constant

equilibrium constant ($$K_{eq}$$) For the reaction

$$wA + xB \xrightarrow{} yC + zD$$

$$K_{eq} = \frac{(C)^y \times (D)^z}{(A)^w \times (B)^x}$$

Capital letters represent quantities in moles per liter.

equilibrium relative humidity (ERH) The amount of water vapor in the headspace of a container at a given temperature

equine Pertaining to horses

equine encephalitis A group of diseases of the horse that cause nervous disturbances and mortality and can also infect humans; spread by mosquitoes; immunization is available.

equitation The skills involved in riding a horse

equity The net value of property after all debts are deducted

equivalent Equal; corresponding; same See Part 2: Fruit and Vegetables, Cost Per Serving

equivalent weight The molecular weight of a compound divided by the valence of its positive ions or radicals or by the value for the change in valence in oxidation-reduction reactions; the weight of an element that will combine with one-half the atomic weight of oxygen (7.9997 g); also called combining weight See Part 2: Equivalent Weights

Er Symbol for the element erbium
erbium (Er) A rare-earth element of the lanthanide series; at. no. 68; at. wt. 167.27; Group IIIB of the Periodic Table; oxidation state +3; electron configuration 2-8-18-30-8-2

erco A provolone-type cheese made from cow's milk

ermie A blue cheese made from cow's milk

erepsin An enzyme (mixture of peptidases) that is secreted into the small intestine and converts polypeptides into amino acids

See Part 2: pH Values of Biological Materials

erg A measure of work and energy
1 erg = 1 dyne-centimeter (dyn-cm)
= 1.020 × 10^-3 gram-centimeter (g-cm)
= 1 × 10^-7 joule (J)
= 7.3756 × 10^-8 foot-pound (ft-lb)
= 2.3889 × 10^-8 gram-calories (g-cal; mean)
= 1.020 × 10^-8 kilogram per meter (kg/m)
= 9.4805 × 10^-11 British thermal unit (Btu; mean)
= 2.773 × 10^-11 watt-hour (W-h)
= 2.3889 × 10^-11 kilogram calories (kg-Cal; mean)
= 3.7250 × 10^-14 horsepower-hour (hp-h)
= 2.773 × 10^-14 kilowatt-hour (kW-h)

-erg- A syllable meaning work

ergocalciferol (vitamin D_2) Calciferol

ergosterol (C_{28}H_{43}OH) A steroid alcohol that, on irradiation with ultraviolet light, yields calciferol (vitamin D_3)

See Part 2: Vitamins

ergot 1) A fungus (Claviceps purpurea) that grows on grasses; a fungal disease of wheat that makes consumption hazardous to humans and animals; a fungal disease of rye and other cereals where the grain is replaced by long, hard, hornlike, dark-colored bodies that makes consumption hazardous. See also rye. 2) In horses, a horny growth behind the fetlock joint

erg per second (erg/s) A measure of power, rate of energy transfer, and heat
1 ergs
= 1 dyne-centimeter per second (dyn-cm/s)
= 1.439 kilogram-calorie per minute (kg-Cal/min)
= 4.4254 × 10^-6 foot-pound per minute (ft-lb/min)
= 1 × 10^-7 watt (W)
= 0.0000000737612 foot-pound per second (ft-lb/s)
= 5.888 × 10^-9 British thermal unit per minute (Btu/min)
= 1.34 × 10^-10 horsepower (hp)
= 1 × 10^-10 kilowatt (kW)

ERH See equilibrium relative humidity

eriwani (elisavetpolen; karab; kasach; tali kurini) A salted Russian cheese of the Caucasus, made from ewe's milk. See karab; kurini cheese; tamales

Erlenmeyer flash A flat-bottomed glass container that gradually tapers to a narrow mouth; used in chemical laboratories

error of first kind (α) Rejection of a hypothesis that is true

error of second kind (β) Accepting a hypothesis that is not true

erucic acid See docosenoic acid

eructation Belching air and gas from the stomach; a belch

ervy A soft, camembert-like cheese made from whole cow's milk with rennet. See troyes

ervy-le-châtel A short, cone-shaped, camembert-type cheese made from cow's milk and cured 4–8 weeks

Erwinia A genus of vegetable pathogens related to coliform
See Part 2: Rot Spoilage; Spoilage, Carbohydrate Foods

erythorbate An isomer of ascorbate. See ascorbate; ascorbic acid

erythorbic acid (isoascorbic acid) An antioxidant that accelerates color fixing in meat and is used as a preservative. Storage: tight, light-resistant container. See ascorbic acid

erthro- A prefix meaning red

erythrocyte A red blood cell, which contains hemoglobin. See also red blood cell

erthyromycin An antibiotic; used in poultry to increase feed efficiency and egg production. See Part 2: Antibiotic Standards

erythroplastid See erythrocyte

erthyrose See Part 2: Sugar, D-Aldehydo

ES See Extension Service

Es Symbol for the element einsteinium
-es A Latin suffix that indicates plural

esbareich A cylindrical (1–4 kg), semisoft to semi-hard cheese made from sheep's milk (sometimes mixed with cow's or goat's milk), with small holes and a tangy flavor, sometimes lightly smoked

escabèche Pickled meat or pickled fish; a small fish hors d'oeuvre

escallop See scallop

escalopes Thin pieces of meat

escarchado An aniseed-flavored herb liqueur that contains sugar crystals

escargot A snail
Varieties: garden snail (Helix aspersa); vineyard snail (H. pomatia)

escarole (broad-leaved endive; escarol; escarolle; Chicoree scarole; Cichorium intybus) A salad
green with large, ruffled, bitter leaves that are dark green, edging into yellow; it resembles chicory but the leaves are broader and less curly. Endive produces in its second year a seedstalk that resembles wild chicory and is often called escarole. See chicory; endive
See Part 2: Minerals, Food; Sugar, Vegetables

escarole soup Available as a ready-to-eat canned soup Composition (ready-to-serve): moisture 96.9%; protein 0.6%; fat 0.7%; carbohydrate 0.7%; fiber 0.3%; ash 1.0%

Escherichia A genus of gram-negative, rod-shaped, usually nonpathogenic, bacteria found in the intestines of animals and humans See Part 2: Microorganism Reactions on Differential Tube Media; Spoilage, Carbohydrate Foods

Escherichia coli A common intestinal bacterium; some strains are pathogenic

escoveitched fish Pickled fish
escovitch Pickled meat or pickled fish

esphægus (oesphægus) The gullet, or food pipe; the alimentary tract between the mouth (pharynx) and the stomach

espagnole A brown sauce See brown sauce

espallier 1) To train plants to grow on a flat surface and pruning to confine growth to one plane. 2) The trellis or lattice on which trees or shrubs are trained to grow in a flattened form

esparto A coarse grass of northern Africa from which a wax is obtained; it is also used for specialty papers. See Part 2: Wax

espresso coffee Coffee made by forcing steam under pressure through powdered coffee

espresso roast (Italian roast) A procedure for roasting coffee that produces a black-brown bean that shines with coffee oil; the coffee has a penetrating, robust flavor

espumante A white sparkling wine

esrom A yellow, rich, mild, tilsit-type cheese

essang seed oil An unsaturated fatty acid found in essang seeds See Part 2: Unsaturated Fatty Acids

essence (extract) 1) The natural, concentrated cooking juice of food, used for flavoring. 2) A flavoring agent obtained by distillation. 3) Extracted (by maceration or distillation) and bottled, essential flavors

essential 1) A distilled flower product in which the “essence” of the flower is evidenced by the fragrant odor See also essential oil. 2) A dietary factor that must be obtained from external sources, as it is not synthesized by bodily metabolism See also essential amino acid; essential fatty acid

essential amino acid An amino acid that is not synthesized in sufficient quantities within the body, namely, leucine, isoleucine, lysine, methionine, phenylalanine, threonine, tryptophan, and valine; these are nutritionally essential and must be furnished in the diet. Histidine and arginine are also essential amino acids for the rat and chick.

essential element An element that is essential for human nutrition: bromine, calcium, chlorine, cobalt, copper, fluorine, iodine, iron, magnesium, manganese, phosphorus, potassium, sodium, sulphur, and zinc

essential fatty acid A fatty acid required for good nutrition that must be present in the diet, as it is not produced within the body, e.g., linoleic and linolenic acids

essential nutrients Includes essential elements and both organic and inorganic compounds that the body requires but does not synthesize in sufficient amounts for its need

essential oil (volatile oil) A fragrant and inflammable volatile oily liquid derived from the flowers, stems, or leaves of plants by steam distillation, dry distillation, or vacuum distillation, or expressed or extracted with solvents (alcohol or ether but not water); insoluble in water; volatile oils removed from a spice by distillation usually have the taste and smell of the original plant because they retain the characteristic odor or flavoring factors in biological materials. Essential oils are not glycerol esters and have no relationship to edible oils; they are normally not used with products that will be heat processed because essential oils are readily vaporized at high temperature. They are used as the basis of perfumes and flavors. Usually contain:

- Constituents responsible for aroma
- Most of constituents responsible for flavor
- Do not contain:
- Nonvolatile flavor constituents
- Pungent constituents

See Part 2: Essential Oils

Essex (Essex Half-Black; White-Shouldered) A large-framed breed of English swine, similar to the Wessex Saddleback, that are black with white belt around the front shoulders

established price See target price

establishment Premises that have been approved and registered by a controlling authority

establishment number A USDA-granted number on the inspection stamp that identifies the plant

estate bottled Indicates that a wine has been bottled by the vineyard, i.e., the winery was involved with growing, crushing, and fermenting the grapes and ageing and bottling the wine

estepo A Swiss cheese made from cow's milk

ester

\[ R' - C - O - R \]

An organic compound formed by reacting an alcohol with an acid, a molecule of water being removed in the reaction:
Esters are responsible for part of the bouquet of mature wines.

**esterase** An enzyme that attacks simple esters

**esterencuby** See ardi-gasna

**esterification** The chemical reaction between an alcohol and an acid to produce an ester

**est-est-est** A clear or white, dry or semisweet, light wine, produced in the region of Rome

**estonsky** An edam-type cheese

**estradiol** A female sex hormone produced by the ovaries

**estradiol** A female sex hormone, isolated from bovine ovaries, that is used in treatment of menopausal syndromes

**estradiol** A female sex hormone produced by the ovaries

**estradiol** A female sex hormone produced by the ovaries

**estradiol** A female sex hormone produced by the ovaries

**estrous cycle** The time between one period of ovulation and the next

**estrus (period of heat)** The recurrent, restricted period of sexual receptivity in females; the time when a female will readily breed

**estuary** An arm of the sea at the end of a river, sometimes including bays or areas where tide is found

**ethane** A flammable, odorless gas derived from petroleum

**ethanol** Used as a flavoring agent in food

**ethanol** A flammable liquid used as a solvent or beverage (e.g., found in wine, beer and liquor), or vehicle; a noncumulative poison; commercial grade is 95% (92.3% by wt.; 94.9% by vol.); often called ethanol or simply alcohol; sp. gr. 0.798 at 60°F; bp 78.5°C; heat value 7 calories per gram. A person with 0.08–0.15% concentration in blood is considered “under the influence.”

**Anhydrous (dry) form—200 proof; 85,000 Btu/gal 95% alcohol—190 proof**
100 lb corn = 5.3 gal, 80–85% alcohol
= 4.3 gal, 97% alcohol
Storage: tight container, away from fire
See Part 2: Alcoholic Solutions; Antioxidant Mixtures;
Fluid and Fermented Milks, Composition

ethyl anisate (ethyl p-methoxybenzoate)

\[
\text{CH}_3\text{O} - \text{COOCH}_2\text{CH}_3
\]

Used as a fruity, anisely-like flavoring agent in food
Storage: full, tight, glass container in a cool, dark place

ethyl anthranilate (ethyl aminobenzoate)

\[
\text{NH}_2 - \text{COOCH}_2\text{CH}_3
\]

Used as a floral, orange-blossom-like flavoring agent in food;
sp. gr. 1.042–1.046
Storage: full, tight glass container in cool, dark place

2-ethylbutyraldehyde

\[
\text{CH}_3\text{CH}_3
\]
\[
\text{CH}_3\text{CH}_2\text{CHCHO}
\]

Used as a pungent flavoring agent in food; sp. gr. 0.808–0.815
Storage: tight container

ethyl butyrate [CH₃(CH₂)₄COOCH₂CH₃] Used as a fruity flavoring agent in food; sp. gr. 0.870–0.878
Storage: full, tight glass container in a cool, dark place

ethylbutyric acid

\[
\text{CH}_3\text{CH}_3
\]
\[
\text{CH}_3\text{CH}_2\text{CHCOOH}
\]

Used as a flavoring agent in food; sp. gr. 0.870–0.878
Storage: tight container

ethyl caprylate See ethyl octanoate

ethylcellulose An ethyl ester of cellulose; used in food as a protective coating, binder, or filler
Storage: well-closed container

ethyl chloride (C₂H₅Cl) A flammable gas (liquid when compressed)
See Part 2: Refrigerant

ethyl cinnamate (ethyl 3-phenylpropenoate)

\[
\text{CH}=\text{CHCOOCH}_2\text{CH}_3
\]

Used as a cinnamon-like flavoring agent in food; sp. gr. 1.558–1.560
Storage: tight, light-resistant container

ethylene (C₂H₄) A flammable gas used in ripening some fruit, such as lemons, oranges, tomatoes, bananas, dates, and persimmons (the gas destroys the chlorophyll so that the other pigments may become visible); also used as a refrigerant
See Part 2: Refrigerant

ethylenediaminetetraacetic acid (EDTA; edetic acid)

\[
\text{[HO—C} - \text{CH}_2\text{N(CH}_2\text{)}_2\text{N—[CH}_2\text{—COH]}_2
\]

A food antioxidant used in dressings, margarine, and sauces
See EDTA

ethylene dibromide (EDB) A fumigant that has been shown to be carcinogenic

ethylene dichloride (dichloroethane) [(CH₂)₂Cl₂]
A toxic flammable liquid used as a food extraction solvent and fumigant; sp. gr. 1.245–1.255
Storage: tight container
See Part 2: Fumigants

ethylene oxide [(CH₂)₂O] A toxic flammable gas used for the sterilization of food, particularly spices; max. residual 50 ppm; bp 10°C; often mixed with 90–95% carbon dioxide, which makes it less susceptible to explosion
See Part 2: Fumigants

ethyl ether (CH₃CH₂—O—CH₂CH₃) A flammable liquid sometimes used as a general anesthetic and extraction solvent; dangerous!
Test for peroxide in ether:
1. Shake, for 1 h, 10 ml ether with 1 ml aqueous potassium iodine (1:10).
2. Protect from light.
3. When viewed transversely against a white background, no color should be seen in either layer.

ethyl formate (HCOOC₂H₅) A flammable liquid used as a fumigant and flavoring agent; sp. gr. 0.916–0.920
Storage: full, tight glass container in a cool, dark place
See Part 2: Fumigants

ethyl heptanoate (ethyl heptate)

\[
\text{CH}_3(\text{CH}_2)_6\text{COOCH}_2\text{CH}_3
\]

Used as a fruity, winelike flavoring agent in food; sp. gr. 0.866–0.872
Storage: full, tight glass container in a cool, dark place

ethyl hexanoate (ethyl caproate; ethyl capronate) [CH₃(CH₂)₅COOCH₂CH₃] Used as a fruity flavoring agent in food; sp. gr. 0.866–0.870
Storage: glass, light-resistant container

ethylidene chloride (CH₃CHCl₂) A flammable liquid used as a fumigant and refrigerant
See Part 2: Refrigerant

ethyl isovalerate

\[(\text{CH}_3)\text{2(CH}_2\text{)2COOCH}_2\text{CH}_3\]
Used as a fruitlike flavoring agent in food; sp. gr. 0.862–0.866
Storage: full, tight container in a cool, dark place

**ethyl lactate (ethyl 2-hydroxypropionate)**

\[ \text{CH}_3\text{CHOHCOOCH}_2\text{CH}_3 \]

Used as a flavoring agent in food; sp. gr. 1.030–1.032
Storage: tight, light-resistant container

**ethyl laurate (ethyl dodecanoate)**

\[ \text{CH}_3(\text{CH}_2)_9\text{COOCH}_2\text{CH}_3 \]

Used as a fruity, floral-like flavoring agent in food; sp. gr. 0.858–0.864
Storage: tight, glass container in a cool, dark place

**ethyl maltol**

\[ \text{CH}_3\text{CHOHCOOCH}_2\text{CH}_3 \]

A flavor- and aroma-enhancing agent that is found naturally in some foods; used as a sweet, fruitlike flavoring agent in food
Storage: tight container

**ethyl methyl phenylglycidate**

\[ \text{CH}_3\text{CH}_2\text{COOCH}_2\text{CH}_3 \]

Used as a fruitlike flavoring agent in food; sp. gr. 1.086–1.112
Storage: full, tight, glass container in a cool, dark place

**ethyl nonanoate (ethyl pelargonate)**

\[ \text{CH}_3(\text{CH}_2)_7\text{COOCH}_2\text{CH}_3 \]

Used as a fruity, fatlike flavoring agent in food; sp. gr. 0.862–0.866
Storage: full, tight container in a cool, dark place

**ethyl octanate (ethyl caprylate; ethyl octoate)**

\[ [\text{CH}_3(\text{CH}_2)_9\text{COOCH}_2\text{CH}_3] \]

Used as a fruity, floral-like flavoring agent in food; sp. gr. 0.864–0.870
Storage: tight, glass container in a cool, dark place

**ethyl oxyhydrate (rum ether)**

Used as a rumlike flavoring agent in food
Storage: tight container

**ethyl pelargonate** See **ethyl nonanoate**

**ethyl phenylacetate**

\[ \text{CH}_3\text{CH}_2\text{COOCH}_2\text{CH}_3 \]

Used as a vanilla-like flavoring agent in food
Storage: tight, light-resistant container

**ethyl violet azide broth** See Part 2: Microbiological Media; Microorganism, Culture Media, Water and Sewage, Standard Methods

**etiology** The study of the causation of disease

**etivaz** A very hard cheese made from cow’s milk

**etna** A wine produced in Sicily

Types:
- Red—robust, ruby-colored, dry
- White—dry, well balanced

**ETP** Electrolytic tin plate

**et seq.** _Et sequens_ (and the following)

**etsew** A fermented sourdough dumpling made with maize and cassava

**ettaler** A yellow or green herb liqueur

**etuku** A steamed cassava bread

**Eu** Symbol for the element europium

**eu-** A prefix meaning good, well, or beneficial

**eucalyptus leaf** A leaf used as an herb and for tea

**eucalyptus oil (dinkum oil)** A colorless or pale yellow, volatile essential oil steam-distilled from the leaves of the eucalyptus tree (_Eucalyptus globulus_); used as a pungent, spicy flavoring agent in food
Storage: full, tight container in a cool, dark place
See Part 2: Essential oils

**eucaryotic** Describes microorganisms that have a well-defined nuclear membrane, chromosomes, and exhibit mutotic cell division
euda  A ripened cheese made from low-fat or skimmed milk
Composition: moisture 56–57%; protein 30%; fat 6–7%; carbohydrate 1–2%; salt 2.6%
eugenol

![Chemical structure of eugenol](image)
Used as a spicy, clove-like flavoring agent in food; sp. gr. 1.064–1.071
Storage: full, tight container in a cool, dark place

euglena agar  See Part 2: Microorganism, Media
Eugon agar  See Part 2: Microbiological Media; Microorganism, Media
eulachon smelt  See smelt
eupepsia  Good digestion
Euphausiacea  See krill
Euromart  The European Economic Community (EEC)
European corn borer (Ostrinia nubilalis)  An insect that bores through the stalk of corn at any spot
Control: destroy stalks and plow under
European Development Fund (EDF)  Created by the European Economic Community to aid former colonies (Fonds Européen de Développement, Communautés Européennes, rue de la Loi 200, B1049 Brussels, Belgium)
European Economic Community (EEC)  A federation of European countries organized to promote economic growth and trade; member countries are: Belgium, Denmark, France, Great Britain, Greece, Ireland, Italy, Luxembourg, The Netherlands, Portugal, Spain, and Germany
European fruit lecanium (Lecanium corni)  A pest of the pear; convex (\(\frac{1}{4}\)–\(\frac{1}{2}\) in.) and brown; feeds on limbs and leaves and produces honeydew on which black fungus then grows
European plan  No meals included in room rate
European red mite (Panonychus ulmi)  A pest of the pear; the adult is velvety red and very convex; it damages foliage, which is bronze in appearance, and it interferes with normal fruit development.
European wheat stem sawfly (Cephus pygmaeus)  An insect that attacks wheat
europium (Eu)  A rare-earth element of the lanthanide series; at. no. 63; at. wt. 152.0; oxidation states +2, +3; Group IIIB of the Periodic Table; electron configuration 2–8–18–25–8–2
orbit K L M N O P
eutectic plate (cold plate)  A portable plate that contains a solution; they are frozen and used to maintain temporary refrigeration temperatures in containers
eutrophication  1) The nutrient enrichment of water. 2) A process that causes a lake to fill with solid waste. 3) A process that supports algae bloom

EVA (ethyl violet azide) broth  A broth used for detection, enumeration, and confirmation of enterococci, which is an index of pollution; other organisms are inhibited by sodium azide and ethyl violet.
See Part 2: Microorganism, Media
evaporated  Describes a product from which water has been removed by evaporation, e.g., evaporated skimmed milk (final composition): moisture 79–80%; protein 7–8%; milk fat 0.2–0.3%; total milk solids min. 15%; carbohydrate 11–12%; fiber 0%; ash 1.5–1.6%; See evaporated milk

evaporated food  Food that has been dried by artificial heat

**Evaporated milk**

<table>
<thead>
<tr>
<th>Composition</th>
<th>Skimmed</th>
<th>Whole</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>79.4</td>
<td>73.5–74.5</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>7.5</td>
<td>6.6–7.0</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>0.2</td>
<td>7.6–7.9</td>
</tr>
<tr>
<td>Total milk solids (%)</td>
<td>15</td>
<td>25.9</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>11.3</td>
<td>9.5–10.5</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>1.5</td>
<td>1.4–1.6</td>
</tr>
</tbody>
</table>

Specific gravity 1.066
pH = 5.9–6.3
Max. 0.1%
Disodium phosphate
Sodium citrate
Calcium chloride
Min. 25 USP units of vitamin D per fluid ounce
\(\frac{1}{2}\) cup evaporated milk, whole = 170 calories
Sodium 266–294 mg/cup (255 g)
Sold in 13\(\frac{1}{2}\)-oz "tall" cans and 6-oz "baby" cans
Storage (unopened): room temperature (below 70°F); use within 6 months.
Storage (opened): as for fresh milk, refrigerate, covered, use within 5 days  
See also sweetened condensed milk

**evaporation**  Conversion of a liquid to a vapor; this occurs at room temperature or lower, but is usually done by heating. The vapor becomes steam at 100°C.  
See Part 2: Dairy Terms; Milk and Cheese, Composition; Milk and Milk Products, Vitamin Content; Milk Composition; Milk, Concentrated Products; Minerals, Food; Stabilizers, Thickeners; Storage Times; Vitamin A, Milk and Milk Products

**evening primrose**  A biennial plant whose roots are used like parsnips

**everbearing**  Describes a plant that bears two or more crops in a single growing season

**eviscerate**  To remove the entrails

**eviscerated**  Describes a carcass from which all organs were removed from the great cavity of the body

**evisceration**  The removal of viscera (entrails and organs)

**ewe**  A female ovine animal (sheep) of any age; average gestation period 147 days (range 142-157); duration of heat 1-3 days; normal recurrence of heat 15-21 days  
See Part 2: Milk, Mammals, Composition; Milk, Species; Sheep Market Classes and Grades; Teeth Eruption

**ewe neck**  A depression at the top of the neck forward of the withers

**ewule bolo**  Steamed, fermented balls of rice

**ex-**  A prefix meaning out or away from

**exanthema**  A copper deficiency disease of citrus fruit that is distinguished by dark brown, glossy spots on the fruit and gum pockets in the albedo of the thickest-skinned fruit

**exelsior**  1) A soft, milk, high-fat (72%) cheese that is made from cow’s milk and humid-cured for 2-3 weeks, the surface becoming covered with white mold.  
2) Wood shavings used for packing

**excess calorie intake**  The overconsumption of calories

**exchange bread**  A food that contains approximately 15 g carbohydrate, 2 g protein, and 68 calories

**exchange fat**  A food that contains approximately 5 g fat and 45 calories

**exchange for physical (EFP)**  A simultaneous transaction between two traders wherein one trader buys physicals and sells futures contracts, and the opposite trader sells physicals and buys futures contracts; prices for EFP transactions are mutually agreed upon by the two parties involved.

**exchange fruit**  A food that contains approximately 10 g carbohydrate and 40 calories

**exchange meat**  A food that contains approximately 7 g protein, 5 g fat, and 73 calories

**exchange milk**  A food that contains approximately 12 g carbohydrate, 8 g protein, 10 g fat, and 170 calories

**excreta**  The products (e.g., feces and urine) of excretion

**excretion**  The removal of waste

**ex dock**  The buyer takes title to the goods only when they are unloaded on the buyer’s dock

**ex-factory**  The buyer takes title to the goods when they leave the vendor’s dock

**ex-light steer hide**  A steer hide weighing less than 48 lb.

**Exmoor Horn**  A hill breed of British sheep

**exo**  A prefix meaning outside

**exocoeus**  A flying fish that is used for food

**exoenzyme**  An enzyme that acts outside of the cell that produced it

**exogenous**  Describes something arising or originating outside the body of organism concerned

**exogenous brown discoloration**  See brown rot

**exogenous growth hormone**  A compound that improves growth performance and carcass characteristics

**exotoxin**  A soluble protein poison secreted by living cells; a toxic substance produced by another organism and introduced to an organism that did not produce it

**expanded**  Describes feed that has been exposed to moisture (which gelatinizes the starch), temperature, and pressure and then to an abrupt reduction in pressure, causing the volume to increase

**expectorant**  A substance that loosens phlegm or induces the ejection of mucus or fluid from lungs or trachea

**expediting**  “Rushing” purchase orders that are needed in less than the normal lead time

**expeller process**  Mechanically extracts oil from products by using a screw press

**experiment**  A controlled test or trial performed to discover something unknown (e.g., a substance or an effect) or to test a principle

**expiration date**  1) The date on which an option will cease to exist. 2) The final date (do not use after) you should eat or use food; the date after which a product cannot be sold and should not be used

**expire (abandon)**  The term for what happens to an option when, at expiration, it has no value; because the cost is finite to the purchaser, an option (unlike a two-sided contract) can be abandoned by the purchaser and does not have to be closed out. It can expire without value, in which case the purchaser would have lost the purchase price.
explorateur  A disk-shaped, small- to medium-sized (250–350 g) excelsior-type cheese

export  1) Describes a strong, alcoholic beer. 2) Describes goods, services, and products that are sold to buyers in foreign countries; a commodity conveyed (traded) from one area to another
See Part 2: Casings, Hog Bungs

export certificates  Certificates available to producers participating in the wheat and feed grain programs; they are redeemable for cash when the grain shown on the certificate has been exported.

export enhancement program  Provides government subsidies to increase the volume of agricultural exports

export PIK  An export subsidy that is to be given only to countries in which competing exporting countries are also using export subsidies See payment-in-kind

export restitution payment  A payment made to an EEC exporter to enable the exporter to compete on the world market

export sales reporting  A program that requires that export sales in one day involving more than 100,000 metric tons of major grains and oilseeds be reported within 24 hours; for other commodities, weekly reports are required.

export subsidy (restitution)  A government grant that is made to a private enterprise to facilitate exports

expressed oil  A vegetable oil obtained by pressing in a hydraulic press or expeller

exsanguinate  To cause blood to flow from; to deprive of blood

extender  A diluent added to adjust physical condition; a diluent that will expand the quantity of food

extensibility  The ease or degree of extension (stretch)

Extension Service (ES)  See Science and Education Administration

extensor  A muscle that extends (straightens) a joint

external  Outside; an outer part

external abdominal oblique  An outside sheet of muscles of the flank whose fibers point down and backward

extra-  A prefix meaning outside

extract (flavoring)  An alcohol or alcohol–water solution containing a flavoring (e.g., aromatic oil, essence, imitation, or essential oil) ingredient; less potent than essential oils. The following are examples: allspice; almond; anise; apple; caraway; celery seed; cinnamon; cherry; clove; ginger; lemon; nutmeg; onion; orange; peppermint; pineapple; pistachio; raspberry; rose; savory; spearmint; strawberry; sweet basil; sweet marjoram; thyme; tonka; vanilla; wintergreen. Natural juices and minerals are also used as flavoring (e.g., meat extract, yeast extract). Also, a flavoring obtained by evaporation or concentration of an active principle

extractable color (extractible color)  The amount of color a product will distribute to a medium (e.g., this determines strength of paprika); a measure of the color a spice will give to a liquid. Determined as follows: The material is usually diluted with acetone; this extracts the oleoresin that contains the coloring agent, which is then tested on a spectrometer.

extracted honey  Honey that has been separated from the comb by centrifugal force

extracted, mechanically (expeller extracted; hydraulically extracted; old process)  Fat or oil that has been removed by heat or mechanical pressure

extracted, solvent (new process)  Fat or oil that has been removed by an organic solvent

extraction  The removal of soluble components from a substance or mixture by use of a solvent, e.g., water (coffee), alcohol, ether, acetone, etc.

extra-dry vermouth  A very dry, clear wine with a trace of herbs in its flavor

extra gras crème  Contains a minimum of 45% fat

extra-narrow hog casing  A hog casing with a diameter of 29 mm or less

extraneous matter  Of a spice, the amount of nonspice material (dirt, stones, burlap fibers, etc.) found in the spice, which determines cleanliness

extra-wide hog casing  A hog casing with a diameter of 43 mm or greater

extrawurst  A moist, cooked, smoked or unsmoked Austrian sausage made from finely chopped, mildly seasoned (with nitrite) beef and pork stuffed into beef or artificial casings with diameter greater than 40 mm

extremity  An end or termination

extruded  Describes material that has been pressed, pushed, or protruded through an orifice or die under pressure

exudative  Losing fluid, or dripping

eye  1) The bud of a tuber; e.g., potato. 2) Holes (pin-sized to ¾ in.) in cheese, produced by gas formed during fermentation. 3) A compact muscle, usually embedded in fat, e.g., rib eye, loin eye, or eye of round

eye muscle  The longissimus dorsi muscle

eye of round (eye of silverside; semitendinosus)  A small, triangular muscle of the round See also semitendinosus
See Part 2; Beef, Boneless Cuts; Beef Round Cuts; Meat Identification

eye-spotted bud moth  An insect; the adult is gray with light beige bands on the forewings; the larva is brown with a black head and is up to ⅓ in. long. The larvae eat buds, blossoms, and leaves and spin webs.

eyran  See airan

ezerjo  A dry white wine
F  Symbol for the element fluorine
F₁  Offspring of parental generation (P₁)
F₂  Offspring of crossing F₁
faba  See broad bean
fabriama  See fra-fra
fabricated cuts  Boned or partially boned meat cuts made from primal cuts
fabricated steak  An uncooked, unsmoked American sausage made from coarsely chopped to chunked and ground tissue that is then restructured, pressed, formed, molded, or sliced
F.A.C.  Fat Analysis Committee
FAC albicans  See Part 2: Microorganism, Media
factor  1) One of two (or more) numbers that yield a given product when multiplied together, e.g., 2 and 4 are factors of 8; 3, 4 and 6, and 2 are factors of 12. 2) In biochemistry, an active nutrient substance See also filtrate factor; folic acid
factorial (1n; n!)  A number multiplied by each number lower than itself until 1 is reached, e.g., 7 factorial is

\[ 7! = 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 = 5040 \]

It can be estimated by Stirling’s approximation formula:

\[ n! \approx n^n e^{-n} \sqrt{2\pi n} \left(1 + \frac{1}{12n} + \frac{1}{288n^2} + \cdots \right) \]

The value in parentheses is practically unity for large values of \( n \).
factor, prime  Numbers that are divisible only by themselves and 1, and that yield a given quantity when multiplied together, e.g., the prime factors of 45 are 5 \( \times 3 \times 3 \).
factory end (bottom; can manufacturer’s end)  The can container end (usually the bottom) that is placed on the can body by the manufacturer
factory-end seam  See bottom seam
faculative  Possibly but not essentially (e.g., facultative aerobes and facultative anaerobes)
faculative anaerobe  An organism that is anaerobic but can grow in the presence of oxygen, e.g., bacteria that can grow with or without oxygen
FAD  Flavine adenine dinucleotide
faggot  A moist, cooked, unsmoked British sausage made from medium- or coarse-chopped, mild- or medium-seasoned pork not stuffed into small casing; sage-seasoned pork, liver, kidney and onions; a cooked, smoked sausage that is made from beef, veal, and pork cured with salt, nitrite, and sugar and is linked in 6-in. long pairs in sheep or hog casings See fagot
fagot (faggot)  Pork that is cooked and then mixed with ground livers, hearts, and onions; this is made into a ball, covered with caul fat, and baked with bundle of thyme, marjoram, and bay leaf; also called savory ducks See faggot
Fahrenheit (F)  A measure of temperature:

- Freezing point of water 32°F
- Boiling point of water 212°F at 760 mm Hg
- Absolute zero −459.6°F
- Normal body temperature 98.6°F

Conversion formulae:

\[ °F = \frac{9}{5}°C + 32 \]
\[ °C = \left(°F - 32\right) \frac{5}{9} \]
\[ °R = °F + 459.67 \]
\[ °R = \left(°F - 32\right) \frac{9}{5} \]
\[ °C = °R - 459.67 \]
\[ °C = \text{Celsius, or centigrade} \]
\[ °R = \text{Reaumur} \]

See Part 2: Temperature
fair average quality  See FAQ
Fair Packaging and Labeling Act (1966)  Requires that consumer products moving in interstate commerce be honestly and informatively labeled, so that any shopper may easily determine the best value
fairy-ring champignon (Marasmius oreades)  A small, brown to pink, edible fungus that creates the “fairy-rings” in short grass
fajy  See biza
falernum  A sweet liqueur with a low alcohol content, flavored with lime and ginger
fall armyworm (Spodoptera frugiperda)  A worm that feeds on young leaves, ears of the corn plant, and sorghum; also attacks wheat See also armyworm
fall cankerworm (Alsophila pometaria)  A worm that feeds on pear leaves
fall cure  A lightly salted, pickle-cured cod (contains 45–48% moisture)
fallish  Chub
fall salmon  See salmon
See Part 2: Salmon and Trout
false cabbage aphid  See turnip aphid
false chinch bug  A grayish brown, narrow-bodied (1-in. long) insect that usually congregates in masses; its feeding causes beets to wilt and die in a short time.
false fire blight  See pseudomonas blight
false hellebore  A plant having a poisonous principle
See Part 2: Poisonous Plants
false morels  An irregular to saddle-shaped, wrinkled-capped, central stalk fungus
false rib (asternal)  A rib whose cartilage is attached to the cartilage of the rib in front of it. See also rib
false seam  The double seam of a can where a part of the body hook and lid hook are not interlocked
false smut  A rice disease caused by a fungus (Ustilaginoidea virens); it rarely causes much damage, so no control measures are warranted.
falukorv  A moist, cooked, smoked or unsmoked Norwegian sausage made from medium-chopped, mildly seasoned beef and pork stuffed into an artificial casing; a moist, cooked, smoked Swedish sausage made from finely chopped beef and pork stuffed into an artificial casing
Composition: moisture 65% max.; fat 23% max.; binder 3% max.
Fameuse (snow)  A variety of apple that is good for eating, baking, sauces, and pies
family  A group of animals with a common ancestor
family budget survey  A survey concerned with family income and expenditure, including all the different foods and drinks purchased or otherwise obtained
family contracts  The practice of grouping families of similar parts together on one purchase order to obtain pricing advantages and a continuous inbound materials flow
family farm  A farm for which a family provides most of the labor, management decisions, and operating capital; the land may be owned, partly owned, or rented
famine  An extreme shortage of food affecting large numbers of people
fan  Rice
fancy sausage  Usually an uncooked, dry or semidry sausage
fan-kot  See kudzu
fanning  A small-sized green tea
fantasia  A moist, cooked, unsmoked Argentinean sausage made from finely ground, mildly seasoned beef, pork, and veal (with split dried green peas, wheat flour, and white wine) cooked in molds lined with pork skins
fanti kenkey  An acidic maize dumpling
FAO  Food and Agricultural Organization  See Food and Agricultural Organization
FAO/WHO Food Standards—Codex Alimentarius Commission  A cooperative effort by the Food and Agricultural Organization (FAO) and the World Health Organization (WHO) to develop international standards for the food industry
FAQ (fair average quality)  Fair average quality of the season at time and place of shipment
farad (F)  A unit of capacitance [1 C (coulomb) charging a capacitor to 1 V (volt)]
1 F = 1 x 10^6 microfarad
faraday (F)  An electrical measurement
1 faraday = 96,500 coulombs (C; the amount of electricity required to deposit 1 g equivalent weight in electrolysis)
= 26.8 ampere-hours (A-h)
See Part 2: Constants, Fundamental
faraday per second  1 faraday per second = 9.65 x 10^4 amperes (A)
farce  Stuffing; to fill with mingled ingredients
faremorr  A heavily smoked salami made from mildly seasoned beef, lamb, pork, and sometimes horsemeat; a dry, uncooked, smoked Norwegian sausage made from medium-chopped, medium-seasoned beef, lamb, pork, and horsemeat, with plucks and blood added; it is fermented and stuffed into a beef casing.
farepolse  A dry, uncooked, heavily smoked Norwegian sausage made from medium-chopped, mildly seasoned beef, lamb, goat, and horsemeat fermented and stuffed into an artificial casing; a heavily smoked salami made from mildly seasoned beef, goat, pork, and often horsemeat.
faresnabb (chub)  A dry, uncooked, smoked Norwegian sausage made from medium-chopped, medium-seasoned beef, pork, lamb, and horsemeat, with plucks and blood added; it is fermented and stuffed into artificial casings.
farina  1) Wheat (durum not used) in granular form from which the bran and most of the germ have been removed; the granules are hard particles of gluten, which is the part of hard wheats known as middlings; wheat middlings ground to flourlike size; can be cooked as a breakfast dish. 2) The gluten part of hard wheats known as middlings. 3) A fine potato powder used for thickening. 4) Starch obtained from vegetables (e.g., beans, peas, or potatoes) and used in cereal and pasta products
Nutrients added to enriched types:
Thiamine 2–2.5 mg/lb
Riboflavin 1.2–1.5 mg/lb
Niacin or niacinamide 16–20 mg/lb
Iron 13 mg/lb
Equivalents:
1 cup quick-cooking farina, cooked = 80 calories
1 cup, cooked = 8.4–8.6 oz
= 1 oz, dry
1 cup, dry = 6–6.1 oz
See macaroni; potato starch
See Part 2: Cereal Composition; Cereal Enrichment; Food, Composition; Grain Products, Composition
farina dolce  Chestnut flour
farina, light  A breakfast food made from the endosperm of wheat
farine  A type of gari that is short-fermented or unfermented
farinha  A flour or meal made from bitter cassava tubers
  \[\text{CH}_3-\text{C}=\text{CH}-\text{(CH}_2)_2-\text{C}=\text{CH}-\text{(CH}_2)_2-\text{C}=\text{CH}-\text{CH}_2\text{OH}\]
farinha de mandioca  A type of gari
farinha seca  White, toasted gari
farm  Defined as $1000 in gross sales of farm products per year
farm acreage base  The total of crop acreage bases on the farm, including all crop acreage bases plus the average acres planted to soybeans and the average acreage devoted to conservation
Farm Credit Administration  The federal agency that supervises the farm credit system
farm credit system  The financial system that includes the federal land banks, the federal intermediate credit banks, production credit associations, and banks for cooperatives
farmer  Similar to holsteiner (a coarsely chopped cervelat) except that it is made in straight lengths
farmer cervelat (farmer cervelat)  A semidry, cured, delicately seasoned sausage made of coarsely chopped pork and beef
farmer cheese  A cottage cheese made from cow's milk
Farmer-Owned Reserve (FOR)  A program of loans for wheat and feed grains that is intended to stabilize prices and hold reserves for times of short production
farmer sausage  A mild, coarse-chopped, smoked, uncooked, semidyimy sausage; a semidry or dry, cooked or uncooked, smoked American cervelat-type (farmer cervelat) sausage made from medium- or coarse-chopped, mildly seasoned (no garlic) beef (65%) and pork (35%), fermented and stuffed into beef or artificial casings; available in links, rings, or large-diameter casings. See holsteiner
farmer's cheese (pressed cheese; pot cheese)  A soft, white, dry cottage cheese pressed into packages; it is made from partly skimmed milk and has a mild flavor.
Farmers Home Administration (FmHA)  The agency that is authorized to make direct loans to farmers who cannot obtain credit from other sources; it may also guarantee loans made by banks.
farmer-style hog carcass  A hog carcass split on both sides of the backbone
farmer summer sausage  A dry, cooked, heavily smoked American sausage made from medium-chopped, mildly seasoned beef and pork (mostly beef, with some pork), fermented and stuffed into beef or artificial casings
farmhouse cheddar  A cheddar-type cheese made on farms in England

farm management  The science and art of combining land, labor, and capital to establish and run farming operations
farm marketing quota  See marketing quota
farm program payment yield  See program yield
farnesol  A naturally occurring flavoring agent
farniha puba  Brown, toasted gari
faro  1) A strong, sour, alcoholic gari beer made by long fermentation of wheat with a maturation period. 2) A blend of 1 kilogram of sugar candy and 5 liters of beer
farrow  To give birth to pigs
farrowing index  The number of litters produced by an animal per year
farrowing interval  The average time between one farrowing and the next
farrowing rate  The number of animals farrowing, given as a percentage of animals served
FAS  See free along side
FAS broth  A medium used in the enrichment serology method for detecting Salmonella in foods and feeds
faschingskrapfen  A doughnut made from wheat flour and filled with apricot jam
fascia  A covering of connective tissue that supports and protects internal organs of the body
fasciated  Describes an abnormal stem where plants have joined together or flattened
fascicle  A small bundle of fibers; a muscle bundle
fasciculus  A bundle of endomysially bound myofibers
fasekh  A small, strongly salted fish (Barbus spp. and Hestos spp.) used for seasoning
faseich  Strong, salted fish used for seasoning
faseole  A small, green bean similar to the haricot
fast  To abstain from eating
fast food service  As the name indicates this is a restaurant that serves food quickly; in the past, it has centered around a short order counter (drug store soda fountain, luncheonette, or snack bar) where the customer sat on a stool or remained standing, or a self-service service such as a cafeteria or buffet; currently, the concept applies to feeding establishments that fall into the following categories: utilization of time-saving equipment, utilization of labor-saving equipment, or utilization of self-service devices or methods.
fastidious  Disgust with food or eating
fasting  Abstaining from all food; the voluntary abstinence from food
fat (adipose tissue; fatty tissue; lipid)  An ester of glycerol and a fatty acid; a fat is solid at 18–25°C (64–77°F), and is called an oil if it is liquid at these
fat (adipose tissue; fatty tissue; lipid)

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functions: energy storage; integral part of cell membranes; supply essential fatty acids (e.g., linoleic acid). Fats are lighter than water and are poor conductors of heat.

1 tbsp lard, tallow, butter, or mayonnaise
= 2 tbsp 40% whipping cream
= 4 tbsp coffee cream
1 gal = 7.5 lb
2 cups = 1 lb
2 tbsp = 1 oz

Sources:

<table>
<thead>
<tr>
<th>Plants</th>
<th>Animals</th>
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<tbody>
<tr>
<td>Olive</td>
<td>Beef</td>
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<td>Peanut</td>
<td>Mutton</td>
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<td>Sesame</td>
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<td>Corn</td>
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<td>Sunflower</td>
<td>Salmon</td>
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<td>Safflower</td>
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The daily requirement for females (23–50 yr old) is 85 g/day. It is recommended that 30% or less of total caloric intake for adults be from fat. Coefficient of digestibility is 90–95% for different foods.

fat analysis (crude fat) Determination of fat content by extracting the dried sample with anhydrous ethyl ether or petroleum ether; the loss in sample weight or residue after solvent evaporation is reported as fat.

fatback The layer of fat over the loin of a hog (10% skin)

fat bloom A white crystalline coating resulting from separation of the fat in chocolate, which rises to the surface.

fat drippings Fat that is rendered during the cooking of one food and used as fat or oil in cooking another food.

fat-free mass (FFM) Body mass = ether-extractable fat + FFM
Fat-free mass = (total body water)/0.732 = (total body Potassium)/68.1

fat hen See orache

fathom A measurement of length or depth
1 fathom = 2 yards (yd) = 1.829 meters (m) = 6 feet (ft)

fatigue A condition that results in loss of ability to respond to a stimulus.

fat-liquoring Adding a fat or oil (e.g., neat's-foot oil) to damp leather to keep it from becoming hard and dry.

fat, saturated A fat containing fatty acids with only single bonds; usually a solid fat.

fat-soluble A nonpolar substance that is easily soluble in fat or a fat solvent (e.g., ether) and generally not soluble in water.
fat-soluble vitamins  Vitamins A, D, E, and K
fat stability  The hours required for a fat to reach a specific peroxide value under a given set of conditions, which include aeration of the sample at an elevated temperature
fat steaming  See sweat
fatty acid
\[ R-C-OH \]
An aliphatic acid occurring in both plants and animals; it may be saturated or unsaturated, the molecule being comprised of a chain of alkyl groups of varying lengths ending in a carboxyl group. Many are derived from glycerides by hydrolysis; used as lubricants, binders, defoaming agents, and emulsifiers in foods See also glyceride
See Part 2: Beans, Peas, and Nuts; Fatty Acids; Milk, Fatty Acids, Seasonal; Olives and Pickles, Composition; Poultry Composition; Sausage Composition; Soups, Composition; Sugars and Sweets, Composition; Unsaturated Fatty Acids; Vegetable Composition; Wheat, Fatty Acids
fatty acid, essential  A fatty acid that must be supplied in the diet
Linoleic (18-carbon, 2 double bonds)
Linolenic (18-carbon, 3 double bonds)—can be synthesized from linoleic acid; required only if linoleic acid is absent
Arachidonic (20-carbon, 4 double bonds)
fatty oil  An extractable, nonvolatile oil
fat, unsaturated  A fat containing one or more unsaturated (double or triple bonds) fatty acids; usually a soft fat
fauna  The animal life of an area
fava  See broad bean
fayesh  A wheat crispbread made with a yogurt starter
FC broth base  See Part 2: Microorganism, Culture Media, Water and Sewage, Standard Methods; Microorganism, Media
FDA  Food and Drug Administration See Food and Drug Administration
FD & C blue No. 1 (food, drug, and cosmetic color)  A synthetic food additive useful to color food
FD & C color (food, drug, and cosmetic colors)  The following are permanently listed:
   Blue No. 1
   Orange B—used in sausage casings, citrus
   Red No. 2—used on orange skin
   Red No. 3
   Red No. 40
   Yellow No. 5
   See colorant
   See Part 2: Colors Permanently Listed
FD & C orange B (food, drug, and cosmetic color)  This color is no longer approved by the FDA for use in food.
FD & C red No. 2 (food, drug, and cosmetic color)  This color is no longer approved by the FDA for use in food.
FD & C red No. 3 (food, drug, and cosmetic color)  A synthetic food additive used to color food
FD & C red No. 40 (food, drug, and cosmetic color)  A synthetic food additive used to color food
FD & C yellow No. 5 (tartrazine; food, drug, and cosmetic color)  A synthetic food additive used to color food; some people are allergic to this color
FDD  Food and Drug Directorate
F-distribution (\(z\)-distribution)  Frequency distribution of the ratio of two variance estimates, \(F = s_1^2/s_2^2\); the \(F\)-distribution has two numbers for its degrees of freedom, which are the degrees of freedom of the respective variance estimates: The first refers to the numerator (\(s_1^2\)) and the second to the denominator (\(s_2^2\)).
See Part 2: \(F\)-distribution
Fe  Symbol for the element iron
feather 1) A proteinaceous process elaborated by birds; the units grow out from skin follicles, analogously to mammalian hair. The chief protein component is keratin. 2) Long hair at the rear of the cannons and ankles of a horse (horse feathers). 3) See sharp seam
feather bone  A superior spinous process or flat process on the vertebrae in the thoracic region
See Part 2: Beef Chuck; Beef Rib Nomenclature; Beef Wholesale Cuts; Bone; Lamb Wholesale Cuts; Meat Identification; Pork Wholesale Cuts; Veal Wholesale Cuts
feather geranium  See ambrosia
feathering  Intercostal fat; the presence of fat streaks between the ribs
feathery mottle  When internal cork, chlorotic leafspot, and yellow dwarf viruses act together in the sweet potato
febr-  A prefix meaning fever
febrifuge  Something that reduces fever; a substance used to reduce fever
feces  The waste material discharged from the intestinal tract; (indigestible residue)
Fechmer-Weber law  The strength of the sensory process is proportional to the logarithm of the stimulus
fecula  A very fine starchlike (usually manioc or yam) or flourlike (usually potato) powder obtained from vegetables (e.g., cassava) and used for thickening
fedelini  Narrow, ribbonlike pasta See spaghetti
Federal Crop Insurance  A voluntary insurance program available to farmers under which the government pays approximately 30%
Federal Insecticide, Fungicide, and Rodenticide Act  Governs use of pesticides and states that it is unlawful for any person to use any registered pesticide in a manner inconsistent with its labeling See Environmental Protection Agency
Federal land bank  See farm credit system
federal marketing orders and agreements  See marketing orders and agreements
federal marketing orders and agreements
Federal Register method A method of analysis published in the Federal Register and later incorporated into the Code of Federal Regulations

Federal Reserve Board See monetary policy

feed 1) The food that is consumed by domestic animals; food for animals. 2) The amount or quantity of food given at one particular time.

feedback inhibition The inhibition of an enzyme in a pathway by a product of that pathway.

feed-cattle grades Fancy, choice, good, medium, cull.

feed efficiency (feed conversion) The ratio of the feed required to produce one unit of production.

feeders Cattle that are of the proper size to be put on a fattening ration before slaughter; animals with sufficient size to go into a feedlot.

feed flavor A flavor in milk and cottage cheese that is caused by the cow’s consuming weeds or weed seeds.

feed grade Feed suitable for animals but not for humans.

feed grain (coarse grain) Those grains most commonly used for livestock or poultry feed, e.g., barley, corn, grain sorghum, and oats.

feeding See nourishment.

feeding limestone A good source of dietary calcium; contains almost no magnesium.

feeding tankage See meat meal tankage.

feed leg The portion of a hydrostatic retort prior to the pressure section.

feet The plural of foot. 1) A distance See foot. 2) The hooves of animals.

feet-column of water A measure of pressure.

1 feet-column of water
  = 304.8 kilograms per square meter (kg/m²)
  = 62.426 pounds per square foot (lb/ft²; also psf)
  = 22.4185 millimeters of mercury (mm Hg; 13.59593 sp. gr.)
  = 0.88262 inch of mercury (in. Hg; 13.59593 sp. gr.)
  = 0.43353 pound per square inch (lb/in²; also psi)
  = 0.30480 meter of water (max. density at 4°C, 39°F)
  = 0.3048 kilogram per square centimeter (kg/cm²)
  = 0.0299 bar
  = 0.02595 atmosphere, standard (760 mm Hg)

feet fallen from rest Feet fallen from rest = (seconds)² × 16.08

feet per 100 feet A measure of grade.

1 foot per 100 feet = 1% grade.

feet per minute (ft/min; fpm) A measure of velocity.

1 ft/min
  = 0.305 meter per minute (m/min)
  = 0.18288 kilometer per hour (km/h)
  = 0.018288 kilometer per hour (km/h)
  = 0.11364 mile per hour (mi/h; also mph)

foot per second (ft/s; fps) A measure of velocity.

1 ft/s
  = 18.29 meter per minute (m/min)
  = 1.09728 kilometer per hour (km/h)
  = 0.68182 mile per hour (mi/h; also mph)
  = 0.59209 knot (U.S.)
  = 0.30480 meter per second (m/s; also mps)
  = 0.01136 mile per minute (mi/min)

foot per second per second (ft/s²) A measure of acceleration.

1 ft/s²
  = 30.48 centimeters per second per second (cm/s²)
  = 1.097 kilometers per hour per second (km/h-s)
  = 0.68182 mile per hour per second (mi/h-s; also mph-s)
  = 0.30480 meter per second per second (m/s²)

Fehling’s solution A test reagent consisting of two solutions; one contains 173 g sodium potassium tartrate and 50 g sodium hydroxide diluted to 500 ml with water; the other solution contains 34.6 g copper sulfate diluted to 500 ml with water; mix prior to use (NaKCuC₂H₆O₆); on reacting with a reducing sugar, it yields cuprous oxide [Cu₂O (dark red)].

feijoa (Feijoa sellowiana) A warm-temperature compact shrub that produces edible flowers and fruit that can be eaten fresh or made into a firm jelly.

Variety: Collidge.

feldspar Any of various Anhydrous silicates of alumina; used as component of fertilizers and poultry feed.

fell A membrane (connective tissue) between muscle and the skin of an animal; sometimes removed prior to cooking, but does not affect flavor.

felluccine A pasta.

felt A fabric made from short wool (also hair or fur) that is pounded together while the wool is hot and moist; has less strength than woolen fabric and is used for insulation.

felvagott A moist, cooked, smoked Hungarian sausage made from coarsely chopped, medium-seasoned beef and pork stuffed into beef or artificial casings.

female The sex that produces the ovum See also sex.

femoral artery An artery located in the rear legs and used to distribute the curing pickle when artesery-curing hams.

femorotibial See Part 2: Bone.

femto- A prefix meaning one quadrillionth (10⁻¹⁵, or 0.000000000000001).

femur The bone from the pelvis to the knee; the rear leg (thigh) bone. See also bone.

fenarull A salami made from coarsely chopped beef and lamb; a dry, uncooked, smoked Norwegian sausage made from coarsely chopped, medium-seasoned beef and lamb fermented and stuffed into an artificial casing.

fenbendazole A drug used as a wormer.
fence post treatment  Chemical solutions used: 
1. Coal-tar creosote (100% or can be mixed with 50% kerosene or fuel oil) 
2. 5% solution of pentachlorophenol (very toxic) 
3. 5% solution of copper naphthenate 
Methods in order of preference: 
1. Pressure 
2. Hot and cold bath 
3. Cold soaking

fen chiu  A beverage with a high alcohol content

fender rail  A rail placed around the wall of a farrowing pen to keep the sow from mashing her pigs

fenelar  Dried and smoked mutton

Fengjuichow  A breed of white, black, or black and white pig from Fukien Province, China

fennel (Marathon)  (Called sweet anise but not related to anise) The ripened fruit from a number of plants. A 5-ft perennial grown as an annual plant; it produces a flattened, oblong-ovoid, green to brown seed (± 1 in. long) with yellow ridges; sweet fennel or bitter fennel is used in seasoning (has a warm, sweet odor and tastes somewhat like anise); the leaves are used as a salad or cooked vegetable and in sauces, soups, and salad dressings; oil from the seed is used in confectionery, conduiments, pickles, and liquor; the seeds are used whole or crushed. The plant looks like celery with fernlike tops.

European (Foeniculum vulgare syn. officinale) —grown for seed

Florence fennel (fenocchio (F. vulgare var. dulce)) —the bulbous leaf base, separates into licorice-flavored stalks

Parts used:
Bulbous root—used like celery
Leaves—used for garnishing, flavoring (aniseed or licorice), and in salads
Seed—available cracked or course to medium grind
Stems and leaves (or base of leaves)—may be cooked as vegetables
Stems (of some types)—eaten uncooked, or cooked and used like asparagus or celery

Types
Sweet or Roman (anise flavor)
Wild (bitter flavor)

Terms:
Dark fennel—tan to brown
Light fennel—greenish yellow

Composition (seed): moisture 8–9% (6.5% max.); protein 14–16%; fat 14–16%; carbohydrate 52–53%; fiber 15–16%; ash 8–9% (9% max.); HCl-insoluble ash 2% max.; volatile oil 1.25–1.4%

Storage (seed): cool, dark, dry place

See also Florence fennel (not the same plant)
See Part 2: Essential Oils; Flavoring Agents, Natural; Planting Density

fennel flower (Nigella sativa)  Black cumin, not related to fennel See nigella

fennel oil  A volatile oil obtained from the dried fruit of Foeniculum vulgare; sp. gr. 0.952–0.974; used as a fennel-like flavoring agent in food

Storage: full, tight container in a cool, dark place

fennel, sea  See samphire

fenny  A liqueur flavored with coconut and cashew

fermium (Fm) 291
fernet branca An Italian (40% alcohol) bitters used to flavor alcoholic beverages; a very bitter aperitif wine with a high alcohol content

fern shoots (bracken; fiddlehead) The soft tip of young fern shoots

ferric Iron in highest valence state: Fe\(^{+3}\)

ferric chloride (FeCl\(_3\)) A coagulant and sludge conditioner; toxic, and corrosive even to stainless steel

ferric hydroxide [Fe(OH)\(_3\)] The floc former resulting from the use of ferric iron coagulants in sewage treatment; insoluble at all pHs encountered in water and waste treatment

ferric phosphate (ferric orthophosphate; iron phosphate) (FePO\(_4\) \(_x\) \(\cdot\) \(y\) \(\cdot\) \(z\) \(\cdot\) H\(_2\)O) Used as an iron nutrient additive in food or a dietary supplement

Storage: well-closed container

ferric pyrophosphate [Fe\(_4\)(P\(_2\)O\(_7\))\(_x\) \(\cdot\) \(y\) \(\cdot\) \(z\) \(\cdot\) H\(_2\)O] Used as a nutrient additive in food or a dietary supplement

Storage: well-closed container

ferric sodium pyrophosphate Used to enrich food

Storage: well-closed container

ferric sulfate (Ferri-Floc) Fe(SO\(_4\)\(_3\) \(\cdot\) \(y\) \(\cdot\) \(z\) \(\cdot\) H\(_2\)O) A coagulant and sludge conditioner

Ferri-Floc See ferric sulfate

Ferro-Therm The proprietary name of an insulating material

See Part 2: Insulation

ferrous Iron in a lower valence state: Fe\(^{+2}\)

ferrous fumarate

\[
\begin{array}{c}
\text{HC} \\
\text{O} \\
\text{C} \\
\text{C} \\
\text{O} \\
\text{O} \\
\text{CH} \\
\text{Fe}
\end{array}
\]

Used as a nutrient additive in food, or a dietary supplement; a source of iron in food

Storage: well-closed container

ferrous gluconate

\[
\begin{array}{c}
\text{OH} \\
\text{[HOCH}_2\text{-CH-CH-CH-C=O]}_2\text{Fe} \cdot 2\text{H}_2\text{O} \\
\text{OH} \\
\text{OH} \\
\text{OH} \\
\text{O}^{-}
\end{array}
\]

Used as a synthetic nutrient or dietary supplement (source of iron), as a flavoring agent, and as a yellow to gray coloring material (e.g., in black olives); causes gastrointestinal problems in some people

Storage: tight containers

ferrous sulfate (FeSO\(_4\) \(_{7}\)\(_\text{H}_2\)O) Used as a nutrient additive in food, as a dietary supplement, or as an iron supplement in food

Storage: tight container

fertilization See pollination

fertilizer Any of a number of agricultural chemicals applied to the soil to increase its fertility and productivity; among the more widely used are superphosphates, ammonium nitrate, potassium compounds, and lime; processed municipal wastes are also used. Animal manures are natural fertilizers.

See Part 2: Fertilizer; Fertilizer Materials; Sugar Beet Yield

fertilizer analysis Reported as \(x\)-y-z, where

\[
\begin{align*}
x &= \text{total nitrogen} \\
y &= \text{available P}_2\text{O}_5 \\
z &= \text{available K}_2\text{O}
\end{align*}
\]

fescue (Festuca) A perennial grass used for pasture; seed 24 lb/bu; 8–10 lb/acre in mixtures; 15–20 lb/acre alone

Varieties: Kentucky 31; Alta

Nutrients used for 3 tons of grazing: 135 lb N; 60 lb P\(_2\)O\(_5\); 210 lb K\(_2\)O

Meadow fescue (F. elatior)

Narrowleaf fescue

Red fescue (F. rubra)

Sheep fescue (F. ovina)

Tall fescue (F. elatior var. arundinacea)

See Part 2: Seed, Germination

festpolse A moist, cooked, smoked Norwegian sausage made from finely chopped, mildly seasoned, beef and lamb stuffed into an artificial casing

feta A crumbly, white, brined cooking cheese made from cow’s, goat’s, or sheep’s milk and packed in salt brine See feta cheese

feta cheese (fetta cheese) A cooking cheese from the Balkans that is pure white, semisoft, and salted; used for salad or cooking; a dry, salty cheese made from goat’s milk

Term:

Saganaki—small, fried squares

Composition: moisture 51–57%; protein 14–20%; fat 21–24%; carbohydrate 3–4.5%; fiber 0%; ash 4–5.2%; sodium 316 mg/oz

1 cup, crumbled = 4 oz

See feta

See Part 2: Milk and Cheese, Composition

fetlock The area on the legs below the cannon and above the pastern (ankle)

fetta A salty, white, fetalike cheese

fetticus See field salad

fettuccelle See spaghetti

fettuccini A flat-shaped spaghetti; little (\(\frac{1}{4}\)–\(\frac{1}{2}\) in. wide) noodles

fetus Unborn offspring from the embryonic stage to parturition; the embryo in the later stages of pregnancy

feuille de Dreux A ricrui-type cheese wrapped in chestnut leaves

FF Frozen food

FFA (ffa) See Free Fatty Acid Analysis; Fresh Freezer Accumulation

FFC Frozen food container

FFDCA Federal Food, Drug and Cosmetic Act
fiambres meat, luncheon A moist, cooked, unsmoked Uruguayan sausage made from finely chopped, mildly seasoned beef, pork, and veal, with gelatin, flour, vegetables, and eggs and not stuffed into a casing

fiber (fibre; roughage) A long, thin, and generally crystalline form of matter whose dimensions may be from 1 micron (μm) to 0.05 in. diameter and up to a foot or more long (for some cellulose fibers); many proteins are fibrous, e.g., keratin in hair and wool. Asbestos also has a fibrous structure. The sarcolemma surrounding a muscle fiber or cell is fibrous. Fiber in the diet comes only from plant sources and promotes bowel regularity by providing bulk and absorbing many times its weight in water, and also promotes satiety through the feeling of fullness. It is composed of complex carbohydrates such as cellulose (e.g., stems of salad greens, celery, wheat bran, and apple skins). See cell

See Part 2: Cherry Composition; Egg Composition; Flour, Extraction Rates; Fruit Composition; Grain Analysis; Macaroni and Noodles, Composition; Mangle Analysis; Meat and Meat Products, Composition; Milk and Cheese, Composition; Oil Meals, Composition; Packinghouse By-Products Composition; Plant Foods, Composition; Pulses, Nuts, and Seeds, Composition; Seed Composition; Soybean Composition; Starches and Starchy Roots, Composition; Sugars and Syrups, Composition; Tomato and Tomato Products, Composition; Vegetable Composition; Wheat, Carbohydrate Composition; Wheat Products, Composition

fiber, crude, analysis Measures the quantity of material that will not go into solution in acid and alkali, e.g., cellulose, insoluble hemicellulose, and lignin

fiber, dietary The dietary carbohydrate component that cannot be metabolized or degraded by the human digestive system

fibre A paper or cardboard material formed by compressing vegetable fibers See fiber

fibril A small filament; an extracellular, threadlike structure

fibroblast A flattened, irregularly shaped cell found in association with developing muscle; fibroblasts produce a matrix of collagen fibrils (basement membrane) around developing myotubes.

fibroin The principal protein of silk, made up of the amino acids glycine, alanine, tyrosine, and arginine

fibrous Having a stringy texture

fibrous connective tissue Connective tissue in which the fibers are closely woven with little space between them

fibula The small hind shank bone running parallel to the tibia and often fused to it

See Part 2: Bone

fiche See microfiche

ficin A buff-colored, bitter, proteolytic enzyme from the sap of the fig tree; used to tenderize meat, in brewing, and to coagulate milk

fiddlehead The coiled tips of young ferns; asparagus-flavored See fern shoots; fiddlehead fern

fig (Ficus carica L.) 293

fiddlehead fern (cinnamon fern) An edible fern with a curved stem; the young shoots have a fiddlehead shape and have an asparagus flavor; available fresh or canned

fidelini See spaghetti

field bean See broad bean

field bindweed (Convolvulus arvensis L.) A perennial weed

field salad (corn salad; lamb’s lettuce; Valerianella olitoria) A plant whose spoon-shaped leaves are used for salad greens (lettuce-like with a slightly bitter taste); 45 days to maturity; large, round, dark green leaves See corn salad

Composition (raw): moisture 93%; protein 2%; fat 0.4%; carbohydrate 4%; ash 1%

FIFO First in, first out

fifth (of a gallon) A measure of liquid volume used chiefly for liquor

1 fifth = 25.6 oz

fig (Ficus carica L.) A shrub (originally from the Mediterranean and Middle East) that produces a pear-shaped fruit that may be green, brown (yellow) or purple (black); the fruit has a thin skin and does not keep well; it has mild laxative properties. The pulp may be red to yellow-brown.

Varieties:

California

- Adriatic—small
- Calimyrna—almost white; brown flesh
- Mission—dark purple

Southeastern states

- Brown Turkey
- Brunswick
- Celeste
- Magnolia

Figs are available fresh, dried, or canned.

Fresh varieties:

- Brown Turkey—large, pear-shaped, green and brown skin and amber pulp
- Calimyrna—large, onion-shaped, green or yellow color skin, red pulp
- Kadota—small, round, green skin, purple pulp
- Mission (Black Mission)—large, pear-shaped, purple skin, red pulp

Dried (domestic) varieties:

- Adriatic—white; medium sized, pear-shaped; heavy, soft skin; brown flesh with numerous small, hollow seeds; holds shape on cooking
- Black Mission—dark purple; large, pear-shaped; brownish red flesh with small seeds; good flavor
- Calimyrna—light color; large, onion-shaped; brown flesh with few large, oily seeds; very sweet
- Kadota—yellow; small, round; thick skin; almost seedless

Dried styles:

- Bulk—white and black figs; in natural shape
- Layered or pressed—white figs; split, flattened and arranged in layers in shingled fashion
- Pulled rounded fig—white figs; pulled by hand to produce an oblong shape
- Pulled squared fig—white figs; pulled by hand to produce a square shape
Composition

<table>
<thead>
<tr>
<th></th>
<th>Moisture (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Carbohydrate (%)</th>
<th>Ash (%)</th>
<th>pH</th>
<th>Temp. (°F)</th>
<th>RH (%)</th>
<th>Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dried</td>
<td>15–24</td>
<td>0.6–4.0</td>
<td>1</td>
<td>53–69</td>
<td>2</td>
<td></td>
<td>32–40</td>
<td>50–60</td>
<td>9–12 mo.</td>
</tr>
<tr>
<td>Raw</td>
<td>77</td>
<td>1</td>
<td>0.3</td>
<td>20</td>
<td>1</td>
<td>4.6</td>
<td>28–32</td>
<td>80–85</td>
<td>7 days</td>
</tr>
</tbody>
</table>

Storage

Canned varieties and styles:
- Celeste—smaller
- Kadota—light greenish yellow to amber; whole fruit packed in syrup (most of which comes from the fruit); practically seedless; skin is absorbed
- Magnolia—small; practically seedless; skin is absorbed
- Mission
- Preserved style—packed in very thick syrup
- Whole
  - In light syrup, flavored with lemon juice
  - In water

Count per can:
- No. 1—10
- No. 2—14
- No. 2½—20
- No. 10—75

Equivalents:
- 1 lb figs, dried = 40–50 black cooking figs
  - = 44 med. figs
  - = 2.5 cups, dried, whole
  - = 3 lb fresh California figs
  - = 4 lb fresh figs from other places
  - = 2½ cups fine-cut dried figs
- 1 lb fresh figs = 2.7 cups, fine-cut
  - = 12 raw med. figs
- 1 cup, fine-cut, dried = 170 g (5.7–6 oz)
- 1 cup, chopped, dried = 5.4–6 oz
- 1 cup, fresh, peeled = 0.5 lb
- 1 cup, canned, solids and liquid = 8.4–8.8 oz
- 1 small (1.5 in.) fig, fresh = 1.3 oz
- 1 fig (2 × 1 in.), dried = 0.7 oz

Storage (fresh): Refrigerate; use within 1–2 days.

Sucrose content of syrup:
- Extra light 11–16%
- Light 16–21%
- Heavy 21–26%
- Extra heavy 26–35%

**fig, jumbo** Dried, extra-large, fancy Calimyrra figs

**fig nectar (juice from figs)** The unsweetened material extracted from dried black figs cooked in water

**fig pudding** Contains dried figs, eggs, flavoring, flour, and sugar

**fig souring** A destructive alcohol fermentation followed by acetic acid production in the fig; the pulp changes to colorless and watery, liquid exudes from the eye, and the skin is water-soaked and soft; it is caused by several yeasts (*Hanseniaspota* spp. and *Torulopsis* spp.) and acetic-acid bacteria

**fig splitting** Spherical and oblate figs are more susceptible to splitting; damp, cold weather, and careless handling will increase the problem.

**fig sunburn** A blemish of dead, hard, tan to dark brown bands encircling the eye or on the side of the fruit

**fig wasp** See *endosepsis*

**fijnkost** A salami made from beef and pork; a dry, uncooked, smoked Belgian sausage made from medium-chopped, medium-seasoned beef and pork, fermented and stuffed into artificial casings

**fil-** A prefix meaning thread

**filament** 1) An extremely long fiber. 2) The portion of the stamen supporting the anther. 3) A single fibril

**filbert** (cob nut; hazelnut; *Corylus avellana* var. *maxima*) A hazel-type nut that grows on a large tree and is covered by a more extensive husk

Types:
- American filbert
- Californian
- Chinese
- Cob nut or Kent cob
- European filbert—variety Barcelona
- Frizzle
- Giant
- Himalayan
- Japanese
- Red
- Siberian
- Tibetan
- Turkish
- White
Commercial (quarter) nape fillet—belly flap removed; essentially boneless
Crosstcut fillet—fillets of flatfish; may include the belly flap
Full nape fillet—a single fillet, including belly flap and often rib bones
Quarter-cut fillet—each fillet taken off in two pieces
Single fillet or side—the flesh from one side of a roundfish
2) Material placed at an intersection, for strength. 3) A thin strip, band, or engraved line. See also *psosas* major; tenderloin
See Part 2: Fish Fillets; Fish Forms; Fish, Smoked-Cured; Fish Yields

**fillet, cracow** A moist, cooked, smoked Greek sausage made from medium-chopped, medium-seasoned beef and pork, with 80% precooked meat pieces in the paste, stuffed into an artificial casing

**fillet, Greek** A moist, cooked, smoked Greek sausage made from medium-chopped, medium-seasoned beef and pork, with 70% precooked meat pieces in the paste, stuffed into an artificial casing

**fillet, origan** A moist, cooked, unsmoked Greek sausage made from medium-chopped, medium-seasoned beef and pork, with 70% precooked meat pieces in the paste, stuffed into an artificial casing

**filling** See *frosting*

**filling temperature** The product temperature at the time a container is filled

**filly** A young female horse that has not produced a foal

**film gauge** Film thickness
See Part 2: Film Gauge

**filmjolk** A thick, ropy, fermented cow's milk, low-medium acid (pH 4.4-4.7)

**filter** To remove suspended matter from a gas or liquid by passing it through a porous article (e.g., paper, fine mesh) or mass (e.g., sand); e.g., filtering fruit juice from jelly

**filter aid** A substance similar to a coagulant aid but added prior to filtration to improve efficiency of filtration

**filter, anthracite** A graded filter that is coarser (0.72 mm) and lighter than a sand filter; it requires less backwash pressure, but backwash is needed more frequently than with sand.

**filter, Anthrafil** See *filter, Anthracite*

**filter, capped** A sand filter with the top layer consisting of anthracite (a coarser medium), which gives longer filter runs

**filter, high-rate** A density-graded sand filter with the larger particles on top

**filter, membrane (milipore)** A filter that is used to remove exceptionally small particles (even colloids in the millimicron range)

**filter paper** The higher the number (of products from a given manufacturer), the smaller the particles that the paper will remove
filth test  A determination of food contamination by rodent hairs and insect fragments
filtrate  Liquid that has passed through a filter
filtrate factor  See pantothenic acid
filtration  The physical separation of liquids and solids
fimbriae  Filamentous appendages that are smaller, shorter, and more numerous than flagella; they do not contribute to motility, probably aid in adhering, and occur on both flagellated and nonflagellated cells.
fin  A bony but flexible structure attached to the bodies of fish at various locations to serve in locomotion and to act as stabilizers
See Part 2: Fish Nomenclature
financière  A rich garnish
financière sauce  A brown sauce flavored with truffles and liver
fin boîte  See feather bones
fin de siècle  An excelsior-type cheese
fined  Wine that has been clarified by using albumin or isinglass to cause sediment to fall to the bottom
fine grind  The smallest particle size (of coffee beans)
See Part 2: Coffee Granule Designation; Coffee Particle Size
fines  Material that will pass through a screen
fines herbes  A mixture of finely chopped sweet herbs used in cooking; it may include basil, chervil, chives, mint, parsley, savory, shallots, and tarragon.
fine-wool sheep  A classification of sheep that includes the following breeds: American Merino, Delaine Merino, and Rambouillet
See Part 2: Sheep Breeds
finger  Transverse process on a vertebra
See Part 2: Beef Wholesale Cuts; Bone; Lamb Wholesale Cuts; Pork Wholesale Cuts; Veal Wholesale Cuts
finger steak  A steak cut from the chuck
fining  The material (e.g., egg white or gelatin) for clarifying (the material settles to the bottom, carrying impurities with it), used in connection with the processing of metal, glass, liquid, beer, wine, etc.
See Part 2: Minerals (Trace), Limits
finish  1) To fatten an animal; the degree of fatness; the amount and distribution of fat on an animal; fatness, smoothness. 2) The portion of a glass container used for holding the cap or closure
finished equilibrium pH  The pH of the finished product
finishing varnish  A clear, transparent coating placed over inks to produce gloss and to protect the appearance
finish point  See end point
finnan haddie  1) A lightly salted (cured in a brine containing carotene) haddock that is pale yellow, smoked, usually baked, and often served in a cream sauce; it is headless and split open, with part of the backbone removed; the flesh is flaky and tender. Market name for hot-smoked haddock
See Part 2: Fish, Smoke-Cured
Finn Crisp  A cracker
Type and color:
Caraway—red
Rye—yellow
Wheat—orange
fino  A dry, young sherry with flor; a pale, dry, light-bodied sherry
finocchio dulce (finocchio dolce)  See finocchio dulce; Florence fennel
finocchio dulce (finocchio dolce)  Foeniculum vulgare dulce See Florence fennel
finte (Alosa finta)  A shadlike marine fish used for food
flor di latte  A mozzarella-type cheese made from cow's milk
flore d'Alpe  A creamy, semisoft, surface-bacteria-ripened, mild-flavored, cheese made from cow's milk
fiore sardo  A very hard cheese made from sheep's milk; an Italian cheese made from sheep's milk, somewhat dumbbell-shaped with a dark yellow rind; the center is straw-colored to white. Fiore sardo may be ripened for table use (young), dried hard (cured) for grating, or brine-soaked.
fire blight (Erwinia amylovora)  A bacterial disease that affects apple and pear trees; it first appears as blossom blight (blossoms wilt and turn light to dark brown), spreads to shoot or twig growth (starts at the tip and moves downward) and to leaves (which turn brown to black), and later spreads to developing fruit; finally, the tree will die. Prevention: use resistant varieties; prune infected tissue (disinfect pruning tools); avoid excessive use of nitrogen fertilizers; control insects.
fiore  A bony but flexible structure attached to the bodies of fish at various locations to serve in locomotion and to act as stabilizers
fin  See Part 2: Fish Nomenclature
fired  The heating step in processing tea to stop fermentation; used to control the amount of fermentation that takes place
Types: basket-fired; pan-fired
fire lily  See bear grass
fire point  The temperature at which oil, when heated under specific conditions, will ignite and burn for at least 5 seconds See also flash point
See Part 2: Free Fatty Acid, Smoke, Flash, and Fire Points
FIRI  Fishery Industry Research Institute
firm  Describes a solid, compact texture; a subjective term used to describe the maturity or ripeness of fruit (the fruit will give slightly to pressure)
firming agent  A substance that coagulates and/or improves texture; a material used to prevent the texture of processed fruits and vegetables from becoming too soft and used to assist the coagulation of some cheeses; e.g., calcium chloride, calcium citrate, or calcium lactate
firmness  Hardness; describes an unyielding substance; degree of resistance
fir-needle oil  An essential oil obtained by steam distillation of needles from Canadian or Siberian pine or balsam
Types:
Canadian (Abies balsam)—sp. gr. 1.472–1.476
Siberian (A. sibirica)—sp. gr. 0.898–0.912
Used as a flavoring agent in food.

**Storage:** full, tight, glass container in a cool, dark place.

**First operation** In double seaming, where the curl of the lid is tucked under the flange of the can body.

**Fish** Aquatic, cold-blooded vertebrates, equipped with fins and usually scales; they also have gills by which they extract dissolved oxygen from the water.

<table>
<thead>
<tr>
<th>Part</th>
<th>Freshness of fish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>Does not bend under own weight</td>
</tr>
<tr>
<td>Eyes</td>
<td>Clear, bright; not filmed; not sunken</td>
</tr>
<tr>
<td>Gills and mouth</td>
<td>Closed Pale yellow or gray-red; covered with slime; disagreeable odor</td>
</tr>
<tr>
<td>Scales</td>
<td>Cling to skin Slimy, easily removed</td>
</tr>
</tbody>
</table>

Available forms:
- Chunks—cross section of dressed fish, with backbone the only bone; ready to cook
- Drawn, or cleaned—whole, eviscerated; 50% edible yield
- Dressed, or pan-dressed—scales and entrails removed, usually head, tail, and fins also removed; 38–67% edible yield
- Large—may be cooked as is, but often filleted or cut into steaks or chunks first
- Small—ready to cook
- Fillets—sides of fish, cut lengthwise; may be skinned or with skin left on; ready to cook; 60% edible yield
- Fried fish portions—portions cut from frozen fish, coated with batter, breaded, partially cooked, and frozen; weight more than 1 1/2 oz; ready to heat
- Fried fish sticks—sticks cut from frozen fish, coated with batter, breaded, partially cooked, packaged, and frozen; weight up to 1 1/2 oz; ready to heat
- Portions—breaded blocks; may be raw or cooked; 90% edible yield
- Steak—a 3/8 to 1-in. cross section, including backbone, of a dressed fish; ready to cook; 60–84% edible yield

**Classification (fat content)**

<table>
<thead>
<tr>
<th>Classification (fat content)</th>
<th>Cooking method</th>
<th>Fat (%)</th>
<th>Fish</th>
<th>Liver</th>
<th>Color</th>
<th>Flavor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lean</td>
<td>Poach, soup, stew, fry</td>
<td>Less than 2</td>
<td>Cod, haddock</td>
<td>High in fat</td>
<td>White</td>
<td>Little</td>
</tr>
<tr>
<td>Medium-fat</td>
<td></td>
<td>2–5</td>
<td>Halibut, pollock</td>
<td>High in fat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fat</td>
<td>Bake, broil, grill, fry</td>
<td>More than 5</td>
<td>Salmon, mackerel, herring, shad, lake trout, butterfish, eel</td>
<td></td>
<td>Yellow, pink, or gray</td>
<td>More</td>
</tr>
</tbody>
</table>

**Sodium content (per 3 oz (85 g))**
- Raw—40–60 mg
- Cooked—48–100 mg
- Canned (salt added)—298–443 mg
- Cured or smoked—5234 mg

**Defect action level:** 50 cysts/100 lb, provided that 20% of the fish are infested

**Storage (uncooked):** wrap loosely in plastic and refrigerate; use within 2 days.

**Storage (cooked):** wrap in foil or plastic; refrigerate; use within 2 days
storage (thawed): in leakproof wrap; refrigerate 
(28-30°F); use within 1-2 days

storage (frozen) —0°F; in moisture- and vapor-proof wrap; keep fat fish no more than 3 months, lean fish no more than 6 months.

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Relative Humidity</th>
<th>Storage Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh</td>
<td>28-30</td>
<td>90-95</td>
</tr>
<tr>
<td>Frozen</td>
<td>-10</td>
<td>90-95</td>
</tr>
<tr>
<td>Salted</td>
<td>40-50</td>
<td>90-95</td>
</tr>
<tr>
<td>Smoked</td>
<td>40-50</td>
<td>50-60</td>
</tr>
</tbody>
</table>

See Part 2: Animal Foods, Composition; Calcium, Daily Recommendations; Calories, Daily Recommendations; Fish and Shellfish, Composition; Fish Cross Section; Fish, Drawn; Fish, Dressed; Fish Fillets; Fish Forms; Fish Nomenclature; Fish, Smoke-Cured; Fish Steaks; Fish, Storage; Fish Yields; Food, Composition; Frozen Food Storage; Frying Time; Glutamate; Iron, Daily Recommendations; Meat, Servings Per Pound; Minerals, Food; Minerals (Trace), Limits; Moisture in Biological Materials; Niacin, Daily Recommendations; Nicotinic Acid, Food; Portion Size; Riboflavin, Daily Recommendations; Riboflavin, Food; Spoilage, Protein Foods; Storage Times; Thiamin, Daily Recommendations; Thiamin, Food; Vitamin A, Fish; Vitamin A, Food; Vitamin D, Fish; Vitamin D, Food

Fish ball A cooked mixture of fish, milk, broth, flour, and seasoning, shaped into oval patties (15-20 lb); made from codfish, haddock, and/or pollock, potato flour, milk, spices, and fish bouillon (which can also be used to make soup or sauces)

Fish cake A cooked cake made from fish, potatoes, seasoning, and sometimes egg, butter, and onions; often dipped in eggs and bread crumbs and deep-fat fried; fish is 35-55% of the weight

Fish chowder A thick mixture of cooked fish or shellfish and potatoes in a broth made from fish stock, pork, flour, and seasoning

Fish, colombo-cured Fish, usually mackerel, cured in an acid extract of fruit pulp of *Garcinia cambogia*

Fish, dried Fish that has been preserved by salting and drying

Fish, fat A fish that has a high percentage of oil in its flesh and that usually has more flavor

Types: bluefish; butterfish; chubs; croaker; halibut; herring; king mackerel; mackerel; mullet; pickerel; pompano; sable; salmon; shad; smelt; Spanish mackerel; tilefish; tulibees; whitefish

Storage (frozen): should be kept no longer than 3 months

Fish flakes Canned, boneless, flaked fish that has been cured in brine and steamed; pieces of cooked codfish and/or haddock packed without brine

Served: creamed, baked, or scalloped

Fish flour (fish protein concentrate) Produced by treating whole, comminuted fish with a solvent that removes water and fat, after which the solvent is removed

Composition (whole fish flour): moisture 2%; protein 78%; fat 0.3%; ash 20%

Fish, freshwater The following types are often used for food: bass (black or white); bullhead; catfish; chubs; crappies; herring; mullet; perch; pickerel; pike; sheephead; spoonbill; sunfish; trout; tulibees; whitefish

Fish in jelly Pieces of fish (minimum 50%) that have been heated in acidified brine or vinegar, fried, or smoked and packed in gelatin, gelatin and pectin, or aspic; vegetables are sometimes added.

Fish inspection Regulation of fish and other seafood is the responsibility of the Department of the Interior

Fish, lean A fish that has a low percentage of oil in its flesh and that usually has less flavor

Types: bass; bluefish; bullhead; catfish; codfish; crappie; croaker; flounder; groupers; haddock; jewfish; perch; pike; pompano; red drum; red snapper; sea trout; sheephead; snapper; spoonbill; spot; squid; sunfish; swordfish; tilefish; trout; whiting

Storage (frozen): can be kept for up to 12 months

Fish-liver oil Oil extracted from fish (usually whitefish) livers; usually high in vitamins A and D

Fish-liver paste Ground fish liver mixed with salt, spices, and flavoring agents

Fish manure A safe fertilizer

Fish meal (fish-protein concentrate; FPC) A 70%-protein animal food (some high-grade meal is used for human consumption) made from fish house waste by dry or wet rendering; 1 lb/qt; 35 lb/bu

Fish used:
America—menhaden
Europe—cepelin, mackerel, sandeel
Japan—mackerel, sardine, sauries
Norway—pout
Peru—anchoveta

<table>
<thead>
<tr>
<th>Fish Meal Composition</th>
<th>Mechanically Extracted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dry Matter (%)</td>
</tr>
<tr>
<td>Anchoveta</td>
<td>92</td>
</tr>
<tr>
<td>Herring</td>
<td>92</td>
</tr>
<tr>
<td>Menhaden</td>
<td>92</td>
</tr>
<tr>
<td>Sardine</td>
<td>93</td>
</tr>
<tr>
<td>White</td>
<td>91</td>
</tr>
</tbody>
</table>

See fish-protein concentrate

See Part 2: Packinghouse By-Products Composition; Water Activity, Organisms and Food

Fish oil An oil obtained from the bodies of fish, especially the livers, which are rich in vitamins

See Part 2: Fats and Oils, Characteristics; Oil or Fat, Characteristics; Saturated Fatty Acids; Vitamin D, Food

Fish paste (fish spread) A dark (yellow-brown), salty (20-25%), fermented sandwich spread or condiment made from fish or shrimp ground to a fine consistency and mixed with salt and sometimes spices and/or fat

Types: anchovy paste; sardellan butter; sardine paste

Fish, pickled Fatty fish (e.g., herring) pickled in acid, salt, and sugar and matured for months

Fish portion Cohering pieces of fish flesh cut from frozen blocks; min. weight 1 1/2 oz (40 g); min. thickness 3/8 in. (1 cm)
**fish-protein concentrate (FPC)** A product prepared from whole (not eviscerated), fresh fish by a solvent process that removes both fat and water; the remaining tissue is converted to a flourlike material that can be incorporated into prepared foods. See fish flour; fish meal

**fish, saltwater** The following are common food types:
- bass (black, striped); bluefish; butterfish; codfish; croakers; flounder; grouper; haddock; halibut; hake; herring; mackerel; mullet; pompano; red snapper; sable; salmon; shad; smelts; sole; squid; swordfish; tilefish; whiting

**fish sausage** A stable, bold, salty, brown sauce made from fish with fish enzymes and used as a seasoning

**fish scrap (fish waste)** Unground fish meal; waste fish products used as an agricultural fertilizer; 9.5-6; it is slightly acid in nature and would require 0.05 lb of dolomitic limestone to neutralize each pound applied.

**fish solubles** A fish by-product that is used as animal feed

<table>
<thead>
<tr>
<th>Composition</th>
<th>Condensed</th>
<th>Dehydrated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry matter (%)</td>
<td>50</td>
<td>93</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>33</td>
<td>64</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0.5</td>
<td>1.4</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>5.6</td>
<td>8</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>10</td>
<td>12.5</td>
</tr>
</tbody>
</table>

**fish stearin** A solid fat produced by separating chilled fish oils; used in the production of lubricants and soap

**fish stick** A rectangular block, breaded and often fried, cut from frozen whitefish fillets; min. weight is often 1 oz and min. length is at least three times the width. See Part 2: Fish and Shellfish Composition; Fish, Storage

**fishy** Having the odor or flavor of fish or of trimethylamine

**fission** Asexual reproduction in which an organism divides into two approximately equal parts

**fissurelle** Any of many varieties of marine mollusk; cooked like octopus

**fistula** 1) An abscess in the area of the withers. 2) An opening into an internal organ; an artificial opening in the body; a passage from some part of the body to another or to the exterior

**Fistulina hepatica** (liver fungus; oxtongue) An edible oak-tree fungus

**fitfit** Injera (a soft bread baked from teff) mixed with wot, or stew

**fito** A sorghum beer

**five-gaited horse** A horse that has three natural gaits (walk, trot, canter) and two learned gaits (slow gait, rack)

**fixative** A substance used to reduce the overall volatility of flavoring agents

**fixed oil** An oil that must be solvent-extracted or expressed; similar to a fatty oil (an extractable, nonvolatile oil) except that it may also contain a few nonvolatile compounds dissolved in the fat

**fixed-price contract** A contract based on a price that will not differ from that agreed upon at the time of ordering

**fixed reel phase** When cans are maintained in a stationary position by the reel of the cooker

**fixing agent** A substance used to preserve protoplasm with the least amount of alteration; solutions used are alcohol, formalin, mercuric bichloride, potassium bichromate, acetic acid, formic acid, osmic acid, and picric acid; mixtures used are Zenker's fluid, Bouin's fluid, and Mueller's fluid.

**fizz** 1) An effervescent, sweet, alcoholic drink made primarily with gin. 2) Effervescent properties

**fjellbit** A beef and lamb salami that also contains blood; a dry, uncooked, smoked Norwegian sausage medium-chopped, medium-seasoned beef and lamb with plucks and blood added, fermented and stuffed into an artificial casing

**fjellmorr gilde** A pepperoni made from beef, lamb, and pork, with added offal and blood; a dry, uncooked, smoked Norwegian sausage made from medium-chopped, medium-seasoned beef and lamb, with some plucks and blood added, fermented and stuffed into a beef casing

**fkkoss** A tea bread

**flagella** Thin, hairlike appendages that protrude through the cell wall and are responsible for bacterial motility; they may be attached to the ends of the cell or may emanate from all surfaces and more common on bacilli-type bacteria. See also flagellum

**flagellum** A long, contractile process that is the organ of locomotion of many bacteria. See also flagella

**flaggeolot** A variety of small, green, dried beans

**flag smut** (*Urocystis agropyri*) A disease that produces dark stripes on leaves, sheaths, and stems of wheat; it stunts the plant and prevents the formation of normal heads.

**flake** 1) Dehydrated vegetables used as flavoring materials. 2) To break into small, flat pieces. 3) One of several thin layers that are separated by open spaces

**flaked (rolled)** Material that has been passed between rollers

**flake tapioca** Dough made from tapioca flour, rolled in thin sheets and baked; if ground, it is called granular tapioca.

**flaky** Describes the texture of loose, easily separated layers

**flambé** Describes food that has been flamed (set afire)

**flamber** To flame food with an alcoholic mixture; to singe

**Flame** A variety of grape

**flan (pie; tart)** An open tart cooked in a pastry shell; a round, open pastry shell that is filled with sweet or savory material; a tartlike pastry filled with fruit,
cream, or custard; a custard dessert with caramel syrup

flange 1) The outward-flared edge of a can body that forms the body hook on a double seam; the flare on the top of an unseamed can. 2) The outermost part of a can cover

flanged opening A threaded fitting (used for filling and dispensing) on a steel drum

flank The side of an animal, between hips and ribs; meat from this area; about 4% of a choice cattle carcass

See Part 2: Beef Chart; Beef Cuts; Beef Cuts and Uses; Beef Retail Yield; Beef Wholesale Cuts; Lamb Chart; Lamb Yield; Meat Identification; Veal Cuts and Uses

flank steak (The Rectus abdominus muscle) A tear-shaped steak removed from the flank area; a membrane is removed from it and it is usually cut across the fibers; only two of these steaks may be obtained from an animal.

1 flank steak = 1-3 lb
See Part 2: Beef, Boneless Cuts; Beef Chart; Braising Meat

flannel cake A pancake topped with chicken or turkey and a cream or vegetable sauce

flapjack 1) A griddle cake. 2) A biscuit made with oats

Flash 18 (Swift & Co.) A canning system in a pressurized (18 lb) can-filling room; this raises the boiling point of a liquid (250-255°F is normally used).

flash point The temperature at which fat exposed to a test flame will flash but not continue to burn; that temperature at which an ignitable concentration of vapor develops above the surface of an organic liquid; liquids that evolve such concentrations at or below 80°F are considered flammable, e.g., ethyl alcohol.

<table>
<thead>
<tr>
<th>Fats</th>
<th>Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoke point</td>
<td>320-500°F</td>
</tr>
<tr>
<td>(160-260°C)</td>
<td>(232°C)</td>
</tr>
<tr>
<td>Flash point</td>
<td>554-626°F</td>
</tr>
<tr>
<td>(290-330°C)</td>
<td>(330°C)</td>
</tr>
<tr>
<td>Fire point</td>
<td>644-689°F</td>
</tr>
<tr>
<td>(340-365°C)</td>
<td>(363°C)</td>
</tr>
</tbody>
</table>

See Part 2: Free Fatty Acid, Smoke, Flash, and Fire Points

flaskkorv A moist, cooked or uncooked, unsmoked Swedish sausage made from finely chopped, mildly seasoned beef and pork stuffed into beef, pork, or artificial casings

Composition: moisture 65% max.; fat 23% max.; binder 3% max.

flat 1) Having little or no flavor. 2) Having low acidity. 3) Loss of carbonation. 4) A shape of cheese: diam. 14-16 in.; height 4-7 in.; weight 35-45 lb. 5) A shallow tray (containing soil) for growing plants

flat bone See Part 2: Bone and Retail Cuts

flat bone sirloin See double bone sirloin

flatbread 1) A general term for thin, flat bread, usually with a pocket. 2) The term is also used for lavash. See lavash; nan

flatbrod A thin, crisp wafer made from rye, barley, or wheat

flatfish (order Heterosomata) A fish with both eyes on the same side of the head (the “eyed side,” the other side is the “blind side”); types include, e.g., flounder, halibut, plaice, sole, and turbot See flounder

flathead A food fish
Australia Leviprora sp.
Neoplatycephalus sp.
Platycephalus sp.
Trudis sp.
Pacific—Platycephalus indicus

flathead sole (Hippoglossoides cassiodon) A food fish

flat price The same as the spot or actual cash price

flats A type of cheddar cheese

flat sour A type of spoiled canned goods; the can does not bulge but the food is sour. The spoilage is produced by thermophilic anaerobes and is due to slow cooling, which allows bacterial growth.

See Part 2: Canned Spoilage Manifestations; Canned Spoilage Related to pH

flatulence The formation of gas in the stomach

flatulent Generating gas in the digestive system

flauta Two overlapping corn tortillas that have been rolled to form a long tube, filled, and fried

flav- A prefix meaning yellow

flavanone Any of a group of plant pigments producing yellow and orange colors
See Part 2: Lemon Juice, Composition

flavedro Yellowness
See Part 2: Orange Structure

flavin adenine dinucleotide (FAD)
flaxseed screenings  Used in animal feed
flavone  (C\textsubscript{15}H\textsubscript{10}O\textsubscript{2})  A white-yellow plant pigment
flavoprotein  A complex of a flavin nucleotide and an enzyme See also adenine-riboflavin dinucleotide; riboflavin phosphate
flavor (flavour)  1) The ability of food to stimulate the senses located in the alimentary and respiratory tracts, closely associated with the odor, taste, color, and texture of the food See also taste. 2) A substance used to heighten the natural flavor of a food or to restore flavor lost in processing
flavor adjuncts  Substances that are added to a flavor but are not an essential part of it, e.g., anticaking agents, antioxidants, carriers, density-adjusting agents, emulsifiers, enzymes, organic acids, and solvents
flavor, artificial  A flavor not found in nature
flavored milk drink  See Part 2: Cultured Dairy Products, Composition
flavored triple crème  A soft, thin-rind cheese; 75% fat gives a buttersy texture; may be eaten in its natural state or mixed with spices
flavor enhancer (flavor potentiator)  A substance that will magnify, modify, or supplement the natural or original flavor, taste, or aroma of a food without the substance contributing significantly to that flavor
flavoring (flavors)  A substance added to a food to give it a specific taste, e.g., vanilla, chocolate, whole spices, ground spices, essential oils or oleoresins of spices, hydrolyzed plant protein flavorings, and monosodium glutamate; many are made synthetically. An extract or essence that imparts its flavor to food; some are available in paste (sugar) form. Over 2000 are used in food and approximately one-fourth are natural. See also taste; flavor
flavoring extract  A solution in ethyl alcohol (of the sapid and odorous principles derived from an aromatic plant
flavor, natural  A flavor derived from a natural animal or plant product
flavor potentiator  See flavor enhancer
flax  A vegetable fiber composed primarily of cellulose; seed 20 qt/acre
See Part 2: Wax
flaxseed (linseed)  A seed from which a drying oil is produced; flaxseed hulls and flaxseed (linseed) meal are used for livestock feed.
1 bu flaxseed = 2.5 gal oil
= 56 lb
See Part 2: Oil, Seed and Fruit; Protein Factors; Seed, Chemical Composition; Seed Composition; Seed, Germination
flaxseed screenings  Used in animal feed
Composition: dry matter 91%; protein 16.5%; fiber 12%; fat 9%; ash 6%
flay  To remove the skin from an animal in a uniform pattern
flea beetle  A tiny (\(\frac{1}{16}\)–\(\frac{1}{8}\) in. long), brown to shiny black or striped, jumping insect that feeds on the seedling (cotyledon and first true leaves) and leaves of young plants (brassica family) and weeds, producing circular holes in the leaves (a shot-hole appearance); an insect that causes damage to tomato plants
Control: carbaryl
See grape flea beetle
See Part 2: Insect Control
fleas  The inner covering of the stomach of a pig
Fleckvieh  German Simmental cattle
fleece  The wool of a sheep
flehmen  A courtship activity of the male of a species: the act of curling the upper lip upward and inhaling in the vicinity of the female reproductive tract
fleisch  Meat
fleischblutwurst  A moist, cooked, unsmoked eastern German blood sausage made from fine- or medium-chopped, medium-seasoned pork stuffed into beef, pork, or artificial casings
fleischknäsen  A moist, cooked, unsmoked Swiss sausage made from finely chopped, medium-seasoned beef, pork, and veal, not stuffed into a casing
fleischwurst  A moist, cooked, smoked western German sausage made from finely chopped, mildly seasoned beef and pork stuffed into beef or artificial casings
flesh  The muscular tissue of animals
fleshy-fruited vegetable  Includes eggplant, pepper, and tomato
fleskepolse  A semidry, cooked, smoked or unsmoked Norwegian sausage made from finely chopped, medium-seasoned pork stuffed into beef or artificial casings
fletan  See halibut
fletch (flitch)  One of four longitudinal segments cut from a halibut
Fletcher medium base  Used for the isolation, cultivation, and maintenance of Leptospira
See Part 2: Microorganism, Media
fleur  Surface mold
fleurie  A fruity red wine
fleuron  A small food decoration made from flake pastry
flexible  See retort pouch
flexible container  A container that can change shape depending on pressure; usually made from laminated plastic or metal sheets
flexor  A muscle that flexes (bends) a joint
flier  White particles that float in white wines when the temperature has been reduced
flint corn See corn

flip A hot or cold beverage made from almost any alcoholic beverage and egg

flip panel See safety button

flipper A can with internal pressure causing one end to bulge when a surface of the can is struck See swell; TA spoilage

flitch Half of a pig carcass with legs and shoulder removed; a side of bacon, sometimes including the shoulder area See flitch

float 1) A wheat-flour doughnut. 2) A milk shake containing undissolved ice cream

floating rib A rib with no cartilage

floc Turbidity, or particulate agglomeration

flocculation The building or agglomeration of a macrofloc by coagulation

flock A group of chickens, turkeys, sheep, or goats

flor A white yeast that floats on the surface of wine, e.g., sherry

flora 1) A dry white wine. 2) The plant life of a given area. 3) The bacteria present in the digestive tract

floral Describes a flowerlike odor

flor alpina A sweet Italian cordial (50% alcohol)

Florence fennel (anise; finnchoch dolce; finocchio; finnchuch dolce; Italian fennel; sweet fennel; Foeniculum vulgare dulce) A plant resembling celery with a swollen leaf base ("bulb" or "apple," 3-4-in. diam.), which is eaten raw, in salads, or cooked; 90 days to maturity; 2 1/2-ft plant; the flavor is aniselike, celery-like, or spicy and licorice-like; the fernlike top can be cooked like spinach. It is not the same plant as the fennel herb or the anise herb.

florentine 1) A method of cooking fish and/or eggs with spinach. 2) A chocolate-coated thin biscuit containing dried fruit and nuts

florentine, à la With spinach

floricane A cane that was produced the previous year

Florida and Walters A variety of midseason Florida grapefruit

Florida cherry See pitanga

flotation Separation by density or specific gravity and removal of the floc from the surface (e.g., over mature peas in a brine); the floc is often encouraged to rise by using gas bubbles.

flotost A high-fat mysost-type cheese made from cow's milk

flounder (blackback; fluke; halibut; sole; yellowtail; Epimotis gibbosus; Platichthys flesus) The general name for various flatfish, including two families of saltwater flatfish called right-eye flounders and left-eye flounders, and also including the species of soles, flounders, and halibuts; weight is usually 1-12 lb; the term often refers to a lean flatfish (usually 12 in., 1-2 lb) caught in the middle and north Atlantic and on the east and west coasts. Another variety is the plaice (deep-sea flounder or fluke), which weighs 15 lb and is 36 in. long.

Europe—Platichthys flesus; Pleuronectes flesus

Lefteye—species of the family Bothidae

Oceania—Rhombosolea spp.

Atlantic species:

American plaice

Blueback

Fluke or summer flounder

Gray sole or witch flounder

Lemon sole or blackback flounder

Winter flounder

Yellowtail flounder

Pacific species:

Arrowtooth flounder

Dover sole

English sole

Petrale sole

Rex sole

Sanddab

Sand sole

Starry flounder

Common names:

Blackback—also called winter flounder, lemon sole

Dab—also called sea dab

Fluke—also called summer flounder

Southern

Yellowtail

One average flounder fillet weighs 0.25-1 lb.

Composition: protein 16.7%; fat 0.8-1.4%; cholesterol 69 mg/3 oz

See also demersal fish

See Part 2: Fish, Storage; Frozen Food Storage, Minerals, Food; Vitamin D, Fish

flour (plain flour; wheat flour; white flour) Any finely ground grain or cereal; a fine-ground powder made by milling (grinding) wheat and sifting (bolting) bran layers (approximately 28%) from the inner portion of the wheat grain; flour consists essentially of endosperm and may be bleached or unbleached. It is the basic ingredient for breads, pastries, and cakes, and may be made from the following: barley, buckwheat, corn, oat, rye, or wheat (the most common) which has a higher gluten content. The term may also apply to any soft, finely ground, bolted meal from grain, seeds, or other products; composed primarily of starch and gluten.

1 lb flour = 1 1/2 lb bread
100 lb flour = 2.3 bu wheat
3-4 tbsp flour = 1 oz
2 1/2-3 1/4 cups flour = 1 lb
4 cups all-purpose flour = 1 lb
1 cup enriched flour, sifted = 110 g
4 cups enriched flour, sifted = 1 lb
1 qt flour, sifted = 1 lb
4-5 cups cake flour, sifted = 1 lb
3 1/4 cups graham flour, sifted = 1 lb
1 barrel = 196 lb

Adjustment for altitude is made as follows:

<table>
<thead>
<tr>
<th>Elevation</th>
<th>Increase in flour per cake</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ft)</td>
<td>(tbsp)</td>
</tr>
<tr>
<td>4000</td>
<td>1</td>
</tr>
<tr>
<td>5500</td>
<td>2</td>
</tr>
<tr>
<td>7000</td>
<td>3</td>
</tr>
<tr>
<td>8000</td>
<td>4</td>
</tr>
</tbody>
</table>
Thickening:
2 tbsp flour = 1 tbsp cornstarch, potato starch, rice starch, or arrowroot starch
= 2 tbsp quick-cooking tapioca
1 cup flour = 2 cup all-purpose flour
+ 1/4 cup cornstarch
pH 6.0-6.5; sp. gr. 0.40-0.50 (loose) 0.70-0.80 (pressed)

<table>
<thead>
<tr>
<th>Composition</th>
<th>Straight hard wheat</th>
<th>Straight soft wheat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>1.2</td>
<td>1</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>75</td>
<td>77</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>0.5</td>
<td>0.4</td>
</tr>
</tbody>
</table>

Iron 13-16.5 mg/lb; niacin or niacinamide 16-20 mg/lb; riboflavin 1.2-1.5 mg/lb; thiamin 2-2.5 mg/lb

Storage: at room temperature in tightly closed containers; inspect often for weevils.

See Part 2: Bread and Flour Enrichment; Cereal Composition; Cereal Fortification; Cereal Products; Composition: Minerals, Food; Minerals (Trace), Limits; Riboflavin, Food; Soybean Composition; Storage, Dry; Storage Times; Thiamin, Food; Vitamin A, Food; Wastes, Agricultural and Industrial; Water Activity, Organisms and Food; Wheat and Flour, Composition; Wheat, Carbohydrate Composition; Wheat, Minerals; Wheat Products, Amino Acid Compositions; Wheat, Vitamins

flour, all-purpose (blend flour; family flour; general-purpose) Flour made from blends of wheat (usually hard and soft wheats, but may be milled from all soft wheats) that are satisfactory for most household cooking; it has less strength and elastic gluten than bread flour, but contains sufficient gluten that it is delicate enough for cake making and strong enough for bread making. Due to fine milling, it does not have to be sifted.

Composition: moisture 12%; protein 10%; fat 1%; carbohydrate 76%; ash 0.4%

flour, biscuit A mixture of good-quality cake flour, shortening, baking powder, and salt

flour, bleached Flour that has been treated with chemicals (oxidizing agents) to lighten the color and artificially age or mature the flour to simulate flour stored for 2-3 months; usually preferred for baking; optional bleaching agents are oxides of nitrogen, chlorine, nitrosyl chloride, chloride dioxide, acetone peroxides, or azodicarbonamide; used to produce an aging effect.

flour, bread (hard-wheat flour) Flour made for bakers and manufactured from hard wheat; high in protein (gluten); granular; bleached or unbleached; should be kneaded 10-12 minutes.

1 pound = 3.75 cups
1 cup, unsifted, dipped = 4.8 oz
1 cup, unsifted, spooned = 4.3 oz
1 cup, sifted, spooned = 4.1 oz
1 tbsp = 0.25 oz
1 tsp = 1/8 oz

flour, bread, wheat See flour, graham

flour, cake Flour made from soft wheat; it is the most highly refined flour, is low in protein and is very fine. A light, fluffy flour that produces a tender texture for products like angel food cakes, sponge cakes, and cakes made with shortening; not suitable for yeast-raised products; it contains more starch and less gluten (and the gluten is less elastic) than bread flour.

1 lb = 4-4.75 cups
1 cup, unsifted, dipped = 4-4.2 oz
1 cup, unsifted, spooned = 3.9 oz
1 cup, sifted, spooned = 3.6 oz
= 100 g
= 1 cup minus 2 tbsp all-purpose flour, sifted
1 tbsp = 0.25 oz
1 tsp = 1/8 oz

Composition: moisture 12%; protein 7%; fat 1%; carbohydrate 79%; ash 0.3%; pH 5.0-5.2

flour, clear Straight flour, excluding the flour included in the patent grade

flour, corn Cornstarch

flour, durum A granular flour made from durum wheat by removing the bran and germ; it is yellow in color and used to make pasta products

flour, enriched Flour with added vitamins and minerals

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron</td>
<td>13</td>
<td>16.5</td>
</tr>
<tr>
<td>Niacin</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td>Riboflavin</td>
<td>1.2</td>
<td>1.5</td>
</tr>
<tr>
<td>Thiamin</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

May also contain:
Calcium—500 mg/lb min., 625 mg/lb max.
Vitamin D—250 USP units/lb min., 1000 USP units/lb max.

flour, entire-wheat See flour, whole-wheat

flour, gluten A flour that has been specially milled to obtain a product high in gluten (protein) and low in starch; a hard-wheat flour from which a large portion of the starch has been removed for people who must avoid starch; also used for special baking purposes, to mix with other flour, and in breakfast cereals.
flour, graham [bread flour (wheat)] Flour made from the entire wheat grain; similar to whole-wheat flour but less finely granulated

- 1 lb = 3 1/3 cups
- 1 cup = 4 2/3 oz
- 1 tbsp = 1 1/3 oz
- 1 tsp = 1/10 oz

flour, instant (granular flour; instant blending; instantized; quick-mixing) A general, all-purpose flour that blends rapidly with liquids; it is made by special grinding or by exposing regular flour to moisture, which causes it to clump (agglomerate). It is free-flowing and dust-free, it does not pack down in the package, and it disperses in cold water.

flour, low-grade The last 2–3% of flour obtained at the end of the milling process.

flour, masa (tortilla flour) A ground, dehydrated flour made from corn treated with lime water.

flour, pancake A prepared flour (primarily wheat but often mixed with corn, rice, and rye flour) that contains leavening, salt and sometimes other ingredients (e.g., powdered milk, sugar, monocalcium phosphate).

flour, pastry A whole-grain flour made mostly from soft, but sometimes from hard wheat; it is low in protein and has less and weaker gluten than bread flour; finely milled (not as fine as cake flour); used by bakers (for pie crusts, tarts, cakes, and cookies) and biscuit cooks (for cakes, pastries, all quick breads, and waffles).

- 1 lb = 4 cups
- 1 cup, unsifted, dipped = 4–4.2 oz
- 1 cup, unsifted, spooned = 3.9 oz
- 1 cup, sifted, spooned = 3.5 oz
- 1 tbsp = 0.25 oz
- 1 tsp = 1/10 oz

flour, patent Flour produced from the cleanest and best particles; it excludes the first and last breaks and tailings.

flour, ready-mixed See flour, pancake

flour, self-rising (flour, self-raising) An all-purpose flour made from winter wheat and used for cakes and pastries; it is convenient for making biscuits and quick breads and does not work well with yeast-raised products. Flour to which leavening ingredients (baking soda and monocalcium phosphate or calcium acid phosphate) and salt are added; some products contain powdered milk, eggs, and fat. It is similar to flour mixed with baking powder and salt.

- 1 cup self-rising flour = 1 cup all-purpose flour + 1.5 tsp baking powder + 0.5 tsp salt
- 1 cup, unsifted, dipped = 4.6 oz
- 1 cup, unsifted, spooned = 4.5 oz
- 1 cup, sifted, spooned = 3.7 oz
- Contains 500–1500 mg calcium per pound

flour, straight All the flour produced in a mill run except the low grade.

flour strength The capacity of flour to make large, elastic (or spongy) loaves of bread under a wide range of handling conditions.

flour strong Flour that contains high-quality gluten and is made from hard wheat; it will absorb more liquid and is used for yeast bread. See gluten.

flour, tortilla See flour, masa

flour, unbleached Flour that has been matured naturally (an oxidizing agent is not used); it is creamy in color and produces a lower volume and coarser texture in baked goods.

flour, weak Flour that contains low-quality gluten and is made from soft wheat; used for making cakes and pastries. See gluten.

flour, white Flour that contains very little of the germ or husk; it has good storage properties and is often graded as follows:
- Patent
- Straight
- Clear
- Low-grade

flour, whole-grain Flour made from the whole grain. Storage: tightly covered; cool or refrigerate in a dry place; will keep for 5 months; freeze for longer storage.

flour, whole-meal Flour that contains the germ and most of the husk.

flour, whole-wheat (entire-wheat flour) A flour made from the entire wheat grain (durum or red durum wheat is not used) after removal of the outer coating of bran; may also be made from the germ, the endosperm, and the outer layer of grain bran (where the B vitamins and minerals are concentrated); it contains all the B vitamins, iron, and fiber of the whole kernel. Because of weaker gluten strength, bread made from this flour will rise less, be heavier, and have a coarser texture. Whole-wheat flour is sometimes called graham flour, but is more finely granulated than graham flour.

- 3 1/3 cups = 1 lb
- 1 cup, stirred, spooned = 4.8 oz

When using whole-wheat flour:
1. Add the whole-wheat flour first.
2. Mix for a shorter time.
3. Decrease baking temperature by 25°F.
4. Stir before measuring; do not sift.

Composition: moisture 12%; protein 9–13%; fat 2–5%; carbohydrate 71–75%; ash 1–2%.

Storage: airtight container in the refrigerator; for longer storage keep in the freezer.

flower The pigmented blossom of a plant, containing the reproductive organs (anther, ovary, pistils, etc.). See Part 2: Flower, Imperfect; Flower, Perfect.

flower cheese An English, soft-cured, rennet cheese made from whole cow's milk with flower petals added.

flowering Chinese cabbage See Chinese cabbage.

flowers of zinc See zinc oxide.

fluffy Describes a soft, downy, light, airy texture.

fluffy dressing See Part 2: Salad Dressing and Mayonnaise Variations.
fluid A liquid or a gas, e.g., moisture
fluidized bed A process where a fluid is passed upward through a bed of solids at a rate fast enough for the particles to remain free
fluke (Paralichthys spp.) A food fish
- Fourspot (P. oblongus)
- Gulf (P. albigutta)
- Southern (P. lethostigma)
- Summer (P. dentatus)

See flounder; plaice
flummery (flomery; flumery) A sour (made with buttermilk, milk, or yogurt) cereal-grain gruel; a jelly-type sweet; a custard pudding; a blancmange
fluorescence The ability of a compound (anthracene, fluorescein) to absorb light of one wavelength and radiate light at another wavelength
fluoridation Addition of small quantities of fluoride to potable water to bring fluoride content to 1.0–1.12 mg/l; the purpose is to reduce dental cavities.
fluoride (fluorid) A fluorine compound combined with another element or radical
fluorinated ethylene propylene (FEP)

\[
\text{FEP} = \begin{array}{c}
\text{H} \\
\text{H—C—H} \\
\text{H—C—C—C—C—C—C—C—C—C—C} \\
\text{H—C—H} \\
\text{H—C—H} \\
\text{H—C—H}
\end{array}
\]

A flexible, translucent Teflon that is very chemically resistant.
fluorine (F) The most active halogen element; at. no. 9; at. wt. 19.00; Group VIIA of the Periodic Table; oxidation state – 1; electron configuration 2–7
orbit K L
1 ppm is often added to drinking water: Water fluoridation of 1.8 ppm will produce mottled dental enamel; a solution of 2% is often used to treat teeth. Body function: necessary for proper mineralization of bone and teeth
See Part 2: Egg Products, Nutritive Value; Minerals (Trace), Limits; Water Drinking Standards
fluorocarbon Any of a class of gaseous compounds produced by adding fluorine in place of hydrogen on hydrocarbons; fluorocarbons were previously used as aerosol propellants, but have been banned due to possible reaction with the ozone layer.
flush 1) To pick (often used with tea). 2) New growth on a tea plant; a tea shoot. 3) To feed females generously for 2 weeks prior to breeding
flushing Giving females high-energy feed for a short time to augment the ovulation rate
flute 1) To make decorative cuts on food, e.g., to cut and serrate the edges. 2) To press dough around edges, e.g., to crimp the edges of a pie crust. 3) A type of French bread. 4) A tall glass. 5) A flat surface on a can. 6) A rib or corrugation
flux A chemical aid to soldering (by removing oxides and accelerating coverage), e.g., alcohol solution of rosin, zinc chloride, and ammonium chloride
fly, horn A small, black fly; a large number will concentrate on a small area of an animal.
fly (horsefly) A large black fly
fly (housefly) A parasite that can transmit various diseases, e.g., cholera, dysentery, salmonella, and typhoid
flyer A silent cutter
flying Chopping
flying fish Any of several species of the genus Cypselurus, Prognichthys agoe, and Hirundichthys affinis; used as food fish
fly-poison A plant having a toxic principle
See Part 2: Poisonous Plants
fly specks A fungal disease that appears as sharply defined black shiny dots in groups of 10–20 on the surface of apple or pear fruit
Control: fungicide spray
Fm The symbol for the element fermium
F35M hajna See Part 2: Microorganism, Media
FNB Food and Nutrition Board
FNS See Food and Nutrition Service
foal A colt or filly less than one year old
foam A gas dispersed in a liquid or solid; such dispersions are often of colloidal dimensions. Soapsuds and ordinary seafoam are examples of gas (air)-liquid dispersions; bread and cake are examples of gas (CO₂)-solid dispersions. During frying, foam is caused by fat breakdown or the presence of foreign materials.
foam glass See Part 2: Insulation
foaming The development and persistence of bubbles on the surface
foaming agent A substance that regulates the amount of air (often increasing it) in a product, e.g., sodium caseinate
foam inhibitor An additive that prevents the formation of foam in foods during processing
foam-mat drying Processing food by concentrating the food in liquid form, whipping it to a foam, spreading it on a tray, and drying it with forced warm air
foam test A test performed under prescribed conditions to indicate relative stabilities of fats by their tendencies to break down and foam during frying
foamy Having a bubbly or frothy texture
fob See free on board
fob, stowed, trimmed (FST) The seller places grain at the end of the loading spout and also provides and pays for the stevedoring cost to stow and trim the cargo in the ship’s holds; the buyer provides the ocean vessel.
focal infection A local infection that allows microorganisms to enter the bloodstream continuously or intermittently

fodder Fresh or cured plant matter, containing ears or seed heads if any. See corn, aerial part

fog A colloidal system in which a liquid is dispersed in a gas (air)

foggiano A hard, dry, low-fat, grating cheese made from ewe's milk (may also contain cow's or goat's milk)

foie Liver

foie gras A paste made from the liver of goose, duck, or other poultry

foil Usually refers to aluminum foil

folacin Folic acid. See Part 2: Recommended Daily Dietary Allowances

fold 1) To combine two ingredients gently by turning over until well mixed; to incorporate gently one ingredient into another; mixing materials by lifting and dropping, usually with a tool. 2) The strength of flavoring material expressed as a multiple of a standard

fol d'amour A semisoft, mild, oval-shaped, double-cream cheese made from cow's milk and covered in white mold

folded rib roast A standing rib roast with a portion of the ribs removed and the roast folded

fold in To mix a light ingredient with a thicker mixture using a gentle over and over motion

folding Gently combining a mixture

foliar Relating to leaves, e.g., feeding plants via the leaves rather than by the roots

foliar feeding Giving nutrients to a plant via the leaves rather than by the roots

folic acid [folacin; leaf acid; pteroylglutamic acid (PGA); vitamin M]

\[
\text{HOOC—CH}_2—\text{CH}_2—\text{C—N—C—}\text{C}—\text{N—CH}_2—\text{C}—\text{N—CH}_2—\text{C}—\text{C—NH}_2
\]

pteroylglutamic acid (PGA)

A yellow-orange factor necessary for the production of red and white blood cells; related to enzymes capable of transferring one-carbon units (formyl group, —CHO) in metabolic reactions; found in the liver in the form of pteroylglutamic acid; part of the B-vitamin complex and used as a nutrient in food

Sources: liver, kidney, dried beans, beef, yeast, green leafy vegetables, wheat, and mushrooms

See Part 2: Cereal Fortification; Cereals, Vitamin and Mineral Content; Cheese, Vitamin Content; Egg Products, Nutritive Value; Grain Analysis; Lemon Juice, Composition; Milk and Milk Products, Vitamin Content; Vitamins; Vitamin Sources, Functions, and Stability; Wheat Products, Composition; Wheat, Vitamins

folle blanche A dry, fruity, chablis-type, white table wine

follicle The structure in an ovary that contains an ovum before ovulation; formed by oogenesis from an oocyte

follicle-stimulating hormone (FSH) A hormone that is secreted from the anterior of the pituitary and stimulates rapid growth of follicles in the ovary

fomite An object that has been contaminated by a diseased individual

fond Gravy

fondant 1) An aqueous solution of invert sugar and corn syrup used by confectioners. 2) A candy made by cooking (112–115°C, to soft-ball stage) a sucrose solution and then cooling and beating until crystallization occurs. 3) Acid, flavoring, sugar, and water mixed to make a candy. 4) A mixture used to coat nuts and fruit

Candy corn:

20 pieces (1 oz) = 105 calories

Mints:

3 1/2-in. mints = 105 calories

See candy

See Part 2: Water Activity, Organisms and Food

fondu (fondus; fromage) 1) A general term for processed cheese. 2) A melted spread made from cheese, milk solids, butter, and cream

fondu au marc A processed cheese made from cow's milk, with dried grape seed or rind added

fondu au raisin A processed cheese made from cow's milk, with dried grape seed or rind added; cheese coated with grape pits

fondutta A soft (more fat) munster-type cheese

fonfom Balls of cooked maize flour

fontainebleau cheese An unsalted, light-textured, triple-cream, French cream cheese made from cow's milk

fontal A semihard cheese made from cow's milk, with a full, fruity flavor

fontina 1) A sweet, mellow, hard Italian cheese; there are also French and Swiss versions. 2) A semihard
food additive  A substance intentionally added to food in small quantities to prevent spoilage, to stabilize or to improve its keeping qualities, texture, flavor, or appearance, or to aid in processing; the Food Protection Committee of the Food and Nutrition Board, National Academy of Sciences—National Research Council defines a food additive as "a substance or a mixture of substances, other than a basic foodstuff, that is present in a food as a result of any aspect of production, processing, storage or packaging. The term does not include chance contaminants." The United States Food and Drug Administration has defined a food additive as "any substance the intended use of which results or may be reasonably expected to result, directly or indirectly, in it becoming a component of or otherwise affecting the characteristics of any food (including any substance intended for use in producing, manufacturing, packing, processing, preparing, treating, packaging, transporting or holding of food; and including any source of radiation intended for such use), if such substance is not generally recognized, among experts qualified by scientific training and experience to evaluate its safety, as having been adequately shown through scientific procedures (or in the case of a substance used in food prior to January 1, 1958, through either scientific procedures or experience based on common use in food) to be safe under the conditions of its intended use." The Food and Agriculture Organization (FAO) and the World Health Organization (WHO), have defined food additives as "nonnutritive substances added intentionally to foods, generally in small quantities to improve their organoleptic properties." See additive

food aid  Assistance, rendered on an organized basis, for providing food to a population group

Food and Agricultural Organization (FAO)  Specialized agency of the United Nations concerned with the development of world agriculture, fisheries, and forestry, with the production, processing, preservation, and distribution of food, and with the improvement of nutrition; located at Via delle Terme di Caracalla, 00100 Rome, Italy

Food and Drug Administration (FAO)  The federal agency responsible for enforcement of the Federal Food, Drug, and Cosmetic Act, which prohibits the movement in interstate commerce of adulterated or misbranded food; this law covers all food (except meat and poultry) as well as drugs, devices, and cosmetics. The FDA protects the consumer by insuring the following:
1. Foods must be pure and wholesome, safe to eat, and produced under sanitary conditions.
2. Drugs and therapeutic devices must be safe and effective when used according to their directions. New drugs must be approved by the FDA before they can go on the market.
3. Cosmetics must be safe.
4. Labeling must be truthful and informative.
5. Drug labeling must include warnings needed for safe use.
6. Drugs that are not safe for self-treatment are restricted to sale by prescription.
7. Drug plants must be inspected by the FDA at least once every 2 yr.
8. Antibiotic drugs, insulin drugs, and colors used in foods, drugs, and cosmetics must be tested in the FDA laboratories before being offered for sale.
9. Chemicals added to foods must be proven safe before they are allowed to be used.
10. Pesticide residues that may remain on raw food crops must not exceed safe limits (tolerances) set by the FDA

Food and Nutrition Board (FNB)  A committee of the National Academy of Sciences, established in 1940, that publishes recommended dietary allowances

food and nutrition policy  Those aspects of the national policy that are designed to improve the nutritional state of a country

Food and Nutrition Service (FNS)  A subdivision of the U.S. Department of Agriculture that administers the food assistance program, whose purpose is to improve the nutritional status of low-income children and adults

food avoidance  Exhibiting a negative attitude toward a given type of food

food balance sheet  A table of the food supply of a country, showing the types and quantities of food produced, imported, exported, and used for food and other purposes; the table also shows the per capita
supplies available for human consumption in terms of calories and nutrients.

food chain (food web) A trace of the route of protoplasmic material through the various levels of organisms

Food Chemicals Codex See Committee of Food Protection of the National Academy of Science–National Research Council

food color See colorant

food consumption survey A survey that is designed to determine qualitative and/or quantitative information on food consumption

food consumption target An improved food consumption level to be reached by a specified time

food consumption trend How the consumption of food changes with time

food demand The quantity of food that can be sold at a given price at a market during a certain time

food distribution program The Food and Nutrition Service donates food (generally acquired under price support and surplus removal legislation) to various food program outlets—schools, institutions, charitable institutions, nutrition programs, summer camps, disaster relief, needy families, American Indian reservations, in-trust territories, and supplemental food programs

food, drug, and cosmetic colors See FD & C color

food economics The information or economic facts and principles dealing with production, distribution, and consumption of foods

food energy See Calorie

food engineering Using modern engineering techniques in food processing

food fad A fashionable food idea that is popular usually for a short time; the most prevalent problem is the lack of important nutrients.

food for special dietary use Food with special composition or that has been modified by processing to meet a particular need for someone whose assimilation or metabolism has been modified and for whom an effect may be obtained by ingestion

food grains The cereal grains most commonly used for human food, such as wheat, rice, and rye in the United States

food groups

Eleven:
1. Milk
2. Potatoes and sweet potatoes
3. Dry beans, peas, nuts
4. Citrus fruits and tomatoes
5. Green and yellow vegetables
6. Eggs
7. Meat, poultry, and fish
8. Other fruits and vegetables
9. Flour and cereals
10. Fats and oils
11. Sugar, syrup, and preserves

The basic seven:
1. Yellow and green vegetables
2. Citrus fruits, tomatoes, raw cabbage, green salad
3. Potatoes and other fruits and vegetables
4. Milk and milk products
5. Meat, poultry, fish, eggs, dried legumes, nuts, and peanut butter
6. Whole-grain or enriched bread and cereals
7. Butter or fortified margarine

food guide See Part 2: Food Guide

food habits The manner in which foods are selected and consumed in response to physiological, psychological, cultural, and social influence

food hygiene Those measures to secure or to increase the wholesomeness, soundness, and safety of food for human consumption

food irradiation (cold sterilization) The treatment of food with ionizing radiation (electrons or gamma rays) to do the following:
- Reduce microbial growth
- Reduce ripening
- Reduce sprouting
- Disinfect the food

food pathogen Active cultures of microorganisms, such as Escherichia coli, Salmonella spp., Staphylococcus aureus, etc., that are mainly responsible for food poisoning

food patterns The broad picture of the foods consumed by a given community

food poisoning The harmful effects following ingestion of food, resulting from the presence of pathogenic bacteria, the toxic products of fungi and bacteria, an allergic reaction, or chemical contamination See Clostridium botulinum; salmonellosis; Staphylococcus aureus

See Part 2: Food Poisoning, Bacteria; Infectious Diseases, Food-Borne

food preference Having a positive attitude toward a given type of food

food prohibition A negative behavior toward handling, consuming, or mixing certain types of food

Food Protection Committee A subdivision of the Food and Nutrition Board of the National Research Council that has the following responsibilities:
- Evaluating scientific information on food additives
- Assisting in research on food additives
- Establishing guidelines and processing principles

food record The food consumed, estimated by household measures and recorded in detail daily, meal by meal, during a certain period of time

food relief A supplement to the food supply, on a national or local scale, in the event of a catastrophic food shortage

food rituals Religious or magical ceremonies performed to increase the success of a food-gathering or a food-producing activity

Food Safety Council A nonprofit organization established to develop viable standards for determining the safety and wholesomeness of food and food ingredients

food science The study and application of the properties (chemical, physical, etc.) of foods and their constituents and the changes they undergo in preparation for consumption
foot rot (foul foot) A virus-caused disease that affects all cloven-footed animals; it is highly infectious and only partially controlled by vaccines.

foot-candle A unit of illumination
1 foot-candle = 0.010764 lux (lumen per square meter) = 1.0764 milliphots = 1 lumen per square foot

foot of water A measure of pressure
1 foot of water = 0.8826 inches of mercury (in. Hg) = 0.4334 pounds per square inch (lb/in.²)

foot-pound (ft-lb) A measure of heat, energy, and work
1 ft-lb = 13,557,300 ergs (or centimeter-dynes) = 13,825.5 gram-centimeters (g-cm) = 32,174 foot-pounds = 1.35573 joules (J; 1 J = 10⁷ erg) = 0.32389 gram-calorie (mean) = 0.13826 kilogram-meter (kg-m) = 0.001285 British thermal unit (Btu; mean) = 0.0003239 kilogram-calorie thermal unit (mean) = 0.000005121 metric horsepower-hour (75 kg-m-h) = 0.000005051 horsepower-hour (hp-h; U.S.) = 0.0000037662 kilowatt-hour (kW-h)

foot-pound per minute (ft-lb/min) A measure of power, rate of energy, and heat
1 ft-lb/min = 0.01667 foot-pound per second (ft-lb/s) = 0.001286 British thermal unit per minute (Btu/min) = 0.0003241 kilogram-calorie per minute (kg-cal/min) = 3.030 x 10⁻⁵ horsepower (hp) = 2.260 x 10⁻⁵ kilowatt (kW)

foot-pound per second (ft-lb/s) A measure of power, rate of energy, and heat
1 ft-lb/s = 13,557,300 ergs per second (erg/s) = 13,825.5 gram-centimeters per second (g-cm/s) = 60 foot-pounds per minute (ft-lb/min) = 1.35573 watts (W; 1 W = 10⁷ erg/s) = 0.13826 kilogram meter per second (kg-m/s) = 0.077124 British thermal units per minute (Btu/min; mean) = 0.01945 kilogram-calorie per minute (kg-cal/min) = 0.001843 metric horsepower (75 kg-m/s) = 0.001818 horsepower (hp; U.S.; 1 hp = 550 ft-lb/s) = 0.001356 kilowatt (kW) = 0.001285 British thermal unit per second (Btu/s) = 0.00032431 kilogram-calorie per second (kg-cal/s; thermal unit per second)

foot rot (foul foot) 1) An infection of the foot of cattle and sheep causing swelling around the top of the foot and inflammation between digits
Treatment: Soak in 5% copper sulfate.
2) Crown rot, an early-ripening disease of wheat; caused by Cochliobolus sativus and a Fusarium sp.
foot rot (foul foot)

3) Die-off, a disease of the sweet potato (caused by *Plenodomus destruens*); the plant dies and the sweet potatoes develop a brown, firm rot

foots Soap stock, alkali soap; the liquid remaining after rendering fat or oil from animal tissue See also soap stock

foo-yue Suzu soybean curd

fooyong (fu yung) Any of various types of omelet (using eggs), often covered with gravy

foo-yue See spaghetti

foratini See spaghetti

Forbidden Fruit A liqueur made from orange, grapefruit, honey, and brandy See grapefruit

foce-meat Meat that has been chopped fine, spiced, and highly seasoned; used as a stuffing for fowl, heart, fish, rabbit, veal, etc.

forcing Growing a plant indoors during the winter, e.g., growing rhubarb from large crowns

Ford Foundation A philanthropic organization located at 320 East 43d Street, New York, NY 10017

fore end Shoulders from Wiltshire sides

forefoot See Part 2: Bone; Pork Wholesale Cuts

foreign flavor A flavor not usually associated with the product

foreleg See Part 2: Bone Age

forequarter The front portion of a beef carcass that has usually been divided between the 12th and 13th ribs (approx. 52% of carcass), less any or all of the ribeye roll (cube roll), the chuck tender, and the shin/shank; it is usually divided into wholesale cuts called chuck, rib, brisket, shank, plate, and short ribs.

forequarter meat The front quarter of a carcass less any or all of the ribeye roll (cube roll), the chuck tender, and the shin/shank and with no more than one of the following cuts removed: clod, chuck, and neck (clod and sticking)

foresaddle A wholesale cut of veal or lamb consisting of all in front of the 12th rib; the two quarters are not split.

See Part 2: Veal Wholesale Cuts

foreshank Made up of the ulna and radius of a carcass See Part 2: Beef Cuts; Bone; Lamb Chart; Lamb Yield

forestière Prepared with mushrooms; garnished with fried mushrooms, bacon, and potatoes

forez cheese (d’Ambert) A French Roquefort-type cheese

forget fredette agar See Part 2: Microorganism, Media

forging Overreaching or striking the heel of the forefoot with the hindfoot on the same side

forkbeard, greater (*Phycis blennoides*; *Urophycis blennoides*) A hake fish

forkbeard, lesser (*Raniceps trifurcus*) A hake fish

-form A suffix meaning shape

formagelle cheese A soft Italian cheese made from cow’s milk, with rennet added

formaggini A soft cream cheese

formaggini cheese A class of small Italian cheeses

formaggio Cheese

formaggio d’capri An Italian cheese made from goat’s milk

formaldehyde (methanal) (HCHO) A poisonous, water-soluble gas that is produced in smoke used for smoking food; used as a fumigant and for smut control

formalin (formol; formolose) Commercial formalin is 40% formaldehyde in water; approx. 37% formaldehyde, 10–15% methanol in water (same as 40% formalin); used as a disinfectant (in a 1:2000 to 1:200 solution), fixing fluid, and preservative

Formate Ricinoleate broth A medium used for detection of coliform by formation of gas See Part 2: Microorganism, Culture Media, Dairy and Food Products; Microorganism, Culture Media, Water and Sewage, Standard Methods; Microorganism, Selective and Differential Broths and Media, Water Filtration Plant

formic acid

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 \[ \text{H—C} \]
 \[ \_—\_ \]
 \[ \text{O} \]
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A poisonous liquid found in the venom of ants and bees; mp 8.4°C; bp 100.5°C; commercial acid has sp. gr. 1.20 (90% by wt.) and 1.06 (25% by wt.). It is also found naturally in many plants and, in small concentrations, is usually considered safe to use for food flavoring

Storage: tight container

See Part 2: Concentration of Commercial Strengths of Acids and Bases

Formosa oolong See oolong tea

Formosa tea There are several types:

- Black
- Oolong (excellent)
- Oolong, partly fermented

formula An abbreviation for the name of a chemical compound; it also shows its composition.

formulated meal replacement Food that has been formulated to provide the nutrients required of a single meal

formulation 1) Preparation according to a formula.
2) The addition of alcohol (e.g., brandy) other than that produced in the product; this usually stops fermentation before all the sugar is consumed and leaves the product sweet.
3) In food, the addition of nutrients to maintain or improve the quality of the diet

formyl group (aldehyde group)

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\[ \text{C}—\_ \]
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A chemical group that is characteristic of aldehydes
**fortification**  The addition of selected nutrients to food to provide higher levels than are naturally present.  
*See* Part 2: Cereal Fortification; Dairy Terms

**fortified dry wine**  A dry wine to which brandy has been added to obtain better keeping qualities, flavor, and potency

**fortified margarine**  Margarine to which vitamin A has been added  
*See margarine*

**fortified sweet wine**  A sweet wine to which wine spirits have been added to obtain better keeping qualities, flavor, and potency

**fortified wine**  A general term for dessert wines or aperitif wines; a wine to which grape spirits have been added during or after fermentation; this increases the strength of the wine: if added during fermentation, it will stop fermentation and produce a sweeter wine, because not all the sugar has been converted to alcohol. Common types are marsala, madeira, port, and sherry.

**fortify**  To add nutrients that may be lacking in the diet; to add nutrients to

**fortifying**  1) Adding wine spirit to port or sherry. 2) Adding sugar to wine

**Fortran**  (*formula* translator)  A high-level programming language used in scientific and engineering applications

**fossa**  A depression in a bone

**foster**  A variety of late Florida grapefruit

**foudre**  A wine container or cask; in Alsace, 1 foudre holds 220 gal

**fou-fou**  *See* foo-foo

**fougère**  A coulommiers-type cheese made from cow's milk and matured in fern leaves

**foulah butter**  Ghee made from cow's milk

**foul foot**  *See* foot rot

**founder**  Of an animal, to overeat

**fourme**  *See* cantal

**fourme d'Ambert**  (*fores; fourme de Pierre sur Haute; montbrizon*)  A blue-veined, unpressed, uncooked French cheese made from cow's milk

**fourme de Cantal**  A hard, pressed, cheddarlike cheese made from cow’s milk

**fourme de Laguiole**  A cantal-type cheese

**fourme de Rochefort**  A small (5–10 kg) cantal-type cheese

**fourme de Salers**  A cantal-type cheese; a hard, cheddarlike cheese made from cow’s milk

**four-seasons sausage**  A moist, cooked, unsmoked Australian sausage finely chopped, medium-seasoned beef and pork stuffed into artificial casings

**four-way cross**  The offspring from the mating of two single-crosses

**fovantini**  *See* macaroni

**fowl**  A mature hen (chicken), usually more than 10 months old; used for stewing  
*See also hen*

**foxberry**  *See* cranberry

**foxtail**  A variety of millet

**foxy**  Having the aroma and taste of methyl anthranilate, as in wine made from concord and labrusca-type grapes

**FPC**  *See* fish-protein concentrate; fish meal

**fpm**  Foot per minute

**Fr**  The symbol for the element francium

**fraction**  1) That component of a mixture that can be separated by distillation (for liquids of different boiling points) or by filtration or centrifugation (for solids of different weights). 2) Refers to one of two types of molecule in a substance [e.g., in starch, the linear (amylose) fraction and the branched (amylopectin) fraction]

**fractional crystallization**  A separation method by which the temperature is slowly lowered, allowing the higher-melting compounds to crystallize

**fractional distillation**  The separation of the components of petroleum (and other liquid mixtures) by boiling off and condensing them in sequence; this is possible because of the wide difference in boiling points of the several components.  
*See also distillation*

**fra-fra**  (*daso; fabriama; fura-fura*)  An edible tuber

**fragrant**  Having a pleasant odor

**fraise des bois**  A brandy distilled from fermented wild strawberries (*Fragaria* spp.)

**framboise**  A brandy distilled from raspberries (*Rubus idaeus*)

**francium**  (*Fr*)  An alkali metal element; at. no. 87; Group IA of the Periodic Table; mass number of the most stable isotope's 223; oxidation state +1; electron configuration 2–8–18–32–18–8–1; orbit K L M N O P Q

**Franconia**  An area on the Main river in central Germany that produces several clean, fruity wines; these wines are often called Steinwein and are bottled in a type of flask called bocksbeutel

**frangipane**  1) A flavor used in pastry stuffing. 2) A rich, flavored cream. 3) A kind of tart

**Franken**  A region in northeastern Germany, along the Main river, that produces a robust, earthy, dry wine sold in flagon-shaped bottles

**frankenbrot**  A large, round bread made from wheat and rye

**frankfurter**  (*frank; frankfur; frankfurter; frankfurter; wieners; wurst; wiener; wiener; wiener; dog; hot dog; red hot; vienna sausage; wiener; wiener-wurst; Wieners)*  A general term for a smoked, fully cooked, mildly seasoned sausage (frankfurter sometimes considered to be larger in diameter than a wiener); may be made with beef and pork or all beef

<table>
<thead>
<tr>
<th>Composition</th>
<th>Frankfurter</th>
<th>Moisture (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Carbohydrate (%)</th>
<th>Ash (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef</td>
<td>54</td>
<td>11.3</td>
<td>29.4</td>
<td>2.4</td>
<td>2.9</td>
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<tr>
<td>Beef and</td>
<td>54</td>
<td>11.3</td>
<td>29.1</td>
<td>2.5</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>pork</td>
<td>54</td>
<td>11.3</td>
<td>29.1</td>
<td>2.5</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>Chicken</td>
<td>57.5</td>
<td>13</td>
<td>19.5</td>
<td>6.8</td>
<td>3.3</td>
<td></td>
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<tr>
<td>Turkey</td>
<td>63</td>
<td>14.3</td>
<td>17.7</td>
<td>1.5</td>
<td>3.5</td>
<td></td>
</tr>
</tbody>
</table>
Sodium 639 mg/frankfurter (57 g); cholesterol 112 mg/2 frankfurters (4 oz)

1) A moist, cooked, smoked or unsmoked American sausage made from finely chopped, mildly seasoned beef, pork, and veal stuffed into pork, sheep, or artificial casings; if the product contains variety meats, meat by-products, and/or binders and extenders, it must be so labeled; it is available as a batter-type product in medium- to large-diameter links or large-diameter casings for slicing, and as a comminuted, cooked, smoked, small-casing sausage (normally 60% beef, 40% pork).

Ingredients:
- Beef (30–70%)
- Pork (25–50%)
- Veal (0–40%)
- Pork liver and hearts (0–8%)
- Defatted pork solids (0–15%)
- Tripe (0–20%)
- Ice* (20–40%)
- Salt* (2–3%)
- Sugar* (7–16 oz/100 lb)
- Binder (0–7%)
- NaNO₂* (2 oz/100 lb)
- NaNO₃* (1 oz/100 lb)
- White pepper* (4–7 oz/100 lb)
- Coriander* (1–3 oz/100 lb)
- Ginger or mace* (1–2 oz/100 lb)
- Onion juice (0–3 oz/100 lb)
- Cardamom (0–1 oz/100 lb)
- Cinnamon (0–1 oz/100 lb)
- Sage (0–1 oz/100 lb)
- Garlic (0–1 oz/100 lb)
- Ascorbate (0–1 oz/100 lb)
- Mustard (0–1 oz/100 lb)
- Nutmeg (0–2 oz/100 lb)

The asterisk indicates the combination of additives used in some formulations.

Procedure:
1. Grind ⅛-in. plate.
2. Mix beef, seasoning, ice, and binder.
3. Chop.
4. Add pork and ascorbate.
5. Chop; max. temp. 65°F
6. Stuff and link.
7. Smoke, using the following conditions.

<table>
<thead>
<tr>
<th>Temp. (°F)</th>
<th>Time (h)</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>130</td>
<td>½</td>
<td>No smoke</td>
</tr>
<tr>
<td>140</td>
<td>1</td>
<td>Smoke</td>
</tr>
<tr>
<td>150</td>
<td>1 ½</td>
<td>Smoke</td>
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<tr>
<td>160</td>
<td>2</td>
<td>Smoke</td>
</tr>
<tr>
<td>170</td>
<td>4</td>
<td>Smoke</td>
</tr>
<tr>
<td>180</td>
<td>To internal</td>
<td>Steam temp. 152°F</td>
</tr>
</tbody>
</table>

8. Shower for 15 minutes.

2) A moist, cooked, smoked, fine- or medium-chopped, mild- or medium-seasoned beef, lamb, veal, and goat stuffed into sheep or artificial casings or no casing. 3) A moist, cooked, smoked finely chopped, mildly seasoned (with nitrite) beef and pork stuffed into sheep or artificial casings with a diameter of less than 28 mm. 4) A moist, uncooked, unsmoked Australian sausage made from finely chopped, mildly seasoned beef stuffed into beef or pork casings.

Storage (at home): Keep in original wrappers; refrigerate; use within 1 week for best flavor.

See chicago dog; kansas city dog; kansas dog; new york dog

See Part 2: Calories, Daily Recommendations; Food, Composition; Meat Composition; Meat, Servings per Pound; Meat Storage; Pork Storage; Sausage Composition; Sausage Identification; Sausage, Nutritive Value; Sausage, Types

Frankfurter, chicken Composition: sodium 617 mg/frankfurter (45 g)

Frankfurter, Dutch A moist, cooked, smoked Dutch sausage made from finely chopped, medium-seasoned beef and pork stuffed into sheep or artificial casings or not stuffed into a casing.

Frankfurter, Irish A moist, cooked, smoked or unsmoked Irish sausage made from finely chopped, mild- or medium-seasoned beef and pork stuffed into sheep or artificial casings.

Frankfurter, Kosher A moist, cooked, smoked American sausage made from finely chopped, medium-seasoned (with garlic) beef and veal stuffed into an artificial casing; must be produced under rabbinical supervision.

Frankfurterli A moist, cooked, smoked Swiss sausage made from finely chopped, medium-seasoned pork stuffed into sheep casings.

Frankfurter, skinless A frankfurter cooked in an artificial casing that is removed after cooking.

Frankfurter, Uruguayan A moist, cooked, smoked Uruguayan sausage made from finely chopped, mildly seasoned beef stuffed into a pork or sheep casing.

Frankfurter würstchen A moist, cooked, smoked eastern German sausage finely chopped, mildly seasoned lamb and pork stuffed into pork or sheep casings.

Frankincense A fragrant resin, obtained from Arabian and African sources, that gives off an aromatic smoke and is used in religious ceremonies. See olibanum oil.

See Part 2: Essential Oils

Frappé 1) A semifrozen ice or fruit juice; a soft sherbet. 2) An iced drink. See candy.

Frascato An Italian white wine that is strong and fragrant, with the flavor of golden grape skins; produced near Rome in both dry and abboccato styles.

FRBC Fisheries Research Board of Canada

Freciarossa An Italian wine.

Free alongside (FAS) The seller delivers the cargo to the dock (or in a smaller vessel) beside the buyer's vessel; usually applicable to bagged cargo.

Free choice Of a food, letting individuals select their own amount (usually refers to consumption); having unlimited access to separate components of the diet.

Free fatty acid (FFA; F.F.A.) A non-neutralized acid produced by hydrolysis of fat; free fatty acid content is used as a specification for fats used in cooking.
fatty acids in living organisms is usually less than 0.5% max. and 1% in emulsifiers. FFA content is determined by mixing hot fat with hot, neutralized ethyl alcohol and then titrating the mixture with a standard weak base; the results usually are expressed as oleic acid. A high level of free fatty acids indicates a poorly refined fat or fat breakdown after manufacturing; in general, FFA content is an indication of the care taken in the collection, washing, processing, and storage of fat; see also acid value. See Part 2: Free Fatty Acid, Smoke, Flash, and Fire Points.

free market A market in which prices are set by competitive forces without government influence.

freemartin A sterile female calf twinborn with a male calf.

free on board (fob) The seller is responsible for placing grain at the end of the loading spout; the buyer is responsible for providing the ocean vessel.

free radical (•;*) An electrically neutral molecule with an unpaired electron in the outer orbit; a centered dot or asterisk placed as in OH • or OH * designates a free radical.

free residual chlorine The amount of uncombined chlorine measured by the 5-s orthotolidine test.

free rotation The production phase when cans roll on the retort shelf and agitate the product.

free trade A theoretical concept to describe international trade unhampered by government barriers.

free water Water that is not an integral part of the living cell with which it is associated.

freeze damage Citrus fruit will freeze and show freeze damage at temperatures of 25–30°F (average 27.5°F):

Higher freeze temperatures—tangerines, lemons, and limes

Intermediate freeze temperatures—grapefruit and hybrid fruit

Lower freeze temperatures—oranges

Freezing may occur on the tree or post-harvest. Evidence of freezing: membranes between segments look soaked and contain a number of white specks (hesperidin crystals or naringin in grapefruit); rind may range from brown to gray; severely frozen fruit will be mushy.

freeze dehydration See freeze-drying.

freeze-drying (freeze dehydration; lyophilization) 1) A preservation technique by which a food (or heat-labile solution) is frozen and placed in a vacuum; the ice is vaporized (by sublimation) and trapped, leaving a dried product, used especially for coffee and for preservation of microorganisms. 2) Sublimation from the frozen state.

freezer If power is lost, keep the door closed.

Number of days contents will remain frozen:

Full freezer—2

Half-full—1

freezer burn Dehydration of frozen food, causing white areas to appear on the surface; can be eliminated by proper wrapping. The condition is harmless but, if extensive, it can cause food to become tough, to lose flavor, and to oxidize.

frost-freezing—See sharp-freezing

freezing Preserving food by storage at low temperature (below 0°F is recommended).

freezing point The temperature at which a liquid becomes a solid; identical to the melting point; water is 32°F (0°C). The depression (in degrees Celsius) of the freezing point of water (for 1 g mol. wt. dissolved in 1 l water) is as follows:

Nonionizing substance (e.g., sugar)—1.86

Ionizing substance (e.g., salt)—3.72

<table>
<thead>
<tr>
<th>Salt in water (%)</th>
<th>Freezing point (approx.) °F</th>
<th>°C</th>
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<tbody>
<tr>
<td>0</td>
<td>32</td>
<td>0</td>
</tr>
<tr>
<td>2.5</td>
<td>29</td>
<td>-2</td>
</tr>
<tr>
<td>5</td>
<td>26</td>
<td>-3</td>
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<tr>
<td>20</td>
<td>0</td>
<td>-18</td>
</tr>
<tr>
<td>22.5</td>
<td>-5</td>
<td>-21</td>
</tr>
</tbody>
</table>

See Part 2: Defrosting Time; Freezer Sizes; Freezing Rate; Thermal-Arrest Time.

Freezomint A liqueur flavored with mint.

freight equalization A rebate given on transportation costs to meet competition from a supplier with a more convenient plant.

Freisa 1) A sweet, sparkling wine made from Nebbiolo grapes; also a sparkling red wine; a dry or slightly sweet, Italian red wine. 2) A grape variety.

French-Alpine See Part 2: Goats, Milk Breeds.

French artichoke A vegetable whose flower is used as food.

French bean (kidney bean; Phaseolus vulgaris) One of many varieties of edible beans that produce a variety of shapes and colors of pods and beans.

French bread A long loaf of white, wheat-flour bread with a crisp crust and a soft interior; usually consumed within 6 h of baking.

French burnt peanut See candy.

French-Canadian food habits

Animal products—lard, pork, salt fish

Dairy—little cheese or milk used

Fruit and vegetables—apples, beets, cabbage, peas, pickled green tomatoes, and turnips

Grain products—cake, cornmeal, oatmeal, pastry, and white bread.

French-Canadian A hardy breed of dairy cattle, originally from France, that resembles the Jersey; black or black with yellow fawn stripe along the back.

French celery See Chinese celery.

French Charolais See Charolais.

French colombard A semidry wine with an appealing flavor and bouquet.
French combing wool  Wool that is shorter than normal combing wool yet can be combed on French-style combs

French cream  See candy

French dressing  A temporary emulsion (must be shaken before use) of oil, acid (vapor or lemon juice), and seasoning; paprika gives it a red color; min. 35% vegetable oil; the emulsifier is egg yolk and designated emulsifiers (max. 0.75%); the acid is vinegar or lemon juice (citric acid can be used for 1/2 acetic acid in vinegar).

Combination often used: 1/2 cup salad oil (corn, cottonseed, olive, peanut, or soybean oil); 1/4 cup vinegar (cider, white, or wine); 1 tsp salt; 1 tsp sugar; dash pepper; 1/2 tsp paprika; 1/2 tsp mustard

Other spices sometimes used are basil, celery, cloves, curry, garlic, ginger, nutmeg, onion, oregano, and tarragon; catsup also may be used.

Sodium content:
- Home recipe—92 mg/tbsp (14 g)
- Bottled—214 mg/tbsp (14 g)
- Dry mix, prepared—252 mg/tbsp (14 g)

See Part 2: Fats and Oils, Composition; French Dressing; French Dressing Variations

French-fried onions  Onion rings that have been dipped in batter and deep-fat fried

French-fried potatoes (chips; French fries)  Fingers of deep-fat fried (196–201°C, 385–395°F) potatoes See French fries

French fries  Potatoes that have been cut into thin strips, soaked in water, deep-fat fried, and sprinkled with salt; they should be moderately crisp on the surface and tender but not soggy throughout; often eaten with catsup

20 fries = 1 serving
Procedure:
1. Use old potatoes.
2. Peel.
3. Cut into strips 2–3 in. long.
4. Soak in cold water for 1 hour.
5. Dry.
6. Cook in deep fat (385°F) for 3 minutes.

Composition: fat 8–12% (absorbed during cooking); sodium 146 mg/2.5 oz (69 g)
- 10 3/4 in. pieces, fresh = 215 calories
- 10 3/4 in. pieces, frozen = 170 calories

Storage (frozen): 4 to 8 months at 0°F

French fry  To deep-fat fry food

French frying  Deep-fat frying food (e.g., eggplant, green peppers, onions, parsnips, potatoes, or sweet potatoes) in fat or oil at 370–395°F

French ice cream  In France, ice cream with a high percentage of egg or egg yolks; in the United States, a high percentage of butterfat or eggs See ice cream, French

frenching  Removing the meat (2 in.) from the end of a bone

French kidney bean  See pea bean

French leg of lamb  The tibia is left in the leg and frenched

French Merino  See Rambouillet

French mustard  See Part 2: Mustard, French

French roast (continental roast; Cuban)  A procedure for roasting coffee that produces a deep brown bean with the oil brought to the surface; it is darker than American roast and has a heartier body and sharper taste.

French spinach  See orach

French-style bean  Green beans cut at an angle (or sliced lengthwise) rather than horizontally

French toast  Pan-fried bread, usually coated with an egg–milk mixture

French vermouth  Dry and pale vermouth

Freon  Proprietary name for a series of nonflammable refrigerants based on fluorocarbons

<table>
<thead>
<tr>
<th>Freon</th>
<th>mp (°C)</th>
<th>bp (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 Trichloromonofluoromethane</td>
<td>−111</td>
<td>23.7</td>
</tr>
<tr>
<td>12 Dichlorodifluoromethane</td>
<td>−158</td>
<td>−29.8</td>
</tr>
<tr>
<td>114 1,2-dichloro-1,1,2,2-tetrafluoroethane</td>
<td>−94</td>
<td>4.1</td>
</tr>
<tr>
<td>C318 Octafluorocyclobutane</td>
<td>−41.4</td>
<td>−6.0</td>
</tr>
</tbody>
</table>

frequency  The number of cycles per second (Hz)

frequency distribution  A summary table or graph showing the frequency of occurrence of individual values

fresa  A creamy, semisoft, surface-ripened, mild-flavored cheese made from goat's or cow's milk

fresh  1) Describes a cow that has recently given birth to a calf. 2) Of food, recently produced (e.g., freshly baked bread); describes food that has not been frozen; describes a product, as grown, that has not been canned, dried, or processed; contains no preservatives; not stale; recent; new; not deteriorated. 3) Meat that has not been cured or cured and smoked, but that may have been frozen

fresh beef sausage  A sausage made from fresh or frozen beef, not including beef by-products; may not contain more than 30% fat and 3% added moisture See beef sausage, fresh

fresh fish  Fish preserved by chilling; thawed fish

fresh freezer accumulation (FFA)  Meat that is fresh, partly frozen, or solidly frozen, that has been accumulated in the last 15 days, and is in good condition

fresh frozen  Describes fresh meat that has been frozen
friesche kaas cheese  A soft cheese made in The Netherlands

freshness date  Similar to expiration date but usually allows for normal home storage  See quality assurance date

freshness preservers  Emulsifying agents that are used in baked goods to retard the rate of hardening; they do not retard flavor degeneration.

d characterize food products but usually do not retard flavor degeneration.

fresh pork sausage  A sausage made from fresh or frozen pork, not including pork-by-products; cannot contain more than 50% trimmable fat or 3% added moisture

Styles:

Breakfast—fine grind; all pork; seasoned with salt, pepper, and sage; sold in links, patties, or bulk  
Country style—coarse grind; all pork; seasoned with salt and pepper, may or may not have sage; often smoked; sold in unlinked casings

See pork sausage

fresh sausage  Merchandise that has just arrived

freshwater drum  (Aplodinotus grunniens)  A food fish

freshwater fish  (Including ocean-dwelling fish caught in fresh water)  Fish caught in fresh water, i.e., Pacific salmon, Atlantic salmon, and salmon trout; composition of edible portion 16% avg. protein; up to 20% fat in salmon

freshes  A moist, cooked, unsmoked French blood sausage medium-chopped, medium-seasoned (with onions and bread) pork, with meat, head, and rinds and not stuffed into a casing

friable  Easily pulverized or broken

fricandeau  1) Veal or other meat that is larded, glazed, and braised. 2) Slices of braised fish

fricandelles (fricadelles)  Fried meat balls made from beef or veal

fricasee  1) To cook fowl, veal, or rabbit by braising or by braising and stewing; braised meat. 2) A type of ragout made by browning a meat that is then cooked covered in a sauce or liquid

See Part 2: Braising Meat

friction plug  A closure held in place by friction

fries  The testicles of food animals

friesche kaas cheese  A soft cheese made in The Netherlands

Friesian  1) A European black and white cattle; a mature bull weighs 2200 lb.  See Holstein-Friesian.  2) A cheese flavored with cloves and cumin

Friesian clove  A semihard, reduced-fat, usually wheel-shaped cheese made from cow’s milk and flavored with cloves

Frieder Schaunnessy medium  See Part 2: Microorganism Reactions on Differential Tube Media

frigate mackerel  (Auxis thazard)  A food fish

frijole  A bean, usually meaning pinto bean  See bean, pinto

frikandel (frikadel)  A moist, cooked, unsmoked Dutch sausage made from finely chopped, heavily seasoned beef and pork that is not stuffed into a casing

frill treatment  The application of herbicide to a frilled area (cut) in the trunk of a woody plant

frinault  A soft cheese, made from cow’s milk, with a blue rind

frikkæse  A fresh, soft cream cheese made from cow’s milk

frit  Fried

frittled glass  Ground glass that has been fused to form a sheet of filtering (porous) material

fritter  A deep-fried [in oil, 177-190°C (350-375°F)] ball of dough in which apples, bananas, vegetables, cheese, etc., are enclosed

See Part 2: Frying Time

frittkorn  (kornlet)  A thick liquid that is obtained by boiling the milky liquid pressed from fresh corn kernels; used for making corn fritters, griddle cakes, muffins, puddings, and soups

frito-misto  A mixed grill of deep-fried meat or vegetables

fritz  A moist, cooked, unsmoked Australian sausage made from finely chopped, medium-seasoned beef and pork stuffed into artificial casings

friulans  A Cheddar-type cheese

frizzle (frizzie; soppressata; sopressata)  1) A dry (moisture-to-protein ratio 1.6:1 or less), irregularly shaped French–Italian sausage similar to unsmoked pepperoni; a dry sausage made from coarsely chopped, cured lean pork and a small quantity of cured lean beef; it is highly spiced and may be hot or sweet; not smoked; air-dried for 60–90 days

Types: hot spice; sweet spice

2) A dried pork and beef sausage that is stuffed in a hog middle and dried without smoking for 60–90 days; it has a crinkled shape.

See Part 2: Sausage Identification

frizzle  To fry thin meat at high temperature until the edges curl  See salami; soppressata

frog  (Rana spp. of the family Ranidae)]  A web-footed, smooth-skinned, amphibious animal that lives around water and is capable of jumping long distances; the rear legs of larger frogs are used for food (in season May–September).

Types:

Bull or bellowing  (R. catesbeiana)

Green  (R. esculenta)
Leopard (R. pipiens)
Mute
Equivalents:
1 pair of legs, jumbo size = \( \frac{1}{2} \) lb
4 pairs of legs = 1 serving
Bones are removed when the product is canned.
See Part 2: Minerals, Food; Portion Size

frog [Rana spp. (of the family Ranidae)]

frogeye leaf spot See black rot

fromage Cheese
fromage à la crème A cream cheese made from cow's milk
fromage, au With cheese
See Part 2: Milk and Cheese, Composition
fromage blanc A fresh cheese made from whole milk that is allowed to sour and is then drained; a thick curd cheese
fromage de Bruxelles A soft, fermented cheese made from skimmed cow's milk See brusselskaas
fromage de la mothe See chèvre à la feuille
fromage de monsieur A white, creamy, fermented cheese made from cow's milk
fromage de Troyes A ricotta-type cheese matured in wood ashes See barbery
fromage fort A flavored cheese paste
fromage frais Fresh cheese
fromage sec A pepper-covered, dry cheese made from cow's milk
fromaggio Cheese
fromagey A white cheese made from cow's milk
front end of machine The feed end of a machine
frontignan A sweet French dessert wine
frost 1) To cover with frostings. 2) To chill until covered with ice crystals, e.g., by storing wet glasses in the freezer
See Part 2: Frost Date, Autumn; Frost Date, Spring
frosted 1) A glass, used for beverages, that is ice- or frost-covered, accomplished by allowing atmospheric condensation to collect on a cold glass. 2) A milk shake with dissolved ice cream
frostfish A codlike fish See whiting
frosting (icing) 1) A sweet material that is placed on the top and sides of a cake to add to the color, flavor, and texture of the cake; when used between layers, it is often called a filling. 2) Chilling a glass and allowing atmospheric moisture to condense on the cold surface
frosting temperature See candy
frothing Coating with flour and exposing to high heat
frozen concentrated juices USDA grades: U.S. Grade A; U.S. Grade B; U.S. Grade C
frozen custard A frozen mixture containing a custard base of cooked eggs and milk See ice cream
frozen dessert Storage: tightly covered in freezer, use within 1 week; below 0°F use within 1 month; keeping hard-frozen prevents the formation of ice crystals. Before serving, place in the refrigerator for 10 (1 pt) to 20 (\( \frac{1}{2} \) gal) minutes.
See Part 2: Creams, Butter, and Frozen Desserts; Dairy Terms

frozen dinner A frozen meal that must include three separate dishes from the following groups: cereal-based products; cheese; eggs; fish; meat; potatoes; poultry; rice; vegetables

frozen food Food kept at or below zero degrees Fahrenheit (\( -17.5°C \)); cooking time for frozen vegetables is approximately one-half that required for fresh vegetables.
Advantages of frozen food:
- Available all year
- Color and flavor preserved
- Nutrient content stable for months
- Usually unsalted

Disadvantages of frozen food:
- High cost of appliance and energy
- Possibility of freezer burn
- Risk of repeated thawing
- Texture deterioration
Storage: can be stored in the freezing unit inside a refrigerator for 1 week

frozen fruit Fruit that has been preserved by freezing; enzymatic darkening occurs in peaches during frozen storage unless they are packed in a syrup containing ascorbic acid (an oxidation inhibitor) and are properly packaged to reduce the amount of oxygen reaching the food.
See Part 2: Fruit Servings per Pound

frozen fruit juice Fruit juice (often concentrated) that has been preserved by freezing
Storage: Keep frozen; cover reconstituted fruit juice and keep in refrigerator in glass or plastic container

frozen, sharp- See sharp-freezing

frozen storage If the freezer stops, food will remain frozen for the following times:
- Fully loaded, door closed—2 days
- Half-loaded, door closed—1 day
- With 25 lb dry ice, 10-ft \(^3\) freezer
  - Fully loaded—3–4 days
  - Half-loaded—2–3 days
- With 50 lb dry ice, 20-ft \(^3\) freezer
  - Fully loaded—3–4 days
  - Half-loaded—2–3 days
Food can be refrozen if the temperature is less than 40°F for no more than 2 days.
See Part 2: Baked Products, Frozen Storage Life; Frozen Food Containers; Frozen Food Storage

frozen vegetables Vegetables that have been preserved by freezing; vegetables (e.g., corn, green beans, lima beans, peas) can deteriorate enzymatically during frozen storage; they are normally heated briefly to 100°C to destroy the enzymes prior to freezing.

fructose (fruit sugar; levulose) \((C_6H_{12}O_6)\) A six-carbon monosaccharide (hexose) that is widely distributed in nature; 173% as sweet as sucrose; mp
103°C; found naturally in honey and fruits

\[
\begin{align*}
&\text{H} \\
&\text{H} - \text{C} - \text{OH} \\
&\text{C} = \text{O} \\
&\text{HO} - \text{C} - \text{H} \\
&\text{H} - \text{C} - \text{OH} \\
&\text{H} - \text{C} - \text{OH} \\
&\text{H} - \text{C} - \text{OH} \\
&\text{H} \\
\end{align*}
\]

Pure fructose is produced from sucrose; high-fructose syrup is derived from corn. Fructose is used to prevent graininess in ice cream.
Available forms: granular; liquid; powder; tablet See corn syrup, high-fructose
See Part 2: Honey Composition; Sugar, Fruit; Sugar, Legumes; Sugar, Vegetables; Sweeteners, Sweetness; Sweetening Agents; Sweetening Compounds

frufru Yogurt
frühstück (breakfast cheese; lunch cheese) A small, round, limburger-type cheese
frühstückskäse A soft to semisoft, limburger-like, strongly flavored, surface-bacteria-ripened cheese made from skimmed cow’s milk
fruit The edible tissue resulting from the flower of a plant and usually containing the ripened seed; formed from the ovary of the flower
Classes: berries; capsules; citrus; pepos; pomes; stone-bearing
Cooking in liquid:
Dense syrup—large shrinkage and hardening
Syrup of 2 parts water to 1 part sugar—desirable for most fruit; slight shrinkage; yields a more transparent product
Water—used for fruit that is to be cooked to a smooth pulp; sugar, if desired, is added after cooking.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Fancy</td>
<td>Premium</td>
</tr>
<tr>
<td>U.S. No. 1</td>
<td>Good (most fruit)</td>
</tr>
<tr>
<td>U.S. No. 2</td>
<td>Medium</td>
</tr>
<tr>
<td>U.S. No. 3</td>
<td>Lowest</td>
</tr>
</tbody>
</table>

USDA grades
Fresh fruit
U.S. Fancy
U.S. No. 1
U.S. No. 2
Canned, frozen, or dried fruit
U.S. Grade A
U.S. Grade B
U.S. Grade C
Grades for processed fruit:
U.S. Grade A, or Fancy—the very best fruits, with excellent color and uniform size, weight, and shape; having the proper ripeness and few or no blemishes; excellent to use for special purposes where appearance and flavor are important
U.S. Grade B, or Choice—includes much of the fruit that is processed; very good quality, only slightly less perfect than grade A in color, uniformity, and texture; good flavor and suitable for most uses
U.S. Grade C, or Standard—may contain some broken and uneven pieces; although the flavor may not be as sweet as in higher qualities, these fruits are still good and wholesome; useful where color and texture are not of great importance, such as in puddings, jams, and frozen desserts
Equivalents:
one 16-oz can = 4 1/2-cup servings if liquid is used
= 2-3 servings if drained
one 29-oz can = 7 1/2-cup servings if liquid is used
= 4-5 servings if drained
one lb, dried = 2 cups
= 10 servings
To remove stain from cloth: soak promptly in cold water; launder in hot water; bleach if necessary.
Storage: can be frozen (0°F max.)
See also vegetable
See Part 2: Calcium; Calories, Daily Recommendations; Canned Spoilage Related to pH; Citrus Fruit Storage; Food, Composition; Food Guide; Frozen Food Storage; Fruit and Nut Rootstock; Fruit and Vegetables, Diseases; Fruit and Vegetables, Composition; Fruit, Availability; Fruit Classification; Fruit Composition; Fruit, Cooking; Fruit Dressing; Fruit, Dried, Simmering; Fruit, Frozen Yield; Fruit Grade Uses; Fruit, Growing Season, Storage Life; Fruit Harvest Dates; Fruit Inspection Labels; Fruit Juice Flavors; Fruit Label; Fruit Salad Dressing; Fruit Sauces; Fruit, Servings per Pound; Fruit, Simmering; Fruit Storage; Microwave Cooking, Fruit; Minerals, Plant or Animal Tissue; Moisture in Biological Materials; Mold, Food; Nicotinic Acid, Food; Nutrients in Crops; Oils, Seeds and Fruit; Organic Acids in Fruits and Vegetables; Portion Size; Potassium-Rich Foods; Riboflavin, Food; Rot Spoilage; Salad Dressing and Mayonnaise Variations; Spoilage, Carbohydrate Foods; Standards, Processed Fruit and Vegetable Products; Storage Times; Sugar, Fruit; Thiamin, Food; Vitamin A, Daily Recommendations; Vitamin A, Food

fruit acid An acid that was originally found in fruit, e.g., malic acid (in apples) and tartaric acid (in grapes)
fruit acid added Indicates that fruit acid has been added to a product to give jellying properties
fruit bread A tea bread
fruit butter See butter, fruit
fruitcake A rich cake containing raisins and candied fruit; one 2 × 1 1/2 × 1/2-in. slice of dark fruitcake contains 56 calories.
Storage: dampen cheesecloth with brandy, bourbon, or spirits and wrap cake in the cloth; place in a cake tin or wrap in aluminum foil and refrigerate; will keep for several weeks
See Part 2: Baked Products, Frozen Storage Life; Grain Products, Composition; Water Activity, Organisms and Food
fruit, candied
1 cup, mixed, chopped = 6.4 oz

fruit, canned
16 oz, served with liquid = 4 servings
16 oz, drained = 2-3 servings
Storage: cool, dry place; storage life 1 yr; after opening, can be refrigerated in can (acid fruit and juices may acquire a harmless metallic taste); use within 2-3 days
Freezing does not make the product unsafe unless the seal is broken. Rusting does not make the product unsafe unless the seal is broken.

fruit cheese Made from fruit that has been slowly cooked until soft and thick, e.g., apple and gooseberry, black current, medlars, and quince

fruit cocktail Mixed pieces or sections of fresh or canned fruit, served as an appetizer, sometimes containing whipped cream and served cold; the canned product may also contain added natural and artificial flavors, spices, vinegar, lemon juice or organic acids, or ascorbic acid (no greater than needed to preserve color); contains 5 tsp sugar per 0.5 cup
1 cup = 8-9 oz
Fruit mixture commonly used (pears and peaches must be the greater part):
- Bartlett pears, diced (25-45%)
- Yellow cling peaches, diced (30-50%)
- Red maraschino cherries, halved (2-6%)
- Pineapple segments (dices or tidbits) (6-16%)
- Green-white seedless grapes, whole (6-20%)
May also contain:
- Apples
- Apricots
- Berries
Sucrose content of syrup:
- Extra light—10-14%
- Light—14-18%
- Heavy—18-22%
- Extra heavy—22-35%
See Part 2: Calories, Daily Recommendations; Standards, Processed Fruit and Vegetable Products

fruit grade
Fresh, consumer:
- U.S. Grades A, B, C
Fresh, wholesale:
- U.S. Extra Fancy
- U.S. Fancy—for some fruits, this is the top grade.
- U.S. No. 1
- U.S. Utility or U.S. No. 2
No. 1 cookers
Combination
Processed:
- U.S. Grade A or U.S. Fancy
- U.S. Grade B, U.S. Choice, or U.S. Extra Standard
- U.S. Grade C or U.S. Standard—thrift quality

fruit ice A tart, frozen dessert made from water, sugar, and fruit juice

fruit juice Can be used as a natural food additive to color food
Storage life: home-frozen (0°F)—4-6 months; frozen concentrate, opened and reconstituted—use within 2-3 days
See juice, fruit
See Part 2: Fruit Juice Flavors; Minerals (Trace), Limits; Spoilage, Carbohydrate Foods; Stabilizers, Thickeners

fruit kernel The soft, edible part within the hard shell of the stone or nut of a fruit; sometimes used to make liqueurs

fruitlet black rot See brown rot
fruitlet brown rot See brown rot
fruitlet core rot See brown rot

fruit liqueur A beverage with high alcohol content and various degrees of sweetness, made by soaking extracts of fruit in spirits

fruit moth See oriental fruit moth

fruit moth, oriental The larva is a pinkish white worm (\(\frac{1}{2}\) in. long), with a brown head, that feeds on growing twigs and maturing fruit

fruit, pickled Fruit that has been pickled with salt and allowed to ferment

fruit rot (\textit{Alternaria} spp.; \textit{Botrytis cinerea}; \textit{Cladosporium} spp.; \textit{Penicillium} spp.) A fungal disease of the raspberry and blackberry, causing the fruit to become soft, watery, and often covered with a (moldy) growth of fungus; warm, wet weather favors development of fruit rot. Gray mold fruit rot caused by \textit{Botrytis cinerea} is the most common fruit rot of raspberries and blackberries in the field.
Control: Pick only sound berries; handle with care and do not bruise; refrigerate; use fungicide spray.
See heart rot

fruit-set The development of the ovary after fertilization of the egg(s) when swelling of the ovary is noticeable

fruit sugar See fructose
See Part 2: Sweetening Compounds

fruit vinegar Vinegar made from citrus fruit, dates, or bananas
fruitworm  The larva of various species whose hosts are cranberry, blueberry, and other fruits; damage is caused by larvae feeding on the fruit. Control: insecticides
See cherry fruitworm; green fruitworm
fruity flavor  A flavor that is aromatic or fruitlike
frukostkorv  A moist, cooked, smoked Swedish sausage made from mildly seasoned beef and pork stuffed into a pork casing
Composition: moisture 65% max.; fat 23% max.; binder 3% max.
frumenty  A sour gruel of wheat with milk
fruitgat  A Swiss cheese made from cow’s milk
fry  1) To cook in fat
Types of frying:
   Pan fry or sauté—to cook in \( \frac{1}{4} \)–\( \frac{1}{2} \) in. of fat
   Deep-fat or French fry—to cook in fat deep enough to cover food
To brown previously cooked foods—375–390°F (190–200°C)
To cook and brown raw foods—360–375°F (182–190°C); croquettes 375–400°F; french-fried onions 385–400°F; french-fried potatoes 385–400°F; fritters 360–375°F
2) Small, young fish; whitebait fish See whitebait.
3) The intestines of pigs and lambs
See Part 2: Frying Time; Lamb Cuts and Uses; Pork Cuts and Uses; Variety Meat Preparation; Veal Cuts and Uses; Vitamin Retention, Meat
fryer  A chicken intended to be cooked by frying; usually larger than a broiler; a young chicken from 3\( \frac{1}{2} \) to 4\( \frac{1}{2} \) lb
See broiler
See Part 2: Poultry Roasting
fryer-roaster (fryer-roaster turkey)  A turkey of either sex that is about 16 weeks old and is tendermeated with soft, pliable, smooth-textured skin and flexible breastbone cartilage
fry test  A test made under controlled and specified conditions to indicate relative stability of fat or oil by such parameters as the tendencies to smoke, discolor, or foam
FSH  See follicle-stimulating hormone
FSIS  Food Safety and Inspection Service of the USDA
FSQS  Food Safety and Quality Service of the USDA
See FSIS
FST  See fob, stowed, trimmed
F test  A test of the hypothesis that two population variances \((s_1^2 \text{ and } s_2^2)\) are equal; the variance ratio is computed and compared to a table of \(F\) values.
See Part 2: F-Distribution
ftinoporino  A cheese made from sheep’s milk
fuba  Corn bread
fuchsin lactose broth  A selective medium used in examination of water for \textit{Escherichia coli}; the basic fuchsin dye inhibits gram-positive organisms.
See Part 2: Microorganism, Selective and Differential Broths and Media, Water Filtration Plant
fuder  A wine container or cask made from oak
1 fuder = 220 (gal)
fudge  A confection consisting of a flavored, supersaturated sugar solution; a crystalline candy made by mixing granulated sugar (2 cups), milk (1 cup), butter (1 tbsp) chocolate (1\( \frac{1}{2} \)–2 oz) or cocoa (4–7 tbsp) and cooked to 112–113°C (240°F)
Vanilla or chocolate:
1 oz, plain = 115 calories
1 1-in. cube, plain = 85 calories
1 oz, with nuts = 120 calories
1 1-in. cube, with nuts = 90 calories
See Part 2: Calories, Daily Recommendations; Sugars and Sweets, Composition
fuel  A carbonaceous solid, liquid, or gas used for heating and cooking
See Part 2: Fuel, Heating Value
fu-fu  See foo-foo
-fug- (Fuge-)  A syllable meaning flee or avoid
fugu  Globefish
fu-ju  A sufu soybean curd
fula  Balls (50 g) of cooked millet flour, sometimes with maize, rice, or sorghum flour; also a beverage, when mixed with water or milk
fulani cheese  A cheese made from cow’s or goat’s milk that is coagulated by the water extract of leaves of \textit{Calotropis procera}; the curds are drained and pressed and may be dipped in red material obtained from sorghum stalks, rolled into balls, and sun-dried
full  See kumiss
full  1) Describes a tea that has strength but no bitterness. 2) Describes a wine with abundant mineral salts and alcohol
full bloom  Having two-thirds or more of the plants in bloom
fuller’s earth  A refining agent for fats and oils, composed of colloidal clay and silicious material
full-fat soy flour  A flour made from soybeans that are hulled, ground, and processed without fat removal; up to 23% fat and 43% protein
full-feed  To provide an animal with as much material as it will consume
full-panel easy-open end  A can with a scored panel on the metal end that has a tab attached, allowing the entire panel to be removed
full pension (American plan)  The same as the American plan, which includes three meals daily in the room rate (breakfast is Continental)
fully cooked  Describes food that has been cooked during the smoking process and can be served without further cooking; however, heating will develop additional flavor. The product should be refrigerated. See cooked; smoked temperature
fumaric acid  \[
\begin{align*}
\text{HOOCCH} & \quad (\text{trans}) \\
\text{HCCOOH}
\end{align*}
\]
A white, odorless, organic acid that is used in beverages and baking powder and as an antioxidant; also used to add tartness to dry foods (67–72% as tart as
anhydrous citric acid) and as a food acidifier, a pH control agent, and a flavoring agent
Storage: well-closed container
See Part 2: Acidulants; Maple Syrup Composition; Organic Acids in Fruits and Vegetables
fumeol  Refined smoke used to make liquid smoke
fumet  An essence of fish, meat, or game
fungation  Killing pests (e.g., vermin, insects, bacteria, mold) by exposure to fumes or gases
Commonly used fumigants: ethylene oxide; hydrogen cyanide; methyl bromide; sulfur dioxide
See Part 2: Fumigants
funazushi  A dark, salty, fermented, carp paste, with cooked rice containing koji
fundus  The lower portion of the stomach; base; bottom
fungal amylase  An enzyme produced by Aspergillus oryzae
Fungchong (rice-bran pig)  A prolific, black, razorback, bacon pig from Kiangsu province, China
Fungi  A higher order (division) of the protista kingdom whose members do not contain chlorophyll and therefore are unable to synthesize their own foods, obtaining their nourishment from dead or living organic matter; they range in size from single-celled microscopic yeasts to multicellular plants (the body of such a plant being known as mycelium) reproduce by fission, budding, or spores; e.g., molds, mushrooms, slime molds, toadstools, and yeasts
See Part 2: Fungi Food Products; Microorganism, Media
fungicide  A chemical used to kill, to destroy, or to protect against fungi (and other related growths) on plants; e.g., sulfur, lime, Bordeaux mixture See pesticide
fungistat  A substance used to prevent the growth of fungus
fungus  A plant, without chlorophyll, that reproduces by spores See fungi
F₀ unit  Heat treatment equivalent to the number of minutes at 250°F
F unit  The thermal death time of organisms may be expressed as F values with a subscript indicating the temperature in degrees Fahrenheit (e.g., F_{200}).
See Part 2: Thermal-Death-Time Curve
Funk, Casimir  A Polish biochemist who coined the word vitamin from “the amine of life”
fura  Balls of cooked millet or sorghum flour
fura-fura  See fra-fra
furazolidone  A drug used in poultry to promote growth, to increase feed efficiency, to maintain feed consumption, and to reduce death losses
furcellaran (Danish agar; furcelleran)  A gum extracted from a sea-growing red algae (Furcellaria fastigiata); a white, odorless, general-purpose, natural colloid that is used in food as a stabilizer, an emulsifier, a thickener, and as a gelling agent
furfural  See oat
furfurame  A baked bread that is made from a dried flour produced by fermentation of the pseudostem of ensete or false banana
furlong (fur)  A unit of linear measure
1 fur = 660 feet (ft)  
= 220 yards (yd)  
= 201.168 meters (m)  
= 40 rods (rd)  
= 0.125 mile (mi)  
8 furlongs = 1 statute mile
furmural  Used as a flavoring agent in food; sp. gr. 1.154–1.158
Storage (short-term): tight, glass container in a dark place
furotake  Straw mushroom
fur-sheep  See Part 2: Sheep Breeds
fu-ru  A sufu soybean curd
fusarium  A fungal disease that affects tomato plants
Control: Change plots every year or plant one of the resistant varieties.
See Part 2: Mold, Food; Molds, Mycotoxins
fusarium brown rot  A decay of oranges and lemons that is caused by several species of the genus Fusarium and occurs on fruit held in storage for long periods; infection starts at the stem end as a soft brown spot and the fungus grows through the center of the fruit, causing internal breakdown and reddish brown discoloration.
Storage: 40°F (suppresses development)
fusarium stalk rot  See Part 2: Sorghum Diseases
fusarium wilt  A fungal disease; the first symptom in tomato plants is yellowed leaves, which gradually wilt and die; it continues up the stem until the foliage is killed and the plant dies.
Control: plant resistant varieties
See stem rot
fused rock phosphate  A fertilizer material that contains 30% total P₂O₅
fusel oil  A by-product of alcohol fermentation containing a high percentage of mixed amyl alcohols
fusion point  See heat of fusion; melting point
fu-su  A sufu soybean curd
futira  A wheat pastry filled with dates, honey, raisins, sugar, cinnamon, and cloves
futures  The purchase or sale of contracts that call for delivery of a specified volume of a commodity at a specific place and time; contracts for immediate sale but future delivery
futures contract  A contract to buy or sell (to make or take delivery) a specific amount of a commodity for delivery at a future time (or period of time) and place; a uniform, transferable contract subject to Exchange rules, requiring that a certain grade of a commodity
is received or delivered at a specific future date; futures contracts are traded under standardized terms; all trades in the same contract have the same unit of trading, the terms of all trades are standardized, and a position may be offset later by an opposite trade in the same contract. One contract for corn, oats, soybeans, or wheat is equivalent to 5000 bushels.

**fuyong**  See fooyong

**fu-yu** A sufu soybean curd

**fuyong**  See fooyong

**fylde** A hard English cheese

**fynbo** A hard, rich, yellow, gouda-type cheese with holes

**fu yung**  See fooyong

**FV**  Folio verso (on the back of the page)

**F value**  See F unit
G

See conductance; G value

G-4 A Griffith antioxidant containing propyl gallate, lecithin, corn oil, and citric acid

Ga Symbol for the element gallium

gadelles See potato apple

gadfly Horsefly

gado-gado A cooked vegetable (cabbage, carrot, bean, bean sprout) salad with a sauce

gadoleic acid An unsaturated fatty acid found in certain vegetable oils

See Part 2: Fats and Oils, Fatty Acid Composition; Fatty Acids and Their Properties; Unsaturated Fatty Acids

gadolinium (Gd) A rare earth element of the lanthanide series; at. no. 64; at. wt. 157.26; Group IIIB of Periodic Table; oxidation state + 3; electron configuration 2−8−18−25−9−2

gafsfelhitar Herring preserved in 10−12% salt; small chunks of skinless, boneless, fat herring packed in olive oil or sauce

gag See grouper

gage See gauge

gahi A variety of millet

gahlet Shallow-fried cakes made from millet or sorghum flour

gai balin A type of fula

gai choy A bitter, green vegetable See Chinese mustard

gaiskasli See ziegenkäse

ga kenkey Acidic, whole meal, maize dumpling

galabart A semidry, cooked, unsmoked Argentinian sausage made from finely chopped, medium seasoned, head meat, rind, tongue, lung, heart, and possibly bread and stuffed into beef casings.

galacian A semidry, cooked, smoked American sausage made from medium chopped, mildly seasoned, cured beef and pork cooked at a high temperature and stuffed into a beef casing; has a wrinkled appearance resulting from rapid air cooling

galactopoeisis Maintenance of lactation

galactose (C6H12O6) A six-carbon monosaccharide (hexose) found in combination with other sugars in legumes, agar, pectin, and gum; 32% as sweet as sucrose; a constituent of lactose

galacturonic acid methyl ester A monosaccharide derivative used as a building block in nature

galangal (Alpinia officinarum) Plant whose root produces a mild form of ginger

galanga root See Laos

galantina A moist, cooked, unsmoked Argentinian sausage made from finely chopped, medium seasoned (white pepper, salt, nitrite, peas in halves, ground cinammon, ground mace), beef, pork (and backfat), and wheat flour, made in molds covered with caul fat and cooked.

galantine 1) An edam-type cheese. 2) A chilled, pressed poultry or meat (e.g., veal) in its own jelly

Galician sausage A wrinkled sausage produced from cured beef and pork that is seasoned and stuffed into beef rounds. It is smoked at a high temperature and cooled in a blast of air.

galil A strong-flavored, blue cheese made from sheep's milk

gall 1) Bile secreted by the liver. If it is allowed to touch meat, it will impart a bitter flavor. 2) Swelling on leaves See crown gall

galla Dried flour produced from the fermented pseudostem of ensete or false banana
gallbladder  A sac or receptacle located close to the liver whose function is storage of bile
 See Part 2: Liver

galleyo  A tilsit-type cheese

galliano  Slightly sweet, vanilla-flavored, herb liqueur

gallinaceo (Cantharellus cibarius)  Mushroom

gallium (Ga)  A metallic element; at. no. 31; at. wt. 69.72; Group IIIA of Periodic Table; oxidation state +3; liquid at 85°F; electron configuration 2-8-18-3

orbit K L M N

gall maker  An insect that lives inside swellings (galls) on leaves and stems; the larvae are tiny and greenish yellow, yellow-orange, or reddish in color and cause unsightly swelling on leaves and canes and weaken the plant.

gallon (dr gal; dry; dry gal; U.S.)  A measure of volume

1 dr gal = 268.803 cubic inches (in.3)
= 4.65460 U.S. liquid quarts (liquid qt; U.S.)
= 4.40492 cubic decimeters (dm3)
= 4 U.S. dry quarts (dry qt)
= 1.16365 U.S. liquid gallons (liquid gal)
= 0.15556 cubic foot (ft3)
= 0.125 U.S. bushel (bu; U.S.)
= 0.005761 cubic yards (yd3)

1 liquid gal = 1.25 U.S. liquid quarts (liquid qt; U.S.)
= 8 pints (pt; liquid)
= 4 U.S. liquid quarts (liquid qt; U.S.)
= 1 liquid gal
= 3.78533 liters
= 3.43747 U.S. dry quarts (dry qt; U.S.)
= 0.85897 U.S. dry gallon (dry gal; U.S.)
= 0.82388 gallon (British)
= 0.13368 cubic foot (ft3)
= 0.10742 U.S. bushel (bu; U.S.)
= 0.004951 cubic yard (yd3)
= 3.785 x 10-3 cubic meters (m3)
= 3.78544 cubic decimeters (dm3)
= 0.031746 barrel (U.S. liquid)

See Part 2: Volume; Water, Weight and Volume

gallon (U.S. or Brit.) per acre (gal/acre)  Weight per unit of area
1 gal (U.S.)/acre = 9.353 liter per hectare (l/ha)
1 gal (Brit.)/acre = 11.232 l/ha

gallon per minute (gpm)  A rate of flow
1 gal/min = 8.0208 cubic feet per hour (ft3/h)
= 0.227 cubic meter per hour (m3/h)
= 0.06308 liter/second (l/s)
= 2.228 x 10-3 cubic feet per second (ft3/s)

Galloway  A breed of beef cattle that originated in southwestern Scotland; they are black, polled, smaller than the Angus, and have long curly hair
 See Part 2: Beef and Dual-Purpose Cattle

gallstone  A calculus in the gallbladder usually formed from cholesterol or calcium; they may require surgical removal

gallways  A whiskey liqueur flavored with coffee and honey

galotiri  A white, brined cheese made from sheep’s milk

galvanize  To coat with zinc by dipping or electroplating

galvanized  See zinc

galvanometer  An instrument to measure the direction and potential force of an electrical current

-gam-  A syllable used to indicate marriage

Gamay  1) A red wine. 2) A grape used to produce red or rose table wine

gambrel stick  A metal or wooden stick placed in the tendons of the rear legs to support a carcass when it is hung on a rail

game  Any edible wild animal or bird hunted either for food or for amusement

Birds: dove; duck; grouse; partridge; pheasant; quail; snipe; turkey; woodcock

Animals: bear; boar; deer; hare; rabbit; raccoon; squirrel

Big game usually refers to deer, moose, etc.

See Part 2: Meat and Meat Products Composition

game chips  Thin slices of salted and deep-fried potato

gamel  A schnapps-type spirit

gamma (Γ, γ)  Greek letter that is the English equivalent of g; third in a series; sometimes used as a
metric unit of weight equivalent to a microgram;
1 gamma = 0.001 milligram (mg)
= 0.000001 gram (g)

gamma globulin A protein found in blood and
coagulum that has disease-fighting qualities

gamma ray (γ) High-energy, high-frequency, elec-
tromagnetic radiation produced when an unstable
atomic nucleus releases energy in order to gain stabil-
ity; similar to X-rays but of shorter wavelength

gammelost (Mucor ramosus; Penicillium roque-
forti) A large (3-kg), cheese made from skimmed
(low-fat) cow’s milk and coated with blue-green sur-
face mold; a Norwegian, sour, skimmed-milk cheese

gammon Ham or strip of bacon that has been salted
and smoked or dried; hind legs from Wiltshire sides;
hind leg of pig
gamy An off-flavor in meat due to incipient decomposi-
tion
-γamy Suffix that indicates marriage

gamza A light, red wine
gander Male goose See goose
ganjong A soy sauce made with cayenne pepper

GAO General Accounting Office; Government Ac-
counting Office of the U.S. Congress
gaper 1) Bivalve (Mya truncata). 2) Term used for
soft-shelled clams. 3) Term used for sea bass
gaperon A ricovi-type cheese made from cow’s milk
and flavored with garlic or peppercorns and matured

gar A number of varieties of fish with a long, narrow
jaw; a freshwater pike-like (Lepisosteus osseus) fish

garam masala Curry powder; spice blend of car-
damom, cinnamon, cloves, coriander, cumin, and pepper

garam nimboo achar Spiced lime packed in oil
garbage Miscellaneous food waste; a possible energy
source

<table>
<thead>
<tr>
<th>Composition</th>
<th>Hotel and restaurant, boiled</th>
<th>Institutional, boiled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry matter (%)</td>
<td>49</td>
<td>18</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>1</td>
<td>0.5</td>
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<tr>
<td>Ash (%)</td>
<td>3</td>
<td>1</td>
</tr>
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</table>

See Part 2: Wastes, Agricultural and Industrial

garbage hogs Hogs that are fed garbage
garbanzo (ceci pea; chick pea) A pea-like plant
containing 1 or 2 rough-surfaced, rather large peas
per pod; round, light brown bean used in Spanish and
Oriental cooking; canned chick peas; similar to peas
in appearance and flavor; used as a vegetable and in
soups and salads
1 cup, dry = 7.1 oz
See bean, garbanzo; chick pea; pea
garbanzo bean See bean, garbanzo
garbanzo pea Chick pea
garbure A bacon and vegetable soup; ragoût

garden cress (Lepidium sativum; Sometimes er-
roneously called pepper grass) A green, spring,
annual vegetable similar to watercress salad greens
but grown in soil; used for garnish and in salads.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Season</th>
<th>Leaves</th>
<th>Flavor</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curlycress</td>
<td>10</td>
<td>Dark green; Curled</td>
<td>Salad, Garnish, Sprouts</td>
<td></td>
</tr>
<tr>
<td>Mega</td>
<td>50</td>
<td>Large</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salad Cress</td>
<td>10</td>
<td>Large</td>
<td>Salad</td>
<td></td>
</tr>
</tbody>
</table>

See Part 2: Essential Oils
garden lemon See cucumber
garden mint See spearmint
garden symphylans An active, small, fragile,
whitish, centipede-like arthropod; newly hatched lar-
vae have six pairs of legs; another pair is added after
every molt until there are 12 or more pairs; adults
have 15 body segments and are about \( \frac{1}{2} \) in. long
Control—difficult because only 35% of the population
can be found in the upper 6 in. of soil at any one time

garfish A long, thin saltwater fish (Belone belone; not
the freshwater gar)
Atlantic See gar pike
Sea, Australia—species of Heporhamphus, Aor-
hamphus, and Hemirhamphus
garget See mastitis
gari Acidic, partially gelatinized granules of cassava
garin acha Thick, porridge gruel made from sorghum
or millet and sweetened with honey or sugar
garlic (Allium sativum Linn.) A sulfur-contain-
ing, bulb-like root composed of several (approximately 10) bulbils (cloves) encased in a membrane;
used as spice and seasoning; allicin is responsible for
the characteristic odor; available fresh, dried (crushed,
ground flakes, powder), oil, mixed with salt forms, in
butter, and in vinegar
Crow garlic (A. vineale)
Crushed garlic—strongest flavor
Field garlic (A. oleraceum)
Frozen food—flavor increases in potency
Heated garlic—flavor diminishes
Garlic skin covering cloves is rose-tinged
Splits—outer skin split exposing cloves
White garlic—skin covering cloves is white

<table>
<thead>
<tr>
<th>Variety</th>
<th>Season</th>
<th>Cloves flavor</th>
</tr>
</thead>
</table>
| California White     | 110 days
| Extra Select         | 395 days from seed
| Jumbo                | Huge   | Mild |
| 6 in.                |        |        |
| 1 tsp, minced = 6-8 cloves |        |        |
| 1 garlic clove, peeled, crushed, and finely chopped = \( \frac{1}{2} \) tsp |        |        |
| 1 oz raw garlic = \( \frac{1}{2} \) oz garlic juice = \( \frac{1}{4} \) oz garlic powder |        |        |
| 1 tsp dehydrated powder = 2.8 g |        |        |
| 1 tsp dehydrated flakes = 2 g |        |        |

When eaten by cattle garlic imparts an off-flavor to
milk and meat.
The least dense of the three states of matter, in which the molecules move about freely, exerting pressure equally in all directions. At constant temperature the volume of a confined gas is inversely proportional to the applied pressure (Boyle's law). Equal volumes of different gases contain the same number of molecules (Avogadro's law). See also gas law. 2) See Part 2: Fuel, Heating Value

gas constant \((R)\)

\[
R = 8.314 \text{ joules/(g-mole X K or °C)} = 0.7302 \text{ (atm X ft}^3) / (\text{lb-mole} \times ^\circ \text{R}) = 1.987 \text{ (Btu)/(lb-mole} \times ^\circ \text{R}) = 0.0821 \text{ (atmXl)/(g-mole} \times ^\circ \text{K})
\]

gasket Pliable material used to seal (e.g., hermetic seal) two surfaces; a filler (usually made of paper or rubber) used in a seam to make it hermetically tight

gaskin Stifle to hock of hind foot of a horse

gas law \(pu = RT\), where

- \(p\) = pressure
- \(u\) = volume
- \(R\) = gas constant
- \(T\) = absolute temp.

gas, natural Obtained by boring into the earth; usually free of sulfur See natural gas

gasohol Blend of 90% gasoline and 10% anhydrous ethyl alcohol; 121,000 Btu/gal See Part 2: Fuel, Heating Value

gasoline A mixture of hydrocarbon liquids used for automotive fuel; 125,000 Btu/gal See petroleum See Part 2: Fuel, Heating Value

gasoline gas Heated burners vaporize gasoline, which, in turn, is burned, producing a blue flame

gaspergou croaker See sheepshead

gassing Air is removed and replaced with a gas (often carbon dioxide or nitrogen)

gastradenitis Inflammation of glands in the stomach

gastroenteritis Inflammation of the stomach and the intestines

See Part 2: Infectious Diseases, Food-borne

gastrointestinal Relating to the digestive organs (stomach and intestines)

See Part 2: Organ Weights

gastronomy The preparation and appreciation of gourmet food; epicurean taste; art of good eating See also gourmet; epicure

gastrosuccorrhea Secretion of too much gastric juice

---

<table>
<thead>
<tr>
<th>Composition</th>
<th>Powder</th>
<th>Raw clove</th>
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<tbody>
<tr>
<td>Moisture (%)</td>
<td>6-7</td>
<td>61</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>16-17</td>
<td>6</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>0.6-0.8</td>
<td>0.2</td>
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<tr>
<td>Carbohydrate (%)</td>
<td>72-73</td>
<td>31</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>1.5-2</td>
<td></td>
</tr>
<tr>
<td>Ash (%)</td>
<td>3-4</td>
<td>1.5</td>
</tr>
<tr>
<td>Sodium [(mg/tsp), 3 g]</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

When tops are ripe the plant is pulled and the bulbs are allowed to dry (in sun), braided and stored in a dry, cool (do not freeze) place.

Storage (dry): 32°F; 70-75% relative humidity; 6 mo. storage life

See Part 2: Essential Oils; Minerals, Food; Minerals, Plant or Animal Tissue; Plant Density; Spices, Microbial Content; Storage; Vegetables Classification; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Yields

garlic butter A blend of one garlic clove to 2 tbsp of butter

garlic, dehydrated Forms: chopped, granulated, ground, large slices, minced, powder

garlic mustard Pot herb

garlic oil Volatile oil obtained by steam distillation of Allium sativum; yellow, strong-smelling fluid obtained from crushed garlic bulbs or cloves; used as a flavoring agent for food; sp. gr. 1.040-1.090

Storage: full, tight, glass container in a cool, dark place

garlic salami A moist, cooked, smoked Australian sausage made from medium chopped, heavily seasoned (garlic), beef, stuffed into artificial casings

garlic salt A mixture of garlic powder, salt, and starch Composition: Sodium 1850 mg/tsp (6 g)

garlic sausage A moist, cooked, unsmoked Australian sausage made from finely chopped, medium seasoned, beef, stuffed into artificial casings See knackwurst

garlic vinegar Flavored vinegar made by adding peeled and bruised garlic to vinegar for one month and then filtering

garni In travel, indicates that a hotel has no dining facilities

garnish Flavorful, colorful, decorative, small pieces of food used to accompany other food; addition to food that improves its appearance and flavor; to decorate a serving of food with colorful items, such as parsley, radishes, etc.

garos Fish sauce

gar pike (Belone belone) Food fish

garri Meal made from cassava tubers

garulla Bun

garum A salt and fish sauce

garvock See sprat

gas 1) The least dense of the three states of matter, in which the molecules move about freely, exerting pressure equally in all directions. At constant temperature the volume of a confined gas is inversely proportional to the applied pressure (Boyle's law). Equal volumes of different gases contain the same number of molecules (Avogadro's law). See also gas law. 2) See Part 2: Fuel, Heating Value

gas constant \((R)\)

\[
R = 8.48 \times 10^5 \text{ (kg/m}^3) / (\text{lb-mole} \times ^\circ \text{R}) = 18510 \text{ (lb-force/in}^2 \times ^\circ \text{ft}^3) / (\text{lb-mole} \times ^\circ \text{R}) = 1546 \text{ (lb-force/in}^2 \times ^\circ \text{ft}^3) / (\text{lb-mole} \times ^\circ \text{R}) = 10.73 \text{ (lb-force/in}^2 \times ^\circ \text{ft}^3) / (\text{lb-mole} \times ^\circ \text{R}) = 8.314 \text{ joules/(g-mole} \times ^\circ \text{K or °C}) = 1.987 \text{ (Btu)/(lb-mole} \times ^\circ \text{R}) = 1.987 \text{ (chu)/(lb-mole} \times ^\circ \text{K}) = 1.987 \text{ g-cal/(g-mole} \times ^\circ \text{K or °C}) = 0.7302 \text{ (atmXft}^3) / (\text{lb-mole} \times ^\circ \text{R}) = 0.0821 \text{ (atmXl)/(g-mole} \times ^\circ \text{K})
\]

---
gâteau A cake
GATT General Agreement on Tariffs and Trade
gattinara A dry, Italian, red wine made from Nebbiolo grapes
gatty gum See gum ghatti
gauche A tea bread rich in fruit
gaufrettes Wafers with dessert
gauge (gage) Thickness of a metal or other material; height; an instrument to measure pressure See Part 2: Film Gauge
gau gee A pork- or shrimp-filled dumpling that is deep-fried, stir-fried, or served in soup
gauss (G) A measure of magnetic flux density
1 G = 6.452 lines/square inch (in.²) = 1 maxwell/square centimeter (cm.²)
= 1 gilbert/square centimeter (cm.²) = 0.7958 amp-turn/square centimeter (cm.²)
= 1 x 10⁻⁴ weber/square meter (m.²)
= 6.452 x 10⁻⁸ weber/square centimeter (cm.²)
= 1 x 10⁻⁸ weber/square inch (in.²)
gautrias A cylindrical (3-4.5 kg), medium flavor, semisoft French cheese made from cow’s milk
gazpacho Salad made from bread crumbs, cucumber, onion, tomato, vinaigrette with garlic
gazpacho, canned soup Ready to serve
Composition

Moisture (%) 93.8
Protein (%) 3.6
Fat (%) 0.9
Carbohydrate (%) 0.3
Fiber (%) 0.3
Ash (%) 1.4

gel A colloidal solution of such hydrophilic materials as gelatin, agar, pectins, and starch paste dispersed in water; such solutions set to a firm jelly as a result of the interlocking of the long-chain macromolecules; can be returned to liquid form by heating (reversible gel)
Type gels:
—Elastic—agar pectin
—Inelastic—gum arabic, silicic acid
See Part 2: Gums and Gelling Agents; Gums and Gelling Agents, Characteristics
gelatin (gelatine) An odorless, colorless to slightly yellow, tasteless, hydrophilic protein made from collagen (bones, skin, tendons) that forms stiff gels when added to water (2-5%); 1 tbsp/pt of liquid is often used; widely used in food products for its thickening and water-binding properties; will soften at 80°F; used as a jelly base for desserts and salads, an emulsi
er, in candies and marshmallows, and in frozen desserts.
Types:
Plain and uncolored—used to gel foods; available granulated (unsweetened and unflavored) 1 1 oz makes 1 pt
1 envelope of unflavored gelatin will support 2 cups of liquid
1 envelope of unflavored gelatin will support 1.75 cups of liquid and solid fruit, vegetables, or meat
Flavored and mixed with sugar—used to make pudding; available powdered (sweetened and flavored) 3 oz makes 1 pt
10% gelatin, sugar, citric acid or other acids, synthetic and natural flavors, and artificial colors
Extracted from: bones, connective tissue, and skins
Forms: sheet (transparent, brittle), granular (most common), and XXXX-powdered (used in ice cream)
Types:
A—derived from acid-cured tissue; isoelectric point pH 7-9
B—derived from alkaline tissue; isoelectric point pH 4.7-5
Equivalents:
1 envelope, unflavored, dry = 7 g
4 tbsp, granulated = 1 oz
4 cups, granulated = 1 lb
1 cup = 150 g (5.3 oz)
1 package, flavored = 3 or 6 oz
1 cup, dry = 6.6 oz
1 cup, prepared = 8.4-9.8 oz
Gelatin dissolves when heated above 35°C (95°F) and absorbs 5-10 times its weight in water; max. 1-2 tbsp of acid (lemon juice, vinegar, wine, or other acid) will make the mold softer and more fragile; raw pineapple juice will interfere with setting and acid
gefilte fish (jefullte fish; Jewish fish) A Jewish dish made from whitefish and yellow pike that is formed into balls or patties and cooked very slowly in fish broth; stuffed fish or fish balls
geheimratskäse A gouda-type cheese
geisenheimer A white wine
geitost A cheese made from goat’s milk whey
gelee Plant extract used to thicken or gel foods; pectin is often used to produce a jelly-like consistency
gelebek (Atractoscion aequidens) A food fish
gelatin (gelatine) An odorless, colorless to slightly yellow, tasteless, hydrophilic protein made from collagen (bones, skin, tendons) that forms stiff gels when added to water (2-5%); 1 tbsp/pt of liquid is often used; widely used in food products for its thickening and water-binding properties; will soften at 80°F; used as a jelly base for desserts and salads, an emulsi
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will decrease gel strength

<table>
<thead>
<tr>
<th>Composition</th>
<th>Powdered: sweetened and flavored</th>
<th>Dessert prepared with powder and water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>13</td>
<td>84</td>
</tr>
<tr>
<td>Calories per gram</td>
<td>86</td>
<td>0.5</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>0.1</td>
<td>14</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>0.1</td>
<td>0</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ash (%)</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Has poor nutritive value because of low tryptophan content; is pareve. See agar-agar; collagen; gelatinization

See Part 2: Calories, Daily Recommendations; Gums and Gelling Agents; Gums and Gelling Agents, Characteristics; Minerals (Trace), Limits; Protein Factors; Salad Dressing and Mayonnaise Variations; Stabilizers, Thickeners.

gelatinized Starch granules are ruptured by moisture, heat, pressure, and sometimes by shear

gelatinous A sticky, jellylike texture

gelation Setting or stiffening of a gelation solution at 10–16°C (50–61°F)

gelato An ice cream with little air incorporated that is rich in color and flavor; contains approximately 12% milk fat, no eggs, and only natural ingredients

Gelbvieh A yellow (cream to red-yellow), medium sized, alpine, German breed of beef cattle with high fertility rates; from four triple-purpose, yellow breeds: Glan-Donnersburg; Yellow Franconian; Limburg; Lahn

gelwurst 1) An American sausage made from medium to coarsely chopped, cooked or uncooked, smoked or unsmoked meat; available in large diameter links, rings, or large diameter casings for slicing.
2) A moist, cooked, unsmoked western German sausage made from finely chopped, mildly seasoned, beef and pork, without nitrite, stuffed into an artificial casing

gelderse rookworst Moist sausage made from coarsely chopped, uncooked, heavily smoked, beef

gelderse rookworst onverpakt A moist, uncooked, smoked Dutch sausage made from fine- or medium-chopped, medium-seasoned, beef and pork that is fermented and stuffed into a pork or artificial casing

gelderse rookworst verpakt A moist, cooked, smoked Dutch sausage made from fine- or medium-chopped, medium-seasoned, beef and pork that is fermented and stuffed into a pork or artificial casing

gelding A male horse castrated before advanced sexual development (2 years old)

gelling agent See agar-agar; gel; gelatin; pectin

gendarme 1) Square-loaf, farmer sausage made from beef and pork. 2) A semidy, uncooked, smoked French sausage made from coarsely chopped, medium seasoned, beef and pork that is fermented and stuffed into pork casings with square sections

gene The simplest unit of inheritance; made up of DNA; small sections of a DNA molecule that consist of specific numbers of nucleotides linked in a specific sequence. They can reproduce themselves, control the synthesis of protein, and control the characteristics of a cell

General Accounting Office (GAO) An agency of Congress that investigates the operations of programs and the expenditure of appropriated funds

General Agreement on Tariffs and Trade (GATT) Multilateral agreement that establishes rules and guidelines for regulating world trade among members and provides a forum for countries to resolve trade disputes

generically regarded as safe (GRAS) A Food and Drug Administration term for a group of chemicals that by current knowledge are safe to use in food. Chemicals first added to food after Jan. 1, 1985 have to be tested for safety to be on this list. Usually these chemicals can be used in unlimited quantities

generation time The time required for a newly divided cell to grow and divide again

generation time

\[
\frac{\text{time}}{\text{no. of generations}} = \frac{\text{elapsed time}}{3.3} - \frac{\text{no. bacteria at end of period}}{\text{no. bacteria at start or zero time}}
\]

no. = number

generic Food that does not carry a brand or grade as a guide to quality

genetic engineering (biotechnology) A process of developing new plants and animals by combining genes into new forms and combinations

genetic line See variety

generva (genievre; jenever; Hollands; schiedam) A strong Dutch gin flavored with juniper; high alcohol content (47–49%); not aged. See genievre

See Part 2: Minerals, Trace, Limits

genevoise sauce A fish stock, butter, and wine sauce containing vegetables, herbs, and pepper, flavored with anchovies

genievre A gin (plain spirit) flavored with juniper berries See geneva

genipap (genipop; Genipa americana) A subacid, greenish white fruit or berry with a purple juice, eaten fresh or made into jam, preserves, conserve, or marmalade

Genoa salami A coarsely chopped salami made from beef and pork

gene The self-replicating portion of a cell; a complete set of hereditary factors of a cell
genotype

The fundamental hereditary or genetic construction of an individual.

Genova  See Geona

gentaine  See enzian

gentian  Plant whose flower is used to flavor liqueur; bitter herb whose root is used as a tonic

genus (pl. genera)  A taxonomic classification between family and species; a group of related species; the first (capitalized) word of a scientific name

geometric isomers  See cis-trans isomers

Geona (Genova)  A coarsely ground, unsmoked, dry (moisture-to-protein ratio 2.3 : 1) sausage made with mostly pork (sometimes a small amount of beef is used) and placed in a natural casing

geophagia  Eating of products (e.g., clay, soil) normally considered inedible

Georg fungus medium  Microbiological medium used for the isolation of fungi; contains penicillin, streptomycin, and cycloheximide; all dermatophyte species grow, whereas bacteria and saprophytic fungi are inhibited.  See Part 2: Microorganism, Media

Georgia bind  See Saffle

Geotrichum  Mold sometimes found on food machinery

geradner  A muenster-type cheese

geraniol

\[
\begin{align*}
\text{CH}_2\text{OH}
\end{align*}
\]

A naturally occurring odor compound that smells like sweet rose; can be artificially produced; used as a flavoring agent in food; sp. gr. 0.870–0.886

Storage: full, tight, glass container in a cool, dark place

geranium oil

Oil obtained by steam distillation of leaves of Pelargonium graveolens; used as a roselike flavoring agent in food; sp. gr. 0.886–0.899

Storage: full, tight, glass container in a cool, dark place  See Part 2: Essential Oils

geranyl acetate

\[
\begin{align*}
\text{CH}_2\text{OC}=\text{O} \\
\text{CH}_3
\end{align*}
\]

Used as a floral-like flavoring agent in food; sp. gr. 0.900–0.915

Storage: full, tight, glass container in a cool, dark place

geranyl benzoate

\[
\begin{align*}
\text{CH}_2\text{OC}=\text{O} \\
\text{CH}_2\text{CH}_3
\end{align*}
\]

Used as a floral-like flavoring agent in food; sp. gr. 0.978–0.985

Storage: full, tight, glass container in a cool, dark place

geranyl butyrate

\[
\begin{align*}
\text{CH}_2\text{OC}=\text{O} \\
(\text{CH}_2)_2\text{CH}_3
\end{align*}
\]

Used as a rose- and fruitlike flavoring agent in food; sp. gr. 0.888–0.904

Storage: full, tight, glass container in a cool, dark place

geranyl formate

\[
\begin{align*}
\text{CH}_2\text{OC}=\text{O} \\
\text{H}
\end{align*}
\]

Used as a roselike flavoring agent in food; sp. gr. 0.906–0.915

Storage: full, tight, glass container in a cool, dark place

geranyl phenylacetate

\[
\begin{align*}
\text{CH}_2\text{OC}=\text{O} \\
\text{CH}_2-\text{C}_6\text{H}_5
\end{align*}
\]

Used as a honey- and roselike flavoring agent in food; sp. gr. 0.970–0.978

Storage: full, tight, glass container in a cool, dark place

geranyl propionate

\[
\begin{align*}
\text{CH}_2\text{OC}=\text{O} \\
\text{CH}_2\text{CH}_3
\end{align*}
\]

Used as a fruity, floral-like flavoring agent in food

Storage: full, tight, glass container in a cool, dark place

geriatric  Of or related to the aged

germin  1) A common name for bacteria. 2) The embryo (at one end of the kernel) and scutellum in a seed; usually separated from the endosperm during milling; seed embryo that is rich in oil and contains protein, vitamins, and minerals; 2% of the kernel; the part of the seed kernel necessary for new plant life  See embryo

See Part 2: Wheat and Flour Composition; Wheat, Carbohydrate Composition; Wheat, Fatty Acids; Wheat Kernel Parts; Wheat Products Composition

germin-  Prefix indicating a bud or an infantile growth stage

German bologna  A medium to coarsely chopped, cooked, smoked, American sausage available in large diameter links, rings, or large diameter casings for slicing

germanium (Ge)  A metallic element; at. no. 32; at. wt. 72.60; Group IVA of Periodic Table; oxidation states +2, +4; electron configuration 2–8–18–4 orbit K L M N

A semiconductor

German salami  An uncooked, smoked, dry, 40–60 mm diameter sausage made from medium chopped, medium seasoned meat

germicidal detergent  A cleaning agent that has properties of a germicide
**germicide** A product or substance that destroys or kills most germs or microorganisms; synonymous with bactericide, but more general in what it is active against. See also disinfectant; antiseptic

**germinate** To sprout (as a seed)
See Part 2: Seed, Germination

**germ plasm** Genetically controlled traits

**germ spot (disc blastoderm; germ cell)** A small light-colored spot (germinal disc) on the upper surface of an egg yolk (avian) that, in a fertile egg and favorable environmental conditions, develops into the embryo
See Part 2: Egg Structure

**gerome** A soft, strong, yellow French cheese made from fermented whole cow's milk and with a brine-washed, golden-colored rind or a red rind and a distinctive flavor; sometimes flavored; a soft, greenish, rennet cheese (somewhat like munster) made from cow's milk. See munster

**gersterbrot** A wheat and rye bread

**gervais** A soft, Neufléchatel-type, cream cheese made from whole cow's milk and cream with rennet added

**gessenay** A very hard cheese made from cow's milk

**gestation** Pregnancy

**gestation period** Length of normal pregnancy (between breeding and birth of offspring)

<table>
<thead>
<tr>
<th>Animal</th>
<th>Average age of puberty (months)</th>
<th>Average duration of heat (hr)</th>
<th>Average heat interval (days)</th>
<th>Average gestation period (days)</th>
<th>Frequency of twinning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>12 ± 1</td>
<td>15 ± 10</td>
<td>21 ± 3</td>
<td>283 ± 5</td>
<td>1 in 200</td>
</tr>
<tr>
<td>Horses</td>
<td>20 ± 5</td>
<td>156 ± 30</td>
<td>21 ± 4</td>
<td>340 ± 30</td>
<td></td>
</tr>
<tr>
<td>Sheep</td>
<td>5.5 ± 1</td>
<td>28 ± 25</td>
<td>16.5 ± 3</td>
<td>148 ± 4</td>
<td>Depends on breed</td>
</tr>
<tr>
<td>Swine</td>
<td>5 ± 1</td>
<td>60 ± 15</td>
<td>21 ± 3</td>
<td>114 ± 12</td>
<td>*</td>
</tr>
</tbody>
</table>

*6.5 pigs per litter

See Part 2: Gestation Periods

**gesztenyepure** See Mont Blanc chestnut

**getost** A cheese made from goat's milk

**geuze lambic** A very strong, sour, alcoholic beer made by long fermentation of barley and wheat; with a maturation period

**geuse** A strong, sour, alcoholic beer made by long fermentation of barley; with a maturation period

**gewachs (the growth of)** Used on wine bottles to indicate the vineyard

**gewer(t)ztraminer** A dry, spicy, flowery, white wine

**gex** A hard, Roquefort-type white cheese with blue veins made from cow's milk with rennet added and with a yellow or red rind

**GH** See somatotropin

**ghatti gum** See gum ghatti

**ghee** A clarified butter from India, made by boiling buffalo milk and cream; can also be made from cow's milk, clarified buffaloes' goat's, or sheep's milk or vegetable oil; butter made by removing the water; will keep without refrigeration; used in cooking

See Part 2: Creams, Butter and Frozen Desserts; Iodine and Saponification Values; Oils and Fats Composition

**ghemme** Italian, red wine made mainly from Nebbiolo grapes

**gherin** (Cucumis anguria) A pale green cucumber that produces a small (1–3 in.), ovoid, prickly fruit; a small cucumber; the immature fruit is used for pickling (vinegar, brine, or both); other small cucumbers are often pickled and sold as gherkins (pH 5.8); 1100 seed/oz; 3 days germination period.
See Part 2: Olives and Pickles, Composition

**gherin, burr** Midget (less than 1 in.), burred cucumber; 550 per gallon

**ghussub** Balls of cooked millet normally eaten with cheese

**giant granadilla** A climbing plant that has a large, green or greenish yellow fruit; tastes more insipid than passion fruit; may be boiled in unripe state as a vegetable or eaten fresh when ripe

**giant Mexican spinach** A plant whose 8-in. leaves are used like spinach

**giant ragweed** (Ambrosia trifida L.) An annual weed.

**giant sea bass** (Stereolepis gigas) A finfish that is used for food and has light meat and a very light, delicate flavor

**Gibberella** See Part 2: Molds, Mycotoxins

**gibberelic acid**

A plant growth regulator (hormone) occurring in the seeds of some plants that aids in germination; used as an enzyme activator in food

**Giblet** Primarily the fleshy portion of the diaphragm muscle that is used in sausage; also the heart, liver, gizzard, sometimes neck, and occasionally feet (scales removed) of poultry. See also poultry giblet
See Part 2: Poultry Dressing Percentage

**gibna beida** A dry, salty cheese made from goat's milk

**gibne** (jibne) A soft, white, cheese made from sheep's, goat's, or camel's milk that may be salted and pressed

**gibson** A mixed drink containing 5 parts gin to 1 part vermouth that is stirred with ice, strained, and garnished with a pearl onion

**gid-deed** A lamb jerky

**gien** A valencay-type cheese made with cow's, goat's, or mixed milk and cured for 3 weeks in leaves

**giga** Prefix for quantities one billion times larger than the base unit
giganta  A large (30 kg) provolone-type cheese made from cow’s milk.

gigot  Leg of mutton.

gilan  A moist, coarsely ground, Iranian sausage stuffed into a beef casing.

gilbert (Gi)  A measure of magnetomotive force:
1 Gi = 0.7958 ampere-turn

gilbert per centimeter (Gi/cm):
1 Gi/cm = 79.58 ampere-turn/minute (m) = 2.021 ampere turn/inch (in.) = 0.7958 ampere turn/cm (cm)

gilboa  An edam-type cheese.

gild  To brush on egg yolk and then cook.

gilead  A provolone-type cheese made from sheep’s milk.

gill (gi)  1) A measure of liquid volume:
1 gi = 2 wine glasses = 0.25 pint (pt)
2) Breathing organ of fish.

gill (gi; Brit.)  1 gi (Brit.) = 142.07 cm³

gill (gi; U.S.)  1 gi (U.S.) = 118.285 cubic centimeters (cm³) = 118.292 liters (l)

gill (gi; Brit.) = 118.285 cubic centimeters (cm³) = 2 wine glasses = 0.25 pint (U.S. liquid; pt) = 0.118292 liters (l)

gilt (hilt; yelt; yilt)  A young female hog or pig that has never farrowed and has not reached an evident stage of pregnancy.

See Part 2: Swine Market Classes and Grades.

gilthead (Chrysophrys auratus)  A food fish.

gimlet  An alcoholic beverage made from 4 parts gin or vodka and 1 part sweetened lime juice that is shaken with ice and strained.

gimmer  A ewe lamb from birth to weaning; yearling ewe.

gin  An alcoholic beverage made by original distillation from mash (malt wine); its flavor is from juniper berries and sometimes other botanicals (e.g., lemon peel, coriander, fennel); clear, distilled spirit that is high in alcohol (usual range, 37-43% alcohol by volume) and flavored with juniper berries and other plants.

Types:
Hollands See geneva
London—dry
Plymouth (old tom)—sweet
Sloe—liqueur
1 fl oz = 28 g
1 fl oz, 90 proof = 73 calories
1 fl oz, 86 proof = 70 calories
1 fl oz, 80 proof = 63 calories

See Part 2: Minerals, Trace, Limits.

ginepy  White and green varieties of herb liqueur.

ginger (Zingiber officinale Roscoe)  The underground stem (rhizome; often called hands) of a reed-like, tropical, perennial plant obtained whole, cracked, or ground. Good ginger rhizomes are washed and soaked, sometimes boiled, sometimes peeled and dried; rhizome contains starch and can be used for making ginger beer (low alcoholic content).

Sources:
Africa
China
India
Jamaican—prime quality, higher price.

Types:
Black ginger—dried, whole ginger; dark brown outer coating; superior flavor
Green—not dried
Ground ginger—yellow to brown
Root—lower portions of root
Stem—part close to root
White coating—artificial whitening or sulfate of lime added to discourage mildew
White ginger (tan)—dried, whole ginger; outer coating removed; superior appearance
Wild ginger (India ginger; Asarum canadense)—the rootstock has a warm, aromatic flavor very similar to the imported (plant of commerce) ginger.

Physical forms of dried ginger:
Black ginger—fresh rhizomes that were scalded prior to scraping; it darkens the color
Bleached, limed—clean, peeled, whole rhizomes treated with sulfuric acid or lime to lighten the color
Fingers—branches of the rhizome
Hands, races—branched rhizomes as dug
Peeled, scraped, uncoated—whole rhizomes from which the skin has been carefully removed
Ratoons—second growth rhizomes
Rough scraped—skin partially removed
Slices—unpeeled rhizomes that have been sliced longitudinally to speed drying
Splits—unpeeled rhizomes that have been split longitudinally to speed drying
Unpeeled, coated—whole rhizomes dried with skin intact

Stage of maturity:
5 months—green; used as a vegetable
7 months—immature; used for preserved ginger
8-9 months—mature; used for dried ginger

May be obtained fresh, but more often dried (usually medium to fine grind); rootlike, warm, and spicy aroma; warm and spicy, peppery, piquant flavor; graded by oil content, color, sweetness, pungency, and heat.

Composition

<table>
<thead>
<tr>
<th></th>
<th>Fresh</th>
<th>Dried</th>
<th>Limed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>87</td>
<td>9-11  (11-max.)</td>
<td></td>
</tr>
<tr>
<td>Protein (%)</td>
<td>1</td>
<td>7-10</td>
<td></td>
</tr>
<tr>
<td>Fat (%)</td>
<td>1</td>
<td>5-6</td>
<td></td>
</tr>
<tr>
<td>Volatile oil (%)</td>
<td>1.75*</td>
<td>4-5</td>
<td></td>
</tr>
<tr>
<td>Nonvolatile oil (%)</td>
<td>4-5</td>
<td>70-71</td>
<td></td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>10</td>
<td>6-7</td>
<td></td>
</tr>
<tr>
<td>Fiber (%)</td>
<td></td>
<td>4-5</td>
<td>10-max.</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

*Volume to weight minimum.

Dried: starch not less than 42%; cold water extract not less than 12% (Jamaica 15%); water-soluble ash.
Dried ginger, grade or type | Aroma and flavor | Form | Color | Size | Volatile oil | Nonvolatile ether extract
--- | --- | --- | --- | --- | --- | ---
Australian Chinese | Lemon note | Sliced, coated Whole, peeled, coated slices | Often blanched with sulfur dioxide | 4.4
Indian | Cochin, Calicut | Lemon note | Whole-rough, scraped, sometimes coated sometimes limed | Cochin light brown, Calicut orange | 1.9–2.2 | 4.3
Jamaican | No. 1 bold, No. 2 medium, No. 3 small, ratoon | Superior | Clean, peeled, whole | Light buff | 6–9 cm | 1–1.3 | 4.4
Nigerian | Coarser | Whole-peeled, slices | 2.25 | 6.5
Sierra Leone | Harsh | Whole-coated or rough scraped, ratoon | Dark | Small | 1.6 | 7

not less than 2%; crude fiber not more than 8%; lime not more than 1%; acid-soluble ash not more than 2%

Standards:
Moisture 10–12% max.
Ash 6–7.5% max.
Water soluble ash 1.7–1.9% min.
Ash on dry basis
Unbleached 8% max.
Bleached 12% max.
Calcium on dry basis
Unbleached 1.1% max.
Bleached 2.5% max.
Acid soluble ash 2.3% max.
Crude fiber 8–9% max.
Starch 42–45% min.
Volatile oil 1.5% min.
Water soluble extract 10–13.3% min.
Alcohol soluble extract 4.5–5.1% min.

Storage (root): store in refrigerator; for long storage place in a covered glass jar and freeze

See Part 2: Essential Oils; Flavors, Beverage; Spices, Microbial Content; Vegetable Storage; Wastes, Agricultural and Industrial

**ginger ale** An effervescent, nonalcoholic beverage flavored with ginger; caramel colored, carbonated water that contains ginger, lime juice, lemon juice, sugar, and a small quantity of extract of red pepper (capsicum)

Pale dry—less sugar, ginger, and caramel; more citrus fruit acid
Golden (amber)—more sugar, ginger, and caramel; less citrus fruit acid
1 fl oz of beverage = 30.5 gram (g) = 9.6 calories (c)

**ginger beer** A sparkling, slightly alcoholic beverage flavored with ginger or mauby bark

**gingerbread** A cake sweetened with molasses and flavored with ginger
2¼ × 2¼ × 1¾-in. slice = 175 calories

See Part 2: Grain Products Composition

**ginger bread palm** See palm

**ginger, candied** See ginger crystallized

**ginger, crystallized** (ginger, candied; ginger, dry)
Preserved, young, ginger root (stem ginger) that has been dried; peeled rhizomes are boiled, impregnated with sugar syrup, dried, and dusted with crystalline sugar

Grades or forms:
- Cargo ginger—main stem
- Bold
- Medium
- Small—medium

Choice selected stem—small, distal ends

Cubes—21 mm per side

Fingers or third quality—smaller

Slices—7 mm thick

Young stem ginger—distal ends of fingers

**ginger, dry** See ginger, crystallized

**ginger, essential oil** (ginger oil) Pale yellow liquid obtained by steam distillation; does not have the pungent principle but does have the flavor and aroma

**ginger extract** 100 cc must contain the alcohol-soluble matter from a minimum of 20 g of ginger

**ginger liqueur** An herb liqueur made from macerate of ginger root in spirits

**ginger oil** A volatile oil obtained by steam distillation of rhizome of Zingiber officinale; used as a ginger-like flavoring agent for food; sp. gr. 0.870–0.882

Storage: full, tight, glass container in a cool, dark place

**ginger, oleoresin** A dark brown, viscous to highly viscous liquid obtained by solvent (ethanol, acetone, trichloroethane) extraction of the dried rhizomes of ginger; has the full pungency of the spice; 15–35% volatile oil (minimum 25 ml/100 g); soluble in alcohol with sediment; insoluble in propylene glycol
1 kg oleoresin = 28 kg of spice

**ginger, preserved** The peeled rhizomes are boiled, bottled, and sold in sugar syrup
Grades:
Cargo ginger—main stem
   Bold
   Medium
   Small-medium
Choice selected stem—small, distal ends
Fingers or third quality—smaller
Skins, shavings, tops, and tails—waste material
Young stem ginger—distal ends of fingers
Available crushed or pulped, diced, sliced; syruping ratios (ginger to syrup) 60:40–80:20

Ginger preserved in brine (ginger, salted) A preserved ginger that has been pickled with saltwater and vinegar

Ginger root
1 cup, julienne pieces = 6 oz

Ginger, salted See ginger preserved in brine

Ginger snap A crunchy cookie or cracker with a crisp, ginger flavor
1 cup, finely crushed or chopped = 15 ginger snaps
1 cup, broken = 10 ginger snaps
Sugar 1 tsp/1 medium ginger snap
Sodium 161 mg/4 ginger snaps (28 g)

See Part 2: Grain Products, Composition

Ginger stem See ginger, crystallized

Ginger wine A wine fermented from sugar, water, and ginger (Zingiber officinale)

Gingivae Gums; the soft tissue that surrounds the teeth

Gingko (maidenhair tree; Ginkgo biloba) A deciduous tree with fan-shaped leaves; the female produces a fleshy, unpleasant smelling fruit; starchy seed available dried or canned

See Part 2: Seed, Chemical Composition

Gingli oil See sesame oil

Ginsang See pinakbet

Ginkgo A Japanese nut used in cooking

Gin 'n' tonic An alcoholic beverage made by squeezing ½ lime over ice cubes, adding rind and 1½ oz (1 jigger) gin, filling with tonic water, and stirring

Ginseng (Panax quinquefolium) The root (sometimes also leaves and flowers) of a plant used for tea; sweet and aromatic taste; 1 × 4-in. root weighs approximately 1 oz in the fresh state; matures in 5–7 yr; yields approximately 1 ton/acre
Types:
   Chinese two piece red
   Korean Pine white
   Pure Korean red
   Pure Korean white
Composition [root (4 yr old) analysis per 100 g]: 338 calories; moisture 10%; protein 12–12.2%; carbohydrate 70%; fat 1%; fiber 4.2%; ash 2.8%; vitamin A < 100 IU; vitamin C < 0.5 mg; vitamin B₁ < 0.1 mg; vitamin B₂ > 0.1 mg; niacin 4.7 mg; calcium 324 mg; iron 4.9 mg; vitamin E < 1.49 IU; vitamin B₆ < 0.48 mg; folic acid 0.05 mg; vitamin B₁₂ < 0.31 μg; phosphorus 216 mg; iodine < 5 μg; magnesium 96 mg; zinc 1.0 mg; copper 0.62 mg; pantothenic acid 0.69 mg

Ginseng wine A vodka flavored with ginseng root

Gin, sloe A gin flavored with sloe berries (the fruit of the blackthorn)
Sherry or port glass = 2 oz
Tumbler = 8-12 oz

**glass container** A glass jar or bottle for preservation of fruits or vegetables
See Part 2: Cans, Conversion Table; Cans, Equivalent Sizes

**glass fiber** An extruded glass filament of extremely small diameter; woven into mats, it is used for insulation
See Part 2: Insulation; Insulation, Conductivity Values; Insulating Value

**glass jar top** See Part 2: Glass Jar Tops

**glass lug** The ridge of glass on a container that forms the threads that engage the cap lug

**glass wool** See glass fiber

**glasswort** (*Salicornia herbacea*) An inferior variety of samphire (carrot family) See samphire

**glatt kosher** Meat prepared by more stringent rules than kosher See kosher

**glaucous** Dull grayish green or grayish blue

**glavya** A whiskey liqueur flavored with honey and herbs

**glaze** 1) To coat with syrup, gelatin, jelly, sugar, honey, or other liquids to obtain a shine; to add luster; to make glossy; to give a shiny appearance upon heating or freezing. 2) Concentrated meat stock. 3) Brushed on fruit jelly. 4) Brushed on white or cheese sauce. 5) To coat with milk. 6) To coat with milk. 7) To coat frozen foods with ice.
See Part 2: Stabilizers, Thickeners

**glazy bacon** Bacon cured from dark, firm, and dry pork

**GLC** Gas liquid chromatography

**gliadin** A protein found in gluten
See Part 2: Wheat Products, Amino Acid Compositions

**glitter** A sparkling, bright surface

**globefish** (*Sphaeroides* spp.) A food fish

**globulin** A simple group of proteins that are insoluble in water but soluble in neutral salt solution (5% NaCl) and are coagulable by heat; found in blood, milk, and muscle
See Part 2: Wheat Products, Amino Acid Compositions

**glucosamine** A monosaccharide derivative used as a building block in nature

**glucogenesis** The formation of glucose from glycogen

**gluconeogenesis** The formation of glucose and glycogen from nonglucose matter

**gluco delta-lactone**

```
\[
\text{\text{O=C}} \\
\text{H-C=OH} \\
\text{HO-C-H} \\
\text{O} \\
\text{H-C=OH} \\
\text{H-C} \\
\text{CH$_2$OH}
\]
```

White, acidic, odorless, sweet compound used as a leavening agent, to prevent milk and beer stone, to accelerate color fixing in cured meat, and as an acid or leavening agent or sequestrant in food
Storage: well-closed container

**glucoprotein** See glycoprotein

**glucosamine** A monosaccharide derivative used as a building block in nature

```
\[
\text{\text{OH}} \\
\text{CH$_2$} \\
\text{C} \\
\text{O} \\
\text{\text{HO-C-H}} \\
\text{\text{O}} \\
\text{H-C-H} \\
\text{C} \\
\text{H} \\
\text{NH$_2$}
\]
```

**glucose** (blood sugar; corn syrup; dextrose; grape sugar)

A six-carbon monosaccharide (hexose) that has a wide distribution in nature; 74% as sweet as sucrose
glucose (blood sugar; corn syrup; dextrose; grape sugar)

Glucose-1-phosphate:

\[ \text{OH} \quad \text{on no. 1 carbon is replaced by} \quad -O-P=O \quad \text{OH} \]

Glucose-6-phosphate: OH on no. 6 carbon is replaced by the same group.

Commercial glucose is a mixture of glucose, dextrin, and maltose made by incomplete hydrolysis of starch; isotonic glucose is 5% in distilled water. Used in confectionery because it does not crystallize and for invalids because it is easily converted into energy in the body (glucose is the form in which carbohydrates are circulated in the blood); common in grapes and sweet corn. See also corn sugar.

See Part 2: Amylose and Amylopectin; Honey Composition; Minerals (Trace), Limits; Sugar, D-Aldehyde; Sugar, Fruit; Sugar, Legumes; Sugar, Vegetables; Sweetness of Sweeteners; Sweetening Agents; Sweetening Compounds

**glucose isomerase** An enzyme that converts dextrose (glucose) to fructose

**glucose syrup** See corn syrup

**glucose syrup, dried** See corn syrup, dried

**glucose vinegar** A vinegar made from alcoholic and acetous fermentation of solutions of glucose

**glucuronic acid** A monosaccharide derivative used as a building block in nature

\[ \text{H} \quad \text{C} \quad \text{O} \quad \text{H} \quad \text{OH} \]

\[ \text{glume blotch (Septoria nodorum) } \quad \text{A disease that produces green to yellow spots between veins of wheat leaves; also causes shriveling of kernels} \]

**glumes** A chaffy or membranous bract enclosing the spikelet or flowers of grasses and sedges; consists of lemma and palea; hulls

See Part 2: Rice Kernel

**glumse** A German, sour, cottage cheese made from skimmed milk

**glutamic acid**

\[ \text{H} \quad \text{O} \quad \text{C} \quad \text{(CH}_2\text{)}_2 \text{CH} \text{C} \text{O}_2 \text{H} \quad \text{NH}_2 \]

A monoamino-dicarboxylic amino acid; the sodium salt is used to give meat flavor to foods. A white, odorless, nonessential amino acid, salt substitute; also used as a nutrient or dietary supplement

Storage: well-closed container

See Part 2: Amino Acids; Amino Acid, Solubilities; Corn, Amino Acids; Egg Products, Nutritive Value; Glutamate; Glutamate Addition; Grain Analysis; Manure Analysis; Wheat, Amino Acids; Wheat Products, Amino Acid Compositions

**glutamic acid hydrochloride**

\[ \text{[HOOC(CH}_2\text{)}_2\text{CH} \text{-COOH]} \quad \text{Cl}^- \quad \text{NH}_3^+ \]

Used as a salt substitute or flavoring agent

Storage: well-closed, light-resistant container

**glutamine** A nonessential amino acid

See Part 2: Amino Acids

**glutathione** A widely distributed tripeptide of glutamic acid, cysteine, and glycine, found in all living cells

\[ \text{R-S-S-R oxidized form} \]

\[ \text{R-S-S-R reduced form} \]

**glutelins** A group of simple proteins that are insoluble in water or salt solution but are soluble in dilute acids or alkalis

**gluten** A tough, viscid, nitrogenous substance (protein) that remains when grain flour is washed to remove the starch; elastic substance that gives dough the ability to stretch, trap gas and expand, and double in bulk without breaking when the product is baked; gives strength to flour; the greater the gluten content, the better the bread.

**glue** A colloidal protein mixture made from materials high in collagen

Types of animal glue:

- Hide glue
- Bone glue
- Blood albumin glue (water-resistant)
- Fish glue (from skin and bones of fish) See also collagen
Quality
High quality gluten, strong flour, hard wheat; will
absorb more liquid; used in yeast bread
Lower quality gluten, weak flour, soft wheat; used
for cakes and pastries
See Part 2: Corn Kernel Composition

Gluten bread (starch-reduced bread) A bread with
less starch (lower energy) made from gluten flour;
used by people who would like to avoid starchy foods;
looks like white bread but has more elastic texture

Gluten flour Wheat flour with the starch removed; a
mixture of wheat flour and gluten that contains 41%
protein
1 cup, unsifted, dipped = 5 oz
1 cup, unsifted, spooned = 4.8 oz
1 cup, sifted, spooned = 4.8 oz
See Part 2: Gluten-Free Diet

Glutenin One of the principal proteins of cereal grain
that interacts with gliadin to form gluten; a glutenin
found in seed; varies with wheat varieties
See Part 2: Wheat Products, Amino Acid Compositions

Gluteus Greek for buttock. A muscle of the thigh that
runs from the spinous processes of the sacrum, over
the ilium to the outside of the femur

Gluttony Eating to excess

Glux A cheese made from cow’s milk

Glyce- A prefix meaning sweet

Glyceraldehyde (HOCH₂CHOHCHO) A product of
sugar metabolism in the body. Its molecule contains
an asymmetric carbon; its conformation is the refer­
ence standard for optical isomers of carbohydrates
See also enantiomer; optical isomers
See Part 2: Sugar, D-Aldehydo

Glyceride An ester of glycerol and fatty acids in which
one or more hydroxyl groups of the glycerol have
been replaced by an acid radical; glycerides are the
main constituents of vegetable and animal fats and
oils See also triglyceride

Glycerin (glycerine; glycerol)
\[
\begin{align*}
\text{CH}_2\text{OH} \\
\text{CHOH} \\
\text{CH}_2\text{OH}
\end{align*}
\]
0.6 times as sweet as sucrose; used as a bodying
agent, humectant, solvent, or plasticizer; sp. gr. min.
1.249 See glycerol

Glycerol (glycerin; glycerine)
\[
\begin{align*}
\text{H} \\
\text{HC—OH} \\
\text{HC—OH} \\
\text{HC—OH} \\
\text{H}
\end{align*}
\]
A trihydric alcohol; a viscous, clear liquid obtained by
hydrolysis of natural fats and as a by-product of soap
manufacture; used for the manufacture of explosives
and as a humectant (e.g., to retain solvent in con­
fectionery), to prevent hardening of icing, and as a
solvent; 0.6 times as sweet as sucrose; b.p. 290°C

Glycerol ester of partially hydrogenated wood
rosin A medium-hard resin used as a masticatory
substance in chewing gum base
Storage: well-closed container

Glycerol ester of polymerized rosin A hard resin
used as a masticatory substance in chewing gum base
Storage: well-closed container

Glycerol ester of tall oil rosin An amber-colored
resin used as a masticatory substance in chewing
gum base
Storage: well-closed container

Glycerol-lacto oleate An emulsifying agent used in
food fat

Glycerol-lacto palmitate An emulsifying agent used
in food fat

Glycerol-lacto stearate An emulsifying agent used
in food fat

Glycerol monostearate A food humectant

Glyceryl abietate A food ingredient used as a den­
sity adjuster or plasticizer

Glyceryl monooleate A food fat

Glyceryl monostearate A flake used as a dispensing
agent

Glycine (aminoacetic acid; glycocoll) A mono­
amino-monocarboxylic amino acid (nonessential)

\[
\text{CH}_2\text{—C} \leq \text{O} \\
\text{NH}_2
\]
Used to retard rancidity in fat (0.01% in fat, total
antioxidant; 0.02% in combination) and as a nutrient
or a dietary supplement; 70% as sweet as sucrose
Storage: well-closed container

Glycogen (animal starch) (C₆H₁₂O₆)ₙ The chief
form in which carbohydrates are stored in the animal
body; made up of glucose units (1 & 4 α linkage); it is
stored mainly in the liver and is soluble in cold water
See Part 2: Histochemical Test; Sweetening Com­
pounds

Glycogenase An enzyme that converts glycogen to

Glycogenesis A formation or synthesis of glycogen
glycogenolysis The conversion or hydrolysis of glycogen into glucose units in the body

glycol Ethylene glycol; broadly any aliphatic alcohol containing two hydroxyl groups, i.e., dihydric

glycolipid (cerebrosides) A group of substances composed of a lipid (nonpolar) and a carbohydrate (polar) portion; often found in brain and nerve tissue; the carbohydrate is usually galactose

glycolysis (glycolytic cycle; Meyerhof-Embden pathway) The metabolism of sugar to lactic acid in the body or to pyruvic acid by enzymatic reactions; anaerobic enzymatic decomposition of carbohydrates, with release of energy; occurs in yeast fermentation and in some metabolic processes. Lactic acid is one of the products formed

glycolytic cycle See glycolysis

glyconeogenesis (gluconeogenesis) The formation of carbohydrates from protein and fat

glycoprotein A combination of a carbohydrate and a protein; nitrogen content 9–13%; an example is mucin, the lubricating protein of saliva

glycosia Sugar in the saliva

glycoside A monosaccharide joined to a monocarbohydrate molecule

glycrhrizine See licorice

glyoxylic acid (HCOCOOH) A flavoring intermediate and agricultural chemical

GMP Disodium guanylate

GMQ (good merchantable quality) Describes a product that meets legal standards at point of delivery

gnat A fruit fly

GN broth Gram-negative broth is a selective enrichment medium used for the growth of Gram-negative bacilli of the enteric group; desoxycholate and citrate inhibits growth of Gram-positive; mannitol and dextrose inhibits Proteus and encourages enteric pathogens.

See Part 2: Microorganism, Selective and Differential Broths and Media, Water Filtration Plant

gnocchi 1) Dumplings of cornmeal or potatoes, eggs, and parmesan cheese; dumplings made with flour or bread crumbs, milk, eggs, cheese, and nutmeg; entrée made from potatoes, flour, and parmesan cheese. 2) Pasta

gnotobiote An organism free from contamination or associated with known organisms; mono: without contaminants; di, tri, poly: organism contains one or more known contaminants

gnotobiotics (Greek: known life) Study of living things by themselves or in association with other known organisms

GNP Gross national product

goat (Capra hircus hircus) A hollow-horned, ruminant animal; mammal with straight hair raised for milk, meat and hide; milk used to make cheese; a kid is young goat; gestation period 150 days (range 142–160).

See Part 2: Gestation Periods; Goats, Milk Breeds; Milk and Cheese Composition; Milk, Mammals, Composition; Milk, Species; Minerals, Food; Reproductive Cycle; Teeth Eruption; Unsaturated Fatty Acids

goat acid A short-chain acid that has an animal odor, for example, caprylic, capricryl, and capric acids (Latin caprus = goat)
goatbeard (Traqopoqon pratensis) A wild, salisfy-like plant See saliify

goat fish (salmonette) A salmon-type food fish found in the Gulf of Mexico

goat grass (Aegilops sp.) An annual weed

goat meat (chevon) See Part 2: Meat and Meat Products, Composition

goat milk The milk of a goat; similar to cow’s milk except it is almost pure white and has smaller fat globules, which makes it easier to digest; butterfat varies with breed

Composition (whole, fluid): moisture 87.0%; protein 3.6%; fat 4.1%; carbohydrate 4.4%; ash 0.8%
goat’s beard See goatbeard

goat’s cheese (chevré) A cheese made from goat’s milk or goat’s milk mixed with other milk; it has a distinctive and strong flavor

goat’s horn See gum tragacanth

goat’s milk See goat milk

goatweed A plant having a toxic principle

See Part 2: Poisonous Plants

gobby Lumpy in fleshing

gobo See burdock

goetborg See goteborg

goetteberg A dry sausage

goetta An American specialty sausage that is medium to coarsely chopped, uncooked, unsmoked, and jellied; available in links, loaves, or canned

goettinger cervelat A cervelat-type sausage made from high quality, very lean, dry, hard, delicately spiced, pork and beef

gogues A moist, cooked, unsmoked French pork blood sausage made from medium chopped, medium seasoned pork; made with up to 60% cooked vegetables and 15–20% diced pork that is stuffed into a beef casing

gohan Rice; food

goiter An enlargement of the thyroid gland due to iodine deficiency

gokujo Choice grade

gulan A provolone-type cheese made from sheep’s milk

gold (Au) A metallic element; at. no. 79; at. wt. 197.0; m.p. 1063°C; Group IB of Periodic Table; sp. gr. 19.4; oxidation states +1, +3; electron configuration 2–8–18–32–18–1 orbit K L M N O P

golden apple See tomato

golden chasselas A chablis-type, white, table wine

golden cure Red herring smoked for 5 days

Golden Delicious A variety of apples that is in season from October to March; an excellent eating apple
and a fair to good cooking apple; too sweet for some cooking purposes

golden fizz A drink made with gin and egg yolk
golden gram See bean, mung
golden hog See ambarella
golden needle See tiger lilies
golden seal (orange root; yellow root; Hydrastis canadensis) An herb that is sometimes used as a tonic
golden thistle (Spanish oyster plant; Scolymus hispanicus) A plant that is similar to salsify See scolymus
goldfish (Carassius auratus Linnaeus) A food fish
gold 'n rich A tilsit-type cheese
goldwasser An herb liqueur that contains particles of gold
goldwater An herb liqueur that contains particles of gold
gollandsky An edam-type cheese
gomasio A mixture of sea salt and sesame seeds; reported to give a source of salt without inducing thirst
gomme syrup See gum syrup
gomolya A soft, white, sheep's milk cheese that may be partially cured
gomost Curdled milk
gomser A semihard, full, fruity flavored, cow's milk cheese
gonad Essential sexual glands; in female fish they produce roe; in male fish they produce milt
gonadotrophin An agent that causes rapid growth of follicles or ovaries
gonéz An oak wine container
1 gonéz = 144 liters Tokay wine
gon lo mein Stir-fried noodles
goober See peanut
Gooch crucible A funnel device with a perforated bottom used in a laboratory with suction to filter (through asbestos filter mats) precipitates
good See Part 2: Lamb Quality Guide
good King Henry (all good; mercury; Chenopodium bonus henricus) A food plant that is an herb of the spinach family
Parts eaten:
Fleshy shoots—like asparagus
Mature shoots—eaten like spinach
Young shoots—raw in salads
See mercury
good marketable quality See GMQ
goods received note A document that details all inbound materials after they have been checked for quantity
goody See spot
goose (varieties of the Anser species; A. anser; A. ferus; S. seqetum) A large, amphibious, web-footed bird used for food; its liver is used for paté de foie gras. Egg incubation period 29–35 days; all dark meat; a high percentage of fat (30%); to aid feather removal, dip in scalding water (145–155°F) for 1½–3 min
Green geese (junior geese)—young geese (10–13 weeks old) that weigh 10–12 lb 1 lb ready to cook = 2 servings

<table>
<thead>
<tr>
<th>Goose breeds</th>
<th>Color back</th>
<th>Color breast</th>
<th>Color abdomen</th>
<th>Adult weight (lb)</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>African</td>
<td>Ash brown</td>
<td>Light ash</td>
<td>Light ash</td>
<td>18–20</td>
<td>Meat, good layer</td>
</tr>
<tr>
<td>Buff</td>
<td>Dark buff</td>
<td>Light buff</td>
<td>White</td>
<td>16–18</td>
<td>Fair marketing</td>
</tr>
<tr>
<td>Canada</td>
<td>Dark gray</td>
<td>Very light gray</td>
<td>Light gray</td>
<td>10–12</td>
<td>Lays few eggs</td>
</tr>
<tr>
<td>Chinese</td>
<td>White or brown</td>
<td>White or brown</td>
<td>White or brown</td>
<td>10–12</td>
<td>Good layer</td>
</tr>
<tr>
<td>Egyptian</td>
<td>Gray and black with white, reddish brown, or buff</td>
<td>White</td>
<td>4.5–5.5</td>
<td>Ornamental</td>
<td></td>
</tr>
<tr>
<td>Emden</td>
<td>White</td>
<td>White</td>
<td>White</td>
<td>20–26</td>
<td>Meat, good layer</td>
</tr>
<tr>
<td>(Bremen)</td>
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<td></td>
<td></td>
<td>Good marketing</td>
</tr>
<tr>
<td>Pilgrim</td>
<td>Male White</td>
<td>White</td>
<td>White</td>
<td>13–14</td>
<td>Good marketing</td>
</tr>
<tr>
<td></td>
<td>Female Dark gray</td>
<td>Very light gray</td>
<td>Light gray</td>
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<td>Sebastopol Toulouse White</td>
<td>White</td>
<td>White</td>
<td>12–14</td>
<td>Ornamental</td>
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<tr>
<td></td>
<td>Dark gray</td>
<td>Light gray</td>
<td>White</td>
<td>20–26</td>
<td>Meat</td>
</tr>
</tbody>
</table>


gooseberry (varieties of the Anser species; A. anser; A. ferus; S. seqetum)

<table>
<thead>
<tr>
<th>Domesticated Goose Composition</th>
<th>Flesh and skin (raw)</th>
<th>Flesh and skin (cooked, roasted)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>49.66</td>
<td>51.95</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>15.86</td>
<td>25.16</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>33.62</td>
<td>21.92</td>
</tr>
<tr>
<td>Total carbohydrates (%)</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>0.87</td>
<td>0.97</td>
</tr>
</tbody>
</table>

USDA grades:
- U.S. Grade A poultry
- U.S. Grade B poultry
- U.S. Grade C poultry

See Part 2: Animal Foods, Composition; Frozen Food Storage; Minerals, Food; Meat and Meat Products, Composition; Poultry Class; Poultry Roasting

gooseberry (Barbados gooseberry; cape gooseberry; Chinese lantern; coqueret; dwarf cape gooseberry; ground cherry; husk tomato; jamberry; strawberry tomato; tomatillo; winter cherry; Physalis alkekengi; P. peruviana; Ribes grossularia; R. hirtellum; R. missouriensis) An annual plant that produces a round berry, \(\frac{1}{2} - \frac{3}{4}\) in. in length, with a thin skin, a sweet, juicy, slightly acidic flesh, a number of seeds, and covered by a light-brown husk; it is eaten raw or used in stews, sauces, preserves, jellies, and in chili sauce; tart, green, yellow, pink, or red berries grown on a thorny, 4-ft bush; bearing age-2 yr; yield/plant 12 lb; usually picked while unripe and stewed. Available raw, canned in syrup, and as jam; usually canned in water for pies, picked prior to changing color, and usually green when canned

Ripeness:
- Green—sauce, pies, canning
- Ripe—jelly, wine

Types: Yellowish with hairy skin; reddish skin; dark green skin; pale whitish-green skin; black; red-purple skin

Cultivar

<table>
<thead>
<tr>
<th></th>
<th>Fruit size</th>
<th>Fruit color</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downing</td>
<td>Large</td>
<td>Green</td>
<td>Excellent</td>
</tr>
<tr>
<td>Pixwell</td>
<td>Large</td>
<td>Dark red, golden</td>
<td>Excellent</td>
</tr>
<tr>
<td>Poorman</td>
<td>Large</td>
<td>Pinkish red</td>
<td>High</td>
</tr>
<tr>
<td>Welcome</td>
<td>Large</td>
<td>Dull red</td>
<td>Excellent</td>
</tr>
</tbody>
</table>

1 crate (24 qt), fresh = 32–36 pt, frozen
1 qt, fresh = 1 qt, canned
1 pt, frozen = 1 \(\frac{1}{2} - \frac{3}{4}\) pt, fresh
1 cup = 5.3 oz

Composition (raw): moisture 85–89%; protein 1–2%; fat 0.2–1%; carbohydrate 10–11%; ash 0.4%; pH 2.8–3.1

See Part 2: Fruit, Canning Dates; Fruit Classification; Fruit Composition; Fruit, Frozen Yield; Fruit Storage; Minerals, Food; Organic Acids in Fruits and Vegetables; Riboflavin, Food; Sugar, Fruit

gooseberry, canned In addition to gooseberries, may also contain natural and artificial flavors.

Percent sucrose in syrup
- Extra light < 14
- Light 14–20
- Heavy 20–26
- Extra heavy 26–35

gooseberry, cape (Physalis peruviana) See gooseberry

gooseberry, otaheiti See grosela

goose braunschweiger See goose liver sausage

goose fat The fat rendered from a goose; mp 15–25°C

goosefoot See lamb's quarter; mercury

goose grade See poultry grades

goose, green A young goose with a soft flexible bill and soft feet; best for cooking

goose liver sausage (goose braunschweiger) A braunschweiger made with cubed pieces of goose liver; must contain 30% liver; pistachio nuts may also be used

goose, noodle A goose fattened on noodles

goose, potted Goose breast meat and butter that is sieved and heated

gorbea An esbareich-type cheese that matures in one month

gorgonzola A pungent, blue-veined cheese made from cow's and/or sheep's and/or goat's milk and with a reddish rind; size 12 in. in diameter and 6 in. high

gorgonzola cheese A blue-veined (Penicillium roqueforti or P. glaucum), whole milk cheese very similar to roquefort or blue cheese; soft and creamy, yellow interior; light-brown surface; marbled with blue-green mold; cylindrical shape; piquant and spicy flavor; made from goat's and/or cow's milk; ripened 3 months by internal mold; a semihard cheese from Italy that travels well

Composition: moisture 36%; protein 26%; fat 32%; ash 5%; salt 2.4%

Storage: can be frozen (0°F) in small quantities if used in salads or dressings; use in 6 months

See Part 2: Cheese Characteristics; Cheese, Vitamin Content; Milk and Cheese Composition

gorlo See Part 2: Fatty Acids and Their Properties

gornooryakhorski soudzouk A medium-chopped salami made from beef

gorny A hard, dry, low-fat, grating cheese

gorny doubnyak A bitter, ginger liqueur

gosling A young goose

gossypol A toxic, phenolic, yellow pigment in cottonseed; causes discoloration of egg yolk during cold storage

goteborg (goetborg; goteburg; hard cervelat; Swedish sausage) 1) A dry, uncooked, smoked or unsmoked American sausage (cervelat-type) made from medium to coarsely chopped, mildly seasoned (thyme, salt) beef and pork that is fermented and stuffed into a beef or artificial casing; available in dry or semidry links, rings, or large diameter casing; a dry sausage made from coarsely ground beef (60%) and pork (40%) that has a sweet flavor (cardamom); it is given a heavy smoke and dried; a cervelat that has been air-dried for several weeks. 2) A heavily smoked Swedish (gothenburg) sausage that is air-dried, mildly seasoned with thyme, sweet (cardamom), and salty;
made from coarsely chopped beef (60%) and sometimes pork (40%)

gothaer A finely chopped and cured, German summer sausage made from very lean pork; medium-chopped salami made with pork and seasoned with pepper; a dry, uncooked, unsmoked American cervelat-style sausage that is made from medium chopped, mildly seasoned (pepper) pork that is fermented and stuffed into a pork or artificial casing

gottinger A moist, cooked, smoked Austrian sausage made from coarsely chopped, medium seasoned (nitrite), beef and pork, and stuffed into artificial casings with a diameter of greater than 60 mm

gouda A pale colored, semisoft to firm cheese with a gouda cheese flavor made from cow's milk and with a red or pale gold, wax rind; made from pasteurized, inoculated, whole milk with rennet added, scalded, not textured, and pressed; higher in fat content than edam

gouda cheese A Dutch cheese that is sometimes smoked; a hard (softer than cheddar), mild to sharp, nut-like, creamy yellow cheese similar to edam but higher in fat, used as a cooking or dessert cheese; the shape is an ellipsoid ball with a red wax covering. It is made from partly skimmed milk; ripened 2-4 months Composition: moisture 37-42%; protein 24-30%; fat 27-29%; carbohydrate 2-3%; lactose 1-2%; fiber 0%; ash 2.7-4%; salt 1.7-2%; sodium 232 mg/oz Storage: can be frozen (0°F) if no more than 1 in. thick; use in 6 months

See Part 2: Cheese Characteristics; Cheese, Vitamin Content; Vitamin A, Milk and Milk Products

goulash (gulyas) A beef and vegetable stew; a Hungarian beef stew containing beef or veal, onions, potatoes, paprika, and other seasoning (e.g., sauerkraut, sour cream)

See Part 2: Portion Size

goumi (Elaeagnus multiflora) Red or orange, acid, wild berry similar to cranberry; used to make preserves or sauces

gourd An annual, climbing (10-20 ft) plant of the Cucurbitaceae family [genera Cucurbita (thin shelled) and Lagenaria (thick shelled)] whose fruit is often used as food (when small; not edible when ripe)

Types:
- Bitter (Citrullus cythins)
- Cranberry (Abobra tenuifolia)
- Dishcloth or luffa (L. leucanthe)
- Gooseberry (Cucumis anguria)
- Hedgehog, ostrich egg, or teal (Cucumis dip-saceus)
- Ivy (Coccinia cordifolia)
- Malabar (C. ficifolia)
- Mate or utensil (L. I. vugaris)
- Mock and onion-shaped (C. pepo)
- Serpent cucumber (Trichosanthes anguina)
- Wax or white fruited (Benincasa hispida)

Use:
- bottle gourd: dry, hard shell, used as container; young fruit, boiled as a vegetable
- wax or ash gourd: vegetable
- egusi melon: oily seeds are cooked and eaten

Examples are barbarine, cushaw, pumpkin, squash, vegetable marrow

Term often used for only inedible varieties; ripened fruit may be coated with shellac for decoration

U.S. designation (Cucurbitaceae)—hard shelled fruit

European designation—also includes cucumber, melon, pumpkin, and squash

See loofah gourd; passion fruit; round gourd; snake gourd; wax gourd; zapalillo

See Part 2: Cucurbit Crops, Spacing and Depth of Planting; Vegetable Storage; Wastes, Agricultural and Industrial

gourilos Stumps of curly endive

gourmand One who is given to overeating; a glutton

gourmandise 1) A processed cheese made from cow's milk flavored with cherry and often containing nuts. 2) Luxurious, epicurean discrimination in eating and drinking

gourmet A connoisseur in drinking and eating; one who is accustomed to the best of foods See also epicure

gournay A small (100 g), mild-flavored, camembert-type cheese made from cow's milk and cured 1 week

gourney A soft, French, rennet cheese

gout (podagra) An inflammation of the fibrous parts of joint and the formation of uric acid or sodium urate in the blood

goutweed See agropodium

"government" carcass A term used widely by those employed in the meat packing industry indicating a carcass rejected by USDA Meat Inspectors as being unfit for human consumption

gow choy (Chinese chives) A vegetable that looks like chives but is larger and has a mild, garliclike flavor

goya A hard, dry, low-fat, grating cheese made from cow's milk; an Argentinian rennet cheese made from whole or partly skimmed milk

goy choy See Chinese mustard greens

GPO Government Printing Office

graceay A valencia-type cheese made from goat's milk and covered with charcoal

graeilis The inside thigh muscle just below the skin; only visible in cross section on approximately the last half of cross cut round steaks

gradaost A blue cheese made from cow's milk

graddifi A thick,ropy,fermented,low-medium acid (pH 4.4-4.7), cow's milk

grade 1) Classification according to breeding. Animals that are not pure-bred are often produced by mating a purebred sire with a dam of less than pure breeding; high grade: possessing 87½% or more of pure breeding but not 100%. 2) Classification according to quality (eggs, fruits, vegetables, etc.). 3) Classification according to chemical purity.

Chemical specification grades (in order of decreasing purity)
- No. 1—Primary Standards
- No. 2—Spectro
- No. 3—Reagent
- No. 4—A.C.S.
- No. 5—Chemically Pure
- No. 6—U.S. Pharmacopeia
No. 7—National Formulary (N.F.)
No. 8—Purified
No. 9—Technical or Commercial
4) Classification according to weight or yield. 5) 1 grade = 1.571 \times 10^{-2} \text{ radian} \text{ See also specific entry}

See Part 2: Butter Grade; Cheese Grade Stamps; Cheese Shield; Egg Quality; Egg Quality and Size Label; Egg Quality, Broken; Fruit Grade Use; Fruit Inspection Labels; Grades, Meat; Meat Grade Stamps; Nut Grades; Poultry Grade Stamp; Poultry Inspection and Grade Stamp; Sheep Market Classes and Grades; Swine Market Classes and Grades; Tomato Grades; Vegetables, Canned Grades; Wheat Grades

graft A small shoot of one tree inserted into another tree for propagation purposes

graft union The part of the lower stem of a woody plant (usually enlarged) where the scion (variety) was joined to the stock

graham Breakfast food made from whole wheat

graham bread (wholemeal bread) Wholewheat bread

graham cracker A soft cracker made from graham flour

1 cup = 9 coarsely crumbled
2 3/4-in. square = 7 g

Composition: fiber 10%; sodium 48 mg/cracker (7 g)

1 cup = 9 coarsely crumbled
2 3/4-in. square = 7 g

2|-in. square = 7 g

Composition: fiber 10%; sodium 48 mg/cracker (7 g)

graham flour Flour made from the whole-wheat grain; whole, hard, wheat flour. It has superior nutritive value and poorer keeping quality \text{ See also flour}

Graham's salt \text{ See sodium phosphate}

grain 1) Small seeds of grass or cereal plants. 2) In wood and paper, the direction of the fibers.

See Part 2: Food, Composition; Grain Analysis; Grain Products Composition; Minerals, Food

grain (apoth.; av.; gr; troy) A measure of weight used for gold, silver, and jewels; grain avoirdupois = grain troy = grain apothecary

1 grain (gr) = 64.799198 milligrams (mg)
= 0.3240 carat (metric)
= 0.064799815 gram (g)
= 0.05 scruple (apothecary)
= 0.04166667 pennyweight (troy)
= 0.03657143 dram (avoirdupois)
= 0.01666667 dram (apothecary or troy)
= 0.00228571 av. ounce (oz avoirdupois)
= 0.000208333 troy or apothecary ounce (oz troy; oz apothecary)
= 0.0001738111 troy or apothecary pound (lb troy; lb apothecary)
= 0.0001288571 av. pound (lb avoirdupois)
= 0.00006480 kilogram (kg)
= 0.0000007143 net-short ton (2,000 lb)
= 0.00000063787 gross-long ton (2,240 lb)
= 0.0000006480 metric ton (1,000 kg)

24 grains = 1 pennyweight (dwt)
20 dwt = 1 ounce
12 ounces = 1 pound

grain (vinegar) Quantity of alkali (in grains) to neutralize the acetic acid in the vinegar; grain = 10 \times \% acid

grain alcohol Normally 190 proof ethyl alcohol \text{ See ethyl alcohol}

grain per gallon (Brit.) 14.254 parts per million in water (ppm; by weight)

grain per gallon (U.S.)
1 grain per gallon = 142.86 pounds/million gallons
= 17.118 mg/l
= 17.118 parts per million in water (ppm; by weight)
= 14.857 pounds/million gallons

grain screening Separation of small, imperfect grains, weed seed, and other foreign material using a screen when grain is cleaned; it is used as a feed ingredient

Composition (unclean): dry matter 92%; protein 13.9%; fiber 17.1%; fat 5.4%; ash 8.6%

grain sorghum \text{ See sorghum grain}

grain spirit A spirit distilled from cereal grain

grain vinegar Distilled vinegar

grain whiskey A whiskey distilled from a high proportion of unmalted cereal

grainy Granular texture

graisse Fat

gram (food; Vigna radiata) Pulse and/or tropical legumes \text{ See chick pea}

gram (g; gm; gramme) A measure of weight

1 gram = 1,000,000 micrograms (\mu g)
= 1,000 milligrams (mg)
= 980.665 dynes
= 100 centigrams (cg)
= 15.4323561 grains (troy)
= 10 decigrams (dg)
= 5 carats (metric)
= 1 milliliter of water at its maximum density (4°C) and 1 atm. pressure
= 0.771618 scruple (apothecary)
= 0.64301485 pennyweight (dwt)
= 0.5643833 dram (avoirdupois)
= 0.2572059 dram (troy)
= 0.03527396 av. ounce (common)
= 0.03215074 troy or apothecary ounce
= 0.07093 poundal
= 9.807 \times 10^{-3} \text{ joules per meter (newton)}
= 2.67923 \times 10^{-3} \text{ pound (troy)}
= 9.842 \times 10^{-6} \text{ ton (long)}

See Part 2: Weight

gram-calorie (g-cal)
1 gram-calorie = 4.184 \times 10^7 \text{ ergs}
= 3.086 foot-pounds
= 3.9683 \times 10^{-3} \text{ watt-hours}
= 1.5596 \times 10^{-6} \text{ horsepower-hours}
= 1.162 \times 10^{-6} \text{ kilowatt-hours}

See calorie
gram-calorie per second (g-cal/s)
1 gram-calorie per second
= 14.286 British thermal units per hour

gram-centimeter (g-cm) A measure of heat, energy, and/or work
1 gram-centimeter
= 980.5966 ergs
= 9.807 x 10^-5 joule
= 1 x 10^-5 kilogram-meter
= 9.297 x 10^-6 British thermal units
= 2.343 x 10^-6 kilogram-calories

gram-centimeter per second (g-cm/s) A measure of power, rate of energy, and heat
1 gram-centimeter per second
= 980.5966 ergs per second
= 9.80665 x 10^-4 watt
= 0.00007238 foot-pound per second

gram equivalent Atomic weight of an element divided by its valence

gramicidin An antibiotic polypeptide that is effective against most gram-positive bacteria; obtained by extraction of tyrothricin

gram molecular weight See mole

Gramm-Rudman-Hollings An act that specified rules for moving toward a balanced budget through systematic cuts in federal expenditures

Gram-negative Stain red; more susceptible to destruction by disinfectants and environmental factors See Gram’s stain

gram per centimeter (g/cm)
1 gram per centimeter
= 5.6 x 10^-3 pounds per inch

gram per cubic centimeter (g/cm³) A measure of density or concentration
1 gram per cubic centimeter
= 1,685.56 pounds per cubic yard (lb/yd³)
= 1,000 kilograms per cubic meter (kg/m³)
= 980.5966 dynes per cubic centimeter
= 77.6893 pounds per bushel (lb/bu; U.S.)
= 62.4283 pounds per cubic foot (lb/ft³)
= 9.71116 pounds per gallon, dry (lb/dry gal; U.S.)
= 8.34545 pounds per gallon, liquid (lb/liquid gal; U.S.)
= 1.162283 poundals per cubic inch
= 0.038127 pound per cubic inch (lb/in.³)
= 3.405 x 10^-7 pounds per mil-foot

gram per liter (g/l) A measure of density or concentration
1 gram per liter = 1,000 parts per million (by wt) in water
= 58.43 grains per gallon
= 8,345 pounds per 1,000 gallons
= 0.062427 pound per cubic foot (lb/ft³)

gram per square centimeter (g/cm²) A measure of pressure
1 gram per square centimeter
= 980.5966 dynes per square centimeter
= 2.0481 pound per square foot (lb/ft²)
= 0.4572592 poundal per square inch
= 0.014223 pound per square inch (lb/in.²)
= 9.6784 x 10^-4 atmosphere

gram per square meter (g/m²) Weight per unit area
1 gram per square meter
= 0.029 ounces per square yard (oz/yd²)

Gram-positive Stain dark blue or black See Gram’s stain

Gram’s stain A staining method developed by Gram in 1880 that differentiates Gram-positive from Gram-negative bacteria by their ability to retain crystal violet dye
Negative—red
Aerobacter aerogenes
Escherichia coli
Pseudomonas aeruginosa
Salmonella
Shigella
Positive—blue
Clostridium
Staphylococcus
Streptococcus

The staining is a function of the amino acids and lipid composition of the cell wall
See Part 2: Gram Stain; Sanitizing Chemicals; Water Activity, Organisms and Food

grana A group of hard, well-aged, granular, Italian cheeses; a hard, dry, low-fat (partly skimmed milk), well-matured, grating cheese with a hard rind

grana cheese A grainy texture cheese
Types (both called parmesan): grano padano; parmigiano-reggiano

granadilla (grenadilla; Passiflora edulis) Passion fruit; a fruit with many different types of varieties
Types:
Large fruit with seeded pulp
Small, purple fruit
Yellow with viscous pulp

Varieties:
Giant granadilla—Passiflora quadrangularis; pulp from 10-in. thick shell is used as fruit
Passion fruit; granadilla—yellow pulp is used fresh, in salads, and in desserts
Sweet calabash, kuruba, sweet cup—P. maliformis
Sweet granadilla; parchita—P. liqularis; white pulp
Water lemon; yellow granadilla; golden apple—P. laurifolia
See passion fruit

grandjo A sweet, dessert wine

grand marnier A citrus liqueur using Seville oranges and cognac

Grand Rapids lettuce A leaf lettuce with tightly curled leaves

grand rustique An unpasteurized, camembert-type cheese made from cow’s milk

Granger A variety of bird’s-foot trefoil

granita A frozen dessert that has a texture like chipped ice and contains no dairy products or egg yolks; made from fruit ice and a sweetener

granita A mushy sherbet or ice dessert made from fruit or fruit juice; a frozen, sherbetlike dessert; prepared like a frappé
granola  An oatmeal-based mixture commonly eaten for breakfast; may contain sweeteners (brown sugar, honey), coconut, nuts, and/or dried fruit; available ready-made
Composition: sugar 21–31%; sodium 61 mg/½ cup (34 g)

granular tapioca  See flake tapioca

granulated hominy  See hominy

granulation  1) Particle size usually determined by sieve analysis, through U.S. standard-sized screens, for a specified time, on a standard shaker, and starting with a specified amount. Empirical classification for spices is 1 min and 100 g

<table>
<thead>
<tr>
<th>Passes through</th>
<th>Retained on</th>
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</thead>
<tbody>
<tr>
<td>Min. % Screen no.</td>
<td>Max. % Screen no.</td>
</tr>
<tr>
<td>Coarse</td>
<td>30</td>
</tr>
<tr>
<td>Medium</td>
<td>70</td>
</tr>
<tr>
<td>Fine</td>
<td>98</td>
</tr>
<tr>
<td>Extra fine</td>
<td>50</td>
</tr>
</tbody>
</table>

2) (Corkiness; crystallization; dry end; koa sarn; sclerocystosis) A physiological disorder causing dryness of juice sacs on citrus fruit that has not been exposed to freezing; juice sacs (usually at the stem end) become hard and enlarged and are white or gray in color; the juice sacs are hard and separate from each other and the pulp has a grainy texture. This condition develops on the tree and does not progress materially after harvesting

grape (Vitis vinifera)  A vine that produces fruit used for food (table grapes, raisins, unfermented grape juice) and wine; classification is complex; usually grouped according to the following: black or white; outdoor or indoor; time of ripening; wine or dessert. Bearing age: 3 years; yield: 2 lb/plant
Canning Varieties
Concord (black; very productive, poor keeping)
Delaware
Niagara (large white)

European
Cardinal (red)
Emperor (red)
Thompson seedless (green)
Tokay (red)

Western American
Alicante
Black Zinfandel
California white muscat (raisin grape)
Red flame
Tokay
White malaga

Types:
Vitis bourquiniana—late grape for the South, fruit medium size
V. champini—late grape for the South, fruit medium size
V. labrusca—fox grape; foxy flavor; North and Central areas
V. lincecumii—late grape for the South, fruit medium size
V. riparia—frost grape; hardy, Northern states, small
V. simpsonii—grape grown in Florida and Gulf states
V. vinifera—European or Old World grape; sweet; in U.S. grown in California; table and wine grape; more susceptibility to diseases and insects
Alexandria; Alicante Bouschet; Aurore (white, Aug., early, white wine, eating, hardy); Banco Noir (purple, midseason, wine); Black Hamburg; Burger; Cabernet Sauvignon; Carignane; Chancellor (S. 7053) (purple, midseason, wine); Chasselas de Fontainebleau; Cinsaut; De Chaunac (S. 9549) (purple, midseason, red wine, mid. Aug.); Dodrelabi; Emperor; Foch (Kuhlman) (blue, early, burgundy-type, wine, Sept.); Green Hungarian; Grenache; Listan; Malaga (greenish white, seeds); Mission; Mondeuse; Mourastel; Muscadelle de Bordelaise; Noire; Olivette; Olivette Blanche; Pedro Ximenez; Petit Syrah; Pineau de Chardonnay; Purple Damascus; Sauvignon Varie; Semillon; Seyval Blanc (S. 5276) (white, early, wine); St. Macaire; Sultana; Sylvaner; Thompson's Seedless (greenish white, without seed); Tokay (green to red, large grape); Traminer; Valdepenas; Vermentino; Vidal Blanc (V. 256) (white, midseason, wine and table); Zinfandel

Raw grape composition: moisture 81–82%; protein 0.6–1.4%; fat 0.3–1%; carbohydrate 15–17%; ash 0.4%; pH 3.4–4.5; fiber 0.7%; vitamin A 80 IU/100 g; ascorbic acid 4 mg/100 g; skin and seed (refuse) 22–25%
<table>
<thead>
<tr>
<th>American bunch grape variety</th>
<th>Color</th>
<th>Time of ripening</th>
<th>Characteristics</th>
<th>Cluster size</th>
<th>Berry</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alden</td>
<td>Purple</td>
<td>Early-mid season</td>
<td>Non-slipskin</td>
<td>Large</td>
<td>Table, wine</td>
<td></td>
</tr>
<tr>
<td>Bath</td>
<td>Purple</td>
<td>Mid season Early</td>
<td>Hardy</td>
<td>Small</td>
<td>High sugar, wild flavor</td>
<td>Table</td>
</tr>
<tr>
<td>Betta</td>
<td>Purple</td>
<td>Early</td>
<td>Very hardy</td>
<td>Medium</td>
<td>Small, spicy flavor</td>
<td>Juice, jelly</td>
</tr>
<tr>
<td>Blue Lake</td>
<td>Purple-red</td>
<td>Early-mid season</td>
<td>Florida, Gulf Coast</td>
<td>Large</td>
<td>Excellent, distinctive</td>
<td>Table, wine, juice, jelly</td>
</tr>
<tr>
<td>Buffalo</td>
<td>Blue-black</td>
<td>Early, early Sept.</td>
<td>Hardy</td>
<td>Large</td>
<td>Table, wine, juice, jelly</td>
<td></td>
</tr>
<tr>
<td>Caco</td>
<td>Red</td>
<td>Mid season</td>
<td>Vigorous, hardy, medium productive</td>
<td>Large, medium, medium quality</td>
<td>Table</td>
<td></td>
</tr>
<tr>
<td>Campbell Early</td>
<td>Purple</td>
<td>Early-mid season</td>
<td>Moderate vigor and production fairly hardy</td>
<td>Medium-large</td>
<td>Medium</td>
<td>Juice, jelly</td>
</tr>
<tr>
<td>Catawba</td>
<td>Purple-red bloom</td>
<td>Late, late Sept.</td>
<td>East, Central, vigorous, hardy, productive</td>
<td>Large</td>
<td>Table, juice, wine, storage</td>
<td></td>
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<tr>
<td>Cayuga Champion</td>
<td>White Purple</td>
<td>Late</td>
<td>East, Central</td>
<td>Tight</td>
<td>Medium</td>
<td>Table</td>
</tr>
<tr>
<td>Concord</td>
<td>Deep purple, light bloom</td>
<td>Mid season, late Sept.</td>
<td>Vigorous, hardy, productive, disease-resistant</td>
<td>Medium-large</td>
<td>Fair flavor, poor shipper, juice, wine, jam, jelly, table, seedless</td>
<td></td>
</tr>
<tr>
<td>Concord Seedless</td>
<td>Purple</td>
<td>Mid season, Sept.</td>
<td>Low vigor, medium production, hardy, disease-resistant</td>
<td>Small</td>
<td>Small, almost seedless</td>
<td>Table, pie</td>
</tr>
<tr>
<td>Delaware</td>
<td>Deep red, light bloom</td>
<td>Late-mid season</td>
<td>Medium-low vigor, medium production, hardy</td>
<td>Medium-small</td>
<td>Small, high sugar, good keeper</td>
<td>Table, wine</td>
</tr>
<tr>
<td>Ellen Scott</td>
<td>Red</td>
<td>Late</td>
<td>Vigorous, productive, medium hardy, disease susceptible</td>
<td>Medium-large</td>
<td>Large</td>
<td>Juice, table</td>
</tr>
<tr>
<td>Fredonia</td>
<td>Purple</td>
<td>Early-mid season</td>
<td>Vigorous, productive, disease-resistant</td>
<td>Medium-small</td>
<td>Large, Concord-type</td>
<td>Table, juice, jelly</td>
</tr>
<tr>
<td>Golden Muscat</td>
<td>White</td>
<td>Late-mid season</td>
<td>Vigorous, medium production, medium hardy</td>
<td>Large</td>
<td>Medium, foxy muscat flavor</td>
<td>Table</td>
</tr>
<tr>
<td>Himrod Seedless</td>
<td>White</td>
<td>Early-mid season</td>
<td>Vigorous, medium hardy, productive</td>
<td>Large, loose</td>
<td>Medium, oval, nearly seedless</td>
<td>Table</td>
</tr>
<tr>
<td>Interlaken Seedless</td>
<td>White-amber</td>
<td>Early, mid-Aug.</td>
<td>Moderate vigor and production, cold tender</td>
<td>Medium</td>
<td>Small, nearly seedless</td>
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<tr>
<td>Joannes-Seyve 23-416</td>
<td>Pink</td>
<td>Late-mid season</td>
<td>Vigorous, medium production, disease-resistant</td>
<td>Large, loose</td>
<td>Oval</td>
<td>Wine</td>
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<tr>
<td>Joannes-Seyve 26-205</td>
<td>Purple</td>
<td>Late-mid season</td>
<td>Moderate vigor, productive, disease-resistant</td>
<td>Large</td>
<td>Wine</td>
<td></td>
</tr>
<tr>
<td>Kuhlman 188-2 or Foch</td>
<td>Purple</td>
<td>Early</td>
<td>Moderate vigor and production, fair disease-resistant</td>
<td>Small, tight</td>
<td>Small</td>
<td>Wine</td>
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<tr>
<td>Kuhlman 2 or Marechal Foch</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Landot 244</td>
<td>Purple</td>
<td>Mid season</td>
<td>Medium vigor and production, fair disease-resistant</td>
<td>Medium</td>
<td>Wine</td>
<td></td>
</tr>
<tr>
<td>Landal</td>
<td>Purple</td>
<td>Early-mid season</td>
<td>Vigorous, hardy, productive, disease-resistant</td>
<td>Large</td>
<td>Large</td>
<td>Table</td>
</tr>
</tbody>
</table>
| McCampbell                   | Purple | Early-mid season       | Vigorous, hardy, productive, disease-resistant | Large        | Large | Table                    | (Continued)
American bunch grape variety | Color | Time of ripening | Characteristics | Cluster size | Berry | Use
--- | --- | --- | --- | --- | --- | ---
Moore Early | Deep purple | Early–mid season | Medium vigor, low production, hardy | Medium | Large | Juice, jelly, wine
Niagara | White–light green | Mid season, Sept. | Vigorous, hardy, productive, disease resistant | Medium, compact | Large, tangy, foxy flavor, firm | Table, juice, jelly, wine
Ravat 51 | White | Early–mid season | Vigorous, medium production, hardy | Small, compact | Medium–large, compact | Wine
Vignoles | Pink | Late–mid season | Medium vigor, cold tender, medium production, disease-resistant, fruit rot | Medium–large | Medium | Wine
Seibel 4086 | White | Early–mid season | Vigorous, productive | Medium long, loose | Medium | Wine
Rayond’Or | Pink | Late–mid season | Vigorous, productive | Medium–small, slightly loose | Medium | Wine
Seibel 5279 | White | Early | Vigorous, medium disease-resistant, productive | Medium | Medium | Wine
Aurore | Seibel 7053 | Purple | Late–mid season | Vigorous, productive | Medium, slightly loose | Medium | Wine
Chancellor | Seibel 9110 | White | Mid season | Vigorous, cold tender | Large, loose | Oval | Table, wine
Verdelet | Seibel 9549 | Purple | Early–mid season | Medium vigor and production | Long, loose | Medium | Wine
De Chaunac | Seibel 10868 | Pink | Mid season | Vigorous, productive | Medium–large | Small | Wine
Seibel 10878 | Purple | Mid season | Vigorous, cold tender, productive, disease-resistant | Medium–large | Medium–large | Wine
Cheilos | Seibel 13053 | Purple | Early | Hardy, medium production, disease-resistant | Medium–small | Medium | Wine
Cascade | Seneca | White | Early | Medium vigor, medium hardy, productive | Medium | Oval, crisp | Table
Seyve-Villard 5-276 | White | Early–mid season | Medium vigor, productive, disease-resistant, fruit rot | Large | Medium | Wine
Seyval Blanc | Seyve-Villard 12-375 | White | Late | Vigorous, resistant, productive, | Medium–large | Medium | Table, wine
Villard Blanc | Seyve-Villard 18-315 | Purple | Late | Vigorous, disease-resistant, productive, | Medium–large | Medium | Wine
Villard Noir | Sheridan Steuben | Purple | Late–mid season, late Sept. | Concord-type | Medium–large | Medium | Table, wine
Van Buren | Blue | Early | Vigorous, hardy, Concord-type | Medium | Medium, oval | Table
Worden | Deep purple | Early–mid season | Vigorous, hardy, productive | Medium–large | Large, Concord-type | Juice, jelly, wine
Stover | White | Florida and Gulf Coast | Medium vigor, hardy, productive, Pierce's disease-tolerant | Medium | Medium, oval | Table
Vidal 256 | White | Late | Vigorous, fairly disease-resistant, productive | Long | Small | Wine
grapefruit (forbidden fruit; pamplemousse; shaddock; Citrus paradisi) 345

1 bu = 48–50 lb
= 16–20 qt, canned
1 lug (5.75 × 13.5 × 16.5 in.) = 28 lb
1 basket crate (4.75 × 16 × 16.1 in.) = 20 lb
one 12-qt basket = 18 lb
one 4-qt basket = 6 lb
1 qt, canned = 2 1/2–3 lb, fresh
1 lb, seedless, red or green
= 84 medium grapes
= 3 cups halved
= 2 1/2 cups (1 cup = 170 g or 6 oz)
= 4–6 servings
1 lb, seeded = 2 cups (1 cup = 185 g or 6.5 oz)
1 lb, fresh Tokay = 2.75 cups, seeded
1 lb, fresh Concord = 1 qt
1 lb, grape halves = 2.25 cups
1 cup, seedless, red or green = 5.5 oz
1 grape = 4 g

To ripen: Store in open air at room temperature; keep out of sun
Storage (when ripe): Uncovered (85–90% relative humidity); refrigerate (30–32°F); freezing point 24–27°F; use in 3–5 days See Aspergillus black-mold rot
See Part 2: Beverage (Carbonated), Ingredients; Flavor Ingredients, Taste and Flavor Type; Flavors, Beverage; Frozen Food Storage; Fruit Availability; Fruit Canning Dates; Fruit Classification; Fruit Composition; Fruit Servings per Pound; Fruit Storage; Minerals, Food; Minerals, Plant or Animal Tissue; Organic Acids in Fruits and Vegetables; Plant Foods, Composition; Rot Spoilage; Standards, Processed Fruit and Vegetable Products; Storage; Sugar, Fruit, Wine, Sweet

grape berry moth An insect with a 1 1/2-in. wingspan; appears in late spring or early summer; larvae are active, greenish caterpillars about 3/4 in. long when fully grown; found on grapes (grape is host) throughout most of the eastern states Damage: larvae feed on blossoms and developing fruit; berries are webbed together, turn dark, and drop from stem; holes in nearly ripe grapes can be controlled by using cultural methods (clean up of debris) or insecticides

grape cane gall maker A small, reddish brown weevil; usually causes damage to the cane just above a lower joint

grape, canned Usually Thompson, seedless grape variety; in addition to seedless grapes, may also contain natural and artificial flavors, spice, vinegar, lemon juice, or organic acid

Percent sucrose in syrup
Extra light < 14
Light 14–18
Heavy 18–22
Extra heavy 22–35

grape cheese A mild-flavored, soft French cheese that is white and buttery-textured; the rind is covered by black grape skin and seeds

grape curculio A broad, dark brown, snout beetle about 1/8 in. long; not normally a problem on grapes when a program for control of grape berry moth is followed

grape flea beetle A dark blue, shiny, jumping beetle about 3/8 in. long; larvae are light-brown grubs with black spots and are up to 3/4 in. long. They feed on buds and new leaves and are found on grapes ends; may be controlled by sprays

grapefruit (forbidden fruit; pamplemousse; shaddock; Citrus paradisi) Improved shaddock. A medium–large tree in which the large yellow-rind or sweeter pinkish (pomelo) citrus fruit grows in clusters; the fruit may have a yellow or pinkish pulp with or without seeds; consumed fresh, canned in segments, or made into juice and marmalade. Yield per tree up to 300 lb/yr; freezing point 29.8°F Canned style: Usually packed with sugar, seeds removed, picked at a more mature stage; less astringent and less bitter Pink segments White segments

Types:
Bright—pale, yellow rind
Russet—yellow with russeting

Sizes (number of grapefruit/box)
Large—sizes 25, 36, 46
Medium—size 64 (4 1/4-in. diam)
Small—sizes 70 (4 1/2-in. diam), 80, 90, 126

Equivalents:
1 Florida, Texas box (12 × 12 × 24 in.) = 80 lb
1 California box (11.5 × 11.5 × 24 in.) = 64–67 lb
1 case (24), No. 2 1/2 cans = 0.83 box, fresh grapefruit 13 1/2 oz, frozen = 3–4 servings
1 medium-size grapefruit = 4 1/4 in. in diameter = 570 g (1 1/4 lb)
1 lb, fresh (1 medium size grapefruit) = 1 cup, sections (195 g or 6.8 oz)
1 cup, sections = 7 oz
1 cup, canned sections, solid and liquid = 8–9 oz
1 serving = 1/5 grapefruit and sugar

Variety Pulp color Seed Flavor
Duncan White Seedy Excellent
Marsh White Seedless
Ruby Pink Seedless

Composition (% edible) Raw Pulp Juice Canned sections
Moisture (%) 87–89 89–90 80
Protein (%) 0.3–0.5 0.5 0.6
Fat (%) 0.1 0.1 0.2
Carbohydrate (%) 10–11 9–10 19
Fiber (%) 0.4–1.3 0.2
pH 3.0–3.5 3.0–3.3

Sugar 2.5 tsp/4 oz unsweetened juice; ascorbic acid 40 mg/100 g; ethylene gas will destroy chlorophyll and make grapefruit appear yellow and ripe Storage: Unwrapped (80–85% relative humidity); in cool room (32–50°F); use within 1–4 weeks; short-term refrigeration is not harmful See also citrus fruit

See Part 2: Ascorbic Acid; Calcium, Daily Recommendations; Calories, Daily Recommendations; Citrus Fruit Storage; Flavoring Agents, Natural; Flavors, Beverage; Fruit and Nut Rootstock; Fruit and Vegetables, Composition; Food Composition; Fruit,
grapefruit (forbidden fruit; pamplemousse; shaddock; Citrus paradisi)

Availability; Fruit, Classification; Fruit, Composition; Fruit, Harvest Dates; Fruit, Juice Flavors; Fruit, Storage; Microwave Cooking, Fruit; Minerals, Food; pH Values of Biological Materials; Plant Foods, Composition; Potassium-Rich Foods; Standards, Processed Fruit and Vegetable Products; Storage; Thiamin; Transit Temperature; Vitamin C

grapefruit and orange (citrus salad) Canned (seed and membranes removed); approximately equal numbers of segments of each fruit; packed with natural juice of orange and sugar

grapefruit drink Simulated or diluted grapefruit juice products; amount of juice (if any) must be on label

grapefruit juice 100% grapefruit juice pressed from grapefruit, filtered, and pasteurized; juice from grapefruit (almost no rind oil), with or without dextrose (sweetened) that is pasteurized and canned

1 cup = 8.6–9 oz

Types:
  Unsweetened white
  Sweetened or sugar added white
  Unsweetened pink
  Sweetened or sugar added pink

grapefruit mix, powdered See powdered grapefruit mix

grapefruit oil, expressed (grapefruit oil, cold-pressed; oil of shaddock) The oil expressed from the peel of Citrus paradisi; used as a flavoring agent for food

Storage: full, tight, glass container in a cool, dark place
See Part 2: Grapefruit Oil Composition; Grapefruit Oil Properties

 grapefruit soda Sweetened carbonated water, grapefruit juice, and a small quantity of lemon juice

 grapefruit wine Wine, brandy, cordials, or citrus spirits made from grapefruit juice and sugar

 grape, green Storage: refrigerate, in plastic bag, in crisper; will keep approximately 1 week

 grape jubilee Canned, Thompson, seedless grapes that are artificially colored and flavored and sometimes spiced

 grape juice The juice from grapes; usually combined with approximately 2% sugar

1 cup, canned = 8.8 oz

Types:
  Amber—Catawba grapes (clarified by sulfuring)
  Purple—Concord grapes

 grape leafhopper (Erythroneura comes) A small, jumping insect that is white or pale yellow and has red or yellow markings; they suck juice from the grape leaves and cause white blotsches that later change to brown; host plants are grape, apple, Virginia creeper, and other plants; the damage caused by sucking the sap is reduced vine growth and sugar content of grapes

Control: insecticide

grape leaves (vine leaves) The young leaves from grapes used as a vegetable; available fresh, in brine, and canned; are often stuffed with rice or used to wrap food fillings

 grape mealybug (Pseudococcus maritimus) A whitish insect with a cottony-white coating; approximately ½ in. long when fully grown; crawlers (young) present in early spring and again in early summer. They suck juice from canes, stems, and berries of grapevines, which weakens the plant; also pest of the pear; honeydew is deposited on fruit on which a sooty mold develops

Control: Applications of parathion or malathion

Grape-Nut Flakes A ready-to-eat cereal; fiber 11.1%; sugar 13%

1 cup = 135 g

Grape-Nuts A ready-to-eat breakfast cereal made from wheat flour and malted barley, rusk-type material; uses endosperm, 40% of bran, and all of the embryo; sugar 7%

grape pear See rock medlar; service berry

grape phylloxera A small, aphidlike winged insect that is orange or yellowish brown, has red eyes, and is up to ½ in. long; young on foliage are yellow and soft-bodied and live inside galls or swellings; also causes galls when it attacks grape roots (sucks juice from roots) and foliage.

Control: Applications of lindane may control this insect

grape, pomace (marc) Composition (dehydrated): dry matter 91%; protein 12%; fat 7%; fiber 29%; ash 9%

grape rootworm A small, hairy, chestnut brown beetle, approximately ½ in. long; white, brown-headed, hairy, curved larvae that infest and damage the roots of grapevines; the adult makes a chainlike pattern of holes in leaves.

Control: insecticides

grape skin extract A food additive used to color (purple-red) beverages

grape sugar See glucose

grapevine aphid A tiny, dark brown aphid that sucks sap; appears mostly in dry weather; plant hosts are grapes, black haw, and others.

Control: Keeping vines vigorous and spraying vines with parathion or malathion

 grape (wine) vinegar A vinegar made from the juice of grapes

Composition (min.): acetic acid 4%; grape solids 1%; grape ash 0.13%

graphite A form of carbon that is often used as a lubricant

graphite A rough tasting brandy distilled from fermented grape pomace

GRAS [generally regarded (recognized) as safe] An acronym used by the Food and Drug Administration in classifying food additives; “any...substance ...generally recognized, among experts qualified by scientific training to evaluate its safety, as having been adequately shown...to be safe under the conditions of its intended use”

grass Any of a large group of plants of the order Gramineae, including cereal grains

grass carp (Ctenopharyngodon idella) A food fish
grasser  Cattle direct from pasture
grass-fed beef  Cattle fed on the range and not brought to the feedlot for finishing; fat will often have a yellow cast from the carotene (vitamin A) in the grass
grasshopper  (Melanophus spp.) A brown, gray, black, or yellow insect with strong hind legs; up to 2 in. long; most are strong fliers; will eat large, ragged holes in the leaves and stems in many cultivated crops
grass pea  See chickling vetch
grass tetany  Muscular convulsions caused by low blood levels of magnesium or calcium; caused by high levels of potassium in grasses that tie up these minerals
Treatment: calcium gluconate or magnesium sulfate
grass peas  See chickling vetch
grassy  A bitter or astringent flavor that suggests green grass
grataron  A strong-flavored, valencay-type cheese made with goat’s milk and with a washed rind
grate  To comminute a foodstuff, especially cheese or nutmeg, by friction against a roughened surface
gratiesti  A white, dessert wine
gratin au  A browned cheese covering, for example, on potatoes
gratine  Food sprinkled with bread crumbs or cheese and broiled until brown or a crust forms
gravel  Small stones; 1 ft³, dry = 95 lb
See Part 2: Insulation, Conductivity Values
graves  Dry, white wine; (also, a red called claret); a wine of fine bouquet and good flavor; produced in the Bordeaux (southwest district of France)

<table>
<thead>
<tr>
<th>Color</th>
<th>Communes</th>
<th>Chateau</th>
</tr>
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<tbody>
<tr>
<td>Red</td>
<td>Leognan</td>
<td>Haut Brion</td>
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<tr>
<td></td>
<td>Martillac</td>
<td>La Mission Haut Brion</td>
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<td>Talance</td>
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<tr>
<td>White</td>
<td>Leognan</td>
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<td>Martillac</td>
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<tr>
<td></td>
<td>Pessac</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Villenave d’Ornon</td>
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gravid  Pregnant
gravier  A Swiss cheese made from cow’s milk
gravimetric analysis  An analysis in which results are based upon weight, for example, specific gravity
gravitational acceleration  The gravity constant \( g = 32.1717 \, \text{ft/s/s} \)
See Part 2: Constants, Fundamental
gravity  A measure of velocities and acceleration
1 gravity = 980.5966 centimeters per second per second
= 32.1717 feet per second per second
gravlaks  Salmon, smoked and pickled in a brandy-flavored brine
gravy  Cooked meat juice; sometimes thickened with flour or cornstarch
Types: beef, brown, chicken, herb, mushroom, onion, pork, and turkey
Stain removal from cloth: soak in cold water, wash, sponge with cleaning fluid if necessary
Storage: highly perishable, cover and store in refrigerator, use in 1–2 days
See Part 2: Storage Times
graviera  A hard cheese made from ewe’s milk
gray (Gy)  A unit in the International System (SI) that denotes absorbed irradiation dose; replaces the older unit rad
1 gray = 1 joule per kilogram
= 100 rad
grayback  See lake herring
gray cheese  A sour cheese made from skimmed milk and that has a gray interior and exterior color
Grayface  A crossbred ewe produced when a Border Leicester ram is crossed with a Scottish Blackface ewe
grayfish (dogfish; Squalus acanthias)  A small (average 7 lb) shark that is sold fresh, smoked, canned, and dried; its hide and liver oil are also used See dogfish; rock salmon
See Part 2: Vitamin A, Fish; Vitamin D, Fish
“grayfriar” szurkebarat  A full-bodied, medium dry, Hungarian table wine
gray leaf spot  A tomato leaf spot disease that occurs on leaves that are frequently wet; prevalent in southern states; infected leaves develop small, dark brown spots that extend through to the underside of the leaf; the spots enlarge, darken, and become glazed; in warm, moist weather it will kill all leaves except those near the tip of the branches
Control: planting resistant varieties or applying captan, chlorothalonil, maneb, or zineb.
See Part 2: Sorghum Diseases
grayling  A small, freshwater food fish similar to a trout
Type:  
Arctic—Thymallus signifer  
European—T. thymallus  
Michiganian—T. tricolor  
Montanan—T. montanus
gray mold rot  A pomegranate, strawberry, or fig rot caused by a fungus (Botryis cinerea). The disease attacks strawberries at all stages of development
Control: proper spacing and correct timing of fertilizer applications are the most important factors; fungicides are also helpful.
In pomegranate the skin becomes tough and leathery and the inner part of the fruit is darkened and disintegrated
Control: Can be retarded by temperatures below 45°F
In figs the tissue softens, juice leaks out, and a gray mycelium covers the surface
Control: growth retarded by refrigeration (40–45°F)
See botrytis rot
gray riesling  Grapes; a white, Rhine wine for table use made from riesling grapes
gray snapper  A marine fish similar to the bass
gray sole  A small flatfish with white flesh  See sole
gray trout  See sea trout
green foxtail (Setaria viridis L.)

A greenish or greenish white fruitworm

An aphid that attacks vegetables

greenfly

A food fish See Girella punctata

greenfish

pollock

green cod

See pollock

green peach aphid (spinach aphid; tobacco aphid; Myzus persicae)

Yellow-green or pinkish green, wingless and winged aphids that are also found on beets, cabbage, celery, chard, cole crops, dandelion, endive, lettuce, mustard greens, parsley, peas, spinach, and turnip; often also spreads several virus diseases

green revolution

The development in Mexico of a dwarf, stiff-strawed, high-yielding, spring wheat that has been important in increasing yields in India, Pakistan, Afghanistan, Iran, Turkey, and Tunisia; principles now are being applied in other countries; new high-yielding or greater nutritional value varieties of traditional crops combined with some fertilizer was introduced into food-deficient countries and resulted in a dramatic increase in food production See Borlaug, Norman

green (drip) room

A room where temperature and humidity are controlled to encourage fermentation; used before product is placed in drying room
greens (pot herbs) The leaves of certain vegetables that are cooked and used for food; includes leaves and stems of beet tops, broccoli leaves, chard, chicory or witloof chicory (French endive), collards, cornsalad or lamb-lettuce (fetticus), cress, dandelion, endive (escarole), escarole, head lettuce, kale, leaf lettuce, mustard greens, New Zealand spinach, parsley, sorrel, spinach, swiss chard, turnip greens

Uses: raw or cooked

1 pound, fresh = 4 servings
16 oz, canned = 2–3 servings
1 cup, cooked = 190 g (6.7 oz)
1 ½–6 lb (2 lb avg), fresh = 1 qt, canned
2–2 ½ lb, fresh = 1 qt frozen
1 bu, fresh = 12–18 lb
= 3–8 qt, canned

See Part 2: Canned Yield; Minerals, Food; Vegetable Composition; Vegetable Cooking; Vegetable Frozen Yield; Vegetables, Cooking Frozen; Vegetable Storage

green shrimp Raw shrimp in the shell

green sloke An edible seaweed

green tea Tea made from leaves that have been steamed, rolled, and dried without fermentation; fired immediately after picking; lowest in caffeine content.

A beverage that is greenish yellow, bitter, astringent, has little aroma or flavor, and good body

Types:
- China pouchong—delicate aroma and taste
- Gun powder green—picked as young, budding leaves and rolled into tight balls (to improve keeping quality); produces a tea with clear liquor, penetrating flavor, flowery taste, and sharp body
- Imperial
- Lung ching green dragon—long grained, velvet textured
- Panfried Formosa—light in cup, mellow, tart
- Panfried Japan—sweet, clear, and soothing
- Pinhead gunpowder—tiny, tightly rolled, pleasing aroma
- Young hyson
- Zen—mystical aroma

Green tea is prone to staleness

Green turtle soup A soup made from turtle stock, turtle meat, browned flour, and seasoning

green weight The weight of fresh, uncured, uncooked meat (bone-in, semiboneless, or boneless) before processing

green white An egg infected with Pseudomonas; in the advanced stages the white takes on a greenish cast

green wine A carbonated, just ripe, red or white grape juice wine

grenache A grape used to make rosé wine

grenadilla See granadilla; passion fruit

grenadin Larded and braised slices of veal

grenadine Liquid sugar made from pomegranate juice

grenadine syrup A syrup made from pinkish red juice of the pomegranate

grevesc Swiss cheese made from cow’s milk

GRF See growth hormone releasing factor peptides

grid A controlling element in a tube; usually between the cathode and anode

griddle A flat utensil for frying or broiling

See Part 2: Broiling Griddle, Meat

gridle cake A pancake made from flour (1 ½–2 parts by volume), liquid (1 part by volume), leavening agent, salt, and sometimes eggs and/or fat and/or sugar; originally made with meal and water

See Part 2: Calories, Daily Recommendations

Griess reagent A mixture of sulfanilic acid and alphanaphthylamine used to develop color in nitrite determinations See also nitrite

Grignard’s reagent An alkyl or aryl magnesium halide

grignolino A variety of grapes; a light-bodied, Italian, red, table wine made from grignolino grapes

griil To broil See also broil

griilkorv A moist, cooked, smoked Swedish sausage made from finely chopped, mildly seasoned (potato starch, skimmed milk powder), beef and pork and stuffed into a peableable, pork casing

grillkorvett A moist, cooked, smoked Swedish sausage made from finely chopped, medium seasoned (potato starch, skimmed milk powder), beef and pork and stuffed into a peableable casing

Composition: fat 11%

griipolse A moist, cooked, smoked Norwegian sausage made from finely chopped, mildly seasoned beef and pork that is stuffed into a casing

griilpylsa A moist, cooked, smoked Icelandic sausage made from finely chopped, medium seasoned beef and pork with pork fat added and stuffed into an artificial casing

griise Salmon returning from the sea to freshwater for the first time

Grimes Golden A variety of apple that are in season from September to December; excellent sauce and eating apples, and fair to good cooking apples

grind To reduce to small pieces, usually with a machine designed for the purpose; pulverize; mince; comminute; size from coarse to fine, for example, coffee, meat

gris de lille (puant de lille; puant macere) Very strong flavored (long maturation) cheese made from cow’s milk

griskin 1) Backbone area of pork. 2) Thin slices of loin

grissini 1) Salt sticks. 2) Bread sticks; crisp pencils of French bread; Italian bread

grist See beer

gristle A smooth, elastic cartilage that is undesirable in cooked meat

gristly Cartilaginous-like texture

grits (hominy grits) Coarsely ground grain (often buckwheat or corn) that has the bran and germ removed (largely endosperm)

1 dry cup = 180 g

Dry composition: fiber 10%

See corn grits; hominy; oat
grits, by-product (hominy feed)

<table>
<thead>
<tr>
<th>Composition</th>
<th>Grits by-product</th>
<th>Dent white grits by-product</th>
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<tbody>
<tr>
<td>Dry matter</td>
<td>90</td>
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<td>Protein</td>
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</tbody>
</table>

**gritty** Containing hard, sand-like particles

**grk** A strong, white wine

**great** Oatmeal, sometimes whole and sometimes crushed; grain without hulls; husked oats or wheat; kernels of any grain; often barley, buckwheat, or oats

**grog** A mixture of rum and water

**grosela** (gooseberry; otakeiti) A green acidic fruit grown on trees; eaten stewed with sugar

**gross national product** (GNP) Total market value of a country’s output of final goods and services for a year; can be in either current or constant dollars

**grottenhof** See Limburger cheese

**ground beef** Comminuted skeletal beef, normally 30% fat; chuck averages 20% fat; an uncooked, unsmoked American sausage made from medium to coarsely chopped, restructured, ground, pressed, formed, molded, or sliced beef with no added water, binders, or extenders; max. check meat 25% See also hamburger

See Part 2: Beef Cuts; Beef Retail Yield; Broiling

**ground beef patties** Shaped meat made from ground fresh or frozen beef

**ground beetle** Usually a dull black or brown, long insect that has an oval body and narrow head; larvae have slender, flattened bodies that taper slightly at the tail and contain two spines or bristles at the hind end; beneficial because they feed on caterpillars and other insects

**ground cherry** See gooseberry

**ground color** The color of the “skin” of a developing fruit, which may be blushed, striped, or washed with a different over color; basic or background color before ripening; often can be seen beneath or between the ripened color

**ground furze** See rest harrow

**ground glass joint** Standard taper all are a 1:10 taper; first number is diameter (in mm) of the large end; second number is length of ground zone (e.g., 24 = 24 mm in diameter large end of ground zone and ground zone is 40 mm in length). Ball and socket: first number is ball diameter in mm; second number is inside diameter of tubing

**ground lamb** See Part 2: Lamb Cuts

**ground lean** See Part 2: Meat Composition

**ground limestone** A liming material composed of 80–95% CaCO₃; each pound has the neutralizing equivalent of 0.85–1.00 lb of CaCO₃ (or approximately this quantity of dolomitic limestone)

**ground meat** Comminuted meat; usually made by passing it through a machine equipped with a worm or screw of decreasing flight that forces the meat through a cutting die

Storage: Coldest part of refrigerator; use within 1–2 days

See Part 2: Meat, Frozen Storage; Meat, Servings per Pound

**groundnut** See peanut

**ground nut, bambara** (madagascar nut; Voandzaeia subterranea) A semiarid legume that forms its fruit underground; similar to groundnuts except it contains little oil; unripe seeds are eaten fresh; ripe seeds are used as pulse

**groundnut, Kersting’s** (Kerstingiella geocarpa) Small, annual, semiarid legume with underground fruiting; similar to the barbama ground nut; both the unripe and mature seeds are used as pulse

**ground rot** See soil rot

**grounds** (dregs) The ground coffee bean remaining after having been extracted with water

**groundsel** A plant having a toxic principle See Part 2: Poisonous Plants

**ground substance** Aqueous matter containing connective tissue and surrounding the cell See Part 2: Connective Tissue Proteins

**group** 1) One of the major vertical divisions of the Periodic Table of elements. 2) An uncharged combination of two or more elements that acts as a unit in a chemical reaction, for example, hydroxyl group (OH), sulfate group (SO₄), carbonate group (CO₃), and carbonyl group (C=O). When such a group is ionized it acquires an electric charge and is then called a radical. See also alkyl group; aryl group

**grouper** (aguaji; black; cabrillas; chernas; gag; guasas; hinds, Jew fish; red; scamp; speckled hind; yellowfin; Epinephelus morio) Any of a number of lean fish that resemble the sea bass; caught in the south Atlantic and Gulf; a finfish that has light meat and very light, delicate flavor

1 fillet = ½–2 pounds

Oceania, syn. hapuku (Australia)—Polyprion oxygeneios

Atlantic—Epinephelus spp.

Composition (raw): moisture 79%; protein 19%; fat 0.5%; ash 1.2% See sea bass

**grouping orders** Special price reductions obtained by the buyer when offering the supplier a “package” order for all items on a group of similar products

**grouse** (European—Lagopus scoticus; Tetraoninae) A game bird used for food

Type

Black—Europe

Blue—U.S.

Bob white (quail in north and partridge in south)—U.S.

Caperellia—Europe

Dusky—U.S.

Franklin’s—northwest U.S.

Prairie chicken—North America
Ptarmigan—North America
Red—Europe
Ruffed (partridge in north and pheasant in south)—North America
Spruce—northern Canada
groviera A Swiss cheese made from cow’s milk
growing degree days (GDD; heat unit) A measure of earliness or lateness; one unit for every degree (Fahrenheit) that the average daily temperature is above 40°F, e.g.

<table>
<thead>
<tr>
<th>Average daily temperature</th>
<th>GDD</th>
</tr>
</thead>
<tbody>
<tr>
<td>41°F</td>
<td>1</td>
</tr>
<tr>
<td>65°F</td>
<td>25</td>
</tr>
</tbody>
</table>
growing season See Part 2: Fruit, Growing Season, Storage Life
growler 1) Container (usually a quart) for holding beer 2) Largemouth, black bass
growth An increase in size and weight; irreversible increase in physical attributes
growth crack Deep cracks around the stem scar on tomatoes
growth factor A substance that an organism cannot synthesize and that must be supplied for growth of the organism
growth hormone See somatotropin
growth hormone releasing factor (GRF) peptides Induces somatotropin release
grozdova A brandy
grub An insect larva or chrysalis such as that of the heel fly; a parasite of cattle that makes holes in the hide in the back area
gruel A thin (almost liquid) cereal (usually strained oatmeal); thin, semiliquid mixture of oatmeal boiled in milk or water and used as food; porridge made from cereal; feed mixed with water
grumello An Italian, red wine
grumichana A Brazilian fruit
grunberger A nearly dry, white wine
grunderkäse Fermented, dried vegetables
grunello A dry, delicate, red wine
grunerkäse See glarnor
grunion smelt See smelt
grunsichmellkäse A blue cheese
grun (red mouth; Haemulidae; Pomadasyidae) Several tropical, marine fish used for food; up to 20 lb
grusarin Yogurt
grussevina A ricotta-type cheese made from cow’s milk; usually consumed fresh with herbs
gruyère A firm-textured Swiss or French Emmental-type cheese made from skimmed cow’s milk (also a whole and skimmed milk type); small wholes, 20–50 kg
Composition: moisture 33–34%; protein 29–30%; fat 32–33%; carbohydrate 0.3–0.5%; fiber 0%; ash 4–5%; sodium 95 mg/oz
gruyère cheese A semihard, light-yellow, dessert and cooking cheese from Switzerland; usually sold in small wedges wrapped in foil or flat wheels; it has a nutlike, sweet flavor and is made from partly skimmed, cow’s milk; it is ripened for 3 mo. or more; Emmental-like but with fewer, smaller, holes and a creamier texture; similar to Swiss but sharper; made from pasteurized, inoculated milk, rennet added, and scalded; not textured and pressed
1 cup, shredded = 4 oz
See Part 2: Cheese Vitamin Content; Milk and Cheese Composition; Milk and Milk Products, Vitamin Content; Vitamin A, Milk and Milk Products
gruyère de comté A Swiss cheese made from cow’s milk
gruyère processed cheese Gruyère cheese that is melted and blended with other types of cheese to produce a mild and creamy cheese
guacamole A mashed avocado mixture
guaiac 1) An antioxidant used (up to 0.1%) to retard rancidity in fats 2) A vegetable gum from West Indies.
See Part 2: Antioxidant Structure
guajaqueno A string cheese made from goat’s milk and that has long, narrow, wound fibers
guajillo A plant having a toxic principle
See Part 2: Poisonous Plants
guanabana See sour sop
guajane A nitrogenous compound found in animal and plant tissue; made by reaction of urea and ammonia

\[
\begin{align*}
\text{H}_2\text{N} & \quad \text{C} \quad \text{NH}_2 \\
\text{NH} & \\
\end{align*}
\]
guanidine A nitrogenous compound found in animal and vegetable tissue; made by hydrolysis of nucleic acids

\[
\begin{align*}
\text{HN} & \quad \text{C} \quad \text{C} \quad \text{O} \\
\text{NH}_2 & \quad \text{C} \quad \text{C} \quad \text{NH} \\
\text{C} & \quad \text{C} \quad \text{N} \quad \text{N} \\
\text{CH} & \\
\text{N} & \quad \text{N} \quad \text{N} \\
\text{C} & \quad \text{C} \quad \text{O} \\
\end{align*}
\]
guanine A nitrogenous compound found in animal and vegetable tissue; made by hydrolysis of nucleic acids

\[
\begin{align*}
\text{H}_2\text{N} & \quad \text{C} \quad \text{NH}_2 \\
\text{NH} & \\
\end{align*}
\]
guano The residue of manure of fish-eating birds; used as fertilizer
gunano phosphate The manure and dead bodies of fish-eating fowl

5’ guanosine monophosphate (guanylic acid) A flavor potentiator; also an important growth factor (an RNA nucleotide)
guanylic acid See 5’ guanosine monophosphate

guar See cluster bean

guarana A South American plant (climbing herb) used to brew a bitter-tasting drink that has 3–5 times as much caffeine as coffee; also high in tannin

guarantee A warranty by a seller under contract to a buyer to answer for the quality of the items sold and delivered

guaranteed loan An agreement by which the government guarantees repayment of a loan made by a private lender

guar flour See guar gum

guar gum (guar flour) A water-soluble gum obtained from the endosperm of the weed of a leguminous plant (Cyamopsis tetragonolobus); mol. wt., 200,000–300,000 Uses: a suspending agent, thickener (5–8 times the thickening ability of starch), stabilizer, binder, water-binding agent, and mixture aid in ice cream and to increase the resiliency of doughs; in cakes, pie fillings, cheese, canned food, beverages, icings, and dressings; also as livestock feed Storage: well-closed container See Part 2: Gum Characteristics; Gums and Gelling Agents; Gums, Physicochemical Properties; Stabilizers, Thickeners

guass See grouper

Guatemalan high grown coffee A hard-bean coffee that has a light and dry, winelike flavor

guava (Cattley guava; Psidium cattleianum; P. guajava) A small tree that produces a round, oval, oblong, or pear-shaped, green to yellow fruit (1 1/2–3 in. diameter) that becomes yellow when ripe; the pulp (white, yellow, pink, or red) is juicy, acid to sweet, pungent, and full of small, hard seeds Uses: can be eaten raw, stewed, made into tarts, jam, and jelly, canned, or made into vinegar High in vitamin C content (ascorbic acid 302 mg/100 g) and vitamin A (250 IU/100 g) Variety

Common guava—plum size; yellow in color; seed can be eaten

Indian red—eaten fresh

Pineapple

Ruby X Supreme—eaten fresh

Strawberry guava—small; red in color; white pulp; acid taste

Does not ship well

1 fresh, whole = 2.8 oz

Composition (raw): moisture 81–83%; protein 1%; fat 0.6%; carbohydrate 16%; ash 0.7%

See Part 2: Fruit Classification; Fruit Composition; Fruit Storage; Plant Foods, Composition

guava cheese See guava paste

guava paste (guava cheese) A reddish or yellowish, fragrant, very thick jam made from the guava fruit; used for dessert with crackers and cheese

gudbrandalsost A mossat-type cheese made from cow’s or goat’s milk

gudgeon (Gobio gobio) A small, freshwater food fish

guedj A strong flavored, dried, salted fish used as flavoring for food

Guernsey A breed of dairy cattle that originated on the island of Guernsey; color is shade of fawn with white markings clearly defined See Part 2: Dairy Cattle Breeds; Gestation Periods; Milk Breeds, Composition; Milk Composition

Guernsey gauche A tea bread made with currents and mixed citrus peel

gueze A sparkling, golden, sour beer

gugelhupf An open-textured sponge cake made from wheat flour and covered with chocolate or almonds

guide price An European Economic Community (EEC) trading term that is fixed annually for a 12 month period usually starting on April 1

guinea (guinea keets; keets; Nemida mealeagris) A medium-sized species of poultry similar to pheasant; raised for food; the small eggs (100 per year) are also used for food; it has dark plumage speckled with white. Guinea chicks are called baby keets. Flesh is darker in color and more gamy in flavor than chicken; sold at 15–18 weeks of age Live weight is 2 1/2–3 1/2 pounds Dressed weight is 2 1/2–2 1/2 pounds Variety

Lavender—light gray or lavender plumage regularly dotted with white

Pearl—purplish gray plumage dotted with white

Splashed (Pearl or Lavender X White)—breast and flight feathers are white; remainder is pearl and lavender

White—white plumage, lighter than pearl

Classes

Young guinea—may be of either sex; has tender meat and a flexible breastbone cartilage

Mature guinea (old guinea)—may be of either sex; has toughened flesh and a hardened breastbone

Composition (flesh and skin, raw): moisture 68.90%; protein 23.40%; fat 6.45%; ash 1.25%; total carbohydrates 0.0%

See Part 2: Poultry Class

guinea corn See millet

guinea egg Average weight 1.4 oz; incubation period 26–28 days Incubator conditions:

Turn eggs 5 times per day for first 24 hr

Forced draft incubator: 99.5–99.7°F and 57–58% humidity; last week: 97°F and 60% humidity

Still air incubator: 102°F and 57–58% humidity

guinea grade See poultry grades

guinea palm See palm

guinea pig (Cavia cobaya; C. porcellus) A rodent; much used for experimental work

guinea plum A large tree with plumlike fruit that lacks the flavor or acidity of the plum

guin-hen A cross between a guinea and a chicken; usually sterile; may be as large as a chicken with a bare head and neck area
guinness A strong, dark bitter stout; a draught or bottled (less pungent in flavor and appearance), stout type of beer

guisado Stewed

guisantes See gisantes

gul A liqueur flavored with rose petals

gula malacca A brown sugar made from the coconut

gullet Throat; esophagus

gulose \((C_6H_{12}O_6)\) A water-soluble syrup that is not fermentable by yeast
See Part 2: Sugar, D-Aldehydo

gulyas A beef (or other meat) stew See goulash

gum 1) A hydrophilic colloid obtained from tropical trees and shrubs as well as from seaweeds. They are polysaccharides that, when dissolved or dispersed in water, give a viscous solution or dispersion; water-soluble thickener
Functions in food
Binding
Coating
Emulsifying
Gelling
Stabilizing
Suspending
Thickening
2) Tissue between the jaws that surrounds the teeth
3) Insoluble material formed by polymerization of fats during heating (highly unsaturated fats are most susceptible) See candu
See Part 2: Gum Characteristics; Gum Distribution; Gums and Gelling Agents, Characteristics; Gums, Physicochemical Properties; Pentosans; Stabilizers, Thickeners; Water Activity, Organisms and Food

gum acacia See gum arabic

gum Arabic (acacia; acasia gum; gumacacia; gum acacia; gum Senegal) A dried, gummy exudation from branches of the Acacia senegal or of related species Acacia (Leguminosae family) grown in the Sudan area of Africa; a mixture of Ca, Mg, and K salts of arabic acid
Uses: stabilizer, thickener, crystallization retardant, foam stabilizer, flavoring agent, processing aid, humectant, surface finishing agent, and emulsifier
Available: tears, flakes, granules, powder
Composition: max. ash 4%; max. acid insoluble ash 0.5%
Causes allergic reactions in a few people
Storage: well-closed container
See Part 2: Gum Characteristics; Gum Distribution; Gums, Physicochemical Properties; Stabilizers, Thickeners

gumbo (gombo) A soup thickened with file or okra.
See buckshot soil; okra

gumbo file Powdered, dried, green, sassafras leaves

gum dragon See gum tragacanth

gundrop About 2 \(\frac{1}{4}\) large or 20 small (1 oz) = 100 calories
See Part 2: Sugars and Sweets Composition

gum gatto See locust bean gum

gum ghatti (gatty gum; ghatti gum; Indian gum) A polysaccharide exudate from the Anogeissus latifolia tree; a general purpose food stabilizer, thickener, or texture modifier
See Part 2: Gum Distribution; Gums and Gelling Agents

gum guaiac (guaiac resin) The resin from wood of Guajacum officinale or G. sanctum
Uses: a food antioxidant or preservative
Storage: well-closed container

gum jum See tiger lilies

gum karaya (India gum; Indian tragacanth; karaya; katilo; kullo; kuterra; mucara; Sterculia) The dried exudate from the Sterculia urens tree grown in India; mol. wt. 9,500,000
Uses: an emulsifier in dairy frozen desserts, cheese, meat sausages, bakery products, and salad dressings; also used as a food stabilizer, thickener or texture modifier
Expands 100 times in volume when added to water
Storage: well-closed container
See Part 2: Gums and Gelling Agents; Gum Characteristics; Gum Distribution; Gums, Physicochemical Properties

gumming Polymerization of fat caused by heating; forms an insoluble, syrupy material; occurs more often in unsaturated fatty acids

gummy 1) An old ewe with incisor teeth broken or missing 2) Semisolid texture

gum rosin Rosin remaining after distillation of gum spirits of turpentine

Percent to use

<table>
<thead>
<tr>
<th>Food</th>
<th>Percent to use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fats and oils</td>
<td>1.3</td>
</tr>
<tr>
<td>Gravies and sauces</td>
<td>0.8</td>
</tr>
<tr>
<td>Condiments and relishes</td>
<td>0.7</td>
</tr>
<tr>
<td>Baked</td>
<td>0.2</td>
</tr>
<tr>
<td>Meat products</td>
<td>0.2</td>
</tr>
<tr>
<td>Processed fruit</td>
<td>0.2</td>
</tr>
<tr>
<td>Other categories</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Storage: tight container

gum tragans Edible gum secretion of a shrub
See Part 2: Gum Characteristics

gum tragans See locust bean gum

gunnel See butterfish
gunpowder green  See green tea
guns  See stitches
guppy (Girardinus guppyi)  A 1 1/2-2 in. long
Caribbean fish often kept in aquariums; food fish
gypsum  A substance that, when burned, forms a
white powder called plaster of Paris
gur  See sugar cane
gurdzhaani  A white wine
gurnard (gurnet)  A spiny, marine, finfish that has
white flesh and is used for food
Gray (Eutrigla gurnardus)—North Atlantic
Piper
Trigla lyra—Atlantic
T. capensis—South Africa
Red (Eutrigla cuculus)—North Atlantic
Red (Chelidonichthys kumu)—Japan
Shinning (Eutrigla obscura)—Atlantic and
Mediterranean
Streaked (Trigloporus lastoviza)—Atlantic and
Mediterranean
Yellow (T. lucerna)—Atlantic and Mediterranean
gurry  Fish offal remaining after filleting
guru nut  See kola nut
gussing  A tilsit-type cheese
gussing cheese  An Austrian, brick-type cheese made
from skimmed milk
gustation  Tasting
gustatory  Pertaining to the pleasure or sense of tast­
ing
gut  1) Intestine or alimentary canal 2) To remove the
alimentary canal
gut bread  The pancreas
gutedel  A grape; a white, Rhine-type, table wine made
from the gutedel grape
gut fat  The fat attached to the intestines
Guthion  Proprietary name for a poisonous insecticide of the phosphorus ester type
\[
\begin{align*}
\text{N} & \quad \text{S} \\
\text{N} & \quad \text{CH}_2 \quad \text{S} \quad \text{P} \quad \text{O} \quad \text{CH}_3 \\
\text{O} & \\
\text{CH}_3 &
\end{align*}
\]
gutsfleischwurst  A moist, cooked, unsmoked, eastern
German blood sausage made from fine or coarsely
chopped, medium seasoned pork and stuffed into a
beef or pork casing
gutsleberwurst  A moist, cooked, unsmoked, eastern
German sausage made from finely chopped, medium
seasoned pork liver and stuffed into a pork casing
gutted fish (eviscerated fish, drawn fish)  Fish
with guts removed
Guzerat  A strain of Brahman cattle
G value  The number of molecules charged per 100
electron volts energy transferred to the system
gymnemic acid  An acid that abolishes sweetness,
restricts bitterness, but has no effect on salty or sour
flavor
gyomiso  A fermented, yellow-brown, salty (20-25%),
fish paste condiment
gypsum (land plaster)  Calcium sulfate; not the
same as “plaster of Paris”; a fertilizer material used
to supply calcium; CaSO$_4$ 85%
See Part 2: Fertilizer Materials
gypsy  A moist, cooked, Australian sausage
gyulai  A dry, uncooked, smoked Hungarian sausage
made from medium chopped, heavily seasoned, beef
and pork and stuffed into a pork casing
gyulai kolbasz  A beef or pork pepperoni seasoned
with paprika and garlic
H  The symbol for the element hydrogen
ha  The abbreviation for hectare
habitat  The natural home of a plant or animal
hable crème chantilly  A semisoft, mild, double-cream cheese that is made from cow’s milk and covered with white mold

HACCP  Hazard analysis critical control points  See hazard analysis
haché  Minced
hackamore  A rope halter
hackberry (sugarberry)  The small, sweet fruit of an American tree; the fruit is made into jams, jellies, and preserves; the wood is good for firewood (21 × 10^6 Btu/cord (20% moisture)), medium-easy to start, and easy to split, producing light smoke, fair coals, and few sparks.
hackery  An ox cart
Hackney  A pony not over 14.2 hands, shown only at two-trot speeds (park pace, trot on), with a docked tail and the mane braided close to the neck; pulls a viceroy (a four-wheeled coach)
haddock (scrod (baby); Gadus aeglefinus; Melanogrammus aeglefinus (Atlantic); Sebastes marinus)  A lean saltwater fish that is similar to, but smaller (avg. 4 lb) than the cod, with very lean, white meat and a very light, delicate flavor, and with a firmer texture but less flavor than the cod; caught in the North Atlantic
Sizes:
   Jumbo—large haddock
   Finger—small haddock
   Large—over 2.5 lb
   Scrod (baby)—1.5–2.5 lb
   Snapper—under 1.5 lb
Available forms: canned; fresh; frozen; rizzared haddock (slightly salted, dried, and broiled); salted; smoked (finnan haddie); vinegar-cured
Types of smoked haddock:
   Arbroath smokies—smoked; closed up; round
   Finnan haddie—smoked haddock
   Flat finnans—smoked; split
Composition (raw): moisture 80%; protein 18%; fat 0.1–0.5%; ash 1.4%; cholesterol 42 mg/3 oz
See also demersal fish
See Part 2: Fish and Shellfish, Composition; Fish, Smoked-Cured; Fish, Storage; Frozen Food Storage; Minerals, Food

haddock, smoked  A lightly salted and cold-smoked haddock (whole fish, head removed, or filleted)
haem  See heme

haem-  A prefix used to indicate blood

haematinic  Pertaining to blood; a substance that promotes the formation of blood

hemoglobin  See hemoglobin

haemorrhage  See hemorrhage

hafnium (Hf)  A metallic element; at. no. 72; at. wt. 178.50; Group IVB of the Periodic Table; oxidation state +4;
   electron configuration 2–8–18–32–10–2
   orbit K L M N O P

haggreed  See hogged

haggis  A Celtic wurst; a moist, cooked, unsmoked British sausage made from medium- or coarse-chopped, medium-seasoned lamb stuffed into sheep casings; a pudding or sausage made from the pluck of an animal and other ingredients (often flour foods); a sheep stomach containing a heart pudding; a sausage

Hainan cattle  A breed of slightly brownish light gray, thoracic-humped, draft cattle that originated on Hainan Island (southern China)

hair  Can be used for fertilizer

hair felt  See Part 2: Insulation

hair seaweed (rockweed; sea wrack; Fucus spp.)  An edible seaweed that is used as a vegetable, condiment, or salad

hairtail  A food fish
   Atlantic—Scabbard fish
   Japan—Trichiurus japonicus

hairy  A variety of vetch

hairy brinjal  See hairy melon

hairy melon (hairy brinjal)  A long, green marrow that is similar to a cucumber and has white hair

hai tai  An edible Asian seaweed

Haitian natural  A mild, sweet coffee with fair body

hajdu  A provolone-type cheese made from cow’s milk

hajoshi cabernet  A soft, vigorous, perfumed, red Hungarian wine

hakari  Pickled shark

hake (deep-sea fillet; ling; red; silver; squirrel; white)  A lean, codlike fish with a fin under the throat; used for food and oil; usually dried or salted
   Atlantic (Merluccius merluccius)
   Black (M. senegalensis)—eastern Atlantic
   Cape, stockfish (M. capensis)—southeastern Atlantic; Indian Ocean
   Chilean (M. gayi)—southeastern Pacific
   Eastern Atlantic (M. polli)
   Mediterranean (M. mertensanus)
   Oceanian (M. gayi)
   Pacific (M. productus)—northeastern Pacific
hake (deep-sea fillet; ling; red; silver; squirrel; white)

Red (*Urophycis chuss*)

Silver, whiting (*M. bilinearis*)—northwestern Atlantic

Stockfish—South Africa

Southwestern Atlantic (*M. hubbsi*)

White (*U. tenuis*)—Atlantic

Composition (raw): moisture 82%; protein 16.5%; fat 0.4%; ash 1.3%

See *whiting*

hal A sorghum beer

halal To slaughter food animals under Moslem law

halbstück A wine container

1 halbstück = 132 gal

halb-und-halb (half-on-half) A citrus liqueur made using bitter orange

Halheaven season The season for peach cultivars that ripen midseason, 2 weeks before Elberta peaches

half-and-half 1) A mixture of approximately 50% whole milk and 60% cream See *cream*

1 tbsp = 20 calories

1 cup = 315 calories

See Part 2: Dairy Terms

2) Half whiskey and half water. 3) A mixture of beers. 4) A mixture of ales. 5) A mixture of stout and bitter beer

half-and-half, cream Composition (milk and cream, fluid): moisture 80.6%; protein 3.0%; fat 11.5%; carbohydrate 4.3%; ash 0.7%

half-and-half, sour Made by adding a bacterial starter culture to a mixture of milk and cream, which produces an acid flavor and a semiliquid to semisolid body; min. 10.5% milk fat

halfbeak (*Hemiramphus sajori*) A food fish See *candlefish*

half-glaze A brown sauce made with meat stock and sherry

half-life (half-value) 1) The time required for an unstable substance to lose half of its radioactivity. 2) The time required for half of a particular tissue to be replaced

half-on-half See halb-und-halb

halibut (ellbot; flatean) The largest member of the saltwater flatfish family; it may weigh from 5 to 800 lb and has lean, tender, white flesh; caught on the Pacific coast and in the North Atlantic.

Species:

- Atlantic (*Hippoglossus hippoglossus*)
- Pacific (*H. stenolepis*)

Chicken halibut is a young halibut under 3 lb

1-in.-thick steak = ½ lb

Composition (raw): moisture 74–78%; protein 16–20.9%; fat 1–8%; ash 1–1.4%

See also *demersal fish*

See Part 2: Cholesterol Control; Frozen Food Storage; Minerals, Food; Vitamin D, Fish

halibut, chicken (ellbot) A young halibut (2-10 pounds)

halibut liver oil (haliver oil) An oil obtained by steaming the livers of halibut or flounder; rich in vitamins A and D; used as a dietary supplement

halite Rock salt

**hallauer schublig** A moist, cooked, smoked Swiss sausage made from fine- or medium-chopped, medium-seasoned beef and pork stuffed into a beef or artificial casing

**halloumi** A white, brined cheese made from goat’s or sheep’s milk

**halo blight** A disease of beans causing angular, brown spots on leaves and pods and causing the seeds to become blistered

**halogen** A group of electronegative elements (Group VIIA of the Periodic Table) that includes fluorine, chlorine, bromine, and iodine

**halogeton** A plant having a toxic principle See Part 2: Poisonous Plants

**halophilic** Descriptive of microorganisms that will grow only if a very high salt concentration is present; salt-loving

See Part 2: Water Activity, Organisms and Food

**halumi** A white, brined cheese made from goat’s or sheep’s milk

**ham** The hind thigh area of a pork carcass; it may be cut in several lengths depending on desired size of the ham; a short-cut skinned ham is about 18% of the carcass; the meat may be sold fresh or cured but is usually cured and smoked. The term also refers to cured meat from this area

Ham types:

- Foreleg—picnic ham or cala
- Italian—cured and dried, not smoked; eaten without cooking
- Kentucky—dry-cured, smoked, dried, and aged
- Smithfield or Virginia—from hogs fed on acorns and peanuts; dry-cured, smoked, dried, and aged

Equivalents:

1 lb cooked ham = 3 cups bite-size pieces
1 cup, cubed, cooked = 0.5 lb
1 cup, ground, cooked = 0.5 lb
1 cup, julienne strips = 0.5 lb
1 cup, diced, smoked = 6 oz
1 cup sliced ham, cut into strips = 5 oz

**Composition**

<table>
<thead>
<tr>
<th>Ham</th>
<th>Moisture</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Ash</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chopped</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canned</td>
<td>61</td>
<td>16</td>
<td>18.8</td>
<td>0.3</td>
<td>4</td>
</tr>
<tr>
<td>Not canned</td>
<td>63.6</td>
<td>17</td>
<td>17.3</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Extra-lean</td>
<td>70.5</td>
<td>19</td>
<td>5</td>
<td>1</td>
<td>4.2</td>
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<tr>
<td>Minced</td>
<td>57.4</td>
<td>16</td>
<td>21</td>
<td>1.8</td>
<td>3.8</td>
</tr>
<tr>
<td>Regular</td>
<td>64.6</td>
<td>17.6</td>
<td>10.5</td>
<td>3</td>
<td>4.1</td>
</tr>
</tbody>
</table>

Cholesterol (boiled ham) 51 mg/2 oz; sodium 1114 mg/3 oz (85 g)

Storage: In original wrapper; refrigerate; half-ham or slices should be used within 3–5 days; whole ham should be used within 1 week.

See Part 2: Broiling Griddle, Meat; Broiling Meat; Broiling Time and Temperature; Calories, Daily Recommendations; Cooking in Liquid, Time; Ham Beetle, Red-Legged; Ham, Carving; Ham, Curing; Meat and Meat Products, Composition; Meat Composition; Meat, Frozen Storage; Meat Identification; Meat,
A ham (bone-in) that has been cooked
ham, braised
A ham (bone-in) that has been cooked in stock (e.g., champagne, white wine, madeira, port) in a closed pot

See Part 2: Frozen Food Storage; Meat Composition; Portion Size; Potassium-Rich Foods
hamburger (hamburg) 1) The general term for ground or chopped, fresh or frozen, skeletal beef (max. 30% fat). 2) An uncooked American sausage made from medium- to coarse-chopped beef that is restructured, pressed, formed, molded, or sliced, with no added water, binders, or extenders. 3) A cooked ground beef patty served with a bun
Storage: In coldest part of refrigerator; use within 1–2 days.
See also ground beef
See Part 2: Frozen Food Storage; Meat Composition; Portion Size; Potassium-Rich Foods

Ham used to prepare capocollo
ham, country A dry-cured, smoked ham produced in a rural area; maple, honey, and hickory flavors are used on some of these hams; 70-day minimum for curing, salt equalization, and drying; 4% salt in the finished product, and 18% moisture loss.

ham, country-style A dry-cured, smoked ham produced in a rural area; maple, honey, and hickory flavors are used on some of these hams; 70-day minimum for curing, salt equalization, and drying; 4% salt in the finished product, and 18% moisture loss.

ham, deviled A canned, finely ground (spreadable), sweet-pickled, highly spiced ham
Sodium content:
Deviled—253 mg/oz
Spread—258 mg/oz
See Part 2: Meat Composition

ham ends See ham portion
ham, fresh (leg of pork; pork leg) Uncured, hind leg of pork
358  ham, fully cooked

ham, fully cooked  A ham that has been cooked to an internal temperature of 150°F

ham half  The shank or butt half of a ham that has not had the center section removed.

ham, hannover  A dry-cured, boneless (top and bottom round), mildly cured ham, hand-tied and smoked for 2 days.

ham ha sauce  See harm ha sauce

ham, hickory-smoked  A ham with the flavor of hickory, produced either by smoking over hickory chips or from liquid smoke.

ham, honey-cured  A boneless ham sweetened with honey.

ham, imitation  Ham with more than 10% added curing weight.

ham, Japanese  A pork loin that has been boned, placed in an artificial casing, and smoked.

ham, laval  A dry-cured, cold-smoked ham with a delicate flavor.

hamlet  1) A large grouper (Epinephelus striatus), used as a food fish. 2) A large eel.

Hamlin  A variety of early Florida oranges.

hamma  A paste of milk and parboiled wheat; called kishk when dried.

ham, maple-cured  A boneless ham sweetened with maple syrup.

ham, maple-syrup  A ham that has been cooked and covered with maple syrup before smoking (to seal in natural juices and to produce a dark exterior).

hammerhead (Sphyrna zygaena)  A food shark.

ham, minced  A cooked, smoked meat specialty made of cured pork; ready-to-eat.

ham, nonperishable  A canned ham that has been cooked to an internal temperature of 250°F and can be stored without refrigeration.

ham, old-fashioned  A mild-flavored boneless ham that has been placed in netting and baked.

ham, Parma  A prosciutto ham that has been dry-cured, flattened, and aged (400 days).

ham, parsleyed  Pieces of cooked ham and parsley in a gelatin flavored with white wine, glazed with a jelly containing parsley.

ham, pepper  A lean, round, boneless ham that has been smoked, cooked, and rolled in a mixture of black pepper.

ham, perishable  A canned ham that has been cooked to an internal temperature of 150°F and should be stored under refrigeration; heat to 140°F for serving.

ham, Polish  A boneless, round ham (covered with a layer of fat and skin) that is smoked and cooked in water.

ham portion (ham ends)  The shank or butt portion of a ham from which the center section has been removed.

Hamprace  See Montana No. 1.

Hampshire (hog)  A meat-type breed of hog that originated in Southern England, probably from the Norfolk Thin Rind Hog; the hog is black with a 6-in. white belt that encircles the shoulders and includes the front legs.

See Part 2: Swine Breeds.

Hampshire (sheep)  A medium-wool, mutton-type breed of sheep originating in South-Central England from the Wiltshire and Berkshire Knout breeds; it has a dark brown to black face, with no horns, and a fleece grade of about ½.

See Part 2: Sheep Breeds.

ham, raw, jamon crude  A semidy, uncooked, smoked, medium-seasoned, Uruguayan whole pork ham, bone-in or boneless.

ham roll  Ham used to prepare capocollo.

ham, salad spread  Composition: moisture 63%; protein 8.7%; fat 15.5%; carbohydrate 10.6%; ash 2.5%.

ham sausage  A moist, cooked, unsmoked Iowa sausage made from medium- or coarse-chopped, medium-seasoned beef and pork stuffed into an artificial casing.

ham, Scotch  A dry-cured, aged, boneless ham with skin and fat removed; rolled and tied or stuffed into casings.

ham, serrano  A dry-cured, unsmoked ham similar to prosciutto.

ham skipper  An insect that feeds on stored meat and cheese; the adult is a two-winged fly (⅛ in. long); the larva (maggot) is yellow (⅛ in. long).

ham, Smithfield  A long-shanked ham dry-cured in Smithfield, Virginia, with salt and then smoked and dried or aged; originally produced from peanut-fed hogs, but this is no longer required.

ham, South American  A dry-cured ham that has a black exterior created by dipping in a black tar solution (to keep out the skipper fly) after processing and before drying.

hamster  A small rodent, Cricetus cricetus, used for experimental feeding tests.

hamstringing  Cutting the Achilles tendon.

ham-style bologna  Bologna that contains cubes of lean cured pork.

ham, turkey  A boneless, cured, turkey thigh.

ham, Tyrolian, with fine herbs  A bottom round of pork leg, with skin and fat, that has been salted, pressed, seasoned with dry herbs from the Alps, smoked, and dried for 6 months.

ham, Virginia  A dry-cured ham that has not been produced in Smithfield, Virginia. See ham, Smithfield.

ham, water-added  A ham with up to 10% gain in weight, due to retention of cure.

ham, Westphalian  A ham that has been cured, cold-smoked over juniper, and dried; it is thinly sliced when served.

hamworst  1) A moist, cooked, smoked Dutch sausage made from fine- or coarse-chopped, medium-seasoned pork, with coarsely chopped meat, stuffed into beef or artificial casings. 2) A moist, cooked, unsmoked Australian sausage made from medium-chopped, mildly seasoned pork not stuffed into casings.
hand 1) A unit of measurement [4 in. (10.16 cm), hand width], used to measure a horse’s height at its shoulder. 2) A cluster of bananas on the original stem. 3) The foreleg or shoulder of a food animal. 4) The British term for the picnic area of pork

Handbook No. 8 A USDA publication that lists the composition of foods

hand cheese A sour cheese made from skimmed cow’s milk and buttermilk, with a pungent odor and sharp flavor; it is molded by hand, thus the name.

handkäse A low-fat, high-protein, semisoft cheese that is hand-molded; the rind may be smooth or covered with bacterial or mold smears.

hand mating Breeding a specific sire to a specific dam

hand-to-mouth buying Buying over a short period of time to meet immediate requirements

hanging Ageing meat in a cool place to tenderize the meat and to increase the flavor

hanging tender (hanging tenderloin; hang tender) A pillar of the diaphragm muscle located close to the kidney; used as a by-product item; on the left, or “open,” side of a beef carcass; usual weight 2–4 lb; length 1 ft

handara kanzo A type of fula

Hanss A variety of clingstone peaches

Hanus iodine number See iodine value analysis

Han-Yang A fat-tailed, polled, white-fleeced (carpet grade) breed of sheep; used for wool and mutton and found in Honan Province (northeastern China)

hao yu An oyster sauce

haploid Having a single set of chromosomes

hapt- A prefix used to indicate touching or seizing

haptule A Sri Lankan tea

Harbin White A white, prick-eared pig found in Har-tang Kiang Province, China, produced by crossing Yorkshires with native stock

hard 1) A subjective term used to describe the maturity or ripeness of fruit that will not give when pressed; sometimes called mature green. 2) Describes wine with an excess of tannin

hard butter A processed fat, with a high solid-fat index, that is brittle at room temperature and has a narrow melting range; used in confections

hard candy Three or four ½-in. diam. candy balls (1 oz) contain 110 calories.

hard cider Alcoholic, fermented apple juice See cider

hard coal Anthracite

hard cracker See hard tack

hard-cured Describes fish that have been dry-salted and dried to a moisture content of 40% or less

hard end (black end) A physiological disorder of the pear; the fruit is hard, rounded, and often black on the blossom end

hard glass Glass that has a high melting point and a low coefficient of expansion and that will withstand thermal shock

hardhead See croaker

hardiness 1) The ability of plants to withstand low-temperature injury to woody tissue. 2) The ability of fruit buds to withstand cold injury

hardness A textural property related to the force required to deform a material; the resistance of a material to penetration by any of several types of needle-like instruments; the hardness of metals is measured with the Rockwell and Brinell testers; softer materials are measured with the Shore Durometer.

hardness of water A measure [in parts per million (ppm)] of the presence of bicarbonates, sulfates, chlorides, and silicates of calcium, magnesium, and iron in water that form insoluble precipitates with soap; a precipitation of the salts can be obtained by the following reactions:

Heat:

$$Ca(HCO_3)_2 \rightarrow CaCO_3 + H_2O + CO_2$$

Lime:

$$Ca(HCO_3)_2 + Ca(OH)_2 \rightarrow 2CaCO_3 + 2H_2O$$

Washing soda:

$$Ca(HCO_3)_2 + Na_2CO_3 \rightarrow CaCO_3 + 2NaHCO_3$$

$$CaSO_4 + Na_2CO_3 \rightarrow CaCO_3 + Na_2SO_4$$

Phosphates:

$$3Ca(HCO_3)_2 + 2Na_3PO_4 \rightarrow Ca_3(PO_4)_2 + 6NaHCO_3$$

$$3CaSO_4 + 2Na_3PO_4 \rightarrow Ca_3(PO_4)_2 + 3Na_2SO_4$$

Silicate:

$$Ca(HCO_3)_2 + Na_2O \cdot Al_2O_3 \cdot 2SiO_2 \cdot 6H_2O \rightarrow$$

$$CaO \cdot Al_2O_3 \cdot 2SiO_2 \cdot 6H_2O + 2NaHCO_3$$

Regeneration of silicate:

$$CaO \cdot Al_2O_3 \cdot 2SiO_2 \cdot 6H_2O + 2NaCl \rightarrow$$

$$Na_2O \cdot Al_2O_3 \cdot 2SiO_2 \cdot 6H_2O + CaCl_2$$

See Part 2: Water, Hardness

hard radiation Radiation of extremely short wavelength, including certain X-rays, gamma rays, and cosmic rays

hard rot A strawberry disease caused by a fungus (Rhizoctonia sp.) that attacks only ripe berries

Control: Proper spacing and correct timing of fertilizer applications are the most important preventive measures; fungicides are also helpful.
harvest index

The ratio of grain weight to the total aboveground plant dry weight, e.g., if the grain weight is one-half the total weight of the plant, then the harvest index is 0.5 and the grain-straw ratio is 1.

hard sauce

An uncooked dessert sauce that is made from butter, sugar, and sometimes flavoring and is used on fruit dishes.

hard-smoked

Describes fish that have been given long periods of cold smoke until hard.

hard tack (hard cracker; pilot's cracker; ship biscuit)

A flat-shaped, low-moisture, crisp bread made from whole-meal grain; air is incorporated by whipping or by yeast fermentation; used for thickening stews. See cracker; ship biscuit.

hard-wheat flour

Dough made from this flour has a “rubbery” consistency and thus can hold the carbon dioxide evolved from the leavening agent; it is thus a good bread flour.

hardwood

Any dicotyledonous tree, usually broad-leaved and deciduous. See Part 2: Fuel, Heating Value.

hare

A large rodent with longer ears and legs than a rabbit. See rabbit. See Part 2: Gestation Periods.

hare's ear mustard (Conringia orientalis)

An annual weed.

haricot

1) A dish of meat. 2) The dry seed of a string bean. See bean, dry.

haricot bean (Phaseolus vulgaris)

A bean that is usually dried; dried seeds store well and are soaked in water before cooking; used to make Boston baked beans and cassoulet.

haricot of mutton

A mutton stew with beans, onions, potatoes, and turnips.

haricot vert

Green string beans.

harlequin

See neapolitan.

harm ha sauce (ham ha sauce)

A pungent shrimp sauce that is sometimes used with pork.

harracher

A soft to semisoft, strongly flavored cheese made from cow's milk and ripened by surface bacteria.

Harris hematoxylin

Made by the following procedure: 1 g hematoxylin is dissolved in 10 ml absolute alcohol; add this to a warm solution of 20 g ammonia alum in 200 ml water; boil and add 0.5 g mercuric oxide; boil 1 min and cool rapidly under faucet; just before using, add 4% acetic acid; keeps well.

harrow

A toothed framework tool that may or may not have springs; used to break the soil; a disk harrow consists of circular, rotating knives attached to a mandrel and pulled by a tractor.

harsh

1) Lacking smoothness; rough; grating; astringent; coarse-textured. 2) Describes wine with an excess of tannin.

hart

See stag.

hartkäse

See saanen.

hartshorn (buckshorn plantain; star of the earth)

A plant whose young leaves are used raw in salads.

hartshorn salt

A raising agent, e.g., ammonia salt or carbonate.

harvest index

The ratio of grain weight to the total aboveground plant dry weight, e.g., if the grain weight...
haver Oats
havercake Oatcake
Haversian canals Blood-vessel-carrying canals in compact bone
haw The fruit of the hawthorn bush; 1-in. diam., egg-shaped, orange-brown, dry (some varieties are juicy), and mealy
Hawaiian See Part 2: Salad Dressing and Mayonnaise Variations
Hawaiian duck Duck roasted in orange sauce with pineapple pieces
haw, scarlet The fruit of any variety of crataegus shrubs
hawthorn A thorny shrub whose red berries are used for making desserts, jams, jellies, or wine
hay The aerial part of actively growing grass, clover, or herbage that is cut (mowed) and cured (dried, usually in the sun); it can be used as a mulch if it contains no seed; seed 8–15 lb/acre
Space requirements: loose 3.3–4.4 lb/ft²; baled, 6–15 lb/ft³; chopped 5–7 lb/ft³; should not be stored while damp
See Part 2: Nutrients in Crops
hay, baled Hay in blocks of approximately the following size:
1 bale = 14 × 18 × 36 in.
= 5.26 ft³
= 14.4 lb/ft³
= 60 lb
hay cheese A French cheese made from skimmed milk and ripened on hay
haylage Low-moisture (40–60%) forage that is cut and allowed to wilt in the field and then stored as silage
Hays Converter A strain of cattle developed in Canada from Brown Swiss, Hereford, and Holstein cattle
hazard analysis The identification of sensitive ingredients, critical process points, and human factors that can affect product safety
hazel (cob; Corylus avellana) A small tree that produces round nuts in clusters (1–4); the nuts are 2 in. long; have a hard, brown shell, and are enclosed in a husk; they are similar to (sometimes smaller than) filberts and are often sold as filberts.
Kinds:
Oblong—filbertlike
Round—cobnutlike
Varieties:
Cob
Filbert
Kernels should be slightly baked before use in cakes and confectionery; also used as a forage crop for hogs
See barcelonanut; filbert
See Part 2: Minerals, Food; Protein Factors
hazel grouse See hazel hen
hazel hen (hazel grouse) A partridge-sized, Siberian game bird
hazelnut 1 cup = 4 oz

hazlet A moist, cooked, unsmoked Irish sausage made from coarsely chopped, medium-seasoned pork stuffed into an artificial casing or not stuffed into a casing
Hb The symbol for hemoglobin
H band A light area in the center of the A band in muscle fiber
H broth Used for preparation of the “H” agglutination antigen for identification of the Salmonella group
See Part 2: Microorganism, Media
HDL High-density lipoprotein See high-density lipoprotein
He The symbol for the element helium
head 1) The close-packed, involuted leaves of certain vegetables (lettuce, cabbage, etc.). 2) The seed- or grain-bearing part of a plant. 3) The foremost part of animal; the cranium
See Part 2: Pork Cuts and Uses; Poultry, Dressing Percentage
headcheese (mock brawn) 1) Made from the head (jaws, eyes, and ears removed), jowl, heart, and tongue of a hog; these are cooked, ground, seasoned, placed in crocks to jell, and eaten cold; made with cured pork and spices; jellied with bits of pepper and pimento to add color; it is very similar to sulze or souse; a brawn.
2) A moist, cooked, unsmoked, jellied American sausage made from coarsely chopped to chunked, mildly seasoned pork (beef is sometimes used), with pork by-products and (pork or calf) head meat (extenders and gelatin also permitted), stuffed into an artificial link casing or available in loaves or canned product made from meat, snouts, and/or tongues of hogs, cattle, or sheep; contains added gelatin, salt, vinegar, sugar, spices, and sodium or potassium nitrate and nitrite; max. 40% gelatin in finished product
add color; it is very similar to sulze or souse; a brawn.
and spices; jellied with bits of pepper and pimento to add color; it is very similar to sulze or souse; a brawn.
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See Part 2: Pork Cuts and Uses; Sausage Identification; Sausage, Nutritive Value; Sausage, Types
headcheese and sulze (souce; souse) A sausage product made from meat, snouts, and/or tongues of hogs, cattle, or sheep; contains added gelatin, salt, vinegar, sugar, spices, and sodium or potassium nitrate and nitrite; max. 40% gelatin in finished product
heading broccoli See cauliflower
head nematode See cauliflower
head rice Unbroken milled rice
head smut See Part 2: Sorghum Diseases
headspace The distance between the top surface of food and the body flange of a container or the closure or top of the container; the unfilled portion of a container; the space is needed because food expands during canning and freezing.
Headspace needed for canned foods:
Corn (can, cooked)—1 in.
Fruit juice
Bottles—½ in.
Jars—¼ in.
Fruits (can cooked)—¼ in.
Peas (can, cooked) = 1 inch
Shelled beans (can, cooked) = 1 inch
Tomatoes (can cooked) = ¾ inch
Vegetables (can, cooked) = ½ in.
Nonstarchy—¼ in.
Starchy—1 in.

<table>
<thead>
<tr>
<th>Headspace for container</th>
<th>Wide opening¹</th>
<th>Narrow opening²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of pack</td>
<td>Pint Quart</td>
<td>Pint Quart</td>
</tr>
<tr>
<td>Liquid pack (Fruit packed in juice, sugar, syrup, or water; crushed or pureed; juice³)</td>
<td>½ in. 1 in.</td>
<td>¾ in. 1½ in.</td>
</tr>
<tr>
<td>Dry pack⁴ (Fruit or vegetable packed without added sugar or liquid)</td>
<td>½ in. 1 in.</td>
<td>½ in. ½ in.</td>
</tr>
</tbody>
</table>

¹This is headspace for tall containers, either straight or slightly flared.
²Glass canning jars may be used for freezing most fruits and vegetables except those packed in water.
³Headspace for juice should be 1½ in.
⁴Vegetables that pack loosely, such as broccoli and asparagus, require no headspace.

**health food** Usually applied to natural or organic-type foods; may be considered a misnomer

**heart (cardiac muscle)** The muscular structure that functions as a blood pump in the body; the fibers are branched, multinucleated, small in diameter, and contain intercalated discs.

Blood flows in the following order:
1. Extremities
2. Superior and inferior vena cava
3. Right auricle
4. Right ventricle
5. Pulmonary artery
6. Lungs
7. Pulmonary vein
8. Left auricle
9. Left ventricle
10. Aorta
11. Extremities

Animal hearts may be cooked and used for food:
- Beef—the largest (3½–5½ lb) and toughest
- Veal
- Pork
- Lamb—the most tender

To prepare: wash in warm water; remove large blood vessels.

Composition: sodium 14–32 mg/oz

**heartbeat** Resting rate (beats per minute):
- Horses—35–40
- Oxen—40–60
- Hogs—55–75
- Sheep—60–80
- Goats—60–80

**heartburn** A burning sensation in the esophagus 10–15 min after eating, caused by acid liquid rising from the stomach

**heart infusion agar** See Part 2: Microorganism, Culture Media, Dairy and Food Products; Microorganism, Media

**heart rot (fruit rot)** A pomegranate rot caused by Aspergillus niger, other Aspergillus niger and other A. spp., and an Alternaria sp.; the fruit contains a mass of blackened arils and a threadlike, black line of decay from the calyx into the interior.

**heartwood** The darker, more decay-resistant wood in the center of a tree

**heat** 1) A period of sexual excitement in animals that occurs in cycles
2) To make warm; to make hot. 3) A form of energy

**heat evolution** The heat [in British thermal units (Btu) per unit weight per unit time] that is produced during the storage of fruit

**heat increment** The energy used to consume, digest, and metabolize food

**heating** See Part 2: Fuel, Heating Value

**heat-labile** Unstable to heat

**heat of fusion** The heat required to change 1 g of a solid (e.g., ice to water at 0°C) to a liquid at the same temperature; for water, 80 calories

**heat of vaporization** The heat required to change 1 g of a liquid (e.g., water at 100°C) to steam at the same temperature; for water, 540 calories

**heat transfer** 1) The rate at which heat moves into and through a solid or liquid; it is of primary importance in cooking, baking, and canning. 2) The rate at which heat is conducted away from a mechanical system by a coolant

**heat unit** See growing degree days

**heavy calfskin** A calfskin weighing between 9 and 15 lb

**heavy cowhide** A cowhide weighing over 53 lb

**heavy lap (thick lap)** A container lap formed with excess solder
heavy metal A highly toxic, dense, metallic element, e.g., cadmium, lead, or mercury
heavy soil A soil that contains silt and clay, which make it dense and fine-textured
heavy steer hide A steer hide weighing more than 58 lb
heavy water Deuterium oxide (D$_2$O)
hechsher A mark placed on a food product to indicate that it has been prepared according to the Jewish dietary laws under the supervision of a meshgiach or a rabbi
hectare (ha) A measure of surface area
1 ha = 15,499.969 square inches (in.$^2$) = 107,639.7 square feet (ft.$^2$) = 11,959.5 square yards (yd.$^2$) = 10,000 square meters (m.$^2$) = 2.47106 acres (A.; Brit.) = 2.47104 acres (A.; U.S.) = 0.01 square kilometer (km.$^2$) = 0.003861 square mile (statute).
0.404686 ha = 1 acre
hecto- The prefix for quantities 100 times larger than the base unit
hectogram (hg) A unit of metric weight
1 hg = 100 grams (g) = 10 dekagrams (dag) = 3.527 ounces (oz; avdp.)
hectoliter (hl) A unit of metric volume
1 hl = 100 liters (l) = 26.417 gallons (gal) = 10 dekaliters (dal) = 3.532 cubic feet (ft.$^3$) = 2.838 bushels (bu; U.S.) = 2 bushels (bu) + 3.35 pecks (pk) = 0.1 cubic meter (m.$^3$)
hectoliter per hectare (hl/ha)
1 hl/ha = 1.1484 bushels/acre (bu/acre)
hectometer (hm) A unit of metric length
1 hm = 100 meters (m) = 328 feet (ft) + 1 inch (in.)
hectowatt (hW) A measure of power, rate of energy, and heat
1 hW = 100 watts (W)
See watt
hed-fang Straw mushroom
hedge A futures market sale made against a physical purchase or a futures market sale made against a physical sale, intended as a temporary substitute for the selling or buying of the physical commodity; any purchase or sale having as its purpose the elimination of the negative aspects of price fluctuations
hedgehog A quadruped that has spines and that may be used for food
hedge mustard See cress, American; isiqwashumbe
hedging Taking a position in futures or options that is intended as a temporary offset against a position in the physical commodity See hedge
hedonic 1) Pertaining to pleasure. 2) A scale often used in evaluating food, describing a pleasant or unpleasant feeling or the degree of like or dislike
Example of a hedonic scale:
9—like extremely
8—like very much
7—like moderately
6—like slightly
5—neither like nor dislike
4—dislike slightly
3—dislike moderately
2—dislike very much
1—dislike extremely
hedonic scale A continuum used to rank the degree of like or dislike
heel The curved portion between the body sidewall and the bottom of a glass container
heel flies See ox warbles
heeling in Placing roots in a shallow trench and covering with moist peat moss, sawdust, or soil to prevent the roots of nursery stock from drying out prior to planting
heel-of-round A boneless roast made from the area to the rear of the stifle joint; the round muscles are considerably smaller in this area and, therefore, it contains a large amount of connective tissue. See Pike's peak
See Part 2: Beef, Boneless Cuts
heggebaerlikor A cherry brandy
Hei (Ningsia Black Sheep) A breed of black or dark brown, fat-tailed sheep used for pelts, wool, and mutton; obtained by crossing Karakul rams on Mongolian ewes; found in Ningsia (Ningxia), north-central China
heida A semihard cheese, made from cow's milk, with a full, fruity flavor
heidebrot A bread made from wheat and rye
heifer A bovine female that has not produced a calf. Desirable age at time of first breeding: Jersey 16 months; Guernsey 18 months; Ayrshire 19 months; Holstein 20 months
heiferette A young cow that has had one calf or is of this approximate age
Heifer-Oid A growth-promoting implant used on slaughter heifers
height See Part 2: Body Weight
heilitz-le-maurupt A spicy, ricroi-type cheese matured in wood ashes
Heilungkiang A breed of prolific, black, lop-eared, razor-backed, large-bellied pigs raised in Heilungkiang Province, China
hektoen enteric agar See Part 2: Microorganism, Media
helene A dessert of ice cream, pears, and hot chocolate sauce
helanthin See methyl orange
helium (He) A gaseous element; at. no. 2; at. wt. 4.003; oxidation state 0; noble gas group of the Periodic Table; electron configuration 2 orbit K
helva  A sweetmeat made from sesame, honey, and butter
helzel  A dish made from stuffed neck skin of poultry
hem-  A prefix used to indicate blood
hemah  A type of butter or curd
hemat (heme)  The nonprotein radicle that combines with globin to form hemoglobin; other respiratory pigments have similar structures.
hematoma (haematoma)  A bruise, with resultant blood clotting and discoloration
hematopoietic  Pertaining to the formation of blood cells
hematoxylin  A blue stain (C_{16}H_{14}O_{6} + 3H_{2}O) containing logwood dye See also Harris hematoxylin; iron-hematoxylin solution
heme (haem)  An iron-porphyrin compound found in myoglobin or haemoglobin
hemeralopia  The inability to see in bright light
hem-  A prefix used to indicate one-half
hemicellulose  A carbohydrate of plants that is intermediate between cellulose and simple sugars; it is indigestible but may be hydrolyzed by bacteria.
hemlock (Tsuga canadensis)  A coniferous tree having a toxic principle See Part 2: Poisonous Plants
hemlock oil (spruce oil)  A nonpoisonous hemlock oil that is used for flavoring
hemmes 7-in medium  A medium used for the differentiation of Shigella and Salmonella-type organisms See Part 2: Microorganism, Media
hemoglobin (haemoglobin; Hb)  The oxygen-carrying red pigment of blood; a protein–iron complex found in red blood cells See Part 2: Histochemical Tests; Blood
Hemophilus  See Part 2: Microorganism, Media
hemoperesis  The process by which blood cells are formed
hemorrhage (haemorrhage)  To bleed
hemorrhagic septicemia  See shipping fever
Hemopoxia  An order of microorganisms that are parasites in red blood cells
hemostatic  Serving to arrest bleeding
hemp (abaca; Manila hemp; Musa textilis)  A vegetable fiber that is composed primarily of cellulose and is used for cordage; the plant also produces an inedible fruit.
1 bu hempseed = 44 lb
hemp, Mauritius (cabuya; Fueracea gigantea)  A plant fiber similar to sisal
hempseed oil  A drying oil similar to linseed oil See Part 2: Iodine and Saponification Values; Protein Factors; Seed, Chemical Composition; Titer, Fats and Oils; Unsaponifiable Matter; Unsaturated Fatty Acids
hemus  A salami made from beef and pork
hen  1) A baking chicken, fowl, or stewing chicken; a bird of this class is a mature female chicken (usually more than 10 months of age), with meat that is less tender than that of a roaster (roasting chicken) and with an inflexible breastbone tip; cooked by stewing, steaming, or braising. 2) A female crab or lobster. 3) A pewter drinking pot
hennequin (Agave fourcroydes)  A plant used to produce coarse, strong, hard fibers See sisal
henry (H)  A measure of inductance; 1 H will induce a counter-emf of 1 volt (V) when current changes at the rate of 1 ampere per second (A/s).
1 H = 1000 millihenries (mH)
henware  See badderlock
heparin  A complex carbohydrate acid that is an anticoagulant for blood; it is prepared (isolated) from liver and lungs
1 International Unit (IU; World Health Organization) = 1 USP unit
hepatic  Pertaining to the liver
hepatitis  Inflammation of the liver; a disease of the liver caused by a common, food-borne virus that is pathogenic to humans; possibly hazardous foods include raw shellfish, milk and dairy products and contaminated raw vegetables See Part 2: Infectious Diseases, Food-Borne
hepta-  A prefix used to indicate seven
heptachlor  A poisonous, chlorinated hydrocarbon insecticide; use on food crops is prohibited.
heptanal (heptaldehyde)  
\[ \text{CH}_3(\text{CH}_2)_6\text{CHO} \]
Used as a flavoring agent in food; sp. gr. 0.814–0.820
Storage: full, tight, glass container in a cool, dark place
heptanone (methyl amyl ketone)  
\[ \text{CH}_3\text{CO}((\text{CH}_2)_2\text{CH}_3) \]
2-heptanone
\[ \text{CH}_3(\text{CH}_2)_2\text{COOCH}_2\text{CH}_3 \]
3-heptanone
Used as a flavoring agent in food; sp. gr. 0.812–0.818
Storage: tight container
heptyl alcohol [CH_{3}(CH_{2})_{7}CH_{2}OH]  Used as a citruslike flavoring agent in food; sp. gr. 0.820–0.825
Storage: full, tight, glass container in a cool, dark place
heptylparaben
\[ \text{HO}--\text{COO(CH}_2\text{)}_{6}\text{CH}_3 \]
Used as an antimicrobial agent or preservative in food, including beverages, cake-type pastries, relishes, and salad dressings
Storage: tight container
herb  A flowering plant whose stem does not become woody; a soft-stemmed plant whose seed, stems,
leaves, flowers, or roots are used for seasoning food; the term also refers to the leaves (used for seasoning) of aromatic annual, biennial, or perennial, soft-stemmed shrubs grown in the temperate zone. Herbs should be ground or rubbed between the palms before use. They belong to one of the following families: Boraginaceae (borage family); Compositae (aster family); Cruciferae (mustard family); Labitae (mint family); Liliaceae (lily family); Umbelliferae (parsley family). Maximum shelf-life of dried herbs is approximately 8 months.

\[ \frac{1}{4} \text{ part dried herb} = 1 \text{ part minced fresh herb} \]

See Part 2: Herb Vinegars; Minerals (Trace), Limits; Salad Dressing and Mayonnaise Variations

herbaceous plant A plant that does not develop permanent woody tissue in the top

herbicide A chemical used to kill plants; can be selective (e.g., weed killer) or general

Types:
- Contact—causes rapid death of plant cell or tissue that it comes in contact with
- Selective—will kill only certain plants at recommended rates
- Translocated or systemic—must be transported from foliage or roots to the place of toxic action

See pesticide

See Part 2: Corn Herbicides

herbivore An animal that consumes or eats only plants, e.g., rabbits, cattle, sheep, elephants, many species of birds, some fishes, insects

herb liqueur An alcoholic beverage, with various degrees of sweetness, that is made by soaking herb extracts in a spirit base; may be consumed alone or diluted with water (may be only partially miscible, giving an opaque drink)

herb tea An all-encompassing term for a beverage made from portions of herbs or plants; plants often used are alfalfa, juniper, peppermint, and sage; parts of the plant may be used are bark, flowers, roots, and seeds.

Manufacturing steps: the plant is dried; cleaned; finely cut; mixed to blend; packaged

Most herb teas do not contain caffeine; may be used for hot or iced tea.

Storage: in covered container for up to 6 months

herd’s grass See redtop

Herdwick A hill breed of British sheep

Hereford (cattle) A breed of beef cattle that is red with a white face and underline and that has horns that curve outward and downward; originated in Hereford, England; originally imported to America by Henry Clay, Lexington, Kentucky. See also Double Standard Polled Hereford; Pollled Hereford; Single Standard Polled Hereford

See Part 2: Beef and Dual-Purpose Cattle; Gestation Periods

Hereford (hogs) A breed of meat-type hogs that is red with white faces and underlines

See Part 2: Swine Breeds

Hereford-Aberdeen-Angus cross See Aberdeen-Angus-Hereford cross

Hereford, Polled A breed that developed through natural mutation of parent horned Herefords; the polled trait is dominant

Herellea A coccoid bacteria, often occurring as a diplococcus, that has the ability to oxidize carbohydrate

See Part 2: Microorganism, Media

herkimer A smooth, aged, white, sharp, cheddar-type cheese that is dry and crumbly

hermaphrodite A flower having both male and female parts

hermaphroditic Having both sex organs in the same flower

hermetic Impervious to air or gases

hermetically In an airtight manner
dan hermetically sealed container A container that is capable of maintaining commercial sterility by inhibiting entry of microorganisms

hermit A cookie with nuts and raisins

herrgard Country-style

herrgardsost A hard, Swedish (or Swiss-type) cheese made from full or half-cream cow’s milk

herring (kipper) Any of several similar species of pelagic food fish found in the North Atlantic, Baltic, and North Pacific, including sardines, shads, alewife, thread herring, etc. Some types are used fresh, salted and pickled, or salted and smoked; others are canned (e.g., in oil, with hot peppers in oil, in mustard sauce, in tomato sauce, in barbecue sauce, in hot sauce, spiced, or in brine); may be marinated with the following:

- Allspice (whole)
- Bay leaves
- Black pepper (whole)
- Cloves (whole)
- Hot pepper
- Lemon, onion, and spices
- Mustard seed (whole)
- White vinegar

Types:
- Atlantic (Clupea harengus harengus)
- Kippered herring—lightly salted, smoked, and canned in oil
- Matjes herring—young, underdeveloped, fat herrings
- Oceania (Aldrichetta forsteri)
- Pacific (C. harengus pallasi)
- Painted lady—salted and dyed
- Red herring—heavy salted and smoked

The roe is also used. The fat content (%) of the fish varies greatly with the season of the year.

Composition (raw): moisture 69-79%; protein 17%; fat 2-11%; ash 1-2%

Composition (smoked): sodium 5234 mg/3 oz (85 g)

See also pelagic fish

See Part 2: Fish Cross Section; Fish, Smoke-Cured; Fish, Storage; Minerals, Food; Nicotinic Acid, Food; Riboflavin, Food; Thiamin, Food; Vitamin A, Fish; Vitamin A, Food; Vitamin D, Fish; Vitamin D, Food

herring, bismarck Herring in vinegar
herringbone score  Weakening lines made at an angle to and between parallel scored lines in the body of a key-opened can

herring oil  An edible fish oil obtained from herring
See Part 2: Fats and Oils, Physical and Chemical Properties; Fats and Oils, Characteristics; Iodine and Saponification Values; Unsaturated Fatty Acids

herring, pickled  Herring (Clupea harengus) that have been pickled in acid, salt, and sugar and matured for months

herring tidbits  Pickled herring

hertog van brabant  A gouda-type cheese

hertz (Hz)  The frequency (in cycles per second) of electromagnetic radiation

hervé  A soft, strong-flavored, limburger-like Belgian cheese, made from cow's milk with rennet added, with a red-brown rind

hesperidium  A subdivision of simple fruit; it has a fleshy ovary wall enclosing one or more seeds, attached to a fleshy placenta, and a leathery rind, e.g., citrus fruit
See Part 2: Fruit Classification

Hessian fly (Mayetiola destructor)  An insect that damages the central shoot of small grains and whose maggots extract juices
Control: sow late in fall

Hessische Bergstrasse  A region in central Germany that produces wine for local consumption

hetero-  A prefix used to indicate other; unlike, or dissimilar

heterocyclic  A cyclic organic compound having one or more atoms of an element other than carbon in the ring, the other element usually being nitrogen

heterogeneous  A mixture of two or more substances, whether or not they are uniformly dispersed; milk is a heterogeneous system, even when "homogenized." Heterogeneous systems can be separated by mechanical means. See also homogeneous

heterosis  Hybrid vigor; having genetic characteristics that usually allow offspring to outperform parents

heterotroph  An organism that requires complex organic compounds as a carbon source; organisms that obtain their energy by feeding on other organisms; this term includes animals and many microorganisms.

Hetianyang (Hottenyang)  A breed of fat-tailed, hardy sheep, with white fleece (carpet grade) and black or variegated head and legs, that are used for pelts, wool, and mutton; found in Sinkiang (Xinjiang), northwestern China

HETP (hexamethylytetraphosphate)  A poisonous organic phosphorus insecticide containing 10–20% triethyl pyrophosphate (TEPP)

heung kunn  See Chinese celery

HEW  The Department of Health, Education, and Welfare

hexa-  A prefix used to indicate six

hexacosanoic acid (cerotic acid)  A saturated fatty acid occurring in beeswax, carnauba wax, etc.
See Part 2: Saturated Fatty Acids

hexadecanoic acid (palmitic acid)  \( \text{CH}_3(\text{CH}_2)_{14}\text{COOH} \)
A saturated fatty acid occurring in natural fats and oils
See Part 2: Saturated Fatty Acids

hexadecatrienoic acid  See Part 2: Unsaturated Fatty Acids

hexadecenoic acid (palmitoleic acid)  \( \text{CH}_3(\text{CH}_2)_{15}\text{CH}==\text{CH}(\text{CH}_2)_7\text{COOH} \)

hexadecenoic acid (palmitoleic acid)  An unsaturated fatty acid found in many fats
See Part 2: Milk, Fatty Acids, Seasonal; Unsaturated Fatty Acids

hexadienoic acid  See sorbic acid

hexametaphosphate  A cleaning agent that has excellent calcium-sequestering power; magnesium lowers this sequestering power. It is unstable under high temperatures and high-alkaline conditions. See also Calgon; phosphate
See Part 2: Phosphate

hexanoic acid (caproic acid)  \( \text{CH}_3(\text{CH}_2)_{4}\text{COOH} \)
A saturated fatty acid in milk fat (2%); used as a sweet, cheeselike flavoring agent in food
Storage: tight container

hexyl alcohol (1-hexanol)  \( \text{CH}_3(\text{CH}_2)_{5}\text{OH} \)
Used as a sweetlike flavoring agent in food; sp. gr. 0.816–0.822
Storage: in a full, tight (antioxidant-protected), glass container in a cool, dark place

Hf  The symbol for the element hafnium

HFCS  See corn syrup, high-fructose; high-fructose corn syrup

Hg  The symbol for the element mercury (Latin, hydargyrum)

hgb  An abbreviation for hemoglobin
See Part 2: Blood

Hiangcheng  A prolific breed of small black or large black and white pigs with a sway back, large belly, and small ears; from central China

hibachi  A short-legged, cast-iron Oriental-type grill (4–20 in.) with adjustable damper and grate
hibiscus seed Seed that may be fermented in balls and used in soup and stews

hickory A hardwood that is excellent for use as firewood \((28 \times 10^6 \text{ Btu/cord (20% moisture)})\), is easy to start and easy to split, and produces light smoke, excellent coals, and few sparks

hickory nut \((Carya porcina; C. tomentosa)\) A sweet, edible nut produced by a hardwood tree of the walnut family; the husk splits into four thick, hard valves when the fruit is ripe; the shell is flesh-colored or yellow; the nut is used in confectionery; the wood is used for smoking meat.

Varieties:
- Shagbark (shag)—thin-shelled; white meat, good flavor
- Shellbark

Composition: moisture 3%; protein 13%; fat 69%; carbohydrate 13%; ash 2%

See Part 2: Minerals, Food

hickory shuckworm An insect; the adult is an inconspicuous, dark moth; the larva is pale beige or grayish white with a brownish head, is up to \(\frac{3}{4}\) in. long, and tunnels inside nuts and destroys kernels.

hide An animal pelt; the dermal layer plus hair; cattle hides weigh over 30 lb after curing, skins under 30 lb.

Space required for cattle hide in pack is 1 ft\(^3\), on floor 40 ft\(^2\); salt used per cattle hide is 40 lb; time required to cure cattle hide 30 days; average shrink on curing 15%.

See Part 2: Hide Curing; Hide, Layers; Hides, Salt Absorption

high-acid food See acid food

highball An alcoholic beverage, usually made with whiskey and served in a tall glass, e.g., to a glass with ice add the following:

1 jigger \((1 \frac{1}{2} \text{ oz})\) liquor
Soda or water
Twist of lemon peel (optional) or the juice of \(\frac{1}{4}\) lemon (optional)

Then stir. The term may also refer to a mixture of alcohol and diluent.

For example:
- Brandy and water
- Gin and soda water
- Rum and cider
- Vodka and aerated water
- Whiskey and ice

high-density lipoprotein (HDL) Biochemical messengers that carry fat (mainly cholesterol) away from the arteries

high dose In food irradiation, doses of 10 kilogram \((\text{kGy})\) or 1 megarad \((\text{Mrad})\) or more

high-fructose corn syrup (HFCS) A solution containing dextrose and fructose (as high as 90%) made by the isomerization of the glucose in corn syrup to fructose:

\[
glucose \xrightarrow{\text{glucose isomerase}} \text{fructose}
\]

(in corn syrup)

It is sweeter than sucrose or invert sugar and can be used as a calorie-reducer. See corn syrup, high-fructose

Highland A small breed of very hardy beef cattle native to the high uplands of Scotland. See Part 2: Beef and Dual-Purpose Cattle

highly erodible cropland Land that is in use as cropland and is classified by the Soil Conservation Service as class IV, V, VI, VII, or VIII

highly significant See significance

high-lysine corn (Opaque-2) A variety of corn that is higher in lysine and tryptophan and has a better amino-acid balance than regular corn. See corn, high-lysine

high-temperature short-time (HTST) A high-temperature short-time process for the pasteurization of liquids

hillesheimer A spreadable, lightly spiced, pork sausage (65% belly fat and 35% liver)

hill palm See palm

hill planting Spacing plants with enough distance between plants to permit cultivation in two directions

hilsa (hilsah; Indian salmon) A shadlike fish

hilt See gilt

hilum The point where a seed is joined to the seed case

hilus The opening in the capsule of an organ, through which the blood vessels and tubes pass

Himalayan Peak An herb liqueur

himbergeist A brandy distilled from fermented raspberries

hini A clear, mildly alcoholic, sorghum beer

hind foot See Part 2: Bone

hindquarter The rear portion of a beef carcass (less any or all of the tenderloin, shank, or flank steak) that is usually separated between the 12th and 13th ribs; it is approximately 48% of the side and contains the following wholesale cuts: round, rump, loin end, short loin, flank, kidney, and suet.

hindquarter meat Less any or all of tenderloin, shank, or flank steak and with no more than three of the following additional cuts removed: topside, silverside, thick flank, rump, or strip loin

hinds See grouper

hindsaddle A wholesale cut of veal or lamb consisting of all behind the 12th rib; the two quarters are not split.

hind shank A cut of beef or lamb. See Part 2: Beef, Boneless Cuts; Beef Cuts; Beef Round, Bone Structure; Bone; Lamb Chart

hind shank bone An animal bone made up of tibia and fibula

Hindu An adherent of Hinduism; Hindus generally do not eat meat because they believe in the transmigration of souls.

hinge-cover container A container with its cover connected by a hinge
hingino  A hard, dry, low-fat, cylindrical (2 kg) grating cheese made from cow’s milk

hinny  A hybrid animal produced by crossing a stallion with a jennet

hip  1) Haunch; the region of articulation of the femur (thighbone) with the pelvis; the lateral part (prominence) of pelvis.
   See Part 2: Bone; Lamb, Wholesale Cuts; Meat Identification; Pork Wholesale Cuts; Veal Wholesale Cuts
   2) The red fruit of the rose (Rosa canina); used for syrup or sauce
   Types: dog rose; wild rose

hip bone  See ilium

hip joint  The femeropelvic joint; there is a strong central ligament attachment.

hip loin  See loin end

hiragonic acid  \((\text{C}_{16}\text{H}_{20}\text{O}_2)\) A liquid, unsaturated (three double bonds) fatty acid found in sardine oil
   See Part 2: Unsaturated Fatty Acids

hircine  Having a goatlike odor

hiroshimana  Fermented Chinese cabbage (Brassica pekinensis)

hishio  A flavorful paste made from soybeans, often mixed with cereals

his ‘n’ hers steak  A steak cut from the chuck

histidine  A nonessential amino acid that is essential for optimal growth of infants

\[
\text{HC} = \text{C} - \text{CH}_2 - \text{CH} - \text{C} = \text{O} \\
\text{HN} - \text{N} - \text{NH}_2 \\
\text{CH}
\]

See Part 2: Amino Acids; Amino Acid, Solubilities; Corn, Amino Acids; Egg Products, Nutritive Value; Grain Analysis; Manure Analysis; Seed, Chemical Composition; Wheat, Amino Acids; Wheat Products, Amino Acid Compositions

histochemistry  The study of the composition of plant and animal tissues
   See Part 2: Histochemical Test

histogram  A graphical presentation of a frequency distribution table

histology  A microscopic study of tissue

histone  A simple protein that is strongly basic, coagulable by heat, and soluble in water, dilute acids, or alkalies, but insoluble in dilute ammonia

historical official method  A method considered to be the best available at the time of initial acceptance and in continued use over an extended period of time

hives  Various eruptive diseases of the skin that can be caused by food allergies

HLB value  Hydrophile–lipophile balance

HMM  Heavy meromyosin

Ho  The symbol for the element holmium

hobak kimchi  Acidic, carbonated vegetables

hobelkase  A very hard cheese made from cow’s milk

hochheimer  A white wine

hochstasser  A soft to semisoft, strongly flavored cheese made from cow’s milk and ripened by surface bacteria

hock  1) A large joint halfway down the hind leg of a horse; the tibia-tarsal joint. 2) Knuckle of pork. 3) Pork foreleg shank
   See Part 2: Bone; Pork Carcass, Retail Yield; Pork Chart; Pork, Cooking; Pork Cooking Methods; Pork Cuts; Pork Yield; Veal Wholesale Cuts
   4) A German wine from the Hochheim area, usually containing 10% alcohol by volume; it is made from the Riesling grape but sometimes Sylvaner and Traminer grapes are used.

<table>
<thead>
<tr>
<th>Area</th>
<th>Wine quality</th>
<th>Vineyards</th>
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<tbody>
<tr>
<td>Nahe Valley</td>
<td>Dry, steely,</td>
<td>Bad Kreuznach</td>
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<td>clean</td>
<td>Niederhausen</td>
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<td>Rütiesheim (Nahe)</td>
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<td>Nierstein</td>
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<tr>
<td></td>
<td>dessert</td>
<td>Oppenheim</td>
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</table>

5) A white wine. 6) Rhine wine See rhenish; Rhine wine

hodgil  Oatmeal dumplings for stews and soups

hoe cake  Corn bread baked over an open fire

hoechst  A mineral wax obtained by oxidizing montan (hydrocarbon extracted from lignites)
   See Part 2: Wax

hoemetz  Fermented grains, beans, and seeds

hog  Swine of either sex, 120 lb or over in weight; average dressing percentage 70% (68-75%); average 57% excluding lard

Percentage of hog:
   Carcass (68-75%)
   Edible meat (56%)
   Muscle (36%)
   Intestines and offal (21%)
   Fat in edible meat (20%)
   Bone and fat (10%)
   Head and feet (8%)
   Gut contents (5%)
2) Sheep from weaning to first shearing. 3) In British usage, a male hog castrated at an early age. See hogget.

See Part 2: Cholesterol Control; Gland Weights; Swine Breeds; Swine Market Classes and Grades; Teeth Eruption.

hagapple See mayapple.

hag bung See casing (hog bung).

hag cholera A highly infectious viral disease of swine; immunization is available.

hag, clean 1) A male pig castrated at an early age. 2) A female pig before mating.

hag dressed A lamb carcass with the head and pelt left on but with feet and viscera removed. See also hog style.

hagfish 1) Lachnolaimus maximus, a large saltwater fish. 2) Scorpaena scorfa, a large, spiny-headed saltwater fish.

hagged wood fuel Wood particles (sawdust, wood shavings, and ground bark) produced by a mechanical shredder.

hagget 1) A yearling male sheep that has never been shorn; has 1–2 permanent incisors. 2) A 1- to 2-year-old boar.

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### Hollandaise sauce

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<tr>
<th></th>
<th>Moisture (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Carbohydrate (%)</th>
<th>Fiber (%)</th>
<th>Ash (%)</th>
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<td>13.7</td>
<td>9.3</td>
<td>62.4</td>
<td>0.2</td>
<td>9.5</td>
</tr>
<tr>
<td>Made with milk and butter</td>
<td>61.2</td>
<td>3.2</td>
<td>26.8</td>
<td>7.0</td>
<td>0.01</td>
<td>1.7</td>
</tr>
<tr>
<td>Dehydrated, with butterfat</td>
<td>2.1</td>
<td>11.0</td>
<td>46.0</td>
<td>32.1</td>
<td>0.1</td>
<td>8.7</td>
</tr>
<tr>
<td>Made with water</td>
<td>83.8</td>
<td>1.8</td>
<td>7.6</td>
<td>5.3</td>
<td>0.02</td>
<td>1.4</td>
</tr>
</tbody>
</table>

### Holland gin

See Dutch gin.

hollandia An edam-type cheese.

holly A tree or shrub whose berries may be made into a coffee-like drink or fermented; the shoots may be used as a cooked vegetable.

holmium (Ho) A rare-earth metallic element; at. no. 67; at. wt. 164.94; Group IIIIB of the Periodic Table; oxidation state +3; electron configuration 2–8–18–29–8–2; orbit K L M N O P.

Holstein See holstein; Holstein-Friesian.

holstein bread A nutty-flavored whole-grain rye bread.

holsteiner (holstein; horseshoe sausage) 1) A cheese made from skimmed milk. 2) A ring-shaped cervelat-type farmer sausage made from beef (sometimes beef and pork); a semidry, cooked or uncooked, smoked, cervelat- or farmer-style American sausage made from medium- to coarse-chopped, mildly seasoned meat that is fermented and stuffed into a ring-shaped, wide beef or artificial casing; also available in large-diameter links; usually smoked and air-
dried; the term also refers to a farmer sausage with the ends tied together.

**Holstein-Friesian (black and white)** A dairy-type breed of cattle that originated in the northern part of the Netherlands and is commonly called Holstein in North America and Friesian in other countries; color is black and white (areas clearly defined); it is becoming increasingly popular as a feedlot beef animal.

See Part 2: Dairy Cattle Breeds; Gestation Periods; Milk Breeds, Composition; Milk Composition

**hom-dong** Pickled stems of red onions (*Allium accalonicum*)

**homeostasis** A tendency to maintain the constancy of an internal environment

**homeotherm** A warm-blooded organism; an organism that either uses or gives off heat to maintain its body temperature

**homestead protection** A provision that permits a foreclosed borrower to remain in the principal residence on a farm even though the land is repossessed

**hominy (corn grits)** A cereal made from coarsely ground (grits are more finely ground), dried mature kernels of regular white or yellow field corn with the bran (or hull) and germ removed. The corn is soaked and slightly cooked (which increases its size); the hard outer covering (hull or chaff) and the germ are then removed. This yields a starchy vegetable product that is served hot.

**Types:**
- Brine-pack—packed in weak brine; served as a vegetable
- Canned
  - In brine
  - Jellied—sliced and fried
- Flake—large white flakes
- Granulated—ground form similar to white corn meal but coarser
- Grits—coarse meal; broken grains
- Lye (or hulled corn)—hulls are loosened by lye water (caustic soda); whole grain milk—cooked in milk
- Pearl (coarse, samp)—large pieces; whole grain; hulls removed mechanically
- Refrigerated
- Solid-pack—usually sliced and fried

**Equivalents:**
1 cup, cooked = 8.6 oz
1 cup raw = 6 oz

**Composition (cooked):** moisture 79–80%; protein 2.2%; fat 0.2%; total carbohydrate 17.8%; ash 0.5% pH 3.9 (lye hominy 6.8–8.0); sodium 502 mg/cooked cup

See also corn; corn grits

See Part 2: Cereal Composition; Grain Products, Composition; Minerals, Food

**hominy bread** A corn bread, served hot

**hominy feed** See grits, by-product

**hominy grits (grits)** A coarse meal made from maize

**Composition (corn):**
- Regular—1 mg/cup (236 g)
- Instant—354 mg/ ½ cup (177 g)

**homo-** A prefixed used to indicate "the same"

**homocyclic** A ring compound in which all the atoms in the ring are the same element, e.g., benzene

**homogeneity (as applied to a process)** Variation in quality is attributable to chance causes only

**homogeneous** From the Latin words meaning "the same kind;" this often-misused term refers properly to substances that are of identical constitution throughout and that cannot be mechanically separated, i.e., chemical compounds. It is loosely used to mean mixtures that are uniformly dispersed in each other, but that can be separated by mechanical means. For example, copper sulfate and sucrose are homogeneous, but an alcohol–water solution is heterogeneous. See also compound; mixture

**homogenized cream** Cream that has been obtained from milk and then homogenized; it will not whip.

**homogenized milk** Milk in which the fat globules have been mechanically reduced to uniformly small particles; this is accomplished by forcing milk under pressure through a small aperture to reduce the fat to fine globules of approximately uniform size, so they will tend to form a stable emulsion or suspension; it is, however, a heterogeneous system. The fat globules are one-tenth their normal diameter and they adsorb a layer of milk protein. See also heterogeneous

See Part 2: Dairy Terms

**homolky** A soft, white cheese made from sheep's milk

**homologous series** A series of organic compounds that differ only by a CH₂ group, e.g., methane, ethane, propane, etc.

**honey** A plant nectar that has been collected and modified by the honeybee (*Apis mellifera* and *A. dorsata*), producing a saccharine substance that contains primarily invert sugar [levulose (fructose) and dextrose (glucose), from sucrose hydrolyzed by an enzyme]

**Market forms:**
- Section-comb honey—in the comb, as stored by the bees
- Strained honey—extracted and strained

Crystallization or granulation can be removed by placing the container of honey in moderately hot water (max. 140°F). Flavor and color vary according to nectar collected from the plants; honey is not recommended as a food for infants less than 1 yr old because of the possibility of infant botulism.

1 cup = 330 g (11.7 oz)

**Recipe substitutions:**
1 cup sugar = ¾–⅔ cup honey; reduce liquid by ½
1 cup honey = 1 cup molasses; omit baking soda and replace each ¼ tsp with 1 tsp baking powder
1 tbsp honey = 3 tsp sugar

One tablespoon contains 65 calories.

**Composition:** sucrose not more than 8% (normally 2%, range ½–8%); water not more than 28% (avg. 18%); ash not more than 0.25%; dextrin 0–10%; dextrose and levulose 65–80%

**Composition (strained):** moisture 17% (max. 18.6%); protein 0.3%; fat 0%; carbohydrate 82%; ash 0.2%; pH 3.9

**Properties:** sp. gr. 20/20°C 1.4225; viscosity ca. 70 poises; weight per gallon 11 lb 13 oz; calories 1380/lb; color, seven classes (but not a factor in grading)
Storage: Store in a dry place; if not, honey will absorb water and ferment; unopened, room temperature; opened, refrigerate.

See Part 2: Flavor Ingredients, Taste and Flavor Type; Honey Composition; Minerals, Food; Riboflavin, Food; Storage, Dry; Sugars and Syrups, Composition; Sugars and Syrups, Composition; Sweetness of Sweeteners; Sweetening Agents; Sweetening Compounds

doneyball A round melon, similar to a small honeydew, with a smooth to netted, white to yellow rind and green, sweet flesh
See Part 2: Fruit and Vegetable Diseases

doneyball melon A hybrid between a cantaloupe and a honeydew melon; it is oval with yellow, slightly netted skin and pink flesh; weight 2 lb

doneybee, Africanized (Apis mellifera adansonii) A hybrid bee with an aggressive stinging behavior; its sting is no more venomous than the domestic honeybee. Africanized bees swarm often and spread colonies quickly, often leaving a colony completely and moving to a new location (called absconding); they produce 50% more honey than European bees and are as effective at crop pollination.

honeyberry See mammoncillo

doney bread See carob pod

doney, chunk Pieces of comb honey with extracted honey poured over it

honey, comb (comb honey; section-comb honey) Honey as it comes from the beehive, in hexagonal wax cells built by honeybees See also reticulum

honey, cut comb Comb honey cut into sections (1 1/4 X 4 in.); the honey in the outer cells is allowed to drain prior to packaging

honey, crystallized Honey that has solidified due to the crystallization of some of the natural sugars; available as a solid mass or ground

doneydew See Part 2: Fruit Composition, Part I

honeydew melon A white winter muskmelon that is a blunt oval with smooth (sometimes netted) white to creamy yellow, thin rind, and pale greenish white to white and sweet flesh; stem does not separate from melon; keeps well; avg. 7 lb and 6- to 8-in. diam.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Fruit</th>
<th>Flesh</th>
<th>Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early-Dew</td>
<td>Oval-round,</td>
<td>Green, sweet,</td>
<td>75-90</td>
</tr>
<tr>
<td></td>
<td>med. size:</td>
<td>thick</td>
<td>days</td>
</tr>
<tr>
<td></td>
<td>5 in., 4-6 lb;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>pale green,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>smooth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Honey Dew</td>
<td>Broad oval;</td>
<td>Green</td>
<td>115 days</td>
</tr>
<tr>
<td></td>
<td>7.5 X 6 in., 5.5 lb; yellow-white rind</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Honey Drip</td>
<td>Globe; 3 lb;</td>
<td>Green-cream;</td>
<td></td>
</tr>
<tr>
<td>Hybrid</td>
<td>white rind</td>
<td>high sugar</td>
<td></td>
</tr>
<tr>
<td>Tam-Dew</td>
<td>Broad oval;</td>
<td>Green</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8 X 6 in., 6 lb; hard rind; small seed cavity</td>
<td>95-100 days</td>
<td></td>
</tr>
</tbody>
</table>

honey, extracted Liquid honey that has been removed from the comb by centrifugal force

honey loaf A meat (pork, beef) loaf that contains a minimum of 5% honey
Composition: moisture 70%; protein 16%; fat 4.5%; carbohydrate 5.3%; ash 4%
See Part 2: Sausage Identification

honey locust A tree that is excellent for firewood and sweetening Agent; manufacturing by whipping granulated honey

honey roll sausage A beef sausage that contains honey
Composition: moisture 65%; protein 18.6%; fat 10.5%; carbohydrate 2.2%; ash 4%

honeysuckle A flower frequented by honey bees; when eaten by cattle, it gives an off-flavor to milk.

honeyware (badderlock; Alaria esculenta) An edible seaweed See badderlock

honey, whipped A honey with a light, creamy texture, manufactured by whipping granulated honey

honey wine A sweet, fermented, alcoholic honey beverage, often flavored with fruit juice and spices

hon-fan Red sufu soybean curd that has been soaked in soy sauce with ang-kak

hongaarise mix A moist, cooked, unsmoked Dutch sausage made from coarsely chopped, medium-seasoned (with paprika) beef and veal stuffed into an artificial casing

hongo Teekvass

honing stone See novaculite

hoof The horny (keratin) terminal portion of the feet of horses and cattle

hoof-and-horn meal A slow-release nitrogen fertilizer

hoof-and-mouth disease See foot-and-mouth disease

hooks The points of the hips

hop (Humulus lupulus) A flower used in beer production; the plant is a perennial vine of the hemp family that is grown on a framework; resin glands at the base of the bracteoles produce lupulin and its essential oil and soft resins, which together flavor beer. The flowers are picked by hand, dried, and then baled and used in making beer, ale, and yeast; the shoots can be used as vegetables; the oil is used as a food flavoring.
Defect action level: avg. 2500 aphids/10 g
Storage: 28-32°F; 50-60% relative humidity; will keep several months
See Part 2: Flavoring Agents, Natural; Minerals (Trace), Limits; Wastes, Agricultural and Industrial

hop clover (Trifolium agrarium) An annual, early-spring-growing grass; used for pasture
Hopkins–Cole test A test for the tryptophan radical or the protein containing this radical; a purplish color is developed when this radical is treated with a magnesium glyoxylate reagent.

Hopkins, Gowland An Englishman who suggested that "accessory factors" are needed in the diet in addition to protein, carbohydrates, and fats

hops oil A volatile oil obtained by steam distillation of *Humulus lupulus* and used as an aromatic flavoring agent in food; sp. gr. 0.824–0.926

Storage: full, tight, glass container in a cool, dark place

hops, spent Can be used to supply bulk to soil and as a fertilizer

horehound (hoarhound) A weedy-looking, bitter and aromatic-tasting, perennial herb that is used in candies, confections, lozenges, beverages or drinks, salads, sauces, food flavorings, and cough remedies; it can also be used for tea.

Types:
- European black (*Ballota nigra*)
- Water (gipsywort) (*Lycopus europaeus*)
- White (*Marrubium vulgare*)

hormone Any of several organic substances secreted from the endocrine glands; they exercise specific control over the conduct, character, and development of the body. Examples are thyroxine, pituitrin, and adrenalin.

<table>
<thead>
<tr>
<th>Sex hormones</th>
<th>Male (androgens)</th>
<th>Female (estrogens)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural</td>
<td>Androsterone</td>
<td>Estradiol</td>
</tr>
<tr>
<td></td>
<td>Testosterone</td>
<td>Estrone</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Progesterone</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hexoestrol</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stilbestrol</td>
</tr>
<tr>
<td>Synthetic</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

horn A keratin sheath and core projecting from the head of cattle, some sheep, and goats

horner Cream cheese

hornworm A insect that damages tomato plants

Control: carbaryl

hors d'oeuvres Colorful and attractive dishes used as appetizers; a French term for relish; an appetizer similar to canapes except that they may not be on a hard base

horse (*Equus caballus*) An herbivorous animal of the equine family; a male is called a stallion or a horse (less common), a castrated male is a gelding, and a female is a mare. The horse has a large cecum after the true stomach, rather than a rumen preceding the true stomach. Horsemeat is often used for food in some countries; the meat is slightly sweeter and the fat slightly more yellow than beef.

Age at puberty—12–30 months

Duration of estrus—120–188 h

Frequency of ovulation—22 days; breeding habits are very seasonal

Gestation period—336 days

Mature weight—200–2500 lb

Number of females served by one male—10–60

Number of sperm in semen—200 × 10⁶/ml

Number of offspring—1 per gestation

Semen volume—75 ml/ejaculation

Time of ovulation—24–48 h before end of estrus

horse fat See Part 2: Iodine and Saponification Values; Melting Points, Fats and Oils; Specific Gravities, Fats and Oils; Titer, Fats and Oils

horse fat See Part 2: Iodine and Saponification Values; Melting Points, Fats and Oils; Specific Gravities, Fats and Oils; Titer, Fats and Oils

horse balm (*Collinsonia canadensis*) A perennial aromatic herb belonging to the mint family

horsebean See broad bean; jack bean

horseroot (Mucuna sloanet) A perennial climber whose dry seeds are used as a pulse in thickening soups

horse fat See Part 2: Iodine and Saponification Values; Melting Points, Fats and Oils; Specific Gravities, Fats and Oils; Titer, Fats and Oils

horsefish See moonfish

horsefly (gaddfly) Any of the flies of the family Tabanidae that suck the blood of animals

horse gram (*Macrotyloma uniflorum*) A legume that is grown for fodder and green manure; the dried seeds are used as a pulse and animal feed

horse mackerel A food fish

California—*Trachurus symmetricus*

Japan—*T. japonicus*

Oceania—called scad in Australia

horse meat See Part 2: Meat and Meat Products, Composition

horse mule A male mule

horse nettle A plant having a toxic principle See Part 2: Poisonous Plants

horsepower, metric (cheval vapeur; hp; 75 kg·m/s) A measure of power, rate of energy, and heat

1 hp (metric) = 735.448 watts (W; 1 W = 10⁷ erg/s)
= 542.475 foot-pounds per second (ft-lb/s)
= 75 kilogram-meters per second (kg-m/s)
= 0.98632 (U.S.) horsepower [1 hp (U.S.) = 550 ft-lb/s]
= 0.73545 kilowatt (kW)
= 0.69718 British thermal units per second (Btu/s)
= 0.17569 kilogram-calorie per second (kg-cal/s; thermal units per second)

horsepower, U.S. (hp; 550 ft-lb/s) A measure of power, rate of energy, and heat

1 hp (U.S.) = 33,000 foot-pounds per minute (ft-lb/min)
= 2545.08 British thermal units (mean) per hour (Btu (mean)/h)
= 745.650 watts (W; 1 W = 10⁷ erg/s)
= 550 foot-pounds per second (ft-lb/s)
= 76.0404 kilogram-meters per second (kg-m/s)
= 42,4175 British thermal units per minute (Btu/min)
= 10.688 kilogram-calorie (mean) per minute (kg-cal (mean)/min)
= 1.01387 metric horsepower [hp; 1 hp (metric) = 75 kg-m/s]
The plant or animal on which a parasite lives

host

The stage of development when a plant or plant part possesses the prerequisites for utilization by consumers for a particular purpose

horseshoe sausage

hot
describes wine with a peppery taste

hot break

A failure of solder at hot temperatures

hotcake

A pancake, often eaten with butter and maple syrup

hot-cross bun

A bun that contains currants, candied citrus-fruit peel, sultanas, and spices; particularly cinnamon; a cross shape is placed on the surface.

hot dog

A frankfurter, usually served in a soft bun, often with garnish (ketchup, pickles or relish) and mustard; a moist, cooked, smoked British sausage made from fine- or medium-chopped, mild- or medium-seasoned beef, lamb, pork, veal, and goat that is stuffed into sheep or artificial casings or not stuffed into a casing

hot dog, Dutch

A moist, cooked, smoked Dutch sausage made from finely chopped, medium-seasoned beef and pork stuffed into a sheep casing

hot dog, Swedish

A moist, cooked, smoked Swedish sausage finely chopped, mildly seasoned (with potato starch, skimmed milk powder) beef and pork stuffed into a peelable artificial casing

hotel rack

Unsplit rib from the forequarters of lamb, mutton, or veal See rib rack See Part 2: Lamb Chart

hot-fill method

A container is filled with product and sealed at 180–210°F and receives no further heat

hothouse lamb

A 30- to 60-lb lamb (6–10 weeks old) dropped between Oct. and Jan. and sold between Christmas and Easter

household unit

In a food consumption survey, the basic unit that consumes food taken from a common supply and usually cooks and consumes the food in common

hoven

Describes cheese that is swollen due to gas formation

HPLC

High-pressure liquid chromatography

hramsa

1) Wild garlic. 2) A full-fat, garlic-flavored cheese; a creamy, full-fat, soft, unsalted cheese made from cow's milk and flavored with garlic

hrenovke

A moist, cooked, smoked Yugoslavian sausage made from mildly seasoned beef and pork stuffed into 55–58-mm beef, sheep, or artificial casings or not stuffed into a casing

HRI

Hotel, restaurant, institution

hrossabjugu

A moist, uncooked, smoked Icelandic sausage made from coarsely chopped, mildly seasoned lamb and horsemeat stuffed into an artificial casing
h.s. At bedtime (Latin, *hora somni*)

**H₂S test strip** See Part 2: Microorganism, Media

**HTST** See high-temperature short-time

**hu-a-chai po** Pickled turnip

**huang chiu** A fortified alcoholic wine

**huan tou** A soy sauce

**hubbard** A globular or pear-shaped winter squash with yellow or orange flesh and yellow, green, blue-green, or orange skin that is hard and warty

**hubbard squash** A ridged, warty, lemon-shaped, thick-fleshed, winter squash with orange-red, blue-gray, or bronze-green skin See squash, winter

**huchen (danube; *Salmo hucho*)** A food fish

**huckleberry** (*Gaylussacia* spp.; *Myrtillus niger*)

A type of blueberry (with 10 seeds) that is large, insipid, and white or dark purple to black; it is an annual but often will reseed itself; the berry is used in pies and preserves.

**Types:**
- Bear or buck (*G. ursina*)
- Black (*G. baccata*)—often called huckleberry
- Blue (*G. baccata*)—often called blueberry
- Dwarf (*G. dumosa*)
- Purple (*G. brachyrea*)
- White or pink (*G. leucocarpa*)

**Equivalents:**
- 1 crate (24 qt), fresh = 12–18 qt, canned
  - = 32–36 pt, frozen
- 1 pt, frozen = 1.3–1.5 pt, fresh

*See bilberry; blueberry*

*See Part 2: Fruit Classification; Fruit, Frozen Yield; Minerals, Food*

**huckleberry, canned** In addition to huckleberries, the product may contain natural and artificial flavors.

**Sucrose content of syrup:**
- Extra light < 15%
- Light 15–20%
- Heavy 20–25%
- Extra heavy 25–35%

**hudelziger** A ricotta-type cheese made from cow’s milk

**hue** A dimension of color related to the wavelength (e.g., redness, greenness)

**huevos** Eggs

**huffed** Describes cheese that is swollen due to gas formation

**huffier** A tea bread that contains no fruit

**huinpo** Germinated, dried grains of maize; used as malt for chicha

**huitzle** A white, alcoholic, viscous beverage made by fermentation of the century plant (*Agave*)

**hulidan** A fermented egg

**hull (bran)** 1) The outer covering or protective layer of a grain, seed, or berry. 2) To remove the husk See glumes

*See Part 2: Corn Kernel; Rice Kernel*

**hulu mur** A sorghum-based aleha beverage

**humane slaughter** 1) All animals are rendered insensitive to pain by a single blow, gunshot, electrical, chemical or other rapid, effective means before being shackled, hoisted, thrown, cast, or cut. 2) Loss of consciousness by anemia of the brain caused by simultaneous severance of the carotid arteries with a sharp instrument

**human milk** The whole, mature fluid produced by lactating women

**Composition:**
- Moisture 87.5%; protein 1.0%; fat 4.4%; carbohydrate 6.9%; ash 0.2%

**human nutrition** The scientific discipline that is concerned with nutritional requirements, food composition, food consumption, food habits, the nutritive value of foods and diets, and the relationship between diet and health in humans

**hum choy** Chinese cabbage that has been pickled in rice-washing water

**humectant** A liquid that absorbs moisture from the air and thus maintains constant humidity in a closed container, e.g., glycerol and propylene glycol; used as a moisture conditioner or stabilizer and added to food to help retain moisture and maintains the desired level of moisture (e.g., shredded coconut). Hydration is usually related to the monosaccharide content (e.g., glycerin, propylene glycol, or sorbitol). *See also hygroscopic*

**humerus** The upper arm (or forelimb) bone, between the scapula and the ulna

*See Part 2: Bone*

**humidity** The degree of moisture in the air or other gas

**Absolute humidity**—grains per cubic feet

**Relative humidity**—the percentage of moisture in a gas compared to a saturated (100% humidity) gas

*See Part 2: Humidity, Solutions*
Hungarian food habits
Animal products—eggs; fish; pork
Carbohydrate—grain; potatoes
Dairy products—sour cream
Fruit—wide variety
Seasoning—green and red pepper; onion; paprika
Vegetables—sauerkraut
Hungarian pepper See paprika
Hungarian rizling A crisp, dry, white wine
Hungarian salami A dark red salami made from beef or beef and pork, with garlic, and aged 4–6 months; a dry, uncooked, smoked Australian sausage made from finely chopped, mildly seasoned (with garlic) beef, fermented and stuffed into artificial casings
Hungarian sausage A medium-to-coarse-chopped, uncooked, smoked or unsmoked, American sausage that is fermented and/or dry or semidry and available in links, rings, or large-diameter casings
Hungarian-type salami A dry, uncooked, smoked or unsmoked Greek sausage made from medium-chopped, medium-seasoned beef and pork, fermented and stuffed into artificial casings
Hung beef Beef that has been aged (2–4 weeks in cooler) to improve tenderness and to develop flavor
hyaline  Transparent; glassy
See Part 2: Wheat, Parts of Grain; Wheat, Parts of Grain, Vitamins

hyaluronic acid  A high-viscosity mucopolysaccharide that is found in many tissues and used to bind cells; mol. wt. 5 x 10^4 to 8 x 10^6

hybrid  The offspring of a cross between different species, varieties, or genera
hybridization  See pollination
hybridoma  The fusion of an antibody-producing cell with a tumor cell; produced by injecting an antigen into a mouse to elicit an immune response and fusing the resulting antibody cells (B lymphocytes) with tumor cells growing in a tissue culture. The antibodies produced by hybridomas are monospecific (i.e., react with a specific region of the antigen).
hybrid vigor  The tendency of crossbred offspring to perform better than the parents

hydantoin  (glycolylurea)  (NHCONHCOCH_2)  A nitrogenous pharmaceutical intermediate
See Part 2: Sanitizers

hydatid  A cyst enclosing the larva of a tapeworm

hydatid worm  A food-borne parasite  (Echinococcus granulosus)  found in dog feces

hydncarptic acid  See chaulmoogra oil

hydr-  A prefix used to indicate water

hydrate  A crystalline product made up of salts and closely associated water molecules (water of crystallization), e.g., CuSO_4 • 5H_2O and CrCl_3 • 6H_2O; in some types of hydrates (e.g., hydrated lime) the water reacts chemically with a base to form a new compound.

hydrated lime  (agricultural lime)  [Ca(OH)_2]  Builder's lime to which water has been added (slack), generating a great deal of heat; a liming material; each pound has the neutralizing equivalent of 1.2-1.35 lb CaCO_3 (or approximately this quantity of dolomitic limestone).
See Part 2: Fertilizer

hydration number  The average relative amount of water carried by an ion of one element (or a group) compared to the amount carried by another; it varies with concentration; the higher the hydration number, the slower the ion moves.

hydrator  (vegetable crisper)  The section of a refrigerator that protects fruits and vegetables from excessive drying during storage

hydrofluoric acid  An aqueous solution of hydrogen fluoride; corrosive to tissue
See Part 2: Concentration of Commercial Strengths of Acids and Bases

hydrofluosilicic acid  (fluosilicic acid)  (H_2F_6Si)  A fuming liquid; corrosive to tissue
See Part 2: Concentration of Commercial Strengths of Acids and Bases

hydrogen  (H)  A gaseous element; at. no. 1; at. wt. 1.0080; Group IA of the Periodic Table; oxidation states +1, −1; electron configuration 1s^2 2s^1 2p^1  orbit K
A diatomic gas; the most abundant element in the universe
See Part 2: Constants, Fundamental
**Hydrogenated fat** A fat that has been reacted chemically with hydrogen to stabilize or harden the fat by reducing the degree of unsaturation.

**Hydrogenated oil** See hydrogenated fat

**Hydrogenated shortening** An oil to which hydrogen has been chemically added to convert it to a fat, e.g., Crisco.

1 cup = 190 g (6.6 oz)
1 lb = 2 1/2 cups

*Storage:* keep covered; below 70°F the shelf life is 1 yr.

See also **hydrogenation**

**Hydrogenation** The saturation, or hardening, of unsaturated fats or oils by adding hydrogen to the double bond with the aid of heat, pressure, and a catalyst; this makes the product more plastic, firmer, improves the keeping quality (retards rancidity), and raises the melting and smoke points.

*See Part 2: Margarine Production*

**Hydrogen bond** A weak bond formed when hydrogen is shared between two atoms, e.g.,

\[ \text{H} - \text{O} \cdots \text{H} = \text{O} = \text{C} \]

**Hydrogen cyanide** A fumigant gas used with cereals and legumes. See hydrocyanic acid

**Hydrogen ion** (H\(^+\)) A positively charged ion with mass of 1; equivalent to a proton

**Hydrogen peroxide** (H\(_2\)O\(_2\)) A toxic liquid used to remove color in tripe (must be rinsed off); also used as a preservative in milk (0.05% or less) in some areas; used in foods as a maturing and bleaching agent, a dough conditioner, an oxidizing agent, preservative, or starch modifier, or a bactericide.

*Storage:* cool place with a stoppered vent

*See peroxide*

**Hydrogen sulfide** (H\(_2\)S) A toxic, flammable gas with an offensive odor; a weak dibasic acid

\[
\begin{align*}
\text{H}_2\text{S} & \rightleftharpoons \text{H}^+ + \text{HS}^- & K_1 = 1 \times 10^{-7} \\
\text{HS}^- & \rightleftharpoons \text{H}^+ + \text{S}^{2-} & K_2 = 1.3 \times 10^{-13} \\
\text{Total} & \text{H}_2\text{S} & \rightleftharpoons 2\text{H}^+ + \text{S}^{2-} & K_t = 1.3 \times 10^{-20}
\end{align*}
\]

**Hydrogen swell** Distortion of the end of a container because of hydrogen gas produced by a reaction between the product and the tinplate of the can.

**Hydrolysis** A by-product of the conversion of starch to dextrose

Starch \[\text{hydrolysis}\] dextrose + hydrolyzate

(from corn or grain sorghum)

**Hydrolase** An enzyme that hydrolyzes a variety of compounds by water, e.g., lipase, peptidase

**Hydrolysis** A chemical process of decomposition that involves the addition of water; often induced by the presence of an enzyme, dilute acid, or other chemical; a reaction of water with a complex organic compound in which both the water molecule and the organic molecule split, to form two simpler organic compounds, e.g.,

\[
\begin{align*}
\text{R} - \text{O} - \text{C} - \text{R} + \text{H}_2\text{O} & \rightarrow \text{ROH} + \text{HO} - \text{C} - \text{R} \\
& \text{O} & \text{O}
\end{align*}
\]

Thus, for example, proteins are hydrolyzed to amino acids.

*See Part 2: Enzyme, Food Industry*

**Hydrolyzed poultry feathers** A product obtained from treatment under pressure of feathers from slaughtered poultry; crude protein must be 70% digestible protein. See also feather

**Hydrolyzed vegetable protein (HVP)** A protein (usually soybean) that has been reduced (usually with chemicals) to amino acids; used as a flavor enhancer

**Hydromel** A mixture of honey, water, and seasoning

**Hygrometer** An instrument for measuring relative humidity; a floating device used to determine the specific gravity of liquids

**Hydronium ion** \((\text{H}_3\text{O}^+)\) An \(\text{H}^+\) ion attached to one water molecule

**Hydromorphic** Soil with the ground-water table near the surface

**Hydrophilic colloid** A macromolecular substance, such as a protein or polysaccharide, that swells by absorption of water, in some cases forming stiff gels; often an important textural component of food systems that provides water control by thickening and/or gelling. See also gel; gum; protective colloid

**Hydrophobic** Water-repellent; the opposite of hydrophilic

**Hydroponics (water culture)** A system of growing plants with their roots in water or a liquid nutrient solution rather than soil; the plants are grown in light and without soil, by supplying nutrients to the roots by immersion or spray.

Nutrient solution often used (amounts of ingredients in level teaspoons):

- Ammonium nitrate—5.5 tsp/50 gal water
- Boric acid—pinch/50 gal water
- Calcium sulfate—20 tsp/50 gal water
- Copper sulfate—pinch/50 gal water
- Iron sulfate—0.25 tsp/50 gal water
- Magnesium sulfate—13.5 tsp/50 gal water
- Manganese sulfate—pinch/50 gal water
- Monocalcium phosphate—3.75 tsp/50 gal water
- Magnesium sulfate—13.5 tsp/50 gal water
- Monocalcium phosphate—3.75 tsp/50 gal water
- Sodium nitrate—16.25 tsp/50 gal water
- Zinc sulfate—pinch/50 gal water

**Hydrostatic** Relating to the pressure exerted by a liquid, e.g., a column of water

**Hydrostatic retort** A constant-temperature retort in which pressure is maintained by a water leg through which the product is conveyed for the required processing time

**Hydroxide, amphoteric** A hydroxide that is soluble in both acids and bases, e.g., the hydroxides of aluminum, chromium, and zinc

**Hydroxide ion (hydroxyl ion)** \([\text{OH}^-]\) A radical formed by dissociation of a hydroxide compound in water solution. See also hydroxyl group
378 \( \beta \)-hydroxyalanine

\( \beta \)-hydroxyalanine  See serine

\( \beta \)-hydroxy-\( \alpha \)-amino-butyric acid  See threonine

hydroxyglutamic acid  A monoamino-dicarboxylic amino acid

\[
\begin{align*}
\text{HO} & \quad \text{C} \quad \text{CH}_2 \quad \text{CH} \quad \text{CH} \quad \text{C} \quad \text{OH} \\
\text{O} & \quad \text{C} \quad \text{H} \quad \text{NH}_2
\end{align*}
\]

hydroxycitronellal dimethyl acetal

\[
\begin{align*}
\text{HO} & \quad \text{CH} \quad \text{OCH}_3 \\
\text{CH} & \quad \text{OCH}_3
\end{align*}
\]

Used as a floral-like flavoring agent in food; sp. gr. 0.925-0.931

Storage: full, tight, glass container in a cool, dark place

hydroxylate  To replace hydrogen in a compound with a hydroxyl group

hydroxylated lecithin  Used as a clouding agent or emulsifier in food

Storage: well-closed container

hydroxyl group  \((\text{HO})\) An uncharged combination of atoms that remains unchanged in chemical reactions  See also hydride ion

4-hydroxymethyl-2,6-tert-butylphenone  See Part 2: Antioxidant Structure

\( \alpha \)-hydroxyphenylalanine  See tyrosine

hydroxyproline  A heterocyclic amino acid that is a constituent of collagen; used as a test for connective tissue content

\[
\begin{align*}
\text{HO} & \quad \text{C} \quad \text{CH}_2 \quad \text{CH} \quad \text{C} \quad \text{OH} \\
\text{H} & \quad \text{NH}_2
\end{align*}
\]

See Part 2: Amino Acids; Amino Acid, Solubilities; Manure Analysis

hydroxypropyl cellulose  A nonionic, water-soluble cellulose that is an ether derivative; a hydrocolloid used in foods as a general-purpose stabilizer, an emulsifier, a film-former, a protective colloid, a stabilizer, a suspending agent, or a thickener

Storage: well-closed container

hydroxypropylmethyl cellulose  Used as a general-purpose food stabilizer, emulsifier, or thickening agent

Storage: well-closed container

hydroxypropyl sodium carboxymethyl cellulose  Used as a foam-stabilizer in beer

hygiene  1) The science of public health and prevention of disease. 2) Sanitary practices; cleanliness

hygro-  A prefix denoting moisture

hygromycin B  A drug used as a wormer

hygroscopic  Descriptive of a liquid or solid material that picks up atmospheric water vapor and thus acts as a drying agent, e.g., silica gel; propylene glycol is a hygroscopic liquid (humectant).

hygroscopicity  The tendency of a substance to absorb or attract moisture from the air

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hymin nga-pi  A fermented, salty condiment made from shrimp paste

hyper-  A prefix used to indicate above or over, e.g., hypersensitive

hyperchlorhydria  The presence of excess hydrochloric acid in the stomach

hyperchylia  The secretion of too much gastric juice

hyperlipemia  An overabundance of lipids in the blood

hyperorexia  Abnormal hunger

hyperosmia  Extreme sensitivity to odors

hyperphagia  Consuming large amounts of food

hyperplasia  Growth by an abnormal increase in the number of cells

hypertension  High blood pressure

hyperthyroidism  Excessive thyroid activity, which increases basal metabolism

hypertonic  Having a higher concentration of solute and a higher osmotic pressure

hypertrophy  Excessive growth by an increase in the size of cells (rather than the number of cells)

hypervitaminosis  An abnormal condition due to an excess of one or more vitamins

hyposthesia  An impaired ability to perceive sensations

hypo  Sodium thiosulfate

hypose-  A prefix used to indicate under or beneath, e.g., hypodermic

hypoallergenic  Devoid of irritating properties

hypocalcemia  Low blood calcium level, resulting in convulsions (e.g., tetany, milk fever)

hypochlorhydria  Deficiency (less than 0.14%) of hydrochloric acid in gastric juice

hypochlorite  A combination of chlorine with sodium or calcium hydroxide to give desired available chlorine

hypochlorite ion  \( \text{ClO}^- \)

hypocotyl  The germ of a seed

hypoderm  See Part 2: Orange Structure

hypodermis  See Part 2: Wheat Kernel Parts

hypogaeusia  An impaired sense of taste

hypoglycemia  A low concentration of blood sugar (glucose); the normal blood sugar level in humans is 0.07-0.10%.

hypomagnesemia  Low blood magnesium level

hypophosphorous acid  \( \text{H}_3\text{PO}_2 \)

See Part 2: Concentration of Commercial Strengths of Acids and Bases
hypoproteinemia  A decrease of protein in the blood because of reduced levels in the diet or because of disease

hyposmia  An impaired sense of smell

hypostypic  Astringent or stypic

hypotenuse  The long side of a right triangle

\[(\text{hypotenuse})^2 = (\text{side})^2 + (\text{side})^2\]

hypotonic  Having a lower concentration of solute and a lower osmotic pressure

hyson  Chinese green tea

hyssop (Hyssopus officinalis)  1) A perennial, aromatic, mint-flavored herb used to season food, candy, and beverages; chopped leaves are used as a salad dressing or can be used to make a medicinal tea.

Dried flowers—used to flavor soup
Dried flower spikes—used as an expectorant
Green plant—used to flavor salads
2) Honey made from hyssop nectar. 3) A bitter-tasting herb used for tea

hysterectomy  The removal of the uterus
The symbol for the element iodine
See ampere; current
- A Latin suffix that indicates plural
IAEA International Atomic Energy Agency
IAFMM International Association of Fish Meal Manufacturers
I band Light band (isotropic) in muscle fibers
ibappo palm See palm
ibas A fruit, similar to a mango; the kernel is used to make dika or odika bread and the seed yields dika fat, which has a cacao-like flavor
Iberian moss See carrageen
ibex (Capra ibex) A wild mountain goat
ibid. Ibidem, in the same place
IBR Infectious bovine rhinotracheitis
IBRD See World Bank
icaco See coca plum
icaque See coca plum
ice 1) The solid state of water; sp. gr. 0.92; heat absorbed during melting 144 Btu/lb (80 cal/g)
   1 ft³ = 56 lb
   1 lb = 7 cubes
   = 1 party serving
See Part 2: Ice, Vapor Pressure; Freezing Rate
2) A tart, light, fluffy, frozen dessert that contains no milk fat and usually contains fruit juice, water, sugar, and sometimes egg whites and/or a stabilizer such as gelatin See also ice cream; sherbert
Composition: moisture 67%; protein 0.4%; trace fat; carbohydrate 32%; ash trace
3) To cover with icing
iceberg lettuce A variety of head lettuce with firm, compact heads and light green leaves
   1 med. head = 220 g
See also lettuce
ice cream A frozen dessert made from milk, cream, sugar (14-15%), stabilizer, flavoring, and often eggs; freezing point 12 to -5°C
Types:
   American —made with custard but not as rich as French
   French—rich in egg-yolk custard
   Philadelphia—thick cream and no eggs
Function of ingredients:
   Egg products—bind, stabilize, leaven, and thicken
   Flavoring—adds flavor
   Fruit and nuts—retard freezing
   Gelatin (or marshmallow)—stabilizes
Milk products—adds body and prevents crystallization
Starch—stabilizes
Sugar—stabilizes and prevents crystallization
Equivalents:
15 lb milk = 1 gal ice cream
2 1/3 gal bulk ice cream = 50 servings
1 1/3 gal brick ice cream = 50 servings
1 gal = 4.5 lb
1 qt = 4 cups
   = 6-8 servings
1 cup = 140 g (5 oz)

<table>
<thead>
<tr>
<th>Ice cream (qt)</th>
<th>Freezer size</th>
<th>Making and ripening</th>
<th>Salt (cups)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rock</td>
<td>Table</td>
<td></td>
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<tr>
<td></td>
<td>Rock</td>
<td>Table</td>
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<tr>
<td>2 1/2</td>
<td>15</td>
<td>1 1/3</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>20</td>
<td>1 1/2</td>
<td>2 1/2</td>
</tr>
<tr>
<td>6</td>
<td>25</td>
<td>3 1/2</td>
<td>3 1/2</td>
</tr>
</tbody>
</table>

Ice cream
French Composition

<table>
<thead>
<tr>
<th></th>
<th>10% fat</th>
<th>12% fat</th>
<th>16% fat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>60–63</td>
<td>62</td>
<td>58–63</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>3.6–4.5</td>
<td>4</td>
<td>2.6–2.8</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>16.6–19.9</td>
<td>12.5</td>
<td>16–16.1</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>21–24</td>
<td>21</td>
<td>18–21.6</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>1</td>
<td>0.8</td>
<td>0.5–0.8</td>
</tr>
<tr>
<td>Milk fat, %, min.</td>
<td>10</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Total milk solids, %, min.</td>
<td>20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>French vanilla</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>58–63</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>2.6–2.8</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>16–16.1</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>18–21.6</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>0.5–0.8</td>
</tr>
<tr>
<td>Milk fat, %, min.</td>
<td>1</td>
</tr>
<tr>
<td>Total milk solids, %, min.</td>
<td>20</td>
</tr>
</tbody>
</table>

Food solids min. 1.6 lb/gal; cholesterol 27 mg/0.5 cup; sugar 5-6 tsp/0.5 cup; calcium 97 mg/0.5 cup; sodium 75–155 mg/cup (133–175 g)
1 cup regular ice cream (approx. 10% fat)
   = 270 calories
1 cup rich ice cream (approx. 16% fat)
   = 350 calories
To remove stain from cloth: scrape off excess; soak in cold water with enzyme product; wash in hot suds; use cleaning fluid if necessary.
Storage: -15°F; storage life several months
See American ice cream; French ice cream; overrun; Philadelphia ice cream
See Part 2: Calcium Equivalents for Milk; Calories, Daily Recommendations; Cholesterol Control; Creams, Butter, and Frozen Desserts; Dairy Products, Composition; Dairy Terms; Food, Composition;
Frozen Food Storage; Milk and Milk Products, Vitamin Content; Minerals (Trace), Limits; Portion Size; Stabilizers, Thickeners

ice cream cone 1 piece = 4–5 g

ice cream, French (frozen custard; New York ice cream; parfait) Ice cream to which enough eggs have been added to give a yellow color; often additional cream is also added; made by freezing while mixing cream, milk, sweeteners, stabilizers, and egg yolks; min. 10% milk fat; min. 20% total milk solids

ice cream, New York See ice cream, French

ice cream, Philadelphia Made from light cream that has been sweetened and flavored

ice cream soda A beverage made from carbonated water or soft drink, a scoop of ice cream, and flavoring (which often gives the beverage its name)

ice cream, vanilla Regular (approx. 10% fat), hard­ened ice cream

<table>
<thead>
<tr>
<th>Composition</th>
<th>Regular (10% fat)</th>
<th>Rich (18% fat)</th>
<th>French (soft-serve)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>60.8</td>
<td>58.9</td>
<td>59.8</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>3.6</td>
<td>2.8</td>
<td>4.1</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>10.8</td>
<td>16.0</td>
<td>13.0</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>23.8</td>
<td>21.6</td>
<td>22.1</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>1.0</td>
<td>0.7</td>
<td>1.0</td>
</tr>
</tbody>
</table>

icefish (caplin) A small smelt See caplin

Iceland moss An edible lichen that is dried, ground, and made into bread

ice milk A frozen dessert made from milk, sugar, stabilizers, flavoring, and sometimes eggs

1 qt = 4 cups
1 cup = 185 g (6.6 oz)

<table>
<thead>
<tr>
<th>Composition</th>
<th>Ice milk</th>
<th>Soft-serve</th>
<th>Vanilla ice milk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>67</td>
<td>69–70</td>
<td>67–69</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>4.8</td>
<td>4.6–4.7</td>
<td>3.9–4.8</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>5.1</td>
<td>2.6</td>
<td>4.3–5.1</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>22</td>
<td>21–22</td>
<td>22.1–22.5</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>1.0</td>
<td>1.2</td>
<td>1.0–1.2</td>
</tr>
</tbody>
</table>

Milk fat 2–7%; total milk solids min. 11%; cholesterol 13 mg/0.5 cup
1 cup hardened ice milk = 185 calories
1 cup soft-served ice milk = 225 calories

See Part 2: Calcium Equivalents for Milk; Calories, Daily Recommendations

ice tea 1 gal = 16 eight-oz servings

ichang A good black tea from China

icing A coating for cakes; made from sugar, milk, and flavoring

Types:
Butter—made from butter and confectioner’s sugar
Fondant—a soft icing
Frosting—made from egg white and confectioner’s sugar

Glace—made from confectioner’s sugar, cream, and sugar
Royal—a hard, white icing
See frosting
See Part 2: Stabilizers, Thickeners
icing sugar Confectioner’s sugar
ICMSF International Commission on Microbiological Specifications for Food
icterus Yellow epidermis; jaundice id. Idem, the same
IDA See World Bank
Idaho potato See Russett Burbank
idarika Deep-fried spiced cakes or balls made from black gram or urd dal (Phaseolus mungo)
ideal flatbread A cracker, usually made without sugar

IDF See International Dairy Federation
idiazabal See aralar
idla A steamed rice cake made from fermented or unfermented dough
idli A steamed, acidic, white or yellow bread made from rice or legume flour
idose A water-soluble aldose syrup not fermented by yeast; isomeric with glucose
See Part 2: Sugar, d-Aldehyde
i.e. Id est, that is
IFAD International Fund for Agricultural Development
iflagum A tea bread
IFOP Chilean Institute for Fisheries Development
igado Organs
igba puru A fruit, used raw, in jelly, and as a fermented beverage
igny A tilsit-type cheese made from unpasteurized milk
igwelei A sorghum beer
IITA See International Institute of Tropical Agriculture
ikagage A millet or sorghum beer
ikan bilis Salted, dried whitebait or anchovies
ike-shoyu A squid (Ommastrephes) sauce with rice and koji
llama See annonaceous fruit; custard apple
ilchester A cheese that is flavored with beer, port, or cider
ileum The distal, third portion (12 ft long) of the small intestine
ilha A cheddar-type cheese
ilha, queijo da Hard cheese made from cow’s milk
iliac See Part 2: Lymph Nodes, Ox; Lymph Nodes, Pig
iliacus A muscle of the hindquarter that runs across the inner face of the ilium
ilium A triangular portion of the pelvic (hip) bone that articulates with the spine and directs a shaft downward and to the rear; called hip bone, pin bone  

See Part 2: Bone

illeiz A semihard cheese, made from cow’s milk, with a full, fruity flavor

illipe The fat of Bassia latifolia or B. longifolia, used in the chocolate industry  
See Part 2: Iodine and Saponification Values; Refractive Indices, Fats and Oils

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See Part 2: Iodine and Saponification Values; Refractive Indices, Fats and Oils

illness See Part 2: Bacterial Food-Borne Illnesses

imbalance In nutrition, a disproportion among essential nutrients in the diet that has pathological consequences

imbu A yellow, 1½-in., soft-fleshed, sweet fruit that is used fresh, as a dessert, and as a jelly

imidazole (glyoxaline) A nitrogenous organic compound that inhibits the action of histamine

\[
\begin{align*}
\text{HC} & \equiv \text{C} \\
\text{HN} & \text{N} \\
& \text{CH}
\end{align*}
\]

β-imidazole-alanine See histidine

imitation The term may only be used when the food is nutritionally inferior to the imitated product

imitation food A food product that has been manufactured to appear and taste similar to a conventional food

imitation milk A product that contains fats and oils other than milk fat and that is mixed with food solids other than milk solids

immersion Dipping into; submersion in or being covered by a fluid

immobilization Being made incapable of movement

immune response In higher animals, the body’s recognition and removal of foreign substances (antigens)

immunity Defense against infection

immunoglobulin The general class name of a body of antibody molecules with differing specificities but with some common structural features; an animal or chemically related protein with antibody activity

immunology (serology) The study of the antigen–antibody relationship

immunosuppression Lowering the activity of any of the host’s defenses, especially those involving immunity; reduced functioning of any host defense

impact extrusion A method of shaping metal or malleable material that involves forcing the material to conform to the shape of a die, e.g., some cans are fabricated by impact extrusion

impaction Compaction

impastata A ricotta-type cheese made from cow’s milk and used in baking

impedance A material property that resists the flow of current in a circuit; the combined effect of resistance, inductance, and capacitance

impériale A large bottle  
1 imperiale  
= 8 bottles or 6 liters (after decanting)  
= 8.5 bottles

implant A substance that is inserted into the body tissue

implantation The attachment of embryos to uterine wall

imports The goods, services, and products that a country buys from other countries

imprinting The rapid and sometimes permanent learning that occurs during the first days after birth

impurity A foreign substance; extraneous material

In The symbol for the element indium

inbreeding The mating of very closely related animals

in brine Solid portions of food packed in a salt solution or in water

incanestrato See majocchino

incannestrata A sharp wine or dinner cheese; also a grating cheese

INCAP Instituto de Nutrición de Centro América y Panamá

inch A measure of length  
1 in. (Brit.) = 2.539998 centimeters (cm)  
1 in. (U.S.) = 2.5400 × 10⁻⁹ angstroms (Å)  
= 2540.0508 microns (µm)  
= 1000 mils  
= 72 points (printer’s type)  
= 25.400508 millimeters (mm)  
= 6 picas (printer’s type)  
= 2.5400508 centimeters (cm)  
= 0.08333 foot (ft)  
= 0.02778 yard (yd)  
= 0.02540 meter (m)  
= 0.005051 rod (rd)  
= 0.00002540 kilometer (km)  
= 0.0000157828 statute mile  
= 39.37 in. = 1 m  
12 in. = 1 ft  
7.92 in. = 1 link

inch-column of mercury (Hg, sp. gr. = 13.59593) A measure of pressure  
1 inch-column of mercury  
= 345.3 kilograms per square meter (kg/m²)  
= 70.7310 pounds per square foot (lb/ft²; psf)  
= 25.4001 millimeters (column) of mercury (mm-Hg)  
= 1.13299 feet (column) of water [ft-water; max. density at 4°C (39°F)]  
= 0.49119 pound per square inch (lb/in²; psi)  
= 0.34534 meter (column) of water [m: water; max. density at 4°C (39°F)]  
= 0.03453 kilogram per square centimeter (kg/cm²)  
= 0.034 bar  
= 0.03342 atmosphere [atm; standard (760 mm)]
inch-column of water (4°C) A measure of pressure
1 inch-column of water
= 5.2022 pounds per square foot (lb/ft²)
= 2.4583 x 10⁻³ atmosphere (atm standard)
= 0.57802 ounce per square inch (oz/in.²)
= 0.074 inch of mercury at 0°C (in. Hg; 0°C)
= 0.03613 pound per square inch (lb/in.²)
= 0.00254 kilogram per square centimeter (kg/cm²)

incidence In epidemiology, the number of people in a
given population becoming ill in a given period

incisor A front tooth; in humans there are four in
each jaw.

inclusive tour The price includes meals, hotel,
transportation, sight-seeing, etc.

incomplete block design A statistical design that
permits evaluating more treatments than can be done
at one time; it is a balanced design: The same number
of treatments are evaluated each time and every pair
of treatments occurs together the same number of
times.

inconnu (Stenodus leucichthys) A food fish

incubate 1) To hatch eggs by keeping them warm
with body heat or artificial heat
See Part 2: Egg Incubation Periods
2) To cause microorganisms to grow under favorable
conditions

incubation Maintaining a sample at a specific tem­
perature for a specific time to encourage microorgan­
ism growth

indemnity programs Payment to producers who
sustain losses as a result of pesticides, nuclear radia­
tion, fallout, residues, or toxic substances

index of refraction

\[
\text{index of refraction} = \frac{\text{angle of light ray in air}}{\text{angle of light ray in another medium}}
\]

India fig See prickly pear

India gum See gum karaya

Indian buffalo milk Composition (whole, fluid):
milk 83.4%; protein 3.7%; fat 6.8%; carbohydrate
5.2%; ash 0.8%

Indian cattle See Brahman

Indian corn (Zea mays) See corn

Indian cress See nasturtium

Indian custard apple See custard apple

Indian fig (Opuntia ficus-indica) A warm-temper­
ature, large, treelike cactus that produces a large, red
or yellow, edible fruit whose spines can be irritating

Indian gum See gum ghatti

Indian lettuce See lettuce, Indian

Indian mackerel (Rastrelliger kanagurta) A
food fish

Indian nut See pine kernel

Indian oat See wild rice

Indian pear See prickly pear

Indian pudding A dessert made with cornmeal, mol­
lasses, ginger, and cinnamon and served with ice
cream
See Part 2: Cornstarch Pudding Variations

Indian rice See rice; wild rice

Indian Runner duck An egg-producing breed that
originated in the East Indies and stands almost erect
Varieties:
Fawn and white—reddish orange feet and shanks
Penciled—reddish orange feet and shanks
White—reddish orange feet and shanks

Indian salmon (dara; Polydactylus indicus) See
hilsa

Indian sorrel See masha

Indian spinach See basela

Indian tragacanth See gum karaya

Indian tree lettuce See lettuce, Indian tree

India Plantation A heavy-bodied, mountain-grown
coffee, with an acidic bite and mild but rich flavor,
from the state of Mysore (southwestern India)

indicator A substance that shows a physical change
(usually color) when a reaction has taken place, with­
out affecting the reaction; used in acid-base titra­
tions; e.g., litmus, methylene blue, methyl orange
See Part 2: Indicators: pH and Acid-Base; pH, Buffer
Solutions; pH, Universal Indicators

indicator organism A microorganism that is found
only under certain conditions (often pollution) or in
the absence of certain conditions

indigestion A digestive disturbance

indigo (C₁₆H₁₀N₂O₂) A blue coloring substance de­
rived from a vegetable and used to color food
indium (In) A metallic element; at. no. 49; at. wt.
114.82; Group IIIA of the Periodic Table; oxidation
state +3;
electron configuration 2–8–18–18–3
orbit K L M N O

indole An indigo derivative that is also made synthet­
ically; a carcinogenic agent

\[
\text{HC} = \text{CH} \quad \text{C} \quad \text{C} \\
\text{HC} = \text{CH} \\
\text{NH}
\]

Has been used as a floral-like flavoring agent in food
Storage: full, tight, amber glass container in a cool,
dark place
See Part 2: Microorganism, Media

indrika Deep-fried cakes or balls of spiced field bean
(Phaseolus mungo) or lablab bean (Dolichos lablab)

Indu Brazil See Part 2: Beef and Dual-Purpose Cat­
tle

induced radioactivity Radioactivity resulting from
exposure to radiation, which results in the production
of unstable nuclei that give off radiation by sponta­
neous disintegration

induced tumor Neoplasm that arises after a carcino­
gen is applied
inductance  The property of matter that resists change in a current passing through it; measured in henrys; this is the property of a conductor or an electric circuit that enables it to create a magnetic field.

inductor  An electrical coil used to resist change in current

industrial alcohol  A mixture of 95% ethyl alcohol and 5% water to which are added various chemicals to make the alcohol unfit for drinking; methyl alcohol is commonly used as a denaturant.

industrial feeding  Providing food for the workers and staff of an industrial establishment

INE  These letters on a red seal of an Italian wine indicate that the wine has passed laboratory tests for quality and purity

inedible  Unwholesome; unsuitable for eating

inelastic demand  A market in which a change in price will bring about a smaller proportional change in the amount purchased, for example, when consumers purchase the same amount of a product regardless of the price change

inelastic supply  A market in which the increase in production is relatively less than the change in price

inert  Without active properties

infant botulism  The bacterial toxin is developed in the intestine, not in the food

infant food  Food designed for infants and younger children

infection  Contamination with microorganisms or disease; the contagion or inflammation caused by bacteria or viruses

See Part 2: Illness From Food; Infectious Agents; Infectious Diseases, Food-Borne

infection food poisoning  Viable bacteria present in food are the food-poisoning agents; they produce their toxins in the intestinal tract; e.g., Arizona spp., Bacillus cereus, Clostridium perfringens, Salmonella spp., and Vibrio parahamolyticus

infecious  Describes a disease caused by microorganisms or submicroorganisms, e.g., bacteria, viruses, protozoans, fungi, and rickettsiae

infecious disease  A disease that is caused by pathogenic bacteria, viruses, protozoa, or fungi and may or may not be contagious

inferior  Beneath, below, or lower See caudal

inferno  A dry, red Italian wine

infiltration  Passing through; entering by penetration

inflammation  The swelling, redness, and heat in a tissue caused by injury

inflorescence  A flower or flower cluster

infra-  A prefix used to indicate beneath, e.g., infrared

infrared  Wavelengths of electromagnetic radiation longer than visible red, i.e., over 7500–8000 angstrom (Å)

infraspinatus  A muscle of the chuck that is located laterally to the scapula and below the spine of the scapula

infuse  To place herbs in liquid so that the liquid can be flavored

inga  A purple fruit with white pulp that is made into jam, jelly, and paste

ingesta  The food or drink taken into the stomach; the food present in the stomach or first compartment of the stomach; the contents of the digestive tract

ingestion  Taking substances into the body, as into the stomach; taking any substance into the body by mouth

See Part 2: Ingestion and Inhalation

ingredient  A part or constituent of food; any substance, including food additives, that is used in the manufacture or preparation of food; a component of a mixture See statement of ingredients

inguinal  Located in the groin

See Part 2: Lymph Nodes, Ox; Lymph Nodes, Pig

inhaletion  Taking air into the lungs by breathing

See Part 2: Ingestion and Inhalation

inhibit  To hinder; to restrain

initial temperature  The average temperature of the contents of the coldest container at the beginning of the sterilization cycle

initiation  The irreversible and heritable transformation of normal cells into dormant tumor cells in a short period of time

injection  Forcing fluid through a needle into the body or body parts

injera  A thin, soft, fermented bread that contains many gas holes; baked from teff (cereal)

inkfish  See squid

inkweed  A plant having a toxic principle

See Part 2: Poisonous Plants

Inner Mongolia goat  A brown goat breed that is raised for meat in Inner Mongolia and the Gobi
innominate bone  See osa coxarum

inoculated test pack  A procedure by which a product is inoculated with bacterial spores to test a process under actual plant conditions

inoculation  The introduction of foreign matter (usually microorganisms or other biological substances) into living cells

inorganic  The branch of chemistry concerned with substances that do not contain carbon (except the carbon oxides and metallic carbonates); mineral ash

5-inosine monophosphate  A flavor enhancer

\[
\begin{align*}
\text{HN} & \quad \text{N} \quad \text{N} \\
\text{O} & \quad \text{N} \quad \text{N} \\
\text{C} & \quad \text{N} \\
\text{C} & \quad \text{N} \\
\text{C} & \quad \text{N} \\
\text{CH}_2 & \quad \text{O} \quad \text{P} \quad \text{OH} \\
\text{OH} & \quad \text{OH} \\
\text{OH} & \quad \text{OH} \\
\text{OH} & \quad \text{OH}
\end{align*}
\]

inositol (dambose; inosite; nucite; meat sugar)

A saccharide-type growth factor of the B-complex type that is found in organs, beans, peas, and wheat; used as a food nutrient or dietary supplement.

Storage: well-closed container

See Part 2: Egg Products, Nutritive Value; Lemon Juice, Composition; Wheat, Vitamins

in-process inspection  The purchaser inspects goods during the manufacturing cycle

input  The items and materials used in production

insalivation  The mixing of saliva with food

in season  Indicates that a product is readily available in the fresh state

insect  Any species of small, flying animals having six legs and usually two pairs of wings

See Part 2: Insect Control; Radiation Preservation

insecticide  A chemical used to destroy insects either by contact or by internal poisoning; some types are toxic to humans and are ecologically damaging. See pesticide

See Part 2: Chemical Poisoning

insemination  The placement of sperm in the reproductive tract of a female

insemination time  The effective time for insemination, just prior to ovulation:

Cow—last half of heat period
Ewe—last day of heat period
Mare—last half of heat period
Sow—midpoint of heat period

insertion  The movable (bone that moves) attachment of a muscle

inside chuck (bottom chuck)  A muscle medial to the scapula of which the major ones are teres major, subscapularis, scalenus dorsalis, serratus ventralis, spinalis dorsi, complexus, longissimus dorsi, and longissimus costarum. See also bottom chuck

See Part 2: Beef, Boneless Cuts

inside cut  See Part 2: Beef Round Cuts; Meat Identification

inside round (top round)  A beef cut made up of semimembranosus, adductor, and gracilis muscles

See Part 2: Beef, Boneless Cuts

insipid  Flat; tasteless; vapid

in situ  In an undisturbed or normal position

INSP'D & P'S'D  “Inspected and passed” (meat inspection)

See Part 2: Meat Inspection Stamp

inspection  A close examination; checking against standards; examination by federal government personnel who determine whether the product is wholesome and fit for human consumption

See Part 2: Cheese Shield; Cottage Cheese Shield; Fruit Inspection Labels; Meat Inspection Stamp; Poultry Inspection and Grade Stamp; Poultry Inspection Stamp

inspection level  The relative amount of inspection given a product

inspection lot  A collection of items accepted or rejected as a whole on the basis of a sampling plan

inspection-lot size  The number of items in an inspection lot See inspection lot

inspector  A properly trained officer (may be an employee of the government or the company) who is responsible for inspection of products or premises

instantizing  Undergoing a physical or chemical treatment (agglomeration) that will improve the water dispersibility of dry powders

institutional feeding  The feeding of hospitals, orphanages, etc. where all meals are provided

institutional package  A package size that is larger than that found at retail level

insulation  A material that resists penetration by heat or cold, e.g., air, glass wool, and felt

See Part 2: Insulating Value; Insulation; Insulation, Conductivity Values; Insulation, Thickness

insulin  A hormone isolated from the pancreas and used to treat diabetes; controls sugar metabolism; it is a protein composed of 16 amino acids.

insulin shock  A physiological shock due to low blood sugar level caused by high stimulation of glucose oxidation by insulin, e.g., by an overdose of insulin

insulite  See Part 2: Insulation

integer  A whole number

integration  The combining of various steps in the production and marketing of a product under the control of a single firm. See also vertical integration
intensity A quantitative attribute of a sensation; proportional to the intensity of the stimulus
interaction The extent to which one treatment level depends upon the level(s) of other treatments
intercostal Located between the ribs
See Part 2: Lymph Nodes, Ox
intercostal muscle Two layers of muscle between the ribs
interesterification A procedure for changing (randomizing) the arrangement of the fatty acids on the glycerin molecule; it gives more plastic range, better consistency, and higher solid content; dry heat, 110–200°F
interfacial tension The forces operating at the boundary between two insoluble liquids; an emulsifier reduces these forces.
interferon A nonspecific antiviral agent
interim status The status of a food additive that has been removed from GRAS list, with an interim food additive regulation established while the status of the product is being reviewed
intermuscular Between muscles
internal abdominal oblique The inside sheet of muscles of the flank whose fibers point downward and forward
internal cork A viral disease that produces yellow spots on the leaves of sweet potato plants and lesions on the roots, causing brown to black, hard, corky spots to grow on the tubers during storage
internal decline See endoeriosis
internal phase See dispersed phase
International Agricultural Development Service (IADS) Assists less-developed countries with agricultural development, with offices located at 1133 Avenue of the Americas, New York, N.Y. 10036
International Bank for Reconstruction and Development See World Bank
International Center for Tropical Agriculture (CIAT) Centro Internacional de Agricultura Tropical; its center (with offices at Apartado 67-13, Cali, Colombia) at Cali maintains a global collection of bean types.
international chick unit (ICU) A unit of vitamin D requirement for poultry, using the chick as an assay animal
International Crop Research Institute for the Semi-Arid Tropics Maintains a research station in Hyderabad, India
International Dairy Federation (IDF) An international group whose purpose was to standardize dairy products; it is now a part of FAO.
International Development Association See World Bank
International Food Policy Research Institute An agricultural research center located in Washington, D.C.; part of the Consultative Group for International Agricultural Research (CGIAR)
International Institute of Tropical Agriculture (IITA) Located in Ibadan, Nigeria
International Laboratory for Research on Animal Diseases (ILRAD) An agricultural research center, located in Kenya, that focuses on research into theileriosis (East Coast fever), a tick-borne disease of cattle, and trypanosomiasis, which is carried by flies; part of the Consultative Group for International Agricultural Research (CGIAR)
International Rice Research Institute (IRRI) Conducts a comprehensive rice research program, a worldwide testing system, and a training program; maintains an agricultural research center in Manila (PO Box 933), the Philippines; part of the Consultative Group for International Agricultural Research (CGIAR)
international trade barriers Regulations used by governments to restrict imports and exports
International Tropical Agricultural Center (CIAT) See International Center for Tropical Agriculture
International Union of Pure and Applied Chemistry (IUPAC) An international group that recommends nomenclature, standards for chemical weights and measures, symbols, etc.
international unit (IU; USP unit) A standard of potency as defined by the International Conference for Unification of Formulæ; a measure of the biological value of a product based on comparison with an internationally recognized reference standard See individual vitamins
internode The portion of the plant stem between the nodes from which the leaves grow See Part 2: Corn
interstem A part of the stem tissue that is grafted between the rootstock and a desired cultivar; the central portion of a twice-grafted tree, whose length determines some of the characteristics of the tree
interstitial cells The cells of the testicles that produce testosterone
intertransversals A muscle that connects adjacent transverse processes
intervertebral disc A disc of cartilage between vertebrae
intestinal fat See killing fat
intestinal juice A clear liquid secreted by cells of the small intestine; it contains lactase, maltase, sucrase, and several peptidases.
intestinal tract The large and small intestines
intestines The digestive tract from the stomach to the rectum

<table>
<thead>
<tr>
<th></th>
<th>Average length (in feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Small</td>
</tr>
<tr>
<td>Cattle</td>
<td>120</td>
</tr>
<tr>
<td>Sheep</td>
<td>85</td>
</tr>
<tr>
<td>Swine</td>
<td>55</td>
</tr>
</tbody>
</table>

Human intestines secrete 2.5–3.5 l (2.7–3.7 qt) of digestive fluids per day.
See Part 2: Intestine, Cross Section; Organ Weights
in-the-money A call option is in-the-money when its strike price is below the current futures price level; a put option is in-the-money when its strike price is above the current futures price. An in-the-money option has more intrinsic value than it does time.
intoxication  Literally, poisoning; the usual meaning is presence of alcohol in the brain, causing behavior characteristic of drunkenness; alcohol is a noncumulative poison.  
See Part 2: Illness From Food; Microbial Toxins

intoxication food poisoning  Occurs when the food-poisoning toxin is produced in the food by bacteria, e.g., by Clostridium botulinum and Staphylococcus aureus

intra-  A prefix used to indicate within, e.g., intracellular

intramuscular  Within a muscle

intraperitoneal  Within the peritoneal cavity

intravenous  Within a vein

intrinsic  Situated or present exclusively in a part, e.g., an organ or a group of muscles

intrinsic factor  A substance, secreted by the stomach, that is necessary for the absorption of vitamin B₁₂

intrinsic value  The difference (in dollars) between the option strike price and the futures contract price

intro-  A prefix used to indicate into or within

inulin  [(C₆H₁₀O₅)₃₄] A sugar polysaccharide that yields primarily D-fructose and a little D-glucose on hydrolysis; a form of sugar that can be eaten by diabetics

Sources: many plants; some grasses; Dahlia tubers; Helianthus tuberosus (Jerusalem artichoke); artichokes

in vacuo  In a vacuum or a space without air

inversion  The formation of equal amounts of glucose and fructose (a mixture called invert sugar) from the hydrolysis of sucrose

inversol  See invert sugar

invertase (invertin; saccharase; sucrase)  An enzyme that hydrolyzes sucrose to glucose and fructose  
See Part 2: pH Values of Biological Materials

invertin  See invertase

invert sugar (colorose; inversol; invert syrup; nulomoline)  A 50-50 mixture of glucose (dextrose) and fructose (levulose), used primarily in the confectionery industry; it occurs naturally in honey and is formed by acid or enzyme hydrolysis (inversion) of sucrose:

\[
\text{C}_{12}\text{H}_{22}\text{O}_{11} + \text{H}_2\text{O} \xrightarrow{\text{hydrolysis}} \text{(dextro)rotatory} \quad 80°C \quad \text{dilute acid or enzymes}
\]

\[
\text{C}_6\text{H}_{12}\text{O}_6 + \text{C}_6\text{H}_{12}\text{O}_6 \xrightarrow{\text{dextrose (dextro)rotatory}} \text{mix} \quad \text{levulose (levorotary)}
\]

Compared to sugar it is sweeter (30%), more soluble, and does not crystallize as easily; it is used to prolong freshness and to prevent food shrinkage; it is a humectant and is sold only in liquid form.  
See humectant

See Part 2: Sweetening Agents; Sweetening Compounds

invert syrup  See invert sugar

invitation for bids  Solicitation of prospective suppliers for competitive price quotes

in vitro  Literally, in glass; a reaction carried out in a test tube as opposed to one carried out in a living organism (in vivo)

in vitro  In living matter; a reaction carried out in an organism rather than one carried out in a test tube (in vitro)

involuntary muscle  See smooth muscle

inyu  A soy sauce made from black soybeans

iodine (I)  A halogen element; at. no. 53; at. wt. 126.91; Group VIIA of the Periodic Table; oxidation states +1, +5, +7, -1;  
environment configuration 2-8-18-18-7  
orbit K L M N O

Iodine deficiency causes goiter (swelling of the thyroid gland).

Body function: essential to thyroid gland; in thyroxin.  
Iodine content in food varies, depending on its origin; found in seaweed, seafoods, and in some water supplies; used as an additive to salt to improve nutritional value, e.g., iodized table salt (0.01% potassium iodide); tincture of iodine (3% iodine in alcohol solution) is used as a disinfectant.

See Part 2: Cereal Fortification; Cereals, Vitamin and Mineral Content; Egg Products, Nutritive Value; Minerals, Food; Minerals, Plant or Animal Tissue; Normal Solutions; Recommended Dairy Dietary Allowance; Sanitizers; Sanitizing Chemicals

iodine number  A value indicating the degree of unsaturation of a fat or oil: the larger the number, the greater the unsaturation; it is expressed as the percentage of iodine by weight that a fat or oil will absorb; oils range from 80 to 200.

Fat and iodine number:

<table>
<thead>
<tr>
<th>Fat</th>
<th>Iodine number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butter</td>
<td>22-45</td>
</tr>
<tr>
<td>Coconut oil</td>
<td>6-10</td>
</tr>
<tr>
<td>Corn oil</td>
<td>103-130</td>
</tr>
<tr>
<td>Cottonseed oil</td>
<td>104-114</td>
</tr>
<tr>
<td>Lard</td>
<td>46-70</td>
</tr>
<tr>
<td>Linseed oil</td>
<td>107-202</td>
</tr>
<tr>
<td>Peanut oil</td>
<td>84-100</td>
</tr>
<tr>
<td>Poultry fat</td>
<td>66-71</td>
</tr>
<tr>
<td>Soybean oil</td>
<td>120-141</td>
</tr>
<tr>
<td>Tallow</td>
<td>35-55</td>
</tr>
</tbody>
</table>

See also iodine value analysis

See Part 2: Fats and Oil, Characteristics; Fats and Oils, Composition; Fats and Oils, Fatty Acid Composition; Fats and Oils, Physical and Chemical Properties; Fatty Acids and Their Properties; Iodine and Saponification Values

iodine solution  See iodine

See Part 2: Gram Stain

iodine value analysis (IV)  The number of grams of iodine absorbed by 100 grams of fat; a measure of the unsaturation of a fat; it is determined by adding iodine monobromide to fat; the excess iodine is
titrated with standard sodium thiosulfate and calculated as percentage by weight of iodine absorbed and is reported as iodine number. Hydrogenation lowers the iodine value; fat stability increases as the iodine value decreases. See also iodine number

iodize To treat with iodine or with an iodide

iodized salt Table salt to which 0.01% sodium or potassium iodide has been added, as well as a small amount of magnesium carbonate for free flowing properties

iodoform (CH£¡) An antiseptic iodine compound

iodophor An antiseptic that is a combination of iodine with a wetting agent that (slowly) releases free iodine

ion An atomic particle, atom, or chemical radical bearing a positive or negative electrical charge caused by an excess or deficiency of electrons (by the gain or loss of one or more electrons), e.g., H⁺, OH⁻

ion exchange A reversible chemical reaction between a solid and an aqueous solution that allows the interchange of ions, e.g., cation exchange (which may be used to remove calcium from water and to replace it with sodium)

ionization The process of adding electrons to or removing them from atoms or molecules, thus creating ions; the dissociation of a compound into positive and negative ions See dissociation

ionization constant See dissociation constant

ionone

Irish food habits
Animal products—bacon; cod; haddock; herring; mutton; beef
Beverage—tea
Carbohydrate—oatmeal; potatoes; white bread
Dairy products— buttermilk
Fat—lard
Sweets—cakes; pies; sugar
Vegetables—cabbage; turnip

Irish Cobbler An all-purpose variety of potato

Irish coffee A whiskey-flavored coffee; for instance, it may be made as follows: Dissolve 2 tsp instant coffee and 1 tsp brown sugar in 8 cup boiling water and add 1 1/2 oz (3 tbsp) whiskey; heat (do not boil); pour into a mug and top with whipped cream (sweetened to taste with brown sugar). Sip through the cream.

Irish mist A whiskey liqueur flavored with honey and herbs

Irish moss See carrageen; carrageenan

Irish potato See potato, Irish

Irish sea moss See carrageen

Irish stew A stew made from mutton, potatoes, onions, salt, and pepper

Irish stout A dark, heavy, alcoholic beverage fermented from barley

Irish whiskey Whiskey made by triple distillation of barley malt that has been kiln-dried over coal fires

iron (Fe) A metallic element; at. no. 26; at. wt. 55.85; Group VIII of the Periodic Table; oxidation states +2, +3; electron configuration 2-8-14-2, 2 orbit K L M N

Body function: in hemoglobin, cytochrome, catalase, peroxidase

Used as a food additive or as a dietary supplement added to grain products to improve or maintain nutritional value; it is slightly soluble in food, especially in the presence of acid. Cast iron is used for cooking utensils and there seems to be no serious question concerning safety. In plants, deficiency causes lack of stamina and severe chlorosis (iron plays a role in chlorophyll formation), particularly in young plants, and often occurs in high-lime soil.

High in iron Low in iron
Leafy green vegetables Milk, egg white
Liver White flour, fruits
Meat, fish, egg yolk Peas, beans

See Part 2: Beans, Peas, and Nuts; Beef, Percentages of Daily Recommended Allowances; Cereal Enrichment; Cereal Fortification; Cereal Nutrient Content; Cereals, Vitamin and Mineral Content; Composition of Food; Dairy Products, Composition; Egg Composition; Egg Products, Nutritive Value; Fats and Oils, Composition; Fish and Shellfish, Composition; Flour, Extraction Rates; Food, Composition; Fruit and Vegetables, Composition; Fruit Composition; Grain Anal-
iron ammonium citrate Used as a food additive and anticaeking agent
iron, electrolytic Elemental iron obtained by electrodeposition and used as a nutrient or dietary supplement
Storage: well-closed container
iron-hematoxylin solution Solution I:
Ammonioferric sulfate—2.5 g
Distilled water—100 ml
Solution II:
Hematoxylin—0.5 g
Dissolved in 10 ml 95% alcohol
Distilled water added—100 ml
iron oxide An additive used to color (red-brown) food
iron phosphate A waste product from the manufacture of steel
iron, reduced Elemental iron obtained by a chemical process and used as a food nutrient or a dietary supplement
Storage: well-closed container
iron sulfate Ferric sulfate [Fe₂(SO₄)₃] is used as a flocculant in water purification and as a soil conditioner.
See Part 2: Fertilizer Materials
Ferrous sulfate (FeSO₄) is added to animal feed. Composition [heptahydrate (FeSO₄ • 7H₂O)]: dry matter 98%; sulfur 12.1%; iron 21.4%
irradiate To apply radiation to a material
irradiation The process of applying radiation (waves or particles) to a product; treatment with or exposure to radiation
IRRI See International Rice Research Institute
irritant A process or substance that causes excitation
irsho A yellow fluid used as a starter for the fermentation of injera (a soft bread baked from teff)
iru A type of dawadawa
-is A Latin suffix used to indicate the singular
isard See isard
ischia Red and white Italian wines that are grown on the island of Ischia (southwestern Italy)
ischiatic Having a location near the ischium, or haunch
See Part 2: Lymph Nodes, Ox
ischium The posterior portion of the pelvic bone; joins the ilium at the cavity for the head of the femur; the aitch-bone area of the pelvis bone; called pin bone
See Part 2: Bone; Bone Age
iserband A farmer’s sausage made from beef, pork and barley grain
ISF Inside solder fillet side seam
ishinagi A food fish caught in the Pacific
See Part 2: Vitamin D, Fish
isigny An American, Limburger-like cheese
isingle A refined gelatin obtained from the collagen of the outer layer of the dried swim bladder of a fish (e.g., sturgeon) and used as an edible jelly, to preserve eggs, and for clarifying wine and beer
isiqwashumbe (hedge mustard) A wild mustard that is high in vitamin C
iskra A white, usually sweet, sparkling wine
islands of Langerhans The cells in the pancreas that secrete insulin
islay A firm-textured cheddar-type cheese
iso- A prefixed used to indicate “the same”
isomyl acetate (CH₃COOC₂H₄) Used as a fruitlike flavoring agent in food; sp. gr. 0.868–0.878
Storage: full, tight, glass container in a cool, dark place
isomyl butyrate
CH₃(CH₂)₂COO(CH₂)₄CH₃
Used as a fruitlike flavoring agent in food; sp. gr. 0.860–0.865
Storage: full, tight, glass container in a cool, dark place
isomyl formate [HCOO(CH₂)₂CH₃] Used as a plumlike flavoring agent in food; sp. gr. 0.878–0.886
Storage: full, tight, glass container in a cool, dark place
isomyl hexanoate
CH₅(CH₂)₂COO(CH₂)₄CH₃
Used as a fruitlike flavoring agent in food; sp. gr. 0.858–0.864
isomyl isovalerate
(CH₃)₂CHCH₂COO(CH₂)₂CH(CH₃)₂
Used as a fruitlike flavoring agent in food; sp. gr. 0.854–0.858
Storage: full, tight container in a cool, dark place
isomyl salicylate
\[
\text{OH} \quad \text{COO(CH₂)₄CH₃}
\]
Used as a flavoring agent in food; sp. gr. 1.046–1.054
Storage: full, tight, glass container in a cool place
isoascorbic acid
See ascorbic acid

isobornyl acetate

Used as a woodylike flavoring agent in food; sp. gr. 0.980–0.984
Storage: full, tight, glass container in a cool, dark place

isobutane [(CH₃)₂CHCH₃] Liquefied petroleum gas
See Part 2: Refrigerant

isobutyl alcohol [(CH₃)₂CHCH₂OH] Used as a viscous flavoring agent in food; sp. gr. 0.798–0.802
Storage: tight container

isobutyl cinnamate

Used as a fruitlike flavoring agent in food; sp. gr. 1.000–1.004
Storage: full, tight, glass container in a cool, dark place

isobutylene-isoprene copolymer (butyl rubber) Used as a masticatory substance in chewing-gum base
Storage: well-closed container

isobutyl phenylacetate

Used as a sweet, roselike flavoring agent in food; sp. gr. 0.984–0.989
Storage: full, tight, glass container in a cool, dark place

isobutyl salicylate

Used as an orchidlike flavoring agent in food; sp. gr. 1.062–1.067
Storage: full, tight, glass container in a cool, dark place

isobutyraldehyde [(CH₃)₂CHCHO] Used as a sharp, pungent flavoring agent in food; sp. gr. 0.782–0.788
Storage: tight container

isobutyric acid

Used as a rancidlike flavoring agent in food; sp. gr. 0.944–0.948
Storage: tight container in a cool, dark place

isocitric acid See Part 2: Organic Acids in Fruits and Vegetables

isodrin An isomer of aldrin; a toxic insecticide whose use may be restricted

isoelectric point The pH at which the net charge is zero and there is no migration in an electric field; the point at which a substance dissociates equally as a base and as an acid; the pH of minimum solubility

isoleucine A monoamino-monocarboxylic amino acid

isoeugenol

Used as a floral-like flavoring agent in food; sp. gr. 1.078–1.086
Storage: full, tight, glass container in a cool, dark place

isoeugenyl acetate

Used as a clovelike flavoring agent in food
Storage: tight, light-resistant container

isohedonic Having the same degree of pleasantness (or unpleasantness)

isolabella A sweet, herb liqueur with sugar crystals

isolate Something obtained from a natural substance

isolene Used as a nutrient or dietary supplement
Storage: well-closed container

isomer A compound having the same percentage composition and molecular weight as another compound but differing in chemical or physical properties

isomerism The phenomenon of compounds having the same elements in the same proportions by weight but different structures and properties See also cis-trans isomers; geometric isomers; optical isomers; stereoisomer

isometric Tensing one set of muscles against another or against an immovable object, e.g., pushing against opposite sides of a doorjamb; increases muscle strength, particularly in arms and legs

isophorone A ketone that is a solvent for vinyl and phenolic resins

isopropyl acetate [CH₃COOCH(CH₃)₂] Used as a flavoring agent in food; sp. gr. 0.866–0.870
Storage: tight container
isopropyl alcohol (CH$_3$CHOHCH$_3$) Used as a food-extraction solvent
Storage: tight container, away from fire

isopropyl citrate Used as an antioxidant in fats and oils

isoproterenol

\[
\text{CH}_3 - \text{C} = \text{CH}_2 - \text{NH} - \text{CH(CH}_3)_2
\]

A beta-agonist that is not orally active

isopulegol

\[
\text{CH}_3 - \text{C} = \text{CH}_2
\]

Used as a flavoring agent in food; sp. gr. 0.904–0.914
Storage: full, tight, glass container in a cool, dark place

isotonic 1) Having the same osmotic pressure as another solution. 2) Producing body movements by muscle movement, e.g., in weight lifting or calisthenics; increases muscle strength and flexibility

isotope One of two or more forms of an element whose atomic weights differ by one or more mass units because of the presence of an abnormal number of neutrons in their nuclei; for example, ordinary hydrogen (H$_2$) contains no neutrons, but isotopic hydrogen (H$_3^+$, deuterium) has one neutron. The properties of isotopes are identical except for atomic weight. A number of elements have no isotopes, but most have from two to eight or more.

isotropic Describes a material that has equivalent properties in all directions of test. See also anisotropic

isovaleric acid [(CH$_3$)$_2$CHCH$_2$COOH] A saturated fatty acid occurring in tobacco, hop oil, and valerian; used as an acidic, rancidlike flavoring agent in food; sp. gr. 0.928–0.931
Storage: tight, light-resistant container
See Part 2: Fatty Acids

isterband A semidy, uncooked, smoked Swedish sausage made from coarsely chopped, medium-seasoned beef, pork, and barley grain fermented and stuffed into a pork casing

istle See tampico fiber

Italian food habits:
Animal products—fish
Beverage—coffee, wine
Carbohydrate—dark bread; macaroni
Dairy products—cheese
Fat—lard; olive oil
Fruit and vegetables—used in large quantities
Seasoning—garlic, green pepper

Italian beef sausage A moist, uncooked, unsmoked American sausage made from medium- or coarse-chopped, mild-, medium-, or heavily seasoned (with fennel and/or anise) beef and beef fat only and stuffed into a pork or artificial casing

Italian sausage with beef and veal 391

Italian cheese Refers to a number of different types of cheese, the shape usually determining the name; they are usually smoked and cured, with a tangy, salty flavor.

Italian dressing A salad dressing that usually contains garlic, lemon juice, oil, pepper, salt, spices, sugar, vinegar, and water
Sodium content: bottled 116 mg/tbsp (15 g); dry mix 172 mg/tbsp (14 g)
See Part 2: Fats and Oils, Composition I

Italian fennel A plant having anise-flavored green leaves, a blanched stalk, and a bulbous root

Italian paste Alimentary paste

Italian pear scale (Epidiaspis leperii) A pest of the pear; it produces honeydew on which a sooty fungus grows; the nymph is flattened, reddish purple, and often covered with honeydew.

Italian plum A variety of plum See also ryegrass

Italian roast (coffee) See Espresso roast

Italian salame A medium-flavored, dried, meat sausage that is not cooked and not smoked

Italian sausage May be prepared using fresh or frozen pork (if other species are used, it should be in the name) and pork fat (max. 35%); usually medium- or coarse-chopped, mild-, medium-, or heavily seasoned (with fennel, anise, and/or paprika), uncurved (sometimes lightly cured), unsmoked (sometimes smoked), and uncooked; contains 85% meat or meat and fat (max. 35% fat) and max. 3% added water; it shall contain salt, pepper, and either fennel or anise, and it may contain other spices (including paprika) and flavoring, red and/or green onions, garlic, and parsley. It is commonly placed in an artificial casing but may be available in bulk, rope, linked in edible casings, or in a large-diameter link or ring casing; requires thorough cooking

<table>
<thead>
<tr>
<th>Composition</th>
<th>Cooked</th>
<th>Raw</th>
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</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>50</td>
<td>51</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>20</td>
<td>14.2</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>25.7</td>
<td>31.3</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>1.5</td>
<td>0.6</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.8</td>
<td>2.7</td>
</tr>
</tbody>
</table>

See Part 2: Sausage, Types

Italian sausage product An uncured, unsmoked sausage that contains min. 85% meat or meat and fat (max. 35% fat); it shall contain salt, pepper, and either fennel or anise.

Italian sausage with beef A moist, uncooked, unsmoked American sausage made from medium- or coarse-chopped, mild-, medium-, or heavily seasoned (with fennel and/or anise) beef and pork (mainly pork but with some beef) stuffed into pork or artificial casings; available in bulk, rope, or link form

Italian sausage with beef and veal A moist, uncooked, unsmoked American sausage made from medium- or coarse-chopped, mild-, medium-, or heavily seasoned (with fennel and/or anise) beef, pork, and veal stuffed into pork or artificial casings; available in bulk, rope or link form
Italian sausage with veal

A moist, uncooked, unsmoked American sausage made from medium- or coarse-chopped, mild-, medium-, or heavily seasoned (with fennel and/or anise) pork and veal stuffed into artificial casings; available in bulk, rope, or link-form.

Italian veal sausage

A moist, uncooked, unsmoked American sausage made from medium- or coarse-chopped, mild-, medium-, or heavily seasoned (with fennel and/or anise) veal (veal and veal fat only) stuffed into pork or artificial casings.

Italian vermouth

Sweet and red vermouth.

ita palm

See palm.

item

A single member of an inspection lot.

itimba

Gray-white, dried balls of starter that contain bacteria, molds, and yeast on millet base; used as inoculum for sorghum beer.

-itis

A suffix used to indicate inflammation.

itohiko natto

See natto.

IU

International Unit (vitamins).

IUPAC


IUTM base

See Part 2: Microorganism, Media.

ivybush

See Part 2: Poisonous Plants.

izard (chamois; isard; Rupicapra rupicapra)

A goatlike antelope.

izarra

1) A green armagnac brandy or herb liqueur with a high alcohol content. 2) A yellow armagnac brandy or herb liqueur with a lower alcohol content.

izibo

A plant whose tubers and fried seeds are used as food.
jaboticaba (*Myrciaria cauliflora*) A subtropical, shrubby tree that produces a black, grape-like (1\(\frac{1}{2}\) in. diameter) fruit with white or pink pulp; can be eaten fresh or made into jelly or wine

jaboty Fat or tallow from *Erisma calcaratum* and *E. uncinatum* used as a substitute for cocoa butter

See Part 2: Iodine and Saponification Values

jack 1) A male ass 2) A plant with fernlike leaves; usually considered undesirable 3) Saltwater fish (*Carangidae*)

jack bean (crickshaw lima; horse bean; *Canavalia ensiformis*) A tropical, long (12 in.), tender, podded bean that contains white seeds similar to small lima beans

Uses: as a snap bean; for green manure or fodder or both; whole young pod or mature seed can be cooked and eaten

jack-by-the-hedge  See alliaria

jack cheese  A light-colored cheddar

jackfish  A pike or pickerel

jack fruit A tropical tree related to breadfruit that produces a large fruit (40–50 lb) with green skin and yellow pulp; pulp may be eaten raw or cooked in oil, boiled, or dried; seed may be roasted (like chestnuts), ground into meal, or made into a form of milk

See Part 2: Fruit Classification; Fruit Composition; Fruit Storage

jack fruit wine A wine fermented from ripe fruit of *Artocarpus heterophyllus*

jack mackerel

Atlantic (*Caranx hippos*)

Indian ocean (*C. sexfasciatus*)

Jack mackerel (*Trachurus trachurus*)

Japan (horse mackerel)

jack rail A switch and rail for transferring meat hangers to another rail

jacksmelt  See smelt

Jackson A variety of soybean

Jackson candle unit (JCU) A measure of turbidity

Jacobs Pastry and crackers usually made without sugar

Jacopever (*Sebastichthys capensis*) A South Atlantic, food fish

Jaffa A variety of midsummer, Florida orange

Jagdwurst (yachtwurst) A cooked sausage made from a fine emulsion with cubes of lean meat; a cooked, smoked or unsmoked, American sausage made from fine to coarsely chopped meat; available in medium to large diameter links, rings, or large diameter casings for slicing; a moist, cooked, unsmoked Irish sausage made from coarsely chopped, medium seasoned, beef and pork and stuffed into an artificial casing; a moist, cooked, smoked eastern German sausage made from fine or medium chopped, medium seasoned, beef and pork and stuffed into an artificial casing

jagermeister A dark, red digestive

jaggery (palm sugar) A thick brown sugar made from the sap of palms

See sugar cane: sugar palm

jak  See breadfruit

jalapeno pepper A very hot, cigar-shaped (smooth surface and a rounded tip and bottom) chile that is medium to dark green (when fresh) or red; 2–2\(\frac{1}{4}\) in. long; 1 in. top diameter

Available fresh, canned, and pickled

jaliqvinna A brandy

jam A jell of fruit (often berries) preserve; a jelled spread (generally less firm than jelly) made from crushed or ground fruit and containing whole, sliced, or crushed fruit, smaller than that contained in preserves; the original shape of fruit is not maintained; cooked until 90°F higher than the boiling point of water. Jelling is caused by reaction of acid (pH 2.5–3.5) with pectin (\(\frac{1}{2}\%\)) and sugar (opt. 67%); fruits cooked in sugar until soft and jellylike; made from crushed fruit, sugar (\(\frac{1}{2}\) part sugar to 1 part fruit), cooked and sealed for storage; pH 3.1–4.0.

Classifications:

Pure grade—minimum 45 pounds fruit per 55 pounds sugar

Compounds—minimum 25 pounds fruit per 55 pounds sugar

Imitation—less than 25 pounds fruit per 55 pounds sugar

USDA grades:

US Grade A

US Grade B

US Grade C

Composition: moisture 20–35%; total solids 65–80%; water activity 0.75–0.80; sugar 2 tsp/tbsp.

1 tbsp = 55 calories

Storage: After opening, cover and refrigerate

See jelled products; jelly

See Part 2: Calories, Daily Recommendations; Standards, Processed Fruit and Vegetable Products; Sugars and Sweets Composition; Water Activity, Organisms and Food

Jamaican cob nut A sweet tree seed

Jamaican pepper See allspice

Jamaica rum A dark, full-flavored rum

jaman (jamba-va) A brandy distilled from the juice of fruits of *Eugenia jambolana*
**Japanese liqueur**  Rice wine

**Japanese mackerel**  Pacific mackerel

**Japanese medlar**  See loquat

**Japanese millet**  See millet

**Japanese mint**  *Mentha arvensis var. piperascens*  Often erroneously called Japanese peppermint; a rich source of menthol; label must read “flavored with corn mint or field mint”

**Japanese Poll**  A Japanese, beef breed similar to the Angus

**Japanese press ham**  A moist, cooked, smoked or unsmoked, Japanese sausage made from mild or medium seasoned beef, lamb, pork, veal, goat, mutton, horse, and rabbit; a mixture of 60–80% meat cubes (about 3–5 cm in size) of several different kinds of meat ingredients, 10–20% comminuted meat(s) of food binding quality, and 10–20% pork fatback cubes (about 2 cm in size)

**Japanese quince**  A shrub that has light yellow berries that are used for jam

**Japanese radish**  Daikon

**Japanese rice wine**  See sake

**Japanese salmon**  Pacific salmon

**Japanese sea perch**  *Lateolabrax japonicus*  A food fish

**Japanese Shorthorn**  A breed that accounts for 4% of the Japanese beef cattle

**Japanese sole**  *Glyptocephalus stelleri*  A food fish

**Japanese tuna**  *Thunnus thynnus orientalis*  A food fish

**Japanese walnut**  *Juglans sieboldiana*  A tree producing edible nuts

**japonica**  A fruit used to make jam or jelly

**jaqi**  Dried, hard spheres of fermented milk or milk curds flavored with garlic, onions, and other herbs and spices

**jar**  See Part 2: Glass Jar Tops

**jardiniere**  Fresh vegetables

**jarsberg**  A semisoft cheese from Sweden; Norwegian Swiss cheese; a semihard cheese that is creamy white and has holes and a bland, nutty flavor; a Gouda-type cheese with holes

**jarsberg cheese** A sandwich, snack, or cooking cheese

1 cup, shredded = 4 oz

**jasmine**  *Jasminum grandiflorum*  A delicate, light tea that has a hypnotic aroma and is made from jasmine petals

**jasmine blossom blend**  A scented tea made from oolong tea and whole jasmine blossoms

**jaundice**  A condition caused by absorption of bile by tissue; icterus
Java
1) An American class of chicken that lays a brown-shelled egg

Varieties
Plumage color  Shank  Beak
Black  Greenish black, undercolor  Black to yellow
black
Mottled  Black mottled with white, undercolor slate

2) A variety of coffee originating in Java
Java almond  See Chinese olives
Java arabica  A coffee bean (tan when unroasted) that produces a coffee that is robust, with a gentle aroma and creamy taste
Java black rot (Diplodia theobromae)  A rot that causes sweet potatoes to be dry, hard, brittle, and black (under the skin) beginning at the end
Javanese almond  See pill almond
Java plum (jambolan)  A fruit with dark or white flesh  See jambolan
Javelle water (eau de Javelle)  An aqueous solution of sodium hypochlorite (NaOCl) used as a bleaching agent or antiseptic
Javril, sweet  An aromatic root of a perennial herb
Jbame  A valencay-type cheese made from goat's or cow's milk and drained in woven baskets
JCU  See Jackson candle unit
Jee-rou  Chicken
Jejunum  The upper two-fifths of the small intestine between the duodenum and the ileum
Jellied  Coated with jelly or gelatin
Jellied beef  A jellied and/or specialty American sausage made from medium to coarsely chopped, cooked, unsmoked beef; available in rings or loaves
Jellied fruit products
Essential ingredients:
Acid—flavor and gel formation; may be supplied totally by fruit (higher in unripe fruit) or added (lemon juice or citric acid)
Fruit—flavor; part of pectin and acid
Pectin—may be supplied totally by fruit (higher when unripe) or added
To test for pectin in fruit juice: Add 1 tbsp cooked, cooled fruit juice to 1 tbsp denatured alcohol (poisonous; do not taste) and stir to mix. Juice high in pectin will form a solid, jellylike mass; juice low in pectin will form small particles of jellylike material
Sugar—aids gel formation and firming of fruit; preserving agent; flavor
Storage life—few months (loses flavor with storage)
Jellied tongue  A jellied and/or specialty American sausage made from medium to coarsely chopped, cooked, unsmoked tongue; available in rings or loaves
Jelly 1) A colloidal suspension (usually fruit-flavored) that has gelled; made from pectin, agar, or gelatin by combining 45 parts of clarified fruit juice with 55 parts sugar. The fruit is cooked (8°F higher than water boiling temperature) and strained; sugar (4 sugar to 1 part fruit juice) and commercial pectin are added; product is then sealed for storage; pH 3.0–3.5. A candylike form is clear and firm enough to hold its shape; finished product may contain 40–70% sugar  See also gel
Storage: After opening, cover and refrigerate
2) Animal gelatin obtained from bones and used to glaze or garnish 3) A type of fruit spread that is a clear, jelled juice from which all particles of fruit have been removed by filtering 4) Pudding (Jello-type) made with gelatin or seaweeds 5) Meat or fish extract, in which gelatin is hydrolyzed from collagen and acts as the jelling agent
1 tbsp = 0.6–0.7 oz marmalade, 1 tbsp = 50 calories
USDA grades:
US Grade A
US Grade B
US Grade C
See candy; jellied products
See Part 2: Calories, Daily Recommendations; Standards, Processed Fruit and Vegetable Products; Sugars and Sweets Composition
Jelly bean
10 jelly beans (1 oz) = 105 calories  See candy
Jellying point  The stage at which boiled fruit extracts become viscous upon cooling
Jelly powder  Gelatin that is sweetened and flavored or unsweetened with no flavor added
Jelly roll  A sponge cake filled with jam and topped with powdered sugar
Jelmeter test  A jelmeter is a graduated tube with openings at each end; the rate of flow of juice through the tube gives an estimate of pectin in the juice
Jenever  See genever
Jennet  A small horse
Jenny  A female ass
Jeotkal  A fermented, salty, fish-paste condiment
Jerked beef (jerky)  Meat cut in strips and hung to dry; beef jerky; will keep indefinitely
Jerk pork  Pork jerky
Jerky (charqui)  Thin, dried strips of meat; salted and sun or hot-air dried (MPR of 0.75:1 or less), thin strips of lean meat
Jeroboam  A measure of volume
1 jeroboam = 4–6 bottles
Jersey  A breed of dairy cattle that originated on the island of Jersey; color; shades of fawn with or without white markings; gives rich milk  See Part 2: Dairy Cattle Breeds; Gestation Periods; Milk Breeds, Composition; Milk Composition
Jersey cudweed  A plant used like spinach
Jersey gauche  A tea bread with currants and mixed citrus peel
396 Jersey Giant

Jersey Giant  The largest American class of chickens; it lays a brown-shelled egg

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<tr>
<th>Varieties</th>
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<th>Shank</th>
<th>Beak</th>
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<tr>
<td>Black</td>
<td>Blackish green, undertone—yellow</td>
<td>Black to yellow</td>
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</tr>
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</table>

**Jewfish** (*ghol*; *Johnius sina*)  An Indian finfish that has light meat and light to moderate flavor; used for food  See *grouper*

**Jewish fish**  See * Gefilte fish*

**Jew’s root**  See *parsley, hamburg*

J. Food Prot.  Journal of Food Protection

**Jibne**  See *gibne*

**Jicama**  A turniplike root vegetable that is grapefruit size and has thick brown skin, white flesh, a slightly sweet, water-chestnut-like flavor, and a crisp texture similar to a turnip or radish; may be eaten raw in salad; stays crisp when cooked

- 1 small jicama = 1.5 lb
- 1 cup, peeled and cut into thin strips = 6–8 oz
- 1 cup, cubed = 5 oz
- 1 cup, shredded = 4 oz

**Storage:** refrigerate, wrapped in plastic, unwashed

**Jiffy steak**  Same as cube steak

**Jigger**  A volume measure of liquor (1.5 oz); this volume in most liqueurs weighs 43 g

- Small jigger = 1 oz
- Large jigger = 2 oz

**Jim Beam**

**Jimmy fern**  A plant having a poisonous principle  See Part 2: Poisonous Plants

**Jimson weed**  A plant having a poisonous principle  See Part 2: Poisonous Plants

**Jinnie**  See *jenny*

**Jizrael**  A Swiss cheese made from cow’s milk

**Jo**  First grade

**Joala**  A sorghum beer

**Job lot ordering**  Buying the components necessary to manufacture according to a customer’s specification

**Jocote**  See *red mombin*

**Joghurt**  Yogurt

**Johannis**  An effervescent, table water; effervescent, carbonic-acid water

**Johannisberger**  A white wine

**Johannisberg riesling**  A full, soft, semidry wine

**John dory** (*John doree*)  A small, yellow or olive, marine, food fish similar to the porgy  

- Australia—*Zeus australis*
- Japan—*Z. japonicus*
- United Kingdom—*Z. faber*

**Johnny cake** (*Johnny cake; jonny cake*)  1) A bread made from water-ground, cornmeal; served hot; often eaten with maple syrup  2) A white, cornmeal, griddle-fried cake  3) A bread made from cornmeal, milk, eggs, and salt

**Johnson grass** (*Sorghum halepense*)  A perennial grass that is very difficult to eradicate; often considered a noxious weed

**Uses:** hay, pasture, green chop, and silage  See Part 2: Poisonous Plants; Seed, Germination
Johnston fruit rot  See pitting

johnnycake  See johnnycake

joint  1) To cut meat 2) A piece of meat, usually including bone, for cooking 3) A junction of bones

Jojoba oil  A vegetable oil obtained from a desert bush; contains unsaturated fatty acids; has a unique, waxy consistency; has replaced spermaceti in many instrument oils and cosmetics  See Part 2: Unsaturated Fatty Acids

Jonathan  A variety of apple that is in season from September to January; an excellent eating and cooking apple and a good sauce apple

jonchee  A soft, white cheese made from goat’s milk; usually unsalted; consumed fresh or cured 1–2 weeks

jonchee d’oleron (oleron)  A soft, white cheese made from sheep’s milk

jonchee niortaise  A soft, white cheese made from whole milk with rennet added

jonge  A type of dry gin

jonny cake  See johnnycake

jora (muko; pachoucho)  Germinated, dried grains of maize; used as malt for chicha

Josephine cheese  A soft curd cheese made from whole milk with rennet added

Josser  See codling

jotkal  A fermented, salty, oyster- and fish-paste condiment

joule  (J)  A unit of work or energy or heat; the absolute meter-kilogram-second unit of work or energy; recommended for international use as a unit of food energy to replace kilocalorie

A unit of electrical work:

\[ x \text{ volt times } y \text{ coulomb} = xy \text{ joule} \]

\[ x \text{ watt times } y \text{ second} = xy \text{ joule} \]

1 joule (J)

\[ = 1 \times 10^7 \text{ ergs} \]
\[ = 0.7375 \text{ foot-pounds (ft-lb)} \]
\[ = 0.23889 \text{ calorie (thermal unit)} \]
\[ = 0.10196 \text{ kilogram meter (kg-m)} \]
\[ = 0.0008480 \text{ British thermal unit (Btu)} \]
\[ = 0.0002778 \text{ watt-hours (W-hr)} \]
\[ = 0.0002389 \text{ kilogram-calorie (thermal unit)} \]
\[ = 0.0000003777 \text{ metric horsepower-hour (75 kg-m-hr)} \]
\[ = 0.0000003725 \text{ U.S. horsepower-hour (h.p.-hr; U.S.)} \]
\[ = 0.0000002778 \text{ kilowatt hour (kw-hr)} \]

1 kilocalorie = 4.184 kilojoules

4.184 joule = 1 calorie

joule per centimeter

\[ = 1 \times 10^6 \text{ dynes} \]
\[ = 10299 \text{ grams (g)} \]
\[ = 723.3 \text{ poundals (pd)} \]
\[ = 100 \text{ joules/meter (J/m; Newton)} \]
\[ = 22.48 \text{ pounds (lb)} \]

journiac cheese  A soft, blue cheese

jowl  Pork carcass area (cheek) parallel with the ribs and located in front of the shoulder and below the ear area (3–4% of carcass); it is cured to make jowl bacon or used fresh in sausage; for sausage use, should be sliced every inch to inspect for abscesses  See Part 2: Pork Carcass, Retail Yield; Pork Chart; Pork Cuts; Pork Wholesale Cuts; Pork Yield

jowl bacon (bacon square)  A square cut of bacon made from the cured, pork jowl

joy of the mountain  See oregano

jroo-rou  Pork

jub-jub  Dried, hard spheres of fermented milk or milk curds flavored with spices

jubna  A white, brined cheese made from sheep’s or goat’s milk

jud  The smallest detectible difference between two stimuli

Judaism, dietary rules  No food is cooked on the Sabbath (starts sundown Friday)

General food habits

Animal products—forequarter of beef and lamb; fish

Cheese—kosher

Fruit and vegetables—dried fruit; legumes; pickles

Grains—barley; buckwheat; matzo; noodles; rye bread

Soup—many types

Orthodox (most traditional):

Permitted: fruit, vegetables, grain (in practical terms all plants in the United States are kosher), tea, coffee

Permitted if processed by prescribed methods: meat (front quarter of mammals that must both chew their cud and have a split hoof; all are herbivores), poultry, fish (that have fins and removable scales)

Not permitted: pork, blood, shellfish, birds of prey, insects except locusts, reptiles, amphibians, cartilaginous fish

Dairy products and meats:

cannot be cooked together

food mixtures of these not permitted

some utensils, dishes, and cutlery may not be used for both

milk may not be consumed within 1, 3, or 6 hours after meat

Conservative (follows a mixture of rules from the other two categories):

Avoid dairy and animal products at same meal

Avoid two vegetables from same botanical family at same meal

Use chicken fat or vegetable oil instead of lard or tallow

Rework leftovers as a new dish rather than re-serving them  See kashruth; kosher; Yom Kippur

Judas goat  A goat used to lead sheep to slaughter

judge  A person usually with special qualifications who participates in an evaluation

jugo-bitter  A quinine-flavored, red, aperitif wine
jugular  Neck or throat; major vein returning blood from head
jugurt  Yogurt
juhla  A cheddar-type cheese
juhn  Fried
juice  The liquid from raw meat, fruit, or vegetables
juice, fruit  Sweetened or unsweetened, filtered juice of fruit; pasteurized after sealing See fruit juice
juiciness  Ability to produce juice; succulence
juicy  Succulent; containing moisture and sometimes fat
juicy pineapple  See pineapple physiological breakdown
jui-paing  Gray-white, dried balls of starter containing bacteria, mold, and yeast on a starch or cereal base; used as inoculum for fermented foods
jujube (Chinese date; t'sao)  1) Shrub of buck horn family 2) Chinese date; red-yellow, orange-red to brown or white, egg-sized date-like tropical fruit; ½ in. diameter; leatherlike skin; crisp textured, yellow, subacid, sweet (20% sugar when ripe) flesh and long slender stones; may be available fresh, dried, or made into preserves 3) A gelatin candy
Jung Chang  A prolific, white pig distinguished by black spots near the head; originated in Szechwan (Sichuan, central China)
jung jang  A rice wine
Jungle, The  A 1905 story written by Upton Sinclair that told about the exploited immigrant packing house workers and abuses in the meat industry; it led to congressional passage of the Meat Inspection Act of 1906
jungle ambia  See ambarella
jung yang chun  A spirit-based, alcoholic beverage; a liqueur
juniper (Juniperus communis)  A dark blue, oil extract of berries from an evergreen tree used in flavoring gin, liqueurs, and cordials; available fresh or dried; crushed before use; used to flavor meat and salads
juniper berry oil  A volatile oil obtained by steam distillation of Juniperus communis; used as a flavoring agent in food
Storage: full, tight glass container in a cool, dark place
junket  1) Soft, sour milk product; milk that has had a concentrated extract tablet of rennin added; after warming to 95°F, a small amount of rennet is added; the mixture is then allowed to cool and clot 2) A word sometimes used to mean rennet 1 junket tablet will coagulate 3 gallons of milk
junket tablet  A tablet form of rennet
jura blue  See septmoncel
juruk  1) Pickles 2) Pickled vegetables
jus  Juice; extract of meat; au jus denotes “with natural meat juice”
jute (Corchorus capsularis; C. olitorius)  A vegetable fiber (60–65% cellulose) composed of extremely long fibers of cellulose; used for twine
juustoleipa  A soft, white cheese made from cow’s milk that is hand pressed and roasted with fire
K

1) “K” on label indicates that food is kosher according to Jewish dietary laws and is processed under the direction of a rabbi. 2) Computer shorthand for the quantity 1024. See kelvin, kilohm, potassium.

k  See kilo

$K_A$  See dissociation constant

ka-ak (kahk; kaki)  A crisp, crusty, baked snack made from wheat flour and shaped as a twist or a hollow ring; may be coated with salt, sesame, or thyme

kaanga-kopuwai (kaanga-pirau; kaanga-wai)  A fermented, maize gruel

kaanga-pirau  See kaanga-kopuwai

kaanga-wai  See kaanga-kopuwai

kaas  Cheese

kabanas  A semidry, cooked, smoked Australian sausage made from medium chopped, heavily seasoned, beef and stuffed into artificial casings

kabanos  A moist, cooked, smoked Australian sausage made from medium chopped, medium seasoned, beef. See cabanos

kabanosi special  A dry, uncooked, smoked Irish sausage made from coarsely chopped, heavily seasoned, pork that is fermented and stuffed into an artificial casing

kabanosy  A dry, cooked, smoked Polish sausage made from medium chopped, medium seasoned, pork and stuffed into a sheep casing

kabeljou (Johnius hololepidotus)  A food fish

kabernet  A light, usually dry, elegant, and delicate wine

kablerleberwurst  A moist, cooked, unsmoked eastern German sausage made from fine or medium chopped, medium seasoned pork liver and stuffed into a pork casing

kabob (kebab)  Alternating chunks of food cooked on a skewer. See Part 2: Pork Cookery; Pork, Cooking; Pork Loin Cooking

kabubulika (kapapa)  Gray-white, dried balls of starter containing bacteria, molds, and yeast on a cassava base; used as inoculum for banku

kabute  Straw mushroom

kabuteng dayami  Straw mushroom

kabuteng ginikan  Straw mushroom

kabuteng saging  Banana mushroom

kachasu  A clear, crude distilled, alcoholic spirit; a local gin

kach doo ki gacuuki  An acidic, carbonated, oriental radish

kachkaval  A provolone-type cheese made from sheep’s and/or cow’s milk; often cooked and fried

kackavalj  A cheese made from ewe’s milk

kadamb-bari  A brandy distilled from fermented juice of kadamba (Anstrocephalus indicus)

kadaya  See gum karaya

kadour  A moist Iranian sausage made from coarsely ground meat and stuffed into a beef casing

kaeldermelk  See kumiss

ka-fei  Coffee

kafe  Coffee

kaffir beer  A sorghum beer

kaffir corn  50–56 lb/bu; See also millet

kaffir orange  A fruit that has a hard rind, orange shape and size, and brown pulp

kafir  A plant having a toxic principle. See Part 2: Poisonous Plants

kagar  A pastry

kahk  See ka-ak

kahlu  A low alcoholic liqueur flavored with coffee

kai choy  See gai choy

kail  Kale

kainite  A neutral fertilizer material; contains potassium chloride (KCl) and magnesium sulfate (MgSO4); 0–0–20

kaiserbirnlkor  A citrus liqueur

kaiser roll  A roll made from milk and wheat flour and with a star shape cut into the surface

kajmac  A cream cheese made from sheep’s milk; may be fresh or matured

kajmar  A Serbian, cream cheese

kaju  See cashew nut

kakduggi  An acidic, carbonated, oriental radish

kaki  See ka-ak

kaklo  A fermented, deep-fried maize often with plantain flour

kalalui  A sour, maize porridge

kakshe  A brandy distilled from fermented, local fruit

kal  A type of dawadawa

kalach  A white, wheat bread

kalberwurst  An uncooked, smoked or unsmoked, American sausage made from medium to coarsely chopped meat and formed into a large diameter link or ring; similar to bockwurst but there is no limit on water or milk.
kalbsbratwurst  A moist, cooked or uncooked, unsmoked Swiss sausage made from finely chopped, mildly seasoned beef, pork, and veal and stuffed into a beef, pork, or artificial casing

kalbsleberwurst  A moist, cooked, unsmoked eastern German sausage made from finely chopped, medium seasoned pork and veal liver and stuffed into a beef or pork casing

kalbsleberwurst feine leberwurst  A moist or semidry, cooked, smoked or unsmoked Swiss sausage made from fine or medium chopped, medium seasoned beef, pork, and veal with finely chopped liver added and stuffed into a beef, pork, sheep, or artificial casing

kale (borecole; cale; cole; coleswort; kail; winter greens; Brassica oleracea var. viridis and acephala) A plant belonging to the cabbage family (related to wild cabbage), whose curly, blue-green, reddish brown, or purple leaves are used as greens, garnish, and livestock feed; used raw in salads or may be stewed, fried, or baked; often cooked like cabbage or spinach; 10,000–12,000 seed/oz; 7–10 days germination period; thin to 12–24 in. in rows 24–36 in. apart; matures in 70 days; yield 60 bu/100-ft row

<table>
<thead>
<tr>
<th>Kale variety</th>
<th>Season</th>
<th>Plant</th>
<th>Leaves</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dwarf Blue</td>
<td>55 days</td>
<td>Nonheading, short stem</td>
<td>Blue-green</td>
</tr>
<tr>
<td>Curled Vates</td>
<td>55 days</td>
<td>Nonheading, short stem</td>
<td>Blue-green</td>
</tr>
<tr>
<td>Dwarf Blue</td>
<td>70 days</td>
<td>13 in. tall</td>
<td>Blue-green</td>
</tr>
<tr>
<td>Scotch</td>
<td>70 days</td>
<td>13 in. tall</td>
<td>Blue-green</td>
</tr>
<tr>
<td>Scotch Curled</td>
<td>50–70</td>
<td>12–16 in. tall, plumeleike leaves, frilled edges</td>
<td>Gray-green</td>
</tr>
<tr>
<td>Dwarf Siberian</td>
<td>50–70</td>
<td>12–16 in. tall, plumeleike leaves, frilled edges</td>
<td>Gray-green</td>
</tr>
</tbody>
</table>
| Green Curled      | 55 days   | 15 in. tall                 | White ribbed, yellowish green, finely curled |)

Available in canned and frozen forms

- 1 bu fresh = 18 pounds
- 1 pt, frozen = 1–1.5 lb, fresh
- 1 lb, fresh, untrimmed = 5–6 servings
- 16 oz, canned = 2–4 servings
- 10 oz, frozen = 2–4 servings
- 1 cup, cooked = 200 g
- 1 cup, frozen, chopped = 6.6 oz
- 1 cup, frozen, boiled, and drained = 6.4 oz
- 1 cup, boiled, with stems = 3.8 oz

Composition (raw leaf): moisture 83–87%; protein 4–6%; fat 0.8%; carbohydrate 6–9%; ash 1.5%

Composition (cooked): fiber 2%; fat 0.6–0.8%

Storage: Wash thoroughly; drain well; store in refrigerator (32°F) crisper or plastic bag (90–95% relative humidity); use within 1–12 days
Kansu pig  A black pig from Kansu province, China
kantaro (metric)  A unit of weight used in Egypt and Sudan
1 kantaro = 82.86 pounds
= 0.044928 metric ton
kanten  A form of agar agar, bar kanten, and/or slender kanten
kantong  Dark brown, fermented balls of kapok seed used in soup and stews
kantwurst  A dry, uncooked, smoked Austrian salami or sausage made from coarsely chopped, medium seasoned beef and pork, fermented and stuffed into artificial casings with a diameter of greater than 30 mm
kanyak  Brandy
kaoliang  Sorghum; vodka made from sorghum and sometimes flavored with rose petals
kaolin  A purified clay used as an anticaking agent; also used in manufacture of china and other ceramic products
Storage: well-closed container
kapapa  See kabulika
kapestoes (tarhanocirv; trahana; zamplaricos)  Sheep's milk with crushed wheat
kapok  A light, vegetable fiber used for insulation; the seeds yield an oil used for soap manufacture
See Part 2: Fatty Acids; Insulation; Iodine and Saponification Values; Oil or Fat, Characteristics; Refractive Indices, Fats and Oils; Specific Gravities, Fats and Oils; Titer, Fats and Oils; Unsaponifiable Matter
kappa (\(K, \kappa\))  Greek letter that is the English equivalent of k
kappeli  A soft to semisoft, strongly flavored cheese made from cow's milk and is bacteria surface-ripened
karakul  A broadtail breed of sheep whose greatest value is for young lamb pelts that are used for fur
See Part 2: Sheep Breeds
karamanlidika  A semidry or dry, cooked, unsmoked Greek sausage made from coarsely chopped, heavily seasoned lamb that is fermented and stuffed into sheep casings; eaten after cooking in sheep fat
karawai  A tea bread with lots of raisins
karaya  See gum karaya
kareish  A white, brined cheese made from skimmed buffalo's milk
karish  A white, brined cheese made from buffalo's milk
karoo  A thick porridge gruel made from sorghum or millet
karpatensalami  A dry, uncooked, smoked eastern German sausage made from medium chopped, medium seasoned beef and lamb that is fermented and stuffed into a beef or artificial casing
karpi  A cranberry (\(Vaccinium oxyccoccus\)) liqueur
kartano  A gouda-type cheese
karut (kurt; qurut)  Dried, hard spheres of fermented milk or milk curds
karut cheese  A hard Indian cheese made from skimmed milk
karyotyping  A visual representation and classification of an individual's chromosomes
kasach  See karab
kasar  An Esbareich-type cheese
kascaval cheese  A loaf-shaped cheese made from sheep's milk with rennet added
kaschiri  Chicha made from cassava tubers
käse  A German word for cheese
kaser  A semihard cheese made from ewe's milk
kaseri  A 9-kg, provolone-type cheese made from sheep's milk; sometimes dipped in flour and fried
kasha (kasachs; toasted buckwheat groats)  A cooked cereal; more intense flavor than other whole grains; cracked buckwheat, barley, or millet; toasted buckwheat groats or seed
Storage: tightly closed container in a cool place; freeze for longer storage
kasher  See kosher
kashering  Removal of blood
kashk  Dried, hard spheres of fermented milk or milk curds flavored with herbs and spices
kashkaval  A soft, creamy, smooth provolone-type cheese that is firm, amber, and salty and is made from ewe's and/or goat's and/or cow's milk
kashkawan  A provolone-type cheese made from goat's milk
kashrut  See kosher
Kashruth  Jewish dietary laws See Judaism, dietary laws
kass  A clear, mildly alcoholic, sorghum beer
kasseler  A cured, pork loin smoked with wood and juniper berries
kasseri  A fresh or dried, soft, firm cheese that is mild and white and is made from goat's or ewe's milk
kastanienreis  See Mont Blanc chestnut
kastenbrot  A white, square-shaped, wheat bread
katate  A clear, mildly alcoholic, maize beer
katayef  See ataif
katenspeck  A hot-smoked, pork belly that has a black surface
katenwurst  A beef or pork pepperoni (sometimes only semidry); a semidry, uncooked, heavily smoked eastern German sausage made from medium chopped, heavily seasoned beef and pork that is fermented and stuffed into a beef or pork casing
keeping quality The general resistance of food to undesirable changes during storage

kathroko A turbid, alcoholic wine made from sugar cane juice; usually consumed fresh
kati A weight used for tea
1 kati = 1.43 pounds (avoir)
katjang-boengkil Sufu soybean curd
katschawalj cheese A Siberian cream cheese made from sheep’s milk
katsudon Deep fat fried, pork cutlets with eggs, onions, and rice
katsuobushi Dried, hard, skipjack tuna used for flavoring
See Part 2: Fungi Food Products
katyk Yogurt
kauk-yo-hmo Straw mushroom
kava (arva; ava; yava; Piper methysticum) The root of this plant is mashed and fermented to produce a beverage; claimed to be nonalcoholic but intoxicating See ava
kavaklidere A white or red wine
kava kure cheese A natural cheese eaten with crackers
kavaljer A tilsit-type cheese
kaviarbread See meter bread
kawal Balls of the leaves of the legume Cassia obtusi-folia used in soups and stews
kaymak Fresh or ripe, clotted cream
kazakh fat rumped sheep Polled, fat rumped sheep that have brown or black fleece (coarse carpet); used for pelts, wool, and mutton; found in Sinkiang (Xinjiang, north west China) area
kc A shorthand form of kilocycles/second; its use is discouraged
KCN broth base Media containing potassium cyanide used for differentiation; permits differential growth of Enterobacteriaceae; E. coli, salmonella, and shigella are inhibited but Klebsiella, Bethesda-Bal-lerup, and proteus grow unrestricted.
See Part 2: Microorganism, Media; Microorganism, Selective and Differential Broths and Media, Water Filtration Plant
kebab (cabob) Grilled or broiled (usually with charcoal) meat and/or vegetables cooked on skewers
kebap Small pieces of meat cooked on a skewer
kecap A soy sauce made from black soybeans and roasted cassava flour
kecap asin A salty soy sauce
kecap ikan A fish (Stolephorus leignathus or clupea) sauce
kecap manis A sweetened, soy sauce
kedgeree Rice with smoked, flaked fish and hard-boiled eggs
keemun See black tea
keeper casing An oxygen-semiimpermeable casing often used to store meat; meat will remain in the metmyoglobin state (brown)
keeping quality The general resistance of food to undesirable changes during storage

keet A guinea chick See baby keet; guinea
kefalograviera A hard, cow’s milk cheese made by adding starter culture and rennet; the curd is salted, pressed, and matured
kefalotvri A strong, salty, hard cheese made from sheep’s or sheep’s and goat’s milk
kefalotyri A hard, salty, yellow cheese made from ewe’s or goat’s milk
kefir (kefyr, kephir) A fermented milk produced by a double lactic acid-alcohol fermentation; acidic, alcoholic, effervescent goat’s, buffalo’s, or cow’s milk.
Procedure:
1. Heat whole or skimmed milk to 95°C for several seconds
2. Homogenize
3. Cool to 22°C
4. Inoculate with 1.5% mixed inoculum from Strep-tococcus lactis, S. cremoris, S. lactis var. diacety­lactis, Lactobacillus caucasicus, L. acidophilus, L. casei, Kluyveromyces fragilis
5. Final acidity of 0.9–1.1% lactic acid; alcohol level of 0.5%
See Part 2: Fungi Food Products, Composition; Milk and Milk Products, Vitamin Content
kefir grains The portion of kefir batch that contains microorganisms used as a starter for the next batch
kefyr See kefir
keg
1 beer keg = 180 (12 oz) servings
keitmetwursti A moist, cooked, smoked Finnish sausage made from medium chopped, medium seasoned, beef and pork that is stuffed into a 75-mm artificial casing
kellerabfullung Cellar bottling; location of bottling
kelp (Fucus and Laminaria spp.) A brown seaweed high in trace minerals (especially iodine); used as food; a type of algae; may grow to lengths up to 100 ft; is mechanically harvested Storage: well-closed container See algae
kelt Salmon after spawning See salmon
kelvin (K) See absolute temperature; K = °C + 273.15.
See Part 2: Temperature
kemp Coarse hair or dead fibers or white fibers found in wool, usually from the outer thighs and crotch area; it will not take dye
kenaf (Hibiscus cannabinus; H. sabdariffa) A plant used as a textile and pulp fiber
kench A container used for salt curing
kench-cured fish Dried fish
kenima A fried, soybean cake
kenkey 1) Acidic, maize dumpling. 2) Iced kenkey—nonalcoholic, sour drink made from maize
Kenland A variety of red clover
kentish huffkin A tea bread with no fruit
Kentucky 31 A variety of fescue
Kentucky bluegrass A variety of bluegrass
Kentucky ham  A dry-cured, country ham that is produced in Kentucky
Kenya AA  A light, sharp coffee from the Mt. Kilimanjaro region of Africa
kephalin  See cephalin
kephir  See kefir
kerasin  A glycolipid that yields galactose, sphingosine and lignoceric acid as a result of hydrolysis
keratin  Principal protein (scleroeprotein or albuminoid) in wool, hair, hooves, horns, nails, and outer layer of epidermis; some of its amino acids are arginine, aspartic acid, cystine, glutamic acid, lysine, tryptophan, and tyrosine
keratinization  Production of a horny layer
kernel  The whole grain seed or cereal 1) Seed. 2) Inside portion covered by a shell or stone. 3) Body of seed
kernel smut  A fungus (Neovossia horrida) disease of rice that may be controlled by planting resistant varieties of rice or applying nitrogen fertilizer
kernel spots  A rice disease that can be caused by many fungi, including Trichoconis padwickii, Helminthosporium spp., Curvularia spp., Alternaria spp., Fusarium spp. Oebalus pugnax (rice stink bug); there are no control measures except insect control
keratin  A strong, cream cheese
kerosene (kerosine)  An oil obtained from distillation of petroleum and from oil shale; 1 gal = 7 lb See petroleum
See Part 2: Fuel, Heating Value
kerosene emulsion  A spray of kerosene, water, and soap
Kerry  An Irish breed of small, black, dairy cattle
Kerry Hill  A hill breed of British sheep
kerupok  A prawn or fish puff or cracker
kesong puti  A cheese made from buffalo's milk
kesrah  See kisra
kesti  A tilisit-type cheese flavored with caraway seed
keta  See Part 2: Salmon and Trout
ketchup  See catchup
ketjap (shoyu or soy sauce)  1) A liquid produced from fermented soy products. 2) Hot sauce; a soy sauce made from black soybeans and roasted cassava flour See soy sauce, sweet
See Part 2: Fungi Food Products
ketjap ikan  See kecap ikan
ketogenesis  The production of ketone or acetone bodies in the body
ketone
\[
\text{R} - \overset{\text{C}}{\overset{\text{O}}{\text{C}}} - \text{R}
\]
A class of organic compounds in which two alkyl or aryl groups are attached to a carbonyl group; the most common ketones are acetone and methyl ethyl ketone
ketonuria  The presence of ketone bodies in the urine
ketosis (acetonemia)  Elevated ketone bodies in body tissue and fluids; disorder caused by imbalance (usually glucose) between nutrient intake and nutrient requirements that causes an increase in ketone or acetone bodies and is manifest as a drunkenlike state; treatment consist of administration of glucose
kettle grill  A spherical, cast metal, grill; half of the sphere houses the grill; the other half functions as a lid, which allows its use as a Dutch oven or for roasting or for smoking, in addition to grilling
ketupat  A cake made from eggs, rice flour, sugar, grated coconut, and manisan
kewane  A Japanese, green tea
key  An instrument used for removing the scored section of a key-opened can
key-opened can  Any can that may be opened with a key
KF streptococcus agar  See Part 2: Microorganism, Culture Media; Water and Sewage, Standard Methods
khabz (khabz)  A pocket, flat bread
khachapuri  A fried, wheat flour, dough pie filled with cheese, fish, meat, and sometimes fruit
Khaki Campell duck  An egg-producing breed of duck that originated in England by crossing Types:
Fawn; Mallard; Rouen; White Runner
Females—brown head and neck; remainder is khaki; greenish black bills and brown legs and toes
Males—brownish lower backs, tail coverts, head, and neck; remainder is khaki; green bills and dark orange legs and toes
White variety—orange bills and legs
khaman  A bread made from bengal gram (Cicer arietinum)
khamir  A yeast used for making bread
khamiri puri  A flat, fermented, deep-fried, wheat bread
khamon-tan  A sweet, slightly alcoholic, glutinous rice
khanom-thai-fu  A sweet, slightly alcoholic, glutinous rice made into a cake
kharadya  A wheat flour doughnut
khar-jura (varuni)  A sweet, cloudy, white wine made from date-palm sap; wine fermented from dates (Phoenix dactylifera)
khesari  See pea, grass
khoya  A sour, diluted, skimmed milk
khubz mbassis  A crisp, crusty bread baked in a solid ring and made from semolina flour and olive oil
kiam  A sour, diluted, skimmed milk
kiam chai (kiam chye)  Pickled mustard leaves
kiam chye  See kiam chai
kiangsu (round barrel)  A slate gray (sometimes black or white), draft water buffalo that originated in Tanyang county, China
**kibbleh**
A dish of ground lamb and cracked wheat

**kibbed**
Crushed, baked dough or extruded cooked dough

**kid**
A young goat; immature, caprine meat

**kidney**
One of a pair of organs of the body that excretes liquid waste products of metabolism and is embedded in a fatty deposit. Two ½-pound kidneys per 1000 pound steer; human kidney ultratritrates 170 liters (45 gallons) of liquid per day; human urine 1.5 liters (1.6 quarts) per day

Preparation for food—wash, remove outer membrane, cut into ½-in. slices

Composition (raw): moisture 76–79%; protein 15–17%; fat 3–7%; carbohydrate 1%; ash 1.3%; cholesterol 315 mg/3-oz beef kidney; sodium: 71 mg/oz of beef kidney, 14 mg/oz of pork kidney, 16 mg/oz of poultry kidney

Storage: Coldest part of the refrigerator; use within 1–2 days

See Part 2: Beef Retail Yield; Cholesterol Control; Gland Weights; Lamb Cuts and Uses; Meat, Servings Per Pound; Minerals, Food; Nicotinic Acid, Food; Organ Weights; Pantothenic Acid Content; Thiamin, Food; Variety Meat, Cooking; Variety Meat Percentages of Daily Recommended Allowances; Variety Meat Preparation; Vitamin A, Food

**kidney bean**
*Phaseolus vulgaris* bean

See French bean

**kidney chop**
See Part 2: Veal Chart; Veal Cuts; Veal Cuts and Uses

**kidney knob**
The fat surrounding the kidney; perirenal fat

**kidney sausage**
A medium to coarsely chopped, cooked, unsmoked, jellied and/or specialty sausage made from medium to coarsely chopped meat; available in rings or loaves

**kidney suet**
A large piece of beef fat that encases the kidney

**kielbasa (kielbassy; kolbarsy; kolbarsa; kolbase; kolbassy; Polish sausage)**
A cooked, Polish sausage made from coarsely ground pork and finely chopped beef that is highly seasoned; also a fresh (uncured and uncooked) variety; uncooked, smoked, sausage that is highly seasoned with garlic; a highly seasoned cooked sausage made from coarsely ground pork with added beef or mutton; a smoked sausage made from pork and beef and seasoned with garlic and herbs

Composition: moisture 54%; protein 13.3%; fat 27%; carbohydrate 2.1%; ash 3.5%; sodium 280 mg/slice (26 g)

See Polish sausage

See Part 2: Sausage Identification

**kielbassy**
See kielbasa

**Kienli**
A prolific, black and white, lop-eared pig from Hupeh (Hubei) and Hunan (south central) provinces, China

**kieselguhr**
See diatomaceous earth

**kieserite**
*MgSO₄ · H₂O* See magnesium sulfate

See Part 2: Fertilizer Materials

**ki-koji**
A yellow koji from growth of *Aspergillus oryzae* See koji

**kiel-k**
A prefix for quantities 1000 times larger (10⁴) than the base unit

**kilocalorie (Calorie [Cal]; kilogram-calorie (kg-cal); large calorie)**
A measure of heat, energy, work; the heat required to raise the temperature of 1000 g or 1 kg (2.2 lb) of water 1°C (1.8°F) or to raise 10 g (0.35 oz) of water from its melting point to its boiling point; heat needed to raise the temperature of 1 l of water from 14.5 to 15.5°C under normal atmosphere; the energy equivalent of food is usually given in kilocalories

1 kg-cal = 4.186 × 10¹⁰ ergs
= 4186.17 joules (J; 1 J = 10⁷ ergs)
= 3087.77 foot pounds (ft-lb)
= 1000 gram calories or small calories
= 426.900 kilogram meters (kg-m)
= 4.186 kilojoules (kJ)
= 3.96832 British thermal units (Btu)
= 0.001581 metric horsepower-hour (hp-h; 1 hp-h = 75 kg-m-h)
= 0.001559 U.S. horsepower-hour (hp-h)
= 0.001163 kilowatt hour (kW-h)

4 kg-cal = 1 gram of protein
= 1 gram of carbohydrate

9 kg-cal = 1 gram of fat

3500 calories = 1 pound of body weight

<table>
<thead>
<tr>
<th>Activity of 150 lb person</th>
<th>Calories per hour</th>
</tr>
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<tbody>
<tr>
<td>Lying down or sleeping</td>
<td>80</td>
</tr>
<tr>
<td>Sitting</td>
<td>100</td>
</tr>
<tr>
<td>Driving an automobile</td>
<td>120</td>
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<tr>
<td>Standing</td>
<td>140</td>
</tr>
<tr>
<td>Domestic work</td>
<td>180</td>
</tr>
<tr>
<td>Walking, 2½ mph</td>
<td>210</td>
</tr>
<tr>
<td>Bicycling, 5¼ mph</td>
<td>210</td>
</tr>
<tr>
<td>Gardening</td>
<td>220</td>
</tr>
<tr>
<td>Golf; lawn mowing, power mowers</td>
<td>250</td>
</tr>
<tr>
<td>Bowling</td>
<td>270</td>
</tr>
<tr>
<td>Walking, 3½ mph</td>
<td>300</td>
</tr>
<tr>
<td>Swimming, ½ mph</td>
<td>300</td>
</tr>
<tr>
<td>Square dancing; volleyball; roller skating</td>
<td>350</td>
</tr>
<tr>
<td>Wood chopping or sawing</td>
<td>400</td>
</tr>
<tr>
<td>Tennis</td>
<td>420</td>
</tr>
<tr>
<td>Skiing, 10 mph</td>
<td>600</td>
</tr>
<tr>
<td>Squash and handball</td>
<td>600</td>
</tr>
<tr>
<td>Bicycling, 13 mph</td>
<td>660</td>
</tr>
<tr>
<td>Running, 10 mph</td>
<td>900</td>
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</tbody>
</table>
kilogram per minute (kg-cal/min)  Thermo unit per minute; a measure of power, rate of energy, and heat

- 1 kg-cal/min = 51.43 foot-pounds/second (ft-lb/s)
- = 0.09361 horsepower (hp)
- = 0.06972 kilowatt (kW)

kilocalorie per second (kg-cal/s)  Thermal units per second; a measure of power, rate of energy, and heat

- 1 kg-cal/s = 4186.17 watts (W; 1 W = 10^7 erg/s)
- = 7.23300 foot-pounds per second (ft-lb/s)
- = 0.01333 metric horsepower (hp; 1 metric hp = 75 kg-m/s)
- = 0.001315 U.S. horsepower (hp; 1 U.S. hp = 550 ft-lb/s)
- = 0.009806 kilowatt (kW)
- = 0.009296 British thermal units per second (Btu/s)
- = 0.002342 kilocalorie per second (kg-cal/s; thermal units per second)

kilogram per cubic meter (kg/m^3)  A measure of density

- 1 kg/m^3 = 1.68556 pounds per cubic yard (lb/yd^3)
- = 0.07769 pound per bushel (lb/bu; U.S.)
- = 0.06243 pound per cubic foot (lb/ft^3)
- = 0.009711 pound per gallon (lb/gal), dry (U.S.)
- = 0.008345 pound per gallon (lb/gal), liquid (U.S.)
- = 0.0011 gram per cubic centimeter (g/cm^3)
- = 0.00003613 pound per cubic inch (lb/in.^3)

kilogram per hectare (kg/ha)  Weight per unit area

- 1 kg/ha = 0.890 pound per acre (lb/acre)
- 100 kg/ha = 1.4869 bushels (60 pounds) per acre [bu (60 lb)/acre]

kilogram per meter (kg/m)  A measure of pressure

- 1 kg/m = 0.672 pound per foot (lb/ft)

kilogram per square centimeter (kg/cm^2)  A measure of pressure

- 1 kg/cm^2 = 9.80655 x 10^5 dynes per square centimeter (dyne/cm^2)
- = 2048.17 pounds per square foot (lb/ft^2)
- = 735.514 millimeters Hg (columns of mercury, Hg)
- = 32.8083 feet water (columns of water, max. density at 4°C, 39°F)
- = 28.9572 inches Hg (columns of mercury, Hg)
- = 14.2234 pounds per square inch (lb/in.^2; also psi)
- = 100 millimeters Hg (columns of water, max. density at 4°C, 39°F)
- = 0.9807 bar
- = 0.96778 atmosphere, standard (atm; 1 atm = 760 mm Hg)

kilogram per square meter (kg/m^2)  A measure of power, rate of energy, and heat

- 1 kg/m^2 = 9.80665 dyne per square centimeter (dyne/cm^2)
- = 2048.17 pounds per square foot (lb/ft^2)
- = 735.514 millimeters Hg (columns of mercury, Hg)
- = 32.8083 feet water (columns of water, max. density at 4°C, 39°F)
- = 28.9572 inches Hg (columns of mercury, Hg)
- = 14.2234 pounds per square inch (lb/in.^2; also psi)
- = 1 bar
- = 0.9807 atmosphere, standard (atm; 1 atm = 760 mm Hg)
## Kilohm (kΩ)

1 kilohm (kΩ) = 1000 ohms (Ω)

## Kiloline

1 kiloline = 1000 maxwells (Mx)

## Kiloliter (kl)

A unit of metric volume

1 kl = 1,023.0 cubic inches (in³)

## Kilometer (km)

A measurement of length

1 km = 1.0 × 10⁶ millimeters (mm)

## Kilometer per hour

A measure of velocity

1 km/h = 54.68 feet per minute (ft/min)

## Kilometer per hour per second (km/h-s)

A measure of acceleration

1 km/h-s = 27.78 centimeters per second per second (cm/s²)

## Kilowatt (kW)

A measure of power

1 kW = 1 × 10⁷ ergs per second (erg/s)

## Kilowatt hour (kW-h)

A measure of energy, work

1 kW-h = 3.6 × 10¹² ergs

---

kimaj A pocket, flat bread
kimbil A sorghum beer
kimchee Pickled, spiced, hot cabbage
kimchi (kimchee) Acidic, carbonated vegetables; spiced, pickled cabbage; fermented mixture of cabbage, cucumbers, garlic, onions, radish, red pepper, and often shellfish
kinda A type of dawadawa
kindabjugu A moist, cooked or uncooked, smoked Icelandic sausage made from coarsely chopped, mildly seasoned lamb with lamb fat added and stuffed into an artificial casing
kinetic In motion
kingfish A food fish similar to the mackerel but larger; contains less fat; lives in fresh and saltwater

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kingklip (Genypterus capensis) A food fish
king mackerel (Scomberomorus regalis; Sierra cavalla) A finfish that has light meat and pronounced flavor See mackerel

king orange See tangerine
king pirate See pike
king’s acre berry A hybrid of blackberry and raspberry
king (chinook) salmon (Oncorhynchus tschawytscha) A finfish that has a light meat and light to moderate flavor See salmon

kinghwa A very prolific, black and white, lop-eared, pork and bacon pig from Chekiang province, China
kin-pan See kumquat
kinzanji miso A flavorful paste made from soybean; often mixed with cereals
kinzmarauli A red wine
kip The skin or hide from small or young animals
kipper Herring (or other fish) that are split, lightly salted, and smoked overnight See Part 2: Fish, Smoke-Cured; Riboflavin, Food
kippered An adjective that denotes hot smoked, fish products
kipper snack Boneless kipper packed in their own bouillon

---

= 859,850 gram calories (g-cal)
= 367,123 kilogram meters (kg-m)
= 3,412.66 British thermal units (Btu)
= 859.97 kilogram-calory (kg-cal; thermal units)
= 22.75 pounds of water raised from 60° to 212°F
= 3.53 pounds of water evaporated from and at 212°F
= 1.35972 metric horsepower-hours (hp (metric)-h; 1 metric hp-h = 75 kg/m-h)
= 1.94111 U.S. horsepower-hours (b.p.-h; U.S.)
kip skin  Calf skin weighing between 15 and 25 lb
Kirchner medium  A microorganism media used for
the propagation of Mycobacterium tuberculosis
See Part 2: Microorganism, Media
Kirin Black  A prolific, prick-eared pig that has black
and white points; found in northeast China and ob­
tained from crossing Large White and Berkshire with
native sows
Kirmess (kirschwasser)  A dry, colorless, cherry
brandy
Kirsch  A clear brandy distilled from fermented, small,
black cherries (Prunus)
Kirschwasser  A German, after dinner cordial
Kirsebaerlikoer  A brandy distilled from fermented
cherries
Kiselo mleko  A yogurt made from cow's milk
Kishk  A mixture of fermented milk (2–3 parts) with cereal (1 part, normally wheat) See
hamma
Kiska  An imitation, cooked sausage made from pork,
ribs, pork liver, pork spleen, salt, beef blood,
and spices
Kiskatom  Hickory nut
Kislaw  A brandy distilled from fermented watermelon
Kisra (kesrah; ksa)  A thin, flat, sorghum bread
Kisra rhahefia  See Kisra
Kissingen  A sparkling, astringent, natural, mineral
water from Bavaria
Kitanihon rice cracker  A cracker usually made
without sugar
Kitataka  A processed cheese made with ghee and
sugar
Kitron  A citrus liqueur
Kiwi (Chinese gooseberry; Actinidia chinensis)  A subtropical, New Zealand, climbing vine that pro­
duces an edible fruit with a rough, green skin that
turns brown and fuzzy; the flesh is light green, white
in the middle, and has very small, black seeds; ripen
at room temperature in a plastic bag; eaten when
soft; cut in half and scoop out contents; do not eat
skin
1 pound = 4 medium kiwi
= 2 cups, peeled, sliced, and halved
Composition: solids 21.5%; pH 4.0; acidity 1.7%; sugar
12.7%; nitrogen 0.3%; ash 3%; vitamin C 158 mg/100
gram; carbohydrate 15.6%; protein 1.3%; fat 0%
Storage: refrigerate; at 1°C will keep for weeks See
Chinese gooseberry; kiwifruit
Kiwifruit (Chinese gooseberry)  An egg sized and
shaped (oval), fuzzy, brown fruit; has emerald-green
flesh with tiny, black, edible seeds, a strawberry-
melon flavor, and a sweet, tart taste; high in vitamin
C; ripen at room temperature
Storage: store ripe fruit in refrigerator; can be frozen
See Chinese gooseberry; kiwi
Kiwi, yangtato (Actinidia chinensis)  A warm
temperature vine that produces an edible fruit; vari­
ety hayward
Kjargaard  A hard Danish cheese made from skimmed
milk with rennet added
Kjeldahl (1849–1900)  A Danish chemist who devel­
oped a method of determination of nitrogen that
bears his name
Kjeldahl determination  A determination of total
nitrogen by oxidizing the carbon and hydrogen and
converting the nitrogen into ammonium sulfate; sul­
furic acid is the oxidizing reagent;
\[
\begin{align*}
\text{H}_2\text{SO}_4 & \rightarrow \text{H}_2 + \text{SO}_2 + \text{O}_2 \\
\text{NH}_3 + \text{H}_2\text{SO}_4 & \rightarrow \text{NH}_4\text{HSO}_4
\end{align*}
\]
Sodium or potassium sulfate raises the boiling point
and thus aids in the oxidation; copper sulfate acts as a
catalyst:
\[
\begin{align*}
\text{R} - \text{C} - \text{C} & \underset{\text{O}}{\text{O}} + \text{O} \rightarrow \text{CO}_2 + \text{H}_2\text{O} + \text{NH}_3 \\
\text{NH}_2 & \text{NH}_3 + \text{H}_2\text{SO}_4 \rightarrow \text{NH}_4\text{HSO}_4
\end{align*}
\]
Concentrated NaOH is then added and the ammonia
is liberated and collected in a standard acid; from the
amount of acid neutralized the ammonia nitrogen
and crude protein (N x 6.25) can be calculated
Kjothuoningur  A moist, cooked, unsmoked Icelandic
sausage made from finely chopped, medium seasoned,
beef and pork with pork fat added and stuffed into an
artificial casing
KKCF  Kidney knob and channel fat (averages 3.75%
of the carcass; range 2.5–5%)
KL  Microorganism media used for the serological
identification of Corynebacterium
See Part 2: Microorganism, Media
Klamath weed  A plant having a toxic principle
See Part 2: Poisonous Plants
Klebsiella  A nonmotile genus of plump, short rods
with rounded ends usually found in the respiratory or
intestinal tract; some are pathogenic
See Part 2: Microorganism, Media; Microorganism Re­
actions on Differential Tube Media
Klekowatch  A type of gin
Klenz cheese (Brinsen)  A cheese made from
sheep's milk with rennet added
Kligler iron agar  See Part 2: Microorganism, Media;
Microorganism Reactions on Differential Tube Media
Klip (klipfish)  Cut, salted, smoked cod
Kloster cheese  A soft French cheese made from
whole milk with rennet added
Klosterkase  A soft to semisoft cheese made from
cow's milk that is strongly flavored and ripened by
surface bacteria
Kmag  A pocket, flat bread
Knackebrod  A large (10-in. diameter), round, thin,
Scandinavian, "hard tack"-type bread made from
whole-rye meal
Knackebrot  A whole meal, wheat or rye crispbread
knacker 1) A moist, uncooked, smoked eastern German sausage made from coarsely chopped, heavily seasoned, pork and stuffed into a pork or artificial casing. 2) A moist, cooked, smoked Swiss sausage made from finely chopped, medium seasoned, beef, pork, and veal and stuffed into a pork or sheep casing. 3) A moist, cooked, smoked Irish sausage made from finely chopped, mildly seasoned, beef and pork and stuffed into a pork casing. 4) A finely chopped, cooked, smoked or unsmoked, American sausage; available in medium to large diameter links or large diameter casing for slicing

knackwurst (garlic sausage; knoblauch; knockwurst) 1) A German, beef and pork sausage formulation similar to bologna; no blenders are added and garlic, coriander, and nutmeg are used in the flavoring; stuffed in large casings and linked every 4 inches. 2) A finely chopped, cooked, smoked or unsmoked, American sausage; available in medium to large diameter links or large diameter casings for slicing; ingredients similar to franks and bologna but with a strong, garlicky flavor. 3) A moist, cooked, unsmoked, Australian sausage made from finely chopped, medium seasoned, pork with chunks of cheese added and not stuffed into casings. 4) A "plump," linked sausage made of pork and beef and spicier than a frankfurter; fully cooked, but usually served hot. 5) A moist, cooked, unsmoked or smoked Austrian sausage made from finely chopped, mildly seasoned (nitrite) beef and pork and stuffed into a beef casing with a diameter of greater than 30 mm

Composition: moisture 55.5%; protein 12%; fat 27.7%; carbohydrate 1.7%; ash 3.1%.

See Part 2: Sausage Identification

knakk A moist, cooked, smoked Norwegian sausage made from finely chopped, mildly seasoned, beef and pork and stuffed into a pork or artificial casing

knakworst A moist, cooked, smoked Dutch sausage made from finely chopped, medium seasoned, beef and pork and stuffed into a pork, sheep, or artificial casing or not stuffed into a casing

knaoost (olomoucky; pultost) A strongly flavored, semisoft to semihard, acid (sour) curd, Norwegian cheese made from cow’s milk with rennet added and flavored with caraway seed

knead To work dough or similar semisolid mixture, either by hand or in a machine with revolving agitator blades until it is smooth, pliable, light, and springy; for example, in bread to combine water and flour protein to form gluten.

See Part 2: Margarine Production

knee Hinge joint between tibia and femur

See Part 2: Bone

kneecap Patella

kneeling ability The capacity of deep water plants to become erect after being in a horizontal position

knepe See manoncillo

knob celery See celeriac

knoblauch See knackwurst

knoblauchbruhwurst A moist, cooked, smoked eastern German sausage made from medium chopped, heavily seasoned beef and pork and stuffed into a pork casing or not stuffed into a casing

knoblauchrohwurst A moist, uncooked, smoked, eastern German sausage made from medium chopped beef and pork

knoblauch sausage See knoblauch

knocked-down flange A false seam in which the body flange is bent against the body without engaging the cover hook

knocking The process of stunning an animal to render it insensible prior to slaughter

knockwurst (knoblauch sausage) A moist, cooked, smoked American sausage made from finely chopped, mildly seasoned (garlic) beef and veal and stuffed into a 1\(\frac{1}{2}\)-in. pork, sheep, or artificial casing; sodium content 687 mg/link (68 g)

knol-kohl See kohlrabi

knot A measure of speed

1 knot = 6076 feet per hour (ft/h)  
= 2027 yards per hour (yd/h)  
= 51.44 centimeters per second (cm/s)  
= 1.852 kilometers per hour (km/h)  
= 1.688 feet per second (ft/s)  
= 1.151 statute miles per hour  
[mi (statute)/h]  
= 1 nautical mile per hour  
[mi (nautical)/h]

knotroot See artichoke, Japanese or Chinese

knotted wrack (Ascophyllum nodosum) A brown, algae seaweed used for livestock feed and the production of alginites used for thickening, emulsification, and food film formation

knuckle (tip) 1) A meat cut made up primarily of quadriceps muscles (face of the round or sirloin tip) cranial to the femur; often made into dried beef. 2) Ankle joint in pork or veal See also sirloin

See Part 2: Beef, Boneless Cuts; Beef Round, Bone Structure; Beef Round Cuts; Meat Identification

knyszynska A semidyry, uncooked, hot smoked Polish sausage made from medium or coarsely chopped, medium seasoned beef and pork and stuffed into a pork or artificial casing

koami A fish sauce made from shrimp (Mysis)

koa sarn See granulation

kobasica domaca A moist, uncooked, unsmoked Yugoslavian sausage made from medium chopped, medium or heavily seasoned pork and stuffed into a 62–65-mm beef or pork casing or not stuffed into a casing

kobasica ekstra A moist, cooked, smoked Yugoslavian sausage made from finely chopped, mild or medium seasoned, beef and pork and stuffed into a 59-mm beef or artificial casing

kobasica govedja A moist, cooked, smoked Yugoslavian sausage made from medium chopped, mildly seasoned, beef and stuffed into a 52-mm beef or pork casing

kobasica kranjska A moist, cooked, smoked Yugoslavian sausage made from medium chopped, mildly seasoned, pork and stuffed into a 49-mm sheep casing

kobasica lovacka A moist, cooked, smoked Yugoslavian sausage made from medium chopped, medium seasoned, beef and pork and stuffed into a 51-mm beef, pork, or artificial casing
kobasica pariska A moist, cooked, smoked Yugoslavian sausage made from finely chopped, mildly seasoned, beef and pork and stuffed into a 59-mm beef or artificial casing.

kobasica sremska A dry, uncooked, smoked Yugoslavian sausage made from coarsely chopped, heavily seasoned, pork sausage that is fermented and stuffed into a 35–41-mm pork casing.

kobasica tirosska A moist, cooked, unsmoked Yugoslavian sausage made from medium chopsilled, mildly seasoned, pork and stuffed into a 48-mm artificial casing.

kobe A variety of lespedeza.

kobe beef (high quality beef; super beef) Thin-sliced, choicest cuts of the best carcasses; the slow growing cattle are massaged and fed secret rations.

kobi Dried fish, usually Tilapia.

kobilica A medium to coarsely chopped, cooked, smoked or unsmoked American sausage; available in large diameter links, rings, or large diameter casings for slicing.

koch A baked product or dried flour produced from the fermented pseudostem of ensete or false banana.

kokia (Kochia scoparia) An annual weed.

kochmettwurst A moist, cooked, smoked eastern German sausage made from medium chopsilled, medium seasoned beef and pork and stuffed into an artificial casing.

Koch, Robert The German physician who indicated that diseases were caused by microorganisms.

kochsalami 1) A dry, cooked, smoked eastern German sausage made from coarsely chopsilled, medium seasoned pork and stuffed into a beef, pork, or artificial casing. 2) A cooked, smoked, and semidried, fermented sausage made from coarsely chopped, heavily seasoned beef and/or pork; 50–70-mm diameter. 3) A semidry, cooked, smoked Swiss sausage made from fine, medium, or coarse chopsilled, medium seasoned beef and pork and stuffed into a beef, pork, or artificial casing or not stuffed into a casing.

kochman A flavorful paste made from soybeans mixed with rice and mustard.

kochwurst A finely to coarsely chopped, cooked, smoked or unsmoked, American jellied and/or specialty sausage; available in links, loaves, or canned.

kofkizler A wheat flour doughnut.

kofta A meatball.

kofte Meat rissoles.

kohlrabi (brassica; cabbage turnip; knol-kohl; turnip cabbage; Brassica oleracea var. gongylodes) A cabbagelike, sulfur-containing plant with a pale green, swollen base that looks like a turnip; base size averages 3 in.; can be as large as a grapefruit, but preferred size for best eating is that of an orange; the stem is utilized (raw, steamed with butter, or cooked in broth) as a cooked vegetable or sliced for salads; also used as livestock feed; young leaves used like greens or spinach; winter vegetable between a turnip and cabbage; 8000 seeds/oz; thin to 6–12 in. in rows 24 in. apart; matures in 60 days; harvest when stem is 2–3 in.; yield 1 bu/50 ft row.

Color: green, purple, white.

<table>
<thead>
<tr>
<th>Kohlrabi variety</th>
<th>Season from seed</th>
<th>Use</th>
<th>Size</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Purple</td>
<td>60–63 days</td>
<td>Salads, cooked</td>
<td>Flat globe</td>
<td>Purple skin, green-white flesh</td>
</tr>
<tr>
<td>Early White</td>
<td>50–70 days</td>
<td>Fresh, 2 in. freezing</td>
<td>Round</td>
<td>Light green, white flesh</td>
</tr>
<tr>
<td>Grand Duke</td>
<td>Early, 45 days</td>
<td>Bulbs and tops eaten</td>
<td>Round</td>
<td>Blue-green</td>
</tr>
<tr>
<td>Prima Hybrid</td>
<td>Early, 60 days</td>
<td>Raw, 2 in. cooked</td>
<td></td>
<td>Pale green</td>
</tr>
</tbody>
</table>

Composition (raw stem): moisture 90%; protein 2%; fat 0.1%; carbohydrate 7%; ash 1%.

Storage: refrigerate in a plastic bag, 32°F, 90–95% relative humidity, 1–3 weeks storage life; also store in pits or cold cellars.

See Part 2: Minerals, Food; Planting Density; Storage; Sugar, Vegetables; Vegetable Composition; Vegetable Cooking; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Plants; Vegetables Classification; Vegetables, Cooking Frozen; Vegetable Yields.

koikuchi shoyu A soy sauce made with 50% wheat.

koji A molded, cooked cereal that is a source of enzymes and substrate for fermented mirin, miso, sake, and soy sauce.

kokiano A dessert wine.

kokja A rice wine.

kokkineli A resinated, rose wine.

koko A sour, cereal (maize, millet, or sorghum) porridge.

kokonte A porridge paste made from cassava tubers that have not soaked in water.

kokt kjottpolse A moist, cooked, unsmoked Norwegian sausage made from finely chopped, mildly seasoned beef and pork and stuffed into a beef casing.

kokt medister A moist, cooked, unsmoked Norwegian sausage made from finely chopped, mildly seasoned beef and pork and stuffed into a beef casing.

kokui Acidic, maize-flour (80% extraction) dumpling.

kola See cola; kola nut.

kolach (kalac; kalach; kolachy) A Bohemian yeast bread containing a fruit filling See kolachy.

kolachy A bun filled with prune, apricot or cottage cheese See kolach.

kola nut The seed of the Sterculiaceae tree.

Varieties: Cola nitida (large nuts); Cola acuminata (small nuts) See also kola nut extract.

kola nut extract (guru nut) 60% alcoholic extract of nuts; used in soft drink industry; beverage contains 120 ppm of extract; also used as a flavoring agent for food; contains caffeine.

kolatchen A sour-cream yeast biscuit.
kolbarsy  See kielbasa
kolbasa  See kielbasa
kolbase  See kielbasa
kolbassie (kielbasa)  A cooked, smoked, and cured, Polish sausage made from pork and beef seasoned with pepper, garlic, salt, sugar, and thyme.  See Part 2: Sausage Nutritive Value
kolbasz  A beef and pork salami
kol-bee  A loaf-shaped gouda-type cheese
kolbose, Hungarian  A cooked, smoked sausage made from finely ground, cured beef and pork with seasonings and stuffed into casings
koligu  A type of dawadawa
kolofar  A beef and pork salami
kolos-monostor cheese  A cheese made from sheep’s milk with rennet added
kolosvarer cheese  A cheese made from buffalo’s milk
kolska  A moist, cooked, unsmoked Polish sausage made from medium or coarsely chopped, medium seasoned meat and stuffed into an artificial casing
kolypeptic  See colypeptic
kombu  A seaweed used in soup and for seasoning  See konbu
kombucha  A seaweed; kelp family
kome koji  Rice koji  See koji
kome miso  A flavorful paste made from soybean mixed with milled rice
komi  An acidic, whole-meal, maize dumpling
kominje  A semihard, reduced fat cheese made from cow’s milk; usually wheel-shaped; sometimes flavored with cumin, clove, or caraway seed
komovica  A brandy distilled from fermented grape skins
komposta lampsa grand bretagne  Orange compote
kombu (kombu)  A seaweed; kelp family
kondowole  A porridge or paste made from cassava flour, sometimes with maize added
kong-chai  A pickled, Chinese cabbage
kongo  A sorghum beer
konigskase  A creamy, semisoft, mild-flavored cheese made from cow’s milk and ripened by surface bacteria
koniki  An herb-flavored, low alcohol, citrus liqueur
konjac  A brandy distilled from fermented grapes
konya  A sorghum beer
koobi  See kobi
kooi  Soup
kookwurst  A moist, cooked, smoked Australian sausage made from finely chopped, medium seasoned beef and stuffed into artificial casings
Kool-Aid  A General Foods drink mix
  1 cup, prepared = 9.3 oz
  sugar 6 tsp/8 oz
kopen  A sour, pungent cheese made from goat’s milk  See bauden
koppen cheese  A sharp cheese made from goat’s milk
Korean  A variety of lespedea
kori todu  See tofu
korn  A schnapps-type spirit made primarily from rye
korn dog  See corn dog
kornlet  See fritterkorn
korovai  A white, wheat bread
korv  Sausage
korzh  A white, wheat bread
kos  Yogurt
kosenkorva  A schnapps-type spirit
koser citrate medium  A medium used to grow coliform organisms
  See Part 2: Microorganism, Culture Media, Dairy and Food Products; Microorganism, Selective and Differential Broths and Media, Water Filtration Plant
kosher (kasher)  A Hebrew term for ritually clean foods; fit; proper; prepared according to Jewish dietary laws; to kosher is to salt and soak meat or poultry to remove the blood; ritualistic slaughter  See glatt kosher; Judaism, dietary rules
kosher, glatt  Beef carcasses in which the lungs are free of adhesions
kosher salami  An all-beef, cooked salami that contains mustard, coriander, and nutmeg in addition to regular spices  See salami, cotto
Kosher salt  See salt, flake
Kosher stick  Cutting the throat just back of the jaw
kostromskoy  A gouda-type cheese
kota kapama  Braised chicken in tomato and cinnamon sauce
kotimainen meetwurst  A coarse salami made from beef, pork, and sometimes horse meat
kottkorv  Composition: moisture max. 65%; fat max. 23%; binder max. 3%
koumiss (coomys; koumys; kumiss)  Fermented, mare’s milk; double lactic and alcoholic fermentation; sometimes made with the milk of an ass, camel, or cow  See kumiss
koumouni  A clear, mildly alcoholic, sorghum beer
kouron  Sour, sorghum or millet porridge
kow yuk  Pork cooked in soy, spice, and honey sauce
koya dofu  See tofu
kpalugu  A type of dawadawa
kpata  A sorghum beer
**Germinated, dried grains of sorghum; used as malt for sorghum beer**

**Shallow-oil-fried gari**

**Small (2–3 mm), steamed, fermented balls of maize or yam flour often mixed with red palm oil**

**Symbol for the element krypton**

**A rice wine**

**General-purpose paper manufactured from pine pulp (sulfate pulp); it is strong and relatively cheap; it is the highest tonnage paper produced in U.S.**

**A pork pepperoni 1) A dry, uncooked, smoked Irish sausage made from coarsely chopped, heavily seasoned pork and fermented and stuffed into artificial casings. 2) A semidry, cooked, smoked Austrian sausage made from coarsely chopped, heavily seasoned (nitrite) pork and beef and stuffed into pork casings with a diameter of less than 30 mm**

**A semidry, cooked, smoked Australian sausage made from coarsely chopped, heavily seasoned (garlic) beef and pork; not put into a casing**

**A moist, cooked, smoked Polish sausage made from medium chopped, medium seasoned pork and stuffed into an artificial casing**

**1) A moist, cooked, smoked or unsmoked Austrian sausage made from coarsely chopped, medium seasoned (nitrite), beef, lamb, and pork and stuffed into artificial casings with a diameter of greater than 60 mm. 2) A moist, cooked, Australian sausage**

**A dry, cooked, smoked eastern German sausage made from coarsely chopped, medium seasoned beef and pork and stuffed into a beef, pork, or artificial casing**

**A cooked sausage similar to a berliner; a medium to coarsely chopped, cooked, smoked or unsmoked American sausage available in large diameter links, rings, or large diameter casings for slicing**

**A garlic pepperoni made from pork or pork and beef**

**A semidry, cooked, double-smoked Polish sausage made from medium or coarsely chopped, medium seasoned beef and pork and stuffed into a beef casing**

**A dry, cooked, double-smoked Polish sausage made from medium or coarsely chopped, medium seasoned beef and pork and stuffed into a beef casing**

**A type of gin**

**A jam-filled, wheat flour doughnut**

**A military ration consisting of a 32-oz, three-meal concentrated food package (3726 calories); pocket-size and easy to carry; Example of components: pemmican canned cheese, veal loaf, ham spread, malted milk tablets, candy bars, bouillon cubes, and soluble coffee**

**A gaseous element; at. no. 36; at. wt. 83.80; noble gas group of Periodic Table; oxidation state 0; electron configuration 2–8–18–8 orbit K L M N**

**See kiara**
kubz A flat, pocket bread

kuchay (kiu-ts'ai) An oriental variety of garlic; the cloves, leaves, and flowers are used

Kuche Fat-tailed sheep used for pelts, wool, and mutton; fleece (coarse carpet) is black, white, brown-gray, and multicolored; most are polled; found in Sinkiang (Xinjiang, north west China) area

kude A sorghum or millet, thick porridge, gruel containing cassava flour

kudzu (fan-kot; puer; Pueraria phaseoloides or thunbergiana) A starchy root; runners up to 50 ft long; a perennial plant that is used to reclaim gullies and wasteland; pH 6.0

See Part 2: Seed, Germination

kufa A type of chicha

kugelhopf An open-textured sponge cake

kujawska A semidry, cooked, double-smoked Polish sausage made from finely chopped, medium seasoned beef and pork and stuffed into an artificial casing

kulat jerami A straw mushroom

kulcha A flat, leavened (using yogurt as a starter) pocket bread

kulebyaka A fish-filled, fried, wheat-flour dough pie

kulen A pork pepperoni; a dry, uncooked, smoked Yugoslavian sausage made from coarsely chopped, heavily seasoned, pork that is fermented and stuffed into a 35-41-mm pork or artificial casing

kulich A bread containing almonds and colored yellow with saffron

kulm A creamy, mild-flavored, semisoft cheese made from cow's milk and ripened by surface bacteria; usually 2-kg wheels

kumbach cheese A soft, German cheese made from whole or partially skimmed cow's milk with rennet added

kumiss (koumiss; kumys; milk wine) An acidic, alcoholic horse's, donkey's, or camel's milk; a fermented, mare's milk drink

Procedure:
1. Heat whole cow's or mare's milk to 92°C for 5 min
2. Cool to 26°C
3. Add starter at 10-30% of Kluyveromyces lactis, Lactobacillus acidophilus, L. bulgaricus
4. Final product
   Type A: lactic acid 0.6%; alcohol 0.7%
   Type B: lactic acid 0.8%; alcohol 1.1-11.7%
   Type C: lactic acid 1%; alcohol 1.7-2.5%

See koumiss

kummelwurst (carawaywurst) A cooked, ring sausage containing caraway seed

kumquat (cumquat; kin-pan; Citrus aurantium; Fortunella japonica) A fruit produced by a shrub or small tree and resembling a small (plum size; 1 in.), oblong orange (deep orange color) with a thick to thin orange skin; not a citrus; the pulp has an acid taste; the entire fruit including rind and skin (but remove seeds) may be eaten raw or used in salads, for pickling, candy, marmalade, and conserves; source of vitamin C

Variety: Nagami

Composition (raw): moisture 81%; protein 1%; fat 0.1%; carbohydrate 17%; ash 0.6%

Storage: refrigerate; 1 month storage life

See cumquat

See Part 2: Fruit Classification; Minerals, Food

Kumru A fish similar to bass

kumys An alcoholic beverage prepared from fermented, mare's milk; a fermented, alcoholic, milk beverage

See kumiss

kung chao A fermented, salty, paste condiment made from shrimp (with added color)

kung chom A salty, fermented, paste condiment made from shrimp

kung-som A salty, fermented, paste condiment made from shrimp

kunnu tsaki A sorghum beer

kuo mo A button mushroom

Kupferberg Media used for the isolation and propagation of Trichomonas

See Part 2: Microorganism, Media

kurini cheese (eriwani) A Russian cheese made from sheep's milk

kurisi A dried fish (Holocentrum)

kurrat An onionlike plant closely related to the leek

kurro's salt See sodium phosphate

kurt See karut

kurung A sour, diluted milk

kurut Dried, hard spheres of fermented milk or milk curds

kusei A panir-type cheese

kushuk A parboiled ferment of wheat and turnip

See kishk

kutira gum See Part 2: Gum Distribution

kuva An alcoholic beer made from beans

kvass (kuass; kwass) A sour, alcoholic beverage made from rye (Secale cereale) or rye and wheat

See kvass

kvass An intoxicating Russian beverage made from rye flour, malt, and mint

kwana A unit of weight used in Japan and Republic of Korea

1 kwana = 0.00375 metric ton

Kwangsi cattle Small, brown and roan, Zebu-type, draft cattle; originated in Kwangsi province, China
Kwangtung  A slightly brownish, light gray, draft and milk-producing, water buffalo; originated in Kwangtung province, China

Kwangtung pig  Prolific, black and white, lop-eared, sway back, pork and lard pigs with sagging bellies; found in northern Kwangtung, China

Kwangtung Zebu  Yellow to brown to gray, thoracic-humped draft cattle; originated in Kwangtung province, China

kwas  See kvas; kvass

kwashiorkor  A severe form of protein-calorie malnutrition appearing mostly in young children during or after weaning; some or all of the following signs appear; anemia, arrested growth, dermatosis, diarrhea, edema, enlarged liver, hair changes, mental apathy, misery, and muscle wasting

Kweichow cattle  Yellow, prominently humped draft cattle; originated in Kweichow (south central) province, China

Kweichow pig  Black and white, white, or black, sway back pigs with short snouts; found in Kweichow province, China

kwete  A clear, mildly alcoholic, millet and maize beer

kwon  A sorghum or millet, thick, porridge gruel

kyloes  See west highland

kyoku-shi  See koji
Designates the left-handed (levo-) enantiomer (optical isomer) of a compound containing an asymmetric carbon atom; it indicates only the structure of the compounds, not its optical rotation. See also D; enantiomer; optical isomers

L-640,033

A beta-agonist that is orally active

La The symbol for the element lanthanum

Laap ch'euung A fermented, semidry sausage made from pork or beef

Laban A type of cheese or curdled milk; a type of kefir

Laban hamid Buttermilk

Laban khad Buttermilk

Laban matrad A type of kefir; also used to make a white, brined cheese

Laban rayeb See laban matrad

Laban zabadi A yogurt made from buffalo's milk, cow's milk, or mixed milks

Laban zeer A type of kefir stored in earthenware pots

Labdanum oil A volatile oil obtained by steam distillation of the gum of Cistus ladaniferus; used as a flavoring agent in food; sp. gr. 0.906–0.994 Storage: full, tight, glass container in cool, dark place

Label Written, printed, or graphic matter on or affixed to the container of a commodity

Requirements:
Identity and characteristics of the product
Identity of the food (on the principal display panel); the true name of the product
Form of food, e.g., whole or sliced
Common or usual name
Percentage of characterizing ingredient
Common name of each ingredient, in descending order by weight
Identification of food to be prepared from the product and a statement of ingredients that must be added
Quantity of product
Inspection legend
Nutritional contents
Net weight (including liquid in canned products)
Name, place of business, and zip code of manufacturer, packer, or distributor
Ingredients, in descending order by weight

See Part 2: Beans, Peas, and Lentils Label; Cheese Label; Egg Quality and Size Label; Fruit Inspection Labels; Fruit Label; Meat Label; Nutritional Labeling

Label layout Physical measurements to guide label design

Labile Unstable

Labiatae The mint family

Lablab (bonavist bean; hyacinth bean; lubis; Dolichos lablab) A legume that produces white, reddish, black, or mottled seed; the young pods are boiled and eaten, the ripe seeds are used for split pulse (cooked) and the foliage for livestock feed and hay.

Labna (labneh; labnye) A panir-type cheese made from goat's milk and coated with olive oil and paprika

Labnye See labna

Laboratory table top dressing A formula that is composed of 600 cc raw linseed oil, 30 cc glacial acetic acid, and 2700 cc spirits of turpentine; allow 2 weeks for drying.

La bouille A semisoft, mild, double-cream, white, mold-covered cheese made from cow's milk; a Normandy cheese

Lacceroic acid See Part 2: Saturated Fatty Acids

Lace bug See walnut lace bug

Lacewing See aphid lion

Lachryma Christi (Lacrima Christi) A dry white Italian wine grown near Vesuvius; a dry, white or red, sweet Italian wine produced near Naples

Lachs(s)chinken A meat product made by placing two boneless, cured pork loins in a casing and smoking; may or may not be cooked; pork loin wrapped in a thin layer of bacon fat and hand-tied, mildly cured, and lightly smoked; smoked pork loin wrapped in bacon

Laciniate Leaves that are deeply cut into narrow lobes

Lacombe A breed of hogs
See Part 2: Swine Breeds

Lacquer A liquid that contains cellulose esters or ethers that form a film; dries by evaporation of a solvent

Lactalbumin A protein found in milk, in which it aids in stabilization of the fat particles; it begins to coagulate at 65.6°C.
See Part 2: Milk, Amino Acids
lactase  A carbohydrate digestive enzyme that catalyzes hydrolysis of lactose to glucose and galactose

lactated mono-diglyceride  Used as a food emulsifier or stabilizer
Storage: well-closed container

lactation  The secretion of milk from the mammary glands of the female, especially during the period immediately following parturition
See Part 2: Food, Water Intake; Milk, Mammals, Composition

lactic acid (dextrolactic acid; \( \alpha \)-hydroxypropionic acid; sarcolactic acid)

\[
\text{CH}_3\text{C}(-\text{C})\text{OH} \\
\text{OH}
\]

The acid in sour milk (by fermentation of lactose), sauerkraut, silage, and pickles; also found in muscle after work and after death (responsible for lowering the pH of meat post mortem); a widely distributed asymmetric acid used as a food additive (as an acidulant, a flavoring, and a preservative) in beverages, cheese, frozen desserts, and olives; it can be made by hydrolysis of lactonitrile or by fermentation of dextrose.
Storage: tight container
See Part 2: Concentrated and Dried Milk Products; Creams, Butter, and Frozen Desserts; Dairy Products, Composition; Fluid and Fermented Milks, Composition; Milk Breeds, Composition; Milk Composition; Milk, Concentrated Products; Milk, Dry Products; Milk, Mammals, Composition; Milk, Species; Sweetening Compounds

lactic curd cheese  A panir-type cheese made from cow's milk

lacto  A frozen dessert made from cultured milk, eggs, sugar, and usually flavoring

Lactobacillus  A genus of gram-positive, non-sporeforming, rod-type microorganisms that cause fermentation spoilage in foods and greening in cured meats; lactobacilli produce 2-4% lactic acid and are used in fermented milks and cheeses.
See Part 2: Canned Spoilage Manifestations; Canned Spoilage Related to pH; Microbiological Media; Microorganism, Culture Media, Dairy and Food Products; Microorganism, Media; Spoilage, Carbohydrate Foods; Spoilage, Protein Foods; Thermophiles, Water Activity, Organisms and Food

lactofil  A thick,ropy, low- to medium-acid (pH 4.4-4.7), fermented cow's milk

lactoflavin (lactochrome)  See riboflavin

lactogenesis  The initiation of lactation

lactometer (galactometer)  A floating instrument similar to a hydrometer used to measure specific gravity of milk

Lactosaprophiticus  A microorganism that causes food spoilage
See Part 2: Spoilage, Fat in Food

lactose

\[
\text{H} \quad \text{O} \\
\text{O} \\
\text{H} \\
\text{H}
\]

Milk sugar that yields D-glucose and D-galactose on hydrolysis; occurs only in the milk (4-7%) of mammals; the alpha form is 16% as sweet as sucrose and is obtained from whey during cheese or casein manufacture. Lactose is used as a nutrient, sweetener and humectant, and is added to milk that is to be soured.

1 lb lactose \( \xrightarrow{\text{fermentation}} \) 1 lb lactic acid

\[
\text{Streptococcus lactis}
\]

See Part 2: Concentrated and Dried Milk Products; Creams, Butter, and Frozen Desserts; Dairy Products, Composition; Fluid and Fermented Milks, Composition; Milk Breeds, Composition; Milk Composition; Milk, Concentrated Products; Milk, Dry Products; Milk, Mammals, Composition; Milk, Species; Sweetening Compounds

lactose broth  A medium used in presumptive tests for the coliform (Escherichia spp. and Aerobacter spp.) group by the production of gas
See Part 2: Microbiological Examination of Dairy Products; Microbiological Media; Microorganism, Culture Media, Dairy and Food Products; Microorganism, Culture Media, Water and Sewage, Standard Methods

lactose intolerance  Occurs in individuals who do not have lactase (the enzyme that aids in milk-sugar digestion), which causes bloating and diarrhea

lactylated fatty acid esters of glycerol and propylene glycol  Used as food emulsifiers, plasticizers, stabilizers, surface-active agents, or whipping agents
Storage: well-closed container

lactylic esters of fatty acids  Used as food emulsifiers or surface-active agents
Storage: tight, plastic-lined container in a cool, dry place

lactylic stearate  Used in bakery products to promote freshness, to add size, and to make the product less sticky

ladino clover  A type of large, white clover that is a perennial legume used for pasture and that presents a bloat hazard with a lush spring
Approximate amount of nutrients used for 3 tons of grazing: N 175 lb; P\(_2\)O\(_5\) 54 lb; K\(_2\)O 140 lb

ladle  A large spoon in the form of a hollow hemisphere, usually with a long, curved handle, used for serving soups, stews, and similar dishes
See Part 2: Ladle Size

lad's love  See southerwood
lady beetle The adult insect is shiny red or tan (some with black spots), oval, and approximately ⅓ in. long; the larva is blue, orange, or gray, carrot-shaped, warty, and ⅛ - ⅓ in. long. They feed on aphids, spider mites, scales, and mealy bugs.
lady finger 1) A small, finger-shaped, sponge cake. 2) A common name for okra
ladyfish (Elops saurus) A food fish
lady's smock See cress, meadow
Lafayette See spot
lafi Strong-flavored, dried, salted fish that are used as flavoring
LAFTA Latin American Free Trade Association
lafun A porridge or paste made from cassava, yam, unripe-banana, or plantain flour
L agar See Part 2: Microbiological Media
lagbi 1) The sap from the stem of a palm; it is often fermented. 2) A sweet, cloudy white wine made from date-palm sap
lager 1) In beer manufacturing, the aging, clarification, and carbonation process. 2) A clear, golden, gassy, alcoholic beverage made from cereal extract by bottom fermentation See pale ale
Lago di Caldaro An area in Italy that produces red wine
lag phase A stage of bacterial growth during which the cells increase in size but not in number
laguiole A cheese made from cow's milk See fourme de Laguiole
laguiole cheese A hard French cheese made using rennet
labora bi ageen A pizza bread with minced meat, tomato, and onion
lait Milk
lake A pigment made by precipitating an oil-soluble organic dye on an inorganic substrate, e.g., alumina on aluminum hydroxide; lakes color food by dispersion. See also colorant
lake chub A finfish with light meat and light to moderate flavor
lake fish See lake herring
lake herring (chub; cicro; cisco; grayback; greenback; lakefish; tulibee) A small (avg. 1 lb), North American, freshwater finfish found in the Great Lakes that is used for food and that has light meat and a light to moderate flavor
Lake Michigan—Coregonus clupeaformis
Other Great Lakes—C. leucichthys artedii
lake perch (yellow perch) A freshwater fish (⅜ - ⅜ lb) with firm, white, lean flesh
lake sturgeon A finfish that has light meat and a light to moderate flavor
United States—Acipenser fulvescens
lake trout (togue; Salvelinus namaycush) A fat finfish caught in the lakes of North America, with light meat and a light to moderate flavor
1 lake trout, dressed = 12 oz

lak-whitefish A finfish with white meat and very light, delicate flavor
lakiri A malt- and groundnut-based aleha beverage
lakka A bittersweet cloudberry (Rubus chamaemorus) liqueur
lak-you A thick soy sauce
La Mancha A breed of goat
See Part 2: Goats, Milk Breeds
lamb 1) A young animal of the ovine species (sheep) of either sex and less than 12 months old; it does not have the first pair of permanent teeth (no permanent incisors) and will produce a clean break at the "break joint;," dressing percentage, avg. 52%. 2) The flesh of young (less than 12-14 months old) ovine animals of both sexes
Lamb grades: Prime; Choice; Good; Medium (spring lambs only); Plain; Cull
To cook: heat to an internal temperature of 140°F (rare), 160°F (medium), or 170°F (well done)
Composition: sodium (cooked, lean) 58 mg/3 oz (85 g); cholesterol 85 mg/3 oz
See break joint; hothouse lambs (for their grades)
See Part 2: Animal Foods, Composition; Bone; Bone Age; Braising Time; Broiling Time and Temperature; Calories, Daily Recommendations; Cholesterol Control; Cooking in Liquid, Time; Food, Composition; Frozen Food Storage; Frozen Meat Storage Time; Glutamate; Grades, Meat; Iron, Daily Recommendations; Lamb Braising; Lamb Broiling; Lamb Chart; Lamb Crown Roast Carving; Lamb Cuts; Lamb Cuts and Uses; Lamb Leg Carving; Lamb, Percentages of Daily Recommended Allowances; Lamb Quality Guide; Lamb Roasting; Lamb Simmering; Lamb Wholesale Cuts; Lamb Yield; Lamb Yield Guide; Liver; Meat and Meat Products, Composition; Meat Composition; Meat, Frozen Storage; Meat Identification; Meat Label; Meat, Nutritive Value; Meat, Servings per Pound; Meat Storage; Minerals, Food; Niacin, Daily Recommendations; Riboflavin, Daily Recommendations; Roasting Meat; Roasting, Time and Temperature; Sheep Market Classes and Grades; Simmering Meat; Thiamin, Daily Recommendations; Vitamin A, Food
lambanog A coconut-sap-based arrack beverage or toddy
lambaspeipylsa A dry, uncooked, smoked Icelandic sausage made from medium-chopped, heavily seasoned beef, lamb, and pork fermented and stuffed into artificial casings; a pepperoni made from beef, lamb, and pork
lamb chop A slice (2-4 cm thick) cut from the rib, loin, shoulder, or sirloin of a lamb carcass
1 lamb chop = 0.1 lb
lamb chuck A wholesale cut of lamb consisting of all in front of the fourth rib
lambda (A, λ) 1) The Greek letter with an English equivalent of l; used as a symbol for the wavelength of light. 2) A measure of volume or weight
1 λ = 1 microliter (µl) = 1 x 10^-6 milliliter (ml) = 1 x 10^-6 liter (l) = 1 microgram (µg) = 1 x 10^-9 milligram (mg) = 1 x 10^-9 gram (g)
lambert (L) A unit of brightness

\[
1 \text{ L} = 2.054 \text{ candla per square inch (cd/in.}^2) = 0.3183 \text{ candla per square centimeter (cd/cm}^2)
\]

lamb grade Prime; Choice; Good; Utility

lamb hog See hogget

lambic A strong, sour, alcoholic beer made by long fermentation of barley or wheat, with a maturation period; beer that ferments spontaneously without adding yeast, e.g., guze, faro, kriek

lambkill A plant having a toxic principle
See Part 2: Poisonous Plants

lamb leg See Part 2: Lamb Chart; Lamb Roasting; Lamb Yield

lamb mint See spearmint

lamb quality See Part 2: Lamb Quality Guide

lamb quarters See lamb's quarters

lamb rack 1) An elevated, troughlike skinning rack used in the slaughter of lambs. 2) The rib portion of lamb foreshaddle

7- to 9-rib rack = 1.25–1.5 lb

lambrusco A dry, semisparkling, red Italian wine made from Lambrusco grapes in the vicinity of Modena

lambrusco di sorbara A dry, lightly sparkling Italian wine from the Emilia region (north-central Italy)

lamb's fry The liver, heart, sweetbread, and leaf fat of a lamb

lamb's lettuce (Valerianella locusta) A firm-textured salad plant that grows early in the spring See corn salad; field salad

lamb shank 1 shank = 0.9 lb

lamb, spring The meat from young lambs born in late winter or early spring and slaughtered between March 1 and the end of the week that contains the first Monday in October

lamb's quarters (goosefoot; pigweed; Chenopodium album) An annual weed whose stems and leaves may be eaten raw as a salad or cooked like spinach; also Algerian C. amaranthicolor, which is used as a mild spinach

lamb's wool An English drink made from hot ale, apples, and spices

lamb yield See Part 2: Lamb Yield Guide

lamella A thin leaf or plate

laminarin A starchlike carbohydrate obtained from brown algae

laminate A product made from thin sheets

Lamona An American class of chicken that lays a light-colored egg; chicken color, white

Lamothe-bougon A French cheese

lamoun makbouss Pickled lemon

lamprey An eel-like vertebrate suckerfish used for food

Atlantic and Great Lakes—Petromyzon marinus
Caspiam—Caspioymzon wagneri
Northeast Asia—Lampetra joponica
Rivers—L. fluviatilis and L. ayesi

lanack See limburger cheese

lancashire A hard, crumbly, double-curd cheese made from cow's milk and matured for 1–4 months

Lancashire cheese A soft to hard, crumbly, white, mild cooking cheese made from cow's milk with rennet added; it has a creamy, mild taste that becomes stronger with maturity and is used on bread, in soups, and for toasting.
Sizes available: 10-lb loaf; 30-lb; 50-lb

lance A sand eel; used for food

lance nematode (Hoplolaimus galeatus) Parasitic nematode that reduces the yield and quality of sweet potatoes

lancet fish (Alepisaurus ferox) A food fish

landcress American cress See cress; cress, American

landed price A supplier's price that includes all of the supplier's costs related to the sale

landjaeger A semidry, uncooked, smoked, cervelat-style American sausage made from medium-chopped, mildly seasoned beef and pork fermented and stuffed into pork or artificial casings; the product is pressed flat and has a black, wrinkled appearance; a dry sausage

landjaeger cervelat A heavily smoked, black, wrinkled, semidry Swiss sausage made from beef and pork; linked and pressed to give a four-sided appearance

landjäger 1) A dry, uncooked Austrian sausage made from medium-chopped, medium-seasoned (nitrite) beef and pork fermented and stuffed into pork casings with a diameter of less than 30 mm. 2) A salami made from heavily seasoned beef and pork. 3) A dry, uncooked, smoked or unsmoked Swiss sausage made from medium- to coarse-chopped, heavily seasoned beef and pork stuffed into beef, pork, or artificial casings or not stuffed into a casing. 4) A medium-to-coarse-chopped, uncooked, smoked or unsmoked, American sausage available in fermented and/or dry or semidyemid links, rings, or large-diameter casings

landleberwurst A moist, cooked, unsmoked eastern German sausage made from fine- or medium-chopped, medium-seasoned pork liver stuffed into a pork or artificial casing

land phosphate See land rock

land plaster (rock gypsum) A fertilizer material that is 70–75% CaSO4; used for calcium supply for peanuts; 0-0-0 See gypsum

Landrace A bacon-type hog originating in Denmark; it was originally selected for the Wiltshire bacon market; many countries have different types of this breed of pigs.
See Part 2: Swine Breeds

land rock (land phosphate) Phosphate rock containing from 18 to 40% phosphoric acid

langemelk A thick,ropy, low- to medium-acid, slightly alcoholic, fermented cow's milk

Langensalzer A dairy breed of goats native to Germany

langfil A thick,ropy, low- to medium-acid (pH 4.4–4.7) fermented cow's milk
A crustacean similar to the lobster
See crayfish

A soft, munster-type cheese made from cow's milk
See crayfish

A soft French cheese made with rennet

A type of mango
See Part 2: Fruit Classification

A semisolid natural fat extracted (rendered) from gum obtained by Arabinogalactan

An Asiatic class of chickens that have feathered shanks and lay a brown-shelled egg
Varieties: Black (white skin); White (yellow skin)

Yellow-white, refined wool grease (wax); a mixture of cholesterol palmitate, cholesterol oleate, and cholesterol stearate; used as a base for ointments and creams and as a masticatory substance in chewing gum base; mp 36–42°C
Storage: well-closed container in a cool place

A food fish

A metallic element; at. no. 57; at.
wt. 138.92; Group IIIB of the Periodic Table;
electron configuration 2–8–18–18–9–2

oxidation state +3

A rice wine

A sweet, slightly alcoholic, glutinous rice

A mild-flavored root that resembles ginger and is used in curries and fritters; available frozen or dried

The side seam on a can where there are two layers of metal that are bonded together; two thickness of material bonded together

An edam-type cheese

See black tea

A hard French cheese

A gum obtained from the western larch tree; used as a food stabilizer, thickener, and texture modifier

A semisolid natural fat extracted (rendered) from pork fat; max. rendering temperature 240°F

Hydrogenated—hydrogen added to lard to raise melting point and lower susceptibility to oxidation

Kettle-rendered—leaf and back fat rendered in an open kettle at 240–260°F

Kettle-rendered leaf—leaf fat rendered in an open kettle at 230–250°F

Prime steam—killing and cutting fat in direct contact with steam; closed kettle at 285°F

Grain size is influenced by cooling rate.

1 cup = 220 g (7.8 oz)

2 cups = 1 lb

Fatty acid composition: myristic 1%; palmitic 27–28%; palmitoleic 3%; margaric 0.5%; stearic 12–13%; oleic 44–47%; linoleic 6–10%; linolenic 0.5%

Free fatty acid content 0.015–0.310% desirable, often up to 3.4%

1 tbsp = 115 calories

Composition: fat 100%; ash 0%; protein 0%; carbohydrate 0%

Yield from rind fat 80–85%; yield from nonrind fat (hand press) 75–78%

Properties:

Iodine value—45–75 (fat from peanut-fed hog > 85)

Cutting fat (65% of hog fat)—Iodine value 57–60

Killing fat and depot fat (35% of hog fat)—Iodine value 67–70

Melting point

Back fat—86–104°F

Leaf fat—110–118°F

Mixed lard—36–45°C

Refractive index (60°C)—1.441–1.461

Saponification value—190–205

Smoke point—250–428°F; varies with free fatty acid (FFA) content

Continuous process—420°F

Steam-rendered—340–372°F

Specific gravity—0.917–0.938

Unsaponifiable matter—0.8%

Storage: Keep covered (90–95% relative humidity); if hydrogenated with antioxidants, room temperature; if not stabilized, refrigerate (45°F); storage life 4 months

See leaf fat; pork fat

See Part 2: Altitude Adjustments For Baking; Calories, Daily Recommendations; Cholesterol Control; Fats and Oils, Characteristics; Fats and Oils, Composition; Fats and Oils, Physical and Chemical Properties; Fatty Acids; Fatty Acids, Fats and Oils; Iodine and Saponification Values; Lard, Triglyceride Mole Percent Composition; Melting Points, Fats and Oils; Minerals, Food; Oils and Fats, Composition; Pork Carcass, Retail Yield; Pork Yield; Saturated Fatty Acids; Specific Gravities, Fats and Oils; Spoilage, Fat in Food; Titer, Fats and Oils; Unsaponifiable Matter; Unsaturated Fatty Acids

Dry-rendered lard that drips from the rendering tank during rendering

Lard obtained from pork trimmings by rendering in a steam-jacketed kettle (partially closed or closed tank)

An insect that feeds on stored meat and cheese; the adult is 3 in. long and dark brown with a yellow band across the back; larva is 3 in. long, fuzzy, and brown

See Part 2: Larder Beetle

A method of securing pieces of bacon fat to meat to keep the meat from drying during cooking

See also lardoon

Lard obtained from pork leaf and back fat in an open, steam-jacketed kettle

Lard obtained from pork, internal, abdomen fat

The liquid (primarily olein and stearin) obtained by pressing prime steam lard

Iodine number—56–82

Refractive index (15.5°C)—1.469–1.472

Saponification number—193–198

Specific gravity—0.905–0.916
lardoon (lardon) Narrow strips of bacon fat or fat used to keep meat from drying during cooking See also larding
lard, prime steam Lard obtained from pork trimmings by injecting live steam into a closed tank
lard-type hog A classification of hogs that has been changed to meat-type hog due to the trend toward leaner hogs
Laredo A variety of soybean
Large Black A British breed of hardy, docile, black hogs
large intestine (colon) The portion of the digestive tract that accepts digested food from the small intestine and absorbs some of the remaining water Sections: ascending colon, or cecum; transverse colon; descending colon
largemouth bass A fish belonging to the sunfish family
Large White (Yorkshire) A breed of hogs See Yorkshire
See Part 2: Swine Breeds
Large White Ulster A British breed of white swine
larkspur A plant having a toxic principle See Part 2: Poisonous Plants
larron d’or A strong-flavored cheese, made from cow’s milk, with a red-brown rind
larron, le A cheese made from skimmed cow’s milk
laruns A munster-type cheese made from sheep’s milk
larva The preadult form of some animals, especially insects
lasagne (lasagna) 1) A baked, Italian, pasta dish made from alternating layers of several cheeses, tomatoes, meat sauce, and alimentary paste (i.e., pasta, noodles). 2) A pasta product shaped as ribbons or squares, usually with wavy edges
Types:
Large—1 1/2 in. wide; flat
Veneziana—2 1/2 in. wide; wavy sides
Ricci—1 1/2 in. wide; wavy sides
lasalocid A drug used to promote weight gain, to improve feed efficiency, and to prevent coccidiosis
lascar European sand sole; a food fish
Lash Serum See Part 2: Microorganism, Media
Lasioptera vitis A small fly (also known as a gnat or midge) that causes irregular, succulent galls (known as tomato galls) on grape leaves
lassi A sour, diluted milk that is often salted with spices and herbs or sweetened; a beverage made from sour milk, sugar, water, and soda water
LAST Live Animal Swab Test
late blight A tomato leaf-spot disease that is caused by leaves being frequently wet
Control: application of maneb or zineb
late bloom The stage of maturity during which blossoms are drying and falling
late leaf spot (Cercospora minima) A fungal disease of pear trees that causes gray spots on leaves and sometimes defoliation
large intestine (colon) The portion of the digestive tract that accepts digested food from the small intestine and absorbs some of the remaining water Sections: ascending colon, or cecum; transverse colon; descending colon

**latent heat** The heat absorbed or lost by a substance as it changes state without a change in temperature; e.g., for water the latent heat of fusion (ice to water) is 80 calories per gram (cal/g), and the latent heat of condensation (steam to water) is 540 cal/g. One pound of water vapor at room temperature has approximately 1050 Btu of latent heat See Part 2: Temperature of Vaporization, Latent Heat of Vaporization, Boiling Point
lateral Pertaining to the side, or flank
latex A white, milky fluid obtained from many varieties of shrubs and trees; the most common is rubber latex (from the tree *Hevea brasiliensis*), which contains about 30% rubber hydrocarbon (which is separated by addition of acetic or formic acid). The hydrocarbon particles are coated with a proteinaceous protective colloid. Latex of the papaw contains papaain. The latex of the sapodilla plant is called chicle.
Latin American white cheese See queso blanco

**Latin square** An array with

(no. columns) = (no. rows) = (no. treatments)

<table>
<thead>
<tr>
<th>Columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>B</td>
</tr>
</tbody>
</table>

Key:
$X_{column}$ row treatment
$SS = $ sum of squares
$MS = $ mean square
$df = $ degrees of freedom

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<tr>
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</tr>
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<tr>
<td>Row 1</td>
</tr>
<tr>
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</tr>
<tr>
<td>...</td>
</tr>
<tr>
<td>$j$</td>
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<td>...</td>
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<td>$n$</td>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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</tbody>
</table>

Treatment summary

<table>
<thead>
<tr>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>$X_{..1}$</td>
</tr>
</tbody>
</table>

Correction $= \frac{(X_{..})^2}{an} = C \quad a = n = R$

Total SS $= (X_{11})^2 + \cdots + (X_{aK})^2 - C$

Row SS $= \frac{(X_{1K})^2 + \cdots + (X_{aK})^2}{a} - C$

Column SS $= \frac{(X_{1K})^2 + \cdots + (X_{aK})^2}{n} - C$
420 latin square

\[
\text{Treatment SS} = \frac{(X_{..1})^2 + \cdots + (X_{..R})^2}{\text{number of observations in Treatment sum}}
\]

Error = Total SS - Row SS - Column SS - Treatment SS

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<th>df</th>
<th>SS</th>
<th>MS</th>
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<tr>
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<td>an-1</td>
<td>Total SS</td>
<td></td>
</tr>
<tr>
<td>Row</td>
<td>n-1</td>
<td>Row SS</td>
<td>Row SS/n-1</td>
</tr>
<tr>
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<td>Column SS/a-1</td>
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<tr>
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<td>R-1</td>
<td>Treatment SS</td>
<td>Treatment SS/R-1</td>
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<tr>
<td>Error</td>
<td>(a-1)(a-2)</td>
<td>Error SS</td>
<td>Error SS/(a^2 - 3a + 2)</td>
</tr>
</tbody>
</table>

\[ F = \frac{(MS \text{ of Row, Column, or Treatment})}{(MS \text{ Error})} \]
\[ df = (a-1), (a^2 - 3a + 2) \]

latissimus dorsi The broad muscle of the back that runs from the spinous processes of the lumbar vertebrae to the humerus; it is the lateral muscle in the rib end of a rib steak.

latosols Red, friable, clay soils

lattfil A thick, ropy, low- to medium-acid (pH 4.4–4.7), fermented cow’s milk

lattice design An incomplete block design by which the number of treatments is a perfect square and the number of samples evaluated at one time is the square root of the number of treatments

lattol An alcoholic beer

latvian liverwurst A moist, cooked, unsmoked Australian sausage made from finely chopped, medium-seasoned pork stuffed into artificial casings

latvinsky A semihard, strongly flavored cheese made from cow’s milk and ripened by surface bacteria

lauantai A moist, cooked, smoked Finnish sausage made from finely chopped, mildly seasoned (with potato flour) beef and pork stuffed into 75-mm artificial casings

laughing gas See nitrous oxide

lau-lau A Hawaiian dish made from butterfish and pork wrapped in taro leaves

laurel See bay leaves

laurel-kernel oil See Part 2: Saturated Fatty Acids

laurel-leaf oil (bay-leaf oil) An oil obtained by steam distillation of the leaves of Laurs nobilis; used as a flavoring agent in food; sp. gr. 0.905–0.930 Storage: full, tight, glass container in a cool, dark place

lauric acid See dodecanoic acid

laurolieic acid See Part 2: Fatty Acids and Their Properties; Unsaturated Fatty Acids

lauril alcohol (1-dodecanol) \[ \text{CH}_3(\text{CH}_2)_{10}\text{CH}_2\text{OH} \]

Used as a fattylike flavoring agent in food; sp. gr. 0.829–0.836

Storage: full, tight, glass container in a cool, dark place

lauril aldehyde (dodecanal) \[ \text{CH}_3(\text{CH}_2)_{10}\text{CHO} \]

Used as a fattylike flavoring agent in food; sp. gr. 0.826–0.837

Storage (short-term): full, tight, glass container in a cool (not cold), dark place

lauril sulfate broth See Part 2: Microbiological Media

lauril tryptose broth A liquid medium for growing coliforms

See Part 2: Microorganism, Culture Media, Water and Sewage, Standard Methods

laval A medium-flavored, semisoft cheese

lavandin oil An essential oil steam-distilled from a plant of the lavender species

See Part 2: Flavoring Agents, Natural

lavash A leavened, thin flatbread that is usually made from high-extraction wheat flour

lavender [Lavandula nana alba; L. officinalis; L. spica (broad-leaved); L. vera (narrow-leaved)] The fragrant (sweet-scented), fresh or dried flowers and foliage of a perennial evergreen herb; used as flavoring; the oil has a pungent fragrance and a spicy, bitter taste and is used in perfume

lavender flower A flower that is used as an herb for tea

lavender oil An essential oil steam-distilled from lavender flowers; used as a lavender flavor in food; sp. gr. 0.874–0.894

Types:

Hybrid (Lavandula abrialis)

Spike lavender (L. latifolia)

True lavender (L. officinalis)

Storage: full, tight, glass container in a cool, dark place

See Part 2: Essential Oils

laver (Porphyra umbilicalis) A red-algae seaweed used (pickled or stewed) for food; there is also a green laver (Ulva sp.)

lawn clippings An excellent source of plant nutrients; can be used as a mulch

law of chemical equilibrium See equilibrium constant

law of mass action See equilibrium constant

lawtonberry A small, round, black fruit obtained by crossing a blackberry or dewberry and a loganberry

 laxative A substance that encourages or causes bowel movement

layang A kind of dried fish (Decapterus sp.)

layering A technique of propagating plants by covering a branch (still attached to the parent plant) with soil and allowing it to develop roots

lb (pound) The abbreviation of libra

LCL Less-than-carload (freight car) lot
**LD₅₀**  See **acute toxicity**

**LDL**  1) Lowest detectable limit, the lowest amount of individual residue or sample component that can be found or observed in a sample matrix by the current appropriate methodology. 2) Low-density lipoprotein  See **low-density lipoprotein**

**leach**  To wash out water-soluble components, as from the soil

**lead (Pb)**  A metallic element; at. no. 82; at. wt. 207.21; Group IVA of the Periodic Table; oxidation states +2, +4; electron configuration 2–8–18–32–18–4; orbit K L M N O P

Lead and its compounds are toxic to humans and animals; found in some solders, enamels, glazes, paints, and insect sprays  See Part 2: Chemical Poisoning; Minerals (Trace), Limits; Water Drinking Standards

**lead arsenate**  (PbAsO₄)  A poisonous inorganic insecticide

**lead feeding (challenge feeding)**  Increasing the feed to cows approximately 3 weeks prior to calving

**leaf**  1) The lateral outgrowth of a stem and that portion of a plant in which photosynthesis occurs. 2) A thin sheet of materials. 3) See **tschil**  See Part 2: Corn; Vegetables, Classification; Wastes, Agricultural and Industrial

**leaf beetle**  See **syneta leaf beetle**

**leaf blight**  A fungal (Dendrophoma obscursa) disease of strawberry plants that causes red to brown spots with a purplish border on the leaves; the stem may become enlarged and soft and may have a pale pink rot.

Control: plant resistant varieties; renew fields; fungicide spray  See Part 2: Sorghum Diseases

**leaf cheese**  (telpanier; tschil; zwirn)  An Armenian cheese made from skimmed cow’s or sheep’s milk. See **telpanier; tschil**

**leaf fat**  The fat around the kidneys of a hog; also the fat that lines the abdominal cavity; leaf fat from hogs makes an excellent lard.

**leaf mold**  A compost made of dry, chopped leaves; it is a good mulching material, but weeds will usually grow through it. See **white rust**

**leaf mustard**  (Chinese mustard; Brassica juncea)  A cabbagelike or curly-leaved plant used like spinach

**leaf roll**  A virus disease of strawberries that causes the leaves to be twisted or rolled downward into a tube.

Control: Plant virus-free stock; use insecticides.

**leaf roller**  The larva of various insects; it makes a nest by rolling a leaf over and tying it down with silk, forming a tent.

Fruit-tree leaf roller (Archips argyrospila)

Red-banded leaf roller (Argyrotaenia velutinana)

The adult insect is a brown moth with light markings on the wings and a ½-in. wingspan; the larva is pale yellow or dirty green, has a brown and black head, and is up to ½ in. long; it feeds on the buds and leaves of apple and pear trees, eating irregular holes in the leaves, and also feeds on the fruit, usually causing it to be small and mis-shapen.

See Part 2: Insect Control

**leaf rust**  A disease of the wheat leaf caused by a parasitic fungus (Puccinia recondita); it reduces the number and size of kernels and the yield and protein content of the grain.

**leaf scald**  A rice disease (caused by Rhynchosporium oryzae) found in the southern United States; there are no control measures.

**leaf scorch**  A fungal (Diplocarpon earliana) leaf disease of strawberries that causes small, dark purple spots on the undersides of leaves; later, the leaf may dry up and look scorched. The disease may be prevented by the use of resistant varieties.

Control: use of fungicide; renewal of field

**leaf smut**  A rice disease caused by a fungus (Entyloma oryzae); there are no control measures.

**leaf spot**  1) A fungal (Mycosphaerella fragariae) disease that affects the leaves, petals, fruit stalk, runner, and fruit caps of strawberries, producing spots tan or gray in the center with a purple border; it may be prevented by the use of resistant varieties.

Control: fungicide spray; renewal of field

2) A fungal (Coccomyces hiemalis) disease of cherry trees that causes small spots on the leaves; spots are no control measures.

3) A fungal (Sphaerulina rubi) disease that attacks blackberries and raspberries, causing tiny, greenish black spots to develop on upper leaf surfaces; as the leaves mature, the spots turn gray.

Control: removal and burn canes after harvest; thin to allow good air flow and drainage; apply sprays recommended for anthracnose.

See **early leaf spot; late leaf spot**
leaf variegation (spring yellows) A noninfectious disease caused by a defect in the hereditary makeup of strawberries; there is no known cure, but it may be prevented by use of nonvariegated planting stock.

leafy spurge (Euphorbia esula) A perennial weed

league A linear measurement
1 league = 15,840 feet (ft)
= 5280 yards (yd)
= 24 furlongs
= 3 miles (mi)

leakage Of containers, the loss of the hermetic seal

leaker A container that has lost its hermetic seal See TA spoilage

lean Describes muscle that contains little fat

lean body mass (LBM)
Body mass = adipose tissue + LBM
See fat-free mass

lean cuts (hog carcass) Boston butt, picnic, loin, and ham; lean pork trimmings contain 20–25% fat.

lean fish Fish that contain less than 5% fat: Alaska pollock (pollack); Atlantic cod; Atlantic pollock (pollack); croaker; flounder; grouper; haddock; halibut; ocean catfish; ocean perch; orange roughy; Pacific cod; sea bass; sea trout; sole; whiting

leanyka A dry or sweet, Hungarian table wine

least significant difference A value that can be used if only two means are compared (a = 2, where a = number of treatments); if three or more means are compared, too many will be judged significant

Difference in means = \( t_s \sqrt{\frac{2}{n}} \)

least squares A principle that states that if deviations are measured from the sample mean and then squared, the sum of these squares will be a minimum value; if the deviations were compared to any value other than the mean, then squared and summed, the resulting sum would be larger than when compared to the mean.

leather The cured skin or hide of an animal; may or may not be tanned See also tannic acid

leather cheese A German cheese that is made from skimmed cow’s milk and has small eyes

leather dust A nitrogen fertilizer

leatherfish (tub; yellow gurnard; Monacanthus cirrhifer; Triga hirundo) A food fish

leather jacket The larva of the crane fly (daddy longlegs); attacks brassicas, grass, and lettuce

leather rot A disease of the strawberry, caused by a fungus (Phytophthora cactorum), that attacks both green and ripe berries; proper spacing and correct timing of fertilizer applications are the most important preventive measures; fungicides are also helpful.

leaven 1) A mixture of yeast, flour, water, and sugar that is allowed to start to ferment and then added to dough; materials that are added to pastry dough to cause it to rise and become lighter and more digestible. 2) To add baking powder, baking soda, or yeast to dough to make it rise. 3) A fermenting dough used in bread baking; old dough that has fermented

leavening agent A substance that is added to a product (e.g., dough) to do the following: to produce or stimulate the production of carbon dioxide; to cause fermentation, which makes the product lighter; to make the food porous and light; to cause baked goods to rise

Types:
Biological—yeast; bacteria
Chemical—baking powder; baking soda
Physical—steam; air; egg white
See baking powder; yeast

leaves The plural of leaf See leaf

Lebanon An all-beef, semidry sausage that is given a 6–14-day cold smoke and has a tangy flavor due to microbial growth; a coarsely chopped, dry, fermented sausage that has a dark surface and originated in Lebanon, Pennsylvania
Composition: moisture 59.3%; protein 19.6%; fat 15%; carbohydrate 2%; ash 4.2%

Lebanon bologna A moist, uncooked, heavily smoked sausage made from coarsely chopped beef

leben A type of kefir

leben-up A sour, diluted milk

leberkäse 1) A moist, cooked, unsmoked finely chopped, mildly seasoned beef and pork not stuffed into a casing. 2) A moist, cooked, unsmoked Austrian sausage made from medium-chopped, medium-seasoned (with nitrite) beef and pork not stuffed into a casing

leberwurst A moist, cooked, smoked fine- or medium-chopped, medium-seasoned, beef and pork stuffed into artificial casings See liver sausage

leberwurst hausmacher A moist or semidry, cooked, smoked or unsmoked Swiss sausage made from medium- or coarse-chopped, medium-seasoned beef and veal stuffed into beef, pork, or artificial casings

lebkuchen A cookie containing candied orange peel, cherries, citrons, honey, almonds, and seasoning

lebnah See labna

leche guilla A plant having a toxic principle See Part 2: Poisonous Plants

lechem A wheat bread

lechon A festive pig cooked over live charcoals

lecithin (trimethyl hydroxyethyl ammonium hydroxide) A phosphatidyl choline; lecithins are mixtures of fatty acid diglycerides combined with the choline ester of phosphoric acid. Lecithins may be extracted from soybean flakes, of which it constitutes 0.2–0.6%. Lecithins occur in brains, nerves, liver, egg yolk, soybeans, pancreas, heart, and blood.

Lecithin structure (for R = any fatty acid):

\[
\begin{align*}
 & H \\
 & H \overset{\text{H}}{\text{O}} \\
 & H \overset{\text{O}}{\text{P}} \overset{\text{O}}{\text{O}} \overset{\text{CH}_3\text{CH}_2\text{N}=(\text{CH}_3)_3}{\text{CH}_3\text{CH}_2\text{N}=(\text{CH}_3)_3}
\end{align*}
\]

lecithin
Uses: emulsifying agent; foam stabilizer; suspending agent; release agent; surface-active agent; wetting agent; nutritive supplement; antispattering agent; antioxidant (0.075%)

Storage: well-closed container

See Part 2: Minerals (Trace), Limits

lecithinated soy flour  Defatted soy flour to which 15% lecithin has been added

lecithoprotein  Protein attached to lecithin or some other phospholipid

leczycka  A moist, uncooked, smoked Polish sausage made from finely or coarsely chopped, medium-seasoned beef and pork stuffed into sheep or artificial casings

Lee  A variety of soybean

leech  See litchi

leek  ("asparagus of the poor"; Allium cepa; A. porrum)  A sulfur-containing, onionlike, biennial plant with a thick (1- to 2.5-in. diam., 8 in. tall), blanched stalk and an elongated bulb (larger than a shallot); the blanched stalks are added to sauces and soups, giving a robust flavor (a more delicate flavor than onion) and body (often used in 1/2- or 1/4-in. dice); also used to flavor salads or as a condiment; may be used raw, steamed, or boiled (15-35 min) and used as a vegetable (like asparagus); on cooking, the odor diminishes to a mild onion flavor.

Available forms: fresh; dried; freeze-dried (to 1-3% moisture, with a fresh-weight replacement of 1:10 or 1:13)

The broad, flat, dark green tops can be used as a substitute for green onions. When eaten by cows, leeks impart a flavor to milk. 9800-12,000 seed/oz; 1 oz seed/100-ft row; 2 in. apart in rows 15 in. apart; germination period 8-12 days; plants mature in 100 days and are used when stems have a 3/4- to 1-in. diam.

1 bunch = 4 leeks
1 serving = 1 stalk

Composition (bulb, raw): moisture 85%; protein 2%; fat 0.3%; carbohydrate 11%; ash 1%

---

leek soup  Available as a dehydrated soup mix

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<thead>
<tr>
<th>Composition</th>
<th>Dehydrated</th>
<th>Prepared with water</th>
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<tbody>
<tr>
<td>Moisture (%)</td>
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<tr>
<td>Protein (%)</td>
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<tr>
<td>Fat (%)</td>
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<tr>
<td>Carbohydrate (%)</td>
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<tr>
<td>Fiber (%)</td>
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</tr>
<tr>
<td>Ash (%)</td>
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</tbody>
</table>

lees  (dregs; heel; pomace)  1) The grape skins that are left in the vat after pressing and that are pressed again to release residual wine. 2) The settlings of any liquid; the sediment; or dregs, of a liquid. 3) The sediment in wine or liquor  See sediment

leg  A lower limb; one of a pair of rear limbs of a meat animal  See poultry legs

See Part 2: Bone; Bone in Retail Cuts; Lamb Cuts; Lamb Cuts and Uses; Lamb Roasting; Lamb, Wholesale Cuts; Meat Composition; Meat Identification; Meat, Servings Per Pound; Pork Cuts and Uses; Pork Wholesale Cuts; Poultry, Dressing Percentage; Roasting, Time and Temperature; Turkey Composition; Veal Chart; Veal Cuts; Veal Cuts and Uses; Veal Roasting; Veal Wholesale Cuts

leg bone  See Part 2: Beef Wholesale Cuts; Lamb Wholesale Cuts; Pork Wholesale Cuts; Veal Wholesale Cuts

Leghorn  A Mediterranean class of chickens that is early-maturing, is a good egg producer, and lays a white-shelled egg.

Varieties (an asterisk indicates that there is also a Bantam variety):
- Rose-comb dark brown
- Rose-comb light brown
- Rose-comb white
- Single-comb black
- Single-comb black-tailed red
- Single-comb buff
- Single-comb Columbian
- Single-comb dark brown
- Single-comb light brown
- Single-comb red
- Single-comb silver
- Single-comb white*

See Part 2: Poultry Breeds and Varieties

legnicka  A moist, uncooked, smoked Polish sausage made from fine- or medium-chopped, medium-seasoned pork, with plasma added, stuffed into artificial casings

leg of lamb  A meat cut that can be prepared in several lengths, but is usually cut in front of the hip bone  See also American leg of lamb; French leg of lamb

Legume (family Leguminosae)  A family of plants that can obtain a major portion of their nitrogen by fixation of atmospheric nitrogen from the soil by bacteria (Rhizobium spp.) that live symbiotically in nodules on the roots; a plant that uses atmospheric nitrogen by utilizing nitrogen-fixing nodules on their roots; a plant that has the ability to live symbiotically with microorganisms which can fix atmospheric nitrogen in a form usable by plants, e.g., beans, lentils, peas, and soy beans  See pulse

See Part 2: Sugar, Legumes; Vegetables, Classification
legumin (avenin; plant casein) A protein in legumes that is similar to casein

Leguminosae See Part 2: Vegetables, Classification

leguminous Having the ability, in combination with specific bacteria, to use atmospheric nitrogen from the soil

Leicester A long-wool breed of sheep originating in central England
See Part 2: Sheep Breeds

leicester A hard, grainy, orange-colored cheese

leicester cheese A hard English cheese made from whole cow's milk with rennet added; a mild and mellow English cheese with a rich, russet color and a slightly flaky texture; often used as a dessert cheese or cooking cheese

leicestershire cheese A hard, flaky, tangy, orange (colored with annatto) cheese

leiden A semihard, reduced-fat cheese made from cow's milk and flavored with cumin, cloves, or caraway seed; usually wheel-shaped

leidse A semihard, reduced-fat cheese made from cow's milk and sometimes flavored with cumin, cloves, or caraway seed; usually wheel-shaped

le moine A medium-flavored, semisoft cheese

lemon (Citrus limon) A citrus fruit with yellow skin (a few varieties remain green even when mature) and a high concentration of citric acid in the pulp; the juice is used in flavoring, cooking, confectionery, and in preparing lemonade and is a good source of vitamin C (50 mg ascorbic acid per 100 g); it may be used as a substitute for vinegar when less tartness is desired; also complements flavor of seafood; bottled juice does not keep well after opening. The plant is also used as a rootstock for other citrus plants. The fruit is much sweeter if allowed to ripen on the tree.

Varieties:

Bonnie Brae
Eureka—small, commercial tree; very popular
Genoa
Lisbon—commercial; very popular
Messina
Meyer—less-acid fruit
Milan
Ponderosa—large, mild-flavored fruit
Sicily
Villa Franca—commercial

Refuse: rind and seed 30–38%

1 crate = 300–360 lemons
1 box (9.9 × 13 × 25 in.) = 76 lb
1 carton (10.25 × 10.7 × 16.4 in.) = 70 lb
3 lb, or 1 doz fresh lemons
= 2 cups juice [1 cup = 250 g (8.7 oz)]
1 lb = 3–5 lemons
= 4 med. lemons
= ½ pt juice
1 cup lemon juice = 5–6 lemons
1 avg.-sized lemon = 2–4 tbsp juice
= 1½–3 tsp grated rind

Composition

<table>
<thead>
<tr>
<th>Fruit, peeled</th>
<th>Juice</th>
<th>Peel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>90</td>
<td>91</td>
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<tr>
<td>Protein (%)</td>
<td>1</td>
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<tr>
<td>Fat (%)</td>
<td>0.3</td>
<td>0.2</td>
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<tr>
<td>Carbohydrate (%)</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>pH</td>
<td>2.2–2.4</td>
<td>2.3–2.6</td>
</tr>
</tbody>
</table>

Storage: 32°F; 85–90% relative humidity; storage life 1–2 months; freezing point 28°F
See also citrus fruit

See Part 2: Citrus Fruit Storage; Essential Oils; Flavor Ingredients, Taste and Flavor Type; Flavors, Beverage; Fruit and Nut Rootstock; Fruit, Availability; Fruit Harvest Dates; Fruit Classification; Fruit Composition; Fruit Storage; Fruit Juice Flavors; Lemon Juice, Composition; Lemon Oil, Composition; Lemon Oil, Properties; Minerals, Food; Minerals (Trace), Limits; Organic Acids in Fruits and Vegetables; Plant Foods, Composition; Rot Spoilage; Standards, Processed Fruit and Vegetable Products; Storage

lemonade A drink made from lemon juice, sugar, and water

1 gal = 16 eight-oz servings
1 doz lemons = 2 cups juice
= 16 servings
1 cup = 8.4–8.8 oz

lemon balm (Melissa officinalis) A sweet, aromatic, perennial herb with the odor and flavor of lemon; used for seasoning, salads, desserts, summer drinks, sauces, soups, liquors, perfumes, tea, and nectar (for bees) See balm

lemon cheese See lemon curd

lemon cream pie One-sixth of a pie (66 g) contains 92 mg sodium.

lemon cucumber A yellowish white, rounded cucumber with a delicate flavor

Storage: in refrigerator; peel before use
See cucumber, lemon

lemon curd (lemon cheese) A preserve made with lemons, sugar, butter, and eggs

lemon drops See candy

lemon extract (lemon essence) 5% by volume of oil of lemon, which is obtained by pressure from the peel or rind of a lemon

Extract type Source Oil of lemon (% by vol.) Citral (min.)

Lemon (min. 80% by vol. of ethyl alcohol)
Concentrated Oil of lemon 20–60 (min.) 0.8% or lemon peel
Terpeneless Oil of lemon 20 (min.) 2%
Nonalcoholic Oil of lemon, cottonseed oil

lemon filling Available as a commercial product that contains algin, color (artificial), egg, fruit acid, lemon flavoring, lemon juice, salt, starch, sugar, vegetable gum, and vegetable shortening
lemon gin  A lemon-flavored liqueur

lemongrass (Andropogon nardus; A. schoenanthus)  An herb that has the fragrance of lemon and looks like a fibrous green onion (but with a pungent, lemonlike flavor); a lemon-flavored grass that contains the essential oil citral; available fresh or dried

Types:
- East Indian (also called British Indian, cochin, and native)—sp. gr. 0.894–0.905
- West Indian—from Guatemala and Madagascar; sp. gr. 0.868–0.894

Used as a lemonlike flavoring agent in food
Storage: full, tight, glass container in a cool, dark place

lemon juice  The juice from lemon pulp; often bottled (will lose flavor shortly after opening); contains citric and ascorbic acid; used in some frozen fruits as an antidarkening agent

1 cup frozen concentrate = 8.6 oz
1 cup = 8.6 oz
1 tbsp = 0.5 oz
1 tbsp = ½ tsp crystalline citric acid

lemon-lime  A carbonated beverage made with lemon juice with a small amount of lime juice
See Part 2: Beverage, Carbonated, Ingredients

lemon meringue pie  One-eighth of a 9-in. pie contains 270 calories

lemon oil  The oil obtained by pressure from lemon rind, skins, or juice (the oil and juice are expressed from lemons and the oil is then separated from the juice); the volatile oil expressed (with the aid of heat) from the peel of Citrus limon; sp. gr. 0.848–0.855; the oil is mixed with water and alcohol and used as a lemonlike flavoring agent.
Storage: full, tight container in a cool place

lemon pickle  Sweet or salty lemon with or without oil

lemon sole  A saltwater flatfish used for food
Northeast Atlantic—Microstomus (Pleuronectes) microcephalus; M. limanda, M. kitt
Oceania—Pelotretis flavilatus
See sole

lemon-spiced tea  A scented tea made from lemon granules and black tea

lemon thyme  A lemon-flavored variety of thyme; used as a substitute for lemon

lemon verbena (Lippia citriodora)  A perennial herbaceous shrub whose aromatic, lemon-flavored leaves are used to make perfumes, to flavor jellies, in salads, and to make an infusion for a cooling drink

lemon, zest of  Grated lemon peel

lemon peels  A moist, cooked, smoked Finnish sausage made from finely chopped, mildly seasoned (with potato flour) beef and pork stuffed into 45-mm artificial casings

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lemon, zest of  Grated lemon peel

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Lent  The interval between Ash Wednesday and Easter; a time of fasting and penitence observed in various Christian churches during which abstinence from certain foods is often practiced

lentil (daal; dhal; Lens culinaris; L. esculenta)  A leguminous plant whose flat, thin, disk-shaped seeds (round, ½-in. diam., convex on both sides) are dried and used in soups and stews; 1–2 pea-sized seeds are contained in the flattened pod; the seeds may be green, greenish brown, golden brown, reddish, or mottled. Lentils do not have to be soaked before using in a recipe; the highest grade is U.S. No. 1. A similar legume (monantha vetch) is grown on the west coast of the United States.

To cook: Add 2 cups of lentils to 5 cups of water and 2 teaspoons of salt and boil for 30 minutes.
1 lb, dried = 2.25–2.5 cups = 10–13 servings
1 cup, cooked = 190 g (6.7 oz)
1 cup, cooked = 200 g (7.1 oz)

Composition (dried seed, raw): moisture 11%; protein 25%; fat 1%; carbohydrate 60%; ash 8%; fiber (cooked) 4%

Storage (dried): tightly covered; 50–70°F; keep dry; do not mix with older product; will keep for several months
See Part 2: Beans, Dry, Cooking; Beans, Peas, and Lentils Label; Minerals, Food; Seed, Chemical Composition; Vegetable Servings

lentil with ham soup  Available as a canned soup
Composition: moisture 85.7%; protein 3.7%; fat 1.1%; carbohydrate 8.2%; fiber 0.6%; ash 1.2%

leona  A coarsely ground, cooked sausage

lepper-­so  A sour snack made from fermented tea leaves

Leptospira  Finely coiled, aerobic organisms (6–20 μm long) some of which are pathogenic to humans and animals
See Part 2: Microorganism, Media

leptospirosis 1) Lepto, a highly contagious disease of cattle, hogs, rodents, and humans; blood tests and vaccinations are available. 2) Redwater, a condition that destroys red blood cells

les orrys  A semihard cheese, made from cow's (originally sheep's) milk, with a full, fruity flavor and sometimes flavored with peppercorns or pimento
lespedeza

An annual used for pasture and hay and as a cover crop

Common (Lespedeza striata)
Korean (L. stipulacea)

Seed 25–50 lb/bu; plant 6–40 lb/acre; pH 6.0

Varieties: Climax; Kobe; Korean; Rowan

Approximate nutrients used for 2 tons of hay: N 77 lb; P₂O₅ 16 lb; K₂O 41 lb

See Part 2: Seed, Germination

lespeda, sericea (Lespedeza cuneata)

A perennial grass used for forage and erosion control; seed 60 lb/bu; plant 20–40 lb/acre; pH 6.0; harvest when 12 in. tall; 2–3 times per year

Varieties: Common; Arlington

les riceys

A ricroi-type cheese matured in ashes or vine stems

lesser cornstalk borer (Elasmopalpus lignosellus)

An insect that attacks sorghum

less than

The symbol used in scientific notation is <; the notation for “less than or equal to” is ≤ (or ≤)

lethal dose

See acute toxicity

Lethen broth

A medium made with trypticase glucose extract, lecithin, and polysorbate 80; used for testing the action of quaternary ammonium compounds in cleaning (phenol coefficient)

leiting

A sorghum beer

lettuce (Lactuca sativa)

An annual or biennial plant, originally from Central Asia, belonging to the daisy family and used as a salad green; 25,000–35,000 seed/oz; germination period 4–10 days; head lettuce: seed 1 3 oz/100-ft row; thin to 12 in. apart in rows 15 in. apart; matures in 60 days; leaf lettuce: seed 1 2 oz/100-ft row; thin to 6–10 in. apart in rows 15 in. apart; matures in 70 days.

Types:
Asparagus or Pamir—does not form a head; thick, swollen stems (which may be cooked) and long, narrow leaves
Bibb, Limestone—a variety of butterhead; tender with a sweet, buttery taste; small, cup-shaped head with green exterior and white interior
Boston (also called butterhead, Big Boston, or Bibb)—an American variety of butterhead with med.-large, tender leaves tinged with reddish brown; flat-topped, loose, oval head with dark green exterior and almost white interior
Cos (also called romaine)—England
French—forms a loose head or no head; slightly pungent taste and flavorful; pale, fleshy stem; can be eaten raw or cooked
Head lettuce (L. sativa var. capitata)—includes butterhead and crisphead varieties
Butterhead—forms small, cup-shaped head with green exterior and white interior
Crisphead—forms a firm head with medium green exterior and light green interior; durable in handling and storage
Iceberg (also called New York, crisphead, or head lettuce)—a good shipper with a firm head, medium green exterior, and light green interior
Leaf lettuce (L. sativa var. crispa)—lettuce that does not form a head; includes many varieties; leaves may be curly, smooth, shaped like oak leaves, or have ruffled edges; pale to dark green

Mâche (lamb’s lettuce, or corn salad)—a poor shipper; grows as small bunches of spoon-shaped leaves; light to dark green; tangy or nutty flavor
Oakleaf—a leaf lettuce with leaves shaped like oak leaves
Romaine [also called cos or celery lettuce (L. sativa var. longifolia or augustana)]—elongated head with stiff leaves, dark green exterior, and light green interior
Trevisse—looks like radicchio (speckled with red); shaped like romaine

<table>
<thead>
<tr>
<th>Type and variety</th>
<th>Season</th>
<th>Leaves or head</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crisphead</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fairton</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fulton</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Great Lakes</td>
<td>80 days</td>
<td>Med. size, solid; med. green</td>
</tr>
<tr>
<td>Iceberg Types</td>
<td>82 days</td>
<td>Large, compact; blanched heart; light green, wavy outer leaves</td>
</tr>
<tr>
<td>Imperial</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ithaca</td>
<td>85 days</td>
<td>Very hard; 5 × 4 in.; dark med. green</td>
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<tr>
<td>Oswego</td>
<td></td>
<td></td>
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<tr>
<td>Leaf</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black Seeded</td>
<td>Early;</td>
<td>Light green, frilled; white center</td>
</tr>
<tr>
<td>Simpson</td>
<td>45–60 days</td>
<td></td>
</tr>
<tr>
<td>Grand Rapids</td>
<td>43–60 days</td>
<td>Light green, frilled</td>
</tr>
<tr>
<td>Green Ice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Matchless</td>
<td>50–60 days</td>
<td>Oak-leaf-like, dark green leaves; heat-resistant</td>
</tr>
<tr>
<td>Oakleaf</td>
<td>40 days</td>
<td></td>
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<tr>
<td>Prizehead</td>
<td>45 days</td>
<td>Curled, reddish outer leaves; green, mild inner leaves</td>
</tr>
<tr>
<td>Red Salad Bowl</td>
<td>50 days</td>
<td>Frilled and crisp</td>
</tr>
<tr>
<td>Ruby</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salad Bowl</td>
<td>45–60 days</td>
<td>Curly, wavy leaves; large, med. green; heat-resistant</td>
</tr>
<tr>
<td>Slobolt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boston</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Butter King</td>
<td>70 days</td>
<td>Thick, med. green leaves</td>
</tr>
<tr>
<td>Deci Minor</td>
<td>50 days</td>
<td>Grown in greenhouse</td>
</tr>
<tr>
<td>White Boston</td>
<td>66 days</td>
<td>Light green, tender</td>
</tr>
<tr>
<td></td>
<td>less time than most</td>
<td></td>
</tr>
<tr>
<td>Butterhead</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bibb</td>
<td>57 days</td>
<td>Dark green; loosely folded; inside blanched</td>
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<tr>
<td>Buttercrunch</td>
<td>65 days</td>
<td>Med. size, compact; thick leaves</td>
</tr>
<tr>
<td>Fordhook</td>
<td>78 days</td>
<td>Deep green outer leaves; yellow heart</td>
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<tr>
<td>Hot Weather</td>
<td>82 days</td>
<td>Big</td>
</tr>
<tr>
<td>Summer Bibb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tom Thumb</td>
<td>65 days</td>
<td>Tennis-ball size, solid; med. green; blanched heart</td>
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<tr>
<td>Romaine, or cos</td>
<td></td>
<td></td>
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<tr>
<td>(celery lettuce)</td>
<td></td>
<td></td>
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<tr>
<td>Barcarolle</td>
<td>65–70 days</td>
<td>Loose, large head</td>
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<tr>
<td>Paris Island</td>
<td>75 days</td>
<td>Dark green; vigorous; mosaico-resistant</td>
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<tr>
<td>Paris White</td>
<td>83 days</td>
<td>Light green; very large; 10 in. tall; green-white heart; self-folding (requires no tying)</td>
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<tr>
<td>Valmaine</td>
<td>70 days</td>
<td>Dark green; vigorous</td>
</tr>
</tbody>
</table>
lettuce, sea (Cramba maritima) An edible seaweed that is rich in iodine

leucine A monoamino-monocarboxylic essential amino acid

\[ \text{CH}_3-\text{CH}-\text{CH}_2-\text{CH}-\text{C}=\text{OH} \]
\[ \begin{array}{c}
\text{CH}_3 \\
\text{NH}_2 
\end{array} \]

Used as a nutrient or dietary supplement

Storage: well-closed container

See Part 2: Amino Acids; Amino Acid, Solubilities; Corn, Amino Acids; Egg Products, Nutritive Value; Grain Analysis; Manure Analysis; Milk, Amino Acids; Seed, Chemical Composition; Wheat, Amino Acids; Wheat Products, Amino Acid Compositions

leucocyte See white blood cell

Leuconostoc A genus of sphere-shaped microorganisms; some species used in butter starters

See Part 2: Spoilage, Carbohydrate Foods

leuko- A prefix used to indicate white

leukocyte A colorless, nucleated, ameboid blood cell

Leunasaltpeter A mixture of ammonium nitrate and ammonium sulfate used as a fertilizer

levamisole hydrochloride A drug that is used as a wormer

level playing field The concept that farmers should have equal treatment under government policies and an equal opportunity to compete for markets

leveret A small and very young hare

leverworst, haagse A moist, cooked, unsmoked Dutch sausage made from medium-seasoned pork stuffed into beef or pork casings

leverworst, Berliner A moist, cooked, smoked or unsmoked Dutch sausage made from finely chopped, medium-seasoned beef and pork stuffed into artificial casings

leverworst, haagse A moist, cooked, smoked or unsmoked Dutch sausage made from fine- or coarse-chopped, mildly seasoned beef and pork, with coarsely chopped fat, stuffed into beef or artificial casings

Levine The microbiologist who developed the eosin methylene blue medium, which is used for differentiation of enteric bacilli, including coliform organisms, Escherichia coli, and Aerobacter aerogenes

See Part 2: Microbiological Examination of Dairy Products; Microbiological Media; Microorganism, Culture Media, Dairy and Food Products

Levine EMB agar See Part 2: Microorganism, Culture Media, Water and Sewage, Standard Methods; Microorganism, Media; Microorganism, Selective and Differential Broths and Media, Water Filtration Plant

levkas salami A dry, uncooked, unsmoked Greek sausage made from coarsely chopped, medium-seasoned pork, with pieces (1 cm³) of pork fat, fermented and stuffed into pork or artificial casings

levrorotatory [I; (-)] The ability of an asymmetric compound to rotate polarized light to the left

levroux A Valencay-type cheese made from goat's milk

levroux cheese A French cheese

levulans [(C₆H₁₀O₅)ₙ] A polysaccharide made up of levulose units and found in many plants
levulose  See fructose
levure  A paste of flour and water that is used for sealing lids of cooking containers to retain flavor
leyden A semihard, reduced-fat, usually wheel-shaped cheese made from cow's milk and sometimes flavored with cumin, cloves, or caraway seed
leyden cheese  A hard, goudalike Dutch cheese flavored with cumin seed and cloves or caraway seed  See nokkelost cheese
lezay  A valencay-type cheese made from goat's milk
Li  The symbol for the element lithium
liaison  Using a thickening agent
liable  A rice wine
librid  A type of kefir
Libbee  A variety of clingstone peach
libido  Of animals, the male sex drive
lican acid  See Part 2: Fatty Acids and Their Properties
lice  Parasitical insects of several species that live on cattle, horses, and swine; may be reddish, bluish, or dark gray
lichee  See litchi
lichen  A plant composed of a fungus and an alga in a type of mutually beneficial union called symbiosis; color may be greenish gray to yellow-brown; found on rocky areas, trees, etc.; the chemical indicator litmus is made by fermentation of lichens.
licorice (liquorice; Glycyrrhiza glabra)  The dried rhizomes of a perennial herb belonging to the pea family, they are chewed, powdered, extracted with liquid, and used to flavor sweets and soft drinks.  See Part 2: Minerals (Trace), Limite; Water Activity, Organisms and Food
licorice extract  Obtained from the rhizomes of the licorice plant, which are ground into pulp and boiled in water; the extract is concentrated by evaporation.
lid  A cover for a cooking utensil or storage container  See closure; cover
See Part 2: Glass Jar Tops
liebfraumilch  Any of several quality white wines from the Rhine region that are mild and semisweet and are considered to have a pleasant character
Liebig, Justus von  A German who developed the ideas of food composition, food analysis, and the metabolism of carbohydrate, fat, and protein in the body; he also showed that protein was needed in the diet.
liederkrantz  A semisoft cheese, similar to brie, with a strong flavor and aroma
Liederkrantz  The proprietary name for a soft, creamy yellow, medium-strong cheese that is slightly less pungent than limburger and is ripened by surface bacteria; a dessert cheese made from cow's milk and sold as small (1 3/4 x 2 1/2 x 1 in., 120 g), red rectangles. Composition: moisture 52%; protein 16-17%; fat 28%; salt 1.5%; ash 3.5%  See Part 2: Cheese, Vitamin Content; Vitamin A, Milk and Mild Products
life cycle  The series of stages through which an individual passes: genesis, growth, maturation, reproduction, and death
life expectancy  The average life-span of adult men and women, based on statistics and published in tabular form
LIFO  Last in, first out
ligament  A strip or band of fibrous tissue that attaches one bone to another or that supports the viscera
ligamentum nuchae (back strap)  A ligament of the neck that supports the head  See Part 2: Beef Rib Nomenclature; Connective Tissue, Composition
ligase  An enzyme that catalyzes the linking together of two substrate molecules in a process that includes the breaking of a pyrophosphate bond
light  1) Radiation of any wavelength of the electromagnetic spectrum; its velocity is 3 x 10^8 cm/s (186,000 mi/s); the wavelength range of visible light is 3.9-7.7 x 10^-7 cm. Frequency is the ratio of velocity (in centimeters per second) to wavelength (in centimeters); microwave frequencies are used in cooking; X-rays and gamma rays are used in food preservation.  See also radiation.  2) Of food, often used to indicate that a food has a low level of a particular component (e.g., cholesterol or sodium); there is no legal definition, but a list of nutritional analysis (including calories) is required.  See also lite
light ale  See pale ale
light calf skin  A calf skin weighing less than 9 lb
light cowhide  A cowhide weighing between 30 and 53 lb
light fish  The count of insect fragments taken from an extraction, which determines cleanliness
lightning-type jars  Jars with bail-wire clamps
lights  The lungs of slaughtered cattle, pigs, or sheep; a portion of the offal obtained during animal slaughter and dressing; sometimes labeled "lites"
light steer hide  A steer hide weighing between 48 and 58 lb
lightvan  A white, brined cheese made from sheep's, goat's, or cow's milk
light whiskey  A light-bodied whiskey distilled to a high alcoholic content and then diluted. It is aged in uncharred barrels
light-year (ly)  A measure of distance
  1 ly = 9.4609 x 10^{12} kilometers (km) = 5.9 x 10^{12} miles (mi)
linin (crude fiber)  An amorphous polymer found in wood (25-30%), the balance being cellulose; its exact chemical composition is unknown, but coniferyl alcohol is thought to be the monomer from which it is made.
It is used to cement cellulose fibers together; in papermaking, it is separated from cellulose in the digestion process; it is indigestible by humans because it resists hydrolysis by enzymes or human intestinal bacteria. See Part 2: Histochemical Test.

**lignite** The lowest grade of coal, often called brown coal; it is the next stage after peat in the coal formation cycle. See Part 2: Fuel, Heating Value

**linoceric acid** See [linoceric acid](#).

**linoceric acid** [CH₃(CH₂)₁₉COOH] A saturated fatty acid occurring in peanut oil and found in brain lipids. See Part 2: Fats and Oils, Fatty Acid Composition; Fatty Acids and Their Properties; Fatty Acids; Fatty Acids, Fats and Oils; Saturated Fatty Acids.

**ligule** The papery, triangular structure at the base of a leaf.

**liguleuil** A cheese made from cow’s milk.

**lima** One of the appendages of an animal, as an arm, a leg, or a wing.

**limburger cheese** (algau; briol; carinthian; emmersdorf; grottenhof; lanark; limburg; marianhof; morin; Saint Michels; schutzen; tanzenmersdorf; grottenhof; lanark; limburg; marianhof; morin; Saint Michels; schutzen; tanzenmersdorf) A soft, creamy, white dessert cheese from Belgium with a pungent aroma and a robust, nutlike flavor; it is made from whole or partly skimmed milk and sold in a brick shape with a brownish exterior or packed in jars; ripened 1-2 months. Composition: moisture 45-49%; protein 20-22%; fat 27-28%; carbohydrate 0.5-2%; fiber 0%; salt 2%; ash 3-4%; sodium 227 mg/oz. See Part 2: Cheese Characteristics; Cheese, Vitamin Content; Milk and Cheese, Composition; Vitamin A, Milk and Milk Products.

**lima bean** See bean, lima; butter bean. See Part 2: Potassium.

**lima bean agar** See Part 2: Microorganism, Media.

**lima** A bittersweet vermouth.

**lime [material (calcium oxide; quicklime)]** (CaO) The second-highest-volume chemical produced in the United States; derived from limestone (CaCO₃) by heating at high temperature; aids in the hardening of egg shells; used as a soil conditioner (supplies calcium and other plant nutrients, reduces soil acidity, and improves the physical character of heavy soil). High-
calcium or high-magnesium limestone rock is ground very fine to yield pulverized limestone of six possible types:

- Burnt lime (quicklime)
  - High-calcium
  - High-magnesium
- Pulverized lime
  - High-calcium
  - High-magnesium
- Slaked lime
  - High-calcium
  - High-magnesium

Quicklime can be scattered on moist surfaces as a disinfectant. See builder’s lime; burnt lime; caustic lime; hydrated lime; lump lime; precipitated lime; quicklime; slake; water-slaked lime. See Part 2: Fertilizer Materials; Liming Materials.

**lime defecation** The clarification of juice with milk of lime.

**lime juice** Quality varies with color from red (low-quality juice) to straw-colored (high-quality juice). 1 cup fresh juice = 8.7 oz

**limen** Threshold (of a physiological effect)

**lime oil** A volatile oil steam-distilled from the fruit of Citrus aurantifolia trees; used as a limelike flavoring agent in food. Storage: full, tight, glass container in a cool, dark place.

**lime pickle** A sweet or salty pickle, with or without oil, made from limes.

**limequat** A hybrid between a Key lime and a kumquat; produces an acid fruit.

**lime rickey** A sweetened beverage made from carbonated water with 8% lime and lemon juice.
limerick ham  A country ham that is peat-smoked
limestone  \((\text{CaCO}_3)\)  A source of lime; ordinary limestone contains min. 94% \(\text{CaCO}_3\); dolomites, or dolomitic limestone, may contain large quantities of magnesium carbonate; ground limestone weighs 2.4 lb/qt; food-grade limestone is used in food to produce texture and as a release agent for chewing gum.

<table>
<thead>
<tr>
<th>Composition</th>
<th>Regular</th>
<th>Dolomitic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry matter (%)</td>
<td>100</td>
<td>99</td>
</tr>
<tr>
<td>Calcium (%)</td>
<td>34</td>
<td>22</td>
</tr>
<tr>
<td>Magnesium (%)</td>
<td>2</td>
<td>10</td>
</tr>
</tbody>
</table>

Storage (food-grade): well-closed container

See agricultural limestone; burnt lime; dolomitic limestone; lime
See Part 2: Fertilizer; Fertilizer Materials; Liming Materials

Limestone  A hill breed of British sheep
Limestone lettuce  See Bibb lettuce
lime-sulfur  An inorganic insecticide
lime, Tahitian  See Tahitian lime
limited feeding  A feeding system that gives an animal less feed than it would like to eat; to reduce finishing
limiting amino acid  The essential amino acids that has the greatest percentage deficit with respect to amino acid requirements
limonaya vodka  A lemon-flavored vodka
limonene  A flavoring compound found in orange oil
linalool  A terpene alcohol found in the volatile oils of many plants

\[
\text{\begin{tikzpicture}
\draw (0,0) -- (2,0) -- (2,1) -- (0,1) -- cycle;
\draw (0.2,0.2) circle (0.2);
\draw (1.5,0.2) circle (0.2);
\draw (0.2,0.8) circle (0.2);
\draw (1.5,0.8) circle (0.2);
\end{tikzpicture}}
\]

Used as a floral-like flavoring agent in food; sp. gr. 0.858–0.868
Storage: full, tight, glass container in a cool place

linalyl acetate

\[
\text{\begin{tikzpicture}
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\draw (0.2,0.2) circle (0.2);
\draw (1.5,0.2) circle (0.2);
\draw (0.2,0.8) circle (0.2);
\draw (1.5,0.8) circle (0.2);
\end{tikzpicture}}
\]

Used as a floral-like flavoring agent in food; sp. gr. 0.895–0.915
Storage: full, tight container in a cool, dark place

linalyl benzoate

\[
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\draw (0.2,0.8) circle (0.2);
\draw (1.5,0.8) circle (0.2);
\end{tikzpicture}}
\]

Used as a flavoring agent in food; sp. gr. 0.980–1.000
Storage: full, tight, glass container in a cool, dark place

linalyl isobutyrate

\[
\text{\begin{tikzpicture}
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\draw (1.5,0.2) circle (0.2);
\draw (0.2,0.8) circle (0.2);
\draw (1.5,0.8) circle (0.2);
\end{tikzpicture}}
\]

Used as a fruity flavoring agent in food; sp. gr. 0.882–0.888
Storage: full, tight, glass container in a cool, dark place

linalyl propionate

\[
\text{\begin{tikzpicture}
\draw (0,0) -- (2,0) -- (2,1) -- (0,1) -- cycle;
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\draw (0.2,0.8) circle (0.2);
\draw (1.5,0.8) circle (0.2);
\end{tikzpicture}}
\]

Used as a floral-like flavoring agent in food; sp. gr. 0.894–0.902
Storage: full, tight, glass container in a cool, dark place

Lincoln  A long-wool breed of sheep originating in northeastern England
See Part 2: Sheep Breeds
Lincoln bean  See soybean
lincomycin  A drug used to control and treat dysentery
A poisonous, chlorinated hydrocarbon insecticide (gamma-benzene hexachloride)

\[
\begin{array}{c}
\text{Cl} \\
\text{Cl} \\
\text{Cl} \\
\text{Cl} \\
\end{array}
\]

See also benzene hexachloride
See Part 2: Insect Control

Linden (Tilia americana; T. cordata) A large tree
whose flowers are used for tea, in green salads, or to make honey

Linden flower See Linden

Linden (Tilia americana; T. cordata) A large tree
whose flowers are used for tea, in green salads, or to make honey

Linoleic acid (9,12-octadecadienoic acid)

\[
\text{CH}_3\text{(CH}_2\text{)}_4\text{CH}==\text{CHCH}_2\text{CH}==\text{CH(CH}_2\text{)}_7\text{COOH}
\]

An essential, polyunsaturated (two cis double bonds) 18-carbon fatty acid found in drying oils (cottonseed, linseed, etc.); a fatty acid that is essential for humans

See Part 2: Beans, Peas, and Nuts; Dairy Products, Composition; Egg Composition; Egg Products, Nutritive Value; Fats and Oils, Composition; Fats and Oils, Fatty Acid Composition; Fatty Acids; Fatty Acids and Their Properties; Fatty Acids, Fats and Oils; Fish and Shellfish, Composition; Fruit Composition; Grain Products, Composition; Meat Composition; Oils, Seed and Fruit; Olives and Pickles, Composition; Poultry Composition; Sausage Composition; Seed, Chemical Composition; Soups, Composition; Sugars and Sweets, Composition; Unsaturated Fatty Acids; Vegetable Composition; Wheat, Fatty Acids; Wheat Products, Composition

Linolenic acid \([\text{CH}_3\text{(CH}_2\text{)}_4\text{CH}==\text{CH}_2\text{(CH}_2\text{)}_7\text{COOH}]\)

A polyunsaturated (three cis double bonds) 18-carbon fatty acid found in many vegetable oils; it is a fatty acid that is essential in the diet of a human infant for complete nutrition
The seed of flax (Linum usitatissimum)

linseed oil A fatty, drying oil obtained from flaxseed; forms a hard film by polymerization on exposure to air; used as a paint base, in linoleum, etc.; 2.80 lb flaxseed yields 1 lb oil; acid number 3.42; sp. gr. (20°/4°C) 0.9297

<table>
<thead>
<tr>
<th>Smoke point</th>
<th>Flash point</th>
<th>Fire point</th>
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<tbody>
<tr>
<td>°F</td>
<td>°C</td>
<td>°F</td>
</tr>
<tr>
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<td>163</td>
</tr>
<tr>
<td>Refined</td>
<td>320</td>
<td>160</td>
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</table>

linseed meal A meal made from flaxseed; used as animal feed

<table>
<thead>
<tr>
<th>Composition</th>
<th>Mechanical extraction</th>
<th>Solvent extraction</th>
</tr>
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<tbody>
<tr>
<td>Dry matter (%)</td>
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<td>90</td>
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<tr>
<td>Protein (%)</td>
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<tr>
<td>Fat (%)</td>
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<tr>
<td>Fiber (%)</td>
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</tr>
<tr>
<td>Ash (%)</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

1 lb meal = 1.56 lb flaxseed
New Process yields 29 lb/bu or 0.9 lb/qt.

lip A moist, cooked, smoked Uruguayan sausage made from finely chopped, mildly seasoned beef, with flour, stuffed into beef or artificial casings

liquidated damages Damages for breach of contract, determined and agreed upon by the contract parties

liqueur A spirit-based alcoholic beverage that is flavored with spirit-extracted fruits or herbs or that is modified with cream, coffee, or chocolate and sometimes sweetened; a sweetened, flavored, and/or scented potent spirit (27-80% alcohol); cordials are a subdivision of liqueurs.

liqueur glass 1 glass = 1 oz

liquidity The ability to supply funds or raise money by selling assets
whiskey), as opposed to fermented beverages (e.g., wine and beer)

1 fifth = \( \frac{1}{2} \) gal (U.S.)
\[= 16 - 17 \frac{1}{2} \text{oz jiggers} \]
1 qt = 20 - 21 \( \frac{1}{2} \) oz jiggers

Four jiggers contain 6 oz of liquor; average consumption at a cocktail party 2 - 4 drinks per person; average number of pre-dinner cocktails 2 - 3 drinks per person

<table>
<thead>
<tr>
<th>Number of persons</th>
<th>Total (oz)</th>
<th>Fifts</th>
<th>Quarts</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>24</td>
<td>1</td>
<td>0.75</td>
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<td>6</td>
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<tr>
<td>12</td>
<td>72</td>
<td>3</td>
<td>2.25</td>
</tr>
</tbody>
</table>

*Four drinks per person (1\( \frac{1}{2} \) oz liquor per drink) at a 3- to 4-hour party

2) A concentrated water solution of sugars (mother liquor). 3) The aqueous solution of juices, fats, and other water-soluble components remaining after a food product is boiled

liquorice A perennial herb whose roots are extracted to yield a black, bittersweet confectionery See licorice

Listeria A genus of microorganisms responsible for food poisoning
See Part 2: Microorganism, Media

litmus milk A medium used for propagating and maintaining stock cultures of lactic acid bacteria found in dairy products and in determining the action of bacteria upon milk; the reduction of litmus is useful in differentiation.
See Part 2: Microorganism, Media

little cabbages Brussels sprouts of large size, which are therefore less desirable

littleneck Small, hard-shell clams, so named from Little Neck, Long Island See also quahog

little tuna A food fish
Pacific, Indian—Bathyurus affinis
Atlantic, Mediterranean—E. ailetteratus
See tuna

livarot A strong-flavored, light terra-cotta colored cheese made from cow’s milk; it is encased in a girdle

- 35.196 ounces (oz; Brit., fluid)
- 33.814 ounces (oz; U.S., fluid)
- 10 deciliters (dl)
- 2.11336 pints (pt; U.S., fluid)
- 1.0567 quarts (qt; U.S., liquid)
- 1 cubic decimeter (dm\( ^3 \))
- 0.9081 dry quart (qt; U.S., dry)
- 0.8990 quart (qt; Brit.)
- 0.264178 gallon (gal; U.S., liquid)
- 0.22702 dry gallon (gal; U.S., dry)
- 0.21998 gal (gal; Brit.)

See Part 2: Microorganism, Media

list per hectare \((l/ha)\) Volume per unit area
\[1 l/ha = 0.107 \text{ gallon (U.S.) per acre} \]
\[= 0.089 \text{ gallon (Imp. or Brit.) per acre} \]

list per minute \((l/min)\) Rate of flow
\[1 l/min = 4.403 \times 10^{-3} \text{ gallon (U.S.) per second} \]
\[= 3.666 \times 10^{-3} \text{ gallon (Brit.) per second} \]

See Part 2: Water, Weight and Volume

lites See lights

lithium (Li) A metallic element; at. no. 3; at. wt. 6.940; Group IA of the Periodic Table; oxidation state +1; electron configuration 2-1 orbit K L

litmus An indicator of pH values; in an acid solution it is red, in a basic solution it is blue, and in a neutral solution it is lavender; its pH range is from 4 to 8.
See also lichen

littleneck

little tuna

little cabbages

See Part 2: Microorganism, Media

littleneck

See Part 2: Microorganism, Media
of dark, chestnut green threads (made of hollow reeds) that keep the cheese in shape while softening; a soft cheese with a brine-washed rind; a soft to semisoft, strong-flavored cheese made from cow's milk and ripened by surface bacteria

**liver** A large, glandular, purple organ used as food (an edible variety meat); it produces and secretes bile, purifies the blood, and stores glycogen; weighs 6.5–10 lb in small cattle and 11–13 lb in large cattle; good source of nutrients

To prepare for cooking: wash; remove outside membrane; slice 1/2 in. thick. The cells of the liver are polygonal in shape with a large central nucleus; the cells are arranged in columns and radiate from a central vein.

Composition (raw): moisture 70–72%; protein 19–21%; fat 3.5–5%; carbohydrate 2.5–5.3%; ash 1.3–1.5%; cholesterol 372 mg/3 oz

Storage: Coldest part of refrigerator; use within 1–2 days.

See Part 2: Ascorbic Acid; Beef Cuts and Uses; Calories, Daily Recommendations; Cholesterol Control; Food, Composition; Gland Weights; Iron, Daily Recommendations; Lamb Cuts and Uses; Liver; Meat Composition; Meat, Servings per Pound; Minerals, Food; Moisture in Biological Materials; Niacin, Daily Recommendations; Nicotinic Acid, Food; Organ Weights; Pantothenic Acid Content; Pork, Cooking Yield; Pork Cuts and Uses; Portion Size; Poultry Dressing Percentage; Riboflavin, Daily Recommendations; Riboflavin, Food; Storage Times; Thiamin, Daily Recommendations; Thiamin, Food; Unsaturated Fatty Acids; Variety Meat, Cooking; Variety Meat, Percentage of Daily Recommended Allowances; Variety Meat Preparation; Veal Cuts and Uses; Vitamin A, Daily Recommendations; Vitamin A, Food

**liver abscess(es)** Single (or multiple) inflammation (a localized collection of pus and disintegration of tissue) of the liver

**liver cheese** Composition: moisture 53.6%; protein 15.2%; fat 25.6%; carbohydrate 2%; ash 3.5%; sodium 245 mg/slice (20 g) See **liver loaf**

**liver, desiccated** Used as a dietary supplement

**liver fungus** See **Fistulina hepatica**

**liver infusion agar** See Part 2: Microorganism, Media

**liver loaf** Similar to liver sausage except with more body and molded into a brick that yields sandwich-sized slices

See Part 2: Sausage, Types

**liver oil** See Part 2: Oils and Fats, Composition

**liver paste** A soft, spreadable sausage

**liver pâté** A finely chopped, cooked, unsmoked, jellied and/or specialty American sausage that is canned sterile or shelf-stable and is available in rings or loaves

**liver sausage (braunschweiger; leberwurst; liverwurst)** 1) A sausage product made from pork, beef, or veal, with pork liver and bread; min. 30% liver; cooked to an internal temperature of 145–165°F. 2) A moist, cooked, smoked or unsmoked jellied and/or specialty American sausage made from fine- to coarse-chopped, mildly seasoned (with onions, spices, and sometimes bacon) beef, pork, veal, lamb, and goat with beef and pork by-products, pork skin, and pork, sheep, and goat livers (usually pork and pork liver) and stuffed into pork or artificial casings and available in rings or loaves; when smoked or of a good grade, it is often called braunschweiger.

Composition: moisture 52%; protein 14%; fat 28.5%; carbohydrate 2.3%; ash 3%

2) A moist, cooked, unsmoked British sausage made from fine- or medium-chopped, mild- or medium-seasoned beef, lamb, veal, and goat stuffed into beef, pork, or artificial casings

See Part 2: Sausage Identification; Sausage Nutritive Value

**liver sausage, Irish** A moist, cooked, smoked or unsmoked Irish liver sausage finely chopped, mild- or medium-seasoned pork stuffed into artificial casings

**liver sausage, Kosher** A moist, cooked, smoked American sausage made from finely chopped, mildly seasoned (with garlic), beef, lamb, veal, and goat stuffed into artificial casings; must be produced under rabbinical supervision

**liver veal agar** See Part 2: Microorganism, Media

**liverwurst** 1) A smooth-textured liver sausage; a cooked sausage made of finely ground pork and liver seasoned with onions and spices; when smoked it is called braunschweiger. 2) A moist, cooked, unsmoked Australian sausage made from finely chopped, medium-seasoned beef stuffed into an artificial casing

See **liver sausage**

**livestock** Domesticated animals that are raised for meat, milk, or to use as draft animals

**livestock weather safety index**

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<th>Relative humidity (%)</th>
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</table>

A = alert
D = danger
E = emergency

**live weight** The weight of an animal before slaughter

**livander cheese** A sharp, pungent, German cheese made from sour milk See **hand cheese**
lizard fish (Chlorophthalmus albatrossis) A food fish

llama A long-haired ruminant of South America
See Part 2: Milk, Mammals, Composition

llanero (queso llanero) A strong-flavored, acid curd cheese made from partly skimmed cow’s milk and sometimes flavored with caraway seed

lllymru A sour gruel made from buttermilk and oatmeal

LM agar See Part 2: Microorganism, Media

LMM Light meromyosin

LNF Liquid nitrogen frozen

In n Natural logarithm (base e) of n

\[
\ln n = 0.4343 \log_{10} n
\]

losch (minnow; Tiaroga cobitis) A small, freshwater food fish

load line The highest point to which food should be stacked in a refrigerated case

loaf 1) The usual unit of size in which bread is produced (normally from 1 to 1.5 lb). 2) A mixture of chopped meat (often a mixture of beef and pork) with bread crumbs, spices, etc., that is baked in a definite (nonyindrical) shape or mold; max. 3% added moisture in meat products. 3) A moist, cooked, smoked or unsmoked American sausage made from fine-, medium-, or coarse-chopped, mild- or medium-seasoned beef, pork, and veal that may contain binders, extenders, pimento, olives, cheese, onion, pistachio nuts, flavorings, cubed meat, etc., and may be pressed, formed, molded, or sliced; the product is cured, cooked in molds or stuffed into beef or artificial casings.
See Part 2: Pork, Cooking; Pork Loin Cooking; Portion Size; Sausage Identification

4) A package of cheese in the shape of a brick, weighing approximately 5 lb

loaf cheese A processed American cheese sold in loaf form

loam Soil that contains clay, sand, humus, and/or silt and that holds water but also drains
See Part 2: Soil Classes

loan forfeiture The forfeiting of commodities or property placed under loan instead of repaying the loan in cash

loan ngon-gon See longan

loan rate The price per unit (e.g., bushel, bale, pound) at which the government will make loans to farmers to enable them to hold their crops for sale later See non-recourse loans

lobbyist An individual or a representative of an organization who attempts to influence decisions made by members of Congress and by other government officials

lo bok See Chinese turnip

lobscouse A mixture of meat, vegetables, and biscuit

lobster A lean marine crustacean; a shellfish; also a spiny sea crayfish (Palinurus sp.); is 20–50% edible (avg. 20% protein); the meat is snow-white and lean; a large lobster is less tender than a medium lobster, and claw meat is more tender than tail meat.

Types:
American, Northern, or Maine (Homarus americanus)—large claws; 1–5 lb; caught in New England, Canada, and the North Atlantic; available live, whole, or cooked (as cooked meat and in soups, bisques, and dips)

European lobster—(H. vulgaris or H. gammarus)
Norwegian lobster—(Nephrops norvegicus)

Rock—has small claws; tail often marketed separately (rock lobster tail); caught in South Africa, along the U.S. coast, and in Australia, New Zealand, Brazil, and Ecuador

Slipper—has small claws; lives in tropical and subtropical waters; usually marketed as 2-oz to 2-lb frozen lobster tails; caught in British Honduras and in Haiti

To cook (by boiling): Place in boiling water (3–4% salt solution); start timing when water boils again:
1–1.25 lb—boil 10–12 min
1.5–2 lb—boil 15–18 min
2–2.5 lb—boil 20–25 min
2.5–3 lb
6–14 lb (deep-sea lobster)

Market forms and terms:
Canned—in its own juice, in jelly, or in sauce
Chicken—a small lobster
Fresh—a whole, boiled lobster or cooked lobster meat
Frozen—raw or cooked; whole lobster or tails only
Live—will remain alive up to 36 h after capture
Paste—max. 2% cereal
Soup

Two-claw (H. americanus):
1 lobster = \frac{2}{3}–3 lb
one 2½-lb lobster = 1 lb meat
one 1-lb lobster = 8 oz tail

Spiny (does not have heavy claws):
1 tail, avg. = 2–8 oz
one 1-lb lobster = 4–5 oz meat, cooked
= 1 cup meat, cooked
= 5 oz canned lobster

Servings:
Form served
Meat [1 cup = 155 g (5.4 oz)]—4 oz per serving
Tail—8 oz per serving
Whole—16 oz per serving

As purchased
In shell—purchase 12 oz per serving (22–25% yield)

Tails only—purchase 6 oz per serving (50–66% yield)

Tail is about one-third of the total weight of a lobster.

Grades (New England lobster):
Chicken—\frac{3}{4}–1 lb
Quarters—1 1/2–1 1/2 lb
Large—1 1/2–2 1/2 lb
Jumbo—over 3 lb

<table>
<thead>
<tr>
<th>Composition</th>
<th>Tail meat, raw</th>
<th>Whole</th>
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<tbody>
<tr>
<td>Moisture (%)</td>
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<tr>
<td>Protein (%)</td>
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<tr>
<td>Fat (%)</td>
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<td>1.9</td>
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<tr>
<td>Carbohydrate (%)</td>
<td>&lt; 1</td>
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</tr>
<tr>
<td>Ash (%)</td>
<td>1.5</td>
<td></td>
</tr>
</tbody>
</table>
lobster

Cholesterol (raw tail meat) 71 mg/3 oz; sodium (boiled) 212 mg/3 oz (85 g)
See crayfish
See Part 2: Cholesterol Control; Fish, Storage; Frozen Food Storage; Lobster; Minerals, Food; Portion Size

lobster, Norway  See Dublin bay prawn

lobster paste  Composition (canned): moisture 62%; protein 21%; fat 9%; carbohydrate 1%; ash 7%

lobster sauce  A sauce that is used over lobster and shrimp

local food  Food that is consumed in the vicinity of where it is produced

local gin  A clear, crudely distilled, alcoholic spirit

lochan ora  A sweet whiskey liqueur flavored with honey

lockjaw  See tetanus

locks  A variant of lox  See lox

locorotondo  White wine produced in southeastern Italy

locoweed  A plant having a toxic principle
See Part 2: Poisonous Plants

locules  A cell or cavity
See Part 2: Orange Structure

locust bean, African (Parkia spp.)  Any of several trees (10–30 m tall) whose dry seeds are fermented as a flavoring; the pulp of the fruit is cooked as food.

locust bean gum (carob seed gum; gum gatto; gum trigon; jandagum; St.-John's-bread)  The refined endosperm of the seed of the carob evergreen tree (Ceratonia siliqua); composed of D-mannose and D-galactose units of mol. wt. 310,000; it is used in the food industry as a suspending agent, thickener, food stabilizer, emulsifier, as a natural flavoring agent, and to prevent graininess in ice cream; also used in cheese; the tree's fruit may be eaten fresh or dried; the seed is sweet-flavored and fragrant.
Storage: well-closed container
See carob pod
See Part 2: Gum Characteristics; Gums, Physicochemical Properties; Stabilizers, Thickeners

lodging  The falling over of a plant

lodigiano  A hard, dry, low-fat grating cheese (30–50 kg) that is made from cow's milk and has small to large holes, greenish to yellow color, and sharp or strong (matured up to 5 yr) flavor

Loeffler blood serum  See Part 2: Microorganism, Media

loganberry (Rubus loganobaccus)  A hybrid of a dewberry or blackberry and a raspberry; a variety of red-fruited dewberry or trailing blackberry; it bears a fruit similar to a blackberry except that the color is dull red and the acid content higher; the oblong berries (2 in. long) are tart when green; they are used fresh, canned, in pies, and in preserves.

Frozen style:
Whole—with or without sugar or syrup
Canned styles:
Choice—whole; in 50° Brix syrup
Fancy—whole; uniform size; in 70° Brix syrup
Water or pie—in water for bakery

Equivalents:
100 lb fresh berries = 17–22 lb dried berries
1 crate (24 qts) fresh = 32–36 pt frozen
1 pt. frozen = 1.3 to 1.5 pt fresh
1 cup, fresh, trimmed = 5.1 oz

Composition (raw): moisture 83%; protein 1%; fat 0.6%; carbohydrate 15%; ash 0.5%; pH 3.1
See Part 2: Fruit Classification; Fruit, Frozen Yield; Fruit Harvest Dates; Minerals, Food

loganberry, canned  In addition to loganberries, may also contain natural and artificial flavors
Sucrose in syrup:
Extra light—< 14%
Light—14–19%
Heavy—19–24%
Extra heavy—24–35%

loganberry nectar  Nectar pressed from loganberries and mixed with sugar prior to bottling

logarithm (log)  If \( a^x = y \), then \( x = \log_a y \).

\[
\log_a x = 1 \quad \text{and} \quad \log_a 1 = 0
\]

To change base:
\[
\frac{\log_b y}{\log_b a} = \log_a y
\]

The components of a logarithm are the characteristic and mantissa, e.g., for
\[
x = \log_{10} 50 = 1.699
\]

Characteristic:
The number to the left of the decimal point in the logarithm
1.699—1 is the characteristic.

Gives the position of the decimal point in the number \( y \) and changes as follows:
\[
\log_{10} 8 = 0.9031
\]
\[
\log_{10} 800 = 2.9031
\]
\[
\log_{10} 0.0008 = -3.9031
\]

Mantissa:
The number to the right of the decimal point in the logarithm
1.699—699 is the mantissa.

Used to find the antilogarithm—by finding the mantissa in a table of logarithms
1.699—finding 699 in a table of common logarithms yields 50 as the antilogarithm of 1.699.

Base 10 is assumed in the following operations.
Multiplication (e.g., \( 200 \times 4 = 800 \)):
1. Change each number to its logarithm.
2. Add the logarithms.
\[
2.3010 + 0.6021 = 2.9031
\]
3. Find the antilogarithm.
\[
\text{antilog } 2.9031 = 800
\]
Division (e.g., \( 900 \div 45 = 20 \)):
1. Change each number to its logarithm.
2. Subtract the logarithms.
\[
2.9542 - 1.6532 = 1.3010
\]
3. Find the antilogarithm.
\[
\text{antilog } 1.3010 = 20
\]
Powers (e.g., \(3^4 = 81\)):
1. Find the logarithm of the base number.
   \[ \log 3 = 0.4771 \]
2. Multiply by the power.
   \[ 0.4771 \times 4 = 1.9084 \]
3. Find the antilogarithm.
   \[ \text{antilog} 1.9084 = 81 \]

Roots (e.g., \(\sqrt[5]{243} = 3\)):
1. Find the logarithm of the radicand.
   \[ \log 243 = 2.3856 \]
2. Divide by the root.
   \[ 2.3856 \div 5 = 0.4771 \]
3. Find the antilogarithm.
   \[ \text{antilog} 0.4771 = 3 \]

See also logarithm, negative
See Part 2: Constants, Fundamental

logarithm, base 10 (\(\log; \log_{10}\)) In chemistry and algebra (not mathematics), if the base is not given, it is assumed to be base 10.

logarithm, base e (\(\ln; \log_{e} (e = 2.71828)\)) In mathematics (not algebra), if the base is not specified, it is assumed to be \(e\).

logarithmic growth phase A stage in bacterial growth that follows the lag phase and during which cells grow and divide at a constant rate

logarithm, negative The mantissae listed in tables are always positive. When calculating a multiplication or division (i.e., the addition or subtraction of logarithms) there is no problem.

For example:

<table>
<thead>
<tr>
<th>negative</th>
<th>positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.05</td>
<td>2 \cdot 6990</td>
</tr>
<tr>
<td>\times 0.04</td>
<td>+2 \cdot 6021</td>
</tr>
<tr>
<td>0.0020</td>
<td>3 \cdot 3011</td>
</tr>
</tbody>
</table>
\[
\text{antilog} = 0.002
\]

\(\overline{\text{x.xxx}}\) (negative and positive)—The form used in multiplication or division (addition and subtraction of logarithms) and for looking up in a table

\(\overline{-x.xxx}\) (all negative)—The form used in powers and roots (i.e., multiplication or division of logarithms)

For example:

\[
\log_{10} 0.005 = 3.699 = -3.000 + 0.699 —\text{the form used in calculating multiplication and division and in table lookup}
\]
\[
= -2.301 = -2.000 - 0.301 —\text{the form used in calculating powers and roots but not in table lookup}
\]

The all-negative form is obtained as follows:

\[-3.000 + 0.699 = -2.301\]

To change this back to a form that can be looked up in a table (i.e., positive mantissa), subtract 1 from the characteristic and add 1 to the mantissa:

\[-2 - 1 = -3 \quad \text{(characteristic)}\]
\[-0.301 + 1.000 = +0.699 \quad \text{(mantissa)}\]

Giving 3.699, which can be found in a table to be the logarithm of 0.005.

For example, \(\sqrt[3]{0.0016} = 0.04\):

\[
\sqrt[3]{3.2041} = -3.000 + 0.2041 = -2.7959
\]
\[
-2.7959 \div 2 = -1.39795
\]
\[
= \frac{2.60205}{0.04}
\]

logudoro A soft, white cheese that is made from sheep's milk, drained in baskets, and cured 3-4 weeks

\(-logy\) A suffix that is used to indicate a science or a treatise

loin The region of the back between the last (caudal) ribs and the hip; the lumbar region; the backbone and loin-eye muscle area of a carcass; for hogs, the trimmed loin is 15% of carcass; for choice steers it is 17%.

See Part 2: Beef, Boneless Cuts; Beef Chart; Beef Cuts and Uses; Beef Retail Yield; Beef Wholesale Cuts; Beef Yields; Bone in Retail Cuts; Broiling Time and Temperature; Lamb Chart; Lamb Cuts; Lamb Cuts and Uses; Lamb, Wholesale Cuts; Meat Identification; Meat Label; Minerals, Food; Pork Carcass, Retail Yield; Pork Chart; Pork, Cooking; Pork, Cooking Methods, Pork Cooking Yield; Pork Cuts; Pork Cuts and Uses; Pork Loin Carving; Pork Loin Cooking; Pork Loin Nomenclature; Pork Wholesale Cuts; Pork Yield; Roasting, Time and Temperature; Veal Chart; Veal Cuts; Veal Cuts and Uses; Veal Roasting; Veal Wholesale Cuts

loin center The middle portion of the loin after removal of the blade and sirloin ends; the ribeye and tenderloin are the major muscles.

loin chops See Part 2: Lamb Yield

loin end The rear area of the loin up to the front of the hip bone; it contains the butt end sirloin, wedge bone sirloin, round bone sirloin, double bone sirloin, and pin bone sirloin.

Blade, or rib end—5-7 ribs and blade bone
Loin end—hip or sirloin section

loin eye See longissimus dorsi
See Part 2: Meat Identification

loin halves The loin half should contain 1 or 2 ribs; the rib half should contain at least 10 ribs

loin strip The top muscle found in the short loin; often cut into strip steaks

Loire A region (including the provinces of Anjou and Touraine) in west-central France that produces wines
A moist, cooked, unsmoked Norwegian sausage made from medium-chopped, medium-seasoned, beef and pork not stuffed into a casing

A small-sized, dry, uncooked, unsmoked sausage made from coarsely chopped, mildly seasoned (garlic) pork fermented and stuffed into a pork or artificial casing; lola is made in 14-oz links and lolita in 14-oz links. See lolita

A clear, hard candy, usually placed on a stick

A hard, strong dry, low-fat grating cheese made from cow's milk, with large holes and greenish color

Moist noodles mixed with meat and vegetables

A mixture of dried salmon, tomatoes, and onions

Not a specific cut of beefsteak but usually top quality flank steak, boneless thick-cut chuck, top round, or tip; broiled (rare or medium) and sliced thinly on the diagonal

A dry, clear, distilled spirit that is high in alcohol and flavored with juniper berry

The market position of a futures contract buyer whose purchase obligates him or her to accept delivery unless he or she liquidates the contract with an offsetting sale

A Southeast Asian, lycheelike tree that produces clusters of sweet, pulpy fruit (1-in. diam.) with a smooth, brown outer shell; the fruit is similar to the lychee but less tart.

Available forms: canned (seen loan-gon); dried (loan-gon-gon); fresh

Variety: Kohala

A semidry, uncooked, unsmoked French sausage made from medium-chopped, heavily seasoned beef and pork fermented and stuffed into pork or sheep casings

1) A dry or semidry, uncooked, smoked Uruguayan sausage made from coarsely chopped, heavily seasoned beef and pork stuffed into beef or artificial casings; a semidry sausage made from medium-chopped beef or pork flavored with anisette and pimento. 2) A fresh (or cured and smoked) Puerto Rican sausage made from beef and pork that is flavored and colored with anatto (annatto, arnatto) See linguica

A dry, uncooked, unsmoked Argentinean sausage made from coarsely chopped, medium-seasoned (with marjoram, white wine, white sugar, red pepper, grains of fennel, chili, salt, and nitrite) beef and pork, with backfat, stuffed into pork casings

A medium- to coarse-chopped, uncooked, smoked or unsmoked American sausage that is available in fermented and/or dry or semidry links, rings, or large-diameter casings

Cattle fed in a feedlot for over 130 days (4–6 months, or longer)

General name for any of several fish of the family Serranidae

A shape of cheese (bottom diam. is 7 in., top diam. 5 in., height 10–14 in., and weight 10–16 lb)

A solid, yellow-orange, usually mild-flavored, version of cheddar cheese, usually in a foot-long cylinder, about 8-in. diam.; also made in small, 2-lb cylinder sizes

A food fish

A duck breed that is descended from Peking duck

A long muscle of the back, running from the spine to the lumbar vertebrea to the ribs; it is located between the spine and transverse processes and from lateral to ventral of the spinous processes of the lumbar vertebrae as it proceeds from lumbar to rib section.

A long muscle of the back, running from the neck area to the sacrum and ilium; it is located between the spinous and transverse processes and from lateral to ventral of the spinous processes of the lumbar vertebrae as it proceeds from lumbar to rib section.

Sheep with tails

A muscle of the neck area that lies under the cervical and first four thoracic vertebrae; the trachea lies below its lower surface.

A classification of sheep that includes the following breeds: Cotswold, Leicester, Lincoln, and Romney

Cattle almost 2 yr old

A hill breed of British sheep

Groundnut presscake

A cucumber-like fruit used in Chinese cookery
loogpang (luk-paeng) Gray-white, dried balls of
starter, containing bacteria, molds, and yeast on a
rice base; used as inoculum for fermented foods

look fun (look funn) Broad, rice noodles

loo rong A steamed, rice-based, arrack beverage

loose smut (Ustilago tritici) A disease of wheat in
which the heads are replaced by black masses of smut

loosa Strong-flavored, dried, salted fish; used as a
flavoring

loprivshvenska loukanka A chorizo made from
medium-chopped beef and pork

loquats (Japanese medlar; Eriobotrya japonica) A
small evergreen that produces a yellow-orange,
pear-shaped fruit the size of a crab apple (up to 3 in.
long); the fruit has a sweetish, acid flavor and yellow
to white flesh that encloses a few large seeds; it is
eaten fresh, stewed, as jam or jelly, or made into
liquor.

Varieties: Champagne; Gold Nugget (Thales); Wolfe
Composition (fruit, raw): moisture 86%; protein 0.4%;
fat 0.2%; carbohydrate 12%; ash 0.5%

lormes A valenciay-type cheese made from goat’s milk

lorraine A small, hard, münster-type French cheese
made from sour cow’s milk and seasoned with pepper
and pistachio nuts

loss leader An item sold at less than cost in order to
attract customers

lot A collection of items that have many characteris-
tics in common (e.g., produced or processed under
essentially the same conditions during a specific time
period indicated by a specific code) and that are
grouped together from which a sample is taken

lota (Lota lota) A freshwater burbot

lotic environment In running water (e.g., a river)

lot-sampling inspection A method of sampling in-
spection that accepts or rejects each lot for a specified
requirement based on results obtained from the ex-
amination of a sample drawn at random from the lot

lot size The amount of a particular item that is
ordered from a plant or a vendor

lot tolerance (percent defective) See rejectable
quality level

lotus (Nelumbium nuciferum) A large-leaved wa-
ter plant that is used as food

Parts used:
Flower stem and leaves—used in salads
Fruit—used after removal of seeds
Leaves—used to wrap food
Rhizome (red-brown)—roasted, steamed, pickled,
or used to prepare an arrowroot-like substance
Seed—bitter embryo removed; the remainder is
boiled, roasted, eaten raw, made into jam, or
used in pastries

Available forms: canned; dried, sugared; fresh
See Part 2: Seed, Chemical Composition

loubitelaki A camembert-type cheese made from
cow’s milk

loucanica, cocktail-type A moist, cooked, smoked
Greek sausage made from finely chopped, medium-
seasoned beef and pork stuffed into artificial casings

loucanica, Frankfurt-type A moist, cooked, smoked
Greek sausage made from finely chopped, medium-
seasoned pork stuffed into artificial casings

loucanica, Limpert-type A moist, cooked, smoked
Greek sausage made from finely chopped, medium-
seasoned beef and pork stuffed into sheep casings

loucanica, Strasburg-type A moist, cooked, smoked
Greek sausage made from finely chopped, medium-
seasoned beef and pork stuffed into sheep casings

loucanica, Vienna-type A moist, cooked, smoked
Greek sausage made from finely chopped, medium-
seasoned beef and pork stuffed into sheep casings

Lou Gin Gong A variety of late Florida orange

Louisiana caJa A rice-based confection

loukana 1) A medium- to coarse-chopped, un-
smoked American sausage, large-diameter links or
rings. 2) An uncured Greek sausage; usually made
from lamb, pork, and oranges, with allspice, salt, and
whole peppercorns

loukoumade A wheat-flour doughnut coated with
sugar, honey, and cinnamon

Loupiac A commune on the north bank of the
Garonne River in Bordeaux (southwestern France)
that produces a medium-rich, high-quality white wine
that is sometimes sweet

lour A ricotta-type cheese that is made from sheep’s
milk and consumed fresh

lovage [smallage (Apium graveolens); Levisticum
officinale] A tall, perennial, celery-flavored herb;
the young leaves (fresh or dried) and young stems are
used in salads or cooked (soups and sauces); the seeds
are used as flavoring; the roots are chewed as to-
bacco; a yellow-brown oil is extracted from the roots
and other parts and used as a natural flavoring agent
in food

Types:
American lovage (L. officinale)
Scotch lovage (L. scoticum)

lovage oil A volatile oil obtained by steam distillation
of the root of Levisticum officinale; used as an aromatic
flavoring agent in food; sp. gr. 1.034–1.058
Storage: full, tight, glass container in a cool, dark place

love apple See tomato

lovecky salam A beef and pork salami

lovell A variety of freestone peach

Lovibond color The proprietary name for an official
color scale of the American Oil Chemists’ Society; a
series of yellow and red glass discs are used to match
the color (Tintometer)

low-acid canned food Food with a pH greater than
4.6 and water activity greater than 0.85, e.g., vegeta-
bles, fish, meat, and poultry; heat processing is neces-
sary for sufficient time to kill Clostridium botulinum
spores.
low-acid food  Any food (excluding alcoholic beverages) with a pH above 4.6 (greater than 4.6) and a water activity greater than 0.85; includes all vegetables except *some* tomatoes; low-acid foods require pressure processing; pH 4.4 is often used as the highest permissible value for processing at 100°C. See Part 2: Canned Spoilage Manifestations; Canned Spoilage Related to pH

lowberry  A hybrid blackberry that is less acid than a loganberry

low-calorie  Describes a food that contains 40% fewer calories per serving than the standard version of that food

low-density lipoprotein (LDL)  Molecules that carry fat (mainly cholesterol) in the bloodstream; involved in the creation of fatty deposits on the walls of the arteries

low dose  In food irradiation, a dose less than 1 kGy (1 Gy (gray) = 100 krad)

Lowenstein  See Part 2: Microorganism, Media

lower control limit  The limit above which the variables of a process (e.g., the occurrence of defectives) should fall if the procedure is in control

low-fat  See Part 2: Dairy Terms

low-fat milk  Must have milk-fat content between 0.5 and 2% (label must show 0.5, 1.0, 1.5, or 2%), with min. 8.25% nonfat milk solids; addition of vitamin A is required; addition of vitamin D is optional.

low-fat soy flour  A soy flour having 5–6% fat and 50% protein

low-grade flour  A grade of flour lower than second clear flour; used primarily as stock feed See also clear flour

low-set  Describes an animal with short legs

lox  1) A marketing name for chinook salmon or red salmon that has been cured and smoked. 2) A mild-cured side of fish (e.g., salmon) that has been cold-smoked 1–3 days. 3) Liquid oxygen

loyalty rebate  A rebate offered by a group of companies in return for a buyer's agreement to purchase certain goods or services exclusively from these companies

lozenge  See candy

lozovaca  A brandy distilled from fermented grapes

LSD  See least significant difference

LSM  Low-sodium milk

L/S ratio (L over S ratio)  The ratio of linoleic acid to saturated acid in a fat

LTL  Less-than-truckload lot

Lu  Symbol for the element lutetium

Luan  A breed of sheep with white fleece and fat deposits around the tail; used for wool and mutton; found in Shansi (Shanxi) Province, northeastern China

luau  1) A Hawaiian feast, usually of roasted pig prepared in the ancient style and served with poi. 2) A mixture of taro leaves, coconut milk, and chicken or fish

lubia  See lablab

lubuska  A semidry, uncooked, smoked Polish sausage

lucullus  See boursault

lug  1) A metal or plastic container that will contain certain goods or services exclusively from these companies in return for a buyer's agreement to purchase

lumbar  Of or pertaining to the loin region or to the region of the back between the thoracic vertebrae and the sacrum

lumbar vertebrae  The area of the backbone between the ribs and the slip joint See Part 2: Bone

lumberjack  A lean summer sausage made from finely chopped beef stuffed into mahogany-colored casings and given a heavy smoke

lumen (lm)  1) A measure of light intensity

\[ 1 \text{ lm} = 0.0796 \text{ spherical candle power} \]

2) A measure of power

\[ 1 \text{ lm} = 1.496 \times 10^4 \text{ ergs per second (erg/s)} \]

\[ = 6.6204 \times 10^{-2} \text{ foot-pound per minute (ft-lb/min)} \]

\[ = 0.001496 \text{ watt (W)} \]

\[ = 1.0034 \times 10^{-3} \text{ foot-pound per second (ft-lb/s)} \]

\[ = 8.5096 \times 10^{-5} \text{ British thermal units per minute (Btu/min)} \]

\[ = 1.496 \times 10^{-9} \text{ kilowatt (kW)} \]

lumen per square foot (lm/ft²)  1 lm/ft² = 10.76 lumen per square meter (lm/m²)

luminous meat  A phenomenon caused by phosphorescent bacteria; not a form of food poisoning

lump lime  A liming material composed of 85% CaO; each pound has the neutralizing equivalent of 1.5–1.75 lb CaCO₃ (or approximately this quantity of dolomitic limestone)

lumpsucker (lumpfish; *Cyclopterus lumpus*)  A food fish

lumpy jaw  A noncommunicable disease caused by a fungus (found on grasses) that affects the jaws of cattle and the udders of hogs

lunch  The mid-day meal, usually light or a snack; a light meal between other meals

lunch cheese  A German, Limburger-type cheese See frühstück

luncheon  The mid-day meal

luncheon cheese  A type of gouda cheese
luncheon meat 1) A cured, cooked, food product made from comminuted meat with max. 3% added water; a cooked meat specialty made from chopped pork, ham, or beef and available in loaf form, canned, or in a vacuum package. 2) A moist, cooked, unsmoked, fine-, medium-, or coarse-chopped, mild- or medium-seasoned (with nitrite) beef, pork, and lamb stuffed into artificial casings or not placed in a casing 1 cup, chopped = 4.8–5 oz

<table>
<thead>
<tr>
<th>Luncheon meat (American)</th>
<th>Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Moisture (Winter)</td>
</tr>
<tr>
<td>Beef</td>
<td></td>
</tr>
<tr>
<td>Loaf</td>
<td>52.5</td>
</tr>
<tr>
<td>Thinly sliced</td>
<td>70</td>
</tr>
<tr>
<td>Pork, beef</td>
<td>49.3</td>
</tr>
<tr>
<td>Pork, canned</td>
<td>51.5</td>
</tr>
</tbody>
</table>

Meat ingredients

<table>
<thead>
<tr>
<th>Allowed</th>
<th>Not allowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef</td>
<td>Blood</td>
</tr>
<tr>
<td>Cheek meat</td>
<td>Defatted tissue</td>
</tr>
<tr>
<td>Heart meat</td>
<td>Detached skin</td>
</tr>
<tr>
<td>Pork</td>
<td>Kidney</td>
</tr>
<tr>
<td>Tongue meat</td>
<td>Liver</td>
</tr>
<tr>
<td></td>
<td>Lungs</td>
</tr>
<tr>
<td></td>
<td>Stomach</td>
</tr>
</tbody>
</table>

See Part 2: Calories, Daily Recommendations; Iron, Daily Recommendations; Meat and Meat Products, Composition; Meat Composition; Meat Storage; Niacin, Daily Recommendations; Pork Storage; Riboflavin, Daily Recommendations; Sausage, Types; Thiamin, Daily Recommendations

luncheon sausage, British A moist, cooked, unsmoked British sausage made from fine-, medium-, or coarse-chopped, mild- or medium-seasoned beef, lamb, veal, pork, and goat stuffed into artificial casings Composition: moisture 58.6%; protein 15.4%; fat 21%; carbohydrate 1.6%; ash 3.5%

luncheon sausage, Irish A moist, cooked, unsmoked Irish sausage made from medium-chopped, mildly seasoned beef and pork stuffed into artificial casings

lunchkass A gouda-type cheese

lunchkorv A moist, cooked, smoked Swedish sausage made from finely chopped, mildly seasoned (with potato starch and skim-milk powder) beef and pork stuffed into peableable pork casings

lunchkorvett A moist, cooked, smoked Swedish sausage made from finely chopped, medium-seasoned (with potato starch and skim-milk powder) beef and pork stuffed into peableable pork casings; contains 11% fat

lunch tongue Pork tongue that has been canned and cured

lunchworst (bruwurst) 1) A moist, cooked, smoked Dutch sausage made from finely chopped, medium-seasoned pork and beef stuffed into beef or artificial casings. 2) A moist, cooked, smoked Belgian sausage made from finely chopped, heavily seasoned beef and pork stuffed into beef or artificial casings

lunenberg 1) A yellow (colored with saffron), Swiss cheese made from cow’s milk. 2) A mild, German Limburger-type cheese

lunel A sweet, French dessert wine

lung One of a pair of respiration organs or sacs in the chest or thoracic area; the organ in which the blood is aerated

See Part 2: Gland Weights; Organ Weights; Pork Cuts and Uses

lungan See longan

lungwort (lungmoss; oak lungs) A bitter, acid herb used for tea

lunspolse A moist, cooked, unsmoked Norwegian sausage made from medium-chopped, mildly seasoned beef and pork stuffed into artificial casings

luostari A medium-flavored semisoft cheese

lup cheong See Chinese sausage

Lu-petite beurre A cracker

lupine A plant having a toxic principle (an alkaloid)

Lupinus albus—white or sweet lupine

L. augustifolius—a sweet strain of blue lupine

L. luteus—a sweet strain of yellow lupine

See Part 2: Poisonous Plants; Seed, Germination

lupin seed The seed of a leguminous plant; may be fermented in balls and used in soup and stews

lupus See bass

lurmark A brand in the shape of a trumpet (lur) often found on Danish cheese

lusigan A soft, white cheese made from goat’s milk and cured 1–2 weeks

luster The glistening of a fiber in light

lute A water and flour paste used to seal casseroles

lutein See xanthophyll

luteinizing hormone (LH) A hormone that is produced in the pituitary gland and that controls ovulation in females and testosterone secretion in males

luteol See xanthophyll

lutetium (Lu) A rare-earth element of the lanthanide series; at. no. 71; Group IIIIB of the Periodic Table; at. wt. 174.99; oxidation state +3; electron configuration 2–8–18–32–9–2

lux 1) A salami made from beef and pork. 2) A dry, uncooked, smoked Norwegian sausage made from medium-chopped, medium-seasoned beef and pork stuffed into artificial casings. 3) A unit of illumination

1 lux = 1 lumen per square meter (lm/m²) = 0.0929 foot-candle

luxury loaf A lean, pork sausage

Composition: moisture 68.3%; protein 18.4%; fat 4.8%; carbohydrate 4.9%; ash 3.6%
luxussalami A dry, uncooked, smoked Norwegian sausage made from medium-chopped, heavily seasoned beef and pork fermented and stuffed into artificial casings; a pepperoni made from beef and pork.

ly- A prefix meaning loosen or dissolve

lyase Any of several enzymes that split substrates by removing groups within a substrate molecule. Types: cis–trans isomerase; epimerase; intramolecular ketol isomerase; mutase; racemase.

lychee (Litchi chinensis) A Southeast Asian fruit that can be dried like raisins. Varieties: Mauritius; Sweetcliff. See litchi. See Part 2: Fruit Storage.

lychee browning A physiological browning affecting the pericarp of the lychee, caused by desiccation of the fruit; may or may not alter flavor. Control: Place in polyethylene bag and store at 35°F.

lycopene (C40H56) A red, carotenoid pigment found in tomatoes.

lye Potassium or sodium hydroxide; lye used to be extracted from wood ashes by placing straw in a wooden barrel with a hole in the bottom, adding alternate layers of wood ashes and lime, and adding water. The concentration may be determined by floating a fresh egg in the lye solution: The area of the egg that is above the lye solution should be about the size of a dime. May be used as a disinfectant against the following: Bacteria: Acid-fast—poor, Gram-negative—good, Gram-positive—poor. Viruses—good. Used as a disinfectant, it is more effective cold; has a phenol coefficient of 10. Disadvantages (as a disinfectant): Caustic to tissue, Corrosive to metals, Loses strength in the presence of organic matter. Level: 2% solution for disinfecting. Also used to preserve fish. See Part 2: Detergent Properties.

lye soap Made from rendered fat with lye and water, e.g., 11 lb melted fat, 2 cans lye, 5 pt hot water.

lygus bug (Lygus spp.) Any of several small, flat, plant-sucking insects ($\frac{3}{8}$–$\frac{5}{8}$ in. long, $\frac{1}{8}$ in. wide); primarily a seed feeder; color varies from pale green to reddish or dark brown. Damage: causes plants to bleed profusely; causes cell death for some distance around the site; also causes fruit to be mis-shapen. Control: insecticide (methyl parathion).

lymeswold A blue cheese that is made from cow’s milk and has a white surface mold.

lymph A slightly yellow, alkaline liquid in lymphatic vessels that is taken from the body tissues and returned to the bloodstream.

lymph node (lymph gland) A gland that secretes or stores lymph; part of the body’s defense mechanism. See Part 2: Lymph Nodes, Ox; Lymph Nodes, Pig; Lymph Nodes, Sheep.

lymphocyte A white blood cell; produces antibodies or engages in other types of defensive action after contact with a foreign substance (antigen).

lymphoid See Part 2: Organ Weights.

lyoner 1) A fine- to medium-chopped, cooked, smoked American sausage available in medium- to large-diameter links or large-diameter casings for slicing. 2) A moist, cooked, smoked Austrian sausage made from medium-chopped, medium-seasoned (with nitrite) beef and pork stuffed into artificial casings with a diameter of greater than 40 mm.

lyonerwurst A moist, cooked, smoked or unsmoked Swiss sausage made from finely chopped, mildly seasoned beef, pork, and veal stuffed into beef casings.

lyonnaise Cold, boiled potatoes with butter, parsley, and onions.

lyons 1) A dry, French, all-pork sausage (salami) made from medium-chopped pork and small cubes of diced fat; cured and seasoned with spices and garlic. 2) A dry, uncooked, unsmoked American sausage made from medium-chopped, mildly seasoned (with garlic), cured pork, fermented and stuffed into pork or artificial casings.

lyons sausage A dry French sausage made from finely chopped lean pork (4 parts) and small pieces of diced fat (1 or 2 parts) with spices and garlic; it is stuffed into large casings, cured, and air-dried.

lyophile To loosen.

lyophilic Solvent-loving.

lyophilization (freeze-drying) The evaporation of water from a product in a vacuum by first freezing the product and then changing the ice directly to a vapor and removing the vapor. See also freeze-drying.

lyopylsa A moist, cooked, smoked Icelandic sausage made from finely chopped, medium-seasoned beef and pork, with pork fat added, stuffed into artificial casings.

lys- A prefix meaning loosen or dissolve.

lysine An essential amino acid.

\[
\begin{align*}
\text{CH}_2\text{(CH}_2\text{)}_3\text{CH} & \rightarrow \text{C} \\
\text{NH}_2 & \quad \text{NH}_2 \\
\text{O} &
\end{align*}
\]

See Part 2: Amino Acids; Corn, Amino Acids; Egg Products, Nutritive Value; Grain Analysis; Manure Analysis; Microorganism, Media; Milk, Amino Acids; Seed, Chemical Composition; Wheat, Amino Acids; Wheat Products, Amino Acid Composition; Wheat Products, Composition.
lysidine monohydrochloride

\[ \text{NH}_2(\text{CH}_2)_4\text{CH(NH}_2\text{)COOH} \cdot \text{HCl} \]

Used as a nutrient or dietary supplement
Storage: well-closed container

lysis (hemolysis) The destruction of the red blood cells (resulting in the liberation of hemoglobin) by agitation or addition of water to blood; the hemoglobin is then dissolved in the liquid plasma.

lysozyme An enzyme that breaks down the cell walls of some bacteria
lyt- A prefix meaning loosen or dissolve
lythe See pollock
lyxose See Part 2: Sugar, D-Aldehydo
lyypekkilainen mettwurst A coarse salami made from beef and pork
M M A designation of apple root stock selected by East Malling Research Station, Kent, England

M2 — semidwarf; more vigorous than M7 or M106; roots less sensitive to disease
M7 — semidwarf; poor anchorage
M9 — 8 ft; poor root system
M26 — slightly larger than M3; root system is stronger
M106 — semidwarf
M111 — semidwarf; more vigorous than M7 or M106; roots less sensitive to disease

See mega; molar

m See molal

m See milli

mA See milliampere

maasbunker (horse mackerel) A food fish

maasdam A Swiss cheese made from cow's milk

mabjalwa A sorghum beer

macadamia (Queensland nut; Macadamia ternifolia) A large, white, sweet, crisp, mellow, hazelnut-like nut that is rich in oil (70-78%) and has a smooth, brown, hard shell and a white to brown kernel with a hazelnut shape and a coffee aroma; grown in Hawaii and used in confectionery, desserts, and to make into "butter"

1 cup, canned = 8 oz

See Queensland nut

macaroni A mixture of wheat flour (semolina, durum flour, farina, or flour) and water (sometimes also milk and eggs) that has been dried into elbow and straight tubes (0.11-0.27-in. diameter), solid rods (spaghetti and vermicelli), ribbons (noodles), and novelties (alphabet letters, rings, sea shells, stars, etc.); often canned in cream sauce and cheese; dry product cooked in boiling water

Other varieties:
Ditali—short tubes, 1/4-in. diameter, 1/4 in. long
Ditalini—small elbow pieces
Ditalini—short tubes, 1/8-in. diameter, 1/4-in. long
Ditali rigati—grooved, small elbow pieces
Elbow macaroni—2/3-in. elbow shape, 3/16-in. diameter
Fovantini (or maccaroncelli)—3/32-in. diameter tubes
Rigatoni—large, fluted elbow pieces
Rotini—twist (corkscrew) shape; 1/2-in. diameter, 1 in. long
Tubetti—thinnest elbow shaped
Zitoni—1/2-in. diameter tubes
Zitoni rigati—1/2-ing. diameter fluted tubes

Optional ingredients: Egg white, min. 0.5%, max. 2.0% solids; disodium phosphate, min. 0.5%, max. 1.0%; seasoning; salt, gum gluten, max. 13% protein; total solids min. 87%; glyceryl monostearate, max. 2%

Nutrients added to enriched type:
Iron—13-16 mg/lb
Niacin or niacinamide—27-34 mg/lb
Riboflavin—1.7-2.2 mg/lb
Thiamin—4-5 mg/lb

Equivalents:
1 pound, uncooked = 4 cups uncooked
1 pound, uncooked = 8-9 cups cooked
1 cup, elbow, dry = 4.8 oz
1 cup, 1-in. pieces, dry = 3.8 oz
1 cup, 2-in. pieces, dry = 3 oz
1 cup, broken, uncooked = 2-2 1/3 cups cooked
1 cup, elbow, cooked = 2.7 oz
1 cup, cavatelli, cooked = 2.7 oz
1 oz, dry = 1 serving

Composition (dry): moisture 10%; protein 12.5%; fat 1%; carbohydrate 75%; ash 0.7%

Storage: cool and dry See noodles; rice macaroni; spaghetti

macaroni and cheese A baked mixture of small-diameter macaroni and a cheddar cheese

See Part 2: Calcium Equivalence for Milk; Portion Size

macaroni and cheese loaf A cooked meat specialty made with finely ground pork and beef with cheddar cheese and macaroni distributed through the product

macaroni wheat See wheat

macaroon A sweet cake made with almond paste, sugar, and egg white; sodium content 14 mg/2 cookies (38 g)

See Part 2: Grain Products Composition

macaroon cookie
1 cup, crumbled, soft = 4-5 cookies

macassar nut fat See Part 2: Saturated Fatty Acids

macaroncelli See macaroni

MacConkey agar See Part 2: Intestinal Microorganisms; Microorganism, Culture Media, Dairy and Food Products; Microorganism, Media; Microorganism, Selective and Differential Broths and Media, Water Filtration Plant

MacConkey broth See Part 2: Microorganism, Selective and Differential Broths and Media, Water Filtration Plant

mace [Myristica fragrans Houtt; substitute "mace" (Achillea decolorans)] A spice consisting of the whole (blade) or ground aril (red external
covering) of the seed of nutmeg; it is flattened and
dried (dark yellow); used for seasoning sauces and
ducklings

<table>
<thead>
<tr>
<th>Type</th>
<th>Aroma</th>
<th>Flavor</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Indian</td>
<td>Smooth</td>
<td>Pleasant</td>
</tr>
<tr>
<td></td>
<td>Fresh</td>
<td>Sharp</td>
</tr>
<tr>
<td></td>
<td>Spicy, aromatic</td>
<td>Penetrating</td>
</tr>
<tr>
<td></td>
<td>Sweet, sasafiras</td>
<td></td>
</tr>
<tr>
<td>Siauw</td>
<td>Smooth</td>
<td>Increasing strength</td>
</tr>
<tr>
<td></td>
<td>Fresh</td>
<td>and tenacity</td>
</tr>
<tr>
<td></td>
<td>Spicy, aromatic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nutmeg</td>
<td></td>
</tr>
</tbody>
</table>

Yellow to brownish orange color; stronger and less
delicate flavor than nutmeg; coarse to medium grind
Grade:

Indonesian (East Indian)
Whole
Broken

Grenadian (West Indian)
Whole pale mace
No. 1 broken
No. 2 broken (does not have desired pale color)
Unassorted

Picking

Composition: moisture 6–9%; protein 6–7%; fat
32–33%; carbohydrate 50–51%; fiber 4–5%; ash
2–3%; fixed oil 20–35%; not less than 20% or more
than 35% nonvolatile ether extract; not more than 3
or 3.5% total ash; not more than 0.5% ash insoluble
in HCl; not more than 6% moisture; not less than
12% (range 12–16%) volatile oil; not more than 7%
crude fiber

Storage: ground spice deteriorates during storage due
to loss of volatile oil

See also nutmeg

See Part 2: Flavoring Agents, Natural

macédoine  A mixture of vegetables or fruit

mace oil  A colorless to pale yellow, volatile oil ob-
tained by steam distillation of the ground, dried aril-
lole of the ripe seed of mace (Myristica fragrans);
used as a nutmeglike flavoring agent for food

Refractive index—1.469–1.488 at 20°C;
Sp. gr.—0.860–0.930 (East Indian); 0.853–0.881
(West Indian)

Optical rotation—varies with source from +2 to
+45°

Major constituents: monoterpen hydrocarbons
75–94%; oxygenated monoterpenes 4–17%; aromatic
ethers 0–6%

Storage: full, tight, glass container in a cool, dark place

mace oleoresin  A clear to dark-red liquid obtained
by organic solvent (petroleum ether; ethanol) extrac-
tion or by steam distillation and solvent extraction of
dried arillode of the fruit of mace

Volatile oil—10–55% (min. 30 ml/100 g)
Sp. gr.—0.995–1.005 at 25°C

macerate  1) To soften or flavor by steeping in a
liquid preparation at room temperature or slightly
higher; to soften and wear away by steeping. 2) To
disperse by pounding or chopping; to make soft or
tender

machaça  A spiced, shredded beef used as a filling or
main dish

mâche (lamb's lettuce)  A leafy green vegetable with
a hazelnut taste; can be cooked or used raw in salads

macin  A protease enzyme found in the osage orange

mackerel  A spiny-finned, fat fish; a saltwater fish in
the same family as tuna; weigh from 0.5–25 pounds;
bold rich flavor; firm, dark (usually red) flesh that is
high in fat; often filleted and canned; requires no
freshening or cooking prior to consumption

Graded (1 to 4) according to size with number 1 being
the largest (1½ pounds)

Other Names

Blue (American)—New England, Norway
King (cero, kingfish)—South Atlantic, Gulf
Spanish—South Atlantic, Gulf

Maturity Designation

<table>
<thead>
<tr>
<th>Name</th>
<th>Size (in.)</th>
<th>When caught</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blink</td>
<td>61/2</td>
<td>Aug.: 1st summer</td>
</tr>
<tr>
<td>Tacks or spikes</td>
<td>7–8</td>
<td>Oct.: 1st summer</td>
</tr>
<tr>
<td>Tinkers</td>
<td>12–14</td>
<td>2nd summer</td>
</tr>
</tbody>
</table>

When caught:
Fall—best condition
Summer—beginning to mature
Spring—poor condition

Types:

Atlantic—King (Scomber scombrus)
Australia—Scaly (Amblygaster postera)
Mackerel, Atka (Pleuragrammus azonus; P. monopterygus)
Mackerel, shark—Porbeagle
Mackerel, Spanish—Atlantic (S. maculatus)
New Zealand—Blue (S. australisicus)
Oceanin (Trachurus declivis)
Pacific—Pacific mackerel or blue mackerel or
American mackerel; chub (S. japonicus)
Pacific Jack Mackerel (Spanish mackerel)—Not a
mackerel but a member of the jack family; they
have a tender flesh that is high in oil

Preserved by salting; freshen by soaking for 12–48 h
with several water changes

4 oz per serving
1 cup = 180 g (6.4 oz)

Composition: protein 21.9%; fat 7.3%; pH 6.1; cholesterol 84 mg/3 oz

See also pelagic fish

See Part 2: Fish, Storage; Glutamate; Minerals, Food;
Vitamin D, Fish; Vitamin D, Food

mackerel mint   See spearmint

mackerel, smoked  Mackerel that is eviscerated, dry
salted and hot smoked

Mackeson  A sweet, stout-type beer

maco  See mammoncillo

macon  1) Dry white or red wine. 2) Mutton bacon

maconnois  1) A soft, white cheese made from goat’s,
cow’s, or mixed milk and cured for 1–2 weeks; a
French cheese made from goat’s milk. 2) Region in
Burgundy (east central France) famous for its white
wine, which is lighter in texture than most bur-
gundies and develops quickly

Communes: Fuisse and Pouilly
macore (macora)  A red, aromatic, cherrylike fruit
macqueline A soft French camembert-type cheese made from whole or partly skimmed milk with rennet added
macroeconomic policies  Policies that affect the general economic environment in which the total economy or sectors operate
macrofloc  Floc large enough to be seen
macromolecule  A molecule of a protein or other high molecular weight substance (usually a polymer) whose size extends into the range of colloidal dimensions (diameter more than 1 \( \mu \text{m} \)); some proteins have a molecular weight in excess of \( 10^6 \) (viruses)
macrophage  A cell that engulfs, kills, and biodegrades foreign materials (cancer cells or pathogens)
macroscopic examination  The process of inspecting visually
macromastic  A very good olfactory sense
maczola  A blue cheese
Madagascar  A variety of bean  See butter bean; ground nut, bambara
Madeira  1) A full-bodied, fragrant, fortified wine (20% alcohol by volume) similar to sherry. 2) A dry or sweet, dessert wine in which fermentation is stopped by adding brandy; the wine is then heated, cooled, and matured; color varies from light amber to red and flavor from dry to sweet
Types:
Bual (boal): a sweet, delicate, dessert wine; red in color
Caravela: dry, light amber aperitif
Duke of Charence Malmsey: very dry, light amber, aperitif
Gloria mundi: clear, reddish, sweet cocktail
Malmsey: full-bodied and sweet dessert wine
Sercial: a dry, bitter flavor, aperitif
South side: highly aromatic; similar to brandy
Verdelho: a before or after meal wine
madeira sauce  A brown sauce made with stock and butter and used on meat
madeleine  A scallop- or shell-shaped, French, tea cake
mad gum  A salty, paste condiment made from fermented shrimp with bean oil
madhu  A rice beer
madidi  Degermed, steamed maize, dumpling balls
madras  A black tea from India
madrilene  A jelled consommé
maduro  A semisoft, low fat, mildly acidic, smooth cheese made from cow's milk
maedehe  A moist Iranian sausage stuffed into a beef or sheep casing
maeju loaves  See koji
mae khang  A high-alcohol content whiskey
mafalda  An irregularly shaped pasta (\( \frac{3}{16} \text{-in. width} \))
mafì  Yogurt

Magendie, François  A researcher who showed that dogs could not live on carbohydrate and fat and that some source of nitrogen was required
mager middagspolse  A very lean, moist, cooked, smoked Norwegian sausage made from finely chopped, mildly seasoned beef and stuffed into a beef casing
maggally  A rice wine; sometimes made from other cereal
maggia  A Swiss cheese made from cow’s milk
maggot  A wormlike larva of a dipterous insect  See apple maggot; walnut husk maggot
magma (massecuite)  A mixture of sugar syrup and crystals in the form of a thin paste
magnesia (MgO)  Magnesium oxide; a component of insulating board
See Part 2: Insulation
magnesium (Mg)  A metallic element; at. no. 12; at. wt. 24.32; Group IIA of Periodic Table; oxidation state +2; electron configuration \( 2-8-2 \) \( \text{orbit K L M} \)
Occurs in seawater in recoverable concentration; it is the characteristic element in chlorophyll and is found in bones and teeth; essential for converting food to energy; deficiency in plants causes poorly colored, yellowing, or brilliantly tinted, older leaves and results in chlorosis. Also found in all body tissue; important in bone formation and metabolism (essential part of many enzymes) / Source (variety of foods; deficiency uncommon):
- Dark green vegetables
- Dry beans
- Dry peas
- Epsom salts
- Nuts
- Whole grain products
See Part 2: Beef Percentages of Daily Recommended Allowances; Cereal Fortification; Cereals, Vitamin and Mineral content; Egg Products, Nutritive Value; Grain Analysis; Lamb Percentages of Daily Recommended Allowances; Lemon Juice Composition; Macaroni and Noodles Composition; Manure Analysis; Meat, Nutritive Value; Minerals, Food; Minerals, Plant or Animal Tissue; Normal Solutions; Nutrients in Crops; pH and Availability of Plant Nutrients; Pork, Percentages of Daily Recommended Allowances; Recommended Daily Dietary Allowance; Variety Meat Percentage of Daily Recommended Allowances; Water Drinking Standards; Wheat, Minerals; Wheat Products Composition
magnesium carbonate  (\( \text{MgCO}_3 \)) A light, fluffy solid. Used in food as an alkali, carrier, color-retention agent, drying agent, and anticaking agent and in insulation
Composition \( [\text{MgCO}_3\text{Mg(OH)}_2] \); dry matter 98%; Ca 0.02%; Mg 30.2%
Storage: well-closed container
See Part 2: Liming Materials; Normal Solutions
magnesium chloride  (\( \text{MgCl}_2 \)) A compound used as a color-retention or firming agent in food; used in canned pears for color retention and firmness; also a
malady 447

component of fireproofing agents and refrigeration brines
Storage: tight container
See Part 2: Normal Solutions

magnesium hydrate  See Part 2: Liming Materials
magnesium hydroxide  \([\text{Mg(OH)}_2]\) A white powder used in food as an alkali, color-retention agent, or drying agent; used in frozen desserts and as a drying agent in foods; improves gelling of cheese
Storage: tight container
See Part 2: Liming Materials; Normal Solutions

magnesium oxide  (MgO) A compound that is used in food as an alkali or neutralizer; also used in animal feed
Composition: dry matter 98%; Ca 3%; Mg 55%
Storage: tight container
See Part 2: Liming Materials; Normal Solutions

magnesium phosphate, bibasic  \([\text{MgHPO}_4]\) Used as a food nutrient or dietary supplement
Storage: well-closed container

magnesium phosphate, tribasic  \([\text{Mg}_3(\text{PO}_4)_2]\) Used as a nutrient or dietary supplement
Storage: well-closed container

magnesium silicate  \((\text{MgSiO}_3, \text{Mg}_2\text{Si}_3\text{O}_8, \text{Mg}_3\text{Si}_2\text{O}_7)\)
Used as an anticaking agent in food
Storage: well-closed container

magnesium stearate  Magnesium with variable proportions of stearic and palmitic acids. Used as an anticaking agent, binder, and emulsifier in food
Storage: well-closed container

magnesium sulfate  \((\text{MgSO}_4)\) Epsom salts, used as a food nutrient or dietary supplement; a neutral fertilizer material, 33% MgO; 0-0-0
Storage: well-closed container
See Part 2: Fertilizer Materials

maigre  Lean; no fat
maigrelet  A type of tomme de savoie cheese made with skimmed milk
mailand salami  A coarsely chopped salami made from beef and pork
maile  A cheese made from sheep’s milk with rennet added
Maillard reaction  See browning reaction
mainauer  A munster-type, cream cheese made from cow’s milk; a semihard, full cream, German cheese
Maine-Anjou  A large, French, dual purpose (primarily beef, but sometimes milk), red and white (sometimes roan) breed of cattle resulting from crossing English Shorthorns and French Marcellus; approximately 10% twinning
mainzer  A low-fat, high-protein, semisoft cheese made from cow’s milk and usually flavored with cumin
mainzer handkase  A small, yellow to white, sharp, sour-milk cheese covered in red or yellow wax
maireya  An herb liqueur
mais  Corn
maison  Prepared according to the “house recipe”
maitre d’hôtel  Seasoned with parsley, butter, and lemon juice
maiye  A sorghum beer
maize  (Indian corn)  See corn
maize, dwarf mosaic  See Part 2: Sorghum Diseases
maize oil  See corn oil
majocchino (incanestrato)  An Italian cheese made from cow’s, goat’s, or sheep’s milk that contains spices and olive oil
major defect  A defect not in the critical classification, but one that could result in significant failure, malfunction, or reduction in effective life
makassar fish  An anchovy (Stolephorus); dried fish
mahal  Butter
maki-maki (dolphinfish, dorado)  A tropical, saltwater fish that has a firm, white flesh and a delicate, sweet flavor
makjang  A soy sauce
makkolli  A rice beer
mako  See Part 2: Fruit Classification
malabar nightshade  See basela
malabar spinach  \((\text{Basella alba})\) A spinach substitute that has bright, green leaves on a long vine; quick growing (70 days); grows in hot weather; can be used cooked as a vegetable or raw in salads
malacia  1) Craving for specific foods. 2) Softness of tissue
malady  A disease or disorder of the body
malaga 1) A semisoft, double cream cheese made from goat's milk and covered with white mold. 2) A sweet blend of old and new, Spanish wine, often fortified, produced in Andalusia (southeast Spain); dark in color but made from white grapes. 3) A white or garnet, dessert wine; 15% alcohol. 4) A variety of grape

malakoff 1) A moist, cooked, smoked Icelandic sausage made from finely chopped, medium seasoned, beef and pork with pork fat added and stuffed into an artificial casing. 2) A French, neufchatel-type, cheese

malanga  See calalu

malathion  (malathon) A poisonous insecticide of the organic phosphate ester type

\[ \text{C--O} - \text{CH}_2 - \text{CH}_3 \]

\[ \text{S} \]

\[ \text{CH}_2 - \text{C} - \text{O} - \text{CH}_2 - \text{CH}_3 \]

\[ \text{O} \]

See Part 2: Insect Control

malay apple  See otaheite apple

male  (♂) The impregnating sex See also sex

male gonad  See testicle

malibu  A rum liqueur flavored with coconut

malic acid  (apple acid) An acid found in fruit

\[ \text{HO} - \text{C} - \text{C} - \text{CH}_2 - \text{CH}_2 - \text{C} - \text{OH} \]

\[ \text{O} \]

\[ \text{H} \]

The naturally distributed acid occurs in many foods and is used as an acidulant; in citrus flavors, it is 89–94% as tart as anhydrous citric acid (in fruit flavors 78–83%)

Storage: well-closed container

See Part 2: Acidulants; Maple Syrup Composition; Normal Solutions; Organic Acids in Fruits and Vegetables

malignant  A cancerous growth; tending to become worse; deadly

malinovac  A raspberry (Rubus idaeus) liqueur

mallard  (Anas platyrhyncha) The common, wild duck

mallobet  A frozen, marshmallow dessert

mallow  (Malva sylvestris) A wild plant or weed whose dried flower can be used for tea and whose leaves may be cooked like spinach

mall-pura  A sweet pancake

malmsay  A sweet wine

malnutrition  An inadequate quantity of essential nutrients; a pathological state resulting from a relative or absolute deficiency or an excess in the diet of one or more essential nutrients; poor nutrition caused by inadequate or unbalanced diet; imperfect or lack of nutrition; state in which a prolonged lack of one or more nutrients retards physical development or causes the appearance of specific clinical conditions such as anemia, goiter, and rickets

malnutrition, first degree  Body weight between 76 and 90% of the average theoretical weight

malnutrition, second degree  Body weight between 61 and 75% of the average theoretical weight

malnutrition, third degree  Body weight less than 60% of the average theoretical weight

malonate broth  See Part 2: Microorganism, Media

malt  1) Any cereal (often barley) that is germinated and the young seedlings are dried to produce malt, which is used in brewing beer; it contains enzymes (e.g., diastase) that hydrolyze starch to fermentable sugars (maltose). 2) Sprouted and steamed whole grain without the radicle; germinated, dried grains of cereal with shoots and rootlets removed; an enzyme-rich substrate used in brewing of beer, chicha, lager, sorghum beer, vinegar, and whiskey; also used in biscuits, bread, breakfast cereal, pickles, and sauces

1 bushel (bu) = 34–38 pounds (lb)

1 bu (34–38 lb) malt = 1 bu barley (48 lb)

Composition (dry): moisture 5%; protein 13%; fat 2%; carbohydrate 77%; ash 2%  See beer; malted barley

malt agar  See Part 2: Microorganism, Culture Media, Dairy and Food Products; Microorganism, Media

maltase  A carbohydrate digestive enzyme that hydrolyzes maltose into two glucose units:

maltose → glucose + glucose

See Part 2: pH Values of Biological Materials

malt barley, dark  (kaffee ersatz)  A roasted barley used as a coffee extender; dark malted before roasting

malt bread  A tea bread made with malt and currants

malted  To convert into malt See malt

malted barley  A product made by allowing barley to sprout; in this process the starch is changed to maltose; it is used in production of beer, malted milk, and malt syrup

malted milk  (malted; malts)  A product made by combining milk with the liquid separated from a mash of ground barley malt and wheat flour and then removing the water; adding malted milk powder to a milk shake

1 cup = 235 calories

<table>
<thead>
<tr>
<th>Composition</th>
<th>Powder (avg.)</th>
<th>Chocolate type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malt flour solids (%)</td>
<td>73.0</td>
<td>80.2</td>
</tr>
<tr>
<td>Carbohydrates (%)</td>
<td>71.0</td>
<td></td>
</tr>
<tr>
<td>Milk solids (%)</td>
<td>27.0</td>
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</tr>
<tr>
<td>Protein (%)</td>
<td>15.0</td>
<td>9.4</td>
</tr>
<tr>
<td>Butterfat (%)</td>
<td>7.8 (min. 7.5)</td>
<td>5.8</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>3.7</td>
<td>2.4</td>
</tr>
<tr>
<td>Moisture (%)</td>
<td>2.6 (max. 3.5)</td>
<td>1.8</td>
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<tr>
<td>Salt (%)</td>
<td>0.7</td>
<td></td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0.3</td>
<td>0.4</td>
</tr>
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</table>

See Part 2: Dairy Products, Composition II; Milk and Milk Products, Vitamin Content; Milk, Dry Products; Vitamin A, Milk and Milk Products
malted milk, chocolate flavor

<table>
<thead>
<tr>
<th>Composition</th>
<th>Beverage</th>
<th>Powder</th>
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</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>81.2</td>
<td>2.0</td>
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<tr>
<td>Protein (%)</td>
<td>3.5</td>
<td>6.5</td>
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<tr>
<td>Fat (%)</td>
<td>3.4</td>
<td>4.5</td>
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<tr>
<td>Carbohydrate %</td>
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<td>84.9</td>
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<tr>
<td>Fiber (%)</td>
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<td>0.4</td>
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<tr>
<td>Ash (%)</td>
<td>0.8</td>
<td>3.4</td>
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</table>

malted milk, natural flavor

<table>
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<tr>
<th>Composition</th>
<th>Beverage</th>
<th>Powder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>81.2</td>
<td>2.6</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>4.1</td>
<td>13.1</td>
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<tr>
<td>Fat (%)</td>
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<tr>
<td>Ash (%)</td>
<td>0.9</td>
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maltese  See malted milk

Maltese  A milk goat native to the island of Malta

malt extract  Malt extracted with hot water from germinated grains of cereal, then concentrated or dried

Malthus, Thomas Robert (1766-1834)  A British economist whose “Essay on the Principle of Population” stated that population increases geometrically and the food supply arithmetically; this principle is much discussed today in view of the population explosion

maling  The wetting (steeping), germination, drying, and removal of malt sprouts from barley  See also malt

maltitol  A sugar alcohol that occurs in fruit and may be produced from dextrose; 50% as sweet as sucrose

malt liquor  A fruity, alcoholic beer made from more grain and less malt and hops than regular beer

maltodextrin  A solution or dried material of saccharides obtained from starch

Composition: high saccharides approximately 65-80%; pentasaccharides 4-9%; tetrasaccharides 4-7%; trisaccharides 5-9%; trace mono- and disaccharides

Available in dextrose equivalents of 5, 10-14, and 15-19; used as bulking agent or to increase viscosity without adding sweetness. Maltol and dextrin are used as flavor enhancers and texture modifiers

maltol

\[ \text{H} \quad \text{H} \]
\[ \text{C} = \text{O} \quad \text{C} \]
\[ \text{H} - \text{C} - \text{OH} \quad \text{OH} - \text{C} - \text{OH} \]
\[ \text{HO} - \text{C} - \text{H} \quad \text{HO} - \text{C} - \text{H} \]
\[ \text{H} - \text{C} - \text{OH} \quad \text{H} - \text{C} - \text{OH} \]
\[ \text{H} - \text{C} - \text{OH} \quad \text{H} - \text{C} - \text{OH} \]

Used as a caramellike, flavoring agent

Storage: tight container

maltose (maltobiose; malt sugar)  A sugar composed of two molecules of glucose formed by hydrolysis (by action of diastase or malt) of starch; it is dextrorotatory and 30% as sweet as sucrose

\[ \text{H} \quad \text{H} \]
\[ \text{C} = \text{O} \quad \text{C} \]
\[ \text{H} - \text{C} - \text{OH} \quad \text{OH} - \text{C} - \text{OH} \]
\[ \text{HO} - \text{C} - \text{H} \quad \text{HO} - \text{C} - \text{H} \]
\[ \text{H} - \text{C} - \text{OH} \quad \text{H} - \text{C} - \text{OH} \]
\[ \text{H} - \text{C} - \text{OH} \quad \text{H} - \text{C} - \text{OH} \]

Melting point 212°F (100°C)

See Part 2: Sugar, Fruit; Sweetening Agents; Sweetening Compounds

malts  See malted milk

malt vinegar  A vinegar made by fermentation of malted cereals (often barley); a vinegar made from barley or other cereal-grain malt infusion; made by the alcoholic and subsequent acetous fermentation, without distillation, of an infusion of barley malt or cereals whose starch has been converted by malt; malt flavor; golden brown color

Composition (min.): acetic acid 4%; solids 2%; ash 0.2% [min. 0.009% of phosphoric acid (P_2O_5) in water-soluble ash]

malt whiskey  A whiskey distilled from malted barley

malty  The flavor of malt; can be caused by growth of Streptococcus lactis var. maltigenes

malunggay (marong-gay)  The small leaves of horseradish

malvaceae  See Part 2: Vegetables, Classification

malvidin  One of the anthocyanidins responsible for the red color in fruit and vegetables

\[ \text{OCH}_3 \quad \text{OH} \quad \text{OH} \quad \text{OH} \quad \text{OCH}_3 \]

malwa  A sorghum beer

mam  A dark, fermented, fish or shrimp paste with rice

mam-ca-linh  A dark, salty, fermented, fish (Dangila) paste

mam-ca-loc  A dark, salty, fermented, mudfish paste with roasted rice, ginger, sugar, and pineapple

mam-ca-ro  A dark, salty, fermented, fish (Anabas) paste

mam-ca-sat  A dark, salty, fermented, fish (Trichogaster or Pangasras) paste with roasted rice

mam-ca-tre  A dark, salty, fermented, fish (Clarias) paste

mam-chao  A dark, salty, fermented (for 1-3 months), fish (Cirrhinus) paste with glutinous rice
mam-cu-sak  A dark, salty, fermented, fish paste with roasted rice and pineapple or papaya

mame miso  A flavorful (long fermentation), deep red-brown paste made from soybeans

mamey  See sapodilla

mamey sapote  (Calocarpum sapota)  A tropical, American fruit

mamirrollo  A soft, medium strong, small (500 g) cheese made from cow's milk and with a reddish rind

mammary tissue  Tissue that secretes milk

mamsee  The fruit of a large, tropical tree; rind and seed are bitter; pulp has pleasant taste; source of vitamin C

mamsee apple  (Mamey apple)  An oval or round (4–6 in.) fruit with yellow or salmon pulp and rough brown rind; similar to a cantaloupe; tastes like an apricot  See sapodilla

mam(m)oncillo  (honeyberry; knepe; maco; quenepa; quenette; Spanish lime)  A grapelike, green, leathery, 2-in. diameter tropical fruit similar to the lychee; has a large seed and yellow, semisweet pulp, which is eaten raw; the seed may be roasted and eaten

mam-seing  Dried, salted, fish roe with roasted rice

manapua  A small, filled dumpling

manatee  A large, freshwater mammal that lives on aquatic plants; has been suggested as a meat-producing animal

manchego  A golden, hard, pressed, white to yellow paste cheese made from sheep's milk; cylindrical-shaped (2–5-in. diameter and 5 in. high; 2–3 kg); sometimes has holes; ripened in molds lined with esparto grass

manchurian bean  See soybean

Manchurian cattle  A breed of yellow (a few are brindle or black), humpless, strong, compact, dual purpose (draft and beef) cattle that originated in northeastern China

Manchurian sheep  White sheep raised for wool

mandarin  (Citrus deliciosa; C. nobilis)  A citrus fruit from lower Asia; an orange closely related to a tangerine; canned in segments with water or very light syrup

mandarini  A 14-kg, provolone-type cheese

mandarin oil  The oil expressed from peel of Citrus reticulata; sp. gr. 0.846–0.884; used as an orangelike flavoring agent

mandarin orange  1 cup, canned, solids and liquid = 8.6–9.0 oz

mandeli  (Colilia dussumieri)  A food fish found near India

mandible  A jaw of an animal  See Part 2: Fish Nomenclature

mandoo  A meat dumpling

mandrake  (mayapple; racoon berry; wild lemon)  An herb used for tea  See mayapple

mandrel  A core around which material is shaped to form container tubes

man-eater  (Carcharodon carcharias)  A food fish

mangaba  (mangabeira)  A persimmon-like fruit  See mangaba

mangabeira  See mangaba

manganese (Mn)  A metallic element; at. no. 25; at. wt. 54.94; group VIIIB of Periodic Table; oxidation states +2, +3, +4, +7; electron configuration 2–8–13–2; orbit K L M N

Body function: in reproduction, normal tendon and bone structure and part of some enzyme systems

Sources: beans, bran, coffee, nuts, peas, tea

Deficiency unknown in animals; deficiency in plants causes interveinal chlorosis and necrotic lesions

See Part 2: Egg Products, Nutritive Value; Grain Analysis; Maple Syrup Composition; Minerals, Food; Normal Solutions; Nutrients in Crops; pH and Availability of Plant Nutrients; Water Drinking Standards; Wheat, Minerals; Wheat Products Composition

manganese chloride  (MnCl₂)  Used as a food nutrient or dietary supplement

Storage: well-closed container

manganese gluconate

\[ ([\text{CH}_2\text{OH} (\text{CHOH})_4\text{COO}]_2\text{Mn}) \]

Used as a food nutrient or dietary supplement

Storage: well-closed container

manganese glycerophosphate  (C₃H₇MnO₄P)  Used as a food nutrient or dietary supplement

Storage: well-closed container

manganese hypophosphite  [Mn(PO₂H₂)₃]  Used as a nutrient or dietary supplement

Storage: well-closed container

manganese (manganous) oxide  (MnO)  Used in animal feed

Composition (commercial product): dry matter 99% (including 76.7% manganese)

manganese sulfate  (MnSO₄)  Used as a food nutrient or dietary supplement and a fertilizer material; a source of soluble manganese on land that has been over-limed

Storage: well-closed container

See Part 2: Fertilizer Materials; Normal Solutions

mange  A parasite (mite) that affects the skin of dogs, hogs, horses, and mules (also man), causing loss of hair; contagious

mangel  (mangel wurzel; mangold; mangold wurzel; Beta vulgaris)  A coarse, stock beet used as livestock feed; young mangels may be eaten

Seed 4–8 lb/acre.  See mangel wurzel

mangel wurzel  A flesh-colored, root crop with white, pink, red, orange, or purple skin; used for animal feed  See mangel

mangetout  See sugar pea
mango (apple of the south; tropical peach; *Mangifera indica*) 1) The fruit of a medium-size, subtropical tree that produces a yellow-green to red fruit (6 oz - 1.5 lb); the orange flesh surrounds a central flat, oval stone that is 7-20% of its weight. 2) A smooth, round to oval, southeast Asian fruit with flesh that is sometimes fibrous and sweet but slightly acid; flavor like a mixture of pineapple, apricot, peach, and banana

Varieties:
- Alphonso
- Bangalora
- Carrie
- Dueshri
- Glenn
- Irwin
- Keitt
- Tommy Atkins

Fiber content and flavor varies tremendously with varieties

To prepare: peel and remove large seed

Uses: Eat fresh or in cake when ripe; use in pickles or relish when green

1 large = 2 cups, peeled, pitted, chopped
1 cup, fresh, diced or sliced = 5.8 oz

Ripen at room temperature; gives slightly when squeezed if ripe

Composition: moisture 82%; protein 0.7%; fat 0.4%; carbohydrate 17% av. (10-20% sugar); ash 0.4%; pH 3.9-4.6

High in vitamin A; also contains medium amount of vitamins B and C; eaten fresh, canned, or made into preserves; unripe fruit is made into mango chutney

Storage: 50°F, 85-90% relative humidity, 2 week storage life. See anthracnose, stem end rot

**mango chilling injury** A scald-like, gray discoloration with pitting and uneven softening; caused by storing mangos, before ripening, below 50°F; the fruit has poor development of color and flavor

Storage temperature:
- 50-55°F for up to 3 weeks before ripening
- 70-75°F for ripening
- 30-40°F for several weeks if fully ripe

**mango fish** A yellow-colored, Indian fish that is often canned

**mango melon (orange melon; vegetable peach; *Cucumis melo*)** A yellow-skinned melon with white or yellow flesh; may be cooked, preserved, or made into pickles

**mango pickle** 1) Mango pickled with asafoetida, chillies, fenugreek, mustard, and turmeric. 2) Mango melons or green pepper stuffed with chopped pickles

**mango squash** See chayote

**mangosteen** A large tree that produces a smooth rind and brownish purple berry; beneath the tough rind, the white pulp is segmented (5-7 segments) and contains a few seeds; the fruit is consumed fresh

See Part 2: Fruit Classification; Fruit Storage

**mangrove** 1) A red snapper-type fish. 2) A fruit

**manhattan (manhattan cocktail)** 1) A mixed drink made from 1 1/2 oz (1 jigger) of bourbon or rye, 3/4 oz sweet vermouth, and a dash of angostura bitters (optional); stir with ice, strain, and add cherry. 2) A cocktail usually made with rye, vermouth, and angostura bitters

**manila fiber** A cheese made from cow's milk

**manioc** Fiber produced by a plant that resembles a banana plant; used for making twine

**manisam** A woody, South American, tropical plant whose roots are the source of cassava and tapioca See also cassava; tapioca flour; yam bean

**manisan** A brown sugar made from the coconut

**mannitol**

![Mannitol structure](image)

1) A hexahydric sugar alcohol used in dietetic foods or "sugar-free" products; extracted from brown algae; used as a nutrient, dietary supplement, texture modifying agent, sweetener (50% as sweet as sucrose), anticaking agent, stabilizer, or thickener. 2) White, odorless, crystalline material that is 50 to 0.67% as sweet as sucrose with 0.5% of the calories; may have a laxative effect

Storage: well-closed container

See Part 2: Microbiological Media

**mannose** (C₆H₁₂O₆) A 6-carbon monosaccharide (hexose) found in orange rind, seeds, and sugar cane; has a sweet taste, but bitter aftertaste

![Mannose structure](image)

See Part 2: Sugar, D-aldehydo

**mannuronic acid** A monosaccharide derivative used as a building block in nature

![Mannuronic acid structure](image)

**mano** A provolone-type cheese made from cow's milk and wrapped in banana leaves

**manok** Chicken
man-\textit{ruoc} A salty, fermented condiment made from freshwater, shrimp paste

man-\textit{ruot} A salty, fermented condiment made from fish guts paste

manteche A provola-type cheese made from buffalo’s or cow’s milk and containing butter in the center; sometimes smoked

mantecoso A semisoft, mildly acidic, smooth cheese made from cow’s milk

mantissa See logarithm

man-tom A salty, fermented condiment made from shrimp paste

man-t’ou A steamed, wheat (sometimes maize or rice) bread

man-tu A meat dumpling

manufacturer’s sugar See confectioner’s sugar

manur A ricotta-type cheese made from cow’s or sheep’s milk and that is usually dried

manure (feces) The excrement of animals; used for fertilizer and is best if composted first to keep from burning roots of plants; source of hydrocarbon gases for fuel

\begin{tabular}{|c|c|c|c|c|}
\hline
 & Production (tons/year) &  & &  \\
 & Solid & Liquid & N & P$_2$O$_5$ & K$_2$O \\
\hline
Average: & - & - & 0.7 & 0.4 & 0.5 \\
Cattle: & 9 & 4 & 0.5 & 0.3 & 0.5 \\
Chickens: & 0.07 & - & 0.9 & 0.5 & 0.8 \\
Horses: & 7 & 1 & 0.6 & 0.3 & 0.6 \\
Sheep: & 0.5 & 0.3 & 0.9 & 0.5 & 0.8 \\
Swine: & 1 & 0.6 & 0.6 & 0.5 & 0.4 \\
\hline
\end{tabular}

Composition (poultry, dehydrated): dry matter 90%; protein 25%; fiber 12%; fat 2%; ash 27%

See Part 2: Fertilizer Materials; Manure Analysis; Wastes, Agricultural and Industrial

manure, green Crops that are plowed under for fertilizer

manyplies See omasum

manzanilla A pale, dry, young, low-alcoholic sherry

mao t’ai A spirit distilled from millet and wheat

MAP See modified American plan

maple butter See maple cream

maple cream (maple butter) Maple syrup boiled to 232°F, cooled without stirring to 70°F, and scraped into cream consistency

maple, imitation A flavoring made from vegetable extracts with color added; often contains some pure maple flavor

maple liqueur A brandy liqueur flavored with maple tree sap

maple sap The sap of the sugar maple, which contains sucrose (3–4%), invert sugar, malic acid, mineral matter, and albuminoids; a ¼-in. hole, 1 in. deep is used to tap the tree.

Equivalents:
- 3 pounds of syrup/tree-year
- 0.3–1 gallon syrup/tree-year
- 12.5–44 gallons (depends on sweetness) of sap = 1 gallon syrup

maple sugar See sugar, maple

maple sugar syrup A syrup made by dissolving maple sugar in water; not as sweet or mild as maple syrup

maple syrup (sirup) Concentrated sap of the sugar maple (Acer saccharinum) or rock maple made by evaporation of maple sap, which is collected in early spring. Other maple trees, such as silver, Norway, or swamp, may be used but sap is not as sweet and less syrup can be made per unit of sap; they are sometimes used to make wine by fermentation. Highest quality has light color and delicate flavor

Species of tree:
- Black maple
  - Sugar maple
    - Max. water content, 35%; min. 11 lb/gal (231 in.$^3$); sp. gr. 1.325; pH 6.5–7.0; sugar 66.5%; Baumé 35.75° at 60°F; Brix 66.5° at 60°F
    - Equivalents:
      - 1 cup sugar = 1 cup maple syrup + 1/4 cup of liquid + 1/2 tsp baking soda
      - 1 tbsp, syrup = 2.5 tsp, sugar
      - 1 cup, syrup = 312 g (11 oz)
      - 1 gal syrup = 8 lb maple sugar = 34 gal sap
    - Storage: 40–45°F
  - See Part 2: Maple Syrup Composition; Sugars and Syrups Composition; Sweetening Agents

maquee A soft, Belgian cheese made from cow’s milk with rennet added

marasca A Yugoslavian cheese made from cow’s milk with rennet added

maraschino Sweet liqueur distilled from maraschino cherries and their kernels and used as flavoring; sweet liqueur flavored with maraschino cherries and their kernels

maraschino cherries Unripe cherries (Royal Anne) that are cooked in syrup, colored, and flavored. Brined cherries are pitted, SO$_2$ leached out with water, boiled, dyed, boiled, held in dye, washed in hot water and then citric acid solution, and rinsed; some are sweetened and flavored (bitter almond oil, neroli oil, and vanilla extract). The colorant formerly used was prohibited by FDA in 1976

1 maraschino cherry = ½ oz

See candy

marasmus Malnutrition; wasting away

marastina A strong, dry, white wine

maravsky-bochnik A 10–15-kg, Swiss cheese made from cow’s milk

marble CaCO$_3$ with admixed impurities (iron oxide and other metallic oxides) giving a mottled or streaky appearance

marble cheese A snack cheese
marigold (poor man's saffron; Calendula officinalis) 453

marbled fruit  See brown rot

marbling  Fat intermingled in the muscle; an indicator of meat quality

marc  1) A spirit produced from the skin and seed remaining in the press after grapes have been pressed; residue left in wine press; brandy distilled from fermented grape pulp and skins. 2) A spirit distilled from fruit residue See grape, pomace; pomace

marchpane  See marzipan

MARCIS Microbiological and Residue Computer Information Systems

MARDI Malaysian Agricultural Research and Development Institute

mare A female horse (generally of breeding age); gestation period 340 days (range 307-412); duration of heat period 5-7 days; normal recurrence of heat, approx. 21 days

mare mule A female mule

marengo, à la Fowl in a sauce made of tomato, white wine, butter, mushrooms, and garlic

margaric acid (heptadecanoic acid)

\[
\text{[CH}_3\text{(CH}_2\text{)}_{15}\text{COOH}\]}

An acid rarely found in natural oils and fats  See Part 2: Fatty Acids and Their Properties

margarine A butter substitute developed by a French chemist; a fat, often a mixture of animal and vegetable fat, that is homogenized; used in cooking and as a substitute for butter. A manufactured food resembling butter except cultured, pasteurized, skimmed milk is churned with vegetable or animal fat (usually not milk); it contains at least 80% of one or more of the following fats, which may be hydrogenated:

- Milk fat
- Rendered animal fat
- Stearin or oil derived from fats or oils
- Vegetable fat or oil (cottonseed, soybean, corn, peanut, sunflower, etc.)

Can also contain:

- Butter
- Coloring (carotene or other vegetable color approved by USDA)
- Emulsifying agents
- Flavorings
- Milk products (cultured, skim milk)
- Preservatives
- Salt (2 1/2-3 1/2%)
- Vitamins
- Vitamin A, min. 15,000 U.S.P. units/lb; vitamin D, min. 2,000 U.S.P. units/lb
- Diglyceride—
- Lecithin— max. 0.5% total wt
- Monoglyceride—
- Benzoic acid—
- Potassium sorbate— max. 0.1% total wt
- Sodium benzoate—
- Artificial flavoring, diacetyl or acetyl methyl carbinoli

Equivalents:

- 3 cups, whipped = 1 lb
- 2 cups = 1 lb
- 1 cup = 225 g (7.9 oz)
- 1 cup = 4 cup lard + 1 tsp salt
- 1 cup = 2 cup rendered fat + 1 tsp salt
- 1 cup of hydrogenated fat + 1 tsp salt
- 1 cup, whipped = 5.4 oz
- 1 stick = 1/4 lb
- 4 oz
- 1 cup, whipped = 9-10 g
- 1 pat (1 x 1 x 1/4 in.) = 5 g

Composition: moisture 15% (max. 16%); protein 0.6%; fat 81% (75-84%); carbohydrate 0.4%; ash 2.5%

- 1 pat (1 x 1 x 1/4 in.) = 35 calories
- 1 tbsp = 100 calories
- 1 tbsp, soft tub = 100 calories
- 1 tbsp (14 g), salted = 140 mg Na
- 1 tbsp (14 g), unsalted = 1 mg Na

Storage: Refrigerate (32-35°F), tightly covered; protect from light; use within 2 weeks.

See also oleomargarine

See Part 2: Butter and Butter Products, Composition; Calories, Daily Recommendations; Fats and Oils, Composition; Margarine Formulae; Margarine Production; Oils and Fats Composition; Spoilage, Fat in Food; Vitamin A, Daily Recommendations; Vitamin D, Food

Margarinomyces Bacteria that cause food spoilage

See Part 2: Spoilage, Fat in Food

margarita An alcoholic beverage made from 1 1/2 oz (1 jigger) tequila, 1 oz Triple Sec, 1 oz lime or lemon juice; moisten glass rim with fruit rind and spin in salt; shake ingredients with ice and strain into glass

margaux A red wine

margherite An Italian, cream cheese

margheritina A ribbon pasta

margin The difference between cost and sale price; money deposited as a guarantee of performance on the purchase or sale of a futures contract

Original margin—hedge markets

Variation margin—difference between contract price and the current market price

marianhof See limburger cheese

maribo A large, round, acidic, gouda-type cheese filled with irregular holes; may be flavored with caraway

marienhofer A soft to semisoft, strongly flavored, cheese made from cow's milk and ripened by surface bacteria

marigold (poor man's saffron; Calendula officinalis) The flowers and the green parts of sweet-scented marigold sometimes used as seasoning; petals are used fresh or dried and sometimes used to color cheese
marinade  1) A seasoned liquid (often French dressing or pickle, spiced wine, vinegar, or an acid juice, such as tomato and citrus) in which food is allowed to stand or steep before cooking or serving; used to flavor and tenderize.  2) Fish cured in acidified brine, with or without spices

marinara, alla  Food prepared sailor-style

marinate  To let food stand in a liquid such as acetic acid, vinegar, olive oil, lemon juice, or brine

marine oil  An oil obtained from fish or marine mammals

See Part 2: Oils and Fats Composition; Unsaturated Fatty Acids

marino  An everyday wine produced in the region of Rome

Types: red, rosé, white

marjoram (joy of the mountain; knotted marjoram; sweet marjoram)

European species—Origanum dictamnus, O. onites, O. pulchellum, O. sipyleum

Golden marjoram—O. aureum

Knotted marjoram—O. marjorana hortensis

Pot or common marjoram—O. vulgare

Spanish—Thymus mastichina

1) A popular perennial, treated as an annual herb, with purple blooms and gray-green leaves. Thin to 6 in. in rows 12 in. apart; maturity requires 70 days; 2 ft tall; cut plants before they flower. Wild marjoram is called oregano; sweet marjoram is the cultivated variety.  

2) A fragrant and very popular herb made from the dried, green leaves and flowering tops of a mint family plant found both whole and dried; used as flavoring; leaves are gathered or whole plant is cut and sold in bunches; leaves are cut, whole or medium to fine grind, or powdered

Uses:

Dressing
Meat
Pies
Sausage
Soups
Stew
Stuffing

Aroma is aromatic, camphoraceous, spicy-warm; flavor is like oregano, bitter

Types:

Mediterranean
Pot
Sweet
Wild
Winter

Sources: Egypt and France

Composition: moisture 7–8% (max. 12); protein 12–14%; fat 7–8%; carbohydrate 60–61%; fiber 18–19%; ash 12–13% (max. 16); 1% v/w average volatile oil (0.7% minimum); 4.5% maximum HCl insoluble ash

Storage: dried leaves in an airtight container

See oregano

See Part 2: Flavoring Agents, Natural

marjoram butter  An herb butter; soften \( \frac{1}{2} \) stick, unsalted, sweet butter and add 1 tbsp finely minced, fresh marjoram or \( \frac{1}{2} \) tsp dried marjoram; cream together with a few drops of lemon juice

marjoram jelly  An herb jelly; infuse 2 1/2 cups boiling water over 1 cup fresh marjoram; let cool and strain. To 2 cups of marjoram infusion add \( \frac{1}{4} \) cup of vinegar or apple cider and 4 1/2 cups sugar (boil till dissolved); add 1/2 bottle of liquid pectin and boil 1 1/2 min; remove from heat, add 2 drops of liquid coloring (optional), fill sterilized jelly glasses, and seal with melted paraffin

marjoram oil  A volatile, light yellow oil, steam distilled from the flowering plant of Spanish marjoram (Thymus mastichina); used as a food flavoring agent

Refractive index 1.463–1.468 at 20°C

Sp. gr. 0.904–0.920 g/ml

Optical rotation –5 to +10°

Storage: full, tight, glass container in a cool, dark place

mark code  A six digit number that can be used to identify the plate and inside and outside enamel of a container

market basket  A term used to describe the weekly food purchases (includes all seven food groups) for a family

market class  See Part 2: Sheep Market Classes and Grades

marketing certificates  Certificates issued as part of the price support program; they may be redeemed for cash or commodities

marketing loan  A loan that may be repaid at a level below the rate at which the loan was made

marketing orders and agreements  Programs that permit agricultural producers collectively to promote orderly marketing of a crop or commodity

marketing quota  The quantity of a crop that will provide adequate and normal market supplies. This is translated into individual farm marketing quotas. A producer cannot market more than his/her quota without penalty

marketing spread  The difference between the price the producer receives for a commodity and the price paid by the consumer

marketing year  A 12-month period beginning at the start of harvest of a crop and extending to the same time in the following year.

<table>
<thead>
<tr>
<th>Crop</th>
<th>Market year starts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barley</td>
<td>June 1</td>
</tr>
<tr>
<td>Corn</td>
<td>Sept. 1</td>
</tr>
<tr>
<td>Grain sorghum</td>
<td>Sept. 1</td>
</tr>
<tr>
<td>Oats</td>
<td>June 1</td>
</tr>
<tr>
<td>Soybeans</td>
<td>Sept. 1</td>
</tr>
<tr>
<td>Wheat</td>
<td>June 1</td>
</tr>
</tbody>
</table>

market oriented farm policy  A policy of letting prices be set primarily in a public market rather than by government actions

market price  The amount received or paid for a unit of a commodity

market temper  The fluctuations of the market climate as perceived by the buyer and based on information from constant contact with suppliers
markouk A leavened, thin flat bread usually made from high-extraction, whea flour

marl (merl) A liming material composed of 60% CaCO₃ and clay; each pound has the neutralizing equivalent of 0.5–0.9 lb of CaCO₃ (or approx. this quantity of dolomitic limestone) See lime

See Part 2: Liming Materials

marlin (spearfish) A saltwater food fish

Black (Pacific)—Makaira indica; M. nigricans
Blue (Atlantic)—M. nigricans
Striped (Pacific)—Tetrapturus audax; M. audax
White (Atlantic; Pacific)—T. albidus; M. albidus

marlot A grape used to make an Italian, ruby-red wine

marmalade Small pieces of pulpy fruit [e.g., citrus fruit (all or part of rind is included) or figs] suspended in a clear, smooth, tender, jellylike mixture (1 lb or more sugar/lb of fruit). A preserve made from thinly sliced or chopped citrus fruit, combined with sugar, sometimes combined with pectin, and cooked to a jelly consistency; sealed for storage. Differs from jelly by having suspended slices of fruit or peel in the clear jelly

1 tbsp = 0.5–0.7 oz

See Jelled products

See Part 2: Standards, Processed Fruit and Vegetable Products

marmalade, orange Type of fruit used:
Bitter orange
Sweet orange usually blended with lemon or grapefruit

marmelo See quince

marron A quince (Cydonia oblonga) liqueur

marroncini Aji aromático
marrons glaciés Preserved and glazed chestnuts

marron 1) A soft, fatty, vascular, connective tissue; soft substance found in the medulla (spaces) in spongy bone; the building site of red blood cells; often used for food

See Part 2: Organ Weights

2) A climbing herb (Cucurbita sp.) that produces a pepo; 65–140 seeds/oz; 6–8 days germination period; the varieties yield fruit of many colors and shapes; pH 4.7–5.6

Varieties:

Courgette, zucchini—picked when immature and only a few inches long or when about 9 in. long; when mature they are similar to the vegetable type

Custard marrow—scalloped summer squash; shape of a flattened sphere, white or yellow in color

Vegetable Marrow—an oval cylinder with a rind that may be green or white striped; vegetable may weight up to several pounds; it is boiled or parboiled and baked

Use: cooked vegetable, jams, chutneys, soups, wine

See squash

Marsala A fortified, 12–20% alcohol, yellow, dessert and cooking wine produced in Sicily

Types: dry, specially flavored, sweet

marsh hay See salt hay

marshmallow 1) A confection of soft, creamy consistency made from egg albumin or gelatin and sugar or starch syrup; originally made from the root of the althea plant (Althea officinalis).

Equivalents:

1 lb = 4 cups marshmallows
7–10 oz = 40 regular marshmallows
= 3 cups miniature marshmallows
= 2 cups marshmallow creme

1 1/2 lb = 15 regular marshmallows
1 oz = 3–4 regular marshmallows
1 average marshmallow = 1.5 tsp sugar
4 large marshmallows = 90 calories

See Part 2: Sugars and Sweets Composition; Water Activity, Organisms and Food

2) An herb (mallards; quimauve; schloss tea)

marshmallow creme A form of marshmallow that has a spreadable consistency; made of corn syrup, gelatin, and sugar and flavored with artificial vanilla extract

marsh rabbit See muskrat

Marsh Seedless A variety of grapefruit

martini A mixture of vermouth and gin; a mixed drink containing 4 parts gin or vodka and 1 to 2 parts dry or sweet vermouth; stir with ice, strain, and add green olive, lemon twist, or pickled onion; a dry type of gin; when sweet it is mixed with vermouth

Cocktail proportions:

<table>
<thead>
<tr>
<th>Type</th>
<th>Gin</th>
<th>Vermouth</th>
</tr>
</thead>
<tbody>
<tr>
<td>American</td>
<td>&gt; 3/4</td>
<td>&lt; 1/3</td>
</tr>
<tr>
<td>Dry</td>
<td>3/4</td>
<td>1/4</td>
</tr>
<tr>
<td>French</td>
<td>1/2</td>
<td>1/2</td>
</tr>
</tbody>
</table>

martinique A type of salad dressing

See Part 2: French Dressing Variations

martynia (unicorn plant; Proboscidea jussieui; P. louisiana) A plant that yields green, seed pods, which when young, immature, and newly formed can be pickled like sweet cucumbers

maruzze A shell-shaped pasta
marvany  A blue cheese
marwa  A sorghum beer
Maryland  See Swine Breeds
Maryland No. 1  A breed of hogs produced by crossing Berkshire (38%) and Landrace (62%) breeds; it is black and white in color and has erect ears
marzipan (almond paste)  A mixture of ground almonds, sugar, and egg white that can be molded into fancy shapes
Ingredients:
   8 oz can of almond paste
   1.5 tbsp light corn syrup
   1.3 cups sifted powdered sugar
   liquid food coloring
Glaze ingredients:
   2 tbsp light corn syrup
   0.25 cup water
See Part 2: Water Activity, Organisms and Food
masa  A paste made from white corn that has been soaked and ground; ground mixtamal (whole grain maize soaked in 1% lime solution); dough made from mixtamal and used to make pozol and corn bread See masa
masa flour  See flour, masa
masata  Chicha made from yuca plant or cassava
mascarpone (mascherpone)  A whipped, acidic cream used as a dressing; small, fresh, cream cheese sold in muslin; soft cheese that tastes like whipped cream; sometimes flavored with liqueur or brandy and sugar
See Part 2: Cheese, Vitamin Content
mascone  A soft, white, fresh cream, Italian cheese
masculinity  Possession of secondary male sex characteristics, such as heavy head, neck, and shoulders
mash (mash feed)  To reduce to pulp; mashed potatoes; malt heated with water as the first step in brewing, used to extract solubles and reactivate enzymes; a mixture of feed ingredients in meal form
See urdbean
masha (Indian sorrel; sour-sour)  A bitter, oriental herb used to flavor curry, soup, stew, and salads
Masam  A breed of sheep produced by crossing Swaledale and Teeswater
mashing  Ground grain and a small amount of malt is heated with water and then cooled; malt is added and brought to 140–150°F, at which time the starch is converted to maltose See beer
masi  Poï produced from unripe bananas (Musa)
mask  To improve the looks or taste of food with sauce or seasoning; to coat with sauce or aspic; to cover a food or flavor
masking  When two flavors neutralize each other
Masonite  Proprietary name for an insulating board made by steam-treating wood chips at high pressure See Part 2: Insulation
mass  The amount of matter contained in a body, regardless of its location in space; for example, it is the same on the moon as on the Earth. Mass is different from weight in that weight involves the concept of gravity; thus the weight of an object on Earth differs from its weight on the moon
massa (masa)  Shallow-fried cakes made from millet or sorghum flour
massecuite  See magma
mass number  The sum of the protons and neutrons in an atomic nucleus See also atomic number
mass unit  An arbitrary value of mass; the proton has a mass of 1, and is therefore the basic mass unit; neutrons have a mass of 1.008
See Part 2: Constants, Fundamental
masto  Yogurt
mastic (Pistacia lentiscus)  An evergreen whose sap is used for flavoring; a licorice-flavored gum produced by making cuts in the bark of the mastic bush See mastika
mastication  The grinding, reduction in size, mixing, and addition of saliva that takes place in the mouth
mastika  An herb liqueur that is anise or licorice flavored and contains gum resin of the mastic bush (Pistachia lentiscus)
mastitis  A disease of the udder caused by bacteria, which produce tissue changes; permanent destruction of milk-secreting tissue caused by many types of bacteria, the most prevalent of which are Staphylococcus and Streptococcus
mastuerzo  A tree that produces leaves that are used in salads
masvu  A nonalcoholic, sour drink made from maize
mat  See moth bean
maté (Brazilian tea; Paraguay tea; yerba de maté; yerba maté; Ilex paraguariensis)  1) A tropical, beverage crop whose leaves are picked, dried, and ground; used to make a tealike drink. 2) A coffee substitute that is brewed like tea and contains caffeine. 3) A tea made from a South American tree leaf; an acquired taste; sold roasted or in shredded green leaf form; add 1–2 tsp/cup of hot water or milk and serve with sugar; may be served hot or iced
matelote  A fish stew
material requirements planning (MRP)  A set of techniques to calculate material requirements using bill of material, inventory data, and the master production schedule
Mateus rosé  A proprietary name for a type of rosé wine
matière grasse  The percentage of fat, expressed on a dry-weight basis
Ma-t’ou goat  A white, polled, bearded, very prolific goat raised for meat and milk and found in Hupeh (Hubei, central China)
matrasa  A red wine
matsoni  Yogurt
matsum  A yogurt made from buffalo's, cow's, or goat's milk
matte finish plate  Electrolytic tin plate that has not been brightened by melting the tin coating
matto A fermentation of bolted soy beans
ma tung See kumiss
maturation A stage of development leading to the attainment of physiological maturity; ripening; maturing
mature 1) Full or complete development; ripeness. 2) Fruit that is ready to pick, whether or not it is ripe; if mature, it is capable of ripening after picking; if immature, it will not ripen after picking
mature duck A bird of either sex over 6 months old
mature green See hard
mature turkey A bird of either sex over 15 months old
maturing agent (bread improver) An additive that accelerates the aging process and improves baking quality, will develop the gluten characteristics necessary for baking much more rapidly than will occur naturally; a chemical used to accelerate oxidation and speed up the natural aging process of flour, which improves the baking quality
maturity A stage of development when eating or processing quality is at its peak
matzo An unleavened bread
matzoon A yogurt made from buffalo's, cow's, or goat's milk
matzoth (matzos) Jewish, unleavened bread eaten during Passover; a thin, brittle, biscuit-shaped, unleavened bread made from flour and water
Variations:
Chrimses-matzoth, water, raisins, and eggs, shaped like a pancake and fried
Blintzes-matzoth folded over jelly or cottage cheese and fried
mauby A bitter, ginger beer flavored with mauby tree bark
maund (standard) A unit of weight used in India and Pakistan
1 maund = 0.037324 metric ton
mauoloh A pickled vegetable
maurette A sauce of wine, butter, flour, and spices
mavrodaphne A sweet, red, fortified, Greek, dessert wine
mavrud A dry, red wine
maw A stomach, particularly the fourth stomach of a ruminant or the craw of birds
maowy See mauby
maxilla The upper jawbone See Part 2: Fish Nomenclature
maximum price fluctuation limitation The maximum amount that the contract price is permitted to move, down or up, during a trading session
maxwell (Mx) A unit of magnetic flux equivalent to 1 gauss per centimeter squared
1 maxwell = 0.001 kiloline
= $1 \times 10^{-8}$ weber
Maxwell disc See color wheel
mayapple (hogapple; mandrake is a misnomer; maypop; wild lemon) A small, yellow, egg-shaped fruit that contains many seeds and is often used to make marmalade
mayonnaise 1) An uncooked, semisolid, permanent emulsion in which oil (often cottonseed or corn oil) is held in water suspension by egg yolk and vinegar or lemon juice; may be flavored with salt, pepper, and mustard; minimum 65% (most contain 75–80%) vegetable fat; the only emulsifying ingredient is egg yolk (cholesterol); the acid ingredient is vinegar or lemon juice (citric acid to $\frac{1}{4}$ acetic acid in vinegar); vinegar and salt are the principal bacteriological agents. 2) Dressing often made from egg yolk, lemon juice, mustard (optional), olive oil, salt, and white pepper
Typical ingredients:
2 egg yolks
1 tsp dry mustard
1 tsp salt
1 tsp sugar
dash of cayenne
1 tbsp vinegar
1½ cups salad oil
1 tbsp lemon juice
Equivalents:
1 cup = 7.2–8.6 oz
1 tbsp = 0.5 oz
Stain removal from cloth—scrape off excess, use laundry pretreat spray or cleaning fluid, rinse in cool water, wash in hot suds
Composition: moisture 15%; protein 1%; fat 80%; carbohydrate 2%; ash 2%; pH 4.2–4.5; sodium 78 mg/tbsp (15 g)
Storage: Refrigerate after opening
See also emulsion
See Part 2: Calories, Daily Recommendations; Fats and Oils, Composition; Food, Composition; Mayonnaise; Mayonnaise and Salad Dressing; Salad Dressing and Mayonnaise Variations
maypop See mayapple
may wine A beverage made from Rhine wine, claret, and champagne, seasoned with woodruff, strawberries, oranges, and pineapple
mazagan See broad bean
maziwa lata A yogurt that may have wood ash added
Mazola oil A brand of corn oil
mazun A yogurt made from buffalo's, cow's, or goat's milk
MB-BCP medium See Part 2: Microorganism, Selective and Differential Broths and Media, Water Filtration Plant
mbege A beer made from millet and bananas
mbor Acidic dumpling made from 90% extraction, maize flour
mbote A sweet, fermented, alcoholic beverage made with honey; often flavored with fruit juice and spices
M broth See Part 2: Microorganism, Media
mc Megacycles per second
McCallum's macerating fluid A mixture composed of nitric acid 1 part, glycerin 2 parts, water 2 parts
**McClung Toabe agar**  See Part 2: Microorganism, Media

**McCollum E. V.**  An American who suggested that "accessory factors" in addition to protein, carbohydrates, and fats are needed in the diet

**McDaniel spider mite** (*Tetranychus mcdanieli*)  A pear tree pest; adult in winter is yellow or orange; when feeding, yellow to green with two dark spots and will spin a web; damaged foliage is bronze in appearance and it interferes with normal fruit development

**MCH**  Maternal and Child Health Care

**MCHC**  Mean corpuscular-hemoglobin concentration

\[ \text{MCHC} = \frac{\text{Hgb} \times 100}{\text{PCV}} \]

See Part 2: Blood

**mCi:** millicurie

**McIntosh red**  A variety of apple that is in season from Sept. to March; makes excellent sauce and good eating and cooking

**M coliform broth**  See Part 2: Microbiological Media

**MCPA**  A phenoxy herbicide; chemical name [(4-chloro-o-tolyl)oxy] acetic acid

**MCV**  Mean corpuscular volume of red cell

\[ \text{MCV} = \frac{\text{PCV} \times 10 \text{RBC} \times 10^{-6}}{n} \]

See Part 2: Blood

**Md**  Symbol for the element mendelevium

**MDR**  See minimum daily requirement

**ME (M.E.)**  Metabolizable energy  See metabolizable energy

**mead**  A sweet, fermented, alcoholic beverage made with honey, malt, and yeast; sometimes flavored with fruit juice and spices

**mead agar**  See Part 2: Microbiological Media

**meadow cress** (*Cardamine pratensis*)  A wild plant used in salads and soups

**meadowsweet** (*Spirea ulmaria*)  A native North American shrub; leaves used in soup and flowers used to make tea

**meal**

1) Coarsely ground or powdered grind of pulse or cereal; ground edible part of some grain, e.g., corn.
2) Assembled dishes to be consumed at one time. 3) Time of eating. 4) Food eaten. 5) Volume of milk obtained at one milking. 6) Ground or reduced in particle size ingredient

**mealiepap**  See agidi

**meal, whole wheat**  A ground, cleaned wheat that is finer than crushed or cracked wheat

**mealy**  The crumbly quality of meal; starch or corn-meal-like texture

**mealybug**  See grape mealybug

**mean (\( \mu \))**  Center of a distribution; estimated by sample mean \( \bar{x} = \frac{\sum X}{n} \); interval estimate of \( \mu \):

\[ \bar{x} - t_{0.05}S_x \leq \mu \leq \bar{x} + t_{0.05}S_x \]

Probability is 95% that above area will include \( \mu \)

\( t_{0.05} = \) table \( t \) value at probability desired (95% used here)

\( t(df) = n - 1 \)

\( S_x = \) standard error

See also randomized group comparisons for confidence limits on the difference of means

**mean error**  See mean square

**mean lethal dose** (*Do*)  Radiation dosage that will kill 63% of the population

**mean square** (*)\( s^2 \)  Variation of observations; it is the square of the sample standard deviation

\[ s^2 = \frac{\sum x^2}{n - 1} \]

\( x = \) deviations from mean

\( n = \) sample size

Pooled mean square for equal size randomized groups

\[ s^2 = \frac{\text{pooled} \sum x^2}{2(n - 1)} \]

\( n = \) no. in 1st group

Pooled mean square for unequal size randomized groups

\[ s^2 = \frac{\text{pooled} \sum x^2}{(n_1 - 1) + (n_2 - 1)} \]

Test for homogeneity of variance (*Ho*): \( \sigma_1^2 = \sigma_2^2 \)

\[ F = \frac{\text{larger} s^2}{\text{smaller} s^2} \]

\( s^2 = df = n - 1 \)

See Part 2: F-Distribution

**means test**  A test of the difference between two or more means; \( a = \) no. of treatments; \( n = \) obs. per treatment

1) Tukey: In \( a \) means there are \( a(a - 1)/2 \) comparisons

\[ D = Q\bar{x} \]

\[ \bar{x} = \left( \frac{\text{mean square of individuals or error}}{n = \text{observations in the mean}} \right)^{1/2} \]

\( Q = \) table value \( a = \) no. of treatments

\( df = df \) for individuals or error \( (n - 1)a \)

See also randomized group comparisons for confidence limits on the difference of means

\[ (\bar{x}_i - \bar{x}_j) + D \leq \mu_i - \mu_j \leq (\bar{x}_i - \bar{x}_j) - D \]

2) Keuls test (more powerful): Uses different \( Q \) depending on how far in sequence the means are apart.

\( Q \) from table \( df = (n - 1) \) \( \alpha \) does not change

\( a = 2: \) adjacent means

3: means with one between them

4: etc.

\( \alpha: \) extreme means
meat and bone meal digester tankage See meat meal tankage
meat and bone meal tankage See meat meal tankage
meat and bone scrap See meat meal tankage
Meat and Livestock Commission (MLC) A British organization concerned with swine improvement through breeding

meatball A molded or shaped ball of minced or chopped meat; small, round balls made from ground meat; max. 12% singly or collectively of farinaceous material, soy flour, soy-protein concentrate, nonfat dry milk, calcium reduced dried skim milk, and similar materials with ground meat

meat color See Part 2: Color, Meat; Meat Pigment; Nitrate, Meat Curing

meat extract The liquids pressed from raw meat, usually beef; used as a foundation for soup See beef extract

meat grade See Part 2: Fat and Oil Composition

meat grade Denotes the degree of conformation, finish, and quality of a carcass of meat

<table>
<thead>
<tr>
<th>Beef</th>
<th>Veal</th>
<th>Lamb</th>
<th>Pork</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prime</td>
<td>Prime</td>
<td>Prime</td>
<td>U.S. No. 1</td>
</tr>
<tr>
<td>Choice</td>
<td>Choice</td>
<td>Choice</td>
<td>U.S. No. 2</td>
</tr>
<tr>
<td>Select</td>
<td>Good</td>
<td>Good</td>
<td>U.S. No. 3</td>
</tr>
<tr>
<td>Standard</td>
<td>Standard</td>
<td>Utility</td>
<td>U.S. No. 4</td>
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<td>Commercial</td>
<td>Utility</td>
<td>U.S. Utility</td>
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<tr>
<td>Utility</td>
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<td></td>
</tr>
<tr>
<td>Canner</td>
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</tr>
</tbody>
</table>

meatiness The amount of muscle in relation to fat and bone

Meat Inspection Division of the Bureau of Animal Production Former name for Animal and Plant Health Inspection Service (APHIS), which is the agency responsible for Federal meat inspection; its duties include: elimination of bad meat; enforcement of sanitary preparation; checking for harmful ingredients; guarding against false or misleading labels

meat juice Stain removal from cloth—soak in cold water and an enzyme product; bleach if needed

meat loaf Ground meat (often a mixture), often mixed with bread crumbs, and baked in a loaf shape See loaf (2)

meat meal See meat scrap

meat meal tankage Live steam- or dry-rendered, finely ground, dried residue from animal tissues, exclusive of hair, hoof, horn, manure, and stomach contents; when it contains more than 4.4% phosphorus, the word "bone" must also be included in the name; approx. 1.6 lb/qt; 51 lbs/bu

meat pastes (potted meat) Meat, poultry, or game in paste form See deviled; potted meat

meat patty A flat round cake of chopped, fresh, or frozen meat; water, binders, or extenders may be used
meat patty mix  See meat patty
meat pie  Any of a variety of meat fillings (stewlike with gravy) and crust
meat, potted  Simmered meat pounded into a paste, placed in a pot, and covered with butter.
See Part 2: Meat Composition
meat product  A product containing meat that is intended for human consumption
meat scrap  Dry-rendered, finely ground residue from animal tissue, exclusive of hair, hoof, horn, hide trimmings, blood meal, manure, and stomach contents; when it contains more than 4.4% phosphorus, the words “and bone” must be added to the name; feed 1.3 lb/qt; 42 lb/bu; can be used as a nitrogen and phosphorus fertilizer
Composition: dry matter 94%; protein 51%; fiber 2.7%; fat 9.1%; ash 27%; Ca 8.8%; P 4.4%
See Part 2: Packinghouse By-Products Composition
meat specialties  A variety of chopped, comminuted, cured or uncured meat that is seasoned, usually cooked or baked, and not smoked; usually manufactured in loaves and sliced and served cold, e.g., chopped ham loaf, condiment loaf, head cheese, jellied corn beef, luncheon meat, minced ham, peppered loaf, scrapple, and souse
meat stamp ink  A vegetable dye (food color) certified by Food and Drug Administration; it is combined with water, alcohol, and sugar and used by federal inspectors to stamp grades of fresh meat; it is an edible product. See also ink (meat inspection)
meat tenderizer  Sodium content:
Regular: 1,750 mg/tsp (5 g)
Low sodium: 1 mg/tsp (5 g)
meat type  A classification of hogs that usually includes the following breeds: Berkshire, Chester White, Duroc, Hamprace, Hampshire, Hereford, Kentucky Red Berkshire, Minnesota No. 1, Minnesota No. 2, Ohio Improved Chester, Poland China, and Spotted Poland China
mebos  Dried apricots
mechanically deboned meat (MDM)  Meat removed from bones by machine; now called mechanically processed (species) product
mechanically processed (species) product  Muscle and fat plus some marrow and bone powder obtained mechanically from bony parts of the carcass
mechanical vacuum capper  A closing machine that uses a vacuum pump to produce a vacuum in a glass container
mecklenburg  A skimmed milk cheese with rennet added and colored with saffron
mecklenburger  A hard, dry, low-fat, yellow (saffron), grating cheese made from cow's milk
medaffarah  A hard, dry, low-fat, grating cheese
media  See medium (1)
medial  The midline, middle, or middle plane
median  The value of the middle item of an array if \( n \) is odd; it is the average value of the two center items of an array if \( n \) is even
median plane  Middle plane, where carcass is split, divides into right and left sides
medic  A legume
  Black (Medicago lupulina)
  Burr (M. polymorpha)
  Button (M. orbicularis)
  Harbinger (M. littoralis)
See Part 2: Seed, Germination
medic, black (Medicago lupulina)  An annual or biennial legume that resembles hop clover; used for pasture
medicinal  Describes a medicine-like flavor or odor
medister  A moist, cooked or uncooked, smoked or unsmoked Icelandic sausage made from finely chopped, medium seasoned beef and pork with pork fat added and stuffed into a pork or artificial casing
medisterkorv  A moist, cooked, smoked Swedish sausage made from finely chopped, mildly seasoned beef, pork, and veal and stuffed into an artificial casing
Composition (max.): moisture 65%; fat 23%; binder 3%
medisterpolse  A moist, uncooked, unsmoked Danish sausage made from medium chopped, mildly seasoned, pork and stuffed into a pork casing
medium  1) A solid liquid nutrient material that is suitable for the reproduction and growth of microorganisms; often called culture medium; plural form is media
See Part 2: Culture Media, Specific Groups of Microorganisms; Microbiological Media; Microorganism, Culture Media, Dairy and Food Products; Microorganism, Culture Media, Water and Sewage, Standard Methods; Microorganism, Media; Microorganism, Selective and Differential Broths and Media, Water Filtration Plant; Microorganism on Differential Tube Media
2) A degree of doneness in meat cookery; e.g., internal temperature of beef cooked to medium doneness is 160°F
See Part 2: Beef Degrees of Doneness; Beef Roasting; Broiling Time and Temperature; Casings, Hog; Casings, Sheep
3) Average, moderate, middle
medium acid  See Part 2: Canned Spoilage Manifestations; Canned Spoilage Related to pH
medium aged cheese  See cured cheese
medium dose  In food irradiation: doses between 1 and 10 kilograys (kGy) (100 krad and 1 mrad)
medium-wool mutton-type sheep  Classification of sheep that includes the following breeds: Cheviot, Columbia, Corriedale, Doreet, Hampshire, Oxford, Panama, Shropshire, Southdown, and Suffolk.
See Part 2: Sheep Breeds
medlar (Mespilus germanica)  A fruit with brown skin and firm flesh; similar to the quince, except that the eye is open; it may be eaten off the tree (2 weeks after picking) or made into jam
Médoc A full-bodied, balanced, red, table wine from the Bordeaux (southwest France) area

<table>
<thead>
<tr>
<th>Communes</th>
<th>Wine type</th>
<th>Famous chateaux</th>
</tr>
</thead>
<tbody>
<tr>
<td>Margaux</td>
<td>Medium weight fine wine</td>
<td>Margaux, Rausan Segla</td>
</tr>
<tr>
<td>Pauillac</td>
<td>Fine quality and bouquet</td>
<td>Lafite, Latour, Mouton Rothschild</td>
</tr>
<tr>
<td>St. Estephe</td>
<td>Fruity</td>
<td>Beychevelle, Cos d’Estournel, Gruaud Larose, Leoville-Barton, Leoville-Lascases, Leoville-Poyferre</td>
</tr>
<tr>
<td>St. Julien</td>
<td>Delicate and fragrant bouquet</td>
<td></td>
</tr>
</tbody>
</table>

medok A sweet, fermented, alcoholic beverage made with honey and often flavored with fruit juice and spices

medulla Inner portion See also marrow
medulla oblongata Lower portion of the brain that attaches it to the spinal cord
medullary cavities Hollow tubes in long bones
medwurst A heavily smoked cervelat
mee (mei; mie) Fine noodles
mega- (M) A prefix for quantities one million times larger than the base unit; a prefix indicating $10^6$
megalone
1 megalone = $1 \times 10^6$ maxwell
megaton (Mt) 1 Mt = energy released by 1,000,000,000 tons of TNT
megacalorie (Mcal) 1 Mcal = 1000 kcal = 1 therm
megohm (meg; MΩ) 1,000,000 ohms
megrim (Lepidorhombus whiff-iagonis) A flat, saltwater, food fish
mei See mee
mei kuei lu chiew A digestive liqueur
mein Noodle
meiosis Cellular division [two successive divisions of four phases (prophase, metaphase, anaphase, telophase)] that reduces the normal number of chromosomes by half; nuclear division and production of daughter cells with half the number of chromosomes of the original cell; cell division in which the chromosomes pairs are divided into new cells during sperm and ova formation
meira A semihard cheese made from sheep’s milk and matured in sheepskin for 6–12 months
meitaouza Soybean presscake from sufu production See Part 2: Fungi Food Products
mejette A ricotta-type cheese
mejia Sufu soybean curd
meju A soy sauce
MEK See methyl ethyl ketone
mekhalel A pickled vegetable

mela Germinated, dried grains of sorghum; used as malt for sorghum beer
mélangé An uncooked, French, fruit (strawberries, cherries, sometimes bananas, oranges, pineapple) preserves (equal quantities of fruit and sugar) flavored with brandy; other fruit (apricots, blackberries, currents, peaches, plums, raspberries) is often added
melanose A field disease of citrus fruit caused by the fungus Phomopsis citre Fawc.; appears as small, brown, raised, pin-head-size spots and has a sandpaper feel; when these spots coalesce to form large patches, they are called mudcake; does not spread in storage
melnba 1) A crisp, thin ($\frac{1}{4}$ in.), crunchy toast. 2) A fresh raspberry sauce
melengestrol acetate A drug that promotes growth and improves feed efficiency
melezitose (C_{18}H_{32}O_{16}) A trisaccharide made up of two molecules of glucose and one of fructose; found in the exudate of the fir and other trees
mellilot (Melilotus officinalis) A perennial, leguminous herb whose leaves and flowers are dried and crushed and used as flavoring
melissic acid (trioctanonic acid)

$$[\text{CH}_3(\text{CH}_2)_2\text{COOH}]$$

A saturated fatty acid occurring in montan and other waxes
See Part 2: Saturated Fatty Acids
melitose See raffinose
melitriose See raffinose
mellanol A medium strength, alcoholic beer
melloco A staple, root vegetable
mellow Fully ripe fruit
melnik A dry, red wine

melon (Cucumis melo) An annual, trailing herb (vine) that originated in the Mediterranean, Middle East, and African areas; varieties produce fruit that is variable in size from egg size to 20 lb; spherical to flat, oblong to serpentine shape; textured rind is smooth to warty to densely netted to deep-ribbed; skin color is white, yellow, light green, or gray-green; flesh color is from red to orange to green; 60% edible

Types:

- Cantaloupe (C. m. cantaloupensis)—fruit is light green to yellow; warty or scaly rind; not netted; deep-grooved, hard rind; flesh is light green to pinkish green to orange
- Dudaim melon (pomegranate melon; Queen Ann pocket melon; C. m. dudaim)—inedible; size of a lemon
- Muskemelon (netted melon; nutmeg melon; C. m. cultus or reticulatus)—smooth rind (or broad ribs) that is yellow or green; covered with a raised, lighter colored, prominent net; 1$\frac{1}{2}$–15 lb
- Yellow flesh: Benders Surprise, Emerald Gem, Hales Best, Harts of Gold, Honey Rock, Persian, Pride of Wisconsin
- Green flesh: Extra Early Hackensack, Netted Gem, Rockey Ford
Orange melon (chito; garden lemon; mango melon; melon apple; vegetable orange; vine peach; C. m. chito)—only used for preserving

Pineapple melon (C. m. saccharinus)—sweet flesh; good keeper

Snake melon (snake cucumber; C. m. flexuosus)

Watermelon—See watermelon

Winter melon (C. m. inodorus)—smooth or shallow corrugated; not netted; hard skin; rind color white to dark green; flesh pale green to yellow; stores well; flesh is consumed raw, pickled or used in soup; hard covering of seed is removed and eaten; also yields an edible oil on extraction

Casaba—hard, ridged, yellow rind; round; 5 lb

Honeydew—hard, smooth white rind; 5 lb

1 cup melon balls, frozen in syrup = 8.2 oz

Composition (raw): moisture 90–93%; protein 0.5–1.2%; fat 0.1–0.3%; carbohydrate 6–8%; ash 0.3–0.8%; pH 5.5–6.7

Storage: Unwrapped (85–90% relative humidity); cool room temperature (45–50°F); use within weeks; wrap cut melon in cellophane or waxed paper and refrigerate

See also cantaloupe; casaba melon; honeyball melon; honeydew melon; Persian melon; Santa Claus melon; watermelon

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See Part 2: Ascorbic Acid; Calories, Daily Recommendations; Flavor Ingredients, Taste and Flavor Type; Fruit and Vegetable Diseases; Fruit Classification; Fruit Composition; Fruit Storage; Sugar, Vegetables

melon aphid (Aphis gossypii) An aphid that is also found on pears

melon-pear (pipino; Solanum muricatum) A plant native to Peru that produces a 6-in., egg-shaped fruit that is yellow splashed with violet; aromatic, juicy, tender yellow flesh; fruit is similar to an acid eggplant

Storage: cool place; keeps well

melon pickle worm See Part 2: Insect Control

melon winter A large, round, pulpy melon with white flesh

melt (milt) 1) Spleen. 2) To change from solid to liquid by heat

melting The flesh texture of a peach used for dessert or processing; e.g., Elberta

melting point Temperature at which a solid becomes a liquid or when a disk of fat assumes a spherical shape; impurities lower the melting point See also freezing point

See Part 2: Melting Points, Fats and Oils

membranous stain (membranosis of lemons) Darkening of the membrane walls between the segments and sometimes the core tissue and inner tissue of the rind; occurs more frequently when fruit is picked in cool, damp weather; lemons held at 40°F are seriously affected, whereas those stored at 32 or 60°F seldom develop the stain

memphis A matured cheese

menadione A synthetic vitamin K

See Part 2: Vitamins

menage A dry, uncooked, unsmoked French sausage (salami) made from medium or coarsely chopped, mildly seasoned pork fermented and stuffed into a pork casing

mendelevium (Md) A synthetic radioactive element of the actinide series; at. no. 101; Group IIIB of Periodic Table; mass number of most stable isotope 256;
electron configuration 2–8–18–32–31–8–2
orbit KLMNOPQ

M endo agar See Part 2: Microbiological Media

menduvira A South American fruit

menhaden An oily and bony shadlike fish; usually not used for food

Atlantic (Brevoortia tyrannus)

Gulf [B. patronus (largescale)]

See scup

menhaden oil A drying oil obtained by expressing the flesh of the menhaden fish; in hydrogenated form it is used in cooking fats; also in margarine and in animal feeds

See Part 2: Fats and Oils, Characteristics; Fats and Oils, Physical and Chemical Properties; Iodine and Saponification Values; Vitamin A, Fish;

Mentha The genus of a number of aromatic herbs including the mints

menthol A solid alcohol obtained from oil of peppermint; also occurs naturally, characteristic cool taste; used in cough syrups and cigarettes

storage: full, tight, container in a cool, dark place

Menu A list of food that makes up a meal or a list of meals from which you may select

Meolchijeot A pickled anchovy

mercaptan RSH See also thiol

mercury (quicksilver; Hg) 1) A liquid metallic element; at. no. 80; at. wt. 200.61; Group IIB of Periodic Table; oxidation states +1, +2;
electron configuration 2–8–18–32–18–2
orbit KLMNOPQ

All mercury compounds are poisonous! 2) Mercury (all good; dog's mercury; good King Henry; goosefoot; wild spinach): An annual herb whose shoots are used like asparagus See good King Henry

mercury-in-glass thermometer A reference thermometer often used to indicate retort temperature

mergchez A moist or semidyrid, uncooked, unsmoked French sausage made from medium chopped, heavily seasoned, beef and pork and fermented and stuffed into sheep casings

merguez veritables A moist or semidyrid, uncooked, unsmoked French sausage made from medium chopped, heavily seasoned, beef and lamb and fermented and stuffed into sheep casings; product is usually fried
meringue  A soft topping used for pies, puddings, and other baked desserts; it is made of well-beaten egg whites plus sugar and vanilla or other flavoring. A hard meringue is often combined with fruit, ice cream, sauces, or syrups

Merino  A fine-wool breed of sheep that originated in Spain
Types:
A—skin is wrinkled over entire body
B—skin folds around neck, dock, flanks, and thigh
C (or Delaine Merinos)—most popular type; has practically no wrinkling; has white nostrils, lips, and hooves; rams have horns (polled strain does exist) and ewes are hornless; they will breed in almost any season
See Part 2: Part 2: Sheep Breeds

Merino, China  A white fleeced sheep of northeast and northwest China; raised for wool; developed from crossing Merino (northeast), Sinkiang, Rambouillet, and Marino rams (northwest) with Mongolian fat-tailed ewes

merinofort  A blue cheese

merisette  A French, cherry-flavored, after dinner cordial

merissa  A sorghum beer

merl  See mari

merlot  An Italian, red wine; a grape grown in Italy and used to make a red wine

merlot di aprilia  A wine produced in the region of Rome

mermen  A fish of the skate family

meromyosin  See Part 2: Myofibrillar Proteins of Muscle

mersin  A citrus liqueur

Mertaste  A proprietary flavor enhancer containing a mixture of disodium inosinate and disodium guanylate

mesanarah  A hard, dry, low-fat, grating cheese

mesoclinal  A plant having a toxic principle
See Part 2: Poisonous Plants

mesenteric  See caul

mesentery  The tissue that attaches the intestine to the abdominal wall
See Part 2: Intestine, Cross Section

mesh  Coarseness or fineness of screens; indicated by number of openings per linear inch, i.e., 200-mesh, 300-mesh, etc.; mesh screen (24 × 24 mesh) required to contro vinegar flies
See Part 2: Mesh Sizes

meshgachi  A Jewish food inspector

mesimarja  An aromatic liqueur flavored with arctic brambleberry (Rubus arcticus)

mesitra  A soft, unsalted cheese made from sheep’s milk

meso-  A prefix that means middle

mesocarp  The intermediate layer or fleshy portion of a fruit lying below the pericarp
See Part 2: Corn Kernel; Orange Structure; Rice Kernel

meso compound  Inactive or has no effect on polarized light

mesophilic bacteria  Bacteria that can grow at a medium temperature; minimum growth temp., 10–15°C; optimum, 35–40°C; maximum, 40–50°C; almost all food-poisoning bacteria fall in this range

mesost  A sweet, Swedish, mysost-type whey cheese made from cow’s milk

mesquite  A plant having a poisonous principle
See Part 2: Gum Distribution; Poisonous Plants

meta (m)  Indicates substitution in a ring in the position next to another substituent

meta-  A prefix that means change

metabisulfite (metabisulphite) Sodium is CiSNa2S2O5

metabolic body size (metabolic weight)  Weight raised to the 0.75 power; weight0.75

metabolic water  Water formed from the oxidation of food

metabolism  The biochemical and physicochemical reactions that occur from the time a nutrient enters the body of an organism to the time the waste products are excreted; consists of anabolism (building up) and catabolism (destructing) and liberation of energy. Digestion and absorption of nutrients and their oxidation and degradation are major aspects. These processes yield the energy necessary for maintenance of the organism and are distinctive for each class of nutrients (fats, carbohydrates, proteins)

metabolite  1) A substance produced by metabolism; essential metabolite is a necessary constituent of a metabolic process. 2) An active nutrient factor, such as a vitamin, protein, or enzyme, including numerous combinations of these. Substances that reduce or impair the activity of metabolites are called antimetabolites

metabolizable energy (M.E.)  Digestible energy corrected for loss of energy in the urine and gasses

metacarpal bones  Forefoot bones located above the phalangeal bones
See Part 2: Bone

metallic  An ironlike, copperlike, or oxidative flavor

metaphase  A phase of meiosis
Metaphase I—formation of spindle fibers in the first meiotic division
Metaphase II—formation of spindle fibers in the second meiotic division

metaphosphate  See Part 2: Phosphate

meta sacco  A liqueur flavored with mint

metatarsal bones  Hind foot bones located between the phalangeal and tarsal bones

metazoa  Multiple-celled parasites
meter (m) A measure of length

1 m = 1 x 10^10 angstrom (Å)
= 1000 millimeters (mm)
= 100 centimeters (cm)
= 39.3700 inches (in.; U.S.)
= 10 decimeters (dm)
= 3.28084 feet (ft; Brit.)
= 3.28083 feet (ft; U.S.)
= 1.09361 yard (yd; U.S.)
= 0.54681 fathom
= 0.198838 rod (rd; U.S.)
= 0.0006214 mile (statute)
= 0.0005396 mile (U.S.; nautical)

0.9144 m = 1 yard (yd)

meterbread A long loaf of French bread

meter columns of water A measure of pressure

1 meter column
= 204.817 pounds per square foot (lb/ft^2; psf)
= 73.5514 millimeters (columns of mercury, Hg)
= 3.28083 feet (columns of water, max. density at 4°C, 39°F)
= 2.89527 inches (columns of mercury, Hg)
= 1.42234 pounds per square inch (lb/in.²; psi)
= 0.10 kilogram per square centimeter (kg/cm^2)
= 0.09678 atmosphere, standard (760 mm Hg)

metering pump A pump that delivers a precise flow rate; often used in aseptic processing

meter-kilogram (m-kg)
1 m-kg = 98,070,000 centimeter-dynes
= 100,000 centimeter-gram
= 7.233 pound-feet

meter per minute (m/min) A measure of velocity
1 m/min = 3.281 feet per minute (ft/min)
= 1.667 centimeters per second (cm/s)
= 0.06 kilometer per hour (km/h)
= 0.05468 foot per second (ft/s)
= 0.03728 mile per hour (mph)
= 0.03240 knot (U.S.)

meter per second (m/s; mps) A measure of velocity
1 m/s = 196.8 feet per minute (ft/min)
= 3.6 kilometers per hour (km/h)
= 3.28083 feet per second (ft/s; fps)
= 2.23693 miles per hour (mph)
= 1.94254 knots (U.S.)
= 0.6 kilometer per minute (km/min)
= 0.03728 mile per minute

meter per second per second (m/s²) A measure of acceleration
1 m/s² = 100 centimeters per second per second (cm/s²)
= 3.6 kilometers per hour per second (km/h-s)
= 3.28083 feet per second per second (ft/s²)
= 2.23693 miles per hour per second (mph-s)

methanol See methyl alcohol

methionine

\[
\text{CH}_3\text{–S–CH}_2\text{–CH}_2\text{–CH}–\text{COOH} \\
\text{NH}_2
\]

An essential amino acid. Used as a nutrient, dietary supplement, or food additive.

Storage: well-closed, light-resistant container

See Part 2: Amino Acids; Amino Acid, Solubilities; Corn, Amino Acids; Egg Products, Nutritive Value; Grain Analysis; Manure Analysis; Milk, Amino Acids; Seed, Chemical Composition; Wheat, Amino Acids; Wheat Products, Amino Acids; Wheat Products, Amino Acid Compositions; Wheat Products Composition

methoxybenzaldehyde

[Diagram of structure]

Used as a hawthorn-like flavoring agent for food; sp. gr. 1.118-1.124

Storage: full, tight, glass container in a cool, dark place

methoxychlor (methoxy DDT) A chlorinated, organic insecticide, especially useful in dairy barns; it is less toxic than DDT

\[
\text{CH}_3\text{–O–} \downarrow \text{–CH–C–Cl}_3
\]

4'-methyl acetophenone

[Diagram of structure]

Used as a floral-fruity flavoring agent in food; sp. gr. 1.000-1.004

Storage: full, tight, glass container

methylal (formal) [CH₂(OCH₃)₂] An aldehyde used as extraction solvent in perfumery

methyl alcohol (methanol; wood alcohol)

(CH₂OH) 1) A commercial product that is about 90% methyl alcohol; poisonous and causes blindness; used as solvent and as denaturant for ethyl alcohol. 2) Clear, colorless, flammable liquid found naturally in many foods; used as a flavoring agent and as a food extraction solvent; distillation range 64.5-64.7°C

Storage: tight container away from flame

methylamine (CH₃NH₂) A flammable gas

See Part 2: Refrigerant

β-methyl-ω-amino valeric acid See isoleucine

methyl anisole

[Diagram of structure]

Used as a pungent flavoring agent for food; sp. gr. 0.966-0.970

Storage: full, tight, glass container in a cool, dark place
methyl anthranilate

\[
\text{COOCH}_3
\]

Used as a grapelike flavoring agent for food; sp. gr. 1.160–1.170
Storage: full, tight, glass container in a cool, dark place

methyl benzoate

\[
\text{COOCH}_3
\]

Used as a fruitlike flavoring agent for food; sp. gr. 1.082–1.088
Storage: full, tight, glass container in a cool, dark place

methyl cinnamate

\[
\text{CH}==\text{CHCOOCH}_3
\]

Used as a fruitlike flavoring agent for food
Storage: full, tight, glass container in a cool, dark place

methyl cyclopentenolone

Used as a nutlike flavoring agent for food
Storage: tight, glass container

methylene chloride (dichloromethane) \((\text{CH}_2\text{Cl}_2)\)

A volatile, nonflammable liquid used as a refrigerant and extraction solvent; sp. gr. 1.318–1.324
Storage: tight container
See Part 2: Refrigerant

methyl ester of rosin

Usually produced by esterification of rosin with methanol and partial hydrogenation; used as a masticatory substance in chewing gum
Storage: tight container

methyl ethyl ketone (MEK)

A fast evaporating solvent for phenolic or vinyl resins

methyl eugenol

\[
\text{OCH}_3
\]

Used as a clovelike flavoring agent for food; sp. gr. 1.032–1.036
Storage: full, tight, glass container in a cool, dark place

methyl formate \((\text{HCOOCH}_3)\)

Flammable and explosive liquid used as fumigant and larvicide
Storage: keep in a tight container and observe label requirements
See Part 2: Refrigerant

methyl group \((-\text{CH}_3)\)
The simplest alkyl group; occurs in aliphatic compounds; formed by dropping one H atom from methane

methyl heptenone

\[
\text{CH}_3\text{C}==\text{CH(CH}_2)_2\text{COCH}_3
\]

Used as a citruslike flavoring agent for food; sp. gr. 0.846–0.852
Storage: full, tight, glass container in a cool, dark place
methyl isoeugenol

\[
\text{CH}_3\text{O} = \text{CH} = \text{CHCH}_3
\]

Used as a clovelike flavoring agent for food; sp. gr. 1.046–1.054
Storage: full, tight, glass container in a cool, dark place

**methyl naphthyl ketone**

\[
\text{C} = \text{CH}_3
\]

Used as an orange-blossom-like flavoring agent for food
Storage: nonmetal container in a cool, dark place

**methyl 2-octynoate**

\[
\text{CH}_3\text{(CH}_2\text{)}_4\text{C} = \text{COOCH}_3
\]

Used as a violet-like flavoring agent in food; sp. gr. 0.918–0.925
Storage: full, tight, glass container in a cool, dark place

**methyl orange** An indicator used when titrating weak bases; pH range 3–4.5; color in acid is orange, pink in neutral, and yellow in alkaline solutions. Mix 0.1 g of the Na salt per 100-ml water

**methylparaben**

\[
\text{HO} - \text{C} = \text{COOCH}_3
\]

An antimicrobial food additive used in beverages, cake-type pastries, relishes, and salad dressings
Storage: well-closed container

**methyl red** An indicator used when titrating strong acids, strong bases, or weak bases; pH range 4–6; color in acid is red; in neutral is yellowish red; in alkaline solutions, yellow. Mix 0.1 g in 60 ml of alcohol and 40 ml water

**methyl salicylate (gaultheria oil; wintergreen oil)**

\[
\text{COOCH}_3
\]

Produced synthetically or steam distilled from *Gaultheria procumbens* or *Betula lenta*. Used as a wintergreen-like flavoring agent in food
Storage: full, tight, container in a cool, dark place

**2-methylundecanal**

\[
\text{CH}_3\text{(CH}_2\text{)}_8\text{CHCHO}
\]

Used as a fatlike flavoring agent in food; sp. gr. 0.822–0.830
Storage: full, tight, container in a cool, dark place

**methyl violet** An indicator that is green when the pH is less than 2, blue between pH 2 and 3, and violet for pH above 3; mix 0.1 g per 100-ml water

**methyl yellow (p-dimethylaminoazobenzene)**

\[
\text{N}=\text{N}\text{N} = \text{C} = \text{C}(\text{CH}_3)_2
\]

A pH indicator that has a pH range of 2.9–4.0; red in the acid direction and yellow in the base direction

**metmyoglobin** Oxidized form of myoglobin, the brown-colored pigment of stale meat
See Part 2: Meat Pigment; Nitrate, Meat Curing

**metogo** A nonalcoholic, sour drink made from maize, millet, and sorghum

**metric** A system of measure based on meter, kilogram, second, ampere, kelvin, and mole

**metsastaja** A moist, cooked, smoked Finnish sausage made from finely chopped, heavily seasoned (garlic) beef and pork and stuffed into 75-mm artificial casings

**mett** A semidry, pork sausage

**metton** A mysost-type cheese made from cow’s milk

**mett(w)orst, boeren** A dry, uncooked, smoked or unsmoked Dutch sausage made from coarsely chopped, mildly seasoned pork that is fermented and stuffed into a pork casing

**mettwurst ("smearwurst"; teawurst) 1** A soft (spreading consistency), beef (60–70%) and pork sausage that is processed at low temperature and tied in 2–3-in. lengths; sometimes contains liver; often sold in fresh or uncooked, smoked form. A moist, uncooked, smoked or unsmoked American sausage made from medium to coarsely chopped, mildly seasoned (pepper, coriander, ginger, allspice, and often paprika) beef or beef and pork (often made with \(\frac{3}{4}\) cured beef and \(\frac{1}{4}\) cured pork) and stuffed into a large diameter link or ring, beef, pork, or artificial casing;
by-products and extenders usually not permitted, but beef hearts can be used; max. 3% added water and max. 50% fat. 2) A dry, uncooked, smoked Australian sausage made from coarsely chopped, medium seasoned, beef that is-stuffed into artificial casings. 3) A moist or semidry, uncooked, smoked, Austrian sausage made from mildly seasoned (nitrite) beef and pork and stuffed into 30-mm artificial casings. 4) An uncooked, smoked sausage made with beef and pork seasoned with allspice and mustard. 5) A semidry, uncooked, smoked French sausage made from medium chopped, mildly seasoned, beef and pork, fermented and stuffed into beef or pork casings; spreadable
See Part 2: Sausage Identification; Sausage, Types

mêttwurst, gekochte A moist, cooked, smoked western German sausage made from coarsely chopped beef and pork sausage and stuffed into an artificial casing

mêttwurst, Irish A semidry, uncooked, smoked sausage made from finely chopped, medium seasoned, pork that is fermented and stuffed into an artificial casing

mêttwurst, Norwegia A dry, uncooked, smoked sausage made from medium chopped, heavily seasoned, beef and pork sausage that is fermented and stuffed into an artificial casing

mêttwurst, Swiss A moist or semidry, uncooked, smoked sausage made from fine, medium, or coarsely chopped, medium seasoned beef and pork and stuffed into an artificial casing

mêttwurst, westfälische A dry, uncooked, unsmoked western German sausage made from coarsely chopped, medium seasoned, beef and pork that is fermented and stuffed into a pork casing

metz A semidry (air dried 5 days) sausage made from cured, lean beef and pork and cured bacon; finely chopped and cool smoked

metzo (metzos; metzot) An unleavened, flat bread made from flour and water

metz sausage A medium to coarsely chopped, uncooked, smoked or unsmoked, American sausage; fermented and/or dry or semidry; available in links, rings, or large diameter casings

meunière, à la Dipped in flour, heated in butter, and served with brown butter, parsley, and lemon

meursault A dry, white wine

mevalonic acid

\[
\begin{align*}
\text{HOOCCH}_2 &= \text{C—CH}_2\text{CH}_2\text{OH} \\
\text{OH} &
\end{align*}
\]

Acetate-replacing factor for growth of several microorganisms; a precursor of cholesterol, carotenoids, and ubiquinones

Mexican Food habits:
Carbohydrates—potato, rice
Vegetables—beans, peas, tomato
Traditional food—chili, chili con carne, tamales, tortillas

Mexican altura A coffee
Types:
Coatepec—premier mild coffee
Oaxacas—sharper taste
Plumas—sharper taste

Mexican altura, coatepec A fairly mild coffee with a fresh taste, delicate aroma, and a slight nutty flavor

Mexican black bean A bean with yellow pods and black seeds

Mexican cress See nasturtium

Mexican platyfish (Platypoecilus maculatus) A food fish

Mexican sage See oregano

Mexican spinach See orache

Mexican squash A semidry, uncooked, smoked sausage made from finely chopped, medium seasoned, pork that is fermented and stuffed into an artificial casing

mezr An alcoholic beer

mezzoradu Yogurt

mf See microfarad

Mg Symbol for the element magnesium

mg See milligram

mgb A clear, mildly alcoholic, sorghum beer

M green yeast and mold broth See Part 2: Microbiological Media

M.H.U. See pepper (capsicum)

mian-baw A bread

miang A sour snack made from fermented tea leaves

micelle A tight bundle of linear starch molecules and linear segments of branched molecules

mi-chevre A French cheese made from goat’s and cow’s milk, with savory leaves pressed into the surface

michili See Chinese cabbage

micro (μ) 1) Prefix for quantities one million times smaller than the base unit; prefix indicating 10⁻⁶. 2) Prefix meaning “very small,” e.g., microorganism

microaerophile An organism that is inhibited by normal oxygen atmospheric pressure but can survive at reduced pressure; must have only limited amounts of oxygen

microampere (μA) One milliampere of an ampere

microassay culture agar See Part 2: Microorganism, Culture Media, Dairy and Food Products; Microorganism, Media

Microbacterium A gram-positive, non-spore-forming rod that resists pasteurization; survives 10 minutes at 80°C

microbe A microorganism, e.g., bacteria, protozoa, and fungi

microbiology The study of bacteria and other microorganisms (yeasts, molds, etc.) See Part 2: Microbiological Standards, Dairy

Micrococcus A sphere-shaped microorganism that may survive pasteurization

See Part 2: Spoilage, Protein Foods
micro-cool value A value that containers pass through when they exit from the pressure shell in a continuous agitating retort and are sprayed with water for cooling

microcrystalline cellulose (purified alpha cellulose) A nonfibrous, cellulose derivative hydrocolloid used with other stabilizing ingredients in food systems

microcrystalline wax A substance added to paraffin to reduce the brittleness

microfarad (μF; mf) A measure of electrical capacity; one-millionth of a farad

1 μF = 9 × 10⁻⁶ statfarads

= 1 × 10⁻⁶ farads

= 1 × 10⁻¹⁵ abfarads

microfiche (fiche) Microfilm the size of a postcard that contains up to 98 pages (8.5 × 11 in.) reduced 22 times

microflora The microbial life in a given region

microgram (μg; mcg; γ) A measure of mass; one-millionth of a gram; sometimes called a gamma (γ)

1 μg = 1,000 nanogram (ng)

= 0.001 milligram (mg)

= 0.000,001 gram (g) = 1/1,000,000 gram (g)

= 3.53 × 10⁻⁸ ounce (oz; avdp)

microhm (μΩ) 1 μΩ = 1,000 abohms

= 1 × 10⁻⁶ ohms (Ω)

= 1 × 10⁻¹² megohms (MΩ)

microingredient A ingredient of a mixture measured in milligrams, micrograms, or parts per million

micro inoculum broth See Part 2: Microorganism, Culture Media, Dairy and Food Products; Microorganism, Media

microliter (μl; λ) A measure of volume

1 μl = 1 cubic millimeter (mm³)

= 0.27 × 10⁻³ dram

= 6.1 × 10⁻⁶ cubic inches (in.³)

= 1 × 10⁻⁶ liter (l)

micrometer (μm) 1) One-millionth of a meter. 2) A caliper for making precise measurements See micron

micromicron (μμ) A measure of length; more commonly expressed as 10⁻¹² m

1 μμ = 0.001 nanometer (nm)

= 0.000,000,001 millimeter (mm)

= 1 × 10⁻¹² meter (m)

micron A measure of length (μm, current designation; μ, old designation)

1 μm = 1 × 10⁴ angstroms (Å)

= 1,000 nanometers (nm)

= 0.039370 mil (thickness)

= 0.001 millimeter (mm)

= 1 × 10⁻⁴ centimeter (cm)

= 3.937 × 10⁻⁵ inch (in.)

= 10⁻⁶ meter (m)

micronutrient See mineral; trace element

microorganism A variety of large groups consisting of living single cells or cell clusters; any organism small enough to be indistinguishable with the unaided eye; organisms that can only be seen with a microscope; a minute, usually microscopic, living organism. A living organism consisting of a single cell, which reproduces asexually; while some types are infective, many others are not; some (such as nitrogen-fixing bacteria) are beneficial. Various forms include bacteria, algae, yeasts, molds, etc.

See Part 2: Bacteria on Chickens at Various Holding Temperatures; Culture Media; Intestinal Microorganisms; Intestinal Microorganisms in Triple-Sugar Agar; Microbial Toxins; Microbiological Examination of Dairy Products; Microbiological Media; Microorganism, Culture Media, Dairy and Food Products; Microorganism, Culture Media, Water and Sewage, Standard Methods; Microorganism, Media; Microorganism, Selective and Differential Broths and Media, Water Filtration Plant; Microorganism Reactions on Differential Tube Media; Most Probable Number; Most Probable Number, Bacterial; Rot Spoilage; Spices, Microbial Content; Water Activity, Organisms and Food

microscope An optical instrument used to view small objects by means of glass or magnetic lens systems

microsmatic A poor sense of smell

microtome An instrument for cutting thin sections for microscopic observations

microwave (high frequency) High-frequency electromagnetic energy (300–30,000 megahertz, MHz); frequencies assigned for cooking are 915 and 2450 MHz. Microwaves are produced by an electron tube called a magnetron; the microwaves cause the water molecules in food to vibrate, which produces heat that cooks the food; there is no residual radiation remaining after microwave production has stopped

Cooking containers:

Ceramic

Glass

Paper

Plastic

See Part 2: Microwave Cooking, Fresh Vegetables; Microwave Cooking, Frozen Vegetables; Microwave Cooking, Fruit; Microwave Processing Time: Waves, Energy-Producing

MID Minimum identifiable difference

mid-bloom 1/10–2 of plants in bloom

middagsgrill A moist, cooked, smoked Norwegian sausage made from finely chopped, mildly seasoned beef and pork that is not stuffed into a casing

middagskorvett A moist, cooked, smoked Swedish sausage made from finely chopped, medium seasoned (potato starch, skimmed milk powder) beef and pork sausage and stuffed into a peelable, artificial casing

Composition: 11% fat

middelbaar An edam-type cheese

Middlebrook See Part 2: Microorganism, Media
middles Natural casings used in the meat trade; made from the middle part of the large intestine of pork See also narrow casings; wide-end middle; fat-end middle
See Part 2: Casings, Animal; Casings, Hog and Beef; Casings, Terms

Middle White A white breed of British swine that is stocky and thicker and shorter than the Large White; has a dished face and turned-up snout

middling The inner portion of wheat kernel that is difficult to granulate See farina
See Part 2: Cereal By-Products Composition

midori A green, melon-flavored, low alcoholic liqueur

midriff See diaphragm

midzhur A white, brined cheese made from sheep's milk

mie See mee

mie-chiu A rice wine

mignonette A coarsely ground, white or black pepper See Part 2: Essential Oils

mignot 1) A soft to semisoft, strongly flavored, French cheese made from cow's milk with rennet added and ripened by surface bacteria.
Types:
   Passé—ripened cheese
   White—fresh cheese
   2) A dry biscuit

mignouet A strongly flavored, cow's milk cheese with a red-brown rind

mihalic A ewe's milk cheese

mikaeilian A moist or dry, cooked Iranian sausage made from finely chopped beef, lamb, and goat and stuffed into beef, sheep, or artificial casings

mil A unit of linear measure usually used in reference to thickness
   1 mil = 0.00254 centimeter (cm)
   = 0.001 inch (in.)
   = 8.333 x 10^-6 feet (ft)
   = 2.778 x 10^-9 yards (yd)
   = 2.54 x 10^-8 kilometer (km)

Milanese Food prepared in the style of Milan

Milano A salami made from beef or beef and pork and seasoned with garlic

Milano salami A dry, uncooked, unsmoked Australian sausage made from coarsely chopped, heavily seasoned (garlic), beef, stuffed into artificial casings, and fermented See Milan salami

Milan salami (Milano salami) A finely cut, dry (moisture–protein ratio 1.9:1), Italian sausage made from beef, pork, and pork fat and spiced with garlic; has a distinctive cording See Milano salami

Milan-type salami A dry, uncooked, unsmoked Greek sausage made from finely chopped, medium seasoned beef and pork, fermented and stuffed into pork or artificial casings

milchig A dairy product

mild cheese See cured cheese

mildew (Erysiphe graminis) See alternaria rot

mildew, downy A fungus that affects the leaves (greenish spots on upper surface; grayish growth underside), fruit (soft and light brown with white growth or green–brown and wrinkled), and shoots (thickened and misshapened) of grapes
Control: sunny area; remove infected parts; select appropriate varieties; fungicide spray

mildew, powdery [Podosphaera oxyacantha; Sphaerotheca pannosa; P. leucotricha (pears)]
1) A fungus that causes white, powdery growth on grapes; berries may appear rusty and scaly.
Control: resistant varieties; sunny location; fungicide spray
2) A fungus that may infect the leaves of apple and peach trees and raspberry, blackberry, and strawberry plants; leaves are covered with a white coating and are curled
Prevention: sun; good air; drainage; resistant varieties; fungicide spray

mile (mi) A measure of distance
British:
   1 mi = 1.60934 kilometers (km)

International nautical mile:
   1 mile = 6075.155 feet (ft)

U.S. statute:
   1 mi = 1.609 x 10^5 centimeters (cm)
   = 63,360 inches (in.)
   = 5,280 feet (ft)
   = 1,760 yards (yd)
   = 1,609.34 meters (m)
   = 320 rods (rd)
   = 8 furlongs
   = 1.60935 kilometers (km)
   = 1.15155 statute miles

U.S. nautical:
   1 mi = 72,962.5 inches (in.)
   = 608.02 feet (ft)
   = 2,025.34 yards (yd)
   = 1,852.00 meters (m)
   = 368.40 rods (rd)
   = 1.8521 kilometers (km)

mile per hour (mi/h; mph) A measure of velocity
   1 mi/h = 88 feet per minute (ft/min)
   = 44.7041 centimeters per second (cm/s)
   = 26.82 meters per minute (m/min)
   = 1.60935 kilometers per hour (km/h)
   = 1.46667 feet per second (ft/s)
   = 0.86839 knot U.S.
   = 0.44704 meter per second (m/s)
   = 0.16665 mile per minute (mi/min)

mile per hour per second (mi/h-s) A measure of acceleration
   1 mi/h-s = 44.7 centimeters per second per second (cm/s^2)
   = 1.6093 kilometers per hour per second (km/h-s)
   = 1.46667 feet per second per second (ft/s^2)
   = 0.44704 meter per second per second (m/s^2)
470 mile per minute (mi/min) A measure of velocity

1 mi/min = 2,682 centimeters per second (cm/s)
= 88 feet per second (ft/s)
= 60 miles per hour (mi/h; mph)
= 1.6093 kilometers per minute (km/min)
= 0.8684 knots per minute

milfoil A woodland plant that has leaves that are used in salads

milk A class name for milk, concentrated milk, or dried milk. A nutritive liquid secreted by the mammary gland. Fortified milk has vitamins and sometimes minerals added. Cow's milk has min. 3.25% milk fat and 8.25% nonfat milk solids; fat is milk fat or butterfat; nonfat solids include protein, milk sugar, and minerals. Grade A (if it meets FDA or state standards under the Pasteurized Milk Ordinance) designates wholesomeness rather than quality. Milk is produced by healthy cows and processed, pasteurized, and handled under strict sanitary control

46 1/2 quarts (qt) = 100 pounds (lb)
1 gallon (gal) = 8.6 lb
1 gal, cream = 8.4 lb
1 cup = 245 grams [8.5 ounces (oz)]
1 tbsp = 1 oz
1 tsp = 1/2 oz
1 qt, milk = 3 1/2 oz, dried, skimmed milk + 1 1/2 oz, butter
= 4 1/2 oz, dried, whole milk
= 17 oz, evaporated milk
2 cups = 1 lb
1 cup, milk = 1/2 cup evaporated milk + 1/2 cup water
= 1 cup fluid, nonfat dry or skimmed milk + 2 1/2 tsp butter or margarine
1 cup, milk = 3 tbsp sifted, nonfat, dry milk + (1 cup - 1 tbsp water)
= 1/4 cup instant, nonfat, dry milk + (1 cup - 1 tbsp water)
sp. gr.: whole milk 1.032; skimmed milk 1.035; milk fat 0.9

General composition

| Carbohydrate | Fiber | Ash | pH
|--------------|-------|-----|------
| Moisture | Protein | Fat | Carbohydrate | Fiber | Ash |

Cholesterol Calcium Sodium

<table>
<thead>
<tr>
<th>Milk</th>
<th>Cholesterol (mg/cup)</th>
<th>Calcium (mg)</th>
<th>Sodium (mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole</td>
<td>34</td>
<td>288</td>
<td>122-130</td>
</tr>
<tr>
<td>2% fat</td>
<td>22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1% fat</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skimmed</td>
<td></td>
<td>296</td>
<td></td>
</tr>
</tbody>
</table>

Pasteurization

<table>
<thead>
<tr>
<th>Min. temp (°F)</th>
<th>Min. time (min)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>145</td>
<td>30</td>
<td>—</td>
</tr>
<tr>
<td>161</td>
<td>0.25</td>
<td>Promptly cooled to 40°F</td>
</tr>
</tbody>
</table>

Homogenized milk is mechanically treated to reduce size of fat globules and thus stabilize the emulsion so that cream does not rise to top.

Vitamin D milk contains 400 USP (or IU) units per quart.

Stain removal from cloth—scrape excess, soak in cold water with enzyme product, and wash in hot suds; use cleaning fluid if necessary.

Storage: store at 40°F; freezing point 0.530°C (a rise indicates adulteration); keep out of sunlight; keep tightly closed; use within 3–5 days. See homogenized milk; lactic acid.

See Part 2: Animal Foods, Composition; Calcium, Daily Recommendations; Calcium Equivalence for Milk; Calories, Daily Recommendations; Canned Spoilage Related to pH; Cholesterol Control; Dairy Products, Composition; Dairy Terms; Fluid and Fermented Milks, Composition; Food, Composition; Food Guide; Glutamate; Microbiological Media; Microbiological Standards, Dairy; Milk, Amino Acids; Milk and Cheese Composition; Milk and Milk Products, Vitamin Content; Milk Breeds, Composition; Milk Composition; Milk, Concentrated Products; Milk, Dry Products; Milk, Fatty Acids, Seasonal; Milk, Mammals, Composition; Milk, Physical Properties; Milk, Species; Milk, Total Solids; Minerals, Food; Minerals, Plant or Animal Tissue; Minerals (Trace), Limits; Moisture in Biological Materials, Nicotinic Acid, Food; Pantothenic Acid Content; pH Values of Biological Materials; Portion Size; Protein Factors; Riboflavin, Daily Recommendations; Riboflavin, Food; Saturated Fatty Acids; Spoilage, Carbohydrate Foods; Spoilage, Fat in Foods; Spoilage, Protein Foods; Storage Times; Thermophiles; Thiamin, Daily Recommendations; Thiamin, Food; Vitamin A, Daily Recommendations; Vitamin A, Food; Vitamin A, Milk and Milk Products;
milk allergy. Milk protein that is normally broken down in digestion is absorbed directly into the bloodstream; may result in sneezing, wheezing, abdominal pain, diarrhea, rashes, dizziness, or headache.

milk assessments. Deductions from dairy farmers' prices to finance special federal government supply-reduction programs. See milk production termination program.

milk bread. A white bread that contains at least one-third of its weight as whole milk (or equivalent) for the liquid portion instead of water.

milk chocolate (candy bar chocolate). A mixture of chocolate and condensed milk or dry milk powder; contains not less than 12% milk solids.

milk chocolate drink; chocolate-flavored drink; chocolate-flavored milk; chocolate milk

milk, condensed. See condensed milk.

milk, cultured. Milk or milk products to which selected bacterial cultures are added to produce characteristic flavor and texture.

milk custard. See Part 2: Dairy Products, Composition I.

milk, dialyzed. Milk that has been separated by membrane to remove salts and sodium.

milk diversion program. A program whereby milk producers receive direct payments for agreeing to reduce production.

milk drink. See Part 2: Cultured Dairy Products, Composition.

milk, dry whole. See dried, whole milk.

milk, evaporated. See evaporated milk.

milk fat (butterfat). Fat obtained from milk; cows' milk ranges from 3.3 to 5.4%.

<table>
<thead>
<tr>
<th>Carbon atoms</th>
<th>% of total</th>
<th>Physical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturated</td>
<td></td>
<td>Iodine No. 25–45</td>
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<tr>
<td>4</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>Saponification value 210–240</td>
</tr>
<tr>
<td>10</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>3</td>
<td>Melting point 28–36°C</td>
</tr>
<tr>
<td>14</td>
<td>9</td>
<td>Specific gravity 0.930–0.940 at 15.5°C</td>
</tr>
<tr>
<td>16</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>13</td>
<td>Refractive index 1.460 at 25°C</td>
</tr>
<tr>
<td>20</td>
<td>tr</td>
<td></td>
</tr>
<tr>
<td>Odd no.</td>
<td>2</td>
<td>Titer 33–38°C</td>
</tr>
<tr>
<td>Branched chain</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

milk, filled. See filled milk.

milk, goat's. Goat's milk is usually pure white, has the same keeping quality as cow's milk, and can be used in the same way; has small fat globules that make it easy to digest; higher in fat and stronger in flavor than cow's milk.

Composition: moisture 87–87.5%; protein 3.5–3.6%; fat 4.1–4.3%; carbohydrate 4.4–4.6%; fiber 0%; ash 0.8–0.9%.

milk, grade A. Must comply with U.S. Public Health Service's recommended "Grade A Pasteurized Milk Ordinance". Milk must come from healthy cows; produced and processed under sanitary conditions; pasteurized to kill harmful bacteria.

milk, human. Human milk is one-third sweeter, has less than one-half the casein, and more fat than cow's milk.

Composition: moisture 87–88%; protein 1%; fat 4.3–4.4%; carbohydrate 6.8–6.9%; fiber 0%; ash 0.2%.

milk, ice. See ice milk.

milk, imitation. Made from lauric acid oils or a blend of hydrogenated vegetable oils.

Composition: moisture 88.2%; protein 1.7%; fat 3.4%; carbohydrate 6.2%; ash 0.5%.

milk, Indian buffalo. Composition: moisture 83–84%; protein 3.7–3.9%; fat 6.8–6.9%; carbohydrate 5.1–6.3%; fiber 0%; ash 0.7–0.8%.


milk, lowfat. Milk containing between 0.5 and 2% milk fat; fortification with vitamin A (at least 2,000 IU per quart) and addition of vitamin D (400 IU per quart) is optional; can be made by mixing equal parts of whole milk and skimmed milk or reconstituted, instant, nonfat, dry milk; 2% fat; nonfat milk solids added.

1 cup = 125 calories.

milk marketing orders. Establishes minimum prices that buyers must pay for fluid milk.
milk, nonfat  Skimmed milk with no more than 0.1% fat
milk, nonfat dry milk solids  See nonfat dry milk solids
milk of magnesia  Antacid hydrate of magnesium oxide; mild laxative
milk only record (MOR)  Dairy Herd Improvement Association supervisory records of monthly milk weights
milk powder  A powder prepared by spray-drying whole milk
  3 1/2 cups = 1 pound
  1 pound = 3 1/2 quarts, fresh milk
  1 cup = 4 3/4 oz
  1 tbsp = 3 3/4 oz
  1 tsp = 1/8 oz
See Part 2: Microbiological Standards, Dairy; Riboflavin, Food
milk production termination program (whole-herd buyout)  A program where dairy farmers are paid to quit producing milk for a period of 5 years
milk pudding  See Part 2: Dairy Products, Composition II
milk, raw  Milk as it comes from the cow; has not been pasteurized or processed
milk serum  See whey
milkshake  A whipped mixture of milk, ice cream, flavoring, and sometimes eggs
See Part 2: Calcium Equivalence for Milk; Dairy Products, Composition II
milk, sheep's  Composition: moisture 80–81%; protein 5.8–6.0%; fat 7%; carbohydrate 5.3–5.4%; fiber 0%; ash 0.9–1.0%
milk, skimmed  1 cup = 85 calories
See skimmed milk
milk solids nonfat  The content of carbohydrates, proteins, and minerals in milk
See Part 2: Cultured Dairy Products, Composition
milk soup  Milk combined with vegetables, cereal, or fish
milk, sour  Milk curdled by the formation of lactic acid produced by the normal growth of lactic acid bacteria; milk soured in one of the following ways:
  Naturally by lactic acid bacteria
  Inoculated with lactic acid bacteria
  Addition of vinegar
  Addition of lemon juice
  1 cup, sour milk
    = 1 cup, sweet milk + 1 tbsp lemon juice
    = 1 cup, sweet milk + 1 tbsp vinegar
milk stage  A period after bloom during which seeds begin to form
milk stone  Deposits of calcium and magnesium phosphates, proteins, and other components precipitated when milk is heated above 140°F
milk sugar  See lactose
milk toast  Toast soaked in a mixture of milk, butter, salt, sugar, and spices
milk, vitamin A added  The vitamin A content has been increased by at least 2,000 IU per quart
milk, vitamin D added  The vitamin D content has been increased by at least 400 IU per quart
milk, warm  105–115°F
milkweed (sow thistle; Asclepias spp.)  A perennial weed having a toxic principle; the young leaves may be used in salads or cooked like spinach; roots used like salsify
See Part 2: Poisonous Plants
milk, whole  1 cup = 150 calories
mill by-product  A secondary feed produced in milling
mill dust  Fine, undetermined feed particles produced in processing and handling feed
mille feuilles  Literally, a thousand leaves; a term used in relation to paper-thin pastries
millstones  Date of vintage
millet  An annual, grained (looks similar to mustard seed) plant often used for grazing and hay; a tropical, small-grained cereal that is very drought-resistant and used for food; originated in Mediterranean and Middle East areas. Approx. nutrient used for 2 tons of hay: 53 lb N, 14 lb P₂O₅, 86 lb K₂O
Tropical types:
  Bulrush millet (bajra; cattail millet; candle millet; dukn; penicillaria; pearl millet; Pennisetum americanum; P. typhoides)—pasture, silage, human food; height 1.25–3 m; head 20–40 cm, 2.5 cm in diameter; seed 3–4 mm, 2.25 mm wide
  Finger millet (African millet; birdsfoot; coracana millet; ragi; Eleusine coracana)—human food; stores well; height ½–1 m
  Pearl millet (cattail; Pennisetum glaucum)—grown in southern states
  Sorghum (Sorghum vulgare)—green millet, kaffir corn, guinea corn, giant millet; white grain (human food and livestock feed); red grain (beer); sweet (stems are crushed for syrup)
Temperate types:
  Browntop millet (Panicum ramosum)—pasture and hay
  Common millet (hay millet; Hershey millet; hog millet; Indian broom-corn; proso; Panicum miliaceum)—food for man and livestock; 100 days average crop growth period; 15.0 MJ kg⁻¹ edible energy value; contains carbohydrates, 10% protein, and 4% fat
  Foxtail millet (Italian millet; Setaria italica)—human food; hay; silage; beer
  Japanese millet (barnyard; billion-dollar grass; Echinochloa frumentacea)—food and forage
  Koda millet (ditch; Paspalum scrobiculatum)—food and forage
  Little millet (Panicum miliaceum)—like common millet except smaller and will produce a moderate yield on poor soils and in dry or wet weather
  Composition (whole grain): moisture 12%; protein 10–12% (finger millet, 5–7% protein; newer varieties, 8–20% protein); fat 2–5%; carbohydrate 73%; fiber 2–7%; ash 2–3.5%; seed = 45–50 lb/bu. Lysine is the first limiting amino acid and threonine is the second.
Food Storage: tightly closed container in a cool place or freeze for longer storage
See Part 2: Cereal Composition; Cereal Fortification; Cereal Nutrient Content; Cereals, Vitamin and Mineral Content; Seed, Germination; Tocopherols
millet beer  A general term for clear, mildly alcoholic beer made from millet

millet, cracked  Size between whole millet and millet meal

milli- (m)  A prefix for quantities 1000 times smaller than the base unit; indicating $10^{-3}$

milliampere (mA)  $10^{-3}$ ampere; one-thousandth of an ampere

millier (metric ton; tonne)  
1 millier = 1,000,000 grams (g)  
= 2,204.6 pounds (lb; avdp)  
= 10$^3$ kilograms (kg)  
= 1 cubic meter (m$^3$)

milligram (mg)  A measure of mass  
1 mg = 0.015432356 grain  
= 0.005 carat (metric)  
= 0.001 gram (d)  
= 0.000,771,618 scruples (apothecary)  
= 0.000,643,014,8 pennyweight (dwt)  
= 0.000,564,383,3 dram (troy; apothecary)  
= 3.527396 $\times$ 10$^{-5}$ ounce (oz; avdp)  
= 2.67923 $\times$ 10$^{-6}$ pound (lb; troy; apothecary)  
= 2.20462 $\times$ 10$^{-6}$ pound (lb; avdp)  
= 1 X 10$^{-6}$ kilogram (kg)

milligram per liter (mg/l; ppm)  
1 mg/l = 8.345 pounds per million gallon  
= 1 part per million

millihenry (mH)  
1 mH = 1,000 henries

milliliter (ml)  A measure of volume  
1 ml = 0.015432356 fluid ounce (Brit.)  
= 0.016231 fluid ounce (U.S.)  
= 1.000027 cubic centimeters (cm$^3$; cc)  
= 0.061024 cubic inch (in.; Brit.)  
= 0.03520 ounce (oz; Brit, fluid)  
= 0.03382 ounce (oz; U.S. liquid)  
= 0.0084538 gill (U.S.)  
= 0.00211 pint (pt; U.S. liquid)  
= 0.001 liter (l)  
= 2.6418 $\times$ 10$^{-5}$ gallon (gal; U.S.)  
= 2.199 $\times$ 10$^{-4}$ gallon (gal; Brit.)  
= 3.5316 $\times$ 10$^{-5}$ cubic feet (ft$^3$)  
= 8.387 $\times$ 10$^{-5}$ barrel (U.S.)

29.6 ml = 1 fluid ounce

millimeter (mm)  A measure of length  
1 mm = 1,000 microns (µm)  
= 0.039370 inches (in.; Brit.)  
= 0.000,304,800 feet (ft)  
= 0.000,999,999,249,344 yards (yd)  
= 0.000,999,999,560,161 meter (m)  
= 1 $\times$ 10$^{-6}$ kilometer (km)  
= 6.212 $\times$ 10$^{-7}$ mile

millimeter columns of mercury (Hg 13.5953 sp. gr.)  A measure of pressure  
1 millimeter column  
= 2.78468 pounds per square foot (lb/h$^2$)  
= 0.04461 foot (columns of water, max. density at 4°C, 39°F)  
= 0.03937 inch (columns of mercury, Hg)  
= 0.01934 pound per square inch (lb/in.$^2$; psi)  
= 0.01360 meter (columns of water, max. density at 4°C, 39°F)  
= 0.001360 kilogram per square centimeter (kg/cm$^2$)  
= 0.001316 atmosphere, standard (760 mm Hg)

millimicron (nanometer; micromillimeter)  A measure of length (nm, current designation; µm, old designation)  
1 nm = 10 angstroms (Å)  
= 0.001 micron (µm)  
= 0.000001 millimeter (mm)  
= 1 X 10$^{-6}$ centimeter (cm)  
= 0.000,000,393701 inch (in.)  
= 1 $\times$ 10$^{-9}$ meter (m)

milling  Separation of the endosperm of a grain from the germ and bran; accomplished by cracking or partial crushing, alternated with sifting and sorting

million gallons per day  A measure of flow rate  
1 million gallon/day  
= 694.4 gallons per minute (gal/min)  
= 1.54723 cubic feet per second (ft$^3$/s)

millipede  A garden pest

Millon test  A test for tyrosine or proteins containing tyrosine; a red color is produced when protein is heated with mercury dissolved in nitric acid (Millon reagent). Protein (no tyrosine), negative test; gelatin, faint; carbolic and salicylic acid (phenol group), positive test

See Part 2: Protein and Amino Acid, Color Reactions

mill run  Ungraded and usually uninspected material as it comes from the mill

milo  A type of grain. See also sorghum

See Part 2: Poisonous Plants

milo disease  See Sorghum Diseases

milt (melt; soft roe)  1) Roe of male fish. 2) Animal spleen

mimae  See Part 2: Intestinal Microorganisms in Triple-Sugar Agar

mima-herellea  See Part 2: Microorganism, Media

mimolette  An orange-colored (annatto), hard gouda-type, French cheese

mimosa salad  A salad made from egg yolk, endive, lettuce, spinach, and vinaigrette

minas  A semisoft, mildly acidic, smooth cheese made from cow's milk; eaten fresh or partly matured

mince  To finely cut or cut into fine pieces; to grind; to chop
minced ham 1) A sausage made from the following curried products: 50% lean beef, 25% lean pork, and 25% pork fat, which is finely chopped, seasoned, cooked, and smoked. 2) A moist, cooked, smoked or unsmoked, American sausage made from medium chopped, mildly seasoned, pork (may contain beef) made with cured, lean, ham trimmings and stuffed into a beef or artificial casing or not stuffed into a casing

minced luncheon meat A finely ground, cooked, meat specialty made from lean beef and pork, and spiced and cured

mincemeat A mixture of chopped meat (usually beef), beef fat, apples, raisins, currants, citron, fruit peel, sugar, molasses, and various spices used as the essential ingredient of mince pie; sometimes contains brandy; mixture of apples, raisins, fat, spices, and sometimes meat; ageing (up to 8 months) often improves flavor. Condensed mincemeat contains only 8% moisture; it requires the addition of water and sugar

Required for an 8–9 inch pie: 16 oz regular; 9 oz condensed

1 cup = 10.4–10.6 oz

mince pie Composition [\frac{1}{8} of 9-in. pie (71 g)]: sodium 258 mg; calories 320

mincing Cutting into very small pieces

mineral (inorganic) In food technology, such elements as iron, calcium, chlorine, copper, iodine, phosphorus, etc., which occur in foods in extremely low concentrations; they are often called trace elements

See Part 2: Egg Products, Nutritive Value; Cereal Enrichment; Cereal Fortification; Cereals, Vitamin and Mineral Content; Lemon Juice Composition; Minerals, Plant or Animal Tissue; Minerals (Trace), Limits; Wheat, Minerals; Wheat Products Composition

mineral acid Inorganic acid

mineral mixtures (livestock) Free choice

Mixture #1:
100 lb salt
100 lb ground limestone or oyster shell flour
100 lb phosphatic limestone (not over 0.5% fluorine)

Mixture #2:
80 lb steamed bone meal
20 lb salt

mineral oil A liquid petrolatum product that is not absorbed by the body; used as a laxative

mineral oil, white (liquid petrolatum) A colorless, transparent, oily mixture of refined liquid petroleum hydrocarbons (primarily paraffinic and naphthenic types); used as a food binder, defoaming agent, fermentation aid, lubricant, protective coating, and release agent

Storage: tight container

mineral phosphate

Forms:
- Apatite
- Iron phosphate
- Land rock or land plaster
- River rock or river phosphate

Usually treated with sulfuric acid to increase solubility

mineral water A nonalcoholic water that contains minerals; water containing minerals salts or carbon dioxide; spring or well water that contains minerals such as calcium, iron, lime salts, magnesium, sodium, sulfur, sulfates; some contain natural or added carbon dioxide

Types:
- Aerated (carbon dioxide gas)
- Artificial
- Natural
- Still (not carbonated)

Classified:
- Acidulous—excess of CO2; slight amount of salts
- Alkaline—CO2; alkaline carbonates; sodium chloride; sometimes sodium sulfate
- Arsenical
- Chalybeate
- Sulfurous

See water, mineral

mineral wool A fibrous insulation made by blowing air through hot slag

See Part 2: Insulation

miner's inch 1 miner's inch = 1.5 cubic feet per minute (ft³/min)

minestrone (minestra) A soup made from beef, bacon, and ham, vegetables, and spaghetti, macaroni or rice; thick soup. Also available as a condensed canned, ready-to-eat canned, and dehydrated soup

See Part 2: Soup Composition

<table>
<thead>
<tr>
<th>Minestrone</th>
<th>Moisture (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Carbohydrate (%)</th>
<th>Fiber (%)</th>
<th>Ash (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canned, condensed</td>
<td>82.9</td>
<td>3.5</td>
<td>2.0</td>
<td>9.2</td>
<td>0.6</td>
<td>2.3</td>
</tr>
<tr>
<td>prepared with water</td>
<td>91.3</td>
<td>1.8</td>
<td>1.0</td>
<td>4.7</td>
<td>0.3</td>
<td>1.2</td>
</tr>
<tr>
<td>Canned, chunky</td>
<td>86.7</td>
<td>2.1</td>
<td>1.2</td>
<td>8.6</td>
<td>1.3</td>
<td></td>
</tr>
<tr>
<td>ready-to-serve</td>
<td>4.8</td>
<td>20.0</td>
<td>7.8</td>
<td>53.8</td>
<td>1.9</td>
<td>13.8</td>
</tr>
<tr>
<td>Dehydrated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>prepared with water</td>
<td>91.7</td>
<td>1.7</td>
<td>0.7</td>
<td>4.7</td>
<td>0.2</td>
<td>1.2</td>
</tr>
</tbody>
</table>
Ming Dynasty egg  See hundred year old egg
miniature fruit tree  A natural dwarf that stays small (4–6 ft tall) but produces normal size fruit
minim  A measure of volume
1 minim (Brit.) = 0.059 milliliter (ml)
1 minim (U.S. fluid) = 0.062 ml
minimum daily requirement (MDR)  Minimum quantities of specified vitamins and minerals necessary to avoid dietary deficiencies; established by Food and Drug Administration See recommended daily allowance
minimum price fluctuation  The minimum unit by which the price of a commodity can fluctuate per trade
Minnesota No. 1  An inbred breed of hogs developed from a cross of Danish Landrace (48%) and English Tamworth (52%); it is red with occasional black spots See Part 2: Swine Breeds
Minnesota No. 2  An inbred breed of hogs produced by crossing a Yorkshire (40%) boar with Poland China (60%) sows; the hog is black and white with semiereect ears
Minnow (Phoxinus phoxinus)  A small, freshwater, food fish
Minorca  A Mediterranean class of chicken that has white skin and lays a white-shelled egg
Varieties:
Bantam single-comb black
Single-comb black
Single-comb buff
Single-comb white
Rose-comb black
Rose-comb white
minor defect  A defect not classified as critical or major and whose failure or malfunction would not significantly reduce the effectiveness of the item
min pada  A hot fish pickle
mint (sweet mint; Mentha piperita L. and M. spicata L.)  An aromatic, perennial herb grown for the essential oil distilled from its leaves, which is used for flavoring drinks and in cooking. Leaves are dried and used in summer drinks, teas, jellies, and sauces; fresh leaves are used in salads, vegetables, and candy. Each mint has a different flavor.
Types:
Apple mint; round-leaved mint; royal mint (Mentha rotundifolia; M. spicata)—delicate
Bergamint; lavender mint; orange mint
Bergamot (M. citrata)
Black peppermint (M. piperita)
Brandy mint; balm mint (M. peperita)—oil of peppermint is obtained from this See peppermint
Common mint (M. canadensis)
Dittany
Eau de cologne
Horehound
Horsemint (M. longifolia)
Hyssop—mildly bitter
Japanese (M. arvensis var. piperascens)
Lemon (M. citrata)
Marjoram
Orange mint—delicate
Oregano
Pennyroyal (M. rubra; M. pulegium)
Peppermint; oil of peppermint (M. piperita)—curly mint (black or white) is a type
Pineapple mint (M. citrata)
Red mint (M. rubra)
Rosemary
Round-leaved (M. roundifolia)
Spearmint; curly leaved mint; erba santa maria; green lamb mint; mickerel mint; our lady's mint; pea mint; potato mint (M. spicata; M. viridis)
Thyme
Sold as dried leaves
Fresh storage: wrap stems in damp paper towels and store in plastic bag in a refrigerator for up to 1 week See spearmint
mint herb blend  A scented tea made from black tea and peppermint leaves
mint jelly  A jelly made from a mint infusion
Infusion: Pour 2 1/2 cups boiling water over 1 cup fresh mint; let cool and strain
Jelly preparation: Combine 2 cups mint infusion, 1/4 cup vinegar or apple cider, and 4 1/2 cups sugar; boil until sugar dissolves; add 1/2 bottle liquid pectin and boil for 1 1/2 min; cool; add food coloring, if desired; fill sterilized containers and seal with melted paraffin
mint julip  An alcoholic drink made with whiskey, sugar, and mint
mint oil  An oil obtained by steam distillation from the mint (spearmint, peppermint) plant; it is then mixed with water and alcohol
mint sauce  A vinegared, sweet, seasoned sauce containing mint and used with lamb; made from oil of spearmint, sugar, vinegar, water See spearmint
mint vinegar  Preparation: Rinse and pat mint dry; fill jar lightly with mint; heat (but do not boil) good cider or wine vinegar and pour over mint; cover; let stand at room temperature for 2–3 weeks; strain through cheesecloth and bottle
minute (min) 1) Angle
1 min = 60 seconds (s)
= 0.01667 degree
= 0.0002929 radian
= 0.0001852 quadrant
2) Time
1 min = 60 seconds (s)
= 0.01667 hour (h)
= 0.0006944 day
minute pirate bug  An insect whose adults are generally black marked with white spots or streaks, oval, flat, and about 1/8 in. long. The nymphs are similar to adults, yellowish brown, found on flowers, and under loose bark; they feed on small insects, mites, and eggs and larvae of many kinds of insects
minute steak  A boneless, 1/4 in. thick steak broiled or pan fried for less than 2 min; a very thin steak; a cube steak
See Part 2: Portion Size
MIO  Minimum identifiable odor
MIO medium  See Part 2: Microorganism, Media
mirabelle 1) A small, yellow plum (Prunus insititia).
2) A clear, strong, white liqueur (brandy) distilled from fermented, yellow plums (Prunus)
miraculous fruit  A shrub that produces a tart berry; food eaten after the berry tastes sweet
mirafilm Plastic, shrink wrap

miripolx A seasoning made with carrots, onions, ham, butter, bay leaves, and thyme that is used with meat

mirin A sweet, alcoholic condiment made from coconut milk or glutinous rice

mirliton See chayote

MIR (Management Information System) A specially designed comprehensive data base that includes all relevant data, records, files, etc., required for a given field; all the data are easy to retrieve, up-date, and use

miscella The liquid remaining after distillation of a solvent that was previously used to extract botanical material

miscelingkäse A hard, sharp, loaf-like, greenish yellow, blended cheese

mish A dry, white, brined (very salty) cheese made from goat's milk

miso (soybean paste) A dark, paste food produced by fermentation and aging of mold, rice, barley, soybeans, and salt in wooden barrels for 3 years; flavorful paste made from soybeans often mixed with cereals

misozuke Pickled vegetables, eggs, or fish in red or sweet white miso

mistelli A dessert wine

mistletoe A parasitic plant that often grows in fruit trees; sometimes used as an herb

mistol A fruit that is consumed raw or its juice is fermented into a beverage

mite A sap sucking pest that damages fruit trees and fruit buds, affecting next season's crop; most fruit trees are suitable hosts Control: insecticide spray, e.g., dicofol See cheese mite; orchard mite; rust mite; spider mite See Part 2: Mite

miti hue A sweet, alcoholic condiment made from coconut milk

mito- A prefix meaning thread

mitochondria Enzyme-containing bodies (organelles) found within cells, responsible for most cellular chemistry; these powerhouses or dynamos use glucose as the primary fuel

mitosis A nuclear division that yields two daughter nuclei with the same number of chromosomes as the original cell

mitral valve Heart valve that allows one-way flow of blood from the left auricle to the left ventricle

Mittelrhein The northern Rhine region of Germany that produces hearty, stylish wines

M.I.U. Moisture, insolubles and unsaponifiable; the amount and type of impurities present in a tallow

mix To combine or stir two or more ingredients

mixed broil See mixed grill

mixed culture A culture composed of two or more types of microorganisms growing together

mixed feeding (of infants) Infants receiving some solid foods while still consuming milk

mixed fruit See Part 2: Fruit, Dried, Simmering; Fruit Servings Per Pound

mixed glyceride A triglyceride in which more than one type of acid is present

mixed grill (mixed broil) A dish of fried chops, bacon, and sausages; sometimes also contains kidney, bacon, steak, and liver; a combination of several meats or seafoods and vegetables, most of which are broiled

mixed rot (added egg) An egg in which the membrane of the yolk breaks, allowing the yolk and white to blend

mixed vegetables A mixture containing three or more of the following: beans, green or wax (1/2-11/2-in. cuts) beans, lima (large whole green limas or baby limas) carrots (1/4-3/4-in. cubes) corn, sweet (whole kernel, yellow) peas (sievel sizes 3-5)

When three vegetables are used, use no more than 40% of each; when four vegetables are used, use no more than 35% or less than 8% of each; when five vegetables are used, use no more than 30% or less than 8% of each

1 cup = 180 g (6.3 oz)

mixer An effervescent liquid used to dilute or flavor alcoholic beverages

mixture A combination or blend of two or more substances which may be either uniformly or randomly dispersed. The components of a mixture can be separated by mechanical means (gravity, filtration, distillation, etc.). Mixtures are heterogeneous, and thus differ from chemical compounds, which are homogeneous. Milk is an example of a nonuniform mixture; a sugar solution is a uniformly dispersed mixture See also heterogeneous; compound

misithra (myzithra) A mild, moist, soft, cottage cheese or ricotta-like cheese made from feta whey and ewe's or goat's milk See Part 2: Milk and Cheese Composition

misithra A soft Yugoslavian cheese made from sheep's milk

ml See milliliter

MLC See Meat and Livestock Commission

M-line A dark line bisecting the H-band in muscle fiber

mlyntae A wheat and buckwheat pancake

mm See millimeter

M.M.B. Milk Marketing Board (English)

MMWR Morbidity and Mortality Weekly Reviews

Mn Symbol for the element manganese

Mo Symbol for the element molybdenum

mocha 1) A coffee-chocolate flavoring. 2) A variety of coffee; a fragrant coffee with distinctive flavor. 3) Coffee dishes; dish with coffee flavor

mocha-java blend A blend of coffee; 2/3 java for richness and 1/3 mocha for sharpness
mocha yemen  A sharp, sweet coffee obtained from small, hard, coffee beans grown in the southwest corner of the Arabian peninsula
mock chicken  See Part 2: Veal Chart; Veal Cuts
mock crusta  A fruit juice-type, nonalcoholic drink
mock duck  A specialty cut of lamb made from the outside of the shoulder  See Part 2: Lamb Cuts
mock goose  A dish made from beef heart
mock halibut (Greenland halibut)  A food fish
mock turtle  Calf's head meat and condiments made to simulate turtle meat
mock turtle soup  A substantial, gelatinous soup; a dark colored, strong-flavored soup made from meat juices, tomatoes, rice flour, sherry, and spices and containing gelatinous meat from calves' heads (simulating turtle meat)
modality  Differentiation of a sense, e.g., sweet, sour, salty, bitter
mode  The class that has the greatest frequency
mode, à la  1) In the style of. 2) With ice cream. 3) A dessert served with ice cream, as a pie, melon, etc.
modem  A device to interface the computer to a telephone line
modified American plan (MAP)  A room rate that includes two meals—breakfast and either lunch or dinner
modified food starch  A food stabilizer, thickener, and texturizer
modified starch  A chemically treated starch  See also starch
modified wine  A wine made by alcoholic fermentation of grapes and sugar or syrup (min. 65% sucrose); max. 11% alcohol (by volume)
moelle de chicoree  Stumps of curly endive
mohair  Coarse wool sheared from Angora goats
moist heat cooking  A method of cooking the less tender cuts of meat by surrounding them with hot liquid or vapor; this includes braising and cooking in water
moisture  The water content of foods; also steam or atmospheric water vapor  See also humidity

See Part 2: Bananas, Composition; Beans, Peas and Nuts; Cereal Nutrient Content; Cheese Composition; Composition of Food; Concentrated and Dried Milk Products; Connective Tissue, Composition; Creams, Butter and Frozen Desserts; Cultured Dairy Products, Composition; Dairy Products, Composition; Egg Composition; Egg Specifications; Fats and Oils, Composition; Fish and Shellfish Composition; Fluid and Fermented Milks, Composition; Food, Composition; Fruit Composition; Grain Analysis; Grain Products Composition; Hide, Layers; Honey Composition; Macronutrient and Noodle Composition; Maple Syrup Composition; Meat and Meat Products Composition; Meat Composition; Milk and Cheese Composition; Milk Breeds, Composition; Milk Composition; Milk, Concentrated Products; Milk, Dry Products; Moisture, Drying; Moisture in Biological Materials; Oil Meals Composition; Oils and Fats Composition; Packinghouse By-Products Composition; Plant Foods, Composition; Poultry Composition; Pulses, Nuts and Seeds Composition; Sausage Composition; Seed, Chemical Composition; Seed Composition; Soups, Composition; Soybean Composition; Starches and Starchy Roots Composition; Sugars and Sweets Composition; Sugars and Syrups Composition; Sweetening Agents; Tomato and Tomato Products, Composition; Turkey Composition; Vegetable Composition; Wastes, Agricultural and Industrial

moisture analysis  Determination of water content by drying at a specific elevated temperature, with or without vacuum, for a specific time and reporting the loss in weight as moisture; distillation as an azeotropic mixture is sometimes used

moisture and volatile matter  Substances that vaporize upon heating; weight loss (escape in vapor state) after heating for a prescribed time under controlled conditions

moisture content  Percentage of water (free and bound) present

moisture-vapor-proof  A packaging material that prevents moisture loss from foods during storage (e.g., frozen)

moisture-vapor-resistant  A packaging material that protects food from moisture loss during storage (e.g., frozen)

molar (M)  The concentration of a solution that contains 1 mole of solute in 1,000 g of solvent; sometimes called a formal solution

molar (M)  A solution of a concentration such that 1 liter of the solution contains 1 mole (gram-molecular weight) of the solute. A 1 molar solution of sodium hydroxide (mw = 40) contains 40 g of NaOH dissolved in 960 g of water, the total volume being 1 liter

molasses  1) Liquid remaining after the sugar has been removed from the concentrated sugar solution obtained from sugar cane; thick, viscous, by-product obtained when sugar is refined

<table>
<thead>
<tr>
<th>Cane molasses grades</th>
<th>Min. Brix solids (%)</th>
<th>Total sugar (%)</th>
<th>Ash (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (U.S. Fancy)</td>
<td>79</td>
<td>63.5</td>
<td>Max. 5</td>
</tr>
<tr>
<td>B (U.S. Choice)</td>
<td>79</td>
<td>63.5</td>
<td></td>
</tr>
<tr>
<td>C (U.S. Standard)</td>
<td>79</td>
<td>63.5</td>
<td></td>
</tr>
<tr>
<td>D (Substandard)</td>
<td>79</td>
<td>63.5</td>
<td>Over 9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>55</td>
<td></td>
</tr>
</tbody>
</table>

Grades:
First-boil or first molasses—65% total sugar; table use; bright amber color
Second-boil or second molasses—60% total sugar; darker and less sweet than first-boil; pronounced flavor
Third-boil (blackstrap)—industrial use; flavoring
Best quality from Antigua, Barbados, Louisiana, Puerto Rico, St. Croix
Types:
Barbados—resembles syrup more than molasses
Cooking (blackstrap)—dark; lower percentage of sugar; higher percentage of ash
See also blackstrap molasses
Refiners syrup—residual product from refining sugar cane or sugar beet; it is clarified and decolorized; max. moisture 28%; used in flavoring corn syrup
Table—light in color; high percentage of sugar; low percentage of ash

Equivalents:
1 gallon = 11.7 pounds (lb)
1 quart = 3 pounds (lb)
1½ cups = 1 pound (lb)
1 cup = 330 grams (10.9 oz)

Feed:
1 bushel = 26 pounds (lb)
1 quart = 0.8 pound (lb)

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dehydrated</th>
<th>&gt; 46% invert sugar</th>
<th>&gt; 79.5° Brix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry matter (%)</td>
<td>94</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Protein (%)</td>
<td>9.7</td>
<td>4.4</td>
<td></td>
</tr>
<tr>
<td>Fat (%)</td>
<td>1</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>6.3</td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td>Ash (%)</td>
<td>12.5</td>
<td>9.8</td>
<td></td>
</tr>
</tbody>
</table>

1 tbsp = 50 calories; pH 5.0–5.5
2) Concentrated, dehydrated fruit juice
See Part 2: Calcium, Daily Requirements; Calories, Daily Recommendations; Food, Composition; Iron, Daily Recommendations; Minerals, Food; Minerals (Trace), Limits; Sugars and Sweets Composition; Sugars and Syrups Composition; Sweetness of Sweeteners; Sweetening Agents

molasses feed 0.8 pounds per quart; 75 pounds of molasses is equivalent to 1 bushel of corn in feeding value; max. amount of molasses to feed: 20% of ration

molbo A large, red, round samsoe or edam-type cheese

mold (mould) 1) Single- or multicelled microorganisms that form long, branched, hair-like microscopic filaments of fungal growth; they grow into fuzzy or cottony mats; form airborne spores (seed). Growth is encouraged by warm, dark, damp conditions with little air circulation. Optimum condition for growth: 20–35°C (will grow at 10°C) and moist (but will grow with less moisture than bacteria); will grow on jams, jellies, cheese, meat, fruit, vegetables, and cereals. Molds and yeasts are counted using potato dextrose agar or acidified potato glucose agar. Common gray mold (Botrytis cinerea)—usually not harmful if removed promptly and the food is cooked; mold is often used to flavor cheese and meat. 2) To shape food; to shape in a mold. 3) A form or container to shape food; a container in which food is placed to set, thereby allowing it to retain its shape when the mold is removed
See Part 2: Bacteria, Molds and Yeasts; Canned Spoilage Manifestations; Canned Spoilage Related to pH; Culture Media; Egg Specifications; Microbiological Standards, Dairy; Microorganism, Culture Media, Dairy and Food Products; Mold, Food; Molds, Mycotoxins; Spices, Microbial Content; Spoilage, Protein Foods; Water Activity, Organisms and Food

mold count (mould count) See mould count

mold inhibitor Used for dry or semidry sausage:
Apply to outer surface:
Clear mineral oil
Edible vegetable oil
2½% potassium sorbate

moldy A mold-like odor or flavor

mole (mol) An amount of substance containing the same number of chemical units (atoms, ions, molecules, electrons, etc.) as there are atoms in 12 grams of the 12 isotope of carbon, namely, Avogadro’s number of such units, or 6.023 X 10^23. This meaning has replaced the earlier definition of mole as the gram-molecular weight or gram-atomic weight of a substance
See also Avogadro’s number; atomic weight

moleche Soft-shelled crabs; the entire crab, including the shell, is eaten

molecular formula A chemical formula that states the number and kind of atoms in a molecule, but does not indicate their arrangement

molecular weight The sum of the weights of all the atoms present in a molecule. In the case of many high polymers, such as proteins, this may be several million

molecule The smallest unit of a chemical compound that can retain the properties of the compound. A number of elements exist in molecular form, for example, helium (monatomic), oxygen, fluorine, bromine, chlorine, hydrogen (diatomic), and ozone (triatomic)

moliterno A provolone-type cheese made from cow’s or sheep’s milk

molusk (mollusc) A class of shellfish that has a soft, unsegmented body and a calcareous shell, i.e., clams, mussels, oysters, scallops, squid, octopuses, abalone
See Part 2: Fish and Shellfish Composition

moltose See Part 2: Honey Composition

molt The process by which birds replace old feathers with new; molting time 1½–6 months. Hens molt at 18–20 months; no eggs are laid during this time

molu bolo Baked, fermented, rice balls

molybdenum (Mo) A metallic element; at. no. 42; at. wt. 95.96; Group VIB of Periodic Table; oxidation states +2, +3, +4, +5, +6; electron configuration 2–8–18–13–1
orbit K L M N O
Deficiency causes whiptail in cauliflower and broccoli
See Part 2: pH and Availability of Plant Nutrients; Wheat, Minerals

momoni A strong flavored, dried, salted fish used as flavoring
moncenisio A blue mold cheese
mon chou A brick-shaped, foil-wrapped, excelsior-type cheese
mondsseer A soft to semisoft, strongly flavored cheese made from partly skimmed or whole cow’s milk and ripened by surface bacteria
Monel metal An alloy of the elements of Cu, Ni, Fe, Mn, C, and Si or Al; slightly soluble in food
monensin A growth promoter that stimulates rumen flora efficiency
monensin, sodium A drug used to improve feed efficiency
monetary compensatory amount A charge or refund made by European Economic Community (EEC) members to compensate for the effect of currency movement in relation to official parity
monetary policy Policies to influence the supply of money and the rate of interest
mongo See mung bean
Mongolian cattle Brindle, brown, black, or yellow, nonhumped, hardy, tripurpose (beef, milk, draft) cattle that originated in Inner Mongolia, northeastern China
Mongolian fat-tailed sheep A fat-tailed sheep that has white fleece (carpet grade with a lot of kemp) and a black or brown head; used for wool and mutton; found in east and south China and in Inner Mongolia
mongrel An animal of nondescript breeding; (usually derogatory, e.g., “son and heir of a mongrel bitch”)
Monilia See Part 2: Spoilage, Carbohydrate Foods; Spoilage, Fat in Foods; Spoilage, Protein Foods
Monitoring The routine sampling subprogram of the National Residue Program in which samples for residue analysis are collected at slaughter establishments from randomly selected livestock and poultry carcasses
Monkey Foundation sire of the Santa Gertrudis breed
monkey apple See custard apple
monkey bread (baobab) A large tree that bears gourdlike fruit. The fruit pulp is sweet and acidic and used as a drink; the leaves are dried for an herb
monkey fruit See Part 2: Fruit Composition
monkey nut See peanut
monkey puzzle nut A large, oily, hard, tree nut
monkfish (angelfish; angler; anglerfish; goosefish; poor man’s lobster) A large, Atlantic, saltwater, finfish with a large head and flat, thin body. The flesh is firm and white with a mild, lobsterlike flavor
Northeast Atlantic (Lophius piscatorius) angelfish
Northwest Atlantic (Squatina squatina) angelfish
Composition: fat 0.7% See scup
monk’s beard See chicory; French endive
monk’s head See bellelay; monk’s-head cheese
monk’s-head cheese (bellelay cheese) A soft, rennet cheese made by the Swiss
mono- A prefix meaning one or single
monosaccharide A sugar of simple molecular structure that is not decomposed by hydrolysis; simplest form of carbohydrate, e.g., hexose; glucose, fructose, galactose
monosodium glutamate (MSG) A product derived by hydrolysis of vegetable protein or waste liquor from beet sugar refining; used to enhance the natural flavors of food; 0.2–0.5% concentration on salted food. Some people are allergic to this additive
Composition: sodium 492 mg/tsp (5 g)
Storage: tight container
See Part 2: Glutamate; Glutamate Addition
monosodium phosphate (NaH2PO4) A food emulsifier used in some cheeses and meat to reduce juice loss during cooking
monostorer A ewe’s milk cheese
monounsaturated fatty acid  Dietary recommendation is 15% or less of total calories from monounsaturated fatty acids

monsegur A medium flavored (sometimes seasoned with pepper), semisoft, cheese with an artificial black rind

monsieur blanc A high fat (50–55%), white, unfermented cheese made from cow's milk

monsieur fromage A semisoft, double cream, small cylinder cheese made from cow's milk and covered with white mold and cured 4–5 weeks

Monstera deliciosa A fruit that looks like a large ear of corn and tastes like a combination of many fruits

Monstera deliciosa (ceriman; tropical fruit salad plant) An elongated fruit from a climbing plant; used to make a beverage

Montadale See Part 2: Sheep Breeds

montagne A very thin salami made from coarsely chopped pork; a dry, uncooked, unsmoked French sausage made from coarsely chopped, mildly seasoned pork that is fermented and stuffed into a pork casing

montan An earth wax obtained from lignite See Part 2: Wax

Montana No. 1 A breed of hogs developed by crossing solid black Hampshire (45%) boars with Danish Landrace (55%) sows; it is solid black in color See Part 2: Swine Breeds

montanic acid See Part 2: Saturated Fatty Acids

montasio A hard, dry, low-fat, 7–12-kg grating cheese made from cow's milk; a sharp, soft, Italian cheese

montavoner A panir-type cheese made from cow's milk with herbs added; a sour milk and herb Austrian cheese

Mont Blanc chestnut (gesztenyepure; kastaniencreis) Riced chestnuts

Mont-cenis A hard, blue-mold, French cheese similar to Roquefort and made from cow's, sheep's, or goat's milk with rennet added

Mont-des-cats A tilsit-type, cow's milk cheese

Mont d'or 1) A cow's milk, muensterlike cheese. 2) Originally a goat's milk cheese; now a goat's or cow's milk cheese

monte aguila An allspice-flavored, digestive liqueur

monteceniso A blue cheese made from cow's or goat's milk

montepulciano A red, Italian, dessert wine

montepulciano d'abruzzo A grape grown in east central Italy from which a pale red wine is made

monterey cheese Composition: moisture 40.0%; protein 24.5%; fat 30.3%; carbohydrate 0.7%; ash 3.5%

Monterey Jack (Jack) A mild to mellow-flavored, semisoft to semihard (aged), cheddarlike, American cheese made from whole milk; white to light cream interior; sold in wheel shape; ripened 2–6 weeks for table use, 6–9 months for grating. A muenster-type cheese made from whole or partly skimmed cow's milk; may or may not be surface ripened. Used in a sandwich or with fresh fruit

1 cup, shredded = 4 oz
Composition: moisture 41–42%; protein 24–25%; fat 30–31%; carbohydrate 0.6–0.7%; fiber 0%; ash 3–4%; sodium 152 mg/oz

monthery A soft, surface-ripened, brielfike, cheese made from cow's milk

montilla A dry, light, sherry-type, Spanish wine

montlherie A soft, French cheese made from cow's milk with rennet added

monlloire A valençay-type cheese made from goat's milk

montpellier A white wine

montrachet 1) A strong, dry, perfumed, white wine. 2) A soft, white, cheese made from goat's milk and cured for 1 week; a medium strong, salty, log-shaped goat cheese that is sometimes rolled in charcoal

montrachet cheese A sharp French cheese made from goat's milk and with a black, edible, ash coating

montresor A valençay-type cheese made from goat's milk

moon blindness A condition in which blue film covers the pupil

moonfish (horsefish) A small (12 in. or less), silver-colored, saltwater food fish

Atlantic (Vomer setapinnis)

Pacific (V. declivifrons)

moong See mung bean

moonshine An illegally produced, alcoholic beverage

moor cock A male, red grouse

moose A large member of the ruminant deer family

mootsanji An acidic, carbonated, oriental radish

MOR Marine Oil Refiners of Africa, Ltd

morantel tartrate A drug used as a wormer

moratorium A postponement in payment of interest and principal on debts

morbier A semisoft, tilsit-type French cheese made from cow's milk

morela A moist, cooked, unsmoked Brazilian sausage made from finely chopped, mildly seasoned pork and stuffed into pork casings

morella A moist, cooked, smoked Argentinian sausage made from finely chopped, mildly seasoned beef and pork, pork backfat, pork skins, and beef blood and stuffed into beef, pork, or artificial casings

mordant A coagulant used to bind dye to cloth fiber, e.g., aluminum hydroxide, stannic acid

morel (smorchok; Morchella esculenta) An edible fungus that is topped with a network of light brown ridges; valleys are darker brown; a mushroom; may be dried for later use

Moreton Bay chestnut See bean, black

morgan (Cirrhina orius mrigala) An Indian food fish

morgon A red wine
mori A green, Japanese tea
morin See limburger cheese
moringa A 1-cm fruit pod that is used to flavor food
morino cream cheese A rich, soft, French cheese
Mornay A sauce made with butter, egg yolks, milk, cream, and parmesan cheese
morning roll A soft-textured, wheat flour roll
moromi A thick, fermented, soybean cereal or cereal mash containing bacteria, yeast, and molds; used in production of miso, sake, and soy sauce
morphine (C₁₇H₁₉NO₃) A powerful and addictive narcotic (alkaloid) derived from poppy seed; used to relieve pain in extreme cases
morphology The form, shape, and structure or arrangement of living things or cells
Morrill Land Grant College Act Passed in 1862
mortadella 1) A fermented and/or semidry or dry, cooked or uncooked, smoked American sausage made from medium or coarsely chopped, mildly seasoned (red pepper, garlic, and anise) beef and pork (made with finely ground meat and coarsely ground fat cubes) with pistachio nuts added and stuffed into a beef or artificial casing; available in links, rings, or large diameter casing. 2) A cooked sausage (but may also be dry or semidry) made mostly of pork (75%) mixed with beef (25%) or veal; after curing it is mixed with pork fat cubes; it is then smoked gradually until the internal temperature reaches 140°F. 3) A moist, cooked, smoked Argentinian sausage made from finely chopped, mildly seasoned, beef and pork and stuffed into beef, artificial, sewn dried beef bladder, weasand casing, or no casings or cooked in molds. 4) A semidry sausage made with pork and beef that is lightly seasoned and smoked; a semidry, smoked, medium chopped Austrian sausage made from heavily seasoned (nitrite) beef and pork and stuffed into artificial casings with a diameter of greater than 70 mm. 5) A moist, cooked, unsmoked Australian sausage made from medium chopped, heavily seasoned (red wine, crushed peppercorns) beef and stuffed into artificial casings; flavored with spices, garlic, and anise.
Types:
   German—has pistachio nuts added to cubes of bologna and pork fat
   Italian—has garlic
Composition: moisture 52%; protein 16.4%; fat 25.4%; carbohydrate 3%; ash 2.9%; sweet red peppers max. 4%; pistachio nuts max. 1%
See Part 2: Sausage Identification; Sausage, Types
mortadella, French 1) A moist, cooked Greek sausage made from finely chopped, heavily seasoned pork and stuffed into beef or artificial casings. 2) A moist or semidry, cooked, unsmoked French sausage made from finely chopped (mixed with diced pork fat), mildly seasoned (up to 6% milk powder) pork that is sometimes fermented and stuffed into beef or artificial casings
mortadella, German A high grade, cooked, smoked (high temperature) sausage, similar to bologna with cubes of pork fat and pistachio nuts added
mortadella, Greek A moist, cooked Greek sausage made from finely chopped, heavily seasoned beef and pork and stuffed into a beef cecum or bladder or into an artificial casing
mortadella, Icelandic A moist, cooked, smoked Icelandic sausage made from finely chopped, medium seasoned, beef and pork with pork fat added and stuffed into an artificial casing
mortadella, Irish A moist, cooked, unsmoked Irish sausage made from medium chopped, medium seasoned pork and stuffed into an artificial casing
mortadella, Italian A moist, cooked, unsmoked Italian sausage made from finely or coarsely chopped beef and pork and stuffed into a beef or artificial casing
mortadella, Mexican A moist, cooked, unsmoked Mexican sausage made from finely chopped, mildly seasoned beef and pork and stuffed into an artificial casing
mortadella, Norwegian A moist, cooked, unsmoked Norwegian sausage made from medium chopped, heavily seasoned beef and pork and not stuffed into a casing
mortadella, Polish A moist, cooked, smoked Polish sausage made from finely chopped beef with textured vegetable protein added and stuffed into a pork bladder
mortadella, Swiss 1) A moist or semidry, cooked, smoked or unsmoked Swiss sausage made from fine or medium chopped, medium seasoned beef and pork and stuffed into an artificial casing. 2) A moist, cooked Greek-style sausage made from finely chopped, heavily seasoned pork and stuffed into beef or artificial casings
mortadello A moist, chopped, mildly seasoned (peppercorns), cooked sausage made from pork or beef and pork and containing cubes of pork fat and sometimes milk powder; usually large diameter
mosaic (soilborne) A virus that causes light yellow-green mottling and striping of wheat leaves; causes loss in yield
moscatel A sweet, Spanish, dessert wines made from muscat grapes
moscatello (moscato) A sweet, Italian, dessert wines made from muscat grapes
moscato An Italian, dessert wine See moscatello
Moselle 1) Table wines produced in the Moselle River valley in southwest Germany as well as the Saar and Ruwer river valleys. The wine is normally made from Riesling grapes grown on slate soil and is clear, fresh, often naturally effervescent (spritzig), acid, and dry. Similar to Rhine wine but not as long lasting. 2) A wine having a clean, fresh flavor, often natural effervescence, and low alcoholic content; generally dry, with a fine bouquet
Vineyards:
   Berncastel
   Brauneberg
   Erden
   Graach
   Piesport
   Uerzig
   Wehlen
   Zeltingen
Mosel-Saar-Ruwer The region in southwest Germany on the steep terraces of the three rivers that produces exhilarating, fragrant, and delicate wines made primarily from Riesling grapes.

mosssberry See cranberry

mostaccioli A short, 3/8-in. diameter, rod-shaped, macaroni pasta product with angle cut ends; total length approximately 2 in.

Mostaccioli — smooth surface

Mostaccioli rigati — lengthwise ribs on surface

1 cup = 2 oz

mostelle (mostele; Gaidropsarus mediterraneus) A whiting-type fish

mosto See must

most probable number See Part 2: Most Probable Number; Most Probable Number, Bacterial

motal A brined, white cheese made from cow’s or sheep’s milk

moth See coding moth; eye-spotted bud moth; grape berry moth; oriental fruit moth; pecan bud moth

mothais See chevre a la feuille

moth bean (mat bean; Vigna acontifolia) A semi-arid legume whose small seeds are used as a vegetable; the plant is used as hay or green forage

mother 1) In vinegar, a mold that contains microorganisms that can be used as a starter. 2) A solution that remains after separation of a precipitate, e.g., mother liquor. 3) A secretion of the oyster from which pearls are formed (mother-of-pearl)

mother-of-clove oil A brown oil obtained by steam distillation of the ripe fruit of the clove tree

Composition: eugenol 53%; phenol 35%

mother's loaf A high carbohydrate, pork sausage

Composition: moisture 55%; protein 12%; fat 22.3%; carbohydrate 7.5%; ash 3.2%

motility medium See Part 2: Microorganism, Media

moto A yeast used in sake brewing

motoho A nonalcoholic, sour drink made from maize

mottle necrosis (Pythium selerotichum; P. ultimum) A field disease that produces brown, sunken spots in the surface of sweet potatoes; internally there are patches of brown, dead tissue that give a mottled appearance

mould See mold

mould count (mold count) The number (or % of microscopic fields) of mold fibers or spores in a given amount of food

Maximum % of microscopic fields: orange juice 15%; tomato juice 20%; strawberries 55%

moulin-a-vent A red wine

mountain cranberry See cowberry

mountain herring See white fish

mountain laurel A plant having a toxic principle

See Part 2: Poisonous Plants

mountain oysters See fries

mountain pepper See caper

mountain spinach See orache

moussala Heavily seasoned, pork salami

mousseline A cream and mayonnaise sauce

moussex A general term for sparkling wine

moutarde A butter sauce flavored with mustard

mouthfeel A mixed experience caused by food in the mouth and related to physical and chemical properties of the food

mouzoum A clear, mildly alcoholic, sorghum beer

moving average A procedure of consecutive measurements of the mean, for example,

\[
\bar{X}_1 = \frac{5 + 7 + 3}{3} = 5 \\
\bar{X}_2 = \frac{7 + 3 + 4}{3} = 4.67 \\
\bar{X}_3 = \frac{3 + 4 + 6}{3} = 4.33
\]

mowa A sorghum beer

moyashi Soybean sprouts

mozarinelli A soft Italian cheese made from cow’s milk with rennet added

mozzarella A sliced or shredded, mild, delicate, semi-hard cheese made from milk and used for pizza or lasagna; creamy, white interior, mild and delicate flavor, firm but elastic and springy texture; when heated becomes stringy or stretchy. Sold in rectangular or spherical shape; made from whole or partly skimmed cow’s milk and is not ripened. A soft, mild, pulled curd, cooking cheese in 50–500 g sizes made from cow’s or cow’s and buffalo’s milk with rennet added

1 cup, shredded = 4 oz

\[
\begin{array}{l}
\text{Composition} \\
\text{Made from part skimmed milk} \\
\text{Made from whole milk} \\
\hline
\text{Moisture} (%) & 53–54 & 48–54.5 \\
\text{Protein} (%) & 24–25 & 19–22 \\
\text{Fat} (%) & 15–17 & 18–25 \\
\text{Carbohydrate} (%) & 2–3 & 2–3 \\
\text{Fiber} (%) & 0 & 0 \\
\text{Ash} (%) & 3–4 & 2–4 \\
\text{Salt} (%) & 1 & 1 \\
\hline
\end{array}
\]

Storage: Can be frozen (0°F) if no more than 1 in. thick; use in 6 months

See Part 2: Cheese Characteristics; Cheese, Vitamin Content; Dairy Products, Composition II
mozzarella cheese

<table>
<thead>
<tr>
<th>Composition</th>
<th>Average</th>
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<th>Part skimmed</th>
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<tr>
<td>Protein (%)</td>
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<tr>
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<tr>
<td>Carbohydrate (%)</td>
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<td>2.5</td>
<td>3.1</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.6</td>
<td>2.9</td>
<td>3.7</td>
</tr>
</tbody>
</table>

Sodium (mg/oz) 106–132

mpapa A sour, maize porridge

MPG See monopotassium glutamate

MPI Meat and Poultry Inspection (Division of FSIS)

MPL Minimum proficiency level: the minimum amount of analyte expected to be identified and quantified by a laboratory and upon which ongoing capability will be evaluated

MPN See most probable number

mpu nam Antelope or game meat jerky

mqomboti joala A sorghum beer

MR-VP medium A medium for growth of coliform organisms and Bacillus cereus
See Part 2: Microorganism, Culture Media, Dairy and Food Products; Microorganism, Media; Microorganism, Selective and Differential Broths and Media, Water Filtration Plant

MS Mass spectrometry

MSC Marine Sciences Council

MSG See monosodium glutamate

msir Pickled lemon

mslalla An olive

mu (μ) The Greek letter that is the equivalent of the English m

muchung kimchi Acidic, carbonated, oriental radish leaves

mucilaginous Viscid and moist; sticky; a measure of gumminess used in relation to cassia

mucin A mixture of amino sugars, glucuronic acid, and sulfuric acid. A glycoprotein that is the lubricating protein of saliva
See Part 2: Histochemical Test

muck Partially decayed vegetable matter; similar to peat; well drained muck is good soil for many vegetable crops

mucoprotein A sugar–amino-acid complex

Mucor A type of fungus that grows on dead or decaying vegetable matter
See Part 2: Molds, Mycotoxins; Rot Spoilage

mucous Descriptive of a type of lining membrane that secretes a viscid liquid (mucus)
See Part 2: Intestine, Cross Section
mugwort A bitter, perennial herb; leaves are used in stews and stuffings. See wormwood
Muir A variety of freestone peaches
muji koji Barley koji. See koji
mukaka A fermented, cottage cheese made with cow's milk with cream added to curd
muko See jora
muksun (Coregonus muksun) A food fish found in the Soviet Union
mukumbi A wine fermented from Scleroaya caffra
mukuzani A heavy, purplish red, dense wine
mulato A chile pepper; slightly larger than ancho; when ripe it is brown and mild
mulberry A tree that produces black or white, or pink or purplish berries; when they are ripe they are juicy but difficult to store; they are eaten fresh or made into wine or jam; white mulberry leaves are used as food for silkworms
Type:
Black—Morus nigra
Red—M. rubra
White—M. alba
See Part 2: Fruit Classification
mulch A material applied to the soil surface to conserve moisture, maintain soil temperature (insulation), and/or as an aid to control weeds; commonly organic matter but can include plastic or aluminum that is applied to the surface of soil to discourage weed growth, allow water to penetrate, reduce water loss, and eliminate cultivation
mule 1) A hybrid from the mating of a jack and a mare. 2) Crossbred sheep produced by crossing Swaledale and Bluefaced Leicester
mule duck A crossbred duck produced by mating female Muscovy ducks to Mallard-type drakes; the offspring are sterile; used for meat
muley (mulley) Naturally hornless
mull To heat a liquid (e.g., cider or wine) with spices
mullah An individual who slaughters animals according to the Muslim halal method
mullet (jumping; silver; striped; white) A fat fish with two barbels on the chin; caught in south Atlantic and Gulf coast areas. A light meat, light to moderate flavor, finfish
Type and habitat
Blue tail (Valamugil seheli)—Australia
Common Gray (Mugil cephalus)—Atlantic, freshwater, Pacific
Diamond-Scaled (Liza vaigaeis)—Australia
Eastern Gray—north China coast
Fat-Tail (Liza argentea)—Australia
Gray (Liza ramada; Mugil auratus; M. chelo)—Europe
Green-Backed (Liza dussumieri)—Australia
Leaping Gray (Liza saliens)—Europe
Lesser Gray (Mugil labrosus)—Europe
Long-Finned Gray (Golden Gray; Liza aurata)—Europe
Red (Mullus barbatus; M. surmuletus)—northeast Atlantic, Mediterranean
Red (M. auratus)—west Atlantic
Redeye (Mugil gaimardiana)—Atlantic
Sand (Myxus elongatis)—Australia
Silver (Mugil georgii)—Australia
Thin-Lipped Gray (Liza labrosus)—Europe
Thin-Lipped Gray (Liza ramada)—Europe
White (Mugil curema)—Atlantic
Yellow-Eye (Aldichetta forsteri)—Australia
Fat 4.6%
See also pelagic fish
See Part 2: Frozen Food Storage
mulligatawny A hot and spicy (primarily pepper) soup containing chicken stock, rice, and tomatoes and spiced with curry powder; highly spiced rich, vegetable broth
mulse A claret and honey beverage
multi- A prefix that denotes many
multifidus dorsi Back muscle that connects the transverse process to the spinous process of the vertebra in front of it; in cross section, it is medial and ventral to the longissimus dorsi and lies close to the spinous processes
See Part 2: Beef Rib Nomenclature
multilateral agreement An international compact between three or more parties
multiple deficiency syndrome A form of protein-calorie malnutrition usually found with vitamin and mineral deficiencies
multiple fruit Fruit formed from several flowers that combined during ripening, e.g., pineapple
See Part 2: Fruit Classification
multiple pairs See Part 2: Taste Panel, Difference Tests
multiple-range test A test using different significance values depending on the number of means being compared
multiple-source buying Purchasing from many suppliers; resorted to, by the buyer, for developing new suppliers
multiple standard See Part 2: Taste Panel, Difference Tests
multiplication An increase in number of cells; usually the result of growth
multiplier A virus disease of strawberries that causes production on many crowns; may be controlled by planting virus-free stock and using insecticides
mum An ale brewed from malted wheat, beans, oatmeal, and herbs
munajuusto See egg-shaped
munchener 1) A strong, dark, malt-flavored, less bitter, lager beverage. 2) A medium to coarsely chopped, cooked, unsmoked American, large diameter link or ring sausage
munchner, weisswurst A moist, cooked, unsmoked Swiss sausage made from finely chopped, mild or medium seasoned beef, pork, and veal stuffed into a pork or sheep casing
mundoo A meat dumpling
mung bean (golden gram; green gram; mongo; moong; mungbean; Phaseolus mungo var radiatus; Vigna radiata) A small, leguminous bean (green, brown, golden) from which sprouts can be obtained; unspouted beans can be used the same as other dried legumes. Pods are cylindrical, 4–10 cm long, hairy to smooth, with 8–10 seeds/pod; seeds are round to square at the ends; 20,000–25,000 seeds/kg
Composition: protein 24%; carbohydrates 58%
See Part 2: Vegetable Composition

munkoyo A sour, nonalcoholic drink made from maize or millet and flavored with munkoyo root (Rhynchosia veramloasa)

munkrull A moist, cooked, unsmoked Norwegian sausage made from medium chopped, mildly seasoned, beef and pork and not stuffed into a casing

müüster (colmar; gérome; strassburg) A soft to semisoft to semihard, mild to mellow to strong flavor (caraway, anise seed) French cheese made from whole cow's milk and ripened by surface bacteria (aged 2–3 months under humid conditions); it is creamy white, cylindrical-shaped, with a yellow–tan (brine washed) to red surface; often flavored with wild cumin; 45–50% fat

mun tao A steamed, wheat (sometimes maize or rice) bread

muratina A turbid, alcoholic wine made from sugar-cane juice; usually consumed fresh

murecha See atsumannie

murcott A large variety of orange that resembles a tangerine; available February through April

mure sauvage A brandy distilled from fermented blackberries

muriate of potash Obsolete term for potassium chloride (KCl); a neutral fertilizer material; 0-0-50 or 0-0-60
See Part 2: Fertilizer; Fertilizer Materials

muriatic acid See hydrochloric acid

murrin See badderlock

muroaji (Decapetus muroads) A Japanese food fish

murol A medium flavored, semisoft cheese

murrain wool Wool from decomposed sheep

Murray Gray An Australian breed of cattle that is solid-color (dark to silver gray) coat, docile breed of the product of a Shorthorn-Angus cross; it is a polled, boneless meat divided at the natural seams

mush A soft food product made from cornmeal, soybean flour, or hominy; may be boiled and eaten as a breakfast cereal or fried and served with butter, syrup, etc. See also grits

muscato (Vitis vinifera) 1) A very sweet, highly scented, white or black grape, usually without pits; used for dessert and to make sweet, dessert wine. 2) A perfumed, flavored white wine

muscatoel 1) A golden, sweet, dessert wine made from muscat grapes. 2) A gold to amber, fortified wine 3) An English, sweet, white, sparkling, elderberry-flavored wine

muscatoel (American) wine A golden, dessert wine made from muscat grapes

muscle 1) A fibrous, dense tissue attached to the bony structure of the body that contracts to permit movement of the limbs See also gastrocnemius. 2) Lean meat

See Part 2: Gland Weights; Muscle and Body Weight; Organ Weights; pH Values of Biological Materials

muscle boning Boneless meat divided at the natural seams

muscle fiber 10–100 μm diameter; millimeters to many centimeters in length

muscovado See sugar cane

Muscovy duck A large, black (some are white) duck with red areas near the base of the beak and eyes; found in southeastern China; originated in South America. The white variety is the most popular in U.S.

mush A soft food product made from cornmeal, soybean flour, or hominy; may be boiled and eaten as a breakfast cereal or fried and served with butter, syrup, etc. See also grits

mushroom Any edible fungus of the orders Agaricales or Lycoperdales, e.g., Agaricus campestris; may be white (good appearance), pink, or brown (pronounced flavor). Microscopic, fruiting bodies of basidiomycete fungi; often used as a substitute for meat flavor; hundreds of varieties (some are poisonous), from 1/4 to over 6 in. in diameter

Types:
Almond flavored (Agaricus fabaceus)
Amanita (Amanita phalloides)—poisonous
Baby (Coprinus micaceus)—very small, shaggy
Cepes—large, fully open mushrooms
Champignons—button mushrooms
Coral (Clavaria aurea)—white, buff, orange, coral-like branches
Edible boletus (Boletus edulis)—large, smooth
Field (Agaricus campestris)—smooth, medium caps; mushroom of commerce
Alaska—small
Snow White
Silver King
Bohemia—large, brown
Columbia—cream
Fresh—closed around the stem by a thin veil
Giant puffball (Lycoperdon giganteum or Calvatia gigantea)—very large
Horse (Agaricus arvensis)—large
Ink cap (Coprinus atramentarius)—small, shaggy
Morel (Morchella esculenta)—spongy
Parasol (Leiopota procera)—tall, rough, reddish brown
Shaggy mane or horsetail (Coprinus comatus)—shaggy
Small midget (Agaricus silvicola)—small
Small puffball (Lycoperdon craniforme)—white ball
Truffle, black truffle of southern France (Tuber
melanosporum)

Preparation:
Baked, 8–10 min
Broiled, 6–10 min
Raw
Sautéed, 4–8 min
Steamed, 8–10 min

Parts:
Cap—wide portion on top
Gills—numerous rows of paper-thin tissue underneath the cap when it opens
Stem—supports the cap

Quality:
Buttons—young, unopened, round caps
Caps—mature, opened, gills exposed
Stems—lower quality

Size:
Small—under 1 in.
Medium—1–1 1/2 in.
Large—1 1/2–3 in.
Extra large—over 3 in.

Available: fresh, canned, soup, hot air or freeze dried (1 year storage), frozen raw (1 month storage), and blanched, steamed, or boiled and frozen (much longer storage)

Canned forms (in brine solution):
Broiled—broiled prior to canning
Button—best grade; buds of unopened mushroom before gills are formed; 3/4–1 in. in diameter; no stem; whole or sliced; served with steak or broiled
Pieces and stems (hotel)—broken pieces and excess of added stems; used in sauces and gravies
Sliced—mushrooms more mature than buttons and sliced to 1/4 in. in thickness; used with creamed chicken or chop suey
Sun dried—soak 3–4 h in cold water prior to use
Whole—including the stems

1 pound (lb), fresh = 12 large mushrooms
= 18–24 medium size
= 30–40 small
= 6 cups, whole
= 2–5 cups, sliced
= 6 cups, chopped
= 1 1/4 cups, sliced cooked
= 3 cups, diced cooked
= 4–6 servings
= 0.1 lb, dried

1 1/2 lb, fresh = 1 can (6–8 oz)
= 1 cup, canned, sliced, drained
= 1 1/2 whole, canned

1 1/2 lb, fresh = 1 can (3–4 oz)
= 1 1/2 cup, canned, drained, sliced
= 1 1/4 cup, canned, drained stems and pieces

Composition (raw): moisture 90%; protein 3%; fat 0.3%; carbohydrate 4%; ash 1%
1 part, freeze dried = 11.7 parts fresh weight
1 cup, canned, solids and liquid = 4.3 oz
1 serving = 1/2 lb
1 cup, raw, sliced = 1/2 lb
= 2.4–2.7 oz
1 cup, quartered = 2.7 oz
1 cup, chopped = 2.7 oz

Storage: keep in refrigerator crisper or plastic bag (32–35°F), covered with a damp paper towel, with good air circulation, 1–2 days

See also oyster mushroom

See Part 2: Flavor Ingredients, Taste and Flavor Type; Frozen Food Storage; Minerals, Food; Plant and Animal Poisoning; Plant Foods, Composition, Soups, Composition; Standards, Processed Fruit and Vegetable Products; Storage; Vegetable Composition; Vegetable Cooking, Frozen; Vegetable Storage

mushroom barley, canned soup

<table>
<thead>
<tr>
<th>Protein (%)</th>
<th>Fat (%)</th>
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<td>Condensed</td>
<td>1.5</td>
</tr>
<tr>
<td>Condensed, prepared with water</td>
<td>0.8</td>
</tr>
</tbody>
</table>

mushroom, black (mushroom, Chinese; mushroom, dried) A dry, strong flavored, brownish-black mushroom that must be soaked prior to use

mushroom, button A small mushroom before the gills are open

mushroom, Chinese See mushroom, black

mushroom, cream of, canned soup

<table>
<thead>
<tr>
<th>Composition</th>
<th>Condensed</th>
<th>Condensed, prepared with milk</th>
<th>Condensed, prepared with water</th>
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</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
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<tr>
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<tr>
<td>Fat (%)</td>
<td>7.6</td>
<td>5.5</td>
<td>3.7</td>
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<tr>
<td>Carbohydrate (%)</td>
<td>7.4</td>
<td>6.0</td>
<td>3.8</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0.2</td>
<td>0.1</td>
<td>0.2</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.2</td>
<td>1.5</td>
<td>1.2</td>
</tr>
</tbody>
</table>

mushroom, dried See mushroom, black

mushroom, enoki Long, thin-stemmed mushrooms that are joined in a cluster at the base and have puffy, round tops, a silky texture, and a crisp, mild flavor (raw)

Storage: cool, 5 day storage life

mushroom gravy

Composition

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dehydrated</th>
<th>Dehydrated, prepared with water</th>
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</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
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<tr>
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<td>Carbohydrate (%)</td>
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<td>5.3</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>18.0</td>
<td>1.5</td>
</tr>
</tbody>
</table>

mushroom gravy, canned

Composition: moisture 89.0%; protein 1.3%; fat 2.7%; carbohydrate 5.5%; ash 1.6%

mushroom juice The water used in blanching mushrooms; with the addition of salt, is used for canning mushrooms; used for flavoring and in soup
mushroom, pickled. Made by placing mushrooms in cold water for 2 days, then adding salt and spices, and fermenting for 1 month.

mushroom sauce. Made from mushrooms, spices, tomato paste, tomato puree, and vegetable oil; used with fish, macaroni, meat, and spaghetti.

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dehydrated with milk</th>
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<tbody>
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<tr>
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<td>Fat (%)</td>
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<td>Carbohydrate (%)</td>
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<td>Ash (%)</td>
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mushroom soup

Composition

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<tbody>
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<tr>
<td>Protein (%)</td>
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<td>Fiber (%)</td>
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<tr>
<td>Ash (%)</td>
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See Part 2: Soup Composition

mushroom with beef stock, canned soup

Composition

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<th>Composition</th>
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</tr>
</thead>
<tbody>
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<td>Moisture (%)</td>
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<tr>
<td>Protein (%)</td>
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<tr>
<td>Fat (%)</td>
<td>3.2</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>7.4</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Dehydrated, prepared with water

| Moisture (%)         | 92.1                  |
| Protein (%)          | 1.3                  |
| Fat (%)              | 1.6                  |
| Carbohydrate (%)     | 3.8                  |
| Ash (%)              | 1.2                  |

Home garden (northern states)
Osage
Pride of Wisconsin (Queen of Colorado)
Irrigation (west)
Casaba
Honey Dew
Mildew resistant
Dulce
Gulf Stream
Perlita

50% refuse See cantaloupe; melon

See Part 2: Cucurbit Crops, Spacing and Depth of Planting; Fruit Classification; Fruit Composition; Fruit Composition, Part I; Minerals, Food; Planting Density; Storage; Sugar, Vegetables; Tocopherols; Vegetable Planting and Maturity Chart; Vegetable Plants; Vegetable Storage; Vegetable Yields

musk ox. North American Arctic ruminant that exudes a characteristic odor; odor does not affect meat.

muskat (marsh rabbit). An edible, aquatic rodent.

musom. A fermented, semidry, pork or beef sausage.

mussel (bay mussel; oyster of the poor). A sea, bivalve mollusk that is oblong (3 x 1 1/2 in.) in shape and has a thin, black shell. The shell should be firmly closed when purchased, indicating that the mussel is living; may be purchased live, shucked, frozen, and canned; eaten raw, steamed, stewed, baked, pickled, smoked, stuffed, fried, and in soup; 20% of its weight is meat; meat is cream, beige, deep orange, tan colored and has a tangy, smoky flavor.

Types:
- Australia (Modiolus latifrons)
- Bearded horse (Modiolus barbatus)—Atlantic, Mediterranean
- Blue (Mytilus edulis)—Atlantic, Pacific
- Common (M. californianus)—Pacific
- Horse (Modiolus modiolus)—Europe
- Mediterranean (Mytilus galloprovincialis)
- New Zealand (M. canaliculus)

Composition: carbohydrate 3–5%; fat 1.4%; sodium 234 mg/3 oz raw (85 g)

See Part 2: Minerals, Food; Plant and Animal Poisoning

must. Crushed grapes (juice, seeds and skin) or the juice from pressed grapes.

mustard. An annual vegetable whose seed is used as a spice or flour and leaves are used as a cooked vegetable. Seed is used whole, ground, or powdered (ground mustard, mustard flour, pulverized mustard; blend of black and white) or in prepared form (a paste made from mustard seed mixed with vinegar and spices and ground).

Types:
- Black or brown mustard (Brassica sinapoides nigra)—seed of commerce; not suitable for salads; smaller, black-red seeds, used for making table condiment; pleasant aroma; ground color is dark brown; native to Egypt
- Japanese (B. japonica)
- Rape (B. nepus)—sometimes used instead of white mustard for salad
White mustard (B. alba or B. hirta)—cabbage family; used for salad; pungent red-yellow seed; ground color is light brown; native to Asia

Wild—oily seed

Yellow or Chinese mustard (B. juncea; Sinapis alba)—cabbage family; used for salad; pungent red-yellow seed; ground color is light brown; native to Asia

Wild—oily seed

Varieties:
Black mustard of Sicily
Florida Broadleaf
Large, black seeded varieties
Large, smooth-leaved
Southern giant curled
Tender green, mustard spinach

Available seed forms:
Mustard seed—small round seed of white or yellow mustard
Dry mustard—ground seed of several varieties

Stain removal from cloth: scrape excess; soak in cold water with enzyme product; wash in hot suds; use cleaning fluid if necessary

Storage (seed): cool, dark, dry place
Storage (leaf): wash and drain; refrigerate in crisper or plastic bag; use within 1-2 days

See mustard sauce and following entries
See Part 2: Essential Oils; Flavoring Agents, Natural; Flavor Ingredients, Taste and Flavor Type; Minerals, Plant or Animal Tissue; Minerals, Trace, Limits; Mustard, French; Nitrate, Vegetables; Planting Density; Spices, Microbial Content; Unsaponifiable Matter; Vegetable Plants; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetables, Classification; Vegetable Yields

mustard cabbage, dried See chungking cabbage

mustard cream dressing A dressing made from cream, lemon juice, mustard, pepper, and salt

mustard flour Ground seed of the mustard plant from which some of the oil (15-25%) and most of the hulls have been removed
Composition (powdered): protein 35%; total ash 6% max.

mustard greens (Brassica juncea var. crispiifolia; Sinapis arvensis) Leaves of the mustard plant used much like spinach; young, tender leaves used raw as a salad; other leaves cooked (stewed) as a vegetable; the forms of Indian mustard in which the leaves are curled or frilled are often used. 15,000 seeds/oz; plant 1 oz seed per 100-ft row; 2 ft between plants in rows 1 ft apart; matures in 70 days
Species:
Black (brown)—smaller and more pungent
White—mild
Variety:
Florida Broadleaf—matures in 40 days; large, broad leaf
Fordhook—matures in 40 days; curled, fringed, dark green leaf
Green Wave—matures in 45 days; curled, dark green leaf
Indian
Southern Giant Curled—matures in 50 days; curled, bright green leaf
Tendergreens (Mustard Spinach)—matures in 28 days; heavy, thick, dark green leaf

Available in fresh, canned, and frozen forms
1 bu, fresh = 12 pounds (lb) = 8-12 pt, frozen
1 pt, frozen = 1 to 1 1/2 pounds, fresh
1 lb, fresh = 2 servings
1 cup, boiled and drained = 7.8 oz

Composition: moisture 92%; protein 2%; fat 0.3%; carbohydrate 4%
Storage: wash and drain well; refrigerate in crisper or plastic bag; 3-5 days

See mustard sauce and following entries
See Part 2: Food, Composition; Minerals, Food; Plant Foods, Composition; Vegetable Composition; Vegetable Cooking, Frozen

mustard seed The tiny, smooth seed of the mustard plant

Types of seed:
Brown—some species pungent
Oriental (yellow)—some species pungent
Yellow—sharp flavor

Sources: Canada; U.S.

Forms:
Ground—whole, ground seed

Prepared composition: moisture 80%; 1 tsp, prepared = 5-9 g; 1 cal/g; sodium 65 mg/tsp (5 g)

Stain removal from cloth: scrape excess; soak in cold water with enzyme product; wash in hot suds; use cleaning fluid if necessary

Storage (seed): cool, dark, dry place
Storage (leaf): wash and drain; refrigerate in crisper or plastic bag; use within 1-2 days

See mustard sauce and following entries
See Part 2: Essential Oils; Flavoring Agents, Natural; Flavor Ingredients, Taste and Flavor Type; Minerals, Plant or Animal Tissue; Minerals, Trace, Limits; Mustard, French; Nitrate, Vegetables; Planting Density; Spices, Microbial Content; Unsaponifiable Matter; Vegetable Plants; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetables, Classification; Vegetable Yields
myofiber 489

Powdered or flour—bran is removed and the heart of the seed is milled
Whole Composition: moisture 6.9%; protein 24.9%; fat 28.8%; carbohydrate 34.9%; fiber 6.5%; ash 4.5%

mustard spinach  See Chinese mustard

musty  A damp, cellar-like flavor often associated with poor ventilation

muta-  A prefix meaning change

mutagen  An agent that changes the genetic materials in a living cell so that a change in heritable characteristics results; a substance or stimulus that may cause a mutation or change in the character of a gene

mutagenic agent  An agent that increases the rate of spontaneous mutation

mutagenicity  The capacity to induce mutations

mutation  A sudden, permanent, random, genetic change; a genetic change within living tissues that changes its characteristics

mutere  A porridge or paste made from the flour of unripe banana or plantain

mutschli  A semihard, full fruity flavored cheese made from cow's milk

mutsum  A red, palm oil

mutton (Ovis caprea)  The flesh from an ovine animal (sheep) that is older than the lamb age (12-14 months; 1-8 permanent incisors); has a pronounced taste
Age:
Yearling mutton—1-2 years old
Mutton—over 2 years old  See break joint
See Part 2: Bone Age; Meat and Meat Products Composition; Minerals, Food; Riboflavin, Food; Specific Heat, Meat; Thiamin, Food; Vitamin A, Food

mutton fat  Fat rendered from mutton tissue; melting point 49-51°C
See Part 2: Fats and Oils, Fatty Acid Composition; Fats and Oils, Physical and Chemical Properties; Fatty Acids, Fats and Oils; Unsaturated Fatty Acids

muttonfish  See abalone

mutton grade
Quality
Choice
Good
Utility
Cull
Yield
Yield grade 1
Yield grade 2
Yield grade 3
Yield grade 4
Yield grade 5

mutton, yearling  Meat from sheep between 1 and 2 years old  See mutton
mu-uan  Cubes of country ham

muzzle  Lower part of face and nose of a quadruped

Mv  Symbol for the element mendelevium

mwenge  A sorghum and green banana beer

mye-  A prefix meaning fungus

mycellium  A threadlike (rootlike) part of a mold microorganism; the vegetative body of a fungus consisting of filaments or hyphae  See fungi

mycella  A yellow cheese with green veining made from cow's and/or sheep's and/or goat's milk

Mycobacterium tuberculosis  See Part 2: Microorganism, Media

mycobiotic agar  See Part 2: Microorganism, Media

mycological agar  See Part 2: Microorganism, Media

mycophil agar  See Part 2: Microbiological Media

myeoplasma (PPLO)  Pleural-pneumonia-like-organisms; tiny organisms, between bacteria and virus in size
See Part 2: Microorganism, Media

mycorrhiza  The association of plant roots with fungus

mycostat  A mold inhibitor

mycotoxicosis  A disease caused by ingesting poisonous compounds produced by molds

mycotoxin  A fungal or bacterial toxin (poisonous compound) produced by molds in foodstuffs and capable of causing health problems when the food is consumed. The term excludes alcohol and mushroom poisoning and various poisonous gases that are known fungal metabolites. Classes of greatest concern in the food area are:
Aflatoxin
Ergot alkaloids
Ochratoxins
Patulin and penicillic acid
Trichothecenes
Zearalenone
See Part 2: Molds, Mycotoxins

-myel-  An affix that means marrow

mykonos loucanica  A moist, uncooked Greek sausage made from coarsely chopped, medium seasoned pork and stuffed into a sheep casing

myo-  A prefix meaning muscle

myoblast  An embryonic cell that will be transformed into muscle fiber. Spindle-shaped cells with centrally located, elongated nuclei that constitute the actively dividing stemline of the muscle tissue but, in general, do not contain contractile proteins. Myoblast align into chainlike configurations with the long axis of muscle tissue and the plasmalemma fuse forming large (several hundred) multinucleated cells

myofiber  A mature, multinucleated (nuclei are peripherally located), striated, muscle cell. The striations are due to the alignment and registration of sarcomeres. Length varies from less than 1 mm to more than 4 cm; diameter from 10-100 μm
myofibril A subunit of a muscle fiber; a bundle of myofilaments
See Part 2: Myofibrillar Proteins of Muscle

myofilament The contractile element of a muscle; a subunit of a myofibril; an array of molecular chains (thin and thick filaments)

myogen The glycolytic enzymes found in the sarcoplasm of muscle tissue

myoglobin A respiratory pigment responsible for the color of muscle; a sarcoplasmic protein
See Part 2: Meat Pigment; Nitrate, Meat Curing

myogenic The glycolytic enzymes found in the sarcoplasm of muscle tissue

myosin A thick filament that is active in muscle contraction See actomyosin
See Part 2: Myofibrillar Proteins of Muscle

myotome A fish muscle segment located between the vertebrae

myotome Oil of bay, used in manufacturing bay rum. A yellow to dark brown, volatile oil obtained by steam distillation of the leaves of Pimenta acris koster; optical rotation 0° to -3°; refractive index 1.507–1.516 at 20°C; sp. gr. 0.950–0.990 g/ml

myriagram A measure of weight
1 myriagram = 10,000 grams (g)
= 22.046 pounds (avdp; lb)
= 10 kilograms (kg)
= 10 liter (l)

myriameter
1 myriameter = 10,000 meters (m)
= 10 kilometer (km)

myriawatt
1 myriawatt = 10 kilowatt (kW)

myristic acid (tetradecanoic acid)

\[
\text{CH}_3\text{(CH}_2\text{)}_{12}\text{C}=\text{CH}\text{(CH}_3\text{)}_{2}\text{COOH}
\]

An unsaturated fatty acid occurring in some seed fats and fish oil
See Part 2: Fatty Acids, Fats and Oils; Fatty Acids and Their Properties; Unsaturated Fatty Acids

myristica oil Nutmeg oil See nutmeg oil

myristoleic acid

\[
\text{[CH}_3\text{(CH}_2\text{)}_{12}\text{C}=\text{CH}\text{(CH}_3\text{)}_{2}\text{COOH]}
\]

An unsaturated fatty acid occurring in some seed fats and fish oil
See Part 2: Fatty Acids, Fats and Oils; Fatty Acids and Their Properties; Unsaturated Fatty Acids

myrrh An odorous resin found in an Arabian plant
See Part 2: Essential Oils

myrtle A brandy distilled from fermented bilberries (Vaccinium)

myrtle (Myrtus communis) An aromatic, evergreen shrub that is used for flavoring

Parts Used:

- Berry—pepper flavor in stew
- Branches—to smoke meat
- Leaves—flavor in meat; substitute for bay leaves
- Seed—used as an herb

myrtle oil An essential oil steam-distilled from the leaves and stems of European myrtle. Used as a food flavoring agent; sp. gr. 0.984–1.015

Storage: full, tight, glass container in a cool, dark place
See Part 2: Essential Oils

mysliwaka A dry, uncooked, triple-smoked Polish sausage made from medium or coarsely chopped, medium seasoned beef and pork and stuffed into a sheep casing

mysost A brown, rectangular (250 g–8 kg), sweet (high lactose), semihard Scandinavian cheese with a mild caramel flavor that is made from the condensed whey of goat’s and/or cow’s milk; sometimes flavored with cinnamon, cloves, or cumin

mysost cheese (primost) A Scandinavian cheese that has a light tan color, soft, creamy, mild flavor, and a distinctive, sweet taste; made from whole milk, cream, or whey produced in making ordinary cheese. It is unripened and sold in cubical or cylindrical shape, wrapped in foil

Composition: moisture 14%; protein 11%; fat 30%
See Part 2: Cheese Characteristics; Milk and Cheese Composition

myx- A prefix meaning mucus

myxomatosis An infectious viral disease of rabbits that is often fatal
N 1) The symbol for the element nitrogen. 2) The symbol for Avogadro's number. 3) See normal

n See nano

Na The symbol for the element sodium (Latin sodium)

naan See nan

naartje A kind of tangerine that is grown in South Africa See tangerine

nabemono Dishes served in a pot, boiled or broiled near the table

NACEPE National Association of Creamery Proprietors and Wholesale Dairymen

nacre See cultured pearl; mother

NADA New animal drug application, issued by the Food and Drug Administration (FDA)

naem A fermented, semidry sausage made from pork or beef

nagelkazen A Dutch cheese made from skimmed milk and flavored with cloves and cumineed

Nahe A region in Germany, south of the Rhine, that produces fresh, racy wines made mostly from Riesling grapes

nail 1) A measure of length
   1 nail = 5.715 centimeters (cm)
   = 2.25 inches (in.)
   = \( \frac{1}{3} \) yard (yd)

2) A slender fastener, usually metal Types:
   • Aluminum roofing nail—made from aluminum with plastic washers (not steel and lead)
   • Barbed Shank—resists pulling; used in creosote-treated and uncured wood
   • Box nail—thinner than a common nail
   • Casing nail—larger head than finishing nail
   • Concrete nail—straight, fluted, hardened shank
   • Drywall nail—sharp point; cupped head
   • Duplex nail—double-headed; for temporary fastening
   • Finishing nail—slender; small head (e.g., 2-in. nail has \( \frac{1}{4} \)-in.-diam. head)
   • Galvanized—has a coating that resists rust and rust stains
   • Hot-dipped (thinner coating)
   • Electroplate (thinner coating)
   • Hardboard siding nail—extra-stiff shank
   • Ringed Shank—resists pulling; used in creosote-treated and uncured wood
   • Spike—thicker shank than common nail
   • Threaded (spiral) Shank—resists pulling; used in creosote-treated and uncured wood
   • Wood siding nail—blunt point

Common nail size
(penny) Length Gauge

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<th>Length (in.)</th>
<th>Gauge</th>
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</tr>
<tr>
<td>60d</td>
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</tbody>
</table>

naja Yogurt

nakki A moist, smoked Finnish sausage made from mildly seasoned beef and pork stuffed into 22 mm sheep casing

NAL See National Agricultural Library

nalim (burbot) A food fish found in Russia

nalivka A brandy-based liqueur

nalzov A camembert-type cheese made from cow's milk

NAM National Association of Manufacturers

namage See tofu

namasu A vinegar sauce or marinade made from carrots, cucumbers, and turnips

namaycush (Salvelinus namaycush) Lake trout

nam budu A fish sauce made from shrimp

nami Third grade; used for grading food

nam khoai A rice wine

nam khoei A fish sauce made from shrimp

NAMP National Association of Meat Purveyors

nam pak A fish sauce

nam plah (nam pla) A condiment that is a salty fish sauce made from cured fish (Cirrhinus, Rostelliger, or Stolephorus spp.)

nam prick A fermented, yellow-brown, salty (20–25%) condiment made from fish paste

nam-som-sai-chu A vinegar made from fruit juice

nam-tau-mao A sweet, cloudy, white wine made from palm sap

nan (naan) A pocketed, leavened, flatbread that may be filled with other ingredients
Nancy Hall  A moist, sweet variety of sweet potato
nangka  A tree; the young fruit is boiled or roasted like chestnuts
nangkaboom  A tree that bears fruit that is similar to jack fruit and used in soup
Nanking duck  A speckled, brownish gray, egg-laying (300 eggs per year) duck from China
nanny goat  A female goat
nano- (n)  The prefix for a quantity one billionth (10^-9) the size of the base unit
nanogram (ng)  A measure of weight (one billionth of a gram)
  1 ng = 10^-9 gram (g)
nanometer (nm)  A measure of length
  1 nm = 10^-9 meter (m)
  See millimicron
nantais  A medium-flavored, semisoft, French cheese
Nanyang  A breed of draft cattle that is red with white or gray spots and with a small, cervicothoracic hump, originated in Honan (Henan), Hupen (Hubei), and Hopeh (Hebei) provinces of northeastern China
naoussa  A red wine
napa  See Chinese cabbage
napareuli  A white or light red wine from the Soviet Union
naphtha (petroleum benzin; petroleum ether)  A low-boiling fraction of petroleum, primarily pentanes and hexanes, used as a solvent and source of synthetic natural gas See petroleum
naphthalene (C10H8)  A bicyclic hydrogen derived from coal tar and petroleum fractions; used as an antiseptic and insecticide, especially for moths

Napierian logarithm  See logarithm, base e
napoleon  Layers of puff pastry filled with custard or pastry cream
Napoleon brandy  Brandy that was made during the time of Napoleon
nara senkel  Sweetened, pickled cucumber
narezuke  Uri melons pickled in sake
narcissus  A bulbous flowering plant; the bulb is sometimes used as food
nareli  A sweet, cloudy, white wine made from coconut-palm sap
narezushi  Dark, salty, fermented fish paste with rice
Narraganett  A variety of alfalfa
narrow brown leaf spot  A fungal (Cercospora oryzae) disease of rice
  Control: plant resistant varieties and early-maturing cultivars.
narrow casings  Sausage casings of specific widths taken from hogs, beef, sheep, etc.
  Narrow-end middle—natural casings used in the meat trade; from the first part of the large intestine of beef
  Narrow hog casing—29–32 mm width
  Narrow medium hog casing—32–35 mm width
  See Part 2: Casings, Hog
NAS  National Academy of Sciences
nasal  Sheep's, cow's, or water buffalo's milk that is low in fat
nasco  A Sardinian wine
naseberry (Achras zapota)  A tree that produces a gray-brown, lemon-shaped fruit with a sweet, red-yellow pulp
naseberry plum  See sapodilla
nasha  A sour porridge made from sorghum or millet
NAS–NRC  See Committee of Food Protection of the National Academy of Sciences–National Research Council
nastoika  A brandy-based liqueur
nasturtium (canary creeper; Indian cress; Mexican cress; Tropaeolum majus; T. minus)  A climbing plant; the leaves (similar to watercress) are used to flavor salads; the flowers have a spicy flavor and the petals are used to flavor salads and vinegar; the immature fruits or buds are packed in vinegar and used as a substitute for capers; the seeds (hot) are ground and used like mustard; the tuberous roots (some types are yellow and some are red) are used like parsnips.
  Varieties: Dwarf Mixed; Golden Globe; Scarlet Gleam; Tall Mixed
nata  A cream-colored to white, gelatinous film that grows on the surface of coconut, pineapple, sours of sugar cane, and other fruit waste
nata de coco  A cream-colored to white, gelatinous film that grows on the surface of coconut water or coconut skim milk
nata de guanabana  A cream-colored to white, gelatinous film that grows on the surface of the juice of soursop, or guanabana
nata de piña  A cream-colored to white, gelatinous film that grows on the surface of juice from pineapple trimmings
National Academy of Sciences (NAS)  A private society that was established in 1863 to provide advice to the federal government See National Research Council
National Agricultural Library (NAL)  See Science and Education Administration
National Association of Creamery Proprietors and Wholesale Dairymen (NACEPE)  An English organization that grades cheese
national farm program acreage  The estimated number of harvested acres needed to meet domestic and export use and to accomplish any desired increase or decrease in carryover.
natural food supply  The amount of food accessible to the consumers of a given country during a given period

National Formulary (NF grade)  A designation of a grade of chemical purity that meets specifications of the National Formulary See also grade

National Health and Nutrition Examination Survey (NHANES)  Primarily a health survey that measures relationships between health and nutrition variables

National Livestock and Meat Board  An organization to promote use of livestock and meat (444 N. Michigan Avenue, Chicago, Illinois 60611)

National Research Council (NRC)  A branch of National Academy of Sciences (2101 Constitution Ave. NW, Washington, DC 20418) that was established in 1916 as the working arm of the National Academy of Sciences

national residue program  A Food Safety and Inspection Service (FSIS) of USDA program that, among other activities, is responsible for determining if residues are present in meat and poultry

National School Lunch Act of 1946  The law that authorized child nutrition programs See child nutrition programs; national school lunch program

national school lunch program  A program that helps to provide nutritious lunches to the nation's school children (in some cases for free or at reduced cost) See child nutrition programs; National School Lunch Act of 1946

national weighted-average market price  The average price received by producers for a commodity, weighted to account for the amounts marked at different prices at different locations

nationalwide food consumption survey (NFCS)  Measures direct food and nutritional intake; the survey is taken every 10 years.

native  1) An unbranded hide. 2) Animals from the corn belt or northern farms. 3) Of vegetables, grown in the United States

native grass  Grass that is indigenous to an area

native protein  A protein that is not denatured

NATO  North Atlantic Treaty Organization

natron  Sodium sesquicarbonate (an alkaline salt)

natto  A fermented, chee’slike, soybean product; strong-flavored, dark brown soybeans in a dark brown paste (various degrees of dryness); looks like peanut brittle made from whole soybeans

natur  Indicates an unsweetened wine

natural cheese  Unblended cheese whose flavor depends on type of milk, bacteria, seasoning, and ripening technique. It is made from milk solids (curd) that have been separated from milk (liquid portion, whey) by rennet and/or bacterial culture.

natural color  Any of several colors that occur naturally in plant and animal tissue; a few are used as additives in food

natural food  Unrefined food; food growing wild; food that has not been treated with artificial chemicals

natural gas  Hydrocarbon gas associated with petroleum; used as fuel and in the manufacture of ammonia and other petrochemicals

Typical analysis: methane (CH₄) 83.4% by volume; ethane (C₂H₆) 15.8% by volume; nitrogen (N₂) 0.8% by volume

See Part 2: Fuel, Heating Value

natural logarithm  See logarithm, base e

natural pearl  A pearl produced without artificial addition of a foreign substance to the oyster

natural spice  A spice that is whole, cracked, or ground

nature  Indicates an unsweetened wine

nature-identical flavoring substance  A flavoring substance isolated from an aromatic raw material by physical methods, e.g., citral from oil of lemongrass

navaga  A food fish

Russia and Europe—Eleginus navaga

Russia and the northwestern Pacific—E. gracilis

naval stores  See rosin; spirit of turpentine

navarra  A red wine

navel (plate; short plate)  The lower portion of the rib cage, between the 6th and 12th ribs

Navel orange  A variety of seedless California orange that has a navel end and is strongly segmented; has poor juice but excellent eating properties; has firm pulp, thick skin; skin, pulp, and juice are bright in color; in season November to May

navy bean  See bean, navy

naw-mai-dong  Pickled, young bamboo shoots (Bambusa arundinacea)

nazareth blue  A blue cheese made from cow’s milk

Nb  The symbol for the element niobium

NB  Nota bene (note well)

N broth  See Part 2: Microorganism, Media

Nd  The symbol for the element neodymium

NDF (neutral detergent fiber)  An analysis that separates material into cell contents and cell wall components

NDGA  See nordihydroguaiaretic acid

ndila molo  Steamed, fermented, rice balls

NE  Level not established

Ne  The symbol for the element neon

neapolitan (harlequin; neapolitan ice cream)  A brick-shaped block of plain or fruit ice creams (and/or ices), usually two to four flavors and colors, placed in a brick mold and hardened

neapolitan medlar  See azarole

neat  1) An animal of the bovine type. 2) Of a material, undiluted or unmodified, e.g., neat whiskey
neat's-foot oil  An oil obtained by pressing the shin bones and feet of cattle; used for waterproofing and fatliquoring leather
Acid number—13.35
Iodine number—45–75
Specific gravity 20°/4°C—0.9158
See Part 2: Fats and Oils, Physical and Chemical Properties; Iodine and Saponification Values; Specific Gravities, Fats and Oils; Unsaponifiable Matter

Nebbiolo  1) An Italian variety of black grapes. 2) A light, red wine

Nebraska currant  See buffalo berry

neck  The connection between the head and the trunk, or body

neck bone  See cervical vertebrae

neck ring parting line  A horizontal mark at the bottom of the neck of a glass container, resulting from the matching of the neck ring part and the body mold part

neck rot  See thielaviopsis stalk rot

neck slice  See Part 2: Lamb Cuts

necropsy  Postmortem examination

necrosis  The pathologic death of a cell (or group of cells) in contact with living tissue

necrotic  Of or pertaining to the localized death of cells in contact with living tissue

nectar  1) A sweet secretion of plants that is the portion of flowers that is made into honey; plant honey. 2) An excellent beverage; any good beverage. 3) A beverage made from sweetened or unsweetened fruit juice, pulp, and some of the water used in cooking the fruit; it is pasteurized after sealing.

nectarberry  A sport of the lowberry

nectarine  (Prunus persica nectarina)  A small cling or freestone peach that has firm flesh (yellow, white, or red), a smooth skin [i.e., no pubescence (fine short hairs), a single-gene recessive], and a rich flavor; the skin has an orange-yellow or greenish ground color, the rest being red. Average yield 120 lb/tree; bearing age 3–4 yr; 8–10 spray applications; useful life 12 yr; pH 3.9; may be used fresh, canned, dried, or frozen; count per No. 2 1/2 can is 20.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Fruit</th>
<th>Size</th>
<th>Color</th>
<th>Flesh</th>
<th>Stone</th>
<th>Tree</th>
</tr>
</thead>
<tbody>
<tr>
<td>(in order of ripening)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very early</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firebrite</td>
<td>Small</td>
<td>Highly colored</td>
<td>Yellow; firm</td>
<td>Semifree</td>
<td>Free</td>
<td>Vigorous</td>
</tr>
<tr>
<td>Sunred*</td>
<td>Med.</td>
<td>Yellow, overlaid red</td>
<td>Yellow</td>
<td>Semifree</td>
<td>Vigorous</td>
<td></td>
</tr>
<tr>
<td>Armking*</td>
<td>Med.</td>
<td>Yellow, overspread red</td>
<td>Yellow</td>
<td>Semifree</td>
<td>Vigorous</td>
<td></td>
</tr>
<tr>
<td>May Grand</td>
<td>Med.</td>
<td></td>
<td>Yellow</td>
<td>Semifree</td>
<td>Vigorous</td>
<td></td>
</tr>
<tr>
<td>Early</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red June</td>
<td>Med.</td>
<td>Red</td>
<td>Yellow; firm</td>
<td>Free</td>
<td>Free</td>
<td>Vigorous</td>
</tr>
<tr>
<td>Early Sun Grand</td>
<td>Med.</td>
<td>Red blush</td>
<td>Yellow; firm</td>
<td>Cling</td>
<td>Productive</td>
<td></td>
</tr>
<tr>
<td>Independence</td>
<td>Med.</td>
<td>Red blush</td>
<td>Yellow; firm</td>
<td>Cling</td>
<td>Productive</td>
<td></td>
</tr>
<tr>
<td>Nectared 4</td>
<td>Large</td>
<td>Yellow, red blush</td>
<td>Yellow</td>
<td>Semifree</td>
<td>Productive</td>
<td></td>
</tr>
<tr>
<td>Early–midseason</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sun Grand</td>
<td>Med.</td>
<td>Yellow, red blush</td>
<td>Yellow; excell ent flavor</td>
<td>Free</td>
<td>Med. vigor</td>
<td></td>
</tr>
<tr>
<td>Flavortop</td>
<td>Large</td>
<td>Yellow, red blush</td>
<td>Yellow</td>
<td>Vigorous; moderately productive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midseason</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delicious</td>
<td>Large</td>
<td>Yellow, mottled red</td>
<td>Yellow; firm</td>
<td>Free</td>
<td>Vigorous; productive</td>
<td></td>
</tr>
<tr>
<td>Red Gold</td>
<td>Med.–large</td>
<td>Yellow, overspread red</td>
<td>Yellow</td>
<td>Free</td>
<td>Vigorous</td>
<td></td>
</tr>
<tr>
<td>Nectared 6</td>
<td>Large</td>
<td>Red over yellow</td>
<td>Yellow; firm</td>
<td>Free</td>
<td>Vigorous; moderately productive</td>
<td></td>
</tr>
<tr>
<td>Fantasia</td>
<td>Large</td>
<td>Yellow, red blush</td>
<td>Yellow; firm</td>
<td>Free</td>
<td>Vigorous; moderate ly productive</td>
<td></td>
</tr>
<tr>
<td>Red Grand</td>
<td>Large</td>
<td>Red</td>
<td>Yellow; firm</td>
<td>Free</td>
<td>Vigorous; sometimes light producer</td>
<td></td>
</tr>
</tbody>
</table>

Sunglo
Le Grand
Late Le Grand
Bob Grand

(Continued)
<table>
<thead>
<tr>
<th>Variety (in order of ripening)</th>
<th>Size</th>
<th>Color</th>
<th>Flesh</th>
<th>Stone</th>
<th>Tree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Late–midseason Gold King</td>
<td>Large</td>
<td>Green-yellow and red</td>
<td>Yellow; firm</td>
<td>Cling</td>
<td></td>
</tr>
<tr>
<td>Late Regal Grand</td>
<td>Large</td>
<td>Yellow, red blush</td>
<td>Yellow; firm</td>
<td>Cling</td>
<td>Large; productive</td>
</tr>
<tr>
<td>Flamekist</td>
<td>Large</td>
<td>Yellow, red blush</td>
<td>Yellow; firm; good flavor</td>
<td>Cling</td>
<td>Large; productive</td>
</tr>
<tr>
<td>September Grand</td>
<td>Large</td>
<td>Yellow, red blush</td>
<td>Yellow; firm</td>
<td>Cling</td>
<td>Large; productive</td>
</tr>
<tr>
<td>Autumn Grand</td>
<td>Large</td>
<td>Yellow, red blush</td>
<td>Yellow; firm</td>
<td>Cling</td>
<td>Large</td>
</tr>
<tr>
<td>Red Gold Flavor-top</td>
<td>Large</td>
<td>Yellow</td>
<td>Free</td>
<td>Free</td>
<td>Hardy</td>
</tr>
<tr>
<td>Fairlane</td>
<td></td>
<td>Yellow</td>
<td>Free</td>
<td>Free</td>
<td></td>
</tr>
</tbody>
</table>

*Chilling requirement 300 hours

*Short chilling requirement

Canned styles: halves, peeled; halves, unpeeled

1 cup, sliced = 3 med. nectarines

1 med. nectarine = ½ lb, peeled, pitted, and sliced

To ripen: Keep in open air, at room temperature and out of the sun.

Storage: When ripe, refrigerate uncovered; use in 3–5 days.

See brown rot; scab

See Part 2: Fruit, Availability; Fruit Classification; Fruit Storage; Minerals, Food

need date The date when an item is required for its intended use

neem oil See Part 2: Fats and Oils, Physical and Chemical Properties; Tocopherols

negotiable marketing certificates Marketing certificates that can be exchanged for cash or commodities See marketing certificates

negotiation The process by which a buyer and a vendor agree to the conditions surrounding the purchase of an item or service

negru de purkar A fruity, dry, red wine

Neikiang A breed of prolific, black, narrow-bodied pigs from Szechwan (Sichuan) Province, central China

Neisseria See Part 2: Microorganism, Media

Nellore A strain of Brahman cattle

nelma (Stenodus leucichthys nelma) A food fish used in the Soviet Union

nematode Any of the small, round worms of the class or phylum Nematoda, including unsegmented threadworms and roundworms; nematodes may be parasites or may be free-living in water or soil; they have a high tolerance for chlorine and can thus protect some ingested microorganisms from this chemical. See root-knot nematode

nemes kadar A soft, deep-rose, Hungarian wine

nemes kadarka A Hungarian red wine

neo- A prefixed used to indicate new

neodymium (Nd) A rare earth element of the lanthanide series; Group III B of the Periodic Table; at. no. 60; at. wt. 144.27; oxidation state +3; electron configuration 2–8–18–22–8–2

neomycin sulfate A drug that is used to treat enteritis and dysentery

neon (Né) An inert gaseous element; at. no. 10; at. wt. 20.183; oxidation state 0; electron configuration 2–8

neonate A newborn

neooibi A cloudy, alcoholic wine made from sugar-cane juice and usually consumed fresh

neoplasia The formation of cancer tissue

neoplasm A new and abnormal growth of tissue, e.g., a tumor

nepeta oil See Part 2: Essential Oils

nephelometric analysis An optical analysis by which concentration is determined by comparing the intensity of light reflected from suspended particles with that of a known concentration of the same particles

neptunium (Np) A synthetic radioactive element of the actinide series; Group III B of the Periodic Table; at. no. 93; mass number of the most stable isotope $^{237}$; oxidation states $+3, +4, +5, +6$; electron configuration 2–8–18–32–22–9–2

nerol

\[
\text{CH}_2\text{OH}
\]

Used as a roselike flavoring agent in food; sp. gr. 0.874–0.880

Storage: full, tight, glass container in a cool, dark place
nerolidol

![Chemical Structure of Nerolidol]

Used as a straw-colored, floral-like flavoring agent in food; sp. gr. 0.870–0.882
Storage: full, tight, glass container in a cool, dark place

neroli oil (orange-flower oil) An essential oil distilled from citrus flowers and used in flavorings
See Part 2: Essential Oils

nerve A fiber (part of a neuron) that transmits sensations and motor impulses

nervine A substance used to relieve tension or excitement

nessel A soft-cured English cheese made from whole cow's milk with rennet added

nesselrode A frozen dessert with fruit and nuts and often rum

net cash Payment for goods sold, usually within a short period of time, with no deduction allowed from the invoice price

net dietary protein calories percent (NDpCal%) The percentage of the total metabolizable calories that is supplied by the utilizable protein content of a diet

net dietary protein value (NDpV) The utilizable protein content of a diet, e.g., the product of the crude protein content and the operative net protein utilization

net energy The energy that is available for growth, work, and production after digestion and metabolism

net price The price after all discounts, rebates, etc. have been allowed

net protein utilization (NPU) The proportion of nitrogen intake that is retained; the product of biological value and digestibility

\[
NPU = \left( \frac{\text{body N content with test protein}}{\text{body N content, protein-free diet}} \right) \times \text{total N intake}
\]

net protein value (NPV)

\[
NPV = \left( \frac{\text{biological value}}{\text{digestion coefficient}} \right)
\]

netted melon See cantaloupe; melon; muskmelon

netting A veinlike network of lines running randomly across the rind of some melons

nettish (stinging nettle; Urtica dioica; U. urens) A weed; the shoots and leaves are used as spinach, in salads, and to make beer; the leaves are ground or chopped and consumed raw, stewed, or steamed

net weight The weight of food without packaging material

net worth The difference between the value of property that a person owns and the debts that he or she owes

neufchâtel cheese (bond; bondon; bondore; bondou; boudart; coeur de Bray; gournay; malakoff; No. 2 cream cheese) A soft, white, mild, creamy French cheese that is made from whole milk and is higher in moisture and lower in fat than cream cheese; it is foil-wrapped in rectangular portions; a soft, white cheese from France that may be eaten fresh or ripened
Composition: moisture 55–63%; protein 9–18%; fat 23–25%; carbohydrate 2–3%; fiber 0%; ash 1–3%; salt 1% (sodium 113 mg/oz)
Storage: refrigerate, covered or tightly wrapped; use within 2 weeks.
See also cream cheese

See Part 2: Cheese Characteristics; Cheese, Vitamin Content; Vitamin A, Milk and Milk Products

neurospora culture agar See Part 2: Microorganism, Media

neusohl A cheese made from sheep's or goat's milk with rennet added

neutral 1) Neither acidic nor basic, i.e., pH 7.0.
2) Having neither positive nor negative electric charge, e.g., a neutron

neutralism An absence of interaction between two populations living together

neutralization 1) A reaction between appropriate amounts of an acid and a base that yields a neutral product (salt and water), e.g.,

\[
H_2SO_4 + CaO \rightarrow CaSO_4 + H_2O
\]

2) To subdue a taste or odor with another stimulus
See Part 2: Margarine Production

neutralizer A substance that is used to change the acid–alkaline balance of a food

neutralizing value See Part 2: Liming Materials

neutral lard Lard rendered slowly (at 126°F) from back and leaf fat

neutral red (C_15H_17C1N_4) A pH indicator with a range of 6.8–8.0; it is red in acid and yellow-brown above pH 8; 0.1% in 60% ethyl alcohol

neutral spirits A rectified spirit used as a base for gin, liqueurs, and vodka See silent spirit

neutron A neutral particle that is present in all atomic nuclei except (common) hydrogen; charge 0; weight 1.675 x 10^{-24} g; mass 1.0086 u; diam. 2.8 x 10^{-13} cm
See Part 2: Constants, Fundamental

neutrophil A white blood cell that engulfs and kills pathogens

newberry A hybrid blackberry

newburg 1) A sauce made with cream and sherry. 2) Cooked lobster served in a cream sauce

Newburg, à la A method for preparing seafood that includes sautéing in butter, sherry, and paprika and heating in cream (sometimes with egg yolk)
niacin (B₃; nicotinic acid; p-p factor) 497

newburg sauce A lobster sauce made from butter, cream, sherry or other wine, brandy, and egg yolk and flavored with paprika and salt

Newcastle's disease A contagious viral disease of poultry that affects the respiratory and nervous systems; immunization is available

new cocoyam See tannia

new england (berliner) A sausage made from coarsely cut pork and a little beef

new england style sausage See berliner

New Hampshire An American class of chickens that lays a brown-shelled egg; plumage color is chestnut red.
- Female—neck chestnut red; tail feathers black and red
- Male—head reddish; neck and back golden; tail feathers black (some edged in red)
See Part 2: Poultry Breeds and Varieties

New Orleans chicory A blend of South American coffee and roasted chicory root

New Orleans roast See coffee

new potatoes Potatoes that have been dug before reaching full maturity

new process (solvent process) The extraction of oil from seed by a solvent

new-process cornmeal See cornmeal, new-process

newback See chipboard

newton (N)
- 1 N = 10⁵ dynes [dyn (10⁵ = 100,000)]

New York dog (frank) (Not a New York City dog) A frankfurter served with bacon and cheddar cheese

New York dressed duck An uneviscerated duck with the feathers removed

New York ice cream See ice cream, French

New York lettuce A variety of head lettuce that is larger and greener than iceberg See also lettuce

New York round A wholesale cut of beef round from which steaks are cut See Part 2: Beef Rounds

New York style See Eastern style See Part 2: Beef Rounds

New York style shoulder A pork shoulder that is trimmed and skinned, with the neck bone and back removed; about 16% of pork carcass (head and leaf fat on)

New Zealand lamb Usually smaller than U.S. lamb; usually marketed frozen

New Zealand spinach (ice plant; Tetragonia expansa) A large (2 ft or more) plant, not related to common spinach that is grown in hot climate as a substitute for spinach; the bright green leaves continue to grow in hot weather and look, taste, and are used like spinach.

nezhinskaya ryafina A brandy distilled from fermented rowan berries (Sorbus sp.)

NF See National Formulary

NFDM See dried skim milk; nonfat dry milk solids

NFE See nitrogen-free extract

NFMOA National Fish Meal and Oil Association

NG No good

ngam-pya-ye A fish sauce made from shrimp

nga ngapi A yellow-brown, salty, fermented condiment made from fish paste

nga-pi A yellow-brown, salty, fermented, condiment made from shrimp paste

nga-pi serissa A yellow-brown, salty, fermented, condiment made from shrimp paste

ng ka py A spirit-based alcoholic beverage; a liqueur

ngo mon A red, palm oil

nguoc mam A fish sauce

nguyen chat A fish sauce

nham A fermented, uncooked, seasoned, semidry sausage made from beef or pork with rice that is wrapped in banana-leaf packets and steamed before eating

NHS National Health Service

Ni The symbol for the element nickel

niacin (B₃; nicotinic acid; p-p factor) A water-soluble (B group) vitamin; deficiency causes a disease called pellagra (in humans) or black tongue (in dogs). Niacin functions in the oxidation-reduction system in cells.
Sources: liver; kidney, meat; yeast; cereals; legumes; wheat germ; enriched foods; green and leafy vegetables; chicken breast and peanuts
Deficiency symptoms: loss of appetite and weight; skin eruptions

\[
\begin{align*}
\text{nicotinic acid} & \quad \text{(niacin)} \\
\text{nicotinamide} & \quad \text{(niacinamide)}
\end{align*}
\]

Used as a food additive to maintain or improve nutritional value and as a nutrient or dietary supplement; mp 234–238°C (nicotinic acid), 128–132°C (nicotinamide)
Storage: well-closed container
See nicotinic acid

See Part 2: Beans, Peas, and Nuts; Beef, Percentages of Daily Recommended Allowances; Cereal Enrichment; Cereal Nutrient Content; Composition of Food; Dairy Products, Composition; Egg Composition; Egg Products, Nutritive Value; Fats and Oils, Composition; Fish and Shellfish, Composition; Food, Composition; Fruit Composition; Grain Analysis; Grain Products, Composition; Lamb, Percentages of Daily Recommended Allowances; Lemon Juice, Composition; Lime Juice, Composition; Macaroni and Noodles, Composition; Meat Composition; Meat, Nutritive Value; Niacin; Niacin, Daily Recommendations;
498 niacin (B₃; nicotinic acid; p-p factor)

Olives and Pickles, Composition; Plant Foods, Composition; Pork, Percentages of Daily Recommended Allowances; Poultry Composition; Sausage Composition; Sausage, Nutritive Value; Seed, Chemical Composition; Soups, Composition; Sugars and Sweets, Composition; Sweet Potato, Nutritive Value; Tomato and Tomato Products, Composition; Vitamin Retention, Meat; Vitamins; Vitamin Sources, Functions, and Stability; Wheat Products, Composition; Wheat, Vitamins

niacinamide (nicotinamide; vitamin B₃)

\[
\text{C} - \text{N} - \text{H}_2
\]

A food additive used to maintain or improve nutritional value and as a nutrient or dietary supplement
Storage: tight container
See niacin

niacinamide ascorbate A complex of ascorbic acid and niacinamide; used as a food nutrient or dietary supplement; melting range 140–145°C
Storage: tight, light-resistant container

niacinamine See niacinamide

nib 1) A small lump, e.g., of a seasoning. 2) Cracked cacao seeds; cotyledon

nickel (Ni) A metallic element; at. no. 28; at. wt. 58.71; Group VIII of the Periodic Table; oxidation states +2, +3;
electron configuration 2–8–16–2
orbit K L M N
used as catalyst in the hydrogenation of vegetable oils; relatively insoluble in food; there is no evidence that nickel will migrate to food in harmful amounts from nickel utensils.
See Part 2: Normal Solutions

nickel silver An alloy of copper, nickel, and zinc; slightly soluble in food

niçoise Describes food prepared with tomatoes and garlic

niçoise salad A salad made from anchovies, black olives, dressing with onions, french dressing, hard-boiled eggs, lettuce, and tuna

nicotinamide (niacinamide; vitamin P-P) Has the same function as niacin See niacin; niacinamide
See Part 2: Cereal Fortification; Cereals, Vitamin and Mineral Content; Vitamins

nicotine (C₁₀H₁₄N₂) An alkaloid derived from tobacco and used as an insecticide and fumigant; it is poisonous.

nicotinic acid See niacin
See Part 2: Cheese Composition; Cheese, Vitamin Content; Flour, Extraction Rates; Milk and Milk Products, Vitamin Content; Milk Composition; Nicotinic Acid, Food; Vitamins; Wheat, Parts of Grain, Vitamins

nidelchas A camembert-type cheese made from cow's milk and shaped into a thick disk

niederungskäse A hard cheese made from cow's milk with rennet added

nieheim A German cheese made from sour milk

nierstein A white wine

nierworst A moist, cooked, smoked Dutch sausage made from fine- or coarse-chopped, medium-seasoned beef and pork, with coarsely chopped kidney, stuffed into beef or artificial casings

Nigahi A breed of black pig with large ears, a sway back, and a large belly; found in south-central China

nigari A natural derivative of seawater; it is used in the manufacture of tofu to form the curd in a cooked puree of soybeans and water and is responsible for the cheeselike consistency of tofu. See tofu

nigella (devil-in-the-bush; fennel flowers; Ranunculus) A plant that produces pungent, aromatic seeds that are used as a substitute for pepper

niger seed oil See Part 2: Fats and Oils, Physical and Chemical Properties

night-blindness Difficulty in seeing in dim light, due to vitamin A deficiency

nightshade Any of several poisonous plants; some varieties have edible leaves that are eaten like spinach
See Part 2: Poisonous Plants

nigisu (Glossanodon semifasciatus) A food fish that is used in Japan

NIH National Institutes of Health

nihon-shu A rice wine

niku Meat

Nilla Wafer
1 cup crumbs = 30 wafers
See vanilla wafer

nimono Boiled meat and vegetables

Ningan A breed of pig found in northeastern China; black with white points

Ningsia Black Sheep See Hei

Ningsiang A prolific breed of pig found in Hunan Province, south-central China; black with white marking; has small lop ears, a sway back, and a sagging belly

ninhydrin test A test for amino acids with a free amino and a free carboxyl group; this includes all amino acids except proline and hydroxyproline; a deep blue color appears when ninhydrin is added to these amino acids.
See Part 2: Protein and Amino Acid, Color Reactions

niobium (Nb) [Also called columbium (Cb)] A metallic element; at. no. 41; at. wt. 92.91; Group VB of the Periodic Table; oxidation states +3, +5;
electron configuration 2–8–18–12–1
orbit K L M N O

niolo A strong-flavored French cheese made from sheep's or goat's milk

nip A small quantity of liquor; ¼ bottle

nipa palm See palm
nipplewort  A dandelion-type weed that can be used in salads or cooked
nippy  Describes a sharp, biting or cold sensation
nissana  A naturally occurring antibiotic (derived from *Streptococcus lactis*) that may be added to food in some countries
nisin  See Part 2: Fatty Acids and Their Properties
nisinic acid  See Part 2: Fatty Acids and Their Properties
nisterull salamismak  A semidry, cooked, smoked Norwegian sausage made from coarsely chopped, heavily seasoned beef and pork not stuffed into casings
niter  1) The insoluble residue of maple sap. 2) Potassium nitrate
niter cake (sodium acid sulfate; sodium bisulfate; sodium hydrogen sulfate) (NaHSO₄) Used as a food and feed additive
nitrate (NO₃⁻)  A salt of nitric acid; a substance containing an NO₃⁻ ion; used in meat curing (serves as an oxygen source and prevents the growth of anaerobic bacteria); should not exceed 500 ppm (0.05%) in the finished product; sodium or potassium nitrate, 7 lb/100 gal pickle (10% pump); generally, now used only in dry-cured meat
nitrate poisoning  Caused excessive quantities of nitrate (NO₃⁻) converted by bacteria to nitrite (NO₂⁻), which interferes with the oxygen's carrying ability of the blood
nitrate of soda (sodium nitrate) (NaNO₃) A fertilizer material; 16-0-0; basic in nature; each pound is equivalent to 0.29 lb dolomitic limestone.
See Part 2: Fertilizer Materials
nitrate poisoning  Caused excessive quantities of nitrate (NO₃⁻); converted by bacteria to nitrite (NO₂⁻), which interferes with the oxygen's carrying ability of the blood
nitrate test strip  See Part 2: Microorganism, Media
nitramide sulfanitran  A drug that is used to improve growth and feed efficiency
nitrite (NO₂⁻)  A salt of nitrous acid; a substance containing an NO₂⁻ ion; used in meat curing (both sodium and potassium nitrite can be used)
Maximum amounts of sodium nitrite or potassium nitrite:
\[ \frac{4}{3} \text{ oz}/100 \text{ lb meat} \]
Finished product cannot contain over 200 ppm (0.02%); many products 156 ppm max.
2 lb in 100 gal pickle (10% pump)
1 oz/100 lb meat in dry cure
Nitrite content is determined by extracting the sample with water and developing a color by using Griess reagent and then measuring this color spectrophotometrically; results can be obtained by comparing the value received with a known standard curve.
See Part 2: Chemical Poisoning
nitro-  A prefix that is used to indicate that a compound contains the —NO₂ group
nitroalkane (nitroparaffin) (R—NO₂) A paraffinic hydrocarbon in which one hydrogen atom has been replaced by a nitro group; used as a solvent for cellulose derivatives
nitroamine  Any of several nitrites with secondary or tertiary amines
nitrofurazone  A drug that is used to treat enteritis
nitrogen (azote; N)  A diatomic (N₂) gaseous element; at. no. 7; at. wt. 14.008; Group VA of the Periodic Table; oxidation states +1, +2, +3, +4, +5, -1, -2, -3; electron configuration 2—5
orbit K L
It is nonflammable and nontoxic, is present in air (78% by volume), is an essential element in proteins and amino acids, and is also an essential component of soils and fertilizers.
Properties:
Boiling point— -320.5°F (-195.8°C)
Critical temperature— -232.9°F (-147.1°C) (critical pressure 492.1 psia)
Freezing point— -345.9°F (-209.9°C)
Heat absorbed
From -320 to 0°F—85 Btu/lb
From 0 to 70°F—17 Btu/lb
From liquid at -320°F to vapor at 35°F—174 Btu/lb
Latent heat of vaporization (—320°F)—85.7 Btu/lb
Liquid nitrogen—50.46 lb/ft³ or 6.7 lb/gal
See Part 2: Fertilizer; Fertilizer Materials; Honey Composition; Manure Analysis; Normal Solutions; Nutrients in Crops; pH and Availability of Plant Nutrients; Sugar Beet Yield; Wastes, Agricultural and Industrial
nitrogen base (nitrogenous base) A basic derivative of ammonia, especially an organic derivative, e.g.:
  Purines
  Adenine
  Guanine
  Pyrimidines
  Cytosine
  Uracil

nitrogen conversion factor Used in determining the protein value of a food: the nitrogen content of the food (as determined by the Kjeldahl method) is multiplied by a conversion factor, e.g., the "crude protein" value is usually obtained by multiplying the nitrogen content by a factor of 6.25.

nitrogen determination See Kjeldahl determination

nitrogen equilibrium Nitrogen intake (i.e., the protein eaten) balances nitrogen output

nitrogen fixation The microbial conversion of atmospheric nitrogen to organic nitrogen

nitrogen-free extract (NFE) The more-soluble carbohydrates and cellulose:

\[
\% \text{NFE} = 100 - (\% \text{H}_2\text{O} + \% \text{ash} + \% \text{protein} + \% \text{fiber} + \% \text{fat})
\]

nitrogenous extract A water-soluble substance that contains nitrogen

nitrogenous ratio (albuminoid ratio; NR) The ratio by which the body-building power of the diet is judged; it should be between 1:4 and 1:8.

\[
\text{NR} = \frac{\% \text{protein}}{\% \text{carbohydrate} + \% \text{fat}(2.5) + \% \text{indigestible matter}}
\]

nitrogen pentoxide See Part 2: Normal Solutions

nitroparaffin See nitroalkane

nitrosamine Any of many neutral compounds characterized by the grouping NNO; an organic compound in which NNO is attached to an alkyl or aryl group; may be formed from nitrates; some nitrosamines may be carcinogenic.

nitroso- A prefix that is used to indicate that a compound contains the —NO group

nitrosohemochrome See Part 2: Meat Pigment; Nitrate, Meat Curing

nitrosomyoglobin (nitric oxide myoglobin) The red pigment in cured meat (formed from nitrite and myoglobin) prior to heating. See Part 2: Meat Pigment; Nitrate, Meat Curing

nitrous acid (HNO₂) An aqueous solution of nitrogen trioxide (N₂O₃). See Part 2: Nitrate, Meat Curing

nitrous oxide (laughing gas) (N₂O) A noncombustible gas that is used as an aerosol propellant, a refrigerant, and a general anesthetic; liquid nitrous oxide (−78°C) is used in cryogenic freezing. See Part 2: Nitrate, Meat Curing; Refrigerant

niu-nai Milk

niu-rou Beef

niva 1) A sweet, cloudy white wine made from palm sap. 2) A blue cheese made from cow's milk

nixtamal Maize grain soaked in 1% lime solution

njeguski sir A hard, dry, low-fat, grating cheese made from sheep's milk

njohi A cloudy, alcoholic wine made from sugar-cane juice, usually consumed fresh

nkyekyere (sabo) Steamed dumpling balls made from degemermed maize

nmada (nmeda) A maize-based aliha beverage

nmeda See nmada

NMFS National Marine Fisheries Service

NMR Nuclear Magnetic Resonance

NNRI National Nutrition Research Institute

No The symbol for the element nobelium

NOAA National Oceanic and Atmospheric Administration

nobelium (No) A synthetic radioactive element of the actinide series; at. no. 102; mass number of the most stable isotope 254; Group IIIB of the Periodic Table; electron configuration 2−8−18−32−32−8−2 orbit K L M N O P Q

noble An element that is chemically unreactive and forms few compounds; refers especially to the gases of the zero-valent group of the Periodic Table, the first three of which (helium, neon, and argon) are completely inert; the term also refers to some metals of low combining power.

noble rot (Botrytis cinerea) A parasitic fungus that grows on grapes and causes them to become desiccated and higher in sugar and to produce a quality wine

nochoctli A white, viscous alcoholic beverage made by fermentation of the prickly pear (Opuntia sp.)

nocino A bitter, digestive liqueur flavored with nuts

node A stem joint where a leaf is or was attached; a swelling; an intersection See Part 2: Corn

nodule A tubercle on the roots of a legume, produced by nitrogen-fixing bacteria (Rhizobium spp.) and harbors bacteria that allow the plant to use atmospheric nitrogen from the soil

noekkelost (nogelost; nokkel) A hard, spiced, flat, Norwegian cheese

NOEL No observed effect level

no-frills food A merchandising or marketing scheme by which foods carry no brand name and are simply and inexpensively packaged

nogg See eggnog

noggin (quartern) A measure of liquid volume used for liquor

\[ 1 \text{ noggin} = 1 \text{ gill} = \frac{1}{2} \text{ pint (pt)} \]

nogyo kihon ho The basic agricultural law of Japan
noil Short wool fibers removed during the process of
combing
noilly prat Dry vermouth
noisette 1) A hazelnut. 2) Small, choice pieces of lean
meat
nokkelost A semihard, reduced-fat, mild-flavored
cheese made from cow's milk; usually wheel-shaped
nokkelost cheese (leyden; spiced leyden) A
cheese similar to edam except that it contains car­
avaway seeds
-nom- A syllable used to indicate law
nominal price An estimated price in the absence of
actual transactions; usually, it is the average between
the last bid and the last offer
nominal rate of interest The actual rate of interest
without adjustment for inflation
γ-nonalactone
\[ \text{CH}_3\text{(CH}_2\text{)}_4\text{CHCH}_2\text{CH}_2 \]

O——C=O

Used as a coconut-like flavoring agent in food; sp. gr.
0.958-0.967
Storage: full, tight, glass container in a cool, dark place
nonanal \[ \text{CH}_3\text{(CH}_2\text{)}_4\text{CHO} \] Used as a fatty, orange-
like or roselike flavoring agent in food; sp. gr.
0.82-0.83
Storage: full, tight, glass container in a cool, dark place
noncarbonated beverage A fruit drink made with
natural and synthetic flavorings and without carbona­
tion
inedible Inedible; not for human consumption
nonelectrolyte A substance that is not a good electrical conductor when in aqueous solution
nonenzymatic browning See browning reaction
nonessential An amino acid or fatty acid that is
synthesized in the body and thus need not be ob­
tained from external sources
no-net-cost program A price support program by
which producers are assessed to finance the cost of the
program
nonfat dry milk (NFDM) Skimmed milk that has
been dehydrated

<table>
<thead>
<tr>
<th>Composition</th>
<th>As is (%)</th>
<th>Moisture-free (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein</td>
<td>33.8-38.6</td>
<td>35.1-40.1</td>
</tr>
<tr>
<td>Lactose</td>
<td>43.8-55.9</td>
<td>45.5-58.0</td>
</tr>
<tr>
<td>Fat</td>
<td>0.1-1.0</td>
<td>1.66-2.12</td>
</tr>
<tr>
<td>CaO</td>
<td>1.6-2.04</td>
<td>1.66-2.12</td>
</tr>
<tr>
<td>Moisture</td>
<td>&lt; 5</td>
<td>—</td>
</tr>
</tbody>
</table>

Titratble acidity (as lactic acid) 1.3-2%; alkalinity of
ash < 200 ml 0.5 N HCl/100 g; scorched particles
< 32.5 mg/25 g (spray-dried), < 32.5 mg/17 g
(roller-dried)

nonfat dry milk, calcium-reduced

<table>
<thead>
<tr>
<th>Composition</th>
<th>Normal (mg/100 g)</th>
<th>Ca-reduced (mg/100 g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium</td>
<td>1257</td>
<td>280</td>
</tr>
<tr>
<td>Potassium</td>
<td>1794</td>
<td>680</td>
</tr>
<tr>
<td>Sodium</td>
<td>535</td>
<td>2280</td>
</tr>
</tbody>
</table>

nonfat dry milk solids Skimmed milk that has been
dehydrated by spray-drying or vacuum-drying; used
as a binder in sausages; 11 lb skimmed milk are
required to produce 1 lb nonfat dry milk solids.
(\( \frac{1}{2} \) cup nonfat dry milk + (4 cups water)
= 1 qt liquid skimmed milk
Instant form—coarse, creamy white, free-flowing
particles that dissolve easily in water
Grades: Extra; Standard
The USDA grade for instant is US Extra; it has a
sweet and pleasing flavor and will dissolve immedi­
ately in water.

Storage (unopened): 75°F or lower; keep dry; use within
a few months
Storage (opened): tightly covered, in a cool, dry place
Storage (mixed with water): refrigerate like fresh milk
See also binder; dried skim milk
See Part 2: Food, Composition
nonfat milk Milk from which over 95% of the fat has
been removed See skimmed milk
See Part 2: Dairy Terms; Milk, Amino Acids
nonfat milk solids The solids in milk other than fat;
protein, milk sugar, and minerals
nonheading cabbage See collards
noninfectious Not infectious, e.g., a condition that is
caused by things other than microorganisms
nonirradiated Not irradiated ("unirradiated" is
considered to be incorrect)
nomeling Describes the texture of the flesh of
peaches used entirely for processing, e.g., Ambergem
nonnats See whitebait
nono See fulani
nonpareil See caper
nonpareille 1) Capers packed in vinegar. 2) Colored,
granulated sugar
nonpolar Describes liquids that have a low dielectric
constant and thus are poor electrical conductors, e.g.,
hexane (\( \text{C}_6\text{H}_{14} \))
nonprotein nitrogen (NPN) Nitrogen from sources
other than amino acids, e.g., anhydrous ammonia,
atmospheric nitrogen, and urea
nonrecourse loan  A price-support loan made to hold crops for later sale; the commodity for which the loan was advanced can be delivered to the government in full settlement.

nonreducing sugar  A sugar that is oxidized very slowly or not at all by weak oxidizing agents (silver, mercuric, or cupric salts); contains no free aldehyde or ketone groups; e.g., sucrose

nor-  A chemical prefix used to indicate “minus one methyl group”

norbo  A gouda-type cheese with holes

nordihydroguaiaretic acid (NDGA)  \((\text{C}_{18}\text{H}_{22}\text{O}_4)\)  An antioxidant used to retard rancidity in fat; 0.01% in fat (total antioxidant), 0.02% (in combination)  See Part 2: Antioxidants, Formula

norea  \([3-(\text{hexahydro-4,7-methanoindan-5-yl})-1,1-di-methylurea]\) An herbicide

norleucine  A monoamino-monocarboxylic amino acid

\[
\text{CH}_3-(\text{CH}_2)_3-\text{CH}-\text{C}^{\text{OH}}\text{NH}_2\text{O}
\]

normal (N)  A solution of a concentration such that one liter of the solution contains one gram-equivalent weight of the solute  See Part 2: Normal Solutions; pH, Standard Solutions; Reagents, Normal Solutions; Sodium Hydroxide Solution

normal crop acreage  The farm acreage that is normally devoted to a group of designated crops

normal distribution  The equation for the distribution

\[
\gamma = \frac{1}{\sigma\sqrt{2\pi}} e^{-(x-u)^2/2\sigma^2}
\]

If \(T = (x-u)/\sigma\),

\[
\gamma = \frac{1}{\sqrt{2\pi}} e^{-\tau^2/2}
\]

This type of frequency distribution is found when the data are measured on a continuous scale (may have fractional components of the unit 1).  See Part 2: Normal Curve

normal yield  The average historical yield established for a particular farm or area

northern pike  A finfish with light meat and light to moderate flavor

northern root-knot nematode  \((\text{Meloidogyne hapla})\)  An extremely small worm that attacks strawberries or other plants and common weeds by entering the roots to feed; it does not attack most grains and grasses; fumigation is one possible method of control.

Prevention: plant only stocks that are free of root knot

Northern Spy  A variety of apple that is in season from Sept. to Dec.; excellent sauce and pie apples and good eating apples

Northrop, John H.  Crystallized trypsin and pepsin

Norway haddock  An oceanic perch-type food fish

Norway lobster  See Dublin bay prawn; prawn
nose The aroma of tea or wine
nootrale (raschera) A hard Italian cheese made from cow's milk with rennet added
No Tail A breed of sheep
See Part 2: Sheep Breeds
notch A small cutout made in a can lap to aid in the formation of the body hook at the crossover
notchweed See sandwort
notruschki (tworog) A Russian cheese made from sour milk See tworog
notchweed See sandwort
nourishment (feeding) The act of supplying or receiving food
Novocaine The proprietary name for procaine hydrochloride; a nerve block anesthetic used in dentistry

\[
\text{C} = \text{O} - (\text{CH}_2)_2 - \text{N} = \text{HCl}
\]

\[
\text{NH}_2
\]
novaculite (Arkansas stone; honing stone; sharpening stone; whetstone) A hard, compact, fine-grained, very pure, siliceous rock used for sharpening tools and knives.
Grades:
Black hard Arkansas—black; extra-fine; honing
Hard Arkansas—white; fine; touching blades
Soft Arkansas—gray; medium-coarse; rapid cutting
Washita—multicolored; coarse; rapid cutting

novinka Buttermilk with fruit syrup added
noyau See crème de noyau
nozawana Pickled Brassica rapa
nozzle with captive cap A one-piece plastic cap that is permanently attached to a nozzle by a narrow strip of molded plastic (to prevent loss and to make closure easy)

Np The symbol for the element neptunium
NPN See nonprotein nitrogen
NRC National Research Council
NRP National Residue Program
nusabufufo A sweet, cloudy white oil made from palm sap
nshima (shima) A fermented, cassava (with or without cereal) sourdough dumpling
nshiu An acidic, white dumpling made from maize flour (80% extraction)
nu (N, ν) A Greek letter with an English equivalent of n; used as a symbol for the frequency of light and for refractive index
nuka-khem Dried beef
nub See nubbin
nubbin (crook; nub) 1) A small ear of corn. 2) Small cucumbers that are crooked or imperfectly formed
Nubian A breed of goat
See Part 2: Goats, Milk Breeds
Nubian goat A brown to black breed of dairy goat originally from Nubia, Abyssinia, Upper Egypt, and northern Africa
Nubian gin See chang aa
Nubian goat A breed of goat
See Part 2: Goats, Milk Breeds
Nubian gin See chang aa
nuchu A thick porridge gruel made from sorghum or millet and served with buttermilk and salt
nucleic acid Any of two types of polymerized nucleotides, the type depending upon the sugar (ribose or deoxyribose) in the nucleotides; a complex compound that on hydrolysis yields phosphoric acid, sugars, and one or more bases (purines and pyrimidines)
nucleoprotein A combination of proteins and nucleic acids; occurs in animal glands and wheat germ
nucleotide A molecule consisting of one molecule of phosphoric acid, one molecule of sugar (ribose or deoxyribose), and one molecule of a base [a purine (adenine or guanine) or a pyrimidine (thymine or cytosine)]

<table>
<thead>
<tr>
<th>Type</th>
<th>Sugar</th>
<th>Nucleotide</th>
<th>Found in</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deoxyribonucleic acid (DNA)</td>
<td>Cell nuclei; chromosomes</td>
<td>Genetic material of cell</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ribonucleic acid (RNA)</td>
<td>Cell nuclei; other parts of cell; ribosomes</td>
<td>Responsible for protein code</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Nitrogen bases: purines (adenine, guanine); pyrimidines (cytosine, uracil)
nucleus 1) The center of an atom; contains most of the mass and is made up of protons (positively charged particles) and neutrons (neutral particles). 2) The central portion of a living cell; contains the chromosomes. 3) The benzene ring
Nuits-Saint-Georges A red wine
nukamiso-zuke Vegetables pickled in water, rice bran, and salt
numerical aperture (NA) A measure of the resolving power of a lens
\[
\eta (\text{NA}) = \gamma \sin \theta
\]
\(\gamma (\text{eta}) = \text{refractive index of the medium between the object and the lens}
\(\theta (\text{theta}) = \text{the angle between the optical axis of the lens and the most divergent rays passing through the lens}
numidia A strong-flavored blue cheese made from sheep's or goat's milk
nung-sa A snake wine
nuoc mam A condiment that is a salty fish sauce made from cured fish
nuoc-mam-qau-ca A fish sauce made from fish (Clarius spp. and Ophicephalus spp.) livers
nurse A large or small, spotted dogfish used for food
nurse cow

A cow used to furnish milk for another cow's calf.

nuruk

Gray-white, dried balls of starter containing bacteria, molds, and yeast on a wheat base; used as inoculum for sake.

nut

A one-seeded fruit contained in a shell (55-65%) that does not open when ripe; high in protein, moderate in fat; e.g., chestnuts, filberts, hazelnuts, and pecans.

2 lb, in shell = 1 lb nutmeats
1 lb, in shell = 2 cups nutmeats
1 cup, chopped = 1/3 - 1/2 lb

Storage (unshelled): keep at room temperature; will keep about 6 months (below 70°F, shelf life 1 yr).

To improve keeping quality: Keep in shell (will keep better than shelled); protect from oxygen; store at low temperature; unroasted nuts keep better than roasted and whole nuts keep better than nut pieces.

Storage (shelled): keep in an airtight container (65-75% relative humidity), refrigerate (32°F, storage life 8 months), or freeze (-10°F); freezing point 13-25°F; See also nuts, canned.

See Part 2: Beans, Peas, and Nuts; Calories, Daily Recommendations; Fruit and Nut Rootstock; Fruit Classification; Iron, Daily Recommendations; Nicotinic Acid, Food; Nut, Grades; Oils, Seed and Fruit; Pulses, Nuts, and Seeds, Composition; Riboflavin, Food; Storage; Thiamin, Daily Recommendations; Thiamin, Food; Tocopherols.

nut brittle

A nut-flavored candy.

nut butter

A thick spread made by grinding nuts that have been dry-roasted; contains added oil and salt.

To prepare: break nuts in a food chopper; dry and crisp nuts in oven (325-350°F) for a few minutes; grind finely in a nut mill or food chopper.

nutmeg (Myristica fragrans Houtt)

The tan kernel of the fruit of the nutmeg tree; used as a spice; available whole or ground; the finer it is ground, the better the flavor dispersal but the quicker the potency will be lost. The aroma is warm, smooth, and spicy; the flavor is pleasant, warm, and bitter.

Classes:
East Indian—produced in Indonesia
West Indian—produced in Grenada

Types:
Light brown grind—made from good, sound, perfectly formed kernels
Dark brown grind—made from imperfect kernels

Grades:
Sound—80s or 110s (the number per pound avoidaduposis)
Sound unassorted (varying sizes)—A, B, C, D
Substandard
Bruised and broken
BWP—broken, wormy and punky
Distilling (occasionally treated with lime to resist insects)—from Indonesia (poor quality or unripe), grades BIA or ETEZ (8-10% volatile oil) and BLZ or AZW1 (12-13% volatile oil), and from Grenada (floats)
Floats—from a water flotation process

Nut shrivelled

The fruit contains a red, fleshy network, called an aril, that is the spice mace; nutmeg is the seed, which is dried before use and may have a coating of lime.

Composition: moisture 6-7% (8% max.); protein 5-8%; fat 36-37%; carbohydrate 49-50%; fiber 4.4-5% (10% max.); ash 2.5% (5% max.); acid-insoluble ash 0.5% max.; avg. volatile oil (volume/weight) 6-9% (6% min.); avg. nonvolatile extract 25% min.; fixed oil 25-40%; myristic acid 70-90% of fatty acid content.

The ground spice deteriorates during storage due to loss of volatile oil and an increase in free myristic acid; the best flavor is obtained if nutmeg is freshly ground; used in sweet and milk dishes. See also mace.

See Part 2: Flavoring Agents, Natural; Spices, Microbial Content; Wastes, Agricultural and Industrial.

nutmeg butter

An orange-colored fat expressed or extracted from nutmeg.

Composition: unsaponifiable matter up to 20%; fixed oil 25-40%; trimyristin 70-85%.

nutmeg fat

See Part 2: Saturated Fatty Acids.

nutmeg melon

See melon.

nutmeg oil (myristica oil)

A colorless to pale yellow to light brown oil obtained by steam distillation of dried kernels of the ripe seed of the nutmeg tree (Myristica fragrans).

Classes:
East Indian—nutmegs grown in Indonesia
West Indian—nutmegs grown in Grenada

Optical rotation +8° to +45°; refractive index 1.469-1.488 at 20°C; sp. gr. 0.880-0.911 g/ml (East Indian); 0.853-0.880 g/ml (West Indian).

Major constituents: monoterpane hydrocarbons 61-86%; oxygenated monoterpenes 5-15%; aromatic ethers 2-18%.

Used as a flavoring agent in food.

Storage: full, tight, container in a cool, dark place.

nutmeg oleoresin

Obtained by organic solvent (e.g., benzene, ethanol) extraction of nutmeg; volatile oil 10-30%.

nut paste

A mixture of sugar and ground nut kernels.

nutrient

Any substance that contributes to the growth and health of a living organism; any of the organic and inorganic compounds and elements that are constituents of foods and that are utilized in the normal metabolism of the body, e.g., in energy production, growth, and regulatory action; water is a nutrient but calories (a measure of the energy in food) are not.

Energy yielding nutrients: proteins; carbohydrates; fats.

Essential nutrients: organic and inorganic compounds and elements which the body requires but does not synthesize (or synthesizes in insufficient amounts).

See available nutrient; essential nutrient.

See Part 2: Nutrients in Crops; pH and Availability of Plant Nutrients.

nutrient agar

An agar used as a culture medium for bacteria (e.g., Bacillus cereus).

See also agar-agar.

See Part 2: Microbiological Examination of Dairy Products; Microbiological Media; Microorganism, Culture Media, Dairy and Food Products; Microorganism, Culture Media, Water and Sewage, Standard Methods; Microorganism, Media.
nutrient allowance  A recommendation for nutrient intake, allowing for variables such as losses during storage and processing, the kind and quality of food or feed and the age, size, degree of activity, stress management, and health of the individual

nutrient broth  A protein-rich liquid used as a culture medium for bacteria
See Part 2: Microbiological Examination of Dairy Products; Microbiological Media

nutrient–calorie ratio  A measure of the nutritional value of a food, given as the weight of nutrients per unit of energy

nutrient density  The ratio of essential nutrients to calories in a food

nutrient gelatin  A gelatin used as a culture medium for bacteria (e.g., Bacillus cereus)
See Part 2: Microorganism, Culture Media, Water and Sewage, Standard Methods; Microorganism, Media

nutrient requirements  The intake of energy, protein, minerals, and vitamins necessary to satisfy the minimum needs (without margins of safety for maintenance, growth, reproduction, lactation, and work) of an individual

nutrition  1) The maintenance of an organism (a plant or an animal) by the absorption of nourishment from nutrients. 2) The science and study of the reaction of living organisms to food utilization for maintenance of life, growth, the normal functioning of organs and tissues, and the production of energy. 3) The process by which a living organism utilizes food to produce energy and for the maintenance of life, growth, and the normal functioning of organs and tissues. 4) Of humans, the science and study of how the body responds to changes in diet and consumption of food and to significant pathological or systemic factors (e.g., age, health, and disease) and of the chemical reactions involved in the nutritional process

nutritional anemia  Anemia (a condition of lower than normal hemoglobin concentration, hematocrit, or number of red blood cells) that is caused by a deficiency of one or more essential nutrients (e.g., iron)

nutritional deficiency disease  See deficiency disease

nutritional disorder  An abnormal state of the body that is caused by consuming food that does not supply the physiological requirements or by failure to utilize the food after ingestion

nutritional dwarfing  A result of inadequate diet, causing a child to be abnormally small for its age and genetic stock, but without clinical signs of deficiency disease other than growth retardation

nutritional labeling  See Part 2: Nutritional Labeling

nutritional marasmus  A severe form of protein–calorie malnutrition, usually occurring in infants, that is characterized by growth retardation with very low body weight, loss of subcutaneous fat, and muscle wasting

nutritional quality guideline  Part of a regulatory procedure for establishing the nutrient content for certain classes of food

nutritional requirements (physiological requirements)  The (average) daily intake of energy and nutrients needed by a healthy individual for growth and normal functioning of the body

nutritional status (state of nutrition)  The general condition of an organism (or a person's body) due to the intake, absorption, and utilization of food and due to factors of pathological significance

nutrition education  Educating the public in an attempt to improve the general nutritional status of the population

nutrition education and training program  Provides funds for the dissemination of nutrition information to children and to food service and teaching personnel

nutrition indicators  Measurements of factors of nutrition that are used to assess quantitatively the changes in the nutrition of population groups

nutrition information panel  The portion of a food label where nutrition information is located; usually a panel on the right-hand side of the label

nutrition in public health  The interactions between diet, health, and disease in a population

nutritionist  A person trained in nutrition

nutrition labeling  A statement of the nutrient content of a food (in terms of a stated serving or portion size) displayed on the container or package

Label content:
1. Serving size
2. Number of servings per package
3. Caloric content—number of calories per serving (to the nearest 5 calories)
4. Content of protein, fat, and available carbohydrate—number of grams per serving (to the nearest gram); percentage of U.S. recommended daily allowance (USRDA) of protein
5. Vitamin content—percentage of USRDA per serving (in 5% increments up to 20% and in 10% increments above 20%); must include vitamin A, vitamin C, thiamin, riboflavin, and niacin; others optional
6. Mineral content—percentage of USRDA per serving (in 5% increments up to 20% and in 10% increments above 20%); must include calcium and iron; others optional

nutrition rehabilitation  Restoration of health of a person who has had a period of undernutrition or malnutrition

nutrition training  Academic and practical instruction in nutrition, dietetics, food science, and food technology

nutritive ratio

\[
\text{nutritive ratio} = \frac{\text{digestible carbohydrate} + \left(\text{(digestible fat)} \times 2.25\right)}{\text{digestible protein}}
\]

nutritive value  An assessment of the nourishment supplied by a food
See Part 2: Meat, Nutritive Value
nuts, canned  Store at room temperature (below 70°F, shelf life 1 yr)
nuts, mixed  A mixture of unshelled almonds, Brazil nuts, filberts, pecans, and walnuts; 1 oz/serving
nuwara eilyas  A black tea from Sri Lanka
nyari turista (summer sausage)  A semidry, cooked, smoked Hungarian sausage made from medium-chopped, medium-seasoned beef and pork stuffed into artificial casings
nylon  See polyamide
See Part 2: Mesh Sizes
nystatin  A polyene, antifungal antibiotic that is added to food in some countries
nyuka  A sour porridge made from maize, millet, or sorghum
o  See ortho-

O  Symbol for the element oxygen

oak  A hardwood tree of which there are over 300 species; used for lumber and vegetable tanning; seeds (acorns) used for animal feed. Excellent firewood; 25 million Btu/cord (20% moisture); difficult to start; easy to split; light smoke, excellent coals, and few sparks

1 cord = 3,800 pounds

See Part 2: Insulation; Poisonous Plants

Oakite  Proprietary name for a tribasic sodium phosphate (Na₃PO₄ • 12H₂O) used as a cleaning compound

oak leaf gland  The pancreas

<table>
<thead>
<tr>
<th>Oats (form)</th>
<th>Dry matter (%)</th>
<th>Protein (%)</th>
<th>Fiber (%)</th>
<th>Fat (%)</th>
<th>Ash (%)</th>
<th>Starch (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereal by-product</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>less than 4% fiber, feeding oat meal, oat middlings</td>
<td>91</td>
<td>15</td>
<td>3.5</td>
<td>6.5</td>
<td>2.3</td>
<td></td>
</tr>
<tr>
<td>Groats</td>
<td>90</td>
<td>16</td>
<td>2.5</td>
<td>6</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Hay, sun dried</td>
<td>91</td>
<td>8.5</td>
<td>28</td>
<td>2.5</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Hulls</td>
<td>92</td>
<td>3.6</td>
<td>31</td>
<td>1.6</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Silage</td>
<td>31</td>
<td>3</td>
<td>10</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Oakleaf lettuce  A leaf lettuce with deeply notched leaves

oak root fungus  See armillaria root rot

oarweed (Laminaria digitata)  A seaweed used for food, livestock feed, and the production of alginate used for thickening, emulsification, and film formation

oat (Avena byzantina, a red oat; Avena sativa, a white oat)  An annual temperate zone, grain crop used for livestock (ripe grain as food; green stage as fodder, hay, or pellets) and human food (porridge, grits, oatmeal, and rolled oats). Oat flour has antioxidant properties and is mixed with other flours to retard rancidity. Oat husk (removed during milling) has been used for fuel, packing material, and as a raw material for the production of furfural. Plant 50–80 lb/acre; 145–155 days to maturity

Weight of dried products:

<table>
<thead>
<tr>
<th>lb/qt</th>
<th>lb/bu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground</td>
<td>0.7</td>
</tr>
<tr>
<td>Middling</td>
<td>1.5</td>
</tr>
<tr>
<td>Oat</td>
<td>1</td>
</tr>
</tbody>
</table>

Strains: Avena sativa, Avena sterilis, Avena strigosa; pH 6.0; approx nutrients required to produce:

<table>
<thead>
<tr>
<th>N (lb)</th>
<th>P₂O₅ (lb)</th>
<th>K₂O (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 bu grain</td>
<td>13</td>
<td>9</td>
</tr>
<tr>
<td>2 tons straw</td>
<td>12</td>
<td>70</td>
</tr>
<tr>
<td>1 ton cover crop</td>
<td>12</td>
<td>50</td>
</tr>
</tbody>
</table>

Whole oats is 30% hulls

1 bu = 32 lb (range 26–36 lb)
1 cup, quick cook = 1.75 cups cooked

Feeding value compared to corn at 100%:

Whole oats—85%
Hulled (groats)—100%

See Part 2: Cereal Composition; Cereal Nutrient Content; Minerals, Food; Nicotinic Acid, Food; Nutrients in Crops; Plant Foods, Composition; Protein Factors; Seed, Chemical Composition; Seed Composition; Seed, Germination; Spoilage, Fat in Food; Tocopherols

oat, cereal

Composition (breakfast cereal, dry): moisture 10%; protein 15%; fat 5%; carbohydrate 67%

See Part 2: Grain Products Composition

oat flour  Ground oats with bran removed

oatgrass (Arrhenatherum elatius)  A long-lived, perennial bunchgrass that produces a seed that is smaller and more chaffy than oats

See Part 2: Seed, Germination

oat, groats  Whole, uncut, uncrushed kernel of oatmeal; oats with hull removed

oat gum  A plant extract used as an antioxidant, stabilizer, and thickening agent

oatmeal (oats; rolled oats)  Ground or cut and rolled oats made by rolling the groats to form flakes; contains nearly the whole oat kernel and is often referred to as whole grain. Quick cooking, sometimes
steaming and then flaking; the groats are cut and
then rolled to produce thin, small flakes used as a
breakfast cereal and in cooking.

Grades of ground meal or flour: coarse, medium, fine

Equivalents:
100 pound (lb) oatmeal = 7.6 bushels of oats
2 3/4 cups = 1 lb
1 cup, instant = 2.3 oz
1 cup, quick = 2.3 oz
1 cup, regular, dry = 2.5 oz
1 cup, cooked = 8.5 oz
1 oz, dry = 1 oz, cooked = 100 calories

Composition

<table>
<thead>
<tr>
<th></th>
<th>Oatmeal</th>
<th>Oatmeal, cooked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>7-8</td>
<td>84-85</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>14-17</td>
<td>2.8</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>7-8</td>
<td>0.5</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>67-68</td>
<td>11.5</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2</td>
<td>0.7</td>
</tr>
</tbody>
</table>

Storage: tightly covered, cool or refrigerate, dry place
(5 months) or freeze for longer storage

See also rolled oats; Scotch oatmeal; steel cut oatmeal

See Part 2: Food, Composition; Grain Products Com­position; Minerals, Food; Thiamin, Food; Vitamin A, Food

oatmeal cookie
Ten, 2 1/2-in. cookies = 1.67 cups, finely crushed
Composition, sodium:
Plain—77 mg/cookie (18 g)
With chocolate chips—54 mg/2 cookies (26 g)
With raisins—55 mg/2 cookies (26 g)

oat, puffed
Plain—1 oz (about 1 1/2 cups) = 115 calories
Sugar coated—1 oz (about 3 cups) = 115 calories
See puffed oat

See Part 2: Grain Products Composition

oat, rolled (old fashioned) Oat grain crushed and
husked by a rolling process; pressing whole oat ker­nels through heated rollers; whole grain product con­taining the germ and outer layers of the grain where the B vitamins and minerals are concentrated
Types:
With seed jacket (most husk)
Without seed jacket
See rolled oat

oat, steel-cut Thin sliced, oat kernels; broken oat
seed grain made by passing grain through steel cutting
machines; takes longer to cook than rolled oats

oaxaca A provolone-type cheese made from cow's milk

obese Excessive fat in the body

obesity Excessive fatness

objective 1) The opposite of subjective; a test
recorded by a physical instrument and thus indepen­dent of an individual's judgment. 2) The lens nearest
the object of a compound microscope

oblaten Large wafers

oblayo A sour maize (and sometimes groundnut)
paste porridge

obligate aerobes Bacteria that must have oxygen
for growth See also aerobic

obligate anaerobes Bacteria that can grow in the
absence of oxygen; cannot live if oxygen is present
See also anaerobic

obstbranntwein A brandy made from fruit other
than grapes

obturator A thigh muscle that covers the obturator
foramen and runs to the femur

obturator foramen A hole in the pelvic bone

obungu bwakawa A sour millet or sorghum porridge

obushera A sour millet or sorghum porridge

oca (occa; oka; okaplant; Oxalis tuberosa) A plant
that produces a white, yellow, or red, edible tuber;
the tubers are usually semidried before eating and
the leaves and shoots may be eaten as a salad; a potato substitute

oca See oca

occipital The back of the head; base of the skull

ocean catfish See catfish

oceanic bonito A skipjack; a food fish

ocean perch A lean fish caught off the North At­lantic and North Pacific coasts.
Atlantic—redfish; red perch (firm, white, lean fish);
rosefish
Northeast Atlantic (Sebastes marinus)
Northwest Atlantic (S. mentella)
Pacific—members of rockfish family; firm, lean,
white flesh
1 fillet = approximately 1/4 pound

ocean pout (Macrozoarces americanus) A dark
meat, light to moderate flavor, fin, food fish

ocha A tea

ochazuke Tea and rice

ocotli A white, viscous, alcoholic beverage made by
fermentation of century plant (Agave)

octacosanoic acid See Part 2: Saturated Fatty Acids

octadecadienoic acid Linoleic acid; occurs in veg­etable oils; is polyunsaturated
See Part 2: Milk, Fatty Acids, Seasonal; Unsaturated
Fatty Acids

octadecanoic acid See stearic acid

octadecatrienoic acid Linolenic acid, a polyunsatu­rated fatty acid essential in the diet
See Part 2: Unsaturated Fatty Acids

octadecenoic acid See oleic acid

octanol [CH₃(CH₂)₇CHO] Used as a fatty or fruity
flavoring agent in food; sp. gr. 0.818–0.831
Storage: full, tight container in a cool, dark place
octanoic acid  \([\text{CH}_3(\text{CH}_2)_6\text{COOH}]\) A saturated fatty acid found in coconut oil; used as a defoaming agent and to make other food activities; sp. gr. 0.980–0.912
Storage: tight container
See Part 2: Saturated Fatty Acids

octopus  Edible (lobster-like flavor), saltwater, cephalopod mollusk (related to squid) with eight suckered arms; meat is firm and sweet but will become tough if overcooked
Curled (Atlantic, Mediterranean; Eledone cirrosa)
Northeast Atlantic, Mediterranean (Octopus vulgaris; O. macropus)
Pacific (Polyopus hongkongensis)
Pacific (poulp; O. punctatus)

octyl acetate  \([\text{CH}_3\text{COO}(\text{CH}_2)_7\text{CH}_3]\) Used as a fruit-like flavoring agent in food; sp. gr. 0.864–0.868
Storage: in a full, glass container in a cool, dark place

octyl butyrate (butyric acid)  An artificial flavoring agent

octyl formate  \((\text{C}_8\text{H}_{17}\text{OOCH})\) Used as a fruitlike flavoring agent in food; sp. gr. 0.868–0.872
Storage: full, tight, glass container in a cool, dark place

ocucaje  A white or red wine

odalsöst  A 10–11-kg Swiss cheese made from cow’s milk

odenwalder  A low-fat, high-protein, semisoft cheese made from cow’s milk

odor (odour; scent; smell)  A sensation caused by stimulation of olfactory receptors in the nasal cavity (sense of smell); gaseous material that is smelled; smell; scent; fragrance
Fundamental sensations:
Burnt
Caprylic or goaty
Fragrant
Sour or acid
Odors are determined in the uppermost regions of the nasal cavity
See Part 2: Bacteria on Chickens at Various Holding Temperatures

oelenberg  A tilsit-type cheese

oenometer  See vinometer

oestrogen  See estrogen

oestrous cycle  Periodic appearance of oestrus in un­served females

oestrus (heat)  Signs of sexual receptivity in the female under the influence of oestrogen in the blood
See heat

ofam  See ablongo

OF basal medium  See Part 2: Microorganism, Media

offal (organ meat; side meat; variety meat)  Variety meat; by-products of processing; less valuable portions; by-products of milk; intestine and other waste parts (inedible) of the carcass; sometime extended to include edible internal organs; parts removed from carcass in dressing; also the bran and germ removed in milling
Examples:
Brains
Entrails
Heart
Kidney
Liver
Lungs
Small intestine of pork, chitterlings
Sweetbread
Testicles
Tripe
Feet
Head
Tail
Tongue
See variety meat
See Part 2: Meat and Meat Products Composition

off-feed  Not eating with a normal or healthy appetite

off-flavor  An objectionable, unpleasant, foreign, atypical, or unnatural flavor

official  Methods that provide a basis for regulatory action without additional product analysis

off-odor  An objectional, atypical, unnatural, or uncharacteristic odor

offset  The elimination of a current long or short position by the opposite transaction

offset printing  A printing method where the image is transferred to an intermediate cylinder and then transferred to the final product

off-setting compliance  A proviso whereby a farmer who desires to participate in a program for one farm must also meet the program provisions for other farms that he/she owns or operates See cross-compliance

off-side  The right side of a horse

offspring  Progeny; young

Ogden  A variety of soybean

ogede  A porridge or paste made from banana or plantain flour

ogi  A sour, maize porridge

ogili (ogili-isi; ogili-ugba)  Dark brown, fermented balls of castor oil seed used in soup and stews

ogili-isi  See ogili

ogili-ugba  See ogili

ogiri  Dark brown, fermented balls of melon seed used in stews and soups

ogiri-agbor (ogiri-igbo)  Dark brown, fermented balls of castor oil seed used in soup and stews

ogiri-igbo  See ogiri-agbor

ogiri-nwan  Dark brown, fermented balls of fluted pumpkin seed used in soup and stews

ogiri-saro  Dark brown, fermented balls of sesame seed used in soup and stews

ogogoro  A local gin distilled from palm wine

Ohio Improved Chester  A meat-type breed of hogs with early breeding similar to the Chester White; later crossed with hogs known as Todd hogs; it is solid white with drooping ears
See Part 2: Swine Breeds
ohm (Ω) A measure of resistance (R) to current flow
1 Ω = \(1 \times 10^6\) microhms (μΩ)
1 international ohm = 1.0005 ohm (Ω) absolute
1 Ω (absolute) = 0.999505 International ohm
100 Ω = 1 kilohm (kΩ)
1,000,000 Ω = 1 megohm (MΩ)

Ohm's law \(I = \frac{E}{R}\), where \(I\) = current in amps, \(E\) = potential in volts, and \(R\) = resistance in ohms

\[ P = I^2R = EI = \frac{E^2}{R} \]
P = power = watts = joule per second

OIC See Ohio Improved Chester

oidium A mildew that affects grape vines

oie farcie Stuffed goose

oigee (ojji) Acidic, carbonated cucumber

oji See oigee

oil A fat that is viscid liquid at room temperature; a food oil is a natural or processed edible fat that is liquid under existing climatic storage conditions. There are both cooking and salad oils.

Obtained from: almond, brazil nut, coconut, corn, cottonseed, hickory nut, mustard, olive, palm nut, peanut, pecan, poppy seed, rapeseed, safflower, sesame, soybean, sunflower, walnut

Essential oil—flavored portion of flowers, herbs, spices, and fruit

Mineral oil—used to coat food machinery to prevent rusting

Stain removal from cloth: apply detergent directly to stain and let stand for several hours; sometimes a cleaning fluid (solvent) will be required

oil cake The solid residue remaining after extraction of oil from seeds

oil, fuel Equivalent to No. 2 fuel oil or diesel oil; 1 gal. = approx 8 lb

See Part 2: Fuel, Heating Value

oil-gland darkening A polka-dotted appearance of the oil glands of grapefruit and tangelos subjected to chilling temperatures during storage

oil immersion Microscope examination in which oil with the same refractive index as glass is placed between the objective lens and the specimen

oil, lubricating See petroleum

oil meal Oil cake that has been pulverized; used as cattle feed

See Part 2: Oil Meals Composition

oil of frankincense Olibanum oil, distilled from a vegetable gum (thus) native to northeast Africa

oil of shaddock Expressed grapefruit oil

oil palm (Elaeis guineensis) A subtropical palm that grows in fairly poor soil but requires moderate rainfall; grows chiefly in western Africa

<table>
<thead>
<tr>
<th>Parts of fruit</th>
<th>Source</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extracted kernel</td>
<td>Inner kernel</td>
<td>Oil cake for livestock feed</td>
</tr>
<tr>
<td>Inner kernel</td>
<td>Center of seed</td>
<td>Palm kernel oil</td>
</tr>
<tr>
<td>Mesocarp or pericarp</td>
<td>Fibrous pulp beneath outer skin</td>
<td>Palm oil of commerce</td>
</tr>
<tr>
<td>Outer black shell of nut</td>
<td>Seed shell</td>
<td>Fuel</td>
</tr>
<tr>
<td>Sap</td>
<td>Tapping tree</td>
<td>Fermented for wine</td>
</tr>
</tbody>
</table>

See palm; palm kernel oil; palm oil

oil sardine (Sardinella longiceps) An Indian food fish

oilseed crops Crops from which oil is extracted, e.g., castor bean, cotton seed, flax seed, peanut, safflower, sesame, soybean, sunflower

oilseed, fermented Dark brown, fermented balls of oil-rich seed used in soup and stews

oil, spice An oil obtained by steam distillation

oil spotting (oleocellosis) Rind oil spotting on citrus fruit is a bruising injury caused by mechanical treatment, freezing, or insects. Liberation of oil from ruptured oil glands causes irregularly shaped yellow, green, or brown spots that stand out on the rind; often occurs when immature fruit is handled when wet

oil, vegetable Glycerides of fatty acids obtained from seeds, nuts, fruits, etc., of plants. The generalized formula of a triglyceride is

\[
\begin{align*}
H_2C\text{-}O\text{-}C\text{-}R \\
O \\
HC\text{-}O\text{-}C\text{-}R \\
O \\
H_2C\text{-}O\text{-}C\text{-}R \\
O
\end{align*}
\]

Vegetable oils are liquid at room temperature (18–25°C)

2 tbsp = 1 oz
1 cup = 20 g

Storage: 35°F will yield 8 months storage life

Salad or cooking composition: moisture 0%; protein 0%; fat 100%; carbohydrate 0%; ash 0%

See also fat, salad oil

See Part 2: Fats and Oils, Composition; Fats and Oils, Fatty Acid Composition; Fats and Oils, Physical and Chemical Properties; Melting Points, Fats and Oils; Minerals (Trace), Limits; Oil or Fat, Characteristics; Oils and Fats Composition; Oils, Seed and Fruit; Oil, Triglyceride Mole Percent Composition; Orange Essence Oils; Orange Oil Composition; Orange Oil Properties; Refractive Indices, Fats and Oils; Specific Gravities, Fats and Oils; Titer, Fats and Oils; Vitamin A, Fish; Vitamin D, Fish
oily  Slick, greasy flavor or appearance
oilsobaegi  Acidic, carbonated cucumber
oiticica oil  A drying oil obtained from a Brazilian tree; used in paints
See Part 2: Fats and Oils, Physical and Chemical Properties; Iodine and Saponification Values; Refractive Indices, Fats and Oils
o'jaffa  A grapefruit and orange liqueur
ojen  An aniseed-flavored, herb liqueur
oka (trappist)  A light, creamy yellow, semihard to soft, medium-flavored cheese made in Canada See amala; oca; port du salut
okaplant  See oca
okara kirazu  Bean curd residue remaining after making tofu
Oklahoma Common  A variety of alfalfa
okolehao  A spirit distilled from molasses and rice and flavored with taro (colocasia species) or coconut juice; Hawaiian whiskey distilled from a mixture of sugar cane, rice, and taro root
okra (bamia; bamies; bamya; gumbo; lady's fingers; okro; quimbombo; Abelmoschus esculentus L. Moench; Hibiscus esculentus)  An annual of the cotton family, native to the Nile valley that when 1 ft long; yield 5 pods/foot of row
Leaves—used like sorrel
Pods—used to thicken or as a vegetable like asparagus
Seed—dried like beans or pickled; used as a coffee substitute
100 pounds (lb), fresh = 10–11 lb dry
1 bu = 30 lb
1\ 2 lb, fresh = 1 qt, canned
1 lb, fresh = 4–5 servings
= 3 cups, sliced fresh
= 2\ 2 cups, cooked
= 2 pints, pickled
1 cup, fresh sliced = 0.3–0.5 lb
1 cup, cooked = 180 g (6.2 oz)
Pod types:
Oblong—gomba
Round—bamya
Can be frozen (rings), canned (whole, small pods, and cut crosswise in lengths of 1 in. or rings); also partially fermented in a salt brine, pickled small pods or dried (by splitting and stringing together and allowing to air dry)
Cook: boil 8–20 min or until tender; saute or bake until tender
Composition (raw): moisture 89%; protein 3%; fat 0.3%; carbohydrate 8%; ash 0.8%; Ph 4.9

<table>
<thead>
<tr>
<th>Okra</th>
<th>Pod</th>
<th>Pod length</th>
<th>Season</th>
<th>Plant height</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>variety</td>
<td>(in.)</td>
<td>(days)</td>
<td>(ft)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clemson</td>
<td>Dark green,</td>
<td>5–9</td>
<td>56</td>
<td>5</td>
<td>Fresh,</td>
</tr>
<tr>
<td>Spineless</td>
<td>slightly grooved, spineless, straight</td>
<td></td>
<td></td>
<td></td>
<td>processed</td>
</tr>
<tr>
<td>Dwarf Green</td>
<td>Round, slender, straight, spineless, dark green</td>
<td>8–9</td>
<td>50–60</td>
<td>5</td>
<td>Fresh,</td>
</tr>
<tr>
<td>Emerald</td>
<td>Short, round, straight, green</td>
<td>3–4</td>
<td>55</td>
<td>4.5</td>
<td>Fresh</td>
</tr>
<tr>
<td>Gold Coast</td>
<td>Slender, round, straight, green</td>
<td>7</td>
<td>60</td>
<td>7–9</td>
<td>Fresh,</td>
</tr>
<tr>
<td>Louisiana</td>
<td>Dark green, ridged</td>
<td>7×1</td>
<td>50–60</td>
<td>10–12</td>
<td>Fresh,</td>
</tr>
<tr>
<td>Green Velvet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>processed</td>
</tr>
<tr>
<td>Perkins</td>
<td>Fresh—red, cooked—green, grooved, curved</td>
<td>60 days</td>
<td></td>
<td>5–6</td>
<td></td>
</tr>
<tr>
<td>Mammoth Long Pod</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red Okra</td>
<td>Green, smooth, round, spineless</td>
<td>7</td>
<td>58</td>
<td></td>
<td>Fresh,</td>
</tr>
<tr>
<td>Spinless Green Velvet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>frozen</td>
</tr>
</tbody>
</table>

produces fuzzy, tapering (pointed, 5–12-sided) seed pods that contains many small, kidney-shaped seeds; pods may be eaten if picked in the immature stage (under 4\ 2 in. long); as a condiment or strong-tasting vegetable; available fresh, cooked, canned, or dried; often used to thicken (mucilaginous body) other dishes (soups and gumbos)
To plant: seed 4 lb/acre; 500 seeds/oz; 1 oz/100-ft row; thin to 16 in. in rows 30–48 in. apart; matures in 90 days; harvest when the pods are less than 3–4 in. [exception red and heirloom (cowhorn) are tender
Storage: pods remain tender only a few days after picking; store at 50°F, 85–95% relative humidity, 7 days storage life See Chinese okra; pickle
See Part 2: Minerals, Food; Plant Foods, Composition; Planting Density; Standards, Processed Fruit and Vegetable Products; Storage; Sugar, Vegetables; Vegetable Boiling; Vegetable Composition; Vegetable Cooking, Frozen; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Plants; Vegetables, Boiling Time, Frozen; Vegetables, Canning Dates; Vegetables, Classification; Vegetable
An 18-carbon unsaturated fatty acid widely distributed in nature, especially in olive oil. Iodine number 90; melting point 14°C; saponification value 196–207; sp. gr. 0.893–0.897.

Uses: a food binder, lubricant, defoaming agent, and to make other additives.

Storage: tight container

See Part 2: Beans, Peas, and Nuts; Dairy Products, Composition; Egg Composition; Egg Products, Nutritive Value; Fats and Oils, Composition; Fats and Oils, Fatty Acid Composition; Fatty Acids and Their Properties; Fatty Acids; Fats and Oils; Fish and Shellfish Composition; Fruit Composition; Grain Products Composition; Meat Composition; Milk, Fatty Acids, Seasonal; Oils, Seed and Fruit; Poultry Composition; Sausage Composition; Seeds, Chemical Composition; Soups, Composition; Sugars and Sweet Composition; Unsaturated Fatty Acids; Vegetable Composition; Wheat, Fatty Acids, Wheat Products Composition

See also

olera A gouda-type cheese
oleo Short for oleomargarine
oleocellosis See oil spotting
oleomargarine A term originally applied to margarine; made from oleo oils of beef fat. A plastic food made of animal and/or vegetable fat; minimum 80% fat, citric acid (preservative); isopropyl citrates maximum 0.02% (preservative); stearyl citrate maximum 0.15% (preservative) See also margarine

See Part 2: Fats and Oils, Characteristic; Margarine Formulae; Minerals, Food

oleo oil The liquid fraction separated from animal fats and used in making margarine

oleoresin The solid, semisolids, or heavy viscous fluid or residue obtained by solvent extraction or percolation of plant matter; percolation is usually with ether, acetone, alcohol, or other solvent; oleoresin is obtained from plant material, spices, and softwood trees or roots, leaves, fruits, seed, stem, bark, or buds, etc. The extraction or percolation is then followed by removal of the solvent or by recombination of the volatile and nonvolatile flavor components following their separation from the natural source; contains both volatile and nonvolatile portions. Volatile and nonvolatile oils extracted with volatile organic solvents from spices; often coated on a carrier (e.g., salt, sugar, or dextrose. Oleoresins are stronger in flavor than essential (volatile) oils; often used to add heat to the product See also turpentine

oleoresin can coating Natural resins or ester gum, tung oil, driers, and thinner; dehydrated castor oil

oleoresin, capsicum Obtained by solvent extraction of dry, ripe fruit of capsicum and with subsequent removal of the solvent; color value 3,500–27,900; Scoville heat units 147,000–500,000

oleron See jonchée d’oleron

olfaction The sense of smell

olfactory Referring to bodily organs and nerve responses responsible for the sense of smell See also odor

olibanum oil (oil of frankincense) A volatile oil obtained from the gum of Boswellia carterii; used as a balsamic flavoring agent for food; sp. gr. 0.862–0.890

Storage: full, tight, glass container in a cool, dark place

See oil of frankincense

oliebollen A wheat flour doughnut

oligo- A prefix meaning few or small

oligodynamic action The inhibition or killing of microorganisms by small amounts of a chemical

oligotrophic water Water containing a negligible supply of nutrients; will support little organic production
olive  The fruit of the evergreen tree *Olea europea*; originated in central Asia and grows in subtropical, fairly arid regions in well-drained soil. The tree (10–40 ft) is a slow growing, long-lived evergreen. The drupe (fruit) is green and turns dark blue or purplish when ripe (20–30% oil); it contains a single seed and may be picked green or ripe and is usually packed in brine. Stuffed olives are green and pickled with seed removed and pimiento, sweet red pepper, onion, almonds, or anchovies inserted in seed area. Fresh, unprocessed, green olives are bitter due to a glucoside, which is neutralized with an alkali and salt treatment. They are then packed in a 7.5% brine for retail sale.

Types:
- Black (ripe) olive—ripen on the tree; skin is brown to purple black; dark pulp; bland flavor
- California varieties:
  - Ascolano
  - Mission
  - Sevillano
- Greek—dry pack, unpitted, preserved; salty, bitter, shriveled, and soft
- Green olive—picked unripe; skin is yellow tinted; firm, pinkish pulp; agreeable flavor
- Kosher dill—contains olives, sprigs of dill, red pepper, garlic, whole mustard seed
- Place pack—symmetrically arranged by hand
- Thrown pack—not arranged

### Olives, packed and canned weight (g)

<table>
<thead>
<tr>
<th></th>
<th>With pits</th>
<th>Without pits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>4</td>
<td>3.2</td>
</tr>
<tr>
<td>Extra large</td>
<td>5.3</td>
<td>4.3</td>
</tr>
<tr>
<td>Giant</td>
<td>8</td>
<td>6.5</td>
</tr>
<tr>
<td>Ripe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small</td>
<td>3.3</td>
<td>3</td>
</tr>
<tr>
<td>Large</td>
<td>5</td>
<td>4.5</td>
</tr>
</tbody>
</table>

1 lug (5.75 × 13.5 × 16.1 in.) = 25–30 lb
3 pt = 50 servings
1 cup, pimiento stuffed olives = 4 oz

Composition (green): moisture 78%; protein 1.4%; fat 13%; carbohydrate 1.3%; ash 6.4%; sodium 323 mg/4 olives (16 g)

Composition (ripe): moisture 73–84%; protein 1.1%; fat 9–20%; carbohydrate 2.5–3.5%; ash 2.5%; sodium 96 mg/3 mission olives (15 g); pH 7.0

U.S. grades, ripe or green olives: Grade A (fancy); B (choice); C (standard); substandard

### Green and ripe olive sizes:

- No. 1 (small)—128–140/lb
- No. 2 (medium)—106–127/lb
- No. 3 (large)—91–105/lb
- No. 4 (extra large)—76–90/lb
- No. 5 (mammoth)—65–75/lb
- No. 6 (giant)—54–64/lb
- No. 7 (jumbo)—46–52/lb
- No. 8 (colossal)—33–45/lb
- No. 9 (supercolloal)—32 max.

### Weight and composition of ripe fruit:

- fruit, 1.5–13 g
- oil, 15–55%
- pit, 14–30% of wt of ripe fruit
- seed kernel, 5% of the oil
- soluble solids, 6–10%

Types:
- American: ½ ripe, reddish fruit
- Greek: preserved after fully ripe and dark purple in color
- Spanish: fermented, unripe, yellowish green olives

Storage (fresh): 45–50°F, 85–90% relative humidity; storage life 4 weeks.

See also olive oil

See Part 2: Calories, Daily Recommendations; Food, Composition; Fruit Canning Dates; Fruit Classification; Fruit Composition; Minerals, Food; Oils and Fats Composition; Olives and Pickles, Composition; Standards, Processed Fruit and Vegetable Products; Storage; Unsaponifiable Matter

olive, cerignola  Giant, green olives

olive drab coating  An opaque, dark green coating required for certain branches of the government

olive loaf  A fine textured, cooked specialty meat made with lean pork and beef and mixed with whole, stuffed olives

Composition: moisture 58.2%; protein 11.8%; fat 16.5%; carbohydrate 9.2%; ash 4.3%; sodium 312 mg/slice (21 g)

See Part 2: Sausage Identification

olive oil  A nondrying oil obtained by pressing or extracting the fruit of the olive tree (*Olea europea sylvestris*); color varies from pale gold (highest grade) to greenish gold to light green; yield 26–60%; oil yield avg 200 kg/ton of olives

Composition: arachidic 0.5–0.9%; linoleic 5–15%; linolenic 1%; oleic 62–84%; palmitic 7–17%; palmitoleic 2%; stearic 2–3%

Properties: Free fatty acid in edible oil 0.3–2.8% (1.41% maximum desirable level); iodine number 78–90; melting point –6°C; refractive index (15.5°C) 1.470–1.472; fresh olive oil: smoke point 390°F (199°C), flash point 435–610°F (225–321°C), fire point 650–682°F (343–361°C); stored olive oil: smoke point 300–315°F (149–157°C); saponification value 185–196; saturated fatty acids 9–18%; sp. gr. 0.9158 at 20°/4°C; titer 17–26°C; unsaponifiable 0.5–1.8%; congealing at 4.4°C does not affect quality; melting is –6°C (liquid at room temperature); coefficient of digestibility 97.8%

Volume:

- 1 qt = 4 cups
- 1 cup = 210 g (7.4 oz)

Blended olive oil grades:
- Blended (blend of virgin and second quality refined)
- Pure (blend of virgin and refined)

Industrial olive oil:
- Solvent extraction of olive residues.

Virgin olive oil grades (oil obtained by pressing):
- First oil obtained by cold pressing; clarification is by mechanical means
- Extra—oleic acid does not exceed 1 g/100 g
- Fine—oleic acid does not exceed 1.5 g/100 g
- Ordinary—oleic acid may be up to 3 g/100 g

Lampante—off-flavor
Refined olive oil grades: second, third, and fourth pressing oil that is chemically treated
Pure (refined from virgin oil)
Second (refined from solvent-extracted oil)
Uses: salad dressings; cooking oil; Castile soap; ointments and cosmetics
Storage: 35–40°F (it thickens and changes color at lower temperatures); protected from light and sealed
See Part 2: Fats and Oils, Composition; Fats and Oils, Physical and Chemical Properties; Fatty Acids, Fats and Oils; Fats and Oils, Characteristic; Fats and Oils, Composition; Free Fatty Acid, Smoke, Flash, Fire Points; Iodine and Saponification Values; Oil or Fat, Characteristics; Oils, Seed and Fruit; Refractive Indices, Fats and Oils; Specific Gravities, Fats and Oils; Spoilage, Fat in Food; Titer, Fats and Oils; Tocopherols; Unsaturated Fatty Acids

olive, ripe
Style of packing
pitted—stuffed with pimientos
unpitted—most popular
Color:
Dark brown
Purplish black

<table>
<thead>
<tr>
<th>Olive varieties</th>
<th>Size comparison</th>
<th>Oil (%)</th>
<th>Texture</th>
<th>Color</th>
<th>Flavor</th>
<th>Size designations</th>
<th>Popularity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ascolano (white olive of Ascoli)</td>
<td>Larger</td>
<td>10</td>
<td>Tender</td>
<td>Light</td>
<td>Giant, jumbo, colossal</td>
<td>Very popular</td>
<td></td>
</tr>
<tr>
<td>Manzanillo</td>
<td>Smaller</td>
<td>16</td>
<td>Good, bitter</td>
<td>Deep</td>
<td>Small, medium, large, extra, mammoth</td>
<td>Very popular</td>
<td></td>
</tr>
<tr>
<td>Mission</td>
<td>Smaller</td>
<td>25</td>
<td>Good, firm</td>
<td>Deep</td>
<td>Small, medium, extra, mammoth</td>
<td>Very popular</td>
<td></td>
</tr>
<tr>
<td>Sevillano</td>
<td>Larger</td>
<td>10</td>
<td>Deep</td>
<td>Giant, jumbo, colossal</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

olivet A soft French cheese with a blue rind made from cow’s or goat’s milk with rennet added; matured 1–3 months, often in wood ashes and wrapped in leaves
olla podrida A Spanish stew (cabbage, chick pea, sausage)
olluco Round yellow tuber with yellow flesh produced by a creeping stem and used like a potato
olmutzer A strong-flavored, semisoft to semihard, acid-curd cheese; sometimes flavored with caraway seed
olmutzer quargel cheese A German, hand cheese flavored with caraway seed
olomoucky (knost) A strong-flavored, acid-curd cheese made from cow’s milk and flavored with caraway seed
oloron An esbareich-type cheese made from ewe’s milk that is matured a few weeks or longer for a stronger flavor
oloroso Sherry that has never developed flavor; full, golden-colored wine with more body than amontillado; a golden, sweet, full-bodied, sherry wine
oloroso Sweet or cream sherry
omasum (bible; manyplies; pecks) The third stomach of a ruminant animal located on its right side and often called the manyplies, bible-bag, prayer book, or manifold; it reduces the water content of foodstuffs entering it; the contents of a bovine omasum may be 2–5 gal
omega (Ω, ω) Greek letter with an English equivalent of a long o. Substitution on the end carbon atom
omega-3 A polyunsaturated fatty acid found in seafood; some scientists reported that it can help to reduce heart attacks

Quantity of omega-3 fatty acid in 4 oz serving:
- Albacore tuna 2.6 g
- Chinook salmon 3.6 g
- Clams 0.5 g
- Herring 1.2–2.7 g
- King crab 0.6 g
- Mackerel 1.8–2.6 g (continued after table)

omelet (omelette) An egg-based food; a mixture of eggs and milk that has been cooked over low heat without stirring, then folded over to serve; often with filling between folds (e.g., cheese, ham, mushrooms, tomatoes, etc.)

Types:
- Foamy—air incorporated; yolks and white beaten separately and then folded together
- Plain—whole eggs are beaten

Ingredients: 4 eggs; 2–4 tbsp milk, water, or acid juice (tomato or orange); 1/2 tsp salt; seasoned with pepper
onion (cebolla; lunu; oignon; *Allium cepa* L.) 515

A bulb of condimental vegetable used as food; a sulfur-containing, biennial plant whose bulb is composed of enlarged leaf-bases; the shape may be flattened globose to oval; the color may be white, dark brown, or red. Onions may be eaten as a vegetable or used to flavor other foods; they may be eaten raw, fried [oil temperature of 190–196°C (375–385°F)], boiled (whole, 15–40 min), braised, roasted, in sauces, stews, curries, pickles, and chutneys. When eaten by cattle will cause off-flavors in milk. Originated in central Asia; 8,000–10,000 seeds/oz; 12–20 day germination period; for dry onions set sets; 1 qt/100 ft row; 4 in. between plants in rows 12 in. apart; immatrupe stems are used as green or bunching onions and the ripe bulbs are used as dry onions; harvest dry onions a few days after tops have fallen over and dried in sun. Size (increasing)

- **Pickling (pearl, button)**—dry, white or yellow, less than 1 in.
- **Boiling; boilers**—dry, 1–1 1/2 in.
- **Larger**—strong in flavor
  - **Spanish or Bermuda**—flat, mild, 2 1/2–3 1/2 in.
  - **6–10% skin as refuse**
  - **100 lb fresh = 9–11 lb, dehydrated**
  - 1 part, freeze-dried weight green onion = 11 parts, fresh weight

1 crate (13 x 18 x 21.6 in.) green onions = 50–55 lb
1 bu raw = 57 lb
1 sack = 50 lb
1 lb, fresh = 4 servings
  - = 3 servings, cooked
  - = 3 large onions
  - = 2 1/2 cups, chopped
  - = 1.6 oz onion powder
1 pound, cooked = 6–7 servings
1 cup, chopped = 2 medium sized onions
1 cup, whole = 1 large onion
1 cup, dried = 135 g (4.8 oz)
1 cup, cooked = 200 g (6.9 oz)
1 cup, slices = 4 oz
1 cup, slices, green = 3.6 oz
1 cup, boiled, whole = 7.4 oz
1 cup, boiled, pieces = 6.4 oz
1 cup, boiled, pearl = 6.4 oz
1 cup, dried = 64 g (2.3 oz)
1 large onion, chopped = 1 cup
1 large onion, sliced = 0.35–0.6 lb
1 medium onion = 1/2 cup, finely chopped
1 small onion = 1/4 cup, chopped
12–16 green onions, sliced = 1 cup
1 serving = 0.25–0.4 lb
1 tbsp, minced = 1 tsp, dried flakes
1 oz, raw for dry onion rings = 3–4 oz
1 oz, fresh for dry onion rings = 3–4 lb
1 oz, raw for frozen onion rings = 1 large onion
1 oz, fresh for frozen onion rings = 135 g (4.8 oz)
1 cup, boiled, whole = 200 g (6.9 oz)
1 cup, slices = 4 oz
1 cup, slices, green = 3.6 oz
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1 medium onion = 1/2 cup, finely chopped
1 small onion = 1/4 cup, chopped
12–16 green onions, sliced = 1 cup
1 serving = 0.25–0.4 lb
1 tbsp, minced = 1 tsp, dried flakes
1 oz, raw = 1/3 oz, onion juice
1 oz, fresh = 1/3 oz, onion juice

**Canned:**
- French fried—in rings
- Stewed—whole, small size
- Whole—usually packed in salt brine

**Frozen (flavor decreases in potency in frozen food):**
- Breaded onion rings
- Whole

**Types:**
- **American**—medium size; round; strong; keeps well
- **Bermuda**—large; flat; mild
- **Bunching (green) or ciboul or Welsh** (*A. fistulosum*)
- **Button**—small, immature onions that are normally pickled
- **Canary**—flat
- **Chives**—grown for leaves
- **Globe**—most common class; used for cooking; primarily yellow skin but some white and red skin; round to oval; pungent; medium size
- **Granex-grano**—primarily yellow skinned class but some white skin; flat, to top shaped; mild; used raw and cooked; medium to large
- **Green onion** (*A. fistulosum*)
- **Green onions varieties** (planted in fall or early spring):
  - **Potatoe** (Multiplier)
  - **Top** (Tree)
  - **Chives**—green shoots are used
  - **Sand leek** (rocambole)—a Welsh-type onion with garliclike flavor
  - **Shallot** (scallions)—small; mild; red skinned; slightly purple flesh
  - **Spring** (scallions)—both bulb and shoot are used
  - **Welsh** (Japanese nebuka)
  - **Italian**—mild
  - **Japanese bunching**—retain foliage through winter; good for flavoring; used in salads
  - **Nebuka**—perennials; small leeks
  - **Onion potatoc**—grown in Ireland
### Onions

**516 onion (cebolla; lunu; oignon; Allium cepa L.)**

Pickling (button)—early stage of growth when bulbs have formed

Polish

Potato (underground; var. aggregatum)—early; reproduce by offset of the parent bulb

Red (Italian)—purple skin; purple tinted white flesh; keeps well

Rocambole (sand leek)—garlic-flavored species of onion

Sand leek—Welsh onionlike

Small (button, silver skin)—pickled

Spanish (Bermuda; brown; sweet Spanish; Valencia)—red; primarily yellow to brown skin but some white skin; globe-shape; imported; large (3 in. or more); mild; used for slicing and salads

Onion variety | Color                      | Shape                  | Size     | Season          | Use                          |
---            |----------------------------|------------------------|----------|-----------------|------------------------------|
Beltsville     | Slight swelling bulb       | Large                  | 65 days  | seed            | Bunching green onions        |
Bunching      |                           |                        |          |                 |                              |
Bronze         |                            | Round                  |          | seed            | Mild                         |
Canada Maple   |                            |                        |          |                 | Stores well                  |
Crystal Wax (White Bermuda) | Light yellow-white skin, white flesh | Thick, flat | Medium-large | 90 days | seed | Home, market, dry |
Early Harvest (F1) | Globe                 |                        |          | 105 days | Early | Storage, dry |
Early Yellow Globe |                        |                        |          |                  |                              |
Ebenezer      |                            | Globe                  | Large    | 105 days | Mild | Storage |
El Capitan     |                            | Globular               |          |                  |                              |
Evergreen White Bunching | White          | Long, leeklike        | Medium for shape | 120 days | seed | Bunching, green onions |
Exporter       |                            | Globe                  | Large    | 100 days | Mild, dry | Storage |
Fiesta         |                            | Globular               |          |                  |                              |
Granex 33 Hybrid | Light yellow            | Thick, flat            | Large    | 80 days | Mild, dry | Storage |
Golden Beauty Michigan Yellow Globe | Yellow |                        | Large    | 100 days | Mild | Storage |
Globe         |                           |                        |          |                  |                              |
Northern Oak   | Oak                       | High globe             | Large    | 108 days | Seed | Storage |
Patti King     | Brown skin, white flesh   |                        |          |                  |                              |
Perfection     |                            |                        |          |                  |                              |
Red Hamburger  | Dark red to center        | Globular               | Large    | 100 days | Mild | Salad, burger |
Ringmaster     | White                     | Flattened              | 3-4 in.  |                  |                              |
(French Fries) |                           |                        |          |                  |                              |
Riverside Sweet Spanish | White |                        |          | 110 days | Good rings, storage | Storage |
Snow White     | White                     | Globe                  | Medium   | 105 days | Seed | Storage |
Southport Red Globe | Red skin, white flesh tinged with pink | Round | Medium | 110 days | Seed | Storage |
Southport White Globe | White |                        | Large    | 65 days | Seed, bunching | Bunching, large, storage |
Southport Yellow Globe |                   |                        |          |                  |                              |
Spano Hybrid   | Yellow                   | High globe             | Large    | 95 days | Seed, early | Storage, dry |
Spartan Sleeper | Yellow skin, white flesh | High globe             | Medium   | 110 days | Seed | Storage |

(Continued)
onion (cebolla; lunu; oignon; *Allium cepa* L.) 517

<table>
<thead>
<tr>
<th>Variety</th>
<th>Color</th>
<th>Shape</th>
<th>Size</th>
<th>Season</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stuttgarter</td>
<td>Yellow</td>
<td>Globe</td>
<td>Large</td>
<td>120 days—seed</td>
<td>Sets</td>
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<tr>
<td>Sweet Spanish</td>
<td>Yellow skin, white flesh</td>
<td>Globe</td>
<td>Large 4–6 in.</td>
<td>110 days—seed</td>
<td>Raw, cooked</td>
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<tr>
<td>Yellow Utah</td>
<td>White</td>
<td>Flat</td>
<td>Large</td>
<td>100 days—seed</td>
<td>Sets</td>
</tr>
<tr>
<td>White Ebenezer</td>
<td>White</td>
<td>Round</td>
<td>Large</td>
<td>60 days—seed</td>
<td>Bunching</td>
</tr>
<tr>
<td>White Lisbon</td>
<td>White</td>
<td>Flat</td>
<td>Large</td>
<td>110 days—seed</td>
<td>Pickling, bunching</td>
</tr>
<tr>
<td>White Portugal (Silver Skin)</td>
<td>White</td>
<td>Round</td>
<td>Large</td>
<td>65 days—plant, 110 days—seed</td>
<td>Storage, mild</td>
</tr>
</tbody>
</table>

- **White Sweet Spanish**: White skin, white flesh, long white stem, bunching, mature—round.
- **Yellow Bermuda**: Yellow skin, flat.
- **Yellow Ebenezer**: Yellow skin, white flesh.
- **Yellow Globe Danvers**
- **Yellow Spanish**: Yellow skin, white flesh

**Uses:**

- Spring dry onions—flatter, fewer skin layers; mild, sweet flavor; very perishable; store 2–3 weeks.
- Summer and fall dry onions—globular, more layers of skin, firmer; more pungent flavor; store several weeks.

**Types:**

- **Red or Brown**
  - Benny’s Red
  - Early Red Creale
  - Prizetaker
- **Red Bermudas**
- **Red Giant**
- **Red Globe**
- **Red Hamburger**
- **Red Italian Tripoli—flat**
- **Red Weathersfield**
- **Southport Red Globe**

- **White**
  - Crystal White Wax—flat
  - Earliest White Queen—small, round
  - Southport White Globe—firm flesh, long storage
- **White Bermuda**
- **White Granex—flat, mild, large**
- **White Portugal—large, flat**
- **White Sweet Spanish—round**

- **Yellow**
  - Downing yellow globe
  - Early Yellow Globe—firm flesh, long storage
  - Ebenezer or Japanese—flat, globe
  - Southport Yellow Globe—firm flesh, long storage
  - Sweet Bermuda—flat
- **Yellow (continued)**
  - Utah Sweet Spanish

**Composition:**

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dehydrated Powder</th>
<th>Raw, dry, white part of root</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>4</td>
<td>5.0</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>9</td>
<td>10.1</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>1.3</td>
<td>1.0</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>82</td>
<td>60.7</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td></td>
<td>5.7</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>4</td>
<td>3.1</td>
</tr>
</tbody>
</table>

- **pH 5.3–6.0**
- **Sodium content:**
  - Powder—1 mg/tsp (2 g)
  - Salt—1620 mg/tsp (5 g)

**Storage (green onions):** Refrigerate in plastic bags; keep moist; use in 2–3 days.

**Storage (mature onions):** Store in loosely woven (well ventilated) or open mesh container (70–75% relative humidity); will keep for several months; do not store with potatoes or under refrigeration due to higher humidity; store in cool rather than cold temperatures; freezing point, 30°F. See *Aspergillus black-mold rot*, *leek,* *scallion,* *shallot,* *vegetable grade* See Part 2: *Fruit and Vegetable, Diseases*; *Frying Time*; *Glutamate*; *Microwave Cooking, Fresh Vegetables*; *Minerals, Food, Minerals, Plant or Animal Tissue*; *Minerals (Trace), Limits, Nutrients in Crops*;
518 onion (cebolla; lunu; oignon; Allium cepa L.)

Phosphorus; Plant Foods, Composition; Planting Density; Riboflavin, Food; Spices, Microbial Content; Storage; Storage, Dry; Storage Times; Sugar, Vegetables; Transit Temperature; Vegetable Boiling; Vegetable Composition; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Plants; Vegetables, Classification; Vegetable Servings; Vegetable Storage; Vegetable Yields

onion, bunching Onions picked before they develop bulbs

donion, button Small onion bulbs that have brown skin; used as garnish

onion, canned soup

<table>
<thead>
<tr>
<th>Composition</th>
<th>Condensed</th>
<th>Prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>86.3</td>
<td>93.1</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>3.1</td>
<td>1.6</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>1.4</td>
<td>0.7</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>6.7</td>
<td>3.4</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0.4</td>
<td>0.2</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.5</td>
<td>1.3</td>
</tr>
</tbody>
</table>

onion, cheese An onion-flavored cheese used with soups, sandwiches, and salads

onion chips (onion flakes) Dehydrated, peeled, sliced onion

onion, cocktail ½-in., white, peeled onions preserved in a brine made with vinegar and salt

onion, cream of, canned soup

<table>
<thead>
<tr>
<th>Composition</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condensed</td>
<td>2.2</td>
<td>4.2</td>
</tr>
<tr>
<td>Condensed, prepared with water</td>
<td>1.1</td>
<td>2.2</td>
</tr>
<tr>
<td>Condensed, prepared with milk</td>
<td>2.7</td>
<td>3.8</td>
</tr>
</tbody>
</table>

onion, dehydrated

Forms (all may be toasted):
- Chopped—visibility important
- Diced—⅛, ⅛, or ⅛ in.; visibility important
- Granulated—free-flowing products
- Ground—large particle size
- Large chopped—visibility important
- Large slices—prime feature of product
- Minced
- Powdered—smooth-textured products
- Sliced—prime feature of product

onion, Egyptian (Allium cepa var. vivaparum) A perennial onion that forms bulbs on the tip of the green shoots

onion flakes Dehydrated onion pieces; to rehydrate add 1 part flakes to 9 parts water See onion chips

onion fly A fly that is attracted by plant’s scent; lays eggs on bulbs or leaves and when they hatch, they burrow into the plant

onion gravy

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dehydrated</th>
<th>Prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>4.4</td>
<td>90.9</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>9.0</td>
<td>0.8</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>3.0</td>
<td>0.2</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>67.7</td>
<td>6.4</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>16.0</td>
<td>1.5</td>
</tr>
</tbody>
</table>

onion, green All types are sometimes called scallion

Types:
- Green onion—ordinary onion harvested when young; little bulbs and tubular tops
- Leeks—larger than shallots; slight bulb formation; broad, flat tops
- Shallots—similar to green onions but grow in clusters
- 1 cup, sliced = 16 green onions

onion group Includes chives, garlic, leek, onion, and shallot

onion, Japanese bunching Onion that retains its leaves during winter; leaves and scallions are used in salads

onion oil A volatile oil obtained by steam distillation of Allium cepa; used as an onion flavoring agent in food; sp. gr. 1.050–1.136

Storage: full, tight, glass container in a cool, dark place

onion, potato (underground onion) An Irish onion

onion powder Pulverized, dehydrated onion; total ash 4% max.

onion salt (onion seasoning) A mixture of ground, dehydrated onion, salt, and cereal (to promote free flowing)

onion seasoning See onion salt

onion sets Small (up to ½ in.), dry onions grown the previous year and used for starting plants

Storage: in pits or cold cellars

onion soup

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dehydrated</th>
<th>Prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>3.7</td>
<td>96.3</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>11.6</td>
<td>0.4</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>6.0</td>
<td>0.2</td>
</tr>
<tr>
<td>Carbohydrate</td>
<td>53.5</td>
<td>2.1</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>2.4</td>
<td>0.09</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>25.3</td>
<td>1.0</td>
</tr>
</tbody>
</table>

onion, tree (Egyptian onion) Grows over 1 m in height; onions develop underground and at the top of the stem; produces hot onions used in pickling and flavoring

onion, Welsh (Japanese leeks) Hardy scallion used as spring onions

onion white rot A disease that causes a white mold to develop at the base of the onion bulb that causes the leaves to yellow
on-line sampling inspection The random selection and subsequent inspection of sample units drawn from a production line.

ontbijtworst A moist, cooked, smoked Dutch sausage made from finely chopped, medium-seasoned beef and pork and stuffed into a pork or artificial casing.

ontjom See oncom

ontjom See Part 2: Fungi Food Products

oo A glutinous, rice wine

ooalspsylsa A moist, cooked, smoked Icelandic sausage made from finely chopped, medium-seasoned beef and pork with pork fat added and stuffed into an artificial casing.

ooeye Egg

ooology The study of bird’s eggs See also egg

oolong tea Tea made from leaves that have been semi-fermented before steaming, rolling, and drying (between black and green tea); semi-fermented has a fruity aroma, less sharp than green tea, less body than black tea.

Types:
Mainland China: brash oolong flavor
Taiwan (Formosa)—champagne of tea; pale liquor; usually not served with milk or sugar; evenly colored leaves; fruity in cup; subtle, fine taste

Oospora See Part 2: Mold, Food

oothappam A spicy, thick ceremonial dosa made from rice and yellow lentil

OP Organophosphate pesticides

opah (Lampris regius) A food fish

opaleye (Girella nigricans) A food fish

opaque maize beer A viscous, brown-colored, slightly bitter, mildly alcoholic beer

op. cit. (Opere citato) An abbreviation of the Latin meaning in the work cited

open Nonpregnant; not bred

open account purchase A manner of supplying credit by charging goods or services to a purchaser’s account; payment is made later

open chain Carbon atoms arranged in a straight or branched chain; characteristic of aliphatic compounds

open-end order An order that specifies price, terms, and period covered, but not necessarily the quantity. Shipments are made against the buyer’s release purchase orders

open interest The total number of futures contracts recorded

open kettle canning A canning method where food is cooked in a kettle, packed in hot jars, and sealed. It is dangerous because organisms may enter jars during transfer and in low-acid foods the temperature is not hot enough to destroy all spoilage organisms

open lap A container seam that is not properly soldered or solder has failed

open loin The left-hand beef loin

open sandwich A sandwich with no top layer of bread

open shoulder Shoulder blades too far apart at top

open side (beef; loose side) The left side

operating characteristic curve A curve that shows the percentage of inspected lots that will be accepted on the basis of the sampling plan for each percentage of defective items in the submitted lots

operating process A process that equals or exceeds the minimum requirements set forth in the scheduled process

operculum See Part 2: Fish Nomenclature

ophthalmia An eye infection caused by lack of vitamin A

opol A red wine

opolska A moist, uncooked, smoked Polish sausage made from coarsely chopped, medium seasoned, beef and pork with plasma added and stuffed into a beef or artificial casing

opoanax oil See Part 2: Essential Oils

oporo Dried fish

oppenheimer A white wine

oppositely The arrangement of leaves directly across from each other on opposite sides of the stem

opsonin An antibody that increases the rate or extent of phagocytosis of bacteria or other cells

optical density Logarithmic scale used to measure opacity

\[ D = \log_{10} \left( \frac{1}{T} \right) \]
\[ D = \frac{x}{T} \]
\[ D = \log \left( \frac{100}{D_0} \right) \]

optical isomers Isomers that are mirror images of each other (enantiomers) occurring in compounds containing one or more asymmetric carbon atoms (sugars, amino acids). The number of enantiomers is the \( n \)th power of 2, where \( n \) is the number of asymmetric carbon atoms. One enantiomorph has a left-handed configuration (levo-) and the other a right-handed (dextro-) configuration. Such structures cause the plane of polarized light to be deflected to the left or right as it passes through them; however, the direction of rotation is not always the same as the structure itself. The small cap letters \( l \) and \( d \) indicate the structure of the isomers, while + and — are used for the direction of rotation. See also stereoisomer; enantiomer

optical rotation \( \alpha \) The ability of a substance to rotate the plane of polarized light to the right or left to an extent characteristic of the substance

option seller The selling counterpart to the purchaser of an option. Unlike the purchaser, who has all the rights but none of the obligations to fulfill the contract, the seller receives the premium and at the request of the purchaser (upon exercise) must fulfill his or her obligations under the terms of the contract. The option seller only receives the premium; therefore his or her profit is finite while risks are unlimited
orach  See orache

orache (bonne damme; butter leaves; fat hen; French spinach; Mexican spinach; mountain spinach; orach; sea purslane; *Atriplex hortensis*) An annual plant that has green, yellow (white), or red leaves; used as a boiled vegetable as a substitute for spinach); young leaves may be used in salad

Varieties:
- Arroche blonde—pale green leaves
- Arroche rouge—dark red leaves
- Arroche verte—large, dark green leaves

See orache

orange (Citrus)  A citrus fruit; 75% edible; a medium size evergreen that produces a globose fruit that contains 10 or more pulpy carpels; the pulp is yellow or red; originated in eastern and southeastern Asia

Types:
- Bitter, brigarade, Seville, or sour (Citrus aurantium)—acid pulp; used for marmalade, bitters, and orange-scented flavoring
- Clementine (Citrus nobilis)—tangerine-like; tight skin; seedless
- High scented peel (C. bergamia)
- Jaffa—large, sweet
- Maltese or blood—red pulp
- Mandarin (C. reticulata)—tangerine; satsuma; loose skinned
- Navel—seedless; deep orange; round; easy-to-peel thick skin; easy to segment; navel formation opposite stem end
- Sweet or China (C. sinensis)—used for eating
  - Blood—dark red or mixed color
  - Mediterranean—fine-grained
  - Navel—seedless; navel end
- Spanish—large; coarse-grained
- Valencia—moderate color, with part of skin turning green; thin, smooth skin; very juicy; some seeds

Tree growth:
- 1 year to reach grafting stage
- 2 additional years in nursery before transplanting
- 2–3 additional years in orchard before bearing
- 12–20 additional years to maximum productivity
- 30 years produce satisfactorily

Bloom to maturity
- 9–10 months tropical
- 15–16 months subtropical

Ripening period: 1–2 months (fruit remains on tree)
If artificially colored; must be labeled "color added"

Canned style: whole segments free from membrane and seed, packed in syrup made from orange juice and sugar

Refuse (usually increases with orange size):
- Halves 39–46%
- Juice 53–68%
- Sections 30–60%
- Slices 31–46%
- 1 box (12 × 12 × 24 in.), FL, TX = 90 lb
- 1 box (11.5 × 11.5 × 24 in.), CA, AZ = 75 lb
- 1 bu = 36 lb
- 1 case, juice (24) No. 2 cans
  = 0.63 box, fresh oranges
- 1 dozen, medium, fresh
  = 6 lb
  = 12 cups, sectioned (1 cup = 2.5 g or 7.5 oz)

1 dozen, medium, fresh (continued)
- 3 qt, diced
- 4 cups, juice (1 cup = 250 g or 8.7 oz)
- 1 qt, juice
- 1 cup, sections = 215 g (7.5 oz)
- 1 cup, juice = 250 g (8.7 oz)
- Small—2½ in.; 5.5 oz
  = 6–8 tbsp, juice
  = 1 tbsp, grated peel
- Medium—3 in.; 5.5 oz = 0.75 cup, diced

Large—3½ in.; 8.4 oz

Varieties:
- California
  - Navel—thick skin; seedless; good flavor; can be divided into sections (Washington navel, December–February)
  - Valencia—late (April; can be stored on tree into summer); thick skin; seedless; good flavor; light color
- Florida
  - Hamlin—early (November); thin skin; flatten poles; seedless; low quality
  - Parson Brown—early; small; seedy; lot of juice; good flavor
  - Pineapple—midseason (December–February); small; thin skin; seedy; good flavor
  - Satsuma—loose skin
  - Temple—excellent flavor
  - Valencia—late; seedless; good flavor

Varieties Area produced
- Hamlin  Florida, Texas
- Parson Brown  Florida, Texas
- Pineapple  Florida, Texas
- Temple  Florida
- Valencia  West, Southwest, Florida
- Washington Navel West

Composition Peeled fruit Juice Peel

| Moisture (%) | 82–86 | 87–88 | 72 |
| Protein (%) | 0.7–1.3 | 0.5–1.0 | 1.5 |
| Fat (%) | 0.1–0.3 | 0.1–0.3 | 0.2 |
| Carbohydrate (%) | 12–16 | 9–13 | 25 |
| Ash (%) | 0.5–0.7 | 0.4 | 0.8 |
| pH | 3.1–4.1 | 2.7–4.4 |

Fiber 2%; ascorbic acid 49 mg/100 g

Storage (unwrapped): Keep dry, cool, and in the dark at 85–90% relative humidity, or refrigerate (32–34°F); 8 week storage life; freezing point 28°F

See also blood orange; citrus fruit; sour orange; sweet orange

Part 2: Ascorbic Acid; Calcium, Daily Recommendations; Calories, Daily Recommendations; Citrus Fruit Storage; Essential Oils; Flavor Ingredients, Taste and Flavor Type; Flavors, Beverage, Food, Composition; Frozen Food Storage; Fruit and Nut Rootstock; Fruit, Availability; Fruit, Classification; Fruit, Composition; Fruit, Harvest Dates; Fruit Juice Flavors; Fruit Storage; Iron; Minerals, Food; Niacin; Nutrients in Crops; Orange Essence Oils; Orange Oil Composition; Orange Oil Properties; Orange Structure; Phosphorus; pH Values of Biological Materials; Plant Foods, Composition; Potassium; Potassium-
Rich Foods; Riboflavin; Rot Spoilage; Standards; Processed Fruit and Vegetable Products; Storage; Storage, Dry; Thiamin; Thiamin, Daily Recommendations; Transit Temperature; Vitamin A; Vitamin A, Daily Recommendations; Vitamin C

orangeade A beverage made from the juice of sweet oranges and plain or sparkling water

orange bitters A flavoring (quinine and orange peel) for mixed drinks; the rind of bitter orange is used to make bitters, which are used to add flavor and bouquet to beverages

orange drink A simulated or diluted orange juice product; amount of juice (if any) must be on label

orange extract Made by dissolving essential oils or essences in alcohol

<table>
<thead>
<tr>
<th>Type of extract</th>
<th>Made from</th>
<th>Volume of oil orange (min. %)</th>
<th>Ethyl alcohol (min. % by vol.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonalcoholic orange flavor</td>
<td>Oil of orange, oil of cottonseed</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>Orange flavor</td>
<td>Oil of orange or orange peel</td>
<td>5</td>
<td>80</td>
</tr>
<tr>
<td>Orange terpenoless flavor</td>
<td></td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

orange-flavored oil An essential oil made from strongly scented orange flowers (blossom); used as flavoring

orange-flower water A product obtained from distillation of orange-flower oil; used as flavoring; distilled from orange blossom

orange gin An orange-flavored liqueur

orange juice 100% orange juice; juice pressed from the orange; may be flavored with the volatile oil obtained from the orange rind

Types:
  Sweetened—sugar added
  Unsweetened—no sugar added

Composition of concentrate: moisture 35%; solids 65%; 0.80–0.84 water activity
  1 gallon = 32 (4 oz) servings
  1 cup = 8.8 oz

orange, mandarin Canned in segments and packed in water or light syrup

orange marmalade 1 cup = 12 oz

orange melon See mango melon

orange mix, powdered See powdered orange mix

orange oil (sweet orange oil) An essential volatile oil expressed from peel or rind of Citrus sinensis L. Osbeck and mixed with water and alcohol; used as an orange-peel-like, food flavoring agent for food; sp. gr. 0.842–0.845

Storage: full, tight, container in a cool, dark place

orange oil, bitter A volatile oil cold-expressed from peel of Citrus aurantium; used as a bitter-orange-like flavoring ingredient for food; sp. gr. 0.845–0.852

Storage: full, tight, glass container in a cool, dark place

orange pekoe A leaf grade (long, thin, tightly twisted leaf) rather than type of tea; often black tea made from the first-opened leaves See also black tea

orange, pomace (orange pulp) Composition (without fines, dehydrated): dry matter 88%; protein 7.5%; fat 1.7%; fiber 8.5%; ash 3.7%

orangequat Hybrid between orange and kumquat

orange roughly (deep sea perch) A fat, saltwater fish

orange rust A fungus (Gymnoconia peckiana) disease that attacks the entire plant of blackberries and black and purple raspberries but does not attack red raspberries; common in northeast U.S.; leaves are small and yellow; produces blisterslike pustules on underside of leaves that shed reddish orange spores; canes will not blossom the following year

Control: Plant rust-free raspberries; remove and burn canes that show symptoms in the spring and thin to allow good air circulation

orange serum agar See Part 2: Microbiological Media

orange-spiced blend A spiced tea made from black tea, cloves, and orange

orange tortrix (Argyrotaenia citrana) A leafroller moth; greenish, black-headed caterpillars feed on the surface of pears

orchard A group of fruit, nut, or maple sugar trees

orchard grass (Dactylis glomerata) A perennial grass used for pasture or hay; seed weighs 14 lb/bu; harvest when it begins flowering; pH 5–5.5; variety, Potomac; plant 5 lb per acre See Part 2: Seed, Germination

orchard mite See brown mite; European red mite; McDaniel spider mite; pear-leaf blister mite; pear rust mite; two-spotted spider mite; yellow spider mite

ordinate (y-axis) The vertical axis on rectangular coordinates

oreanda An amber, Russian, dessert wine

oregano [common marjoram; joy of the mountain; Mexican sage; origan; origano; origanum; origany; pizza herb; pot marjoram; wild marjoram; winter sweet; Origanum spp.; O. vulgare; Greek oregano (Origanum heracleoticum)] A tall (3 ft), perennial (90 days); herb of the mint family; its light green leaves (5 in. in length) can be used fresh or dried; available whole and medium grind forms for use in seasoning (especially in Italian, Mexican, and Spanish cooking), tomato dishes, vegetables, salad dressing, meat sauces, pasta, and chili powder.

Types (different plants):
  Mediterranean—mild; preferred in European cooking, pizza, and Italian cooking
  Mexican—strong; darker color; pungent; preferred in chili powder and Mexican cooking

Source: Greece, Mexico, Turkey
Some call *Origanum vulgare* the original; oregano is similar to marjoram in flavor, but stronger than sweet marjoram

1 tbsp, dried whole = 3 tbsp, minced fresh

Composition: moisture 7–8% (10% max.); protein 10–12%; fat 9–11%; carbohydrate 64–65%; fiber 11–17%; ash 7–8%; average volatile oil 3%

**oreo cookies**

1 cup, coarsely crushed cookies = 12 cookies

**organ** A functional unit of body, e.g., heart, liver, stomach, etc.

See Part 2: Organ Weights

**organelle** Structured components within cells whose function are analogous to those or organs, e.g., mitochondria, Golgi complex, lysosomes, ribosomes, centrioles, etc.

**organic** 1) Pertaining to organs. 2) Chemicals containing carbon

**organic acid** A carbon-containing acid with one or more carboxyl groups

See Part 2: Organic Acids in Fruits and Vegetables

**organic chemistry** Study of carbon-containing compounds, except oxides of carbons and metallic carbonates

**organic farming** Farming that uses only organic fertilizers and avoids use of inorganic agricultural chemicals and herbicides

**organic food** Food grown on soil treated only with organic fertilizer (e.g., manure, garbage, compost)

**organic matter** Dead, organic material of plant or animal origin; essential for soil to have good structure; increases water-holding capacity, prevents drying, and releases nutrients for plant growth

**organism** A life-form that carries on life function by means of organs or mutually dependent parts

**organoleptic** A test of a food product evaluated by a sense perception (feeling, hearing, sight, smell, or taste). In food analysis the term has been replaced by the words “sensory evaluation” or “psychophysics” See also sensory

**organology** A microscopic study of body organs

**organophosphate** A group of insecticides that are phosphoric acid esters; they are highly toxic but not persistent See also parathion

**orgeat** A syrup emulsion of almonds

**oriental** A white, brined cheese made from sheep’s milk

**oriental eggplant** See eggplant

**oriental fruit moth (Grapholitha molesta)** The adult is an inconspicuous gray moth with a ½-in. wingspan. The host is the peach, nectarine, plum, pear, apple, and quince.

Damage: larvae feed inside stone fruit; pinkish white, ½-in. worms with brown heads burrow into deciduous fruit and into twigs and new shoots and kill them

Control: insecticide, e.g., carbaryl

**oriental garlic chives** Grown and used like chives except leaves have a slight garlic flavor

**orifice** Entrance

**origan** See oregano

**origanum oil, Spanish** A volatile oil obtained by steam distillation of *Thymus capitatus* herb; used as a thyme-like flavoring agent for food; sp. gr. 0.934–0.960

Storage: full, tight, glass container in a cool, dark place

**origany** See oregano

**origin** Stationary (or fixed bone) attachment of a muscle

**orkney cheese** A creamy, cheddar-like cheese made from cow’s milk and that is sometimes smoked

**ormer (Haliotis luberculata)** A gastropod mollusk

See abalone

**ornithosis (psittacosis)** Parrot fever, which can infect other fowl and be transmitted to humans

**oropesa** See estrella

**orotic acid**

![Orotic Acid](image)

Growth factor for some microorganisms; used in the synthesis of cytosine

**Orpington** An English class of chickens with white skin that lays a brown-shelled egg

Varieties: black, blue, buff, white,

**orris oil** A semisolid oil distilled from the Iris plant

See Part 2: Essential Oils; Flavoring Agents, Natural

**orris root oil** A volatile oil obtained by steam distillation of rhizomes of *Iris pallida* Lam; used as a food flavoring agent; melting point 38–50°C

Storage: full, tight, glass container in a cool, dry place

**orts** Fragments of feed refused by an animal
orviento A White wine from Umbria (central Italy)
Types:
  Abboccato (semisweet)—light and noncloying
  Secco—dry, well balanced, and flowery bouquet

orvieto A dry of sweet, white wine

Os Symbol for the element osmium

os Bone; mouth

o’s O-shaped pastas
  Small o’s— $\frac{1}{2}$ in. diameter
  Large o’s— $\frac{3}{4}$ in. diameter

osage melon A round, gray melon that has pink or green flesh See melon

osage orange A tree that is a source of excellent firewood; 33 million Btu/cord (20% moisture); difficult to start; easy to split; light smoke; excellent coals; few to many sparks

os calcis See tuber calcis

os coxae See osa coxarum

-ose A suffix meaning sugar

-osis A suffix meaning disease of or abnormal increase

osmazone The part of meat that is soluble in cold water

osmics The science of smell

osmium (Os) A metallic element; at. no. 76; at. wt. 190.2; Group VIII of Periodic Table; oxidation states $+3$, $+4$;
  electron configuration $2-8-18-32-14-2$
  orbit K L M N O P

osmo- A prefix meaning impulse

osmophile An organism that can live in high osmotic pressure

osmophilic See Part 2: Spoilage, Carbohydrate Foods

osmosis The passage of fluid (usually water) through a semipermeable membrane into a solution of higher concentration to equalize the concentration on both sides of the membrane; the passing of a fluid through a semipermeable membrane into a solution where its concentration is lower and thus the concentrations on each side of the membrane are equalized; a force called osmotic force or pressure is generated. Additives that generate a higher osmotic pressure are useful in the food area because they:
  - Cause a pickling solution to penetrate food
  - Reduce shrinkage
  - Aid in size recovery
  - Lower water activity and help control bacteria See osmotic pressure

osmotic pressure The force caused by osmosis; pressure created by the total number of ions and molecules dissolved in water; the pressure at which a solvent passes through a semipermeable membrane; it varies directly with differences in solute concentrations; directly related to freezing and boiling point

<table>
<thead>
<tr>
<th>Moles dissolved</th>
<th>In water (l)</th>
<th>Osmotic pressure atm.</th>
<th>lb/in.²</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>22.4</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>22.4</td>
<td>336</td>
</tr>
</tbody>
</table>

See osmosis

ossa coxarum The pelvic bone

ossein Bone collagen produced by decalcifying the bone

ossetin See tuschinsk

ossetin cheese A Russian cheese made from sheep's or cow's milk

ossification The formation or calcification of bone

ossify To become bone-like
See Part 2: Bone Age

ossobuco (ossi buchi) Braised veal shank

ost Cheese

osteo- A prefix meaning bone

osteology The study of bones

osteomalacia Softness of the bone; a disease caused by the removal of calcium and phosphorus from mature bones; caused by a deficiency of calcium, phosphorus, or vitamin D

osteoporosis Abnormal porosity or rarefication of bone; porous bones due to depletion of calcium

ost(i)epak An ovoid, smoked, provola-type cheese made from sheep's milk

ostrich A large, flightless bird
  1 average bird = 60 pounds meat
  = 40 pounds fat

osumashi A clear soup

oswego A cheddar cheese

oswego tea See bergamot

oszepek An ovoid, smoked, provola-type cheese made from sheep's milk

OTA Office of Technology Assessment, U.S. Congress

otaheite apple (malay apple) A pink or red, pear-shaped fruit with a rose flavor See ambarella

otaheite plum See ambarella

o toso A thick, creamy, rice wine

Ottotan A variety of soybean

ou A glutinous, rice wine

ounago A fish sauce made from shrimp (Mysis)

ounce (apothecary) A measure of weight (same as troy ounce)
524 ounce (avoirdupois or avdp.)

<table>
<thead>
<tr>
<th>Unit</th>
<th>Conversion Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 oz (avdp.)</td>
<td>= 2.8350 × 10^4 milligrams (mg)</td>
</tr>
<tr>
<td>= 437.5 grains (gr)</td>
<td></td>
</tr>
<tr>
<td>= 28.349627 grams (g)</td>
<td></td>
</tr>
<tr>
<td>= 21.875 scruples (apothecary)</td>
<td></td>
</tr>
<tr>
<td>= 18.22917 pennyweight</td>
<td></td>
</tr>
<tr>
<td>= 16 drams (avdp.)</td>
<td></td>
</tr>
<tr>
<td>= 7.29167 drams (troy; apothecary)</td>
<td></td>
</tr>
<tr>
<td>= 0.911,458, 3 troy or apothecary ounce (oz troy; apothecary)</td>
<td></td>
</tr>
<tr>
<td>= 0.08333333 troy or apothecary pound (lb troy; lb apothecary)</td>
<td></td>
</tr>
<tr>
<td>= 0.075954861 troy or apothecary pound (lb avdp.)</td>
<td></td>
</tr>
<tr>
<td>= 0.06250 avdp. pound (lb avdp.)</td>
<td></td>
</tr>
<tr>
<td>= 0.05555556 troy or apothecary pound (lb avdp.)</td>
<td></td>
</tr>
<tr>
<td>= 0.051948 troy or apothecary pound (lb avdp.)</td>
<td></td>
</tr>
<tr>
<td>= 0.00003429 net-short ton (2000 lb)</td>
<td></td>
</tr>
<tr>
<td>= 0.00003125 net-short ton (2000 lb)</td>
<td></td>
</tr>
<tr>
<td>= 0.00002835 metric ton (1000 kg)</td>
<td></td>
</tr>
<tr>
<td>= 0.00002790 gross-long ton (2240 lb)</td>
<td></td>
</tr>
<tr>
<td>12 oz (troy) = 1 pound (troy)</td>
<td></td>
</tr>
</tbody>
</table>

ounces (avoirdupois or avdp.) A measure of weight

- 1 avdp. ounce (oz avdp.)
- 480 grains (gr)
- 31.103481 grams (g)
- 24 scruples (apothecary)
- 20 pennyweight (dwt; troy)
- 17.55428 drams (avdp.)
- 8 drams (troy apoth.)
- 0.971429 avoirdupois ounces (oz avdp.)
- 0.08333333 troy or apothecary ounce (oz troy; lb apothecary)
- 0.075954861 troy or apothecary pound (lb avdp.)
- 0.06250 avdp. pound (lb avdp.)
- 0.05555556 troy or apothecary pound (lb avdp.)
- 0.051948 troy or apothecary pound (lb avdp.)
- 0.00003429 net-short ton (2000 lb)
- 0.00003125 net-short ton (2000 lb)
- 0.00002835 metric ton (1000 kg)
- 0.00002790 gross-long ton (2240 lb)

16 oz = 1 lb

oude An esbareich-type cheese

ouri-curi wax A brown, vegetable wax from South America

outside chuck (top chuck) Muscles lateral to the scapula; the major ones are triceps brachii (long head), infraspinatus, supraspinatus

outside round (bottom round) A cut of beef consisting of the semitendinosus and biceps femoris muscles

outside chuck (top chuck) Muscles lateral to the scapula; the major ones are triceps brachii (long head), infraspinatus, supraspinatus

ovalbumin See egg albumin

ovar A mild, Hungarian tilsit-type cheese made from cow's milk

ovary Site of egg formation in the female

oven An enclosed, heated chamber for baking, roasting, or drying

Temperature ranges

<table>
<thead>
<tr>
<th>Temperature</th>
<th>°F</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very slow</td>
<td>250–275</td>
<td>121–135</td>
</tr>
<tr>
<td>Slow</td>
<td>300–325</td>
<td>149–163</td>
</tr>
<tr>
<td>Moderate</td>
<td>350–375</td>
<td>177–191</td>
</tr>
<tr>
<td>Hot</td>
<td>400–425</td>
<td>204–218</td>
</tr>
<tr>
<td>Very hot</td>
<td>450–475</td>
<td>232–246</td>
</tr>
<tr>
<td>Extremely hot</td>
<td>500–525</td>
<td>260–274</td>
</tr>
</tbody>
</table>
over color  See ground color

overconsumption  Excess caloric or nutrient intake

overeating  Excess caloric or nutrient intake

overfinishing  Excess fatness

overhaul  Redistribution of the cure on a curing meat product to insure a more uniform cure

overlap  The distance on a can that the cover hook overlaps the body hook

overnutrition  A misleading term that should be replaced by overconsumption, overeating, or excess caloric intake; pathological state resulting from an excessive intake of food, eventually causing obesity

overpackaging  Packaging that exceeds the requirements of product containment and/or protection

overpressure  Pressure in a retort in excess of that supplied by steam or water at a given temperature

overreach  Placing the hind foot ahead of the spot from which the front foot was just removed

overrun (swell)  An increase in volume due to air incorporation (whipping) during the freezing process in the manufacture of frozen desserts; in ice cream from 30 to over 100%

<table>
<thead>
<tr>
<th>Ice cream</th>
<th>100% overrun</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gallon</td>
<td>5 pounds</td>
</tr>
<tr>
<td>Quart</td>
<td>1 pound and 4 ounces</td>
</tr>
<tr>
<td>Pint</td>
<td>10 ounces</td>
</tr>
</tbody>
</table>

overweight  Weight in excess of the normal range for a given sex, age, and height

overweight kip skin  A calf skin weighing between 25 and 30 lb

oviduct (fallopian tube; ovarian tube; uterine tube)  The tube leading from the uterus to the ovary; usually a pair; function is to collect the oocyte, unite sperm with egg, and deliver fertilized egg to uterus

ovine  Sheep

ovole  A small, egg-shaped, mozzarella-type cheese made from cow's milk

ovovitellin  See vitellin

ovulation  Rupture of the graafian follicle

ovule  The portion of the pistil that becomes a seed after pollination  See Part 2: Flower, Perfect

ovum  The female egg that is produced in the ovary and, if fertilized, will become an embryo

owner-sampler (OS)  A procedure whereby a producer weighs and samples milk over two consecutive milkings

ox  A castrated bovine (Bos taurus); generally over 3 years of age  See Part 2: Teeth Eruption

oxalate  A salt of oxalic acid. Na oxalate combines with Ca and prevents blood from clotting; Na oxalate 160 mg/100 ml blood

oxalic acid  [COOH₂] A dicarboxylic acid; poisonous; used as a cleaning agent

See Part 2: Normal Solutions; Organic Acids in Fruits and Vegetables; Reagents, Normal Solutions

ox beef  A steer that does not show secondary sex characteristics; a heifer with 7 or less permanent incisors

ox bile extract  A purified ox gall; a food emulsifier used in dried eggs

Oxford  A medium-wool, mutton-type breed of sheep that originated on south central England by crossing Cotswold rams with Hampshire ewes; it has a medium brown-to-gray face, no horns and its fleece will grade about 1

See Part 2: Sheep Breeds

Oxford Down  Former name of Oxford sheep

oxidase  An enzyme that can cause oxidation of a substrate by atmospheric oxygen

oxidation  Loss of one of more electrons by an element or group; addition of oxygen; removal of hydrogen; increase of positive charge; loss of negative charge; often causes color changes and rancidity in fats or food (usually objectionable flavor or taste and odor or smell and color)

See Part 2: Enzymes, Food Industry; Meat Pigment

oxidation number  The number of electrons an element can transfer to another element with which it combines; also the number of electrons that must be added to or subtracted from a combined atom to restore it to its elemental state. Thus an oxidation number can be either positive or negative, e.g., that of oxygen is -2

See also valence

oxidative phosphorylation  The conversion of inorganic phosphate to ATP by the electron transfer system

oxidized  A cardboard, aldehyde, or rancid, fat-like flavor; wine that has deteriorated due to exposure to oxygen

oxidizing agent  An element that gains electrons and is reduced; an agent that causes removal of electrons

oxidoreductase  Enzymes that catalyze oxidation-reduction reactions, e.g., dehydrogenase, oxygenase, peroxidase

oxtail (ox joints)  The skinned tail (coccyx or caudal vertebrae) of ox (beef) used for food (often soup); usually cut in 1 ½ in. lengths

See Part 2: Beef Cuts and Uses

oxtail soup

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dehydrated with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>4.8</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>15.0</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>13.6</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>47.9</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0.7</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>18.7</td>
</tr>
</tbody>
</table>

ox tongue  Beef tongue  See fistulina hepatica
**OX WARBLES**

Eggs laid in June by adult heel flies on the hair of cattle legs; these eggs hatch into larvae that enter the skin and travel through the body to the animal's back; they emerge from the animal's back in February to June and drop to the ground to hatch into heel flies.

**OXYGALA**

Yogurt

**OXYGEN** (O) A gaseous element; at. no. 8; at. wt. 15.9994; Group VIA of Periodic Table; oxidation state -2; electron configuration 2-6;

Noncombustible, but actively supports combustion; composed 20% of air; combines with other elements to form oxides.

**OXYGENATE** To aerate

**OXYGENATION** Uptake of oxygen

See Part 2: Meat Pigment

**OXYGENEE** An aniseed-flavored, herb liqueur

**OXYMYOGLOBIN** A bright red (desirable retail color) meat pigment formed by oxygenation of myoglobin

See Part 2: Meat Pigment

**OXYOSIS** Acidosis; accumulation of acid or loss of base in the body

**OXYSTEARIN** A mixture of stearic and other fatty acid glycerides; used as a sequestrant, defoaming agent, or crystallization inhibitor in food oils; iodine value 15; saponification value 225-240

Storage: well-closed container

**OXYTETRACYCLINE (Terramycin)**

![Diagram of Oxytetracycline](attachment:image.png)

A broad spectrum antibiotic; mol. wt. 496.46; a drug used to promote growth, increase feed efficiency, treat various diseases (diarrhea, dysentery, enterotoxemia, and reduction of bloat), reduce liver abscesses, increase milk production, egg production and quality, hatchability, improve fertility, and liveability.

See Part 2: Antibiotic Standards

**OXYTOCIN** A hormone that controls milk letdown

**OYAKO DONBURI** A dish made from rice, chicken, and coddled egg

**OYOKPA** A sorghum beer

**OYSTER (OSTREA VIRGINICA (EAST COAST) OR O. LURIDA (WEST COAST))** A bivalve, mollusk shellfish; 10-15% weight is meat (10-12% protein); a lean, marine, bivalve mollusk

Blue Point (Crasostrea virginica)—American Atlantic

Common (Ostrea edulis)—Europe

Dredged (O. lutaria)—New Zealand

Japanese (O. lapertourei)

Pacific (C. gigas)

Portuguese (C. angulata)

Rock (C. glomerate)—New Zealand

South America (O. chilensis)

Sydney Rock (C. commercialis)—Australia

Western (Olympia) (O. lurida)—Pacific

**Type and habitat**

American

Eastern—Atlantic and Gulf coasts

Olympia—Puget Sound

Olympia, Western—Pacific coast

Pacific or Japanese—Pacific coast

Blue Point—Atlantic, Gulf of Mexico (large)

Cornish

Europe

Belons—France

English colchester—England

Marenses blanches—France

Marenses verdes—France

Whitstable—Europe, England

Loch Ryan

Pacific, Japanese—Pacific coast; Japan

Portuguese—Portuguese Zeeland—Zeeland

**Freshness:** live oyster with tightly closed shell; meat clear cut and creamy colored; liquor clear

1 serving = ½ dozen, shell oysters

= ½ quart, shucked oysters

= ½ pounds, shucked oysters

= 3.5 ounces, breaded oysters

1 cup, shucked = 13-19 medium select

= 235 grams (8.3 ounces)

1 pt, shucked = 24 oysters in shell

As purchased % Yield

12

25

Shucked

50

6 ½

Ounces to purchase for one serving

<table>
<thead>
<tr>
<th>Size</th>
<th>Count/gal</th>
<th>Count/lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>In shell</td>
<td>160 or less</td>
<td>20 or less</td>
</tr>
<tr>
<td>Large (extra selects)</td>
<td>161-210</td>
<td>21-26</td>
</tr>
<tr>
<td>Medium (selects)</td>
<td>211-300</td>
<td>27-37</td>
</tr>
<tr>
<td>Small (standard)</td>
<td>301-500</td>
<td>38-62</td>
</tr>
<tr>
<td>Very small</td>
<td>Over 500</td>
<td>Over 62</td>
</tr>
<tr>
<td>Pacific</td>
<td>65 or less</td>
<td>8 or less</td>
</tr>
<tr>
<td>Medium</td>
<td>65-96</td>
<td>9-12</td>
</tr>
<tr>
<td>Small</td>
<td>97-144</td>
<td>13-18</td>
</tr>
<tr>
<td>Extra small</td>
<td>More than 144</td>
<td>Over 18</td>
</tr>
<tr>
<td>Olympia</td>
<td>Avg. 1600</td>
<td>275-300</td>
</tr>
</tbody>
</table>

Graded for size in shell:

Half shells—smallest

Culls—medium size

Box—largest

<table>
<thead>
<tr>
<th>Size</th>
<th>Eastern (per gal)</th>
<th>Pacific (per gal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extra large</td>
<td>160</td>
<td>64</td>
</tr>
<tr>
<td>Large</td>
<td>160-212</td>
<td>64-96</td>
</tr>
<tr>
<td>Medium</td>
<td>210-300</td>
<td>96-144</td>
</tr>
<tr>
<td>Small</td>
<td>300-500</td>
<td>144</td>
</tr>
<tr>
<td>Very small</td>
<td>&gt; 500</td>
<td>&gt; 144</td>
</tr>
</tbody>
</table>

Graded for size in shell:

Half shells—smallest

Culls—medium size

Box—largest
1 cup, Eastern, meat = 19–31 small or 13–16 medium = 8.5 ounces
1 cup, Pacific, meat = 6–9 small or 4–6 medium = 8.5 ounces
12 oysters, Eastern, in shell = 4 pounds
Canned in weak salt brine; listed weight is drained weight of meat; black-fringed mantle is characteristics of Pacific oyster and is caused by bed soil in areas where they are grown.
Salty oyster—harvested from saltwater
Sweet oyster—harvested from freshwater

<table>
<thead>
<tr>
<th>Moisture</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Ash</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canned, solid and liquid</td>
<td>8.5</td>
<td>2.2</td>
<td>4.9</td>
<td></td>
</tr>
<tr>
<td>Eastern</td>
<td>79–85</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frozen, solid and liquid</td>
<td>6.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raw meat</td>
<td>79–85</td>
<td>8–11</td>
<td>1.5–2.5</td>
<td>3–6.5</td>
</tr>
<tr>
<td>Western and Pacific</td>
<td>79–85</td>
<td>10.6</td>
<td>2.2</td>
<td>6.4</td>
</tr>
</tbody>
</table>

pH 4.8–6.3; frying oil temperatures 177–190°C (350–375°F); there is a 10–14% fat absorption during frying; cholesterol 42 mg/3 oz raw meat; calcium 0.1%; sodium (raw) 113 mg/3 oz (85 g); sodium (frozen) 323 mg/3 oz (85 g)

Storage:
Live oyster: packed in ice in refrigerator for a maximum of 7 days; if refrigerated, will remain alive for 7–10 days
Frozen: 0°F for no more than 2 months

See Part 2: Calcium Equivalence for Milk; Calories, Daily Recommendations; Cholesterol Control; Fish and Shellfish Composition; Fish, Storage; Frozen Food Storage; Frying Time; Iron, Daily Recommendations; Minerals, Food; Portion Size; Riboflavin, Daily Recommendations; Thiamin, Daily Recommendations

**oyster, Blue Point** A good size oyster from Atlantic or Gulf waters

**oyster cocktail sauce** Contains horseradish (grated), spices, and tomatoes

**oyster cracker**
1 cup = 1.6 oz

**oysterette** A small, unleavened cracker

---

**oyster fish** *See black fish*

**oyster mushroom** (*Pleurotus ostreatus*) An edible fungus whose cap varies from blue-gray to brown; has a very short stem

**oysternut** (*Telfuria pedata*) A large, flat, vine seed used for dessert

**oyster of the poor** *See mussel*

**oyster plant** *See salsify*

**oyster, poultry** Oyster-shaped pieces of meat in the bone cavity on the lower part of the back of poultry

**oyster sauce** A fish-flavored, soy sauce made by cooking oysters in soy sauce; a gray–brown sauce made from oysters, soy sauce, and brine

**oyster shell** Ground oyster shells can be used for liming material and as poultry feed; for liming purposes they are similar to ground limestone but less efficient than pulverized limestone; when ground and applied to soil they supply calcium (Ca) and other minerals, reduce soil acidity, and improve the physical character of heavy soil *See baked oyster shells; burned oyster shells*

See Part 2: Liming Materials

**oyster shell, ground (flour)**
Composition (flour): dry matter 99%; Ca 38%; Mg 0.3%; Na 0.2%; Fe 0.3%

**oyster stew, canned soup**

<table>
<thead>
<tr>
<th>Composition</th>
<th>Condensed</th>
<th>Condensed, prepared with milk</th>
<th>Condensed, prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>89.9</td>
<td>88.4</td>
<td>94.9</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>1.7</td>
<td>2.5</td>
<td>0.9</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>3.1</td>
<td>3.2</td>
<td>1.6</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>3.3</td>
<td>4.0</td>
<td>1.7</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>1.9</td>
<td>1.3</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**ozokerite** An earth wax

See Part 2: Wax

**ozone** (*O₃*) An unstable, blue gas with a penetrating odor; it is a toxic germicide and oxidizing agent; used for industrial waste treatment and for water purification
p  See para-
p  See pico
P  The symbol for the element phosphorus
P₁  A position 45 mm from the midback at the 13th rib of a pork carcass
P₂  A position 65 mm from the midback at the 13th rib of a pork carcass
P₃  A position 80 mm from the midback at the 13th rib of a pork carcass
P₁  The parental generation (genetics)
PA  Spoilage by putrefactive anaerobes; cans do not swell but spoilage odor is apparent; some types of these organisms are toxic, e.g., *Clostridium parabotalinum*
Pa  Symbol for the element protactinium
paak  A red or brown, salty fish paste made by fermentation of fish or shrimp with rice
PABA  See para-aminobenzoic acid
Pabulum  The proprietary name of a prepared cereal made especially for infant feeding
pace  1 pace = 30 inches (in.)
pachwai (sonti)  A rice beer
pachouch  See jora
Pacific butterfish  A small pompano (a saltwater fish) of the west coast of North America
Pacific cod (*Gadus macrocephalus*)  A food fish
Pacific flatheaded borer (*Chrysobothris mali*)  A borer that attacks pear trees
Pacific halibut  A finfish with white meat and a very light, delicate flavor
Pacific herring  See sea herring
Pacific mackerel (*Scomber japonicus*)  A food fish
Pacific ocean perch  A finfish with light meat and a very light delicate flavor
Pacific sanddab  A finfish with white meat and a very light, delicate flavor
Pacific snapper  See rockfish
Pacific whiting  A finfish with white meat and a light to moderate flavor
pack  1) To fill a container. 2) The method by which food is placed in a container (for canning), characterized by, e.g., the temperature of the food when placed in the container (hot-pack, cold-pack) or by the method of sweetening the food for storage (sugar pack, juice pack). 3) A complete run of one product
package deal  An order that groups unrelated commodities from the same supplier in order to obtain a price concession
packaging  Placing foodstuffs in individual containers that are suitable for distribution and that also protect them from bacterial contamination, moisture, and oxidative deterioration and other changes; the materials most widely used are glass, metal, paper, and plastic films.
pack date  The date of manufacturing, processing, or final packaging
packer  One who packs food (especially meat) for market; a meat processor
packer hide  A hide that has been removed by using a uniform pattern and a minimum of cuts and that has been stored under standard conditions
packer's end  See cover
packer's-style hog carcass  A pork carcass split, with jowls on carcass but head and leaf fat removed
packinghouse  A plant for the slaughter, processing and packing of meat; an abattoir
See Part 2: Packinghouse By-Products, Composition
packing sow  A hog that has been a brood sow
paczki  A doughnut made from wheat flour and filled with rum-flavored, rose jam
padding  Swinging the forefeet outward in a trot or walk
paddlefish (*spadefish; spoon-billed catfish*)  A large (up to 100 lb), scaleless, freshwater fish belonging to the sturgeon family; the roe is used as caviar.
paddock  An enclosed outdoor area for exercising horses; a small, fenced area used for grazing
paddy  1) Whole-grain rice; rough rice; unhulled rice. 2) A wet or heavily irrigated plot of ground on which rice is grown. See rice
paddy whack  See back strap
padec  A dark, salty, fermented fish paste with rice bran
paderbornbrot  A loose-textured (loose crumb) bread made from wheat and rye
padi-straw mushroom  A type of straw mushroom
Paecilomyces  A type of mold
See Part 2: Molds, Mycotoxins; Spoilage, Fat in Food
paella  A Spanish fish and seafood dish that is made with rice and vegetables; a casserole made from seafood, poultry, and rice and seasoned with saffron
paella con bacalao Paella made with cod and containing min. 35% cooked meat, poultry meat, or seafood and max. 25% cooked rice

PAG Protein Advisory Group

pagano levin agar See Part 2: Microorganism, Media

paglia A soft, aromatic blue cheese made in Switzerland from cow’s milk and matured on straw in caves

pago An Austrian cheese made from sheep’s milk with rennet added

PAH Polycyclic aromatic hydrocarbons

PAHO Pan-American Health Organization

pai chiu A white wine

paid diversion program Direct payments made to farmers for diverting a specified acreage from certain crops into conservation uses

pai egg medium See Part 2: Microorganism, Media

pai kan A dry white wine

pain Bread

pain parisien A loaf of French bread that is larger than normal and has five lateral cuts, is 70 cm long, and weighs approximately 400 g

paio A semidry, cooked, smoked Brazilian sausage made from medium-chopped, medium-seasoned pork stuffed into beef casings

paired analysis An analysis by which two treatments can be made on essentially the same objects; there is less original variation between the two treatment areas on the same object than there is between adjacent objects.

\[ \bar{D} = \frac{\sum D}{n} \]

\[ d = D - \bar{d} \]

\[ d^2 = d \times d \]

\[ s_D^2 = \frac{\sum d^2}{n-1} \]

\[ s_D = \sqrt{s_D^2} \]

\[ s_{\bar{d}}^2 = \frac{s_D^2}{n} \]

\[ s_{\bar{d}} = \sqrt{s_{\bar{d}}^2} \]

\[ H_0: u_D = 0 \]

\[ t = \frac{\bar{d} - u_D}{s_{\bar{d}}} \]

or

\[ \bar{d} - [t_{0.05 \ or \ 0.01}]s_{\bar{d}} \leq u_D \leq \bar{d} + [t_{0.05 \ or \ 0.01}]s_{\bar{d}} \]

See Part 2: Paired Comparisons; Paired Taste Tests; Taste Panel, Difference Tests

paired comparison A method of testing by which a pair of coded samples is given to a panel for comparison of a specific characteristic

See Part 2: Paired Comparisons; Paired Taste Tests; Taste Panel, Difference Tests

paired-preference test A method of testing by which a panel is asked which of a pair (control and test) of samples they prefer and why

pak-choi (Chinese cabbage; pak choy; Brassica chinensis) The leaves of this plant are eaten raw in salads or are cooked

See Part 2: Vegetable Plants

pakling A green China tea

pakhun A green China tea

pak-siam-dong Fermented leaves of Gynandropsis pentaphylla

paksin A broth made with vinegar and spice

pak yau A soy sauce

pala (Macrura ilisha) A food fish used in India

palacsinta A sweet pancake that is often made in layers with filling

paladru A cheese made from cow’s milk

palamonte A mixture of acorns, sugar, spices, aromatic material, etc.

palatability A complex characteristic of a food that indicates its degree of appeal or attractiveness to the appetite and involves sensory impressions of appearance, odor, flavor or taste, temperature, sound, and texture

palatable Having an acceptable, agreeable, savory, or pleasing taste; describes a pleasant physiological reaction to the presentation and consumption of a food

See palatability

palate The roof of the mouth, comprised of the bony hard palate (front) and the muscular soft palate (rear); erroneously said to be a taste organ, hence the term palatable See palatability

pale Describes something that has weak color or that lacks pigmentation, e.g., PSE (pale, soft, exudative) pork

pale ale (light ale) An English beer with a light color (like American beer) that is darker than lager; a well-hopped, light-colored ale

pale ale (light ale) An English beer with a light color (like American beer) that is darker than lager; a well-hopped, light-colored ale

pale cheese Cheese with no added color

Palestinian soup A soup made from Jerusalem artichokes

palia A bitter melon

palingworst A moist, cooked, smoked Dutch sausage made from fine- or coarse-chopped, medium-seasoned beef and pork stuffed into pork or artificial casings

palladium (Pd) A metallic element; at. no. 46; at. wt. 106.4; oxidation states +2, +4; Group VIII of the Periodic Table; electron configuration 2–8–18–18

or

\[ t = \frac{\bar{d} - u_D}{s_{\bar{d}}} \]

or

\[ \bar{d} - [t_{0.05 \ or \ 0.01}]s_{\bar{d}} \leq u_D \leq \bar{d} + [t_{0.05 \ or \ 0.01}]s_{\bar{d}} \]

See Part 2: Paired Comparisons; Paired Taste Tests; Taste Panel, Difference Tests

pallet A platform or skid (may be made from wood, paperboard, plastic, or metal) that is elevated at least 3 in. from the floor and is used for stacking cartons, paper stock, books, etc.; it permits the material to be moved as a single unit.
palm (family Palmae) A large family of tropical or subtropical trees or shrubs that includes the date and coconut palms.

Types of palm:
- Arenga—sap used to produce sugar and arrack
- Awarra—kernel yields oil and butter
- Betel—nuts produce a red juice when chewed; leaves used to make a beverage
- Carnauba—produces carnauba wax; sap from the trunk used to produce sugar and made into vinegar
- Coconut—produces a hard-shelled nut
  - Milk—used in cooking
  - Flesh—used fresh; cooked to extract oil
- Coquito—sap used to produce sugar; seed has sweet meat; fiber used for rope
- Palmyra—sap used to produce sugar
- Date—produces both hard (less popular) and soft fruit (sweet, 5 cm long, with yellow-red skin) that is used fresh or dried
- Date sugar—sap used to produce sugar and a beverage
- Deleb—produces a sweet, soft fruit
- Down—yields sap
- Gingerbread—yields sap
- Guinea—yields palm oil; kernels used for food
- Hill—yields sap; pith used to produce sago
- Ibappo—produces an edible fruit
- Ita—fruit used to produce flour
- Nipa—sap used to produce sugar
- Oil—yields palm oil; kernel used for food
- African oil palm (Elaeis guineensis)—produces a hard-shelled nut that yields palm oil
- Palmyra—sap used to produce sugar
- Patava—pulp and kernel used to produce oil
- Sago—pith used to produce sago
- Sugar—sap used to produce sugar and arrack
- Toddy—yields sap; pith used to produce sago
- Tree of life—fruit used to produce flour
- Water coconut—sap used to produce sugar
- Wax—roots yield carnauba wax
- Wine—yields sap
- Yatay—shoots and fruit used for food

palmarosa oil (geranium oil) A volatile oil obtained by steam distillation of the grass Cymbopogon martinii; used as a flavoring agent in food; sp. gr. 0.880–0.892

Storage: full, tight, glass container in a cool, dark place

palmate (palmately) Describes lobed leaves shaped like a hand

palm cabbage (palmetto) The edible terminal shoot of the cabbage palm; available canned in oil

palmetto (Inodes palmetto) A palm that produces sprouts and shoots that are used as food See palm cabbage

palm heart (ubod) Palm-tree shoots; used like asparagus

palmitic acid (hexadecanoic acid)

\[
\text{CH}_3\text{(CH}_2\text{)}_{14}\text{C}_\text{=CH}_\text{CH}_\text{2}_\text{OH}
\]

A 16-carbon saturated acid found in all animal and vegetable fats, especially in swine; used as a defoaming agent and to make other food-grade additives; iodine value 2 (max.); saponification value 204–220

Storage: well-closed container

See Part 2: Fats and Oils, Fatty Acid Composition; Fatty Acids; Fatty Acids and Their Properties; Fatty Acids, Fats and Oils; Milk, Fatty Acids, Seasonal; Oils, Seed and Fruit; Saturated Fatty Acids; Seed, Chemical Composition; Wheat, Fatty Acids

palmitoleic acid

\[
\text{CH}_3\text{(CH}_2\text{)}_{14}\text{CH}==\text{CH}_\text{CH}_\text{2}_\text{COOH}
\]

A 16-carbon unsaturated fatty acid found in liver and animal fats

See Part 2: Fatty Acids; Fatty Acids and Their Properties; Fatty Acids, Fats and Oils; Unsaturated Fatty Acids; Wheat, Fatty Acids

palm-kernel oil A white or yellow oil that is extracted from the kernel of the nut or seed of a palm and that resembles coconut oil

Composition (fatty acids): capric 3–7%; caprylic 1–3%; lauric 47–51%; linoleic 1%; myristic 14–18%; oleic 16–19%; palmitic 9%; stearic 1–2%

Properties:
- Acid number—9.0
- Iodine value—14–37
- Melting point—24–26°C
- Saponification value—220–255
- Saturated fatty acid—81–87%
- Specific gravity (20°/4°C)—0.9190
- Titer—20–28°C
- Unsaponifiable matter—< 1%

See also oil palm

See Part 2: Fats and Oils, Characteristics; Fats and Oils, Composition; Fats and Oils, Fatty Acid Composition; Fats and Oils, Physical and Chemical Properties; Fatty Acids, Fats and Oils; Melting Points, Fats and Oils; Refractive Indices, Fats and Oils; Specific Gravities, Fats and Oils; Titer, Fats and Oils; Unsaponifiable Matter

palm oil (palm butter) A red-yellow to dark red or white to yellow oil that is extracted from the pulp (pericarp) of the palm nut (or fruit); a soft solid that liquefies at about 80°F (27°C); used in hot-dip tin pots to cool the tin and to provide lubricative properties and some protection against rusting

Composition (fatty acids): linoleic 10%; myristic 1%; oleic 38–43%; palmitic 40–47%; stearic 4–6%

Properties:
- Acid number—45–60
- Iodine value—25–50
- Refractive index (60°C)—1.450–1.452
- Saponification value—195–205
- Saturated fatty acid—41–60%
- Specific gravity (15°C)—0.915
- Titer—40–47°C
- Unsaponifiable matter—< 1%

See also oil palm

See Part 2: Fats and Oils, Characteristics; Fats and Oils, Composition; Fats and Oils, Fatty Acid Composition; Fats and Oils, Physical and Chemical Properties; Fatty Acids, Fats and Oils; Melting Points, Fats and Oils; Refractive Indices, Fats and Oils; Specific Gravities, Fats and Oils; Titer, Fats and Oils; Unsaponifiable Matter
ties; Fatty Acids, Fats and Oils; Iodine and Saponification Values; Melting Points, Fats and Oils; Oils, Seed and Fruit; Refractive Indices, Fats and Oils; Saturated Fatty Acids; Specific Gravities, Fats and Oils; Spoilage, Fat in Food; Titer, Fats and Oils; Tocopherols; Unsaponifiable Matter

**palm oil, red** A viscous red oil used in palm soup and for frying; a source of carotene; the fruit of a palm (*Elaeis guineensis*) is fermented and the oil removed from the mesocarp, mixed with water, and boiled and then skimmed or the fruit may be cooked rather than fermented and the oil removed by pressure.

**palm sugar** See *jaggery; sugar palm*

**palm wine** A sweet, cloudy, white, often effervescent, beverage that is made from palm-tree sap, and is mildly to strongly alcoholic See *date palm*

**palmyra** A borassus palm; a tall tree that produces about 200 nuts per year

Parts used:
- Germinated nut—used as a vegetable
- Nut sap—used to make a beverage
- Palm sap—used to produce sugar and toddy
- Soft kernel of young fruit—eaten
- Trunk—building material

See *palm*

**Palouse** See Part 2: Swine Breeds

**palpation** The act of massaging tissue; usually performed on the reproductive tract of a cow to make her cycle

**palpuszta** A Hungarian, Limburger-type cheese

**pameras** See Part 2: Insect Control

**p-aminobenzoic acid (PABA)**

\[
\begin{align*}
\text{NH}_2 \\
\text{C} & \text{C} \\
\text{C} & \text{C} \\
\text{C} & \text{C} \\
& \text{COOH}
\end{align*}
\]

See *para-aminobenzoic acid*

**pamir tura** See *black tea*

**pampano** A food fish

- Common (*Trachinotus carolinus*)
- Indo-Pacific (*T. blochii*)

**pampas** Grassland of the temperate region of South America

**pamplemousse** Shaddock or grapefruit

**pan-** A prefix used to indicate all

**panada** A thick paste made of bread or bread crumbs boiled in milk or water and sometimes flavored with sugar or spices; used as a binder for stuffing

**Panama** A medium-wool breed of sheep that was originated in America by crossing Rambouillet rams with Lincoln ewes; this is the same cross that produced the Columbia, with the sexes reversed.

See Part 2: Sheep Breeds

**panamaretto** A light (aerated), breadlike, chocolate-chip fruit cake

**panbroiling** A dry-heat method of cooking used for the more tender cuts: The meat is placed in a heavy container through which the heat is transferred; the fat is drained off during cooking.

See Part 2: Beef, Cooking; Beef Cuts; Lamb Cuts; Pan Broiling Meat; Pork Cuts

**pancake** A thin (2–7 mm), flat, usually circular, fried cake made from flour, eggs, and milk, plus shortening and a leavening agent; made from wheat flour, often mixed with buckwheat, soy, or rice flour, and sometimes with potato or legume flour added; often eaten with sweet syrups or sour cream

- one 4-in. pancake = 1.2 oz

Types:
- American—baking powder as the leavening agent
- English—ale used as the leavening agent
- French (crêpe)—very thin; no leavening agent used

Contains 54 mg cholesterol per 7 tbsp batter

See Part 2: Grain Products, Composition

**pancake mix** A dry, commercially prepared mixture that contains most pancake ingredients; only liquid ingredients need to be added.

- 1 cup = 4.8 oz

Composition: moisture 8%; protein 9%; carbohydrate 75%; fat 2%

Storage: at room temperature, away from the heat of the range or the refrigerator unit

**pancetta** A pork belly that has been rolled, cured, and spiced; Italian cooking bacon

**pandorino** A small-sized bread that sometimes contains dried fruit

**pan-dressed** Describes a fish that has been scaled and eviscerated, with the head and the tail fins removed

See Part 2: Fish Yields

**paneddi** A provolone-type cheese made from cow's milk

**pancit** A mixture of cabbage, long rice, meat, and noodles

**pancreas** A gland attached to the gut whose secretions affect digestion; one of its alkaline secretions [0.8–1.2 l (0.9–1.3 qt) per day] contains various digestive enzymes; insulin, which regulates sugar metabolism, is also secreted; the pancreas is sometimes known as gut, belly, or stomach sweetbread (chest sweetbread is the thymus).

See Part 2: Gland Weights; Organ Weights

**pancreatic juice** A thick, transparent, alkaline liquid that is secreted from the pancreas and contains amylase, insulin, lipase, and trypsin

**pandanus (screw pine)** A fruit bearing tree; the nutlike fruit is used like chestnuts.

**pandelizia** A light (aerated), breadlike fruitcake made with orange peel

**pandemic** A widespread epidemic

**pandorino** A small-sized bread that sometimes contains dried fruit

**pan-dressed** Describes a fish that has been scaled and eviscerated, with the head and the tail fins removed

See Part 2: Fish Yields

**paneddi** A provolone-type cheese made from cow's milk

**paneer** See *panir*
panel

1) A group of observers, subjects, or judges; may be trained or untrained. 2) The flat central area of the lid or body of a can where the label is applied.

panela A semisoft, mildly acidic, smooth cheese made from whole milk or partly skimmed milk. See also sugar cane.

paneling A condition of a can with the sidewalls in a concave position (collapse), i.e., permanently drawn in; this is caused by cooling under too much vacuum.

panettone A light (aerated), breadlike fruitcake.

pan-fried Formosa See green tea.

pan-fried Japan See green tea.

panfry To cook (fry) in a pan with a small quantity of fat. See Part 2: Beef Cuts; Lamb Cuts; Pan Frying Meat; Pork Cuts; Pork Loin Cooking; Veal Chart; Veal Cuts.

pan haus (pon hoss) A coarsely chopped to chunked, cooked, unsmoked, American jellied and/or specialty sausage available in links, loaves, or canned; a food product usually containing meat.

panicle A pyramidal seed head that is branched, with individual flowers attached to short stems.

panir (paneer) An acid-curd, heat-coagulated, soft to semisoft, mild cheese that is eaten fresh or after a short maturation.

panjabi wari Yellow, dried balls of black gram (Phaseolus mungo) that are deep-fat fried.

panned Describes shredded or sliced vegetables that have been cooked in a small amount of fat and water on top of a stove. See Part 2: Vegetables, Panned.

pannes cendrees A ricroi-type cheese that is matured in wood ashes.

pannonia A hard, yellow cheese that is made from cow’s milk and has small holes.

panocha (panoche; panouchi; penuche; penuchi) A confection made from brown sugar, milk, butter, and nuts. See panocha.

panocha See panocha.

panouchi See panocha.

pan-ready Describes a fish that has been scaled and eviscerated, with the head, tail, and fins removed.

panreale A light (aerated), breadlike, sultana fruitcake.

panthenol

\[ \text{HOCH}_2\text{C(CH}_3)_2\text{CH(OH)CONH(CH}_2)_2\text{CH}_2\text{OH} \]

Used as a nutrient or dietary supplement; mp 64-69°C. Storage: tight container.

panti A dry, uncooked, smoked Swiss sausage (a pepperoni) made from medium- or coarse-chopped, heavily seasoned beef and pork fermented and stuffed into beef, pork, or artificial casings.

panoche See panocha.

pantothenic acid (B\textsubscript{5}; filtrate factor; gray-hair vitamin; vitamin B\textsubscript{5})

\[ \text{CH}_2\text{-CH-CH-C-N-(CH}_2)_2\text{-COOH} \]

A vitamin; deficiency causes chick dermatitis and loss of hair color. Sources: Dairy products, Egg yolks, Green leafy vegetables, Muscle meat, Rice polishings, Variety meats, Yeast. The name is derived from the Greek word meaning “from anywhere,” indicating its widespread occurrence. Pantothenic acid is often sold as sodium or calcium pantothenate.

Percentage of the activity of naturally occurring pantothenic acid: d\textsubscript{l}-calcium pantothenate 47%; d\textsubscript{l}-calcium pantothenate-CaCl\textsubscript{2} 37%.

See Part 2: Cheese, Vitamin Content; Egg Products, Nutritive Value; Grain Analysis; Milk and Milk Products, Vitamin Content; Milk Composition; Pantothenic Acid Content; Seed, Chemical Composition; Vitamins; Vitamin Sources, Functions, and Stability; Wheat, Parts of Grain, Vitamins; Wheat Products, Composition; Wheat, Vitamins.

panyon A black China tea.

pap Soft food; baby food.

papa See agidi.

papad See papadam.

papadam (papad; papar; poppadam) Thin, crisp, dried sheets made from legume, cereal, or starch flour.

papain A plant enzyme [latex of the fruit of the pawpaw, or papaya (Carica papaya)]; obtained from green papaya melons and used as a tenderizing agent for meat; activity is slow at room temperature, increases at 55-57°C, is optimum at 65-80°C, and ceases at 90°C. 1 NF unit = 1 μg tyrosine released from a specified casein substrate.

6000 NF units/mg. Also used for clearing beverages and to decrease cooking time of farina. Storage: tight container in a cool, dark, dry place.

papar See papadam.

paparh segundana Thin, crisp, dried sheets made from a starch crop or sago flour.

papa seca A flour made from ground nonbitter potatoes.

papaw (Asimina triloba) A North American tree that produces a purple-skinned, banana-shaped (2-6 in. long) dessert fruit with dark brown to yellow pulp (the stone often produces an off flavor); similar to a custard apple with yellow pulp and a soft texture; it is not the same as a papaya (pawpaw) See papaya.

papaya (pawpaw; Carica papaya) An American tropical evergreen tree (umbrella-like stalk, similar to the pawpaw) in South America that produces the purple-skinned, banana-shaped dessert fruit mentioned above. See papaw (Asimina triloba) for comparison.
a palm tree) that produces a large, elongated, melon-like fruit with green, yellow, or orange skin and pink to orange, pulp (sometimes resembles butter) flesh; the black, glossy seeds are edible, are enclosed in a central cavity, and have a pungent flavor (which is considered to add panache to green salads and dressing); the fruit is high in vitamin C, and unripe fruit contains papain.

Parts used:
Fruit
- Ripe—eaten raw (7-9% sugar)
- Unripe—boiled as a vegetable
- Mountain pawpaw—cooked before eating; used to make jam
Leaves—used to wrap meat (for tenderization)
White latex—obtained by cutting the surface of the fruit; dried to yield the enzyme papain

Equivalents:
- 1 lb, cubed = 2 1/2 cups
- 1 cup = 150 g
- 1 cup, cubed = 6.4 oz

To ripen: keep at room temperature until fruit is golden and gives off a fruity aroma; does not keep well (juice is a popular form for commercial distribution)

Storage: 45°F; 85-90% relative humidity; storage life 2-3 weeks; pH 5.2-5.7

See irrigation; water

See Part 2: Fruit, Availability; Fruit Classification; Fruit Composition; Fruit Storage; Plant Foods, Composition

papaya syrup Made from the pulp and juice of the papaya fruit
Uses:
- Drink—with carbonated water; with milk; with water
- Filling—cakes and pies
- Topping—for desserts and salads

papeda A citrus fruit with a thick skin and a sour pulp

paperboard (Incorrectly called cardboard) paper sheets with thickness 0.012 in. (12 points) or more

paperflower A plant having a toxic principle

paperless purchasing A purchasing operation that does not employ purchase requisitions or hard-copy purchase orders

papilla (papillae) 1) Any of variously shaped structures on the tongue that contain the taste buds
- Kinds: circumvallate; filiform; foliate; fungiform
- 2) Connective tissue at the base of and projecting into the hair follicle. 3) Fingerlike projections in the inside of the rumen.

papillote Baked in white parchment paper

pappadam A crisp, wafer bread made from pulse or lentil flour

paprica See paprika

paprika (paprika; paprika; sweet pepper; Capsicum annuum L.; C. frutescens var. grossum; C. frutescens var. tetragonum) The whole or ground, ripe fruit pods (usually red) of European types of sweet, mild pepper (Capsicum spp.); used in seasoning and as garnish; red in color and sweet to the taste
- Spanish—mild, sweet; called pimiento
- Hungarian—pungent

A natural food additive that is used to flavor (sweet to pungent) and color (red-orange) food; sold under designations determined by the amount of extractable color (in color units) as measured by American Spice Trade Association (ASTA) methods; often between 80 and 200 (normal 120-140 and many times higher for oleoresin, e.g., 80,000); Hungarian ASTA 100; Spanish ASTA 100

Terms:
- Extractable color—the color paprika will impart to food
- Surface color—the apparent color of the powder; influenced by grinding (the finer the grind, the lighter the color)

Types:
- American—sweet and mildly pungent
- Bulgarian—sweet and nonpungent; small quantity of pungent produced
- Chilean—sweet and mildly pungent
- Czechoslovakian—sweet to mildly pungent
- Greek—slightly pungent to pungent
- Hungarian—usually pungent; some is sweet
- First-quality grades—special paprika; table-quality mild paprika (nonpungent); table-quality paprika (mildly pungent); "hot" table paprika; sweet paprika
- Second-quality grades—semisweet paprika
- Third-quality grades—pink (rose) paprika; pungent paprika
- Moroccan—similar to Spanish; medium to high color; mild to mildly pungent
- Portuguese—sweet; medium to high color
- Doce-Extra—made from pericarp only; rich red color
- Doce-Superior—some washed seeds may be used; less intense red
- Romanian—slightly pungent to pungent
- Spanish—usually mild and sweet

<table>
<thead>
<tr>
<th>Spanish types and quality</th>
<th>Composition</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dolce, or Sweet Extra</td>
<td>Pericarps of first-quality fruit</td>
<td>Rich red</td>
</tr>
<tr>
<td>Select</td>
<td>Pericarps and seeds (max. 10%)</td>
<td>Intense red</td>
</tr>
<tr>
<td>Ordinary</td>
<td>Up to 30% seeds</td>
<td>Brick red</td>
</tr>
<tr>
<td>Agridulce, or Semisweet</td>
<td>Pericarps of first-quality fruit</td>
<td>Rich red</td>
</tr>
<tr>
<td>Extra</td>
<td>Pericarps and seeds (max. 10%)</td>
<td>Intense red</td>
</tr>
<tr>
<td>Select</td>
<td>Pericarps and seeds</td>
<td>Brick red</td>
</tr>
<tr>
<td>Ordinary</td>
<td>Up to 30% seeds</td>
<td>Brick red</td>
</tr>
<tr>
<td>Picante, or Pungent Extra</td>
<td>Pericarps of first-quality fruit</td>
<td>Rich red</td>
</tr>
<tr>
<td>Select</td>
<td>Pericarps and seeds (max. 10%)</td>
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</tr>
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<td>Brick red</td>
</tr>
</tbody>
</table>

Spanish-—slightly pungent to pungent
534 paprika

Yugoslavian—similar to Hungarian; good color; slight pungency

Quality: Noble (sweet); Semisweet; First (rose); Second (strong); Third (commercial)

Standards:
- Moisture—8-12% max.
- Ash—5-12% max.
- Acid-insoluble ash—0.3-4% max.
- ASTA color units—110 min.
- Nonvolatile ether extract—18% max.
- Crude fiber—17-23% max.
- Ether-soluble extract—6-17% max.
- Capsaicin—0.01-0.1%

Ground extra fine; made by grinding the pods of dried, ripe sweet peppers

Composition: moisture 9-10% (11% max.); protein 14-16%; fat 12.5-13.5%; carbohydrate 55-56%; fiber 20-22%; ash 6.5-7.5% (6% max. (Rosen), 6.5% max. (Koenigs)); HCl-insoluble ash 0.4% max. (Rosen), 0.5% max. (Koenigs); volatile oil 0.1-2.6%

Fixed oil content: pericarp 4.5-6.5%; seeds 19-27%; stalk 1-2.6%; whole fruit 9-16%

See capsicum; pimiento

paprika oleoresin A natural food additive used to color (red-orange) food; a deep red, viscous liquid obtained by solvent extraction (acetone, dichloroethane, trichloroethane) of the pods of Capsicum annuum and subsequent removal of the solvent; 12,000-100,000 ASTA color units

1 kg = 12-15 kg paprika powder

Available forms: free-flowing; on carriers

paprikash Seasoned with paprika

paprikon azalami A pepperoni made from beef and pork

paprikupylsa A moist, cooked, unsmoked Icelandic sausage made from finely chopped, medium-seasoned beef and pork, with pork fat added, stuffed into artificial casings

para- 1) In organic compounds, the number 4 position on the benzene ring. 2) A prefix used to indicate beside

para-aminobenzoic acid (PABA) A dietary factor that prevents the development of gray hair in mice, dogs, and foxes on purified diets

\[
\text{NH}_2 \cdot \text{C}_6\text{H}_4\text{C}_\text{O} = \text{OH}
\]

See p-aminobenzoic acid

paraben See para-hydroxybenzoic acid

paracasein The product that is formed when casein is acted on by chymosin in cheese making

Paracolobactrum See Part 2: Microorganism Reactions on Differential Tube Media

Paracolon See Part 2: Intestinal Microorganisms; Intestinal Microorganisms in Triple-Sugar Agar

paradise nut See souari nut

paraffin (paraffin wax) \((\text{C}_\text{nH}_{2n+2})\) A (colorless or white) solid mixture of aliphatic hydrocarbon residues obtained from petroleum; average melting range 50-57°C (other melting points available); density 0.90;

used as protective coating for cheeses, for waxed paper, and to seal jellies and jams [melt paraffin in double boiler, pour one layer (\(\frac{1}{8}\) in.) over product, and prick air bubbles]

See Part 2: Wax

Paraguya tea See mate

para-hydroxybenzoic acid (and esters, paraben) Antimicrobial agents used in food, cosmetics, and pharmaceutical products

\[
\text{H}_2\text{O} \quad \text{C}_\text{O} - \text{R} \quad \text{R} = \text{alkyl group}
\]

parakeratosis An abnormality of the outer layer of the skin

parallel circuits The potential drop \((E = IR)\) is the same across each resistor:

\[
\begin{align*}
I_T &= I_1 + I_2 + \cdots + I_n \\
R_T &= \frac{E}{I_1 + I_2 + \cdots + I_n} \\
R_T &= \frac{E}{R_1 + R_2 + \cdots + R_n} \\
R_T &= \frac{(R_1)(R_2)}{R_1 + R_2}
\end{align*}
\]

Potential sources can be connected in parallel to increase the current; however, they must be of equal voltage.

paralysis Loss or impairment of voluntary motion

paraná See Brazilian paraná

paraquat See Part 2: Corn Herbicides

parasite An organism that lives in or on (i.e., an internal or external parasite) a host and at the expense of the host, i.e., it draws nourishment from the host (plant or animal) without contributing to the well-being of the host.

parathion A poisonous, organic phosphorus agricultural insecticide that inhibits the enzyme cholinesterase, but is biodegradable
parathyroid glands Four small glands located close to the thyroid gland; their secretions regulate the blood and nervous systems.

paratyphoid A food poison
See Part 2: Illness from Food; Infectious Diseases, Food-Borne

parboil To boil food until partially cooked See also precook

parboiled rice Rice that is heat-treated or steamed under pressure and dried prior to hulling and milling; it has greater retention of vitamins and minerals than polished rice.

parboiled wheat See bulgur

parch To dry or brown by dry heat, without fat
pare To cut off the outer covering or skin of a fruit or vegetable See also peel

Parein's Tuc A cracker, usually made without sugar

parenchyma 1) The tissue that makes up the pulp of fruits and the pith of stems. 2) The functional part of an organ.
See Part 2: Wheat Kernel Parts

parensia A Hungarian cheese made from sheep's milk

parensica A string cheese made from sheep's milk and often lightly smoked

pareve (parve) A Jewish cooking term describing a product made without milk, meat, or their derivatives; a neutral food; vegetables, fruit, eggs, fish, and all other nonmeat and nonmilk foods; a natural product that may be used with either meat or dairy foods

parfait 1) An excelsior-type cheese. 2) A frozen dessert made from egg and whipped cream or ice cream topped with syrup and whipped cream; a combination of well-beaten egg yolks or whites, heavy syrup, and whipped cream, frozen without agitation; alternate layers of ice cream and fruit or syrup, usually served in a tall, slender glass

parfait amour A sweet liqueur flavored with flowers (usually violets), spice, and orange

paria (ampalaya; palia) A bitter melon

pariser 1) A moist, cooked, smoked or unsmoked Austrian sausage made from finely chopped, mildly seasoned (with nitrite) beef and pork stuffed into artificial casings with a diameter of greater than 60 mm. 2) A moist, cooked, unsmoked Australian sausage made from finely chopped, mildly seasoned (with garlic) beef, not stuffed into casings

Paris green (copper acetarsenite; Schweinfurt green) [CuO]3As2O3 · Cu(C2H3O2)2] A poisonous insecticide

parity 1) A level of purchasing power equal to an earlier base period (usually 1910–1914); the ratio between the prices farmers receive and the prices they paid in some base period (which may be a specific year or a moving base, such as the average of the last 10 years). 2) A fair price plus a reasonable profit. 3) The number of previous litters

parity index The index of prices for items used in production, interest, taxes, and wages rates

parity price The price for an item that would give the buyer the same purchasing power as in a base period

parity ratio The ratio of the prices received to prices paid

pariza A moist, cooked, smoked Greek sausage made from medium-chopped, medium-seasoned beef and pork, with 40% precooked meat pieces in the paste, stuffed into an artificial casing

Parker A variety of bird's-foot trefoil

parma ham A country-cured (10–18 months) ham flavored with pepper, allspice, mustard, and coriander and rubbed with pepper; produced in Italy

parmentier Potato soup

parmesan cheese (lodigiano; reggiano) A pale yellow, hard, dry, sharp grating cheese made from cow's milk; an aged (1–4 yr) hard grating cheese from Italy, made from skimmed milk, using a starter of Streptococcus thermophilus and Lactobacillus bulgaricus or L. lactis, with rennet added; the curd is scalded, not textured, and pressed; used in cooking and salads; it is dark green to black on the outside and has a creamy white to light yellow interior. It is sold in a cylindrical shape and has a mild to sharp, piquant, nutty flavor; it is grated for use.

1 cup, grated, loosely packed = 3.7 oz
1 cup, grated, pressed down = 4.9 oz

<table>
<thead>
<tr>
<th>Composition</th>
<th>Grated</th>
<th>Hard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>17.7</td>
<td>29–31</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>41.6</td>
<td>35–38</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>30.2</td>
<td>25–28</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>3.7</td>
<td>3–4</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>7.0</td>
<td>5–6</td>
</tr>
</tbody>
</table>

Salt 1.8% (sodium 454–528 mg/oz); pH 5.2–5.3; 25 calories/tbsp; 130 calories/oz

Similar cheeses: bagozzo; bresciano; emiliano; lodigiano; lombardi; parmigiano; reggiano; veneto; venenza

Storage: wrap tightly and refrigerate; will keep several months; cut off mold if it develops.
See Part 2: Cheese Characteristics; Cheese, Vitamin Content; Glutamate; Milk and Cheese, Composition; Milk and Milk Products, Vitamin Content; Vitamin A, Milk and Milk Products

parmigiana, alla 1) Food prepared in style of Parma. 2) Food prepared with parmesan cheese

parmigiano A semihard cheese with mellow flavor

parmigiano reggiano A type of parmesan cheese made from cow’s milk

parnossus A white cheese made from ewe's milk

parorexia A craving for unusual foods or for things not normally considered food

parowki (hot dog) A moist, cooked, smoked Polish sausage made from finely chopped, medium-seasoned beef and pork, with textured vegetable protein (TVP) stuffed into sheep or artificial casings

parr A young salmon (less than 1 yr old) before it leaves fresh water

parrot fish (Leptoscarus spp.) A food fish

parrot mouth A mouth formation in which the upper teeth extend over the lower teeth
**parsec (pc)**

A measure of distance (astronomy)

1 pc = 3.084 \times 10^{15} kilometers (km)

= 1.9 \times 10^{12} miles (mi)

**parsley (Petroselinum hortense; P. sativum)** A biennial or perennial 1-ft plant that is often grown as an annual; the leaves (curled or plain) are used for garnishing and seasoning foods; a cool-season glabrous biennial; it may be used fresh, dried, or freeze-dried (1–3% moisture, fresh-weight replacement 1:9) and added to omelets, potatoes, salads, sauces, soups, or stuffing; often used chopped (1/4 to 1/2 in.) or minced (100%, no. 5 US screen); 15,000 seed/oz; seed 1 oz/100-ft row; germination period 10–21 days; transplant 5 in. apart in rows 16 in. apart; matures in 70 days; yield 75 bunches/100-ft row

Types:

- Celery-leaved or Neapolitan—not common in the United States
- Curled or double (P. hortense crispum) double curled, moss curled—not common in the United States
- Varieties—Forest Green; Paramount; Perfection; Triple Moss Curled
- Fern-leaved (P. hortense filiformis)—occasionally grown
- Fool’s—a wild variety that is poisonous
- Hamburg or turnip-rooted—similar in appearance to plain-leaved but both leaves and roots are eaten
- Root—boiled and eaten like parsnips
- Plain-leaved (Italian or common)—superior mild flavor when cooked
- Varieties—Dark Green; Italian; Single

<table>
<thead>
<tr>
<th>Parsley variety</th>
<th>Season</th>
<th>Foliage</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bravour</td>
<td>75 days</td>
<td>Long stem;</td>
<td>Home garden</td>
</tr>
<tr>
<td>Ideal Moss Curled</td>
<td>80 days</td>
<td>Finely cut;</td>
<td></td>
</tr>
<tr>
<td>Compact Curled</td>
<td>70 days</td>
<td>Dwarf;</td>
<td></td>
</tr>
<tr>
<td>Curnina</td>
<td>72 days</td>
<td>Triple curled;</td>
<td></td>
</tr>
<tr>
<td>Darki</td>
<td>77 days</td>
<td>Dark green;</td>
<td></td>
</tr>
<tr>
<td>Evergreen</td>
<td>70 days</td>
<td>Deeply fringed;</td>
<td></td>
</tr>
<tr>
<td>Extra Curled (Emerald)</td>
<td>85 days</td>
<td>Curled;</td>
<td>Fresh</td>
</tr>
<tr>
<td>Hamburg (turnip-rooted)</td>
<td>90 days</td>
<td>7-in. tapered</td>
<td>Flavoring root</td>
</tr>
<tr>
<td>Moss Curled</td>
<td>70 days</td>
<td>Very curly;</td>
<td>Garnish;</td>
</tr>
<tr>
<td>Paramount</td>
<td>70 days</td>
<td>Dark green;</td>
<td>Seasoning</td>
</tr>
<tr>
<td>Plain or Single (Italian)</td>
<td>72 days</td>
<td>Dark green;</td>
<td>Strong flavor</td>
</tr>
</tbody>
</table>

Can be stewed and eaten as a vegetable; roots can also be used as a strong-flavored vegetable or flavoring; oleoresin and oil (from steam distillation of ripe seeds) are used as flavoring.

1 small bunch parsley = 5–6 tbsp, minced
1 tbsp = 4 g

**Composition**

<table>
<thead>
<tr>
<th></th>
<th>Dried</th>
<th>Raw</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>9–10</td>
<td>95</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>22–23</td>
<td>3.6</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>4–5</td>
<td>0.6</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>51–52</td>
<td>8</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>10–11</td>
<td></td>
</tr>
<tr>
<td>Ash (%)</td>
<td>12–13</td>
<td>2</td>
</tr>
</tbody>
</table>

Sodium 6 mg/tbsp [(1 g) dried]; pH 5.7–6.0

**parsley butter** Made using the following procedure:

1. Soften 1/2 stick of sweet, unsalted butter.
2. Add 1 tbsp finely minced fresh parsley or 1/2 tsp dried parsley.
3. Cream together, adding a few drops of lemon juice.

**parsley, dehydrated** Available in the following forms:

- Extra-fancy flakes—used when larger pieces are needed as a garnish
- Large extra-fancy flakes—used when larger pieces are needed as a garnish
- Powder—used in smooth-textured products
- Minced—used when bright flakes are important

**parsley, Hamburg (Jew’s root; turnip-rooted parsley; Petroselinum fusiformis)** A variety of parsley with a turniplike root that is used (like parsnips or carrots) as a vegetable; the leaves are used like spinach and parsley

**parsley jelly** Made using the following procedure:

1. Make infusion by adding 21/2 cups boiling water to 1 cup fresh parsley.
2. Allow the mixture to cool; strain.
3. To 2 cups of parsley infusion add 1/2 cup vinegar or apple cider and 4 1/2 cups sugar.
4. Boil until sugar is dissolved and add 1 bottle of liquid pectin.
5. Boil again for 11/2 min and add 1–2 drops of food coloring if desired.
6. Fill sterilized jars and seal with paraffin.

**parsley oil** A yellow-brown, strong-smelling flavoring

**parsley root (parsnip-rooted parsley)** The Hamburg variety of parsley, grown for its celery-flavored root

Storage: vegetable crisper of refrigerator

**parsley sauce** A butter sauce with parsley

**parsley-seed oil** An oil obtained by steam distillation of Petroselinum sativum seed; used as a flavoring agent in food; sp. gr. 1.04–1.08

Storage: full, glass container in a cool, dark place

**parsley, turnip-rooted** See Part 2: Planting Density
parsnip  (*Pastinaca sativa*; *Peucedanum sativum*) A plant with a yellow-white fleshy root that contains sugar and starch and is similar to a carrot; used as food, for livestock feed, and for making wine; has a peculiar and distinctive taste; leaves on the cultivated variety may be eaten as a vegetable, but wild parsnip leaves are poisonous. 7000 seed/oz; 1 oz seed per 200-ft row; germination period 21 days; 4 in. apart in rows 15 in. apart; mature in 140 days; yield 2 bu/100-ft row

<table>
<thead>
<tr>
<th>Variety</th>
<th>Season</th>
<th>Cook</th>
<th>Root</th>
</tr>
</thead>
<tbody>
<tr>
<td>All American</td>
<td>95 days</td>
<td>White; slender; med. long</td>
<td></td>
</tr>
<tr>
<td>Avonresister</td>
<td>95 days</td>
<td>Short; thick</td>
<td></td>
</tr>
<tr>
<td>Harris Model</td>
<td>120 days</td>
<td>Smooth; white; slender; ships well</td>
<td></td>
</tr>
<tr>
<td>(abundant yield)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hollow Crown</td>
<td>100 days</td>
<td>Boil; tapered parboil; 12 x 3 in.; fry white; smooth</td>
<td></td>
</tr>
<tr>
<td>(disease-resistant)</td>
<td>100 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Offenham</td>
<td></td>
<td>Med. size</td>
<td></td>
</tr>
<tr>
<td>Tender and True</td>
<td></td>
<td>Med. size</td>
<td></td>
</tr>
<tr>
<td>The Student</td>
<td></td>
<td>Good flavor</td>
<td></td>
</tr>
<tr>
<td>White Gem</td>
<td></td>
<td>Med. size</td>
<td></td>
</tr>
</tbody>
</table>

Parsnip is a late-winter vegetable, because flavor improves (becomes sweeter and more desirable) on exposure to cold (below 40°F) weather; freezing (30°F) in the ground does not harm texture or flavor; available canned (quartered)

To cook: Boil until tender; fry until tender; parboil until tender

Caution: Be careful of wild plants that look like parsnip, e.g., the water hemlock (*Cicuta spp.*) resembles parsnip and is poisonous.

Refuse 20%

100 lb, fresh = 20–22 lb, dry
1 lb, fresh = 4 med.-sized parsnips
= 2 cups, cooked
= 2.7–4 servings
1 lb, fresh, without tops = 4–5 servings
1 cup, cooked = 210 g (7.4 oz)
1 med. parsnip, cut into matchstick pieces = 3 cups

Composition (raw): moisture 79%; protein 2%; fat 0.5%; carbohydrate 17%; ash 1%; pH 5.8

Composition (cooked): fiber 4.9%

Storage: may be left in ground and dug as needed; can be frozen, undug in garden; can be stored in cellar or pit; remove tops and store covered (90–95% relative humidity) in refrigerator (32°F); use within 1–4 weeks.

See Part 2: Essential Oils; Microwave Cooking, Fresh Vegetables; Minerals, Food; Plant Foods, Composition; Planting Density; Root Crop Characteristics; Storage; Sugar, Vegetables; Vegetable Boiling; Vegetable Composition; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Plants; Vegetable Servings; Vegetable Storage; Vegetable Yields

parsnip chervil A turnip-rooted chervil; the roots are cooked like parsnips.

parsnip-rooted parsley  See parsley root

Parson Brown A variety of early, Florida orange

parte A tilsit-type cheese

partenay A soft, white cheese made from goat’s milk

partially defatted fatty tissue A by-product made from fatty trimmings that are less than 12% meat

partition coefficient (K in gas chromatography)

\[ K = \frac{\text{weight of solute}}{\text{milliliters of stationary phase}} \]

\[ = \frac{\text{weight of solute}}{\text{milliliters of mobile phase}} \]

partridge (*Perdix cinerea*) A name that is applied to many types of game bird, including grouse and quail; any game bird of the genus *Perdix* or similar type birds; a game bird that has white meat and gamey flavor and is smaller than the pheasant  See quail

parts per million ([ppm] in units of (mg/kg); γ/g, and γ/ml) A measure of very low concentrations

1 ppm = 454 micrograms per pound (μg/lb)
= 45.4 milligrams per 100 pounds (mg/100 lb)
= 8.345 pounds per million gallons
= 1.1 gram per ton (g/ton)
= 1 milligram per liter (mg/l)
= 0.07016 grains/gallon (Brit. gal)
= 0.5684 grains/gallon (U.S. gal)
= (mg/lb) × 2.2
= (mg/lb) ÷ 0.454
= percentage × 10,000
= g/ton × 1.1

Units of weight/weight (w/w):
Milligram per kilogram (mg/kg)
0.001 milligram per gram (mg/g)
Gamma per gram (γ/g)
Microgram per gram (μg/g)

Units of weight/volume (w/v):
Milligram per liter (mg/l)
0.001 milligram per milliliter (mg/ml)
Gamma per milliliter (γ/ml)
Microgram per milliliter (μg/ml)

<table>
<thead>
<tr>
<th>ppm</th>
<th>%</th>
<th>Per 1000 lb</th>
<th>Per 1000 gal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.0001</td>
<td>—</td>
<td>1 tsp</td>
</tr>
<tr>
<td>10</td>
<td>0.001</td>
<td>1 tsp</td>
<td>8 tsp</td>
</tr>
<tr>
<td>100</td>
<td>0.01</td>
<td>3 tbsp</td>
<td>1 ½ cups</td>
</tr>
</tbody>
</table>

*Products with sp. gr. 1.000

parturition The act of giving birth

parve  See pareve

PASA Participating Agency Services Agreement

Pascal A high-level programming language that is used in business

pasha A liqueur flavored with coffee

pasilla (poblano) A shiny, green-black, triangular chili pepper (5–6 in. long) that is mild to medium-hot and has a wavy surface; it is usually peeled because of its tough skin.
pasillo A mild to faintly hot chili pepper (7–12 in. long, 1.5-in. diam.) that is dark green when fresh and brown when mature

passe-l'an A hard, dry grating cheese made from cow's milk

passion fruit [granadilla; grenadilla; purple granadilla; Passiflora edulis (purple); P. edulis flavicarpa (yellow); P. quadrangularis] A South American climbing plant that produces an egg-sized fruit with a tough skin that is purple (sometimes yellow) and wrinkled when ripe; the sweet, orange-colored, juicy pulp contains many small black seeds; may be eaten fresh, used as a drink, or made into jellies, pies, and cakes; the juice flavor is often described as a blend of citrus, pineapple, and guava. The fruit is a good shipper and can be boiled and used as a vegetable when green.

Varieties: Bell Apple; Giant Granadilla; Granadilla; Purple; Sweet Calabash; Sweet Granadilla or Water-lemon; Yellow

One average fruit yields 1 tbsp of juice.

Composition (pulp): moisture 88–89%; protein 0.5%; fat 0.1%; carbohydrate 10–12%; ash 0.4%

Storage: refrigerate (will keep for several weeks) or freeze; extracted pulp or juice may be frozen (will keep for several months).

See Part 2: Fruit Classification; Fruit Composition; Fruit Storage

passion fruit liqueur An alcoholic beverage (high alcohol content) flavored with passion fruit (Passiflora) extract made by soaking fruit in spirits

passiti Sweet, Italian dessert wines

passito A creamy, semisoft, mild-flavored, cheese made from cow's milk and ripened by surface bacteria

Passover bread Matzo

Passover food Unleavened bread is required; matzo meal (a coarse "flour") is used; regular wheat, all grains, and legumes (e.g., peas and beans) are prohibited

Passover wine A dark red, sweet wine

pasta (alimentary paste) The general term for all types of macaroni and spaghetti (originally Italian) made from various mixtures of unleavened wheat flour and eggs; usually served with sauces or stuffed with vegetables, cheese, or meat; a paste of fresh dough made from flour, salt, water, and frequently eggs that is made into a variety of shapes; edible paste made from semolina flours (high in gluten) of durum wheat; pasta shapes and types include ABCs, bow ties, dumplings, lasagne, macaball, macaroni, mostaccioli, noodles, Os, roletti, rotini, shells, spaghetti, spaghettini, squares, vermicelli, and wagon wheels See alimentary paste

paste 1) A thick sauce made from fish or vegetable products, e.g., anchovy paste, tomato paste. 2) A smooth, plastic mixture. 3) A smooth, concentrated starch suspension with a short texture and slight to sluggish flow, e.g., dough for bread, macaroni, noodles, or spaghetti. See meat paste

See Part 2: Tomato and Tomato Products, Composition

pasterello A semihard cheese made from cow's milk with a full, fruity flavor

pastern The area on the leg below the fetlock and above the hoof head

Pasteur See Pasteur, Louis

Pasteurella See Part 2: Microorganism, Media

pasteurization A mild heat treatment (sustained heating below the boiling point of water at sea level) used to kill or inhibit the vegetative forms of many bacteria in liquid or semiliquid food products, resulting in the partial sterilization of food; pasteurization may take place from 175 to 190°F for jams, jellies, and preserves.

<table>
<thead>
<tr>
<th>Cream</th>
<th>Whole or skimmed milk</th>
</tr>
</thead>
<tbody>
<tr>
<td>And other products</td>
<td>For butter making</td>
</tr>
<tr>
<td>Time</td>
<td>150°F (min.)</td>
</tr>
<tr>
<td>30 min</td>
<td>175°F (min.)</td>
</tr>
<tr>
<td>15 s</td>
<td>205–207°F</td>
</tr>
<tr>
<td>3 s</td>
<td></td>
</tr>
</tbody>
</table>

Products are cooled immediately to 50°F or lower.

Other products:

- Beer—140°F for 20 min; 158°F for 30 s
- Eggs—140°F for 3 1/2–4 min
- Fruit juices—170–200°F for 1–3 min
- Wine—145°F, flashing; 120°F for several days

See Part 2: Radiation Preservation; Thermophiles

pasteurization test (milk) A test for the absence of phosphatase enzyme; the temperature of enzyme inactivation is high enough to destroy undesirable microorganisms.

pasteurized Describes food that has been heat-treated to inhibit bacteria, yeast, and molds; the heat used is not enough heat to destroy most spores. See pasteurization

pasteurized process cheese A blend of fresh and aged natural cheese that has been heated; may also be mixed with fruits, vegetables, meats, or pimientos; may have a smoked flavor; can be frozen for 4 months. Types:

- Pasteurized process American cheese—made from natural cheddar or similar types of cheese; the most popular process cheese
- USDA grade—"Quality Approved" (good quality, manufactured in a clean plant)

Pasteurized process Swiss cheese

<table>
<thead>
<tr>
<th>Composition</th>
<th>American</th>
<th>Swiss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>39.2</td>
<td>42.3</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>22.1</td>
<td>24.7</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>31.2</td>
<td>25.0</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>1.6</td>
<td>2.1</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>5.8</td>
<td>5.8</td>
</tr>
<tr>
<td>Sodium (mg/oz)</td>
<td>406</td>
<td>388</td>
</tr>
</tbody>
</table>

pasteurized process cheese, American See pasteurized process cheese
pasteurized process cheese food  Similar to pasteurized processed cheese except the fat content is lower and moisture content higher; it is softer and more bland. It may be made from American cheese with moisture added and is creamy and spreadable; it contains less cheese and more nonfat dry milk or whey solids than pasteurized process cheese.

<table>
<thead>
<tr>
<th>Composition</th>
<th>American</th>
<th>Pimiento</th>
<th>Swiss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>43.1</td>
<td>39.1</td>
<td>43.7</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>19.6</td>
<td>22.1</td>
<td>21.9</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>24.6</td>
<td>31.2</td>
<td>24.1</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>7.3</td>
<td>1.7</td>
<td>4.5</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>5.3</td>
<td>5.8</td>
<td>5.8</td>
</tr>
</tbody>
</table>

pasteurized process cheese spread  Made like pasteurized process cheese food, but with a higher moisture and lower milk fat content; it may be made from American cheese with moisture added and mixed with pickles, pimientos, or spices.

Composition (American): moisture 47.6%; protein 16.4%; fat 21.2%; carbohydrate 8.7%; ash 6.0%

pasteurized process Swiss cheese  See pasteurized process cheese

Pasteur, Louis  A French chemist and bacteriologist who is considered to be the founder of modern microbiology; discovered that microorganisms are destroyed by heat

pastes (pasty)  Turnover-type pastries that may contain meat, fruit, or vegetables

pasting  Clarifying, or fining, a beverage

pastirma  A heavenly seasoned sausage made from lean beef and lamb fat; not smoked

pastis  1) A general term for aniseed-flavored liqueurs.  2) A fish sauce; may be made from Decapterus spp., Leiognathus spp., or Sardinella spp.

pastrami  A flat piece of beef (lean portion of plate or navel) seasoned with allspice, black pepper, garlic, nutmeg and paprika, dry-cured, cooked, sometimes heavily smoked, coated with spice (usually pepper and/or coriander), and dried; may be consumed hot or cold; sometimes made from turkey, goat, or mutton

Composition (turkey): moisture 70.6%; protein 18.4%; fat 6.2%; carbohydrate 1.7%; ash 3.1%

pastry  A baked product made of flour, shortening, and water; sometimes eggs and/or milk may be used as the liquid ingredient; used as a crust for pies, turnovers, etc.

pastry flour  See soft-wheat flour

pasture  Land used for grazing animals to supplement their regular food supply; a crop grown to feed grazing animals:

Winter—barley, crimson clover, oats, and rye
Summer—kudzu, lespedeza, millet, soybeans, and sudan grass

Classes:
Permanent—a field that contains perennial crops (grasses) that are grown year after year for grazing
Temporary—a field that contains crops used to furnish temporary grazing

patay  A soft cheese made from cow's milk and matured in wood ashes

pate  1) A general term for sweet or savory pastry.  2) Pasta; dough

pâté  1) A meat or fish pie or patty.  2) A spread of finely mashed, seasoned meat or a finely chopped, smooth-textured liver sausage

Liver pâté (canned)

<table>
<thead>
<tr>
<th>Composition</th>
<th>Chicken</th>
<th>Smoked</th>
<th>Unsmoked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>13.1</td>
<td>11.4</td>
<td>14.2</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>13.1</td>
<td>43.8</td>
<td>28</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>6.5</td>
<td>4.6</td>
<td>1.5</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>3</td>
<td></td>
<td>2.2</td>
</tr>
</tbody>
</table>

pâté de foie gras  A rich, goose-liver paste; in addition to goose liver, it often contains the following: butter, garden herbs (fines herbs), goose fat, mushrooms, parsley, pepper, salt, and truffles

pate de higado  A moist, cooked, unsmoked Mexican sausage made from finely chopped, mildly seasoned pork stuffed into artificial casings

patela  A tilsit-type cheese

patella  A flat movable bone in front of the knee (i.e., the kneecap)

See Part 2: Bone

patent barley  See barley

patent-coated  See chipboard

patent flour  A grade of white flour that may be made from the best 40–95% of all the white flour milled (the best subdivision of straight grade flour)

Patent flour grades (from highest to lowest):
- Extra-short patent—highest grade
- Short, family, or first patent
- Short patent
- Medium patent
- Long patent—lowest grade

See Part 2: Flour, Extraction Rates; Wheat and Flour, Composition

patho-  A prefix that is used to indicate disease
pathogen Any disease-producing microorganism or material, including bacteria, parasites, viruses, or fungi that can cause disease

pathogenic Disease-producing

patis A condiment that is a condensed by-product of seafood fermentation

patola See Part 2: Vegetable Storage

pato real Wild duck

patrao A liqueur flavored with cashew nuts

pattie See patty

patty (pattie) 1) A small unit of slightly compressed chopped meat, usually fried, e.g., a hamburger. 2) A small pie

See Part 2: Broiling Griddle, Meat; Broiling Meat; Broiling Time and Temperature; Pork, Cooking

patty mix Chopped meat and poultry products that are capable of being shaped into patties

pattypan (custard squash; cymling; scalloped squash) A round (4-12-in. diam.), flat summer squash that has a scalloped edge, a thin, green-yellow or white skin, and yellow flesh

patulin (clavacin; claviformin; expansion clavatinit) A mycotoxin that is an antibiotic and an insecticide; it has been reported to be carcinogenic and mutagenic, and is produced by Aspergillus clavatus and Penicillium roquefortii

paturition The act of giving birth

paua See abalone

paugy See scup

paunch The abdomen; the rumen, or first stomach, of ruminants See rume n

paunchy Having too large a belly

pavé d'Auge A semisoft, strong-flavored (matured 2-4 months) cheese with small holes and an orange and white rind

pavé de Moyaux A semisoft, strong-flavored (matured 2-4 months) cheese with small holes and an orange and white rind

pawpaw See papaya

paw-tsay A type of vegetable preserved by salting and fermentation of its juices, similar to the production of sauerkraut

payment-in-kind (PIK) 1) Payment in the form of commodities, made to farmers for reducing the acreage of certain crops and placing that acreage in conserving uses. 2) Export enhancement programs or other programs by which payments are made in the form of commodities

payment limitation A limit on the amount of money any individual farmer may receive in farm program payments each year

payong payong Straw mushroom

paysanne Describes meat or poultry braised with vegetables

Pb The symbol for the element lead (Latin plumbum)
Pea (Pisum sativum; P. sativum hortense) 541

Semidwarf—flat pods
  Varieties—Gradus; Little Marvel; Thomas Laxton

Snow—both pods and peas eaten; available fresh, frozen, or dried

Southern pea (cowpea; protopea; Vigna unguiculata)

Types:
  Blackeye
  Cream
  Crowder
  Sweet (sugar pea)—large, oblong wrinkled seeds;

Sweet (continued)
  tender, with good flavor; develop dimples during canning

Tall (midseason)—4-ft vines; 4- to 5½-in. pods
  Varieties—Alderman; Dwarf Telephone; Perfection; Telephone

Pealike seeds of other plants (other than Pisum spp.):
  Chick-pea (Cicer arietinum)—also called garbanzo and gram; used fresh or dried; also used as a coffee substitute
  Southern pea (Vigna sinensis, V. unguiculata)—also called cowpea and protopea

<table>
<thead>
<tr>
<th>Pea type and variety</th>
<th>Pod</th>
<th>Pea</th>
<th>Season</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edible-podded*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dwarf Gray Sugar</td>
<td>3 in.; light green</td>
<td>65 days; early</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Giant Melting Sugar</td>
<td>4.25 × (\frac{3}{8}) in.</td>
<td>68 days; midseason</td>
<td></td>
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<tr>
<td>Little Sweetie</td>
<td>2.5 in.</td>
<td>60 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sugar Snap</td>
<td>2½–3 in.; blunt</td>
<td>70 days</td>
<td>Raw; fresh</td>
<td></td>
</tr>
<tr>
<td>Garden</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alaska</td>
<td>2.5 in.</td>
<td>6–8/pod</td>
<td>55 days</td>
<td>Canning; fresh</td>
</tr>
<tr>
<td>Alderman</td>
<td></td>
<td>Smooth</td>
<td>Midseason</td>
<td></td>
</tr>
<tr>
<td>Beagle</td>
<td>2.75 in.</td>
<td>7–8/pod</td>
<td>Early</td>
<td>Canning; freezing</td>
</tr>
<tr>
<td>Freezonia</td>
<td></td>
<td>Wrinkled</td>
<td>Early</td>
<td></td>
</tr>
<tr>
<td>Giant Stride</td>
<td></td>
<td>Wrinkled</td>
<td>Early</td>
<td></td>
</tr>
<tr>
<td>Greater Progress</td>
<td></td>
<td>Wrinkled</td>
<td>Early</td>
<td></td>
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</table>

(Continued)
<table>
<thead>
<tr>
<th>Pea type and variety</th>
<th>Pod</th>
<th>Pea</th>
<th>Season</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Arrow</td>
<td>4 in.;</td>
<td>9-11/pod;</td>
<td>70 days;</td>
<td>Freezing</td>
</tr>
<tr>
<td></td>
<td>bright green;</td>
<td>wrinkled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laxton's Progress</td>
<td>Large;</td>
<td>7-9/pod;</td>
<td>60 days;</td>
<td>Canning;</td>
</tr>
<tr>
<td></td>
<td>4.5 in.</td>
<td></td>
<td></td>
<td>freezing;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>market</td>
</tr>
<tr>
<td>Lincoln</td>
<td>3 in.</td>
<td>8-9/pod;</td>
<td>65 days;</td>
<td>Market;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Freezing</td>
</tr>
<tr>
<td>Little Marvel</td>
<td>3 in.;</td>
<td>7-8/pod;</td>
<td>63 days;</td>
<td>Freezing</td>
</tr>
<tr>
<td></td>
<td>round;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>dark green</td>
<td>wrinkled;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>sweet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midseason Freezer</td>
<td>3.5 in.</td>
<td></td>
<td>63 days;</td>
<td>Freezing</td>
</tr>
<tr>
<td>Mighty Midget</td>
<td></td>
<td></td>
<td>Early;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>60 days;</td>
<td></td>
</tr>
<tr>
<td>Patriot</td>
<td>3.5 in.;</td>
<td>9-10/pod;</td>
<td>65 days;</td>
<td>Freezing</td>
</tr>
<tr>
<td></td>
<td>dark green</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thomas Laxton</td>
<td></td>
<td>Wrinkled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waldo</td>
<td></td>
<td>Early</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Heat-resistant</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Also called Snow Pea, sugar pea, and Chinese pea

Types—black-eyed pea; cream pea; crowder pea
The highest grade for dried peas (whole or split) is US No. 1.

Canned types: dimple-skinned or sweet; smooth-skinned, early, or early June
Canned sizes:
- Tiny
- Small
- Medium small
- Medium large
- Large
- Extra large
- Garden run—no separation
- Run of pod—ungraded except that the two small peas at each end of the pod are removed
- Assorted size—two adjacent sizes
- Mixed range—three or more sizes
- Sifted—some sizes removed

Packed in brine (water, sugar, and salt); cloudy canning brine is caused by overcooking or dry weather.
Frozen styles: sweet types used
To prepare (fresh): Boil or steam.
To prepare (dried, whole): Boil in water for 2 min.; soak for 1 hour or overnight; cook (1 tsp salt to 1 cup dry pea) until tender or pressure-cook 3–10 minutes.
Refuse: pods (45–55%)
1 part freeze-dried weight = 5 parts fresh weight
1 case (24) No. 2 cans = 100 ton, unshelled
1 lb green peas, shelled = 2 1/2 lb, unshelled

In pod:
1 bu, fresh = 30 lb
= 12–15 pt, frozen
= 12–18 pt, canned
1 bu, ground = 24 lb
= 6–15 qt, canned
4–4 1/2 lb, fresh = 1 qt, frozen
2–6 lb, fresh = 1 qt, canned
1 lb, fresh = 1 cup, shelled
1 cup = 4 oz
1 serving = 1/2–3/4 lb
Shelled:
1 bu, dry = 60 lb
= 12–16 pt, canned

1 bu, fresh = 30 lb
1/4 lb, fresh = 1 pt, canned
1 cup, cooked = 165 g (5.7 oz)
1 cup = 140 g (4.9 oz)
1 serving = 1/4 lb
Dried, split:
1 lb = 2.25 cups
= 5 cups, cooked
1 cup = 200 g (7.1 oz)
1 cup, cooked and drained = 195 g (6.8 oz)
Canned:
16 oz = 3–4 servings
1 cup, drained solids = 6–8.2 oz
1 cup, solids and liquid = 8.1–8.8 oz
Frozen:
10 oz = 3 servings
1 cup = 2.5 oz
1 cup, boiled and drained = 6 oz
Dried:
1 lb = 10–13 servings
1 cup = 2–2.75 cups, cooked

<table>
<thead>
<tr>
<th>Composition</th>
<th>Mature, dried</th>
<th>Raw</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>9–12</td>
<td>74–78</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>24–25</td>
<td>6.3–6.7</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>60–62</td>
<td>14–18</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>29–3.0</td>
<td>0.9–1.0</td>
</tr>
<tr>
<td>pH</td>
<td>6.5–6.8</td>
<td>5.4–7.0</td>
</tr>
</tbody>
</table>

Fiber 6.3% (cooked); sodium 698 mg/cup (canned)
Storage (fresh): Leave in pod; refrigerate (32°F); 85–90% relative humidity; use within 1–2 days (sweetness deteriorates after picking).
Storage (frozen): 0°F; storage life 1 yr
See pea, split; southern pea

See Part 2: Ascorbic Acid; Beans, Dry, Cooking; Beans or Peas, Planting Guide; Beans, Peas, and Lentils, Label; Beans, Peas, and Nuts; Calories, Daily Recommendations; Canned Spoilage Related to pH; Canned Yield; Frozen Food Storage; Fruit and Vegetables, Composition; Glutamate; Glutamate Addition; Iron;
pea, asparagus (*Lotus tetraglobus purpureus*; *Psophocarpus tetragonolobus*) An annual pea that produces an edible rectangular pod (2.5 cm) that can be cooked whole

pea bean (beautiful bean; French kidney bean) A variety of green bean that produces small, round, white beans; highest grade is US No. 1 Choice Handpicked (or Handpicked) See bean, pea; cowpea

pea, black-eyed (black-eyed bean; cowpea; cream pea; purple hull; southern table pea; *Vigna sinensis*) Any of several varieties called black-eyed pea, southern pea, or cowpea that produce beans that are cream-colored to white with a black spot on one side; used as a main-dish vegetable Varieties: Brown Crowder; Conch; Dixille; Knuckle Purple Hull; Lady; Louisiana Purchase; Monarch Blackeye; Texas Purple Hull; White Acre

pea, carlin A dark-seeded northern pea that is used mainly for Mid-Lent Sunday

peach (*Prunus persica*) A small tree, originally from eastern and southeastern Asia, that produces a greenish, white- or yellow-fleshed, single-seeded, dessert fruit that grows well in the temperate regions Uses: brandy; eaten fresh, canned, dried, or frozen; made into jam or preserves; the kernels are rich in oil but also contain prussic acid.

<table>
<thead>
<tr>
<th>Freestone variety</th>
<th>Fruit</th>
</tr>
</thead>
<tbody>
<tr>
<td>(from early- to late-ripening)</td>
<td>Size</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Grown east of the Rockies</td>
<td></td>
</tr>
<tr>
<td>Springgold</td>
<td>Med.</td>
</tr>
<tr>
<td>Harbrite</td>
<td>Med.</td>
</tr>
<tr>
<td>Redhaven</td>
<td>Med.-large</td>
</tr>
<tr>
<td>Redglobe</td>
<td>Large</td>
</tr>
<tr>
<td>Loring</td>
<td>Large</td>
</tr>
<tr>
<td>Redskin</td>
<td>Large</td>
</tr>
<tr>
<td>Elberta (yellow)</td>
<td>Large</td>
</tr>
<tr>
<td>Rio Oso Gem</td>
<td>Large</td>
</tr>
<tr>
<td>Monroe</td>
<td>Large</td>
</tr>
<tr>
<td>Grown in bacterial-leaf-spot areas (east of the Rockies)</td>
<td></td>
</tr>
<tr>
<td>Sentinel</td>
<td>Med.-large</td>
</tr>
<tr>
<td>Ranger</td>
<td>Large</td>
</tr>
<tr>
<td>Dixiland</td>
<td>Large</td>
</tr>
<tr>
<td>Grown in Florida and the Rio Grande Valley</td>
<td></td>
</tr>
<tr>
<td>Desertgold</td>
<td>Med.-small</td>
</tr>
<tr>
<td>Floridasun</td>
<td></td>
</tr>
<tr>
<td>Grown in warm-winter* areas (east of the Rockies)</td>
<td></td>
</tr>
<tr>
<td>Junegold</td>
<td>Med.</td>
</tr>
<tr>
<td>Suwanee</td>
<td>Large</td>
</tr>
<tr>
<td>Grown in warm-winter* areas (west of the Rockies)</td>
<td></td>
</tr>
<tr>
<td>Springgold</td>
<td>Med.</td>
</tr>
<tr>
<td>Springcrest</td>
<td>Med.</td>
</tr>
<tr>
<td>Royal May</td>
<td>Med.-large</td>
</tr>
<tr>
<td>Flavorcrest</td>
<td>Med.-large</td>
</tr>
<tr>
<td>Regina</td>
<td>Large</td>
</tr>
<tr>
<td>Redtop</td>
<td>Large</td>
</tr>
<tr>
<td>Sunnycrest</td>
<td>Large</td>
</tr>
<tr>
<td>Fayette</td>
<td>Large</td>
</tr>
<tr>
<td>Summerset</td>
<td>Large</td>
</tr>
<tr>
<td>Fairtime</td>
<td>Large</td>
</tr>
<tr>
<td>Grown in warm-winter* areas (west of the Rockies)</td>
<td></td>
</tr>
<tr>
<td>Junegold</td>
<td>Med.</td>
</tr>
<tr>
<td>Sunnyside</td>
<td></td>
</tr>
<tr>
<td>Fairway</td>
<td></td>
</tr>
<tr>
<td>Grown in short-winter areas (west of the Rockies)</td>
<td></td>
</tr>
<tr>
<td>Desertgold</td>
<td>Med.-small</td>
</tr>
<tr>
<td>Springtime</td>
<td>Small</td>
</tr>
<tr>
<td>Babcock</td>
<td>Med.</td>
</tr>
</tbody>
</table>

*Low chilling requirements

Clingstone varieties: Loadel; Andross; Halford; Early Rose (white-fleshed)

To prevent darkening: After cutting, dip in grapefruit, lemon, lime, orange, or pineapple juice.

Canned types: clingstone yellow; freestone yellow; freestone white (sometimes)

Canned sizes: diced; halves, mixed pieces (irregular sizes and shapes); quarters; slices; whole (usually spiced)
peach (Prunus persica)

Canned styles:
- Diced—peeled
- Halves—peeled
  - In syrup
  - Solid-pack
  - Water-pack
- Melba—halves of large yellow cling peaches
- Sliced—peeled; used for shortcake
  - Solid-pack
  - Water-pack
- Spiced or sweet, pickled—whole
  - Peel—ed—unpeeled—whole
    - In syrup, vinegar, cloves, and cinnamon
  - In syrup, vinegar, cloves, and cinnamon

Canned, packed in: water; slightly sweetened water; light syrup; heavy syrup; extra-heavy syrup

<table>
<thead>
<tr>
<th>Can size</th>
<th>Whole spiced</th>
<th>Melba</th>
<th>Fancy</th>
<th>Choice</th>
<th>Standard</th>
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</thead>
<tbody>
<tr>
<td>2 1/2</td>
<td>9</td>
<td>6</td>
<td>10</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>10</td>
<td>33</td>
<td>19</td>
<td>30</td>
<td>33</td>
<td>40</td>
</tr>
</tbody>
</table>

Defect action level (canned): average 5% wormy or moldy fruit or 4% if a whole larva or equivalent is found in 20% of cans

Frozen style: Slices

Dried variety: Muir, a yellow freestone; pit area does not darken on drying and storage

Dried styles: peeled; unpeeled

Refuse: 12% (pit and skin)
- 1 bu, fresh = 48 lb
- 32-48 pt, frozen
- 16-25 qt, canned
- 1 case (24) No. 2 1/2 cans = 1 bu, fresh
- 1 bu, dried = 33 lb
- 1 lug box = 20 lb
- 13-20 pt, frozen
- 1 pt, frozen = 1-1.5 lb, fresh
- 2-3 lb, fresh = 1 qt, canned
- 1 lb, fresh = 3-4 servings
- 2.6-6 med. peaches (2-in. diam.)
- 1.3-3 cups, sliced
- 3 cups, dried, whole

1 lb, dried
- 54 halves
- 10-14 servings
- 6-7 lb, fresh
- 3 cups, dried (1 cup = 160 g (5.6 oz)]
- 6 cups, cooked (1 cup = 245 g (8.6 oz)]
- 1 qt, canned = 2-3 lb, fresh
- 16 oz, canned = 4 servings, with liquid
  - 2-3 servings, drained
- 10 oz, frozen = 2-3 servings
- 1 cup, dried, fresh = 9.4 oz
- 1 cup, sliced, fresh = 6 oz
- 1 cup, canned, in heavy syrup, halves, solids and liquids = 9 oz
- 1 cup, dried = 6.2 oz
- 1 cup, dried, cooked with sugar, solids and liquids = 10-12 halves + 3 tbsp liquid
- 9.6-10.8 oz
- 1 cup, frozen = 8.4-10 oz

6 med. peaches = 1 lb, frozen
1 med. peach (2-in. diam.)
- = 0.5 cup, sliced
- = 0.25 lb, peeled, pitted, and sliced
1 serving = 0.5 cup, fresh
- = 0.5 cup, dried

Composition

<table>
<thead>
<tr>
<th>Moisture (%)</th>
<th>Dried</th>
<th>Raw</th>
</tr>
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<tbody>
<tr>
<td>15-25</td>
<td>89</td>
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<tr>
<td>Protein (%)</td>
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<td>0.6</td>
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<tr>
<td>Fat (%)</td>
<td>0.7</td>
<td>0.1</td>
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<tr>
<td>Carbohydrate (%)</td>
<td>68</td>
<td>10</td>
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<tr>
<td>Ash (%)</td>
<td>3</td>
<td>0.5</td>
</tr>
<tr>
<td>pH</td>
<td>3.4-3.7</td>
<td></td>
</tr>
</tbody>
</table>

Fiber 1.3% (raw), 1.0% (canned); vitamin A 880 IU/100 g; ascorbic acid 8 mg/100 g

To ripen: unwrapped, at room temperature and out of sunlight

To peel: 2-2.5% lye solution or scald 1-2 min.

To freeze: pack in 40° Brix syrup and 0.1% ascorbic acid.

Storage: Refrigerate (31-32°F), uncovered (85-90% relative humidity); freezing point 29°F; peaches bruise easily; when ripe, use within 3-5 days. Frozen (0°F) storage life 1 yr

See other peach entries

peach brandy A sweet liqueur made from peaches (Prunus sp.) and at least 20% brandy

peaches, canned In addition to peaches, may also contain natural and artificial flavors, spice, vinegar, and lemon juice or other organic acid, such as ascorbic acid (no greater than the amount needed to preserve color)

Packed in:
- Water
  - Slightly sweetened water
- Extra-light syrup—10-14% sucrose
- Light syrup—14-18% sucrose
- Heavy syrup—18-22% sucrose
- Extra heavy syrup—22-35% sucrose

Shapes and sizes: diced; halves; mixed pieces; quarters; slices; whole (usually spiced)

Types: clingstone (yellow); freestone (yellow and sometimes white)

pea, Chinese See pea, edible-podded
peach-kernel paste A paste produced by cooking blanched, ground kernels with sugar

peach leaf curl A fungal disease (caused by Taphrina deformans) of peach trees; the leaves become puckered and thick, red to purple in color; new growth is stunted and twigs are swollen. Control: fungicide spray

peach pie One-eighth of a 9-in. pie (71 g) contains 300 calories and 169 mg sodium

pea, garden See Part 2: Beans or Peas Planting Guide

pea grade (dry edible) US Grades 1, 2, and 3

pea, green (or split) soup Available canned (condensed) or as a dehydrated mix

<table>
<thead>
<tr>
<th>Composition</th>
<th>Green (or split) pea soup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>68.5</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>6.5</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>2.2</td>
</tr>
<tr>
<td>Carbohydrate</td>
<td>22.0</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0.5</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.5</td>
</tr>
</tbody>
</table>

pea, mint See spearmint

peamouth (Mylocheilus caurinus) A food fish

peanut (earth almond; earth nut; goober; goober pea; groundnut; Manila nut; monkey nut; pinda; pindar; pistache de terre; Arachis hypogaea) A leguminous tropical and subtropical plant, originally from Central and South America, that produces edible underground pods (which are called nuts although they are not true nuts, but are a type of pea); grown as an oil crop (used in cooking, lighting, making margarine, and as a substitute for olive oil); the nuts are also used as food (boiled, raw, roasted, or steamed) and are made into a high-protein meal; the vines are used as hay for livestock feed. 2000-3000 seed/kg; mature in 120-150 days; mature nuts must be harvested quickly and dried. Moldy peanuts should be avoided for food or feed because they may contain aflatoxins, which are toxic and carcinogenic metabolites produced by mold (Aspergillus flavus) growing on moist nuts.

pea, edible-podded (Chinese pea; snow pea; sugar pea) A type of pea that produces tender pods (free from tough fiber); the pea is cooked whole like snap beans. See pea, sugar

pea, sugar See Part 2: Baked Products, Frozen Storage Life; Grain Products, Composition

See Part 2: Baked Products, Frozen Storage Life; Grain Products, Composition

peach sauce A fruit sauce made from cooked peaches and sugar; sometimes with cinnamon, nutmeg, or grated lemon oil added

peach tree borer [Sanninoidea exitiosa; lesser peach tree borer (Synanthedon pictipes)] A moth larva that attacks apricot, cherry, peach, and plum trees and feeds on the cambium and inner surface of bark, which reduces fruit size and yield; gum forms on the feeding sites. Control: keep trees healthy; insecticide

peach twig borer A brown worm (\(\frac{1}{4}-\frac{3}{4}\) in.) that is often in fruit (nectarines and peaches) at the time of harvest

pea, dried Peas that are harvested when mature and then dried; may be green or yellow, split or whole. To dry: Pick pods when mature, and spread in a warm place until dry or, after pods are ripe, pull entire plant and dry like hay. To protect after drying: Refrigerate at 0°F or lower for 4 days or heat in oven at 180°F for 15 min and leave in oven for 1 h after heat is turned off. Types:
- Green—more distinct flavor than yellow
- Split—skins removed; pea broken in half by machine
- Whole—not split

Yellow—less pronounced flavor To prepare: Boil in water for 2 min; soak for 1 h or overnight; cook (1 tsp salt to 1 cup dried peas) until tender or pressure-cook 3–10 minutes. 1 cup dried peas = 2–2.75 cups cooked peas 1 lb dried peas = 12–13 servings Storage: tightly covered; 50–70°F; dry; do not mix with older product; will keep for several months (if stored at 32–40°F in a dry place, will keep many years)

pea, sugar beans See Part 2: Baked Products, Frozen Storage Life; Grain Products, Composition

Approximate amount required to produce 1 ton

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Nuts</th>
<th>Vines</th>
</tr>
</thead>
<tbody>
<tr>
<td>K_2O (lb)</td>
<td>20</td>
<td>41</td>
</tr>
<tr>
<td>Nitrogen (lb)</td>
<td>60</td>
<td>39</td>
</tr>
<tr>
<td>P_2O_5 (lb)</td>
<td>14</td>
<td>5</td>
</tr>
</tbody>
</table>
Types:
- Hog peanut (Amphicarpaea monoica or Am. pitcheri)
- Runner—a cross between Virginia and Spanish
- Spanish (Arachis hypogaea var. vulgaris)—contains 6% more oil than Virginia; boiled in oil and salted with the skin on; sweet
- Valencia (Arachis hypogaea var. fastigiata)
- Virginia (Arachis hypogaea var. hypogaea)—boiled in oil and salted with the skin removed

Terms:
- Pops—empty pods
- Roasting—preparing for consumption by dry-roasting until nuts develop light brown color

To remove skins: Blanch in boiling water for 3 min
To boil: Wash and rinse pods; cover with medium brine (10 oz salt/gal water) and boil for 15 min; drain 1 h; shell and eat; refrigerate (will keep up to 5 days); freeze for longer storage.
To roast (unshelled): Place pods in pan 2 in. deep; roast at 325–350°F (stirring) for up to 1 h, depending on moisture; cool.
To roast (shelled): Using 1 tsp cooking oil/cup nutsmeats, dry-roast in oven at 350°F for 5–12 min; sprinkle with salt if desired.
To toast (shelled): Using 1 tsp cooking oil/cup nutsmeats, heat in a heavy pan on top of the stove (stirring) for 10–15 min or until browned.

Oil extraction: Nuts are shelled, cleaned, and crushed; removing the skin and germ, grinding the roasted and blanched kernels, and salt; separation is prevented by hydrogenation and added emulsiifers; crunchy style has bits of roasted peanuts mixed into the product.
Defect action level: avg. 50 insect fragments/100 g; avg. 2 rodent hairs/100 g; 35 mg gritty, water-insoluble inorganic residue per 100 g

One tablespoon contains 95 calories.

Peanut flour
A high-quality protein flour made from peanuts by crushing the shelled nuts (germ and skin removed), extracting the oil, and grinding the meat to form the flour.
Protein content: full-fat 28%; fully defatted 57%; partially defatted 42%

Peanut meal
Peanut press cake (oil cake) that has been ground and that can be used as a fertilizer material (7.2-1.5-1.2); dry 1 lb/qt, 32 lb/bu

Storage: 10% moisture, 60% relative humidity

See Part 2: Beans, Peas, and Nuts; Minerals, Food; Nicotinic Acid, Food; Nutrients in Crops; Oils, Seed and Fruit; Pantothenic Acid Content; Plant Foods, Composition; Protein Factors; Pulses, Nuts, and Seeds, Composition; Seed, Chemical Composition; Seed Composition; Seed, Germination; Tocopherols; Unsaponifiable Matter

Peanut brittle
Brittle toffee containing roasted peanuts; 1 1/3 pieces [2 1/4 x 1 3/4 x 1/4 in. (1 oz)] contain 120 calories.

Peanut butter
A soft paste made from peanuts (usually a mixture of Virginia and Spanish varieties) by removing the skin and germ, grinding the roasted and blanched kernels, and salt; separation is prevented by hydrogenation and added emulsiifers; crunchy style has bits of roasted peanuts mixed into the product.

Composition: moisture 1.8%; protein 27%; fat 49%; carbohydrate 17%; fiber 2%; ash 4%; sodium 75–85 mg/tbsp (16 g)
One tablespoon contains 95 calories.

Storage: Refrigerate after opening; hold at room temperature shortly before using.

See Part 2: Beans, Peas, and Nuts; Calories, Daily Recommendations; Niacin, Daily Recommendations; Nut, Grades; Salad Dressing and Mayonnaise Variations; Standards, Processed Fruit and Vegetable Products; Storage, Dry

Peanut oil
A colorless, brilliant oil extracted from the peanut (which contain 47–50% oil)

Types:
- Virgin (highest grade)—cold-pressed oil from the first pressing
- Refined—made by crushing and cooking peanut pulp to obtain crude oil, which is then given a

See Part 2: Oil Meals, Composition

Peanut oil (arachis oil)
A colorless, brilliant oil extracted from the peanut (which contain 47–50% oil)

Types:
- Virgin (highest grade)—cold-pressed oil from the first pressing
- Refined—made by crushing and cooking peanut pulp to obtain crude oil, which is then given a
chemical treatment to neutralize flavor and to deodorize and bleach the oil

1 qt = 4 cups
1 cup = 210 g (7.4 oz)

Composition (fatty acids): arachidic 1–3%; behenic 2%; lignoceric 1%; linoleic 26–35%; oleic 40–56%; palmitic 8–11%; stearic 2–3%

Properties:
Free fatty acid (as oleic)—0.12–0.24%
Iodine value—85–105
Melting point—2°C
Refractive index (15.5°C)—1.471–1.474
Saponification value—185–195
Saturated fatty acid—15–23%
Smoke point—200–230°C
Specific gravity 15°C—0.914

Unsaponifiable matter—< 1%

See Part 2: Fat and Oils, Composition I; Fats and Oils, Characteristics; Fats and Oils, Composition; Fats and Oils, Fatty Acid Composition; Fats and Oils, Physical and Chemical Properties; Fatty Acids, Fats and Oils; Iodine and Saponification Values; Oil or Fat, Characteristics; Oil, Triglyceride Mole Percent Composition; Refractive Indices, Fats and Oils; Saturated Fatty Acids; Specific Gravities, Fats and Oils; Spoilage, Fat in Food; Titer, Fats and Oils; Tocopherols

pea, petit pois A very sweet pea; popular in France

pea, purple-podded A pea plant with foliage, flowers, and pods that have a purple color; the peas may be used fresh or dried like normal peas

pear (Pyrus communis) A tree (originally from Central Asia) of the genus Pyrus that bears an elongated, fleshy fruit (pome) that often has a gritty texture; 70–80% edible; avg. yield 120 lb/tree; bearing age 4–5 yr; spray applications 8; useful life 15 yr

<table>
<thead>
<tr>
<th>Variety</th>
<th>Size</th>
<th>Color</th>
<th>Season</th>
<th>Dessert quality</th>
<th>Storage</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anjou</td>
<td>Large</td>
<td>Light green</td>
<td>Winter</td>
<td>Good</td>
<td>Good</td>
<td>Fresh</td>
</tr>
<tr>
<td>Aurora</td>
<td>Large</td>
<td>Golden; pink blush</td>
<td>Early</td>
<td>Good</td>
<td>Good; ripen at 60–65°F</td>
<td>Canning; fresh; dried, shipping</td>
</tr>
<tr>
<td>Bartlett</td>
<td>Large</td>
<td>Yellow, brown russet</td>
<td>Fall–early winter</td>
<td>Good</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Butirra di Roma</td>
<td>Large</td>
<td>Blushed yellow</td>
<td>Early</td>
<td>Excellent</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Butirra Precoce</td>
<td>Very large</td>
<td>Early</td>
<td>Good</td>
<td>Good</td>
<td></td>
<td></td>
</tr>
<tr>
<td>California</td>
<td>Large</td>
<td>Yellow, red blush</td>
<td>Early</td>
<td>Good</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Clapps Favorite</td>
<td>Large</td>
<td>Yellow, red blush</td>
<td>Early</td>
<td>Good</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Comice</td>
<td>Large</td>
<td>Greenish yellow</td>
<td>Winter</td>
<td>Excellent</td>
<td>Good</td>
<td>Fresh</td>
</tr>
<tr>
<td>El Dorado</td>
<td>Large</td>
<td>Yellow</td>
<td>Winter</td>
<td>Excellent</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Gorham</td>
<td>Good</td>
<td>Early–midseason</td>
<td>Fair</td>
<td>Good</td>
<td></td>
<td>Canning; baby food; fruit mix</td>
</tr>
<tr>
<td>Highland</td>
<td>Med.</td>
<td>Lightly russet</td>
<td>Early–mid-Sept.</td>
<td>Good–excellent</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Magnes (fire-blight-resistant)</td>
<td>Large</td>
<td>Yellow</td>
<td>Sept.–Oct.</td>
<td>Good</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maxzine (fire-blight-resistant)</td>
<td>Large</td>
<td>Yellow</td>
<td>Very early</td>
<td>Good–excellent</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Moenglow (fire-blight-resistant)</td>
<td>Large</td>
<td>Yellow, red blush</td>
<td>Very early; Aug.</td>
<td>Good–excellent</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Packham's Triumph</td>
<td>Large</td>
<td>Yellow</td>
<td>Early–midseason</td>
<td>Good</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red Anjou</td>
<td>Small</td>
<td>Red</td>
<td>Winter</td>
<td>Good</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Red Comice</td>
<td>Large</td>
<td>Red</td>
<td>Winter</td>
<td>Excellent</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Reimer Red</td>
<td>Large</td>
<td>Red blush</td>
<td>Winter</td>
<td>Good</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Rogue Red</td>
<td>Large</td>
<td>Red blush</td>
<td>Winter</td>
<td>Good</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Rosired Bartlett</td>
<td>Large</td>
<td>Red</td>
<td>Early–midseason</td>
<td>Good</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seckel (Sugar Pear) (fire-blight-resistant)</td>
<td>Small–med.</td>
<td>Yellowish brown, brushed brownish red</td>
<td>Late; Sept.–Oct.</td>
<td>Excellent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensation</td>
<td>Red</td>
<td>Early</td>
<td>Excellent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red Bartlett or Mock's William</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Starkcrimson</td>
<td>Red</td>
<td>Med. to light green</td>
<td>Early</td>
<td>Excellent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winter Nellis</td>
<td>Med.–large</td>
<td>Nov.–May</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
pear (Pyrus communis)

### Hybrid (continued)

<table>
<thead>
<tr>
<th>Variety</th>
<th>Size</th>
<th>Color</th>
<th>Season</th>
<th>Dessert quality</th>
<th>Storage</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orient Waite</td>
<td>Large</td>
<td>Greenish</td>
<td>Aug.–Sept.</td>
<td>Fair</td>
<td>Fair–good</td>
<td>Canning</td>
</tr>
</tbody>
</table>
| Asian or Oriental (P. serotina and P. ussuriensis)—also called apple pear; subacid flavor; resistant to fire blight and bacterial canker
| Chojuro            | Small  | Russetted skin       | Sept.        | Good            |                |           |
| Nijisseki          | Small  | Yellow               | Aug.         | Good            |                |           |
| Shinseki           | Large  | Light green; russeted| Oct.         | Good            |                |           |
| Tau Li             | Large  | Light green; russeted| Oct.         | Good            |                |           |
| Ya Li              |        |                      |              |                 |                |           |

To prevent darkening: After cutting, dip into grapefruit, lemon, lime, orange, or pineapple juice or place in cold water containing 2 tbsp salt/gal and 2 tbsp vinegar/gal

Uses: canning; consumed fresh; pear cider; preserves

Types:
- Chinese sand—edible when cooked
- Common—used for dessert
- Snow—used for juice

Classifications:
- Summer varieties—eaten fresh; also canned or shipped
  - Bartlett—large; uneven yellow-colored (reddish blush) skin; white, juicy flesh
- Winter varieties—cold storage
  - Anjou—smooth, thin skin (green to yellow); very juicy
  - Bosc—large; russet, brown skin; buttery flesh
  - Clairgeau—yellow skin with pink cheek; granular flesh
  - Conice—smooth, pale yellow skin, with some russet, red blush; juicy flesh
  - Easter—large; green to yellow, russet skin; stores well
  - Hardy—large; green, russeted skin; white flesh
  - Winter Nellis—small; green to yellow, russet skin; long, curved stem; juicy flesh
- Other varieties
  - Kieffer—oval; coarse skin (yellow, russet, or brown); firm flesh; medium size; ripening improves taste and texture and makes flesh juicy; cans well
  - Seckel—small, obovate shape; smooth, tough bronze skin that has a spicy flavor; used for pickling and preserving

Canned sizes: chips (usually in fruit cocktail); diced (usually in fruit cocktail); halves; mixed pieces (irregular sizes and shapes); quarters; slices; whole (usually colored and spiced)

Canned styles:
- Bartlett
  - Halves, peeled and cored
  - Halves, unpeeled and cored
  - Melba—large halves
  - Whole, peeled (stem on) and spiced
- Kieffer
  - Halves, peeled and cored
  - Quarters, peeled and cored
  - Slices, peeled and cored
  - Whole, peeled (stem on) and spiced
- Bosc
  - Halves, unpeeled and cored

Composition (raw): moisture 83%; protein 1%; fat 0.4%; carbohydrate 15%; fiber 2.3% (canned 1.1%); ash 0.4%; pH 3.9–4.9; vitamin A 20 IU/100 g; ascorbic acid 4 mg/100 g

Dried pears contain 15–18% moisture.

Shipping: immediately after harvest; case temperature 28–31°F

Storage: cool (28–31°F); in a dark, moist (85–90% relative humidity) place; better flavor if picked when green and ripened indoors
Storage (long-term): 30°F, 2% O₂, 1% CO₂
To ripen: 60–70°F, 80–85% relative humidity; when ripe, use within 3–5 days.
See pear, canned; pickle
See Part 2: Canned Spoilage Related to pH; Canned Yield; Flavor Ingredients, Taste and Flavor Type; Fruit and Nut Rootstock; Fruit, Availability; Fruit Classification; Fruit Composition; Fruit, Dried, Simmering; Fruit Frozen Yield; Fruit, Growing Season, Storage Life; Fruit Harvest; Fruit Harvest Dates; Fruit, Servings per Pound; Fruit, Simmering; Fruit Storage; Minerals, Food; Minerals (Trace), Limits; Organic Acids in Fruits and Vegetables; Pear Firmness; Plant Foods, Composition; Rot Spoilage; Standards, Processed Fruit and Vegetable Products; Storage; Storage, Dry; Storage Times; Sugar, Fruit; Wine, Sweet

pears, canned In addition to pears, may contain natural and artificial flavors, spices, vinegar, lemon juice or other organic acids, and salt
Styles: halves; mixed pieces, quarters; slices; whole (usually colored and spiced)
Packed in:
   Water
   Slightly sweetened water
   Juice
   Extra light—< 14% sucrose
   Light syrup—14–18% sucrose
   Heavy syrup—18–22% sucrose
   Extra-heavy syrup—22–25% sucrose

pear cheese A light, creamy tan, pear-shaped cheese; sometimes fried in olive oil before eating

pear decline A pear disease that is caused by a mycoplasma-like organism and results in either a quick decline (or tree collapse) or a slow decline, leaf curl, and fewer and smaller fruit

pearl 1) A variety of millet. 2) See cultured pearl; nacre; natural pearl

pearl barley Polished, barley grain without the bran and lacking in gluten; processed by dehusking and grinding the barley; used in soups and stews See also barley

pearl hominy Coarse hominy grits See also hominy

pearl tomato See tomato

pearl midge (Contarinia pyrivora) An insect in which the adult is a tiny fly that resembles a mosquito; the larva is a pale beige or pale orange maggot; adults lay eggs in swelling buds; the maggots feed on ovaries or the insides of young fruit causing deformed pears and early dropping

defined pears and early dropping

defined pears and early dropping

pear nectar
   1 cup = 8.5–8.7 ounces

pear, prickly The fruit from several species of cacti; varies greatly in size and appearance; a weak but refreshing pulp containing numerous large seeds, which can be eaten

pear psylla (Psylla pyricola) A pest of the pear; the adult is 1/10 in. long and reddish brown with transparent wings over its body; the nymph is flattened and yellowish and often covered with honeydew; as it grows it becomes greenish or brownish black. It sucks sap from foliage, reduces pear size, and produces honeydew on leaves, twigs, and fruit upon which black sooty mold grows; also causes the pear skin to become scarred
Control: fruit tree oil spray

pear ring pattern mosaic A virus that causes light green to yellow rings or lines on pear leaves

pear rust mite (Eriophyes pyri) A small mite that feeds on pear leaves and fruit; foliage becomes bronze and fruit has a smooth russetting

pear slug (cherry slug; Caliroa cerasi) The adult is a shiny black, 1/8-in. sawfly; the larva is a slimmely, olive green or black, 1/2-in. long slug that resembles a snail and that feeds on the upper surface of pear foliage or cherry leaves. It retards the growth and development of fruit

pear thrip (Taeniothrips inconsequens) The adult is 5/10 of an inch long, alime, and dark brown with feathery wings; the larva is white, resembles the adult, and feeds on developing pears and causes them to shrivel and turn brown or causes russetting

pear vein yellows A virus that causes chlorotic bands to form along smaller veins of pear leaves

peas and carrots A mixture of 50–75% peas and 25–50% sliced or diced carrots

pea, snow (China pea; ho lohn dow; sugar pea) A sweet, tender pea with an edible pod
Varieties:
   Dwarf—Gray Sugar
   Mammoth—Melting Sugar
   1 cup = 2.5 ounces
   12 snow peas = 1 ounce
Storage: unwashed in a plastic bag in refrigerator See pea, edible podded

pea, southern (blackeye pea; cowpea) See cowpea
See Part 2: Beans or Peas Planting Guide

pea, split Dried peas with the outer skin removed
Preparation: can be used in soup without soaking; soak for 1/4 hour for general cooking

pea, split, soup See Part 2: Soup Composition
pea, split (with ham), canned soup

**Composition**

<table>
<thead>
<tr>
<th></th>
<th>Condensed, prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>65.7</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>7.7</td>
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<tr>
<td>Fat (%)</td>
<td>3.3</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>20.8</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0.5</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.6</td>
</tr>
</tbody>
</table>

pea, split (with ham), chunky, canned soup

**Composition (ready to serve):** moisture 80.9%; protein 4.6%; fat 1.7%; carbohydrate 11.2%; ash 1.6%

pea sprout

Sprouts grown from mung peas that have white shoots and green hoods

pea, sugar

An edible podded pea; young pod may be eaten; 225 seeds/oz; 9 day germination

**Variety:**
- Dwarf Sweetgreen
- Mange Tout
- Sweetpod

See pea, edible podded

---

**Pecan variety**

<table>
<thead>
<tr>
<th>Variety</th>
<th>Nuts</th>
<th>Kernel quality</th>
<th>Tree</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hardy</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native</td>
<td>Small</td>
<td></td>
<td>30 ft; hardy</td>
</tr>
<tr>
<td>Midwest Northern</td>
<td>hardier,</td>
<td>Poor</td>
<td>Rapid growing; bears young; 30-40 ft; retains foliage late in year</td>
</tr>
<tr>
<td>Colby</td>
<td>Thin shell</td>
<td></td>
<td>Very hardy</td>
</tr>
<tr>
<td>Fritty</td>
<td>Medium size, round, thin shell</td>
<td>Good</td>
<td>Susceptible to spring frost</td>
</tr>
<tr>
<td>Green River</td>
<td></td>
<td>Good</td>
<td>Good producer</td>
</tr>
<tr>
<td>Major</td>
<td>Thin shell</td>
<td></td>
<td>Good 30-40 ft; hardy</td>
</tr>
<tr>
<td>Perique</td>
<td></td>
<td>Good</td>
<td>30-40 ft; hardy</td>
</tr>
<tr>
<td><strong>Southeast</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chickasaw</td>
<td></td>
<td>Fair</td>
<td>30 ft; hardy</td>
</tr>
<tr>
<td>Desirable</td>
<td></td>
<td>Good</td>
<td>30-40 ft; hardy</td>
</tr>
<tr>
<td>Elliott</td>
<td></td>
<td>Fair</td>
<td></td>
</tr>
<tr>
<td>Farley</td>
<td></td>
<td>Excellent</td>
<td>Szlpe 30-40 ft; hardy</td>
</tr>
<tr>
<td>Giant Mahan</td>
<td>Large, long slender</td>
<td>Poor</td>
<td></td>
</tr>
<tr>
<td>Kernodle</td>
<td></td>
<td>Good</td>
<td>30-40 ft; hardy</td>
</tr>
<tr>
<td>Schley</td>
<td></td>
<td>Excellent</td>
<td>30-40 ft; hardy</td>
</tr>
<tr>
<td><strong>Southwest</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ideal</td>
<td></td>
<td>Good</td>
<td>30-40 ft; hardy</td>
</tr>
<tr>
<td>San Saba Imp</td>
<td></td>
<td>Good</td>
<td>30-40 ft; hardy</td>
</tr>
<tr>
<td>Sioux</td>
<td></td>
<td>Excellent</td>
<td>30-40 ft; hardy</td>
</tr>
<tr>
<td>Western</td>
<td></td>
<td>Good</td>
<td>30-40 ft; hardy</td>
</tr>
<tr>
<td>Wichita</td>
<td></td>
<td>Excellent</td>
<td>30-40 ft; hardy</td>
</tr>
</tbody>
</table>

---

peat
Carbonized vegetable matter; precursor of coal; cut into thin oblong blocks and sun dried; used as fuel

peat moss
A milled, partially decomposed vegetable material found in swamps; prevents compacting of soil; good mulching material

peat (and bean) weevil
A pest that eats around the leaf edge of young pea or bean plants in a fairly uniform path

See Part 2: Insect Control

pebre d’ai
A valencay-type cheese made from goat’s or sheep’s milk and rolled in small balls and covered with rosemary or savory twigs

pecan (Carya illinoensis; C. oliviformis)
A large North American tree that produces a hard-shelled nut that may be eaten as a snack or used in many confectionery and cooked items; the nut has a mild, sweet walnutlike flavor; a variety of butternut; highest oil content of all nuts. Papershell refers to any thin-shelled pecan

**Size:**
- Unshelled
- Extra large—often polished and waxed
- Large-medium
- Small
- Shelled
  - Extra fancy—300 halves per pound
  - Fancy—450 halves per pound
  - Selected—650 halves per pound
  - Pieces—broken halves
  - Granules—finely chopped

46% Refuse:
- 2½ pound (lb), in shell = 1 lb, shelled
- 1 lb, unshelled
  - = 8.5 ounce (oz), shelled, halves
  - = 2–2.25 cups, shelled, halves
  - = 2 cups, in shell
1 lb, shelled = 3-4 cups, halves
= 200-225 mammoth size halves
= 3.5-4 cups, chopped
1 cup, chopped = 120 grams (g; 4.2 oz)
1 cup, halves = 110 g (3.8 oz)
1 tbsp, chopped = 7 g
1 pecan half = 1 g
Composition: moisture 3%; protein 9%; fat 71%; carbohydrate 15%; ash 2%; sodium 1 mg/cup (118 g); 10 jumbo halves or 15 large halves = 95 calories
Storage: store in dry, cool, place protected from insects and odors; times and temperatures as follows:

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Unshelled</th>
<th>Halves</th>
<th>Pieces</th>
</tr>
</thead>
<tbody>
<tr>
<td>70-90°F</td>
<td>4 months</td>
<td>2 months</td>
<td>20 days</td>
</tr>
<tr>
<td>38-40°F</td>
<td>18 months</td>
<td>9 months</td>
<td>3 months</td>
</tr>
<tr>
<td>0°F</td>
<td>4 years</td>
<td>2 years</td>
<td>9 months</td>
</tr>
</tbody>
</table>

See Part 2: Beans, Peas and Nuts; Food, Composition; Minerals, Food; Nut, Grades; Pecan Varieties; Plant Foods, Composition; Tocopherols

pecan bud moth The adult is a small, gray moth with blackish brown patches on its front wings; the larva is yellowish green with a dark brown head and neck and is up to \( \frac{3}{4} \) in. long; the larva feed on leaves and terminal buds of pecan trees

pecan phylloxera A small soft-bodied insect that resembles an aphid; causes galls on pecan trees

pecan, pie Composition (\( \frac{1}{4} \) of 9 in. pie): sodium 241 mg 1 slice (71 g); calories 430 1 slice (71 g)

pecan weevil The adult is a brownish beetle that is \( \frac{3}{4} \) in. long with a long beak; the larva is a whitish grub up to \( \frac{1}{2} \) in. long and \( \frac{3}{4} \) in. in diameter; causes immature, soft-shelled pecan nuts

peche melba A dessert made with peaches and ice cream; sometimes with raspberries and green almonds

pechora herring (Clupea harengus suworowi) A food fish

peck [Imperial (Brit); pk] A dry measure of volume

1 pk = 554.6 cubic inches
= 9.092 liters (l)
= 8 Brit. quarts (Bt.; qt)

peck (pk; U.S.) A dry measure of volume used chiefly for raw vegetables (e.g., potatoes) and fruit

1 pk = 537.6 cubic inches (in.\(^3\))
= 16 pints (pt)
= 8.809 liters (l)
= 8 quarts (qt; dry)
= 2 gallon (gal)
= 0.25 bushel (bu)

4 pk = 1 bu

pecorino An Italian cheese made from ewe’s milk

pecorino di tavola A sharp, semihard table cheese

pecorino romano A hard, dry, gray-white, grating cheese made from sheep’s milk and with a brown or black rind

pecorino siciliano See canestrato

pecten (pectinidae) A genus of bivalve mollusks, e.g., scallop

pectic acid \((C_{17}H_{24}O_{16})\) A dibasic organic acid derived from pectin by chemical treatment; used as a food acidulant
See Part 2: Pectic Acid Formula

pectin A colorless, flavorless, water-soluble carbohydrate (pectinic acid) polymer made up of varying numbers of the 1 and 4 linked methyl esters of \( \beta \)-galacturonic acid

\[
\text{CH}_3 - \text{O} - \text{C} - \text{CHOH} \cdot \text{CHOH} \cdot \text{CHOH} \cdot \text{CHOH} \cdot \text{C} = \text{O}
\]

A hydrophilic, colloidal carbohydrate (polysaccharide triad) obtained by acid extraction of citrus fruit rinds (20-30%) or apple pomace (10-15%); it is found in just-ripe fruits (underripe fruit has more pectin) and has strong gelling properties that are used in cooking. It is used as a gelling agent because of its swelling power at concentrations of less than 1% (0.1-0.4 in jams and jellies); gel power is usually standardized with sugar

Forms: liquid and powder
Low ester—100 gel power
High ester—150 jelly grade

May also contain buffers such as sodium citrate or sodium bicarbonate

Fruit high in pectin
High in acid
Apple, sour (including crab)
Blackberry, sour
Currant, red
Grape, southern
Gray, eastern
Guava, sour
Lemon
Logenberry
Orange, sour
Plum (most)
Prune, sour
Low in acid
Apple, sweet
Banana, unripe
Fig, unripe
Pear, unripe
Prune, sweet
Quince, ripe (some)

Fruit low in pectin
Apricot
Fig, ripe
Fruit, overripe
Grape, European
Peach
Pomegranate
Raspberry
Strawberry

Used as a jelling agent, thickener, stabilizer, and emulsifier

1 tbsp powdered pectin = 0.44 oz

Storage: well-closed container; in a cool, dry place; do not hold over from one year to the next
See Part 2: Bananas, Composition; Gums and Gelling Agents; Gums and Gelling Agents, Characteristics; Minerals (Trace), Limits; Pectin; Pectin Content; Pectin Formula
pectin added  Natural pectin added to give jelling properties

pectin and fruit acid added  Natural pectin and fruit acid added to give jelling properties

pectinase  An enzyme present in the pith of citrus fruits that hydrolyzes pectin or pectic acids; a group of enzymes that hydrolyze pectic substances

pectin-hydrolyzing enzyme  An enzyme used in the wine industry to clarify fruit juices; pectin may cause turbidity

pectinic acid  Colloidal polygalacturonic acid containing some methyl ester groups; capable of forming gels (jellies) with sugar and acid See also pectin

pectoral  Muscles that attach the ventral end of the scapula and the dorsal end of the humerus to the sternum; they make up most of the brisket (chest or breast); thoracic (lungs)

pedah-kemburg  Rastrelliger or Scromber dried fish

pedah-siam  See pedah-kemburg

pedigree  A written record of an animal’s ancestry for at least three generations

pedrochino  An herb liqueur

pedroches  A golden, hard, pressed cheese made from sheep’s milk

peduncle  See Part 2: Fish Nomenclature

pee  To remove outer covering or rind of a fruit or vegetable by hand or by 2% lye solution See also pare

peeled shrimp  Shrimp from which the shells have been removed

peeler  A device or person used to remove peel or skin, e.g., peeling skinless Frankfurters

peeling  Outer layer or covering removed

pee wee  A small lamb; small

peh-khato  Gray-white, dried balls of starter containing bacteria, molds, and yeast on starch or cereal base; used as inoculum for fermented foods

Peking Black and White (Peking Black Pied)  Large, black and white, dairy cattle obtained by crossing U.S. Holstein–Friesian bulls with Japanese Pechow cows

Peking Black Pied  See Peking Black and White

Peking duck (Pekin duck)  A white duck, originally from China, that has an orange—yellow bill, reddish yellow shank and foot and yellow skin; produces 160 tinted white eggs per year See Part 2: Poultry Dressing Percentage; Poultry Yield

pek-tong-quay  A fried wheat flour dough pie filled with cheese, fish, meat, and, sometimes, fruit

pelagic fish  Fish that live near the surface of the sea; 55% of such fish is edible; examples are herring, mackerel, and mullet; edible portion has 16% avg. protein; 15% avg. fat for herring and mackerel

pelardou  A cheese made from goat’s milk

pelargonidin  One of the anthocyanidins responsible for the red color in fruits and vegetables

pellagra  A disease in humans caused by deficiency of niacin (nicotinic acid); the skin becomes rough and irritated; the mouth becomes sore and the tongue becomes red, sore, and swollen; in dogs this disease is called black tongue

pellet  An agglomerated food formed by compacting and mechanically forcing through a die

pellicle  A thin microbial growth membrane on the surface of a liquid culture

pellucid  Transparent

pelt  The skin of a hair, wool, or fur-bearing animal, with hair attached

pelvis  The hip bone, which is attached to the femur and is made up of the ischium and ilium areas See Part 2: Bone; Lamb, Wholesale Cuts; Pork Wholesale Cuts; Veal Wholesale Cuts

Pelyon (Coregonus peled)  A food fish found in Russia

pemmican  Lean meat dried in the sun and then ground with fat to form a paste or a mixture of dried meat, fruits, and vegetables; a combination of dried (sun dried or smoked) meat, fat, and dried berries; lean beef, buffalo, or reindeer meat pounded and mixed with vegetables and fruit and sealed in fat; concentrated nourishment that keeps well
pen  A cage or enclosure for restraining animals
penedex  A type of red, white, and sparkling wine
penetrometer  A device that measures firmness or texture and possibly tenderness by using depth of penetration
penholder  An animal left in a pen to keep other animals from being placed in the pen
penia  A suffix meaning need or lack
penicillin  An antibiotic agent produced by the mold Penicillium notatum or P. chrysogenum that is effective against Gram-positive and a few Gram-negative bacteria; there are a number of different types. Many individuals are allergic to it, and such reactions can be serious. A drug that promotes growth and feed efficiency in animals See Part 2: Antibiotic Standards; Mold, Food; Molds, Myotoxins; Rot Spoilage; Spoilage, Carbohydrate Foods; Spoilage, Protein Foods; Wastes, Agricultural and Industrial
penicillium rot (blue-mold rot)  A rot in pomegranates caused by Penicillium expansum or other Penicillium species; it starts in splits, cracks, or wounds and forms pockets of blue or green spored colonies
Penistone  A hill breed of British sheep
pennyroyal (Thlaspi arvense) An annual weed
pennyroyal (Mentha pulegium) A perennial garden herb whose leaves have a mint-like flavor; fresh or dried mint used to flavor food
American pennyroyal—(Hedeoma pulegioides)
pennyroyal oil (Mentha pulegium) A reddish yellow essential oil, used in perfumery and flavoring; a volatile oil obtained by steam distillation; used as a mint-like flavoring agent for food
Storage: full, tight container in a cool, dark place See Part 2: Essential Oils
pennyweight (dwt; Troy)  A measure of weight
1 pennyweight = 24 grains = 1.5551740 grams (g) = 1.2 scruples (apothecary) = 0.8777143 dram (avoirdupois) = 0.4 dram (apothecary) = 0.0548571 ounce (oz; apothecary; troy) = 0.004166667 pound (lb; apothecary; troy)
penuche (panocha)  A fudge-like candy made from brown sugar, milk, butter, and sometimes nuts
pentadecanoic acid [CH₃(CH₂)₁₃COOH] A saturated fatty acid made synthetically See Part 2: Fatty Acids and Their Properties
pentaerythritol ester of partially hydrogenated wood rosin  Used as a masticatory material in chewing gum
Storage: well-closed container
pentaerythritol ester of wood rosin  Used as a masticatory substance in chewing gum
Storage: well-closed container
2,3-pentanedione
\[
\text{CH}_3\text{CH}_2\text{C}=\text{C}=\text{CH}_3
\]
Used as a buttery flavoring agent in food; sp. gr. 0.951–0.963
Storage: full, tight, glass container in a cool, dark place
2-pentanone (CH₃COCH₂CH₂CH₄) Used as a floral-like flavoring agent in food; sp. gr. 0.800–0.806
Storage: tight container
pentale  A Romanian cheese made from sheep’s milk
penelceu  A low-fat provolone-type cheese made from sheep’s milk
pentosan  A carbohydrate mixture (hemicellulose) occurring in cereal plants, brans, etc. See Part 2: Pentosans; Wheat and Flour Composition; Wheat, Carbohydrate Composition; Wheat, Parts of Grain
pentose  A 5-carbon sugar (C₅H₁₀O₅)
peo  See Part 2: Population
pearino sardo  A hard, very dry, strong flavored, grating cheese made from sheep’s milk
pepato  A hard, dry, sharp, table and grating cheese made from sheep’s milk and flavored with whole black peppercorns
peperami  A 10–15-mm diameter beef and pork peperoni
peperoni  A dry, uncooked, unsmoked Australian sausage made from medium chopped, heavily seasoned, beef that is fermented and stuffed into artificial casings See peperoni
pepino  A yellow, acid, South American fruit
pepitos  Seeds that are deep-fat-fried and salted
pepo  A subdivision of simple fruit; it has a fleshy ovary wall enclosing one or more seeds, attached to a fleshy placenta and has a hard rind covering; examples are cantaloupe, cucumber, pumpkin, squash, and watermelon. Fruit of cucurbit or gourd family See Part 2: Fruit Classification; Vegetables, Classification
pepper  A term used to define two different types of plants and fruits 1) Red, cayenne: bushy plants of genus Capsicum. 2) White and black pepper: climbing vine, Piper nigrum See Part 2: Ascorbic Acid; Calories, Daily Recommendations; Essential Oils; Flavoring Agents, Natural; Fruit and Vegetable, Diseases; Minerals, Food; Plant...
554 pepper

Foods, Composition; Riboflavin; Spices, Microbial 
Content; Storage; Sugar, Vegetables; Transit Temperature; Vegetable Composition; Vegetable Frozen 
Yield; Vegetable Plants; Vegetables, Classification; 
Vegetable Storage; Vitamin A; Vitamin C

pepper (bell; cayenne; chili; globe; green; mango; 
red; Capsicum)

Most peppers grown in U.S.—Capsicum annuum

Red hot, tabasco pepper—C. frutescens

A bushy annual plant with a wide range of varieties 
whose seed pod is used as food; pungency due to 
capsicin.

<table>
<thead>
<tr>
<th>Capsicum types</th>
<th>Immature color</th>
<th>Mature color</th>
<th>Shape</th>
<th>Pungency</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweet pepper</td>
<td>Green</td>
<td>Red, yellow brown</td>
<td>Long and narrow to spherical</td>
<td>Mild to medium hot</td>
<td>To make paprika, salads, vegetable, pickled</td>
</tr>
<tr>
<td>Red pepper</td>
<td>Green</td>
<td>Bright red</td>
<td>Variable but smaller than above</td>
<td>Medium hot to hot</td>
<td>Dried</td>
</tr>
<tr>
<td>Chili</td>
<td></td>
<td>Very hot</td>
<td></td>
<td></td>
<td>Dried, curry powder, pickles, tabasco sauce</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pepper type</th>
<th>Subtype</th>
<th>Variety</th>
<th>Season (days)</th>
<th>Shape</th>
<th>Immature color</th>
<th>Mature color</th>
<th>Pungency</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot</td>
<td>Banana</td>
<td>Hungarian Wax</td>
<td>65</td>
<td>Banana, 7-8 in.</td>
<td>Yellow</td>
<td>Red</td>
<td>Hot–sweet</td>
<td>Canning, pickling</td>
</tr>
<tr>
<td></td>
<td>Red</td>
<td></td>
<td></td>
<td>Variable but smaller than sweet</td>
<td>Green</td>
<td>Bright red</td>
<td>Medium hot to hot</td>
<td>Dried</td>
</tr>
<tr>
<td></td>
<td>Cherry</td>
<td>Birds Eye</td>
<td></td>
<td>Globus, three-celled</td>
<td>Green</td>
<td>Orange-red</td>
<td>Sweet or hot</td>
<td>Pungent, seasoning</td>
</tr>
<tr>
<td></td>
<td>(C. f. cerasiforme)</td>
<td>Red Cherry (small and large)</td>
<td>69</td>
<td>Flattened globe, large or small, three-celled</td>
<td>Green</td>
<td>Cherry red</td>
<td>Sweet or hot</td>
<td>Pungent, seasoning</td>
</tr>
<tr>
<td></td>
<td>Yellow Cherry</td>
<td></td>
<td></td>
<td>Globus, three-celled</td>
<td>Small, linear, pointed, 1.5 in. long</td>
<td>1 x 3 in., three-celled, long tapered</td>
<td>Slim, tapering</td>
<td>Very hot</td>
</tr>
<tr>
<td></td>
<td>Cone (C. f. conoides)</td>
<td>Chili Piquin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Very hot</td>
</tr>
<tr>
<td></td>
<td>Tabasco or Red Cluster</td>
<td>Coral Gem</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Very hot</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cayenne</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Very hot</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Japanese Cluster</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Very hot</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Orange Red Cluster</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Very hot</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Small Red Chili</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Very hot</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tabasco</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Very hot</td>
</tr>
</tbody>
</table>

(Continued)
pepper (bell; cayenne; chili; globe; green; mango; red; *Capsicum*)

<table>
<thead>
<tr>
<th>Pepper type</th>
<th>Subtype</th>
<th>Variety</th>
<th>Season (days)</th>
<th>Shape</th>
<th>Immature color</th>
<th>Mature color</th>
<th>Pungency</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot Chili or Cayenne</td>
<td>Anaheim or New Mexico</td>
<td>77</td>
<td>Long, 6–12 in., tapered, two-celled</td>
<td>Green</td>
<td>Red</td>
<td>Mild to pungent</td>
<td>Fresh, dried, tacos, green sauce, chili pepper, chili powder, paprika (if sweet), oleoresin</td>
<td></td>
</tr>
<tr>
<td>Black Nubian Cayenne</td>
<td>4–12 in., pointed, wrinkled</td>
<td>Sausage, 1.5 x 3 in., blunt point</td>
<td>Green</td>
<td>Red</td>
<td>Hot</td>
<td>Hot sauce</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jalapeno</td>
<td>65</td>
<td>Medium thick, 6 in.</td>
<td>Green</td>
<td>Red</td>
<td>Pungent, very hot</td>
<td>Eaten and relish, pickling, soup, canned by Escabeche</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ivory Tusk Large Red Thick</td>
<td>75</td>
<td>Twisted, 5 in.</td>
<td>Dark green</td>
<td>Red</td>
<td>Fiery hot</td>
<td>Dried, sauces, processing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red Chili</td>
<td>2 in., pointed, slim</td>
<td>1.5 x 2.5 in., chubby, bullet shape</td>
<td>Red</td>
<td>Hot</td>
<td>Hot sauce</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serrano</td>
<td>Very Small Yellow</td>
<td>Vineland</td>
<td>60</td>
<td>Pointed, 4 x 2 in.</td>
<td>Red</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shepherd</td>
<td>68</td>
<td>Tapered, 7 in.</td>
<td>Red</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Italian Sweet

<table>
<thead>
<tr>
<th>Varieties</th>
<th>Season (days)</th>
<th>Shape</th>
<th>Immature color</th>
<th>Mature color</th>
<th>Pungency</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bighart Early Sweet Grant Perfection Pimiento L. Spanish Truhart Perfection Burpee's Sunnybrook</td>
<td>73</td>
<td>Flat, 3 in.</td>
<td>Scarlet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>75</td>
<td>Small</td>
<td>Red</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>72</td>
<td>Square, 2.5 in.</td>
<td>Green</td>
<td>Red</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Paprika — milder See paprika

Pimiento (perfection group) not related to allspice or pimento See pimiento. Immature color usually green and mature color usually red; semiconical, 3–4 in. long; relatively mild. Used for canning, stuffing olives, cheese, flavor, and color in salads

Bighart Early Sweet Grant Perfection Pimiento L. Spanish Truhart Perfection Burpee's Sunnybrook

Pimiento L. 75 Small Red Spanish

Pimiento

Immature color usually green and mature color usually red; semiconical, 3–4 in. long; relatively mild. Used for canning, stuffing olives, cheese, flavor, and color in salads

<table>
<thead>
<tr>
<th>Varieties</th>
<th>Season (days)</th>
<th>Shape</th>
<th>Immature color</th>
<th>Mature color</th>
<th>Pungency</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bighart Early Sweet Grant Perfection Pimiento L. Spanish Truhart Perfection Burpee's Sunnybrook</td>
<td>73</td>
<td>Flat, 3 in.</td>
<td>Scarlet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>75</td>
<td>Small</td>
<td>Red</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>72</td>
<td>Square, 2.5 in.</td>
<td>Green</td>
<td>Red</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sweet (C. f. grossum) Immature color green; mature color red, yellow, brown. Sweet; long and narrow to spherical shape; mild to medium hot pungency. Used as a vegetable more than a spice, to make paprika, salads, and pickled. Eaten raw, roasted stuffed, baked

Aconcagua

Burpee's Tasty Hybrid California Wonder

Canape

Cherry Sweet

Cubanelle

<table>
<thead>
<tr>
<th>Varieties</th>
<th>Season (days)</th>
<th>Shape</th>
<th>Immature color</th>
<th>Mature color</th>
<th>Pungency</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aconcagua</td>
<td>70</td>
<td>Large, long Blocky, 3 x 4 in., 3–4 lobed</td>
<td>Green</td>
<td>Red, some yellow</td>
<td>Frying</td>
<td></td>
</tr>
<tr>
<td>Burpee's Tasty Hybrid California Wonder</td>
<td>70</td>
<td>Blocky, 3 lobed</td>
<td>Medium dark green</td>
<td>Scarlet</td>
<td>Sweet, stuffing, salads</td>
<td></td>
</tr>
<tr>
<td>Canape</td>
<td>60</td>
<td>3.5 x 2.5 in., 3 lobed</td>
<td>Deep green</td>
<td>Red</td>
<td>Frying</td>
<td></td>
</tr>
<tr>
<td>Cherry Sweet</td>
<td>78</td>
<td>Round, small, 1.5 in.</td>
<td>Green</td>
<td>Scarlet</td>
<td>Pickling</td>
<td></td>
</tr>
<tr>
<td>Cubanelle</td>
<td>65</td>
<td>6 x 2 in., smooth, tapered</td>
<td>Yellow-green</td>
<td>Red</td>
<td>Frying</td>
<td></td>
</tr>
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</table>

(Continued)
<table>
<thead>
<tr>
<th>Pepper type</th>
<th>Subtype</th>
<th>Variety</th>
<th>Season (days)</th>
<th>Shape</th>
<th>Immature color</th>
<th>Mature color</th>
<th>Pungency</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweet (continued)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweet</td>
<td></td>
<td>Delaware Belle</td>
<td>70</td>
<td>4 in., conical</td>
<td>Yellow</td>
<td>Orange blushed red, yellow, red</td>
<td>Salads, raw, cooking</td>
<td></td>
</tr>
<tr>
<td>Sweet</td>
<td></td>
<td>Dutch Treet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweet</td>
<td></td>
<td>Golden Bell</td>
<td>65</td>
<td>Bell, 4.5 in., 4 lobed</td>
<td>Green</td>
<td>Golden</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweet</td>
<td></td>
<td>Hungarian Sweet</td>
<td>65–75</td>
<td>Banana, 6 x 1.5 in.</td>
<td>Yellow</td>
<td>Crimson</td>
<td></td>
<td>Canning, pickling</td>
</tr>
<tr>
<td>Sweet</td>
<td></td>
<td>Keystone Resistant Giant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweet</td>
<td></td>
<td>King of the North</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweet</td>
<td></td>
<td>Long Yellows Sweet</td>
<td>65</td>
<td>Banana, 6 in.</td>
<td>Yellow</td>
<td>Red</td>
<td></td>
<td>Slicing, cooking</td>
</tr>
<tr>
<td>Sweet</td>
<td></td>
<td>Oakshosh</td>
<td></td>
<td></td>
<td></td>
<td>Yellow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweet</td>
<td></td>
<td>Park's Whopper</td>
<td>65</td>
<td>Blocky, 4 lobed</td>
<td></td>
<td>Scarlet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweet</td>
<td></td>
<td>Parkwonder</td>
<td>65</td>
<td>Medium size</td>
<td></td>
<td>Scarlet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweet</td>
<td></td>
<td>Penn Wonder</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweet</td>
<td></td>
<td>Peter Piper</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweet</td>
<td></td>
<td>Ruby King</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweet</td>
<td></td>
<td>Sweet Banana</td>
<td>72</td>
<td>Long, tapering, 6 x 1.75 in., heart-shaped</td>
<td>Green-yellow</td>
<td>Red</td>
<td>Salads, frying</td>
<td></td>
</tr>
<tr>
<td>Sweet Early</td>
<td></td>
<td>Early Prolife</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweet</td>
<td></td>
<td>Waltman Beauty</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweet</td>
<td></td>
<td>World Beater</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweet</td>
<td></td>
<td>Yale Wonder</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweet</td>
<td></td>
<td>Yolo Wonder</td>
<td>76</td>
<td>4 x 3.5 in., 3 or 4 lobed, blocky</td>
<td>Dark green</td>
<td>Red</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Consumed: fried, raw, steamed, stuffed and baked
Available:
- Canned (green and red)
- Freeze dried (2–3% moisture)—usually diced (¼ in.)
- Frozen (green and red)
  - Diced
  - Halves
  - Sliced
  - Whole, without stems
  - Whole, with stems
Stemless red pepper—red pepper with the caps and stems removed (effects texture and color) before grinding

Hotness is measured by thousands of heat units (M.H.U.)

<table>
<thead>
<tr>
<th>M.H.U.</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cayenne, West Indies</td>
<td>70,000</td>
<td></td>
</tr>
<tr>
<td>Chili</td>
<td>50,000</td>
<td></td>
</tr>
<tr>
<td>Ground Turkish</td>
<td>40,000</td>
<td></td>
</tr>
<tr>
<td>Crushed Japanese</td>
<td></td>
<td>40,000</td>
</tr>
</tbody>
</table>

Red pepper heat units (Scoville test or extract capsaicin with alcohol and measure) ranges from 20,000–120,000

Equivalents:
- 1 part, freeze dried weight of red bell pepper = 18 parts, fresh weight
- 1 crate (13.4 x 11 x 22 in.) = 50 pounds (lb)
- 1 bushel = 25 lb
- 1½ lb = 1 quart, frozen
- 0.67 lb, fresh = 1 pint, frozen
- 3 medium peppers = 1 lb
- 1 large pepper = 6 ounces (oz)
  = 0.7–1 cup, chopped
- 1 medium pepper = 1 cup, coarsely chopped
  = 0.75 cup, medium chopped
- 1 small pepper = 0.5 cup, finely chopped
- 1 cup, chopped = 5.2 oz
- 1 cup, strips, boiled, drained = 4.8 oz
- 1 medium pepper, boiled and drained = 4.8 oz
- 1 cup, strips = 3.4 oz
- 1 cup, slices = 2.8 oz
- 1 cup, seeded and finely chopped = 2 small peppers
- 1 serving = 0.5–1 medium to large size pepper

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dried</th>
<th>Fresh</th>
<th>Dried</th>
<th>cayenne</th>
<th>Dried</th>
<th>red</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>7.5–8.5</td>
<td>92</td>
<td>12 max.</td>
<td>12 max.</td>
<td>12 max.</td>
<td>12 max.</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>11.5–15</td>
<td>1.2</td>
<td>11.5–15</td>
<td>1.2</td>
<td>11.5–15</td>
<td>1.2</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>17–18</td>
<td>0.2</td>
<td>17–18</td>
<td>0.2</td>
<td>17–18</td>
<td>0.2</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>56–57</td>
<td>6</td>
<td>56–57</td>
<td>6</td>
<td>56–57</td>
<td>6</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>5.9–6.2</td>
<td>8 max.</td>
<td>5.9–6.2</td>
<td>8 max.</td>
<td>5.9–6.2</td>
<td>8 max.</td>
</tr>
</tbody>
</table>
pepper (Piper nigrum) 557

HCl insoluble ash 1% max. in dried product; freezing point 30.7°F

<table>
<thead>
<tr>
<th>Storage</th>
<th>Temp. (°F)</th>
<th>Relative humidity (%)</th>
<th>Storage life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry chili</td>
<td>32–40</td>
<td>65–75</td>
<td>6 months</td>
</tr>
<tr>
<td>Sweet</td>
<td>45–50</td>
<td>85–90</td>
<td>8 days</td>
</tr>
</tbody>
</table>

Black pepper (continued)

Whole berry—peppercorn
Cracked
Coarse
Ground
Milling—many sizes available
Microground

White pepper—dried ripened fruit; black outside covering (mesocarp, hotness) is removed (soak, machine decorticated); milder than black because it contains less acrid resins; usually fine grind

Fruit (peppercorn) is red when ripe.

Country of origin is usually specified:
Lampong; Indonesian
Malabar: Indian
Saigon: Vietnamese and Cambodian

Flavor: warm, pleasant, pungent, and biting
Terms:
Bold—large, nicely formed peppercorns
Extra bold—extra large
Light berries—small, hollow berries that float in a water–alcohol solution
Tellicherry—a bold or extra bold, Indian (Malabar) pepper

See capsicum; oleoresin, capsicum; red pepper

See Part 2: Planting Density; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Yields

pepper (Piper nigrum) A whole or ground spice made from the berries of the pepper vine (a climbing perennial) and used in seasoning

Black pepper—dried unripe fruit; entire berry including black coat is used; more pungent and aromatic than white pepper; available in fine and medium grind; quickly loses flavor when ground; has antioxidative activity. Black size (the finer the grind the more immediate the flavor but the shorter the shelf life):

Black pepper—dried ripe fruit; entire berry including black coat is used; more pungent and aromatic than white pepper; available in fine and medium grind; quickly loses flavor when ground; has antioxidative activity. Black size (the finer the grind the more immediate the flavor but the shorter the shelf life):

See Part 2: Planting Density; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Yields

<table>
<thead>
<tr>
<th>Region</th>
<th>Area</th>
<th>Ports of shipment</th>
<th>Most popular pepper</th>
<th>Pepper properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangka (Indonesia)</td>
<td></td>
<td>Muntok</td>
<td>Muntok white</td>
<td>Black pepper</td>
</tr>
<tr>
<td>Brazil</td>
<td>Belem (Para)</td>
<td></td>
<td>Brazilian black</td>
<td>Good appearance, aroma, mild flavor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mangalore</td>
<td>Brazilian white</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Alleppey (south)</td>
<td>Alleppey, Malabar, Malabar Alleppey</td>
<td>Light in color, less pungent, bland flavor</td>
</tr>
<tr>
<td>India</td>
<td>Coorg, Kerala, (Malabar Coast)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Alleppey</td>
<td>Large and uniform</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Malabar</td>
<td>Good aroma, flavor, pungency</td>
<td></td>
</tr>
<tr>
<td>Madras</td>
<td>Mysore Travancore</td>
<td></td>
<td>Tellicherry (north)</td>
<td>Good aroma, flavor, pungency</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Sarawak</td>
<td>Kuching, Singapore</td>
<td>Sarawak black</td>
<td>Mild in odor, flavor, pungency</td>
</tr>
<tr>
<td>Sarawak</td>
<td></td>
<td></td>
<td>Sarawak white</td>
<td>Superior uniform, light appearance</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td></td>
<td></td>
<td>Sri Lankan black</td>
<td>Gray black, excellent aroma</td>
</tr>
<tr>
<td>Sumatra (Indonesia)</td>
<td>Lampong</td>
<td>Singapore</td>
<td>Lamp pong black</td>
<td>Smaller, thin shell, good flavor, very pungent</td>
</tr>
</tbody>
</table>

Range of standards (Piper nigrum)

<table>
<thead>
<tr>
<th>Acid insoluble ash (max. %)</th>
<th>1.5</th>
<th>0.3</th>
<th>0.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chavicine (%)</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crude fiber (max. %)</td>
<td>15</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Foreign organic matter (max. %)</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Moisture (%)</td>
<td>12</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>Nonvolatile ether extract (min. %)</td>
<td>6.75</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Peperine (%)</td>
<td>5–9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Starch (min. %)</td>
<td>30</td>
<td></td>
<td>52</td>
</tr>
<tr>
<td>Total ash (max. %)</td>
<td>7</td>
<td>3.5</td>
<td>3.5</td>
</tr>
<tr>
<td>Volatile oil (%)</td>
<td>1–2.5</td>
<td>1.5</td>
<td>0.8–1</td>
</tr>
</tbody>
</table>
pepper (Piper nigrum)

100 peppercorns = 4.5 g
1 tsp = 3–4 g

<table>
<thead>
<tr>
<th>Composition</th>
<th>Black pepper (%)</th>
<th>White pepper (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>8.7–13</td>
<td>11–12</td>
</tr>
<tr>
<td>Total ash (%)</td>
<td>3.1–6.4</td>
<td>1–2</td>
</tr>
<tr>
<td>Acid insoluble ash (%)</td>
<td>0–1.4</td>
<td></td>
</tr>
<tr>
<td>Water insoluble ash (%)</td>
<td>1.5–3.0</td>
<td></td>
</tr>
<tr>
<td>Crude fiber (%)</td>
<td>8.5–16</td>
<td>4–5</td>
</tr>
<tr>
<td>Fixed oil (%)</td>
<td>6.1–10.7</td>
<td></td>
</tr>
<tr>
<td>Nonvolatile extract (%)</td>
<td>8–10</td>
<td></td>
</tr>
<tr>
<td>Volatile oil (v/w; %)</td>
<td>0.6–3</td>
<td>1.5–1.7</td>
</tr>
<tr>
<td>Alcohol extract (%)</td>
<td>8.5–11.9</td>
<td></td>
</tr>
<tr>
<td>Starch (%)</td>
<td>22–40</td>
<td></td>
</tr>
<tr>
<td>Total nitrogen (%)</td>
<td>1.8–2.5</td>
<td></td>
</tr>
<tr>
<td>Protein (%)</td>
<td>11</td>
<td>10–11</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>9–10</td>
<td>7.5–8.5</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>65</td>
<td>68–69</td>
</tr>
</tbody>
</table>

Composition [ground pepper, 1 tsp (2.9 g): protein 0.3 g; fat 0.2 g; carbohydrate 1.0 g; sodium 4.0 mg; copper 0.02 mg;

Defect action level:
Average of 1% insect-infested and/or moldy pieces by weight
Average of 1 mg excreta/pound (approximately 2 ppm by weight)

See pepper, black; pepper black, decorticated; pepper green; pepper white

pepper, banana 6-in., deep yellow, hot peppers that are packed in vinegar

pepper, black The dried, immature Piper nigrum berry used as a spice and made into pepper oleoresin and pepper oil See pepper (Piper nigrum L.)

pepper, black, decorticated A form of white pepper produced by mechanical removal of the skin of black peppercorns; flavor closer to black pepper than to white

pepper, black, oil An oil that is steam-distilled from black pepper; has the same flavor and aroma as the spice but less pungency

pepper cheese A pepper-flavored cheese that is used on crackers

peppercorn Seed or berry of pepper vine; whole pepper
20 peppercorn, packed in wine vinegar or brine = 1 tsp

pepper cream cheese A neufchâtel cheese containing 10% red peppers

peppergrass See watercress

pepper, dehydrated sweet bell

<table>
<thead>
<tr>
<th>Form</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diced, 1/4 in.</td>
<td>Sauces</td>
</tr>
<tr>
<td>Flakes</td>
<td>Pickles, pizza, oriental foods, and canned meat</td>
</tr>
<tr>
<td>Granulated</td>
<td>Dry and prepared foods</td>
</tr>
<tr>
<td>Powdered</td>
<td>Dry and prepared foods</td>
</tr>
<tr>
<td>Minced</td>
<td>Sauces</td>
</tr>
<tr>
<td>Slices</td>
<td>Pickles, pizza, oriental foods, and canned meat</td>
</tr>
<tr>
<td>Stripes</td>
<td>Pickles, pizza, oriental foods, and canned meat</td>
</tr>
</tbody>
</table>

pepper dulse (Laurencia pinnatifida) A red seaweed used as a spice

peppered loaf A pressed, cooked meat specialty loaf made from beef and pork and seasoned with cracked peppercorn
Composition: moisture 67.4%; protein 17%; fat 6.4%; carbohydrate 4.6%; ash 4.4% See Part 2: Sausage Identification

pepper grass A species of cress See curled cress; garden cress

pepper, green A green (immature) pepper (black peppercorn) produced by artificially drying or bottling in vinegar, brine, or water; red and yellow sorts before they turn color See pepper (Capsicum)

pepper, green sweet A sweet, green, yellow, or red bell-shaped pepper

pepper, Jamaica (allspice; Pimenta dioica) See allspice

pepper, long (Piper longum) A climbing, pepper plant from India whose spike (2–3 cm) is used as a spice; dried root is also used as a drug

pepper, melegueta (Afromomum melequeta)

peppermint (balm mint; brandy mint; curled mint; Mentha piperita) 1) A perennial, 2-ft tall, mint-like herb; 80 days to maturity. Dried leaves of peppermint plant cultivated in Washington. Oil of peppermint is obtained by distillation of the leaves and flowers; chief constituent is menthol. Used for flavoring liquor, confectionery chewing gum, herbal tea, sauces, mint jelly, drinks, etc.
Types:
American (American mint; state mint)—less oil (80–100 lb/acre) than black
Black (black mint; English peppermint; Mitcham mint)
White—preferred
1 part, freeze-dried weight = 10.5 parts, fresh weight
Variety: Curly mint
2) A candy flavored with peppermint See mint See Part 2: Essential Oils

peppermint oil An essential oil obtained by steam distillation of the Mentha piperita plant; used as a peppermint-like flavoring agent for food; sp. gr. 0.896–0.909
Storage: full, tight container in a cool, dark place

peppermint schnapps A schnapps-type spirit flavored with peppermint
pepper, nepaul  Ground from yellow peppers and slightly less pungent than red pepper

pepper oil (Piper nigrum) Oil obtained by steam distillation of dried immature pepper berries; refractive index 1.480–1.499 at 20°C; sp. gr. 0.890–0.900 at 20°C

pepper oil, black A volatile oil obtained by steam distillation of the unripe fruit of Piper nigrum; used as a pepper-like flavoring agent for food; sp. gr. 0.864–0.885

Storage: full, tight, glass container in a cool, dark place

pepper oleoresin A green to yellow-green, viscous liquid (settles on storage) obtained by solvent extraction of black pepper. Has the full flavor, odor, and pungent principle of the spice. Optical rotation –1 to –23°; refractive index 1.4750–1.4880; sp. gr. 0.860–0.884; contains 15–20% volatile oil and 35–55% pipérine. 1 kg (obtained from 8-kg black pepper) can replace 25 kg of spice

pepperone rosso Crushed, hot, red pepper

pepperoni 1) An Italian sausage made of medium-chopped dried pork and beef; the predominant spice is Italian red pepper; it is dried but not smoked. 2) A smoked or unsmoked, uncooked, dried or semidried American sausage made from heavily seasoned, medium to coarsely chopped beef and pork (beef 55% max.) that is fermented and stuffed into pork or artificial casings; usually small diameter (15–50 mm) and/or links, but sometimes in large diameter casing; must be treated for destruction of trichinae; moisture-to-protein ratio 1.5:1

Types:
- Canned—1.5 in. diameter in 3.5 pound cans
- Leoni—2.5 in. diameter; artificial casings
- Rosa—double-linked; 11 in. long; 7 oz, fully dried
- Sliced vacuum packaged
- Vacuum packed chunks—6 oz
- Vacuum packed small double link—natural casing

Composition: moisture 27%; protein 21%; fat 44%; carbohydrate 2.8%; ash 5.2%; sodium 122 mg/slice (6 g)

See Part 2: Sausage, Types

pepper, pink 1) Poivre rose; peppercorns are harvested when they turn red and are bottled in brine and vinegar. 2) Spice of South American pepper tree (Schinus molle L.)

pepperpot (Philadelphia pepperpot) 1) A highly spiced stew made with cassareep (boiling bitter cassava), fish or meat, seasoning, and vegetables. 2) A highly spiced stew made with dumplings, meat and tripe, seasoning, and vegetables

pepperpot, canned soup

<table>
<thead>
<tr>
<th>Composition</th>
<th>Condensed, prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>80.6</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>5.2</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>3.8</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>7.7</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0.4</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.7</td>
</tr>
</tbody>
</table>

pepperpot soup A rich soup made from beef broth, honeycomb tripe, macaroni, potatoes, and seasoning

pepper sauce Hot peppers packed in salt and vinegar brine; the hot brine is used to flavor meat, soup, etc.

pepper steak Fresh, ground, black pepper is added to beefsteak prior to cooking; baked spicy beef chuck

pepper; sweet 1 large pepper = 0.75 cups, coarsely chopped

pepper water Hotly spiced water served with rice

pepper, white A spice of Piper nigrum where the mesocarp is removed from the mature berry; used as a spice See pepper (Piper nigrum)

pepper wine A condiment made from very hot red peppers and sherry wine

PEPS See Pesticide Policy Statement

pepsinogen The inactive form of pepsin and the form in which it is secreted; it is converted to the active form by hydrochloric acid and pepsin itself

peptic Refers to either digestion or pepsin

peptide Combinations of two or more amino acids joined by a

$$-\text{C}--\text{N}--$$

linkage to form a protein See also protein

peptizing The ability of some substances to attack, break down, and disperse a protein; the act of forming colloidal solutions from soils, which may be only partly soluble

peptone A polypeptide of low molecular weight that is water-soluble, is not coagulated by heat, and is not precipitated by saturated ammonium sulfate

peptone colloid medium See Part 2: Microorganism, Media

peptonization Enzymatic hydrolysis of protein into peptones

peptonized milk See Part 2: Microorganism, Culture Media, Dairy and Food Products; Microorganism, Media

PER See protein efficiency ratio

per- A prefix meaning through

pera A small, provolone-type cheese made from skimmed cow's milk and containing candied fruit

perail A soft, white cheese made from sheep's milk and cured in straw
per capita disappearance  See food supply data

percent  Parts per hundred; grams per 100 grams; pounds per 100 pounds

percentage dilution problems (approximate results)  1) Dilute with water

Subtract percentage desired from percentage of original; this will give the portion of water that must be added to the portion (same as the desired %) of original

Example: have 95% alcohol and want 35% alcohol  
(95 - 35 = 60)  
Solution: 60 parts water to 35 parts 95% alcohol = 95 parts of 35% alcohol

2) Dilute with lower percentage

Subtract percentage wanted from percentage of original (higher); this equals the parts of lower percentage to be added

Example: Make 35% from 95% and 20%

\[
\begin{align*}
95 & \rightarrow 20 \rightarrow 75 \\
35 & \rightarrow x \\
95 - 35 & = 60 \text{ parts of } 95
data-backup
\]

percent defective  The percentage of a lot that is defective

percent pump  The percentage increase in weight above green weight caused by adding pickle, e.g., 10% pump (10% pickle added to green weight) = after pump weight = 110% of green weight

perch (darter; lake perch; ringed perch; yellow perch)  A small (often 9 in., \(\frac{1}{2}\) pound; maximum 4.5 pounds), light meat, light to moderate flavor, freshwater or ocean-type fin fish of the bass family. The name is also sometimes used for other related fresh and saltwater fish

Europe, Asia—Perca fluviatilis
Golden (Australia)—Plectroplites ambiguus
Japan—Latelabrax japonicus
Ocean—Sabalas marinus  See redfish

White—Morone (Roccus) americana
Yellow (North America)—Perca flavescens
Composition: protein 18%; fat 1.1-1.2%

See also  rod
See Part 2: Fish and Shellfish Composition; Fish, Storage; Frozen Food Storage; Mitterala, Food

perchloric acid  (HClO\(_4\))  A hygroscopic liquid; strong oxidizing agent; use care in handling
See Part 2: Concentration of Commercial Strengths of Acids and Bases

perch, ocean (Pacific snapper; redfish; rosefish)  A saltwater fish
Composition: protein 18%; fat 0.7-1.2%

perelada  A white, sparkling wine

perennial  A plant with a life span of more than two years (lives more than 3 years); plants live from year to year without reseeding; these plants flower and produce a crop each year

perennial canker  A fungus that produces an oval to linear canker whose margin is surrounded by callus tissue often with gum associated; found on apricot, cherry, nectarine, peach, and plum trees
Control: keep trees healthy and vigorous

perennial sow thistle  (Sonchus arvensis)  A weed

perforation  The reaction between product and tinplate of a can at a localized point causing the can to leak

performance bond  A bond executed in connection with a contract that secures the performance and fulfillment of all terms

perfringens  See Part 2: Bacterial Foodborne Illnesses

peri-  A prefix meaning around

pericarp  The outer layer of grain next to the husk; major part of bran
See Part 2: Wheat Grain; Wheat Kernel; Wheat Kernel Parts; Wheat, Parts of Grain; Wheat, Parts of Grain, Vitamins

perichondrium  The connective tissue covering of cartilage

perigeeux sauce  A half glaze, brown sauce with truffles

perilla oil  A yellow, edible drying oil obtained from a Japanese plant seed
See Part 2: Essential Oils; Fats and Oils, Physical and Chemical Properties; Fatty Acids, Fats and Oils; Iodine and Saponification Values; Oil or Fat, Characteristics; Refractive Indices, Fats and Oils; Unsaponifiable Matter

periosteum  The external connective tissue covering of a bone

periodical cicadas  The adult insect is black, with red eyes, reddish brown legs, and orange wing veins except for a black “W” pattern on the lower edge; nymphs are white, pale beige, or light yellow and resemble small crayfish. The adult females damage twigs and limbs (damaged limbs appear rough and break easily) where eggs are laid; the nymphs feed on roots and weaken the tree

periodic ophthalmia  See moon blindness

periodic ordering  Orders are placed at regular intervals for amounts needed to bring stock up to desired levels

Periodic Table  A classification of the chemical elements devised by the Russian chemist Mendeleef in 1869, in which the elements are listed in order of increasing atomic weight. Thus a recurring similarity of properties (periodicity) is revealed, which depends on the atomic number of the element. The table contains seven horizontal divisions, or periods, and nine major vertical divisions (groups).
See Part 2: Elements

periosteum  The external connective tissue covering of a bone
persimmon (black sapota; date plum; Virginia date plum)

**Peripheral** See superficial

**Peripheral fat** The fat found under the skin; more unsaturated than deep fat

**Perishable** Subject or liable to decay or spoilage

**Peristalsis** Waves of contractions that move food through the alimentary tract

**Peritoneum** The membrane lining the abdominal cavity

**Periwinkle**
1) Small, edible, sea snail (winkle; *Littorina littorea*); univalve, small, mollusk. See winkle
2) An astringent herb (bright eyes; little pinkie; purity; twinkles)

**Perk** A perquisite; a gratuity or tip

**Perkarnaya** A sourdough bread usually made from rye flour

**Perle** A general term for carbonated, grape juice wine

**Perlite** Small white or gray, almost feathery volcanic rock; used to improve soil drainage

**Permanent legislation** The laws upon which many agricultural programs are based

**Permeable** Able to be traversed or penetrated

**Permease** An enzyme that transports a nutrient through a cell membrane

**Permutations** The different orders in which objects can be arranged

\[ P_r^n = n(n - 1)(n - 2)(n - 3)(n - 4) \cdots (n - r + 1) \]

\[ P = \text{no. of permutations} \]
\[ n = \text{total number of objects} \]
\[ r = \text{no. taken at a time} \]

Example: Letters X, Y, and Z can be arranged in how many orders, using two letters at a time?

\[ n = 3 \quad P = 3 \cdot 2 = 6 \quad r = 2 \]

XY, XZ, YX, YZ, ZX, ZY

See also combinations

**Permutit** Proprietary name for a group of ion-exchange resins used to soften water See also hardness (water)

**Pernicious** Serious

**Pernod** A yellow (turns cloudy with water), aniseed-flavored, alcoholic, herb liqueur

**Peroxide** A compound containing an \(-O-O-\) group in which the oxygen atoms are univalent and in a negative oxidation state, e.g., hydrogen peroxide \(H-O-O-H\). Peroxides are strong oxidizing agents

See Part 2: Antioxidant Activity

**Peroxide number (PER No.)** A measure of the extent to which a fat or oil has reacted with oxygen

**Peroxide value analysis (P.V.)** An indication of oxidation that has taken place by measuring the substances in fat that will oxidize potassium iodide and is expressed as the milliequivalents of peroxide per kilogram of fat; it is determined by adding saturated potassium iodide to a solution of fat, chloroform, glacial acetic acid, and hydrochloric acid; the liberated iodide is titrated with a standardized sodium thiosulfate solution; during oxidation, the peroxide value increases, reaches a peak and then decreases

**Perpetual spinach** See beet, silver

**Perrier** A natural mineral water with natural carbonation that is bottled in southern France

<table>
<thead>
<tr>
<th>Mineral content ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ca(^{++})</td>
</tr>
<tr>
<td>Cl(^-)</td>
</tr>
<tr>
<td>HCO(_3^-)</td>
</tr>
<tr>
<td>K(^+)</td>
</tr>
<tr>
<td>Mg(^{++})</td>
</tr>
<tr>
<td>Na(^+)</td>
</tr>
<tr>
<td>NO(_3^-)</td>
</tr>
<tr>
<td>SO(_4^{2-})</td>
</tr>
</tbody>
</table>

See water, mineral

**Perry** Pear juice; still or sparkling wine fermented from pears (*Pyrus*), rich in tannin; like cider

**Persian melon** A round, 5–10 pound melon with a flat netted green rind and thick, fine-grained, pink to orange flesh

**Persile** A blue cheese made from cow's or goat's milk and matured in caves

**Persimmon (black sapota; date plum; Virginia date plum)** Origin eastern and southeastern Asia. A date plum that is round and smooth skinned. As it ripens it changes from yellow to red and its tannin content is reduced and flavor develops. Very astringent (tannin) when immature or green (some wild varieties never lose their astringency), and only loses its astringent when it is ripe and wrinkled. May be eaten raw or dried (often sun dried)

Species:
- American (Virginian date; *D. Virginiana L.*)—fruit is smaller than Japanese and dark red to maroon in color
- Japanese (kaki plum; *Diospyros kaki* L.)—deciduous tree producing a 2–3 in. diameter, red fruit that looks like a tomato; it is eaten fresh, cooked, and candied. Varieties:
  - Fuyu—nonastringent before ripe
  - Hachiya—astringent until ripe
  - Tame nashi—astringent until ripe
- Mexican or Central American or southern Florida (*D. digyna*)—black sapote; dark brown pulp

Composition: moisture 64–78%; protein 0.8%; fat 0.4%; carbohydrate 20–34%; ash 1%; pH 5.4–5.8

Ripen: room temperature

Storage: 30°F; 85–90% relative humidity; can be frozen whole or pureed

See Part 2: Fruit Composition; Fruit Storage; Minerals, Food
perspiration  Excretion of moisture or sweat from skin pores
pertsovka  A pepper-flavored, brown vodka
peruvian apple  See tomato
Peruvian custard apple  See custard apple
pesticide  Any substance used to kill pests; includes fungicides, herbicides, insecticides, and rodenticides; some types are toxic to man See Federal Insecticide, Fungicide, and Rodenticide Act
Pesticide Policy Statement (PEPS)  See Environmental Protection Agency
petacones  A hard, cheddar-type cheese
petal  One of the leaves of the corolla of a flower See Part 2: Flower, Perfect
des de nonne  A rich dessert made from egg yolk batter that is fried in deep fat and sprinkled with sugar before serving
petechia  Small, red (sometimes blue or yellow) spots caused by diffusion of blood or hemorrhaging in muscle tissue
petillant  A general term for carbonated, grape juice wine See cracking
petit  Small or new
petit bessay  A semisoft, medium flavored, 200-g cheese
petite butter steak  A steak cut from the chuck
petite narmite  A French soup garnished with beef marrow, small cubes of toast, and Swiss cheese
petite sirah  A California, burgundy-type, red, table wine
petit four  A small, decorated, tea cake
petitgrain oil  A steam-distilled, brownish yellow, bittersweet, essential oil from the leaves of the bitter orange tree (Paraguay); used in flavoring, perfumery, etc. See Part 2: Essential Oils
petitgrain oil, Paraguay  A volatile oil obtained by steam distillation of the leaves of the bitter orange tree (Citrus aurantium L.); used as a bittersweet, florallike flavoring agent in food; sp. gr. 0.878–0.890 Storage: full, tight, glass container in a cool, dark place
petit gruyere  A soft, rich, yellow, nutty-flavored Danish cheese
petit lisieux  A soft to semisoft, strongly flavored cheese made from cow's milk and ripened by surface bacteria
petit pois  Small-seeded peas that have a good flavor when young and fresh
petit sale  Pickled pork
petits fours  Many kinds of small, fancy cakes and cookies
petit suisse  A soft, creamy, nonsalted cheese made from whole milk with fresh cream added; a cylindrical-shaped French cheese Sizes:
Demi—small
Gros—large
See Part 2: Cheese, Vitamin Content; Milk and Cheese Composition
peto (Acanthocybium solandri)  A food fish
Petragnani medium  See Part 2: Microorganism, Media
petrale sole (Eopsetta jordani)  A white meat, very light delicately flavored, food fish
petri dish  Two shallow dishes (bottom and cover) used for growing bacterial cultures
petrochemical  A chemical derived from petroleum or natural gas, except those used for fuel; thus benzene and ethylene oxide are petrochemicals, but gasoline and fuel oil are not
petrolatum  Rock oil; obtained by boring into oil-bearing rock; a white to yellow mixture of semisolid hydrocarbons obtained from petroleum; melting point 38–60°C; sp. gr. 0.814–0.880 at 60°C. Rock oil when heated yields the following items:

<table>
<thead>
<tr>
<th>Liquids</th>
<th>Distilling temperature (°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphtha</td>
<td>40–70</td>
</tr>
<tr>
<td>Gasoline</td>
<td>70–90</td>
</tr>
<tr>
<td>Benzine</td>
<td>90–150</td>
</tr>
<tr>
<td>Kerosene</td>
<td>150–280</td>
</tr>
<tr>
<td>Lubricating oil</td>
<td>280–400</td>
</tr>
<tr>
<td>Vaseline, paraffin, coal tar residue</td>
<td></td>
</tr>
</tbody>
</table>

Used in food as a defoaming agent or as a protective coating, lubricant, or release agent.
Storage: tight container
petroleum benzin  See naphtha
petroleum ether  See naphtha
petroselinic acid  See Part 2: Unsaturated Fatty Acids
petsai [Chih(i)li; Chinese cabbage; pai-ts-ai; pakchoi; wong bok; Brassica pekinensis]  Autumn and winter vegetable used for greens; a cabbage that looks like large romaine lettuce with light-colored leaves and crisp stalks See Chinese cabbage
pete  A Swiss cheese made from cow's milk
pettijohns  A breakfast food made from whole wheat
petunidin  One of the anthocyanidins responsible for the red color in fruits and vegetables

peujeum  A cassava tape
peujeum ketan  A sweet, slightly alcoholic, glutinous rice
peyem  A cassava tape
peynir  A panir-type cheese made from cow's or sheep's milk that is sometimes matured
pfefefruessc  A peppernut cookie
pfefewurst  A cooked sausage that contains whole peppercorns

PFF (protein fat free)

\[ \text{PFF} = \frac{\% \text{ protein}}{100 - \% \text{ fat}} \times 100 \]

pfister  An emmenthaler-type cheese made in Switzerland

pH  Degree of acidity or alkalinity. It is the negative logarithm (base 10) of the H ion concentration; the range is from 1–14, with 7 being neutral; pH values greater than 7 indicate an alkaline solution, whereas values less than 7 indicate an acid solution.

\[ \text{pH} = \log_{10} \frac{1}{[H^+]} = -\log_{10} [H^+] \]

Fresh meat 5.3–6.0; normal human blood 7.3–7.5; pure water 7.0. pH affects food preservation, e.g., fermented products such as sauerkraut, pickles, and vinegar

Soft drinks (phosphoric acid) Salad dressing

Soil pH  Name  Treatment
Below 4.5  Extremely acid  Should have limestone added
4.5–5.0  Very strongly acid  for most plant growth
5.1–5.5  Strongly acid
5.6–6.0  Moderately acid

6.1–6.5  Slightly acid  General plant growth
6.6–6.9  Very slightly acid
7.0  Neutral
7.1–7.5  Very mildly alkaline  Aluminum sulfate, iron sulfate, powdered sulfur will make soil more acid
7.6–8.0  Mildly alkaline

See Part 2: Egg Specifications; Indicators; Lemon Juice Composition; Lime Juice Composition; Milk, Physical Properties; pH and Availability of Plant Nutrients; pH and Acid Base; pH, Buffer Solutions; pH, Post Mortem; pH, Standard Solutions; pH, Universal Indicators; pH Values of Biological Materials; Water Drinking Standards

phaac  A dark, salty, fermented, fish paste with glutinous rice

-phag-  An affix that means eat

phagocyte  A cell that ingests microorganisms or other cells or substances or foreign particles

phalangeal bone  Foot bones just above the toes
See Part 2: Bone

phak-dong  Pickled vegetables

pharmaceutical  Pertaining to drugs or medicine

pharmacology  The science of drugs and reactions of drugs

phase feeding  Varying the diet to adjust for factors that may influence productivity

pH control agents  Compounds that control change or maintain acidity and alkalinity in food and affect the stability, texture, and taste

pheasant  A game bird of species Phasianus colchicus or similar type of birds; usually long-tailed; some of these birds are also raised in captivity

1 dressed = 1–2 pounds
Composition (flesh and skin, raw): moisture 67.77%; protein 22.70%; fat 9.29%; ash 1.27%; total carbohydrates 0.9%

See Part 2: Poultry Dressing Percentage; Poultry Yield

phellandrene

\[
\begin{align*}
\text{CH}_3 & \quad \text{CH}_3 \text{CHCH}_3 \\
\end{align*}
\]

Used as a herb–mint-like flavoring agent in food; sp. gr. 0.840–0.856

Storage: full, tight, glass container in a cool, dark place

phenethyl acetate

\[
\begin{align*}
\text{CH}_2\text{CH}_2\text{OOCCH}_3 \\
\end{align*}
\]

Used as a floral-like flavoring agent in food; sp. gr. 1.030–1.035

Storage: full, tight, glass container in a cool, dark place

phenethyl alcohol

\[
\begin{align*}
\text{CH}_2\text{CH}_2\text{OH} \\
\end{align*}
\]

Used as a roselike flavoring agent in food; sp. gr. 1.016–1.020

Storage: full, tight, glass container in a cool, dark place

phenethyl isobutyrate

\[
\begin{align*}
\text{CH}_2\text{CH}_2\text{OOCCHCH}_3 \quad \text{CH}_3 \\
\end{align*}
\]

Used as a fruity–rose-like flavoring agent in food; sp. gr. 0.986–0.990

Storage: full, tight, glass container in a cool, dark place

phenethyl isovalerate

\[
\begin{align*}
\text{CH}_2\text{CH}_3\text{OOCCHCH}_3 \quad \text{CH}_3 \\
\end{align*}
\]

Used as a fruity–rose-like flavoring agent in food; sp. gr. 0.972–0.976

Storage: full, tight, glass container in a cool, dark place

phenethyl phenylacetate

\[
\begin{align*}
\text{CH}_2\text{CH}_2\text{OOCCH} & \quad \text{CH}_3 \\
\end{align*}
\]

Used as a rose–hyacinth-like flavoring agent in food; sp. gr. 1.080–1.082

Storage: full, tight, glass container in a cool, dark place
phenethyl silicylate

Used as a balsam-rose-like flavoring agent in food; Storage: tight container

phenol (carbolic acid) An organic compound in which one of the hydrogen atoms in the aromatic ring has been replaced by a hydroxy group in the ortho position.

A disinfectant; 1:100 kills most vegetative bacteria in 20 min; 1:1000 is an effective bacteriostat; 5% solution kills spores in hot solution in 24 hours

Advantages:
Not corrosive
Effective in presence of organic material
Effective against all vegetative bacteria

Disadvantages
Poisonous
Odor absorbed by foods
Loses efficiency when temperature is lowered
Not effective against viruses

Phenol oil droplet will form on surfaces of cold solution and these are dangerous to tissue

See Part 2: Water Drinking Standards

phenol coefficient A number comparing the dilution of a disinfectant with the dilution of phenol necessary to kill a test organism (e.g., typhoid fever germ) under specific conditions

phenolic can coating (phenol-formaldehyde) Has good impermeability and chemical resistance but may give off flavor; does not require zinc oxide; not softened by animal fat

phenolic coating The resin portion derived from phenols or cresols

phenolphthalein \((C_{20}H_{14}O_4)\) An indicator used when titrating weak acids; its pH range is 8–10 (midpoint 8.3); colorless in an acid solution; pink to red at pH 9 and above; 0.2 g/100 ml alcohol

phenol red (phenolsulfonphthalein) \((C_{10}H_{10}O_6S)\) A pH indicator; pH range 6.4–8.0. Yellow in acid and red in basic direction. 0.02–0.05% in ethyl alcohol solution

phenol red broth A medium for growth of Bacillus cereus

phenomenal berry A fruit similar to loganberry

phenothiazine An anthelmintic for livestock

phenylalanine An aromatic amino acid

Used as a nutrient or dietary supplement
Storage: tight container in a dark place

See Part 2: Amino Acids; Amino Acid, Solubilities; Corn, Amino Acids; Egg Products, Nutritive Value; Grain Analysis; Manure Analysis; Microorganism, Media; Milk, Amino Acids; Seed, Chemical Composition; Wheat, Amino Acids; Wheat Products, Amino Acid Compositions

phenylalanine agar See Part 2: Microorganism, Media
phenylethanol  See Part 2: Microorganism, Media

phenyl group  An organic group based on the benzene ring, in which one or more substituent atoms or groups have replaced H atoms; thus a phenyl group may be C₆H₅—, —C₆H₄—, etc.

3-phenyl-1-propanol

\[\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}\]

Used as a hyacinth–mignonette-like flavoring agent in food; sp. gr. 0.998–1.003
Storage: full, tight, glass container in a cool, dark place

phenylpropanolamine hydrochlorine (PPA)  An appetite suppressant ingredient in many nonprescription diet pills

2-phenylpropionaldehyde

\[\text{CH}_3\text{CH}==\text{CHCH}_2\text{CHO}\]

Used as a floral-like flavoring agent in food; sp. gr. 1.010–1.020
Storage: full, tight, glass container in a cool, dark place

3-phenylpropionaldehyde dimethyl

\[\text{CH}_3\text{OCH}_3\]

Used as a mushroom-like flavoring agent in food; sp. gr. 0.988–0.994
Storage: full, tight, glass container in a cool, dark place

3-phenylpropyl acetate

\[\text{CH}_3\text{CH}_2\text{CH}_2\text{OOCCH}_3\]

Used as a spice–floral-like flavoring agent in food; sp. gr. 1.012–1.016
Storage: full, tight, glass container in a cool, dark place

Phosphate  A salt or ester of phosphoric acid; used in meat industry to increase water-holding capacity or to speed cured color development; 0.5% permitted in finished products such as cured hams and shoulders and canned chopped ham and sausage (commingled) products. Used as a pH control agent, sequestrant, emulsifier, and texture modifier

Types:
- Disodium phosphate (sodium phosphate dibasic)—Na₂HPO₄
- Monosodium phosphate (sodium phosphate monobasic)—NaH₂PO₄
- Sodium pyrophosphate (tetrasodium pyrophosphate)—Na₄P₂O₇
- Sodium tripolyphosphate—Na₅P₃O₁₀

No more than 5% of such phosphates may be in pickle; 50 lb/100 gal pickle (10% pump); canned chopped hams, 8 oz/100 lb of fresh uncured ham

<table>
<thead>
<tr>
<th>Composition</th>
<th>Rock, defluorinated</th>
<th>Rock, raw</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry matter (%)</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Ca (%)</td>
<td>32</td>
<td>36</td>
</tr>
<tr>
<td>P (%)</td>
<td>18</td>
<td>15</td>
</tr>
<tr>
<td>Fe (%)</td>
<td>0.6</td>
<td>0.7</td>
</tr>
<tr>
<td>F (%)</td>
<td>0.2</td>
<td>3.2</td>
</tr>
</tbody>
</table>

See bone phosphate; fertilizer; superphosphate

Philadelphia ice cream  A sweetened and flavored, coffee ice cream (18–20% fat) often with nuts and/or fruit and/or chocolate

Phosphocreatine (creatine phosphate; PC)  An energy-rich compound that is necessary for muscular contraction; a high-energy phosphate compound found in muscle that can rephosphorylate adenylic acid after muscle contraction
phospholipid (phosphatide) Fatlike compounds that also contain phosphorus and nitrogen; when subjected to hydrolysis phospholipids yield glycerol, fatty acids, phosphoric acid, and a nitrogenous base; two of the best known examples are lecithin and cephalin.

\[
\begin{align*}
\text{H}_2\text{C} & \quad \text{O} \quad \text{C} \quad \equiv \quad \text{R} \\
\text{HC} & \quad \text{O} \quad \text{C} \quad \equiv \quad \text{R} \\
\text{H}_2\text{C} & \quad \text{O} \quad \text{P} \quad \text{O} \quad \text{(N-base)} \\
\text{OH} & 
\end{align*}
\]

See Part 2: Egg Products, Nutritive Value

phosphoprotein A phosphoric acid ester linked to a protein through a hydroxy amino acid; e.g., casein, vitellin

phosphoric acid (orthophosphoric acid) \( (\text{H}_3\text{PO}_4) \) A colorless, odorless, inorganic acid derived from phosphate rock by treatment with hydrochloric acid or sulfuric acid; mol. wt. 98; equivalent weight 32.67; melting point 41°C

\[
\begin{array}{c|c|c|c}
\text{Commercial strength} & \% \text{ by wt} & \text{sp. gr.} & \text{M.} \\
\hline
85 & 1.689 & 14.7 & 41.1 \\
87 & 1.711 & 15.2 & \\
\end{array}
\]

230 ml of 85% \( \text{H}_3\text{PO}_4 \) to dilute to 10 liters, approx. normality 1.00

Uses: an acid or flavoring or sequestrant agent in food; an acidulant and flavor in soft drinks and in fertilizers

85% acid is 55–60% as tart as anhydrous citric acid

Types:

- metaphosphoric acid \( (\text{HPO}_3) \)
- orthophosphoric acid \( (\text{H}_3\text{PO}_4) \)
- pyrophosphoric acid \( (\text{H}_4\text{P}_2\text{O}_7) \)

Storage: tight container

See Part 2: Concentration of Commercial Strengths of Acids and Bases; Fertilizer Materials; Normal Solutions; Reagents, Normal Solutions

phosphorus (P) A nonmetallic element; at. no. 15; at. wt. 30.975; Group V-A of Periodic Table; oxidation states +3, +5, −3; electron configuration 2–8–5

Body function: in bones (as calcium phosphate, \( \text{Ca}_3\text{PO}_4 \)); buffer action, lecithins, proteins, and nucleic acids.

High P content—cereals, legumes, eggs, fish, meat, and milk products

Low P content—fruit

Required by all organisms, usually as a salt of phosphoric acid \( (\text{H}_3\text{PO}_4) \); a deficiency in plants causes slow growth and green-purple foliage

\[
\% \text{ P} = \% \text{ P}_2\text{O}_5 \times 0.4367
\]

See Part 2: Beans, Peas, and Nuts; Beef Percentages of Daily Recommended Allowances; Cereal Fortification; Cereals, Vitamin and Mineral Content; Composition of Food; Concentrated and Dried Milk Products; Creams, Butter and Frozen Desserts; Dairy Products, Composition II; Egg Composition, II; Egg Products, Nutritive Value; Fat and Oils, Composition I; Fish and Shellfish Composition I; Fluid and Fermented Milks, Composition; Food, Composition; Fruit Composition, Part I; Grain Analysis; Grain Products Composition; Lamb Percentages of Daily Recommended Allowances; Lemon Juice Composition; Lime Juice Composition; Macaroni and Noodles Composition; Manure Analysis; Meat Composition; Meat, Nutritive Value; Minerals, Food; Minerals, Plant or Animal Tissue; Nutrients in Crops; Olives and Pickles, Composition; pH and Availability of Plant Nutrients; Phosphorus; Plant Foods, Composition; Pork, Percentages of Daily Recommended Allowances; Poultry Composition; Recommended Daily Dietary Allowance; Soup Composition; Sugars and Sweets Composition; Tomato and Tomato Products, Composition; Variety Meat Percentages of Daily Recommended Allowances; Vegetable Composition, Part I; Wastes, Agricultural and Industrial; Wheat, Minerals; Wheat Products Composition

phosphorylation Introduction of phosphate into an organic compound

-phot- An affix that means light

photon The massless unit of electromagnetic energy moving at the speed of light

photoperiod The length of a day

photosynthesis The conversion of radiant energy to chemical energy by plants. The generally accepted reaction is

\[
\text{6CO}_2 + 6\text{H}_2\text{O} + 672 \text{ kcal} \xrightarrow{\text{light}} \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2
\]

The chlorophyll acts as catalyst. Virtually all atmospheric oxygen is due to this reaction. The stored energy is released as heat on combustion

phototrophic Plants that use radiant energy (photosynthesis) as a source of energy

phul-varhia Dried yellow rice, wheat, or maize balls that are deep fat-fried

phyagocytic cell A cell that engulfs and kills pathogens

phyecocolloid A hydrophilic colloidal substance derived from seaweed, for example, carrageenan, algin

See also polysaccharide

-phyll A suffix meaning leaf

phyllo (fillo) Parchment-thin pastry made of flour and water

1 pound, phyllo dough = 24 sheets

phyllosticta leaf blight \( (\text{Phylllosticta batatas}) \) A sweet potato fungus that produces brown spots on the upper side of the leaf

phyloxera See grape phylloxera; pecan phylloxera

phylo A thin, flour and water pastry
physalis (groundcherry; husk tomato) See gooseberry
See Part 2: Planting Density
Physalospora A type of mold
See Part 2: Mold, Food
physically induced swell A bulge in cans caused by overfilling at low temperature
physiological Functions of the body and organs; processes that occur in living things
physiological maturity The stage of development when a plant or part of a plant will continue to ontogeny even if detached
physiological requirements See nutritional requirements
physiological saline A salt solution with the same osmotic pressure as blood; 0.389 ± 0.008 mole of dissolved material per 1000 g of water; 0.9% sodium chloride in water; used as an isotonic solution of NaCl when dealing with mammals
-phyt- An affix that means plant
phytic acid \((C_6H_6[OPO(OH)]_6)\) Naturally occurring in corn, cereal grains, and soil; a complexing agent for metals
phytonadione \((\text{K}_3)\) See Part 2: Vitamins
Phytophthora A type of mold
See Part 2: Mold, Food
phytosterol Sterols made by plants
phytotoxicity Poisonous to plants
\(\pi\) (II, \(\pi\)) Greek letter with an English equivalent of &pi; in math \(\pi = 3.14159\) (ratio of circumference to diameter of a circle)
See Part 2: Constants, Fundamental
PI-3 Parainfluenza-3
pica A depraved appetite for unnatural items; pathological desire to eat nonfood substances; desire for unnatural food, such as chalk, clay, etc., by those affected with chlorosis
picarone A cassava-flour doughnut
piccalilli A relish made from brown sugar, chopped cabbage, chopped onions, green pepper, green tomatoes, salt, spice, sweet red pepper, and vinegar
pickerel A lean, freshwater fish of the pike family; young pike \((\text{Esox niger})\); maximum size is usually 12–24 inches
See Part 2: Minerals, Food
pickle 1) A brine or vinegar \((4–6\% \text{ acetic acid})\) solution; salted and fermented fruit, vegetables, fish, or meat; in relation to meat the common ingredients are salt, sugar, sodium nitrate, and sodium nitrite (not acid or vinegar). 2) A relish made from vegetables (small cucumbers) or fruits. Vegetables may be pickled by treatment with salt, vinegar, or both. Fruits may be pickled with vinegar, strong mustard, sugar, and spices and used as a relish. Dill pickles and sauerkraut may be preserved by lactic acid formed during fermentation \((\text{Leuconostoc mesenteroides}; \text{Pediococcus cerevisiae}; \text{Lactobacillus plantarum}).\) Maximum acid formed 0.6–1.5%.
Mixed sliced vegetables—pickle or relish
Sliced cucumbers—bread and butter pickles
Small whole cucumbers—pickles
Types:
- Brined—Soaked in saltwater brine; fermentation produces lactic acid
- Brined, unfermented type—high salt level brine; desalted before use
- Fruit—whole or sliced fruit is simmered in a spicy, sweet-sour syrup
- Relish—chopped, seasoned, and pickled vegetables and fruit
Made from beets; cabbage, red; cabbage, white; cauliflower; cucumbers; eggs; gherkins; melon rinds; mixed vegetables; olives; onions; roots and walnuts

<table>
<thead>
<tr>
<th>50 pounds (lb), of cabbage</th>
<th>15 quarts (qt) sauerkraut</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 lb ((\frac{1}{3} \text{ bushel})), 3–6-in. cucumbers</td>
<td>7 qt, fresh pack dill pickles ((7–10 \text{ cucumbers per qt}))</td>
</tr>
<tr>
<td>5 qt ((7 \text{ lb})), 1(\frac{1}{2}–3)-in. cucumbers</td>
<td>7 pints ((\text{pl})), sweet gherkins</td>
</tr>
<tr>
<td>4 qt ((6 \text{ lb})), cucumber; medium slice</td>
<td>7 pt, crosscut pickle slices</td>
</tr>
<tr>
<td>5 medium onions, 3 medium peppers, 6 lb, tomatoes = 5 pt, chili sauce</td>
<td>3 qt (3 medium head), cauliflower florets</td>
</tr>
<tr>
<td>3 qt ((7 \text{ lb without tops})), sliced beets</td>
<td>5 pt, pickled cauliflower</td>
</tr>
<tr>
<td>3 lb, whole okra = 6 pt, pickled okra</td>
<td>6 pt, pickled beets</td>
</tr>
<tr>
<td>8 lb ((4–5 \text{ qt})), watermelon rind, unpared</td>
<td>5 pt, watermelon pickle</td>
</tr>
<tr>
<td>1 cup, bread and butter = 6 ounces ((\text{oz}))</td>
<td>4 (\times \frac{1}{4}) in. = 4.8 oz</td>
</tr>
<tr>
<td>1 cup, chopped pickle = 5.2 oz</td>
<td>3 (\times \frac{1}{2}) in. = 2.3 oz</td>
</tr>
<tr>
<td>2(\frac{1}{2}) in. = 0.8 oz</td>
<td>2(\frac{1}{4}) (\times \frac{1}{4}) in. = 0.4–0.5 oz</td>
</tr>
<tr>
<td>2 in. = 9 g</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dill</th>
<th>Sour</th>
<th>Sweet</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>2.6–3.8</td>
<td>3.0–3.5</td>
<td>2.5–3.0</td>
</tr>
<tr>
<td>Moisture (%)</td>
<td>93</td>
<td>61</td>
<td></td>
</tr>
<tr>
<td>Protein (%)</td>
<td>Trace</td>
<td>Trace</td>
<td></td>
</tr>
<tr>
<td>Fat (%)</td>
<td>Trace</td>
<td>Trace</td>
<td></td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>1.5</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>Sodium ((\text{mg/medium}))</td>
<td>928</td>
<td>879</td>
<td></td>
</tr>
</tbody>
</table>

3) In cheese the addition of salt and or ageing in a brine. 4) To remove oxide on metal by soaking in an acid. See dill pickles; fresh packed pickles; pickle, bread and butter; sour pickles; sweet pickles

See Part 2: Calories, Daily Recommendations; Food, Composition; Meat Curing Ingredients; Olives and Pickles, Composition; Vegetables, Canning Dates

pickle and pimiento loaf A cooked meat specialty made from finely chopped, lean pork and beef with sweet pickles and pimientos added
Composition: moisture 57%; protein 11.5%; fat 21%; carbohydrate 5.9%; ash 4.4%
See Part 2: Sausage Identification
pickle, bread and butter

Sliced, fresh, pasteurized, canned, slightly sweetened and spiced, fresh, cucumber pickles
Composition: sodium 101 mg/2 slices (15 g)

pickled apple Apple pickled with salt and malt extract and allowed to ferment

pickled aubergine Pickled eggplant (Solanum melongena)

pickled banana Banana pickled with salt and allowed to ferment

pickled calabash Pickled Lagenaria

pickled carrot A red, alcoholic, strong-flavored beverage made from carrot juice

pickled cauliflower Pickled Brassica oleracea botrytis See cucumber pickle

pickled egg Hard-boiled egg immersed in vinegar containing white peppercorns

pickled herrings Herring baked in vinegar and water containing onion and sugar

pickled meat Cooked, cured, meat fermented in salt, often with spices and vinegar

pickled onion Pickled, small, peeled onions (Allium 1alli) immersed in vinegar, sugar, and pickling spice

pickled pigs’ feet Cooked, cured, pigs’ feet fermented in salt, often with spices and vinegar. Clean pigs’ feet; submerge in 75° pickle for several weeks; cook; chill and remove meat; place in hot vinegar solution of 50% vinegar, 50% water, 1 teaspoon salt/pint; seal in jars. See Part 2: Pork Chart; Pork Cuts; Pork Cuts and Uses; Pork Yield

pickled sausage Polish, hot and Vienna sausages packed in vinegar (5% acetic acid)

pickled sweet pepper Sweet pepper pickled with salt and allowed to ferment

pickled tomato Tomato pickled with salt and allowed to ferment

pickled turnip Pickled Brassica campestris or B. rapa

pickled vegetables Brassica and other species preserved in salt and at a low pH

pickled walnuts Green walnuts, softened by cooking and pickled

pickle, mixed Vegetables (cut) used: cauliflower, cucumbers, green pepper, onion; sometimes also green beans and green tomatoes
Types:
- Sour
- Sweet

pickle products
Classification:
- Brined or fermented pickle products (e.g., dilled cucumbers, sauerkraut)—cured 3 weeks
- Fresh-pack or quick-process pickles (e.g., beets, cauliflower, crosscut cucumber slices, green beans, okra, sweet gherkins, whole cucumber dills)—brined several hours and combined with boiling hot vinegar, spices, and seasoning

Fruit pickles (e.g., pears, watermelon rind, whole fruit)—simmered in spicy, sweet-sour syrup
Relishes (e.g., chili sauce, corn relish, horseradish, pepper—onion, picalilli, tomato—apple chutney, tomato—pear chutney)—fruit or vegetables are chopped, seasoned, and cooked

pickled, sweet
Composition: sodium 128 mg/pickle (15 g)

pickling See buckling

pickling spice A mixture of many spices (varies) blended for pickling purposes. Blends often include: allspice, bay leaves, black pepper (whole), caraway, cardamom, chilies, cinnamon, cloves, coriander seed, dill seed, ginger, mace, mustard seed, red pepper or hot chilies, and white pepper (whole). Other recipes may include additional spices. Sometimes mixed with hydrogenated vegetable oil

picloram 4-amino-3,5,6-trichloropicolinic acid. An herbicide used for control of a wide range of weed and brush species; very soil persistent

picnic 1) The lower area (butt removed) of the pork shoulder; it may or may not be cured and smoked; may be bone-in or boneless. 2) Meal eaten in the open or outside of a building
See Part 2: Cooking in Liquid, Time; Meat, Servings per Pound; Pork Carcass, Retail Yield; Pork Chart; Pork, Cooking; Pork, Cooking Methods; Pork Cooking Yield; Pork Cuts; Pork Cuts and Uses; Pork Shoulder; Pork Wholesale Cuts; Pork Yield; Roasting, Time and Temperature; Simmering Meat

picnic loaf A pork and beef specialty sausage
Composition: moisture 60.2%; protein 15%; fat 17%; carbohydrate 4.8%; ash 3.5%

picnic salami A moist, cooked, unsmoked Australian sausage made from medium chopped, heavily seasoned (garlic), beef and stuffed into artificial casings

pico- (p) A prefix for a quantity one trillion times smaller than the base unit, i.e., 1 picogram (pg) = 10^-12 g

picodon A soft paste, mellow, smooth, sharp, French, valenciay-type cheese made from goat’s milk and matured in white wine

picul (pikul) A unit of weight used in Cambodia, Lao People’s Democratic Republic, and Thailand
1 picul = 0.060 metric ton
As used in Brunei, Hong Kong, Macau, and Malaysia
1 picul = 0.06048 metric ton

pidan Fermented egg in which the yolk is semisolid or hard; a pickled egg; a thousand-year egg
Procedure:

<table>
<thead>
<tr>
<th>Time</th>
<th>Solution</th>
<th>Temp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 days</td>
<td>20% NaCl</td>
<td>25°C</td>
</tr>
<tr>
<td>7-9 days</td>
<td>5% NaOH</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10% NaCl</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2% black tea</td>
<td></td>
</tr>
</tbody>
</table>

Cover with paraffin and they will keep for several months

piddock (Pholas dactylus) An edible, clamlike, bivalve mollusk
pide  A packet, flat bread
pie  A baked dish consisting of a filling (Bavarian cream, custard, fruit, meat, pudding, etc.) and a lower or upper crust or both. Tarts or flambés or pie in a pastry dish without a crust or lid
Storage:
  Cream—refrigerate after baking
  Custard—refrigerate after baking
  Fruit—should be refrigerated; may be reheated prior to use
  10–14 tsp sugar per ½ pie
See Part 2: Baked Products, Frozen Storage Life; Calories, Daily Recommendations; Frozen Food Storage; Grain Products Composition; Portion Size; Storage Times

pie piece  A wine container, varies in size
  1 piece = 47 to 50 gallon
  = 228 liters

pie crust  See pastry pie shell
pie filling  A canned product that is already thickened, sweetened, and spiced
pien nu  A hybrid cross of yak and cattle; males are sterile
pie plant  See rhubarb
Pierce's disease  A bacterial disease that attacks American, bunch grapes; spread by several species of sharpshooters or large leafhoppers; widespread throughout the southeastern states but causes obvious damage only in the Gulf states. Once a vine is infected, there is no cure
Pie Rouge  See Simmental
pierre qui vire  A muenster-type cheese made from cow's milk
pierre sur haute  A blue cheese made from cow's milk
pie shell  Pastry portion of a pies

<table>
<thead>
<tr>
<th>Cups of Pastry Mix for:</th>
<th>Single Crust</th>
<th>Double Crust</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 inch</td>
<td>1–1 1/4 cups</td>
<td>2–2 1/4 cups</td>
</tr>
<tr>
<td>9 inch</td>
<td>1 1/2–1 1/2 cups</td>
<td>2 1/2–2 1/2 cups</td>
</tr>
<tr>
<td>10 inch</td>
<td>1 1/2–1 1/2 cups</td>
<td>2 1/2–2 1/2 cups</td>
</tr>
</tbody>
</table>

For piecrust: 1/4 in. thick with 1/4 in. over edge of pan
Weight of crust:
  8 inch—5 oz
  9 inch—6–6.3 oz
  10 inch—8 oz
See Part 2: Grain Products Composition

piesporter  A fruity, white wine
pietan  See pidan
pietraim  A very muscular breed of hogs
pig (hog; swine)  Young swine, 120 lb or under, either sex; Sus scrofa (European); Sus vittatus (Eastern Asiatic); monogastric; produces pork
See Part 2: Gestation Periods; Muscle and Body Weight; Swine Breeds; Swine Market Classes and Grades; Teeth Eruption

pigeon  A bird of order Columbae; includes doves used as food. Young (less than 4 weeks) are called squab
Class:
  Pigeon
  Squab
  1 pigeon = 1 serving

pigeon pea (alberga; Angola pea; arbar; Congo bean; red gram; tur; yellow dhal; Cajanus cajan)  A tropical legume that has good drought resistance; the pea is cooked to produce dhal for human consumption; the pods and foliage are used for livestock feed
Pods—5–8 cm, 4–7 seeds per pod
Seed color—brown with a white spot at point of attachment
Seed shape—round with one edge flattened
Seed size—18,000 per kilogram

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dry seed</th>
<th>Green seed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>69</td>
<td>69</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>22</td>
<td>7</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>1.5</td>
<td>0.6</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>60</td>
<td>21</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>3.5</td>
<td>1</td>
</tr>
</tbody>
</table>

See cajun

piglet  Young pig

pigment  A substance that absorbs radiant energy in the visible spectrum; a colorant
See Part 2: Meat Pigment

pignoli  Pine cone kernels
pignolia (Indian nut; pignon nut; pine nut; pinon nut)  A small (1/4–1/2 inch), narrow, hard-shell seed of the pine tree grown in Spain and used in confections
See pine kernel

pig-nut (hog nut)  1) Ground chestnut. 2) Bitter nut belonging to the brown hickory tree family

pigouille  A panir-type cheese made from cow's, sheep's, or goat's milk

pigs' feet, pickled  See pickled pigs' feet
pigs' feet, tidbits (pigs' feet cutlets; pork feet cutlets)  Small pieces of meat cut from the forward and upper part of the hind feet of pigs; they are cured, cooked, and canned in vinegar

pig's-foot jell  A jelly made by cooking pigs feet, hearts, tongues, and hocks in water, removing the bones, and letting the product jell

pigs' fry  Heart, lights, liver, and sweetbread

pigskin  Composition: collagen 79%; digestibility (both heated and raw) 95%

pig souse  See pig's-foot jell

pig's tail  Sold whole including part of backbone

pigweed (Amaranthus retroflexus L.)  1) An annual weed sometimes used as food
  Dried leaves—edible
  Leaves, shoots, flowers—green vegetable
  Red, white, black seeds—edible
  2) Wine fermented from Amaranthus spinosus See epazote; lamb's quarter
pike (king pirate; Esoc lucius) A large, northern, freshwater, food fish that has soft and firm, white flesh and a moist, delicate taste.

Types:
- Pickerel (several species)
  - Chain pickerel (Esoc niger)—North America
  - Grass pickerel (E. americanus)—North America
- Pike
  - Muska(e)llunge (great North American pike; mask-inong; E. masquinongy)—North America

Common name:
- Northern Europe, North America (E. lucius)
- Pickerel
- Walleye

They contain many bones and under 2 pounds they are lean (0.9% fat) and tender; over 2 pounds they are tougher; they are often pickled or broiled.

See Part 2: Minerals, Food

pikelet See crumpet

pike perch

North America—walleye

Europe and Caspian—Lucioperca lucioperca

Pike’s peak (heel-of-round) Muscles of the hind shank; less tender and boneless beef roast from the lower round area

pik salami A dry, uncooked, Australian sausage

pikul See picul

pilaf Rice cooked in broth, often with meat, vegetables, herbs, and spices

See pilaff

pilaff See pilau

pilau (pilaf; pilaff; pilav; pilaw; pillau) A dish of light and fluffy rice, raisins, meat, and spices; a stew or soup

See pilaff

pilchard (gypsy herring) A small fish related to the herring family; a fully grown sardine; a sardine is a young pilchard.

- Californian, Pacific (Sardinops caerulea; S. sagax)
- Chilean, Pacific (S. sagax sagax)
- Japanese (S. melanosticta)
- Mediterranean (Sardina pilchardus sardina)
- Northeast Pacific (Sardinops (Sardina) caerulea)
- Oceania (Sardinella neopilchardus)
- Pilchard, Australia (Sardinops neopilchardus)
- Pilchard/Sardine, Europe (Sardina pilchardus)
- South African (Sardinops ocellata)
- Southwest Pacific (S. sagax sagax)
- West Africa (S. ocellata)

Used fresh or canned in brine, oil, or tomato sauce and labeled “chunk light sardine” or “pilchard”.

See Part 2: Fats and Oils, Characteristics; Unsaturated Fatty Acids; Vitamin A, Fish; Vitamin D, Fish

pilchard sardine (Clupea (Sardina) pilchardus pilchardus) A western European sardine

pilgrim See goose

pilli almond (Javanese almond) A thick-shelled, high fat content, kernel (rest of seed not edible) of a plum that may be consumed raw or roasted

pilinut A south Pacific nut usually dyed red

Composition: sodium 3 mg/4 oz (113 g)

pilot biscuit See cracker

pilot cracker See hardtack

pilot fish See whitefish

pilot study method A method developed in a single laboratory, resulting in statistics on method performance. It is helpful in determining the need for further testing and/or the development of official methods

pilot wafer (pilot cracker) A ship’s biscuit used for thickening chowders

pilsener A light-colored, lager beverage high in hops

pimarin An antibiotic added to food in some countries

pimenta leaf oil (pimento leaf oil) A volatile oil obtained by steam distillation of the Pimenta officinalis leaf. Used as a spicy flavoring agent in food; sp. gr. 1.037–1.051

Storage: full, tight, glass container in a cool, dark place

pimento oil (allspice oil; pimento oil) A volatile oil distilled from Pimenta officinalis fruit. Used as an allspice-like, flavoring agent.

Storage: full, tight, glass container in a cool, dark place

pimento (allspice; Jamaica pepper; pimiento; Eugenia pimenta; Pimenta dioica; P. officinalis) 1) Spanish paprika or pimento; allspice; dried berries are 6.5–9.5 mm in diameter; 13 berries per gram.

Composition: volatile oil 2–7%, average 4–4.5%; fatty oil 6–8%; moisture 12% max.; total ash 8.5% max.; HCl insoluble ash 1% max.; pH 4.6–5.2; crude fiber, dry weight basis 27.5% max.; extraneous matter 1% max.; nonvolatile ether extract, dry weight basis 8.5% max.

Also available:

Bottled

Canned—in a salt brine with the peel, stem core, and seed removed

Cups—hand-packed, whole in sweet pickle vinegar

2) Dried unripe berries of West Indian tree. 3) Large red and green sweet pepper See allspice; pimento

See Part 2: Essential Oils; Minerals, Food

pimento berry oil A yellow to brown oil obtained by steam distillation from pimento berries

Composition: eugenol 65–96%; methyl eugenol 8–10%

pimento berry oleoresin An organic (e.g., petroleum ether) extraction of the spice; volatile oil 60–66%

pimento cheese A pasteurized, processed cheese to which pimentos (Spanish peppers) have been added

Composition: moisture 39–40%; protein 22–23%; fat 31–32%; carbohydrate 1–2%; fiber trace; ash 5–6%

See Part 2: Cheese, Vitamin Content; Vitamin A, Milk and Milk Products

pimento leaf oil A brown–yellow liquid distilled from pimento leaves; eugenol 65–96%

pimienta Types:

- Pimienta blanca—white pepper
- Pimienta negra—black pepper

See paprika
pineapple (abacaxi; pina; sugar loaf; Ananas comosus; A. sativa) 571

pimiento (not pimento or allspice) A capsicum (pepper) that may be green, yellow, or red; usually sold in canned form. A Spanish sweet pepper; used as a stuffing for olives and as flavoring agent in cream sauces

1 cup, canned, solids and liquid = 8.2 oz

See capsicum; paprika

See Part 2: Standards, Processed Fruit and Vegetable Products; Vegetable Composition; Vegetables, Canning Dates

pimiento cheese A neufchâtel-cheese mixed with finely ground, sweet, red peppers

pimiento cream cheese Cream cheese mixed with chopped pimiento

Pimms No. 1 A brand of gin flavored with cucumber

pimpeltjens A lemon-flavored liqueur

pina A sweet drink made from pineapples See pineapple

pinacbet See pinakbet

pina colada An alcoholic beverage made from 1 ½ oz (1 jigger) rum, 1 oz cream of coconut, 2 oz pineapple juice, ½ cup crushed ice; shake, pour into glass filled with ice cubes, and add cherry

pinakbet (ginisang; pinacbet) A stew of bitter melon, eggplant, fermented seafood, meat, okra, onions, and tomato

pinapaiton Tripe bile

piñatas Brightly colored decorations made from ruffled tissue over chicken wire, filled with candy, toys, and other surprises; used in a Christmas game in which players break the piñatas with a stick and obtain the contents

pinbone (on carcass) Crest of the ilium

See Part 2: Bone in Retail Cuts

pinbone (on live animals) Bony structure on each side of the tail head (ischial tuberosity)

pinbone (sirloin) A sirloin steak found in the loin end, wholesale cut; it is located in front of the double bone sirloin; it is the first sirloin on the short loin end of the loin end cut

pinch As used in recipes, less than ½ tsp

Pinchow Large dairy cattle that are yellow and white, black and white, or red and white; obtained by crossing local cattle with Simmental; found in western Manchuria

pindar See peanut

pindo A tree fruit

pine A tree that is a fair firewood; 19 million Btus per cord (20% moisture); easy to start; difficult to split; medium smoke; fair coals and many sparks; makes good kindling

pineal gland Reddish gland located behind and above the pituitary; it regulates child growth, puberty, and maturity

See Part 2: Gland Weights
pineapple (abacaxi; pina; sugar loaf; Ananas comosus; A. sativa)

1 small pineapple, peeled, cored, cut into \( \frac{1}{2} \)-in. pieces = 2 cups
5 lb, fresh = 4 pints (pt), frozen
30-oz can = 8 slices (larger and thicker than in a 20-oz can)
20-oz can = 10 slices
1 lb, fresh = 2 cups, grated fresh
= 1.25 cups, small cubes
= 0.5 small pineapple
= 4 servings
13.5 oz, frozen = 3–4 servings
Flat can = 4–5 slices
1 cup, diced, fresh = 5.6 oz
1 cup, chunks, fresh = 7 oz
1 cup, canned, solids and liquids = 8.8–9.8 oz
1 serving = \( \frac{1}{2} \) cup
1 slice, \( \frac{3}{4} \times 3\frac{1}{2} \) in., fresh = 3 oz

Composition

<table>
<thead>
<tr>
<th></th>
<th>Juice</th>
<th>Raw</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>86</td>
<td>85</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>0.1</td>
<td>0.2</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>pH</td>
<td>3.4–3.6</td>
<td>3.5–5.2</td>
</tr>
</tbody>
</table>

High in citric and malic acid and vitamins A (130 IU/100 g) and C (ascorbic acid 24 mg/100 g)

Storage:

<table>
<thead>
<tr>
<th>Temp. (°F)</th>
<th>Relative humidity (%)</th>
<th>Storage life (weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>50–60</td>
<td>85–90</td>
</tr>
<tr>
<td>Ripe</td>
<td>40–45</td>
<td>85–90</td>
</tr>
</tbody>
</table>

They will not ripen further after purchase; use as soon as possible; refrigerate, when ripe; when cut, refrigerate in covered container and use in 2–3 days; chill before serving

2) A variety of midsummer Florida orange. 3) An American, hard cheese See black rot; brown rot; pineapple cheese; thiellaviopsis stalk rot

See Part 2: Calories, Daily Recommendations; Flavor Ingredients, Taste and Flavor Type; Fruit Availability; Fruit Canning Dates; Fruit Classification; Fruit Composition; Fruit, Frozen Yield; Fruit Harvest Dates; Fruit Storage; Minerals; Food; Plant Foods, Composition; Potassium-Rich Foods; Standards, Processed Fruit and Vegetable Products; Storage; Vegetable Storage

pineapple bran Dehydrated, pineapple, process residue
Composition: dry matter 87%; protein 4%; fiber 18%; fat 1%; ash 3%

pineapple, canned
Slices:
20-oz can = 10 whole, cored slices
30-oz can = 8 whole, cored slices (larger in diameter and thicker)
Flat can = 4 to 5 slices
Style: broken slices, chunks, crushed, cubelike, half slices, sauce, spears, tidbits, whole cored cylinders

pineapple cheese A smooth, hard, rennet, yellow, tangy-flavored, domestic, sandwich and dessert cheese; it is shaped like a pineapple and diamond-scored, and rubbed with edible oil during ripening. A sharp, cheddar-type cheese made from whole, cow’s milk that is cured in a net and has a surface, pineapple appearance

pineapple chunks (cuts; spoon cuts) Similar to tidbits except cut from slices twice as thick

pineapple cream cheese Pineapple-flavored, cream cheese

pineapple flavor A mixture of synthetic flavor, pineapple extract, alcohol, and water

pineapple, frozen
Forms: chunks, crushed, garnished with mint or mint-flavored, and tidbits

pineapple juice A sweet juice pressed from fresh, ripe pineapples and canned unsweetened (2.6 tsp sugar per 4 oz unsweetened juice). This is not the material in canned pineapple, which is a syrup and extracted pineapple flavor

1 cup = 8.6–8.8 oz

pineapple liqueur A high-alcoholic, pineapple-flavored beverage with a rum base

pineapple, physiological breakdown (juicy pineapple; water logging) A firm, light-brown water soaking of the flesh of the fruitlets beginning near their attachment to the core; only in advance stages does the surface of the fruit become discolored. Caused by exposure to low temperature (40°F)

pineapple spear (finger; longies) Sections cut vertically from the whole pineapple

pineapple tidbits Fan-shaped pieces cut from slices

Pineau Blanc See Chardonnay

Pineau Noir A variety of purplish black grapes that are fermented to yield red burgundy

pine bark Finely shredded bark used as organic matter; best if composted first

pine kernel (indian nut; pignoli; pignolia; pine nut; pinon nut; pinons; Pinus edulis) Pine seeds that are eaten as nuts and used in cooking and confectionery.

Arolla (Pinus cembra)—Switzerland
Chile or Monkey-puzzle (Araucaria araucana)—Chile
Gerard’s (P. gerardiana)—Himalayan
Mexican nut (P. cembroides)—Mexico
Parana-Bunya (A. bidwillii)—Queensland
Pine (P. sibirica)—Russia
Stone (P. pinea)—Mediterranean

High in fat

pine needle oil, dwarf A volatile oil obtained by steam distillation of Pinus mugo leaves; used as an aromatic flavoring agent in food; sp. gr. 0.852–0.872
Storage: full, tight, glass container in a cool, dark place

pine needle oil, Scotch A volatile oil obtained by steam distillation of Pinus sylvestris needles; used as turpentine-like flavoring agent in food
Storage: in a full, tight, glass container in a cool, dark place

pine nut See pine kernel

pine tar A viscous, sticky liquid or soft solid with a pleasant odor; made by distillation of pine wood; used as a fly repellent
pinga  A crude, light rum
pingue  See Part 2: Poisonous Plants
pinholing  Small holes in a container caused by external rusting or internal attack by the product
pink champagne  A sparkling rosé pink wine with a fruity flavor
pinkelwurst  An imitation, water-cooked (152°F) sausage made from beef fat, pork fat, oat groats, water, and onions and stuffed into 1½–2-in. diameter casings that are 10–12 in.
pink eye  A disease of cattle that results in red and irritated eyes and eyelids; it forms a white scum over the eye and often causes blindness
pink fruit disease  A cherry tree disease in which fruit fails to mature and remains a salmon pink color
pink lady  A pink-colored, gin cocktail
pink salmon  A light meat, light to moderate flavor, finfish See salmon
pink tip  See endoxerosis
pinot  White, gray, and black grapes; Italian grape wine
pinot bianco  A dry, white, Italian wine
pinot blanc  1) Grapes. 2) A dry, white, chablis-type, table wine
pinot chardonnay  A crisp, dry, white, French burgundy with outstanding flavor
pinot gorgio  A dry, white wine
pinot gris  A sweet, white wine
pinot noir  1) Classic grape used to make burgundy. 2) A soft round, full-flavored, red, burgundy-type wine made in France from pinot grapes
pint (dry, U.S.)  A measure of dry volume
1 pint = 33.6 cubic inches (in.³)
   = 0.015625 bushel (bu)
   = 0.50 quart (qt)
   = 0.55059 liter (l)
2 pints = 1 quart (qt)
4 qt = 1 gallon (gal)
1 cup (U.S.) = ½ pint (pt; Brit.)
See Part 2: Volume; Water, Weight and Volume
pintařo (Scromeromorus regalis)  A food fish
pinworm  A food-borne parasite (Enterobius vermicularis) found in human feces; a nematode worm infesting the intestines
See Part 2: Insect Control
pioneersky  A cottage cheese made from skimmed cow's milk with cream added to curd
piora  A tilsit-type cheese matured for 6 months
piora cheese  A cheese made from whole cow's and sometimes goat's milk and that is cured for 4–6 months
pip  The seed of apple, orange, etc.
pipe  1) A variable size wine container
   = 105 Imperial-gallon cask for wine
   = 92 gallons
   = 2 hogsheads
   = 2 pipes = 1 tun
2) To squeeze a soft mixture from a pastry tube
pipeline stocks  The quantity of any product needed to carry on normal processing and marketing operations
piperazine  A drug used as a wormer
piperine  A pungent, alkaloid, active principle of black pepper
piperonal

\[ \text{O} \begin{array}{c} \text{CHO} \\ \text{O} \end{array} \]

Used as a floral-like flavoring agent in food
Storage: cool, dry, dark place
pipette  A glass tube used in the laboratory to measure volume; an opaque band at top of pipette (calibrated for blowout) indicates pipette should be blown out to get calibrated quantity See also TC and TD
pipi  A sorghum beer
pipikaula  Dried beef
pipillae  Nipple-shaped projections on the inner surface of the rumen wall
pipino  See melon-pear
pipo crem  A log-shaped, blue cheese made from cow's milk
piquant  1) An agreeable, stimulating flavor; pleasantly biting; sharp; tart; pungent. 2) A strongly flavored, cow's milk cheese
piquillin  A tree fruit used to make syrup, fermented wine, and brandy
piranha [Serrasalmus (Rooseveltiella) nattereri]  An Amazonian food fish
pirate bug  See minute pirate bug
pirogi  Large, fried, wheat-flour, dough pies filled with cheese, fish, meat, vegetables, and sometimes fruit
pirozhki Small, fried, wheat-flour, dough pies filled with egg, fish, meat, or fruit

pisang ambon A spirit-based, alcoholic beverage; a liqueur

pisco A flowery brandy distilled from wine produced from muscat grapes

pissala A fish (Aphyia, Engraulis or Gobius) sauce that has a short fermentation period

pistacia (Pistacia vera) 1) A small tree that produces a 1-cm edible nut (bean-shaped, covered with gray, red, or purple skin); the nut may be eaten salted or used in confectionery, decorating, and flavoring. The green-colored, almondlike kernel is covered by a red skin; the shell is ivory white, dark, or spotted (latter two often dyed red); 98% split shells is desirable for easy shelling

Size:
California—21–25 per count (larger)
Iran—27–30 per count
Turkish—30–32 per count (smaller)
4–5% refuse
1 pound (lb), shelled = 2 lb, unshelled
1 lb, shelled = 3.2–4 cups
1 cup, shelled = 125 g (4.4 oz)
Composition: moisture 5–7%; protein 19–22%; fat 51–54%; carbohydrate 16–19%; ash 3–3.3%; sodium 6 mg/cup (125 g)

2) Green coloring
See Part 2: Minerals, Food

pistachio nut
1 pound, chopped = 3.5 cups

pistil The part of a flower that contains the ovary
See Part 2: Flower, Imperfect; Flower, Perfect

pistillate Large, female flower (no anther)

pistol A cut of beef from the round up through the chuck

pistola
Pistola hind—7 ribs attached; thin flank, kidney, kidney and pelvic fat, and udder removed
Pistola fore—5 ribs with all of thin flank attached

pistolet A small, middle-split bun

pit The stone (seed) of a fruit, e.g., cherry, date, etc.

pitanga (cayenne; Florida cherry; surinam; surinam cherry) A ½–1 in., juicy, subacid, soft fruit of a South American shrub that changes from green to yellow to red

pitaya (Cereus spp) A tropical American fruit

pit-cured fish Dried fish

pitting 1) The physiological breakdown of citrus fruit rind, producing abruptly sunken spots in the rind. In freshly harvested fruit the pits are small, rarely coalesce, and the affected areas remain firm; rarely leads to decay fungi. Pitting during storage is usually a symptom of chilling injury. 2) Johnston fruit rot is a fungus (Piricularia grisea) disease of bananas that usually appears during ripening as a faint red-brown, ½-in., depressed ring that later becomes more sunken and dark brown to black in color. Pit may extend deep into the peel but does not involve the pulp

pituitary gland Grayish yellow gland located at the base of the brain; it is made up of 2 sections:
Anterior lobe
adrenal cortex stimulating
gonad stimulating
growth-promoting hormone
mammary stimulating
thyroid-stimulating hormone
Posterior lobe
controls blood pressure and pulse rate
regulates contractile organs
regulates energy metabolism
See Part 2: Gland Weights

pivny A soft to semisoft, strongly flavored cheese made from cow's milk, ripened by surface bacteria, and wrapped in metal foil

piwna beer A semidry, cooked, double smoked Polish sausage made from medium chopped, medium seasoned, beef and pork and stuffed into a pork bladder

piyush Sour, diluted milk

pizza A bread-like crust topped with tomato sauce and one or more of the following: anchovies, beef, cheese, green peppers, mushrooms, olives, onions, sausage, or other vegetables; a 5½-in. sector of 13½-in. plain cheese pie = 155 calories
See Part 2: Grain Products, Composition

pizzelle The penis of a male animal, especially a bull; a ring or disk on a carcass that can be used to identify the sex of the carcass

pK value The logarithm (to base 10) of the reciprocal of the equilibrium constant

\[ pK = \log_{10} \frac{1}{K_{eq}} \]

pi Private label

PL/1 (Program Language 1) A high-level, programming language that combines the business-oriented attributes of COBOL and the science-oriented attributes of FORTRAN
planter's punch  A rum and lime juice drink

placenta  1) The ovule-bearing portion of the plant ovary. 2) The membrane that provides the physiological link in the uterus between dam and offspring  
See Part 2: Orange Structure

place of origin  The notation on a wine bottle that indicates where the grapes were grown

pla-chao  A dark, salty, fermented fish paste made from freshwater fish with glutinous rice and potassium nitrate

pla-chaw  A dark, salty, fermented fish paste

pla-chom  A dark, salty, fermented fish paste

place  [American plaice (North America), fluke; long rough dab; sand dab; summer flounder; Hippoglossoides platessoides; Paralichthys dentatus; Pleuronectes platessa (northeast Atlantic)] A flat, saltwater, Atlantic, food fish similar to flounder  
See flounder  
See Part 2: Fish, Storage

plain chocolate (bitter chocolate)  See chocolate

plain condensed milk  Condensed milk that contains min. 7.9% milk fat, min. 25.9% total milk solids (not fat)

plain condensed skimmed milk  Condensed skimmed milk that contains min. 20% milk solids (not fat)

pla-mam  A dark, salty, fermented fish paste made from freshwater fish with roasted rice and pineapple

Planck's quantum

\[ 6.624 \times 10^{-28} \text{ erg-seconds} \]

planimeter  An instrument used to measure irregular areas

planking  A method of broiling fish or meat on a wooden plank

plankton  Freely floating, small or minute (most are microscopic), unattached, plant or animal organisms that have almost no power of locomotion

Type:
Phytoplankton—plant
Zooplankton—protozoan or animal

plant  1) A chlorophyll-bearing organism that synthesizes carbohydrates and proteins; composed of root, stem, flower, and fruit (seeds). 2) To sow seeds or insert cuttings in the ground  
See Part 2: Acre, Plants; Acre, Trees

plait (baking banana; cooking banana; Plantago Musa paradisiaca)  1) A tropical tree bearing banana-like (average 10 oz) green, yellow, red, or red-violet fruit that is larger (up to 1 ft) hard, coarser, and less sweet than a banana; usually cut green (eaten before ripe) and roasted, boiled, baked (350°F for 1 hour), or made into fritters or mashed prior to eating; never eaten raw. It has a bland flavor so spices are usually added. It is also ground into meal or may be dried. Often used as a vegetable or as a substitute for potatoes; a source of vitamin C and fiber; maintains a high starch content even when ripe. 2) Plantago major, a weed whose leaves are used in green salad  
See Part 2: Plant Foods, Composition

planting  See Part 2: Planting Density

plant lice  See aphid

pla-paeng-daeng  A dark, salty, slightly alcoholic, fermented fish paste

pla-paeng-khao-mak  A dark, salty, slightly alcoholic, fermented fish paste

pla-ra  A dark, salty, fermented fish paste with roasted rice

plasma  Liquid or noncellular portion of the blood, lymph, or milk; serum is plasma from which the fibrinogen has not been removed

plasma membrane  A triple-layered cytoplasm under the cell wall that regulates the passage of material into and out of the cell

plasmodiogens  A phospholipid found in food

pla-som  A dark, salty, fermented, fish paste

plaster  A paste composed of lime or gypsum and water that hardens on drying  
See Part 2: Liming Materials

plastic  1) A high-polymer film used for food packaging. 2) A texture capable of continuous and permanent deformation without rupture  
See Part 2: Plastic Permeability

plastic range  Temperature range within which a shortening or fat is readily workable or softened

plastification  See Part 2: Margarine Production

plat du jour  The special of the day

plate  A cut of meat from the forequarter between the brisket and flank; about 12% of a choice steer carcass  
See Part 2: Beef Chart; Beef Cuts; Beef Cuts and Uses; Meat Identification

plate count  A procedure for estimating the number of bacteria by growing the cell into a colony that can be seen by the eye. The nutrient medium is often plate count agar  
See Part 2: Microorganism, Culture Media, Dairy and Food Products; Microorganism, Culture Media, Water and Sewage, Standard Methods; Microorganism, Media

plate count agar  Agar used for standard plate count (or plate count)

platelet  Disk-shaped (2–3 μm in diameter) cells in the blood; average 250,000–500,000/cubic millimeters of blood

pla-fhu-khem  Dried mackerel (Rostrelliger)

platinum (Pt)  A metallic element; at. no. 78; at. wt. 195.09; Group VIII of Periodic Table; oxidation states +2, +4

electron configuration \[ 2–8–18–32–16–2 \]

orbit K L M N O P

plattar  Small pancakes

-pléo-  An affix meaning more

pleura  Membrane lining the chest cavity and covering the lungs; often used in inspection of animals for tuberculosis

pleural  Pertaining to the thoracic, lung, or chest area

pleurisy root (butterfly weed; swallowwort; tuber root; wind root)  A bitter, acrid-tasting herb
**pleuropneumonia**  See Part 2: Microorganism Media

**pliima**  Buttermilk

**Pliofilm**  A trademark for rubber hydrochloride; clear plastic used for food packaging

**plockwurst**  A beef and pork coarse salami; a medium to coarsely chopped, uncooked, smoked or unsmoked, American sausage that is fermented, and/or dry or semidry, and available in links, rings, or large diameter casings; a dry, uncooked, smoked Austrian sausage made from coarsely chopped, medium seasoned (nitrate), beef and pork that is fermented and stuffed into artificial casings with a diameter of greater than 40 mm; a dry, uncooked, smoked Dutch sausage made from coarsely chopped, medium seasoned beef and pork that is fermented and stuffed into an artificial collagen casing

**ploughman’s lunch**  Cheddar cheese, crusty bread, and pickles

**pluck**  1) Organs in the thoracic cavity consisting of heart, lungs, gullet, sometimes liver, and windpipe used as food. 2) Removal of feathers

**plum**  (*Prunus domestica*)  A tree that yields a short-stalked, stone fruit may be red, green, or yellow and is used for dessert. Origin Central Asia; dried plums are called prunes.

- Average yield 100 pounds/tree
- Bearing age 4–5 years
- Sprays required 9
- Useful life 15 years

<table>
<thead>
<tr>
<th>Plum type</th>
<th>Where grown</th>
<th>Variety</th>
<th>Self-fruiting</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>American</td>
<td>Areas with severe winters</td>
<td>Underwood</td>
<td>Large; July; red; freestone</td>
<td></td>
</tr>
<tr>
<td>European</td>
<td>Most states</td>
<td>Blue Damson</td>
<td>Freestone; hardy; preserves</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Bluefre</td>
<td>Late midseason; blue; yellow flesh</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bradshaw</td>
<td>Early; yellow; freestone</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Fellenberg (Italian Prune)</td>
<td>× Midseason; blue; fresh, canned, dried, jam</td>
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<td></td>
<td></td>
<td>French</td>
<td>Used for drying</td>
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<td></td>
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<td>Reine Claude (Green Gage)</td>
<td>× Midseason, September; yellow–green</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Stanley</td>
<td>× Large; blue; yellow flesh; freestone; midseason, September; fresh, dried, canned, jam</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shropshire</td>
<td>× Medium size; dark blue; August; fresh, canned, preserves, jelly</td>
<td></td>
</tr>
</tbody>
</table>

Far West
- President
- Tragedy

Varieties:
- American—small; reddish yellow; often hard
- Beach (*P. maritima*)—eaten raw; jam and jelly
- Bullace—cooked
- Cherry—cooking
- Chickasaw or Mountain—low quality
- Chinese or Japanese—large; yellow; juicy
- Coe’s Golden Drop—dessert
- Damson (*P. insititia*)—cooked; jelly and jam; small; dark blue; yellow flesh; sour
- Egg—large; yellow; oblong
- European—stewed; pie; preserved and canned; various colors and sizes
- Gage—jam and canning; small; round; yellow–green; tart flavor
- Imperial Epicure—eating
- Japanese—fresh eating (yellow or red)
- Jefferson—dessert
- Kirke’s Blue—dessert
- Laxton’s Delicious—dessert
- Lombard—large; purplish red; juicy
- Mirabelle (cloth of gold)—small; cooking
- Natal or Amatungula or Carissa—acid taste
- Pond’s seeding—preserving and drying; very sweet
- Prune—drying; small; oval or round; blue; mild flavor; firm; good shipper
- Prune d’Agen—dried prunes
- Sand cherry—thin skin
- Sloe—wine and gin
- Victoria—cooked; jam; canning; dessert
- Zwetchgen—fermented

*(Continued)*
plum curculio (*Conotrachelus nenuphar*)

<table>
<thead>
<tr>
<th>Plum type</th>
<th>Where grown</th>
<th>Variety</th>
<th>Self-fruited</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japanese (frost protected areas)</td>
<td>Calif.</td>
<td>Burmosa</td>
<td>Partially</td>
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<tr>
<td>North</td>
<td></td>
<td>Casselman</td>
<td></td>
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<td></td>
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<td>El Dorado</td>
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<td></td>
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<td>Friar</td>
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<td></td>
<td>Laroda</td>
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<td></td>
<td>Santa Rosa</td>
<td>Partially</td>
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<tr>
<td>South-west</td>
<td>Frontier</td>
<td>Mathley</td>
<td>Partially</td>
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<tr>
<td></td>
<td></td>
<td>Santa Rosa</td>
<td></td>
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</tr>
</tbody>
</table>

Canned style:
- **Purple plum (prune plums)—not peeled, pitted**
- **Green-yellow plum (Green Gage, Yellow Egg)—peeled, pitted**

Packed in syrup of different strength

Canned varieties:
- **Egg (Yellow egg)—large, yellow, oval**
- **Gage (Green Gage, Reine Claude)—smaller, light green or yellow—green, round**

<table>
<thead>
<tr>
<th>Count per can</th>
<th>No. 2.5</th>
<th>No. 10</th>
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<tbody>
<tr>
<td>Egg plum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fancy</td>
<td>15</td>
<td>57</td>
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<tr>
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<tr>
<td>Standard</td>
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<tr>
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<tr>
<td>Choice</td>
<td>26</td>
<td>90</td>
</tr>
<tr>
<td>Standard</td>
<td>32</td>
<td>110</td>
</tr>
</tbody>
</table>

5% refuse

Equivalents:
- 1 bushel, fresh = 56 pounds (lb)
  = 38–56 pints (pt), frozen
  = 20–30 quarts (qt), canned
- ½ basket = 28 lb
- 4-basket crate = 20–29 lb
- 1 crate, fresh = 20 lb
  = 13–20 pt, frozen
- 10 lb, canned = 10–14 plums
- 1.5–2.5 lb, fresh = 1 qt, canned
- 1 pt, frozen = 1–1.5 lb, fresh
- 1 lb, fresh = 4 medium plums
  = 3 cups, pitted and cut into wedges
  = 3–4 servings
- 1 cup, canned with pits, liquid and solids
  = 9 ounces (oz)
- 1 cup, without pits, liquid and solids = 8.4 oz
- 1 cup, slices = 6 oz
- 1 cup, halves = 5.6–6.2 oz
- 1 cup, diced = 4.6 oz
- 1 medium = 2 inch (in.) diameter
- 1 whole plum, 2 in. = 2.1 oz
- 1 serving = 2 medium-size plums
  = 0.5 cup

Ripen: Uncovered, room temperature, out of sun

Storage: Refrigerate (31–32°F), uncovered (60–85% relative humidity); when ripe, use in 3–5 days

Composition: moisture 79–87%; protein 0.5–0.8%; fat 0–0.2%; carbohydrate 12–20%; ash 0.5%; fiber 1.8%; pH 2.8–3.0

See Part 2: Canned Yield; Flavor Ingredients, Taste and Flavor Type; Fruit and Nut Rootstock; Fruit, Availability; Fruit Classification; Fruit Composition; Fruit, Cooking; Fruit Frozen Yield; Fruit Harvest Dates; Fruit Servings per Pound; Fruit, Simmering; Fruit Storage; Minerals, Food; Organic Acids in Fruits and Vegetables; Plant Foods, Composition; Rot Spoilage; Standards, Processed Fruit and Vegetable Products; Storage; Storage Times; Sugar, Fruit; Wine, Sweet

plumba  A special metal or wire tag used with meat to indicate they are Kosher

plum brandy  A high-alcohol spirit distilled from fermented plum (*Prunus*)

plum, canned  In addition to plums, may also contain natural and artificial flavors, spices, vinegar, lemon juice or organic acid, salt, and artificial colors

Type:
- **Green-yellow (green gage or yellow egg)—usually are peeled, not pitted**
- **Purple (prune)—usually not peeled, not pitted**

Packed in syrup (different sweetness)
- Extra light syrup—11–15% sucrose
- Light syrup—15–19% sucrose
- Heavy syrup—19–25% sucrose
- Extra heavy syrup—25–35% sucrose

plumcot  A hybrid between plum and apricot that has purple skin and red flesh

plum curculio (*Conotrachelus nenuphar*)  A small, grayish brown, humpback (four prominent humps on back) beetle with black and white markings and a pronounced snout; the larvae are whitish, ½-in. long, legless, slightly curved weevil with brown heads that feed on flowers, leaves, buds, and fruit.

Host: apple, apricot, cherry, nectarine, peach, pear, plum, quince and other fruit.

Damage: adults lay eggs in fruit and larvae tunnel in fruit causing half-moon-shaped scars, holes in the skin, and destroying the flesh

Control: pick fallen fruit; spray with malathion or methoxychlor
plump To soak dried fruit in liquid until they swell
plum pudding A pudding made with plums or some­
times other fruit.
Ingredients (originally contain plums): baking soda,
citron peel, currents, eggs, flour, milk, orange peel,
seedless raisins, salt, spices, suet, sugar, and vanilla
extract
plumule A plant bud within the embryo
See Part 2: Corn Kernel; Wheat Kernel; Wheat Kernel
Parts
plutonium (Pu) A synthetic radioactive element of
the actinide series; at. no. 94; mass number of most
stable isotope 242; oxidation states +3 , +4 , +5 , +6.
Highly toxic and fissionable
electron configuration 2 – 8 – 18 – 32 – 33 – 2
orbit K L M N O P Q
Plymouth gin A heavy, flavored, distilled spirit that
is high in alcohol content
Plymouth Rock An American class of chicken that
lays a light brown egg
Varieties Plume color Shank Beak
Barred Gray–white with a Dark bar across each feather
(Also Bantam) Yellow Yellow
Blue Male primarily slate blue with feathers Laced with black,
upper sections dark appearance
Female primarily even shade of slate blue with narrow black lacing
Buff Buff (golden) Dark Yellow
(Columbian Mostly white, neck & Yellow with a dark
head feathers are black stripe
White White Dark Yellow
(Also Bantam) yellow
Partridge Male neck & back feathers green–black Laced with red edging, rest of body darker slate
Female neck & back feathers black with red lacing, rest of body slate
Silver- penciled Male neck & back white with black edging of feathers; rest of body white
Female gray with back penciling; yellow gives lacy appearance
White White Dark Yellow
(Also Bantam) yellow
See Part 2: Poultry Breeds and Varieties
P.M. (Post meridiem) After noon
Pm Symbol for the element promethium
pneumococci The spherical bacteria that cause
pneumonia
See Part 2: Microorganism, Media
pneumonia Inflammation of the lungs
Po Symbol for the element polonium
p.o. (per os) Latin for by mouth
poach To cook (fish or eggs) in liquid (water, milk, or
cream) just below the boiling point (below 190–200°F); time required for eggs is 4–6 min at 185°F (85°C)
poison vetch  A plant having a toxic principle
See Part 2: Poisonous Plants

poisson  Fish (French)

Poisson distribution  A frequency distribution in
which the variables are counted rather than measured. Information available: the number of times an
event occurs, for example, number of “heads” when a coin is tossed 10 times

poivrade  A brown sauce with pepper

poivrade sauce  A brown sauce containing vinegar, wine, and vegetables and flavored with peppercorns

poivre d’ane  A valency-type cheese made from
goat’s or sheep’s milk and rolled into small balls and
covered with rosemary or savory twigs

poke  A leafy vegetable used as greens or in salads;
available in canned or frozen form

pokeberry  (Phytolacca americana)  Shoots used
as a substitute for asparagus

pokeweed  (poakan; poake; pokeberry; pokeroot;
poikan; Phytolocca decandra)  A perennial aro­
matic herb whose leafy shoots are used as a veg­
table; a plant having a toxic principle

Parts eaten:
Berries—toxic
Roots—poisonous
Seedling—spinach-like
Shoots—asparagus-like
See Part 2: Poisonous Plants

Poland  Carbonic, acid water

Poland China  A meat-type breed of hogs that origi­
nated in southwestern Ohio with much the same
early breeding as the Spotted Poland China; the
Berkshire and Irish Grazier were then used to im­
prove the type; these contributed the solid color,
which is black, preferably with 6 white points, and a
drooping ear
See Part 2: Swine Breeds

polar  1) A compound capable of forming ions. 2) A
liquid with a high dielectric constant, e.g., water

polar cod  (Boreogadus saida)  A food fish

polarimetry  An optical analysis based upon the rota­
tion of polarized light when it passes through a solu­
tion

polar plaice  (Liopsetta glacialis)  A food fish

pole dab  (witch flounder)  A food fish

polenta  A meal or flour porridge; a mush made from
various granulated cereals

policeman  A stirring rod made of glass and fitted
with a rubber tip; used for loosening precipitates
from glassware

policy  A course of action

polioencephalomalacia  (PEM)  Softening of the
gray matter of the nervous system

poliomyelitis  A crippling disease caused by a virus
that attacks motor nerve centers in the spine. Possi­
hable hazardous foods that harbor the virus include:
raw shellfish, milk and dairy products, and contami­
nated raw vegetables
See Part 2: Infectious Diseases, Food-Borne

Polish
Food habits:
Animal products—meat, pork, fish
Dairy products—cheese, cottage cheese, milk, sour
cream
Grain—buckwheat, rye, wheat
Vegetables—cabbage, potatoes

Polish clobassy  A moist, cooked, Australian sausage
polished  Having a smooth surface

polished rice  Rice grain with husk and bran re­
moved See also rice

Polish rings  A moist, cooked, unsmoked Irish
sausage made from finely chopped, mildly seasoned
pork and stuffed into an artificial casing

Polish salami  A moist, cooked, smoked Australian
sausage made from medium chopped, heavily sea­
soned (garlic), beef and stuffed into an artificial cas­
ing

Polish sausage  (kielbasa)  1) A coarsely chopped,
uncooked, beef and pork (must be at least 50% pork
or beef must be on the label) sausage that is normally
made into 6-in. lengths; a moist, cooked, or uncooked,
smoked or unsmoked, medium or coarse­ly chopped
American sausage made from mild, medium, or heav­ly
seasoned (garlic), beef and pork and stuffed into a
large diameter link or ring, pork or artificial casing;
an uncooked, smoked sausage made from pork and
beef that is highly seasoned with garlic and requires
thorough cooking. Green peppers are permitted up
to 4%
Composition: moisture 53%; protein 14%; fat 29%;
carbohydrate 1.6%; ash 2.4%
2) A moist, cooked, medium chopped, mildly seasoned
Australian sausage See kielbasa
See Part 2: Sausage, Types

poll  The top of the head; cut horns

pollack  See pollock

pollan  (freshwater herring)  A whitefish

polled  (muley)  Naturally hornless; absence of horns
Inheritance of horns:
Horned cattle (xx) × homozygous polled cattle (yy)

\[
\rightarrow \text{offspring heterozygous polled (xy)}
\]

Horned cattle (xx) × heterozygous polled cattle (xy)

\[
\rightarrow \frac{1}{2} \text{offspring horned (xx) and } \frac{1}{2} \text{offspring heterozygous polled cattle (xy)}
\]

\[
\begin{align*}
  x &= \text{gene for horned} \\
  y &= \text{gene for polled} \\
  xy &= \text{heterozygous polled}
\end{align*}
\]

Polled Cattle Herdbook  Early name of Aberdeen
Angus Cattle Society

Polled Hereford  Similar to Hereford cattle except
that they have no horns; the cattle can be registered
as both Hereford and as Polled Hereford. Warren
Gammon of Des Moines, Iowa, started the breed from
polled mutants of registered Herefords; polled characteristic is a dominant trait. See also Double Standard Polled Hereford and Single Standard Polled Hereford

See Part 2: Beef and Dual-Purpose Cattle

Polled Shorthorn Southern cattle without horns; registered in Shorthorn Herdbook See also Single Standard Polled Durham and Double Standard Polled Shorthorn

See Part 2: Beef and Dual-Purpose Cattle

poll evil A running sore behind the ears

pollination (fertilization of flowers) When the stigma of the pistil is supplied with pollen; when this reaches the ovules, it is called fertilization

Types:
- Close—pollen from the same flower or other flowers from the same plant
- Cross—pollen obtained from other plants from the same species
- Hybridization—pollen obtained from related species

pollack (Boston bluefish; coalfish; deep-sea fillet; green cod; green codfish; greenfish; lythe; pollock; Gadus pollachiuss) A lean fish of the cod family; an Atlantic and Pacific, saltwater, light meat, light to moderate flavor, codlike, finfish that may weigh up to 25 pounds; consumed, fresh and salted Alaska or walleye pollock (Theragra chalcogramma)—4-12 pounds; firm texture; white flesh with a mild flavor
- Atlantic pollock—4-12 pounds; firm texture; white flesh and mild flavor
- Europe (Pollachiuss pollachiuss)
- Pacific (Pollachiuss sirenus)
- Sablefish (Anopoploma fimbria)

Composition: moisture 77%; protein 20%; fat 1%; ash 1.3%

See Part 2: Fish, Storage; Frozen Food Storage

pollock melon A round melon with a gray rind and pink or green flesh

pollute To make impure, unclean, foul, or contaminate

polnische A semidry, cooked, smoked Austrian sausage made from coarsely chopped, medium seasoned (nitrite), beef and pork and stuffed into an artificial casing with a diameter of greater than 40 mm

Po1onium (Po) A radioactive element; at. no. 84; Group VIA of Periodic Table; mass number of most stable isotope, 210; oxidation state +2, +4

electron configuration 2—8—18—32—18—6
-orbit K L M N O P

polony A fine to medium chopped, cooked, smoked, American sausage available in medium to large diameter links or large diameter casings for slicing; a moist, cooked, unsmoked British sausage made from fine, medium, or coarsely chopped, mild or medium seasoned beef and pork and stuffed into beef, pork, or artificial casings

poloxalene A drug used to prevent bloat

poloxamer 407 Used as a stabilizing or solubilizing agent in food; average molecular weight 12,500

Storage: tight container

Polloxamer 331 Used as a stabilizing or solubilizing agent in food; average molecular weight 3,800

Storage: tight container

poloxamer 407

 polyethylene (polythene)

\[
\begin{bmatrix}
H & H & H & H \\
C & C & C & C \\
H & H & H & H
\end{bmatrix}_n
\]
An addition polymer of ethylene having various molecular weights; it may be either linear (amorphous) or crosslinked (crystalline). The linear type may be either high or low density. Branch chains may occur and can be controlled; minimum branching produces high-density or linear polyethylene (HDPE) and more branching produces low-density or conventional polyethylene (LDPE). One of the major uses of linear polyethylene is as packaging film and as a bonding agent in laminates. Film is available in several densities: it has good strength and heat-sealing properties, transparency, low water vapor transmission rate, and high gas transmission rate; low-density type is flexible, tough, transparent; medium density is slightly stiffer; high density is stiff. Laminated polyethylene gives a film that is relatively impermeable to air and moisture; used for vacuum and inert gas packaging; may be used as a masticatory substance in chewing gum

Storage: well-closed container
See Part 2: Plastic Permeability; Wax

Polyethylene glycol (PEG) General formula HOCH₂(CH₂OCH₂)ₓCH₂OH; used as a food coating, binding, dispersing, and plasticizing agent, and as a lubricant or flavoring adjuvant
Storage: tight container

Polyglycerate-60 See ethoxylated mono- and diglyceride

Polyglycerol ester Obtained from animal fat and vegetable oils; used as an emulsifier; made from polyglycerol and fatty acids; can have a range of HLB values

Polyglycerol esters of fatty acids Mixed partial esters of polymerized glycerols with fat or fatty acids; used as a food emulsifier
Storage: tight container

Polyhalogenated aromatic hydrocarbons A long-term stable family of chemicals used in a variety of industrial applications. Polychlorinated biphenyls (PCBs) are a subgroup and are considered environmental pollutants

Polyhydric Containing more than two replaceable hydrogens or hydroxyl groups per molecule

Polyisobutylene Used as a masticatory substance in chewing gum
Low molecular weight—soft
High molecular weight—elastic

Polymer Large complex molecules made up of small molecules (monomers); starch, e.g., is a polymer of glucose

Polymerization A chemical reaction in which molecules combine to form large units. In fats this causes the undesirable formation involving agglomeration or clumping of normal fat and its decomposition products into larger and insoluble chemical units of gums and sludge. It is desirable in drying oils

Polymerize To make large molecules by combining small ones

Polymethylpentane (PMP or TPX)

A plastic that has transparency, rigidity, chemical resistance, impact resistance, and will withstand repeated autoclaving

Polymorphism The property of a substance that enables it to solidify in different crystal forms, e.g., fat. Crystal forms often influence melting points, densities, and heat of fusion

Polynucleated A cell with more than one nucleus, e.g., muscle fiber (cell)

Polyol General name for polyhydroxy compounds

Polypeptide See peptide; protein

Polyphagia Excessive eating

Polyphosphate See phosphate; sodium phosphate
See Part 2: Phosphate

Poly-poly A jam and dough pudding

Polypropylene (PP)

A plastic that is translucent, autoclavable, and has no known solvent at room temperature. An addition polymer of propylene, from which are made films of high tensile strength and high grease resistance that are transparent, brittle at low temperatures, and have medium O₂ and low water permeability; used as packaging film; can be heat-sealed

Polysaccharide A large class of natural carbohydrate polymers, which includes cellulose, starches, water-soluble gums, and seaweed products (phyocolloids). Carbohydrate that is decomposable by hydrolysis into monosaccharides

Polysorbate Nonionic surface-active agent made by esterifying sorbitol [C₆H₁₂(OH)ₓ] with a fatty acid; called polyoxyethylene fatty acid esters; used as emulsifiers, dispersing agents, and as shortening in baked products

Types:
20 (polyoxyethylene, 20, sorbitan monolaurate)—A mixture of laurate partial esters of sorbitol and sorbitol anhydrides (1 mole) condensed with 20 moles of ethylene oxide
582 polysorbate

60 (polyoxyethylene, 20, sorbitan monostearate)—A mixture of stearate and palmitate partial esters of sorbitol anhydrides (1 mole) condensed with 20 moles of ethylene oxide

65 (polyoxyethylene, 20, sorbitan tristearate)—A mixture of stearate and palmitate partial esters of sorbitol and its anhydrides (1 mole) condensed with 20 moles of ethylene oxide

80 (polyoxyethylene, 20, sorbitan monooleate)—A mixture of oleate partial esters of sorbitol and sorbitol anhydrides (1 mole) condensed with 20 moles of ethylene oxide

Used as a food emulsifier or stabilizer

Storage: tight container

polyvinyl butyral (polyvinyl acetal) A high polymer made by a condensation reaction of polyvinyl alcohol and an aldehyde; used as films for packaging and in glass laminates

See Part 2: Plastic Permeability

polyvinyl chloride (PVC)

\[
\text{CH}_2 = \text{CCl}_2 \quad \text{CH} \quad \text{CH}_3
\]

A polymer of vinyl chloride; a transparent film; good grease and solvent resistance; low to medium gas permeability; moderate temperature range; stretchable; can be heat-sealed; used for narrow-mouth bottles and laboratory tubing

See Part 2: Plastic Permeability

polyvinylidene chloride (Saran) A high polymer made by polymerization of vinylidene chloride (CH\(_2\)\(=\)CCl\(_2\))\(_n\); film for packaging meats and poultry

See Part 2: Plastic Permeability

pomace (marc; pummace) Fruit pulp; fish; spent grains; ground apples or fruit; residue left after extracting the oil from the castor bean or fish

See Part 2: Fertilizer Materials

pomace wine A wine made by extracting marc or pomace with sugar solutions and fermenting the extract

pombe A sorghum beer

pome A subdivision of simple fruit; its ovary is a paperlike inner portion, around which is the fleshy part of the plant, e.g., apple, pear

See Part 2: Fruit Classification

pomegranate (apple of Carthage; Punica granatum) A small tree that bears a hard, thick-skinned, orange-red, orange-sized berry; divided into cells; each cell contains a large quantity of jewelike seeds (unpleasant taste) encased in a pink acid-sweet, juicy, slightly tart flesh or pulp; may be eaten raw; juice used for drinks or wine; seeds are used for conserves or syrup (grenadine), soup, sauce, and desserts. Orange-red juice may be used in drinks or frozen; grenadine (made from the juice) used in flavoring drinks; fair source of potassium

Variety:
Sweet
Wonderful

1 fruit = 2 servings

Composition (raw): moisture 82%; protein 0.6%; fat 0.3%; carbohydrate 16%; ash 0.5%; pH 3.0

Storage: 34°F, 85–90% relative humidity, 2 month storage life

See aspergillus black-mold rot; gray-mold rot; grenadine syrup; heart rot

See Part 2: Fruit Composition; Fruit Storage
pomegranate internal breakdown. A physiological disorder in which the arils are light in color, flat, and have an undesirable taste; the pomegranate also has white lines radiating from the seeds to the outer walls.

pomegranate splitting (pomegranate cracking) Can be avoided by picking before fruit becomes mature.

pomegranate sunscald (pomegranate sunburn) The stem-end rind becomes brown, slightly russeted, and tough; considered a blemish.

pomelo (pummelo, shaddock) A tree that has the largest fruit of the citrus species; it has a thick skin and bitter pulp See grapefruit

pomegranate sunscald (pomegranate sunburn) The stem-end rind becomes brown, slightly russeted, and tough; considered a blemish.

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pop (soft drink) A nonalcoholic, effervescent beverage.

popcorn (Zea mays everta) Small ear, hard kernel, Indian corn that explodes when exposed to dry heat (some corn expands 38 times the size of the kernel) and exposes the starchy interior; small pointed round kernels; very hard endosperm. Plant 4–6 lb per acre; harvest when ears are dry. Used as a snack food.

Kinds:
- Hull-less (hulless)—white or yellow; long kernel with thin tender hulls
- Pearl—white or yellow; smooth, rounder kernel
- White rice—white, pointed kernel

“Old maids” or “grannies” are unpopped kernels. For popping: 13–20% moisture corn and 450°F oil; don’t add salt until after popping.

<table>
<thead>
<tr>
<th>Popcorn variety</th>
<th>Length of ear (in.)</th>
<th>Color</th>
<th>Season (days)</th>
<th>Stalk (ft)</th>
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<tbody>
<tr>
<td>Best Yellow</td>
<td>Yellow</td>
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<td>105</td>
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<td>(hybrid)</td>
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<td>White</td>
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<td>(hybrid)</td>
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<td>Japanese Hulless</td>
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<td>White</td>
<td>95</td>
<td>5</td>
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<tr>
<td>South American</td>
<td>7.5</td>
<td>Yellow-orange</td>
<td>105</td>
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<td>(hybrid; 14–16 rows per ear)</td>
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<td></td>
<td></td>
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<tr>
<td>Strawberry</td>
<td>2</td>
<td>Dark red</td>
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<td>(round ear)</td>
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<tr>
<td>White Cloud</td>
<td>2</td>
<td>White</td>
<td>95</td>
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<tr>
<td>(hybrid)</td>
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<tr>
<td>White Hulless</td>
<td>2</td>
<td>White</td>
<td>100</td>
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<tr>
<td>(hybrid)</td>
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</tr>
</tbody>
</table>

70 pounds, on ear = 1 bushel
56 pounds, shelled = 1 bushel
1 cup, unpopped = 20 cups popped

Composition (unpopped): moisture 10%; protein 11–12%; fat 5%; carbohydrate 72%; ash 1.5%

Composition (popped): moisture 4%; protein 11%; fat 5%; carbohydrate 79%; ash 1.3%; sodium (caramel-coated) 262 mg/cup (35 g); sodium (buttered or oiled and salted) 175 mg/cup (9 g); 40 calories per cup; sodium (plain) 1 mg/cup (6 g)

Storage (unpopped): 32°F, 85% relative humidity

See also corn

See Part 2: Grain Products Composition; Seed, Chemical Composition
popover  A thin batter baked into a hollow shell; a light muffin that rises (steam acts as the leavening agent) above the container.
Ingredients: flour (1 volume), liquid (1 volume), eggs and salt; bake 30 min at 450°F, then 15 min at 350°F.

poppadom  See papadam.

poppy  Oil—used for cooking and salads
Seed—black or gray; 900,000 per pound; toasted, browned in butter

poppy leaves  Young leaves can be eaten

poppy, prepared  Made by cooking ground poppy seed, honey, and syrup

poppy seed  *Papaver somniferum L.* The tiny, kidney-shaped blue seed of the poppy plant used as a seasoning; no narcotic content (not the seed of opium poppy); 900,000 seeds per pound; nutlike flavor, odor, and taste; used on rolls and bread
Consumption (oil): iodine number 133–158; refractive index (15.6°C) 1.476–1.478; saponification number 189–197; solidifies at -18°C; sp. gr. 0.924–0.927
Source: Australia, Netherlands, Romania, Turkey
Composition: moisture 6–7%; protein 17.5–18.5%; fat 44–45%; carbohydrate 23–24%; fiber 6–7%; ash 6–7%
See Part 2: Fats and Oils Composition; Physical and Chemical Properties; Tocopherols

popularna  A moist, cooked, double-smoked Polish sausage made from fine or medium chopped, medium seasoned beef and pork and stuffed into a beef casing

population  See Part 2: Population

porbeagle  *Lamna nasus*  A food fish

porcine  Pertaining to swine or pigs

pork salé aux choux  Salt pork and cabbage

porged  Blood vessels removed by hand

porgy  *Calamus spp.; Pagrosomus spp.; Stenotomus spp.*  A food fish See scup

pork  *Sus domestica*  Meat or flesh of swine or pigs; well done = 170°F
1 barrel = 220 pounds
5–5.5 pounds of fresh, untrimmed, with bone, pork loin = 1 quart, canned
Composition: cholesterol 75 mg/3 oz
See Part 2: Animal Foods Composition; Bone; Braising Time; Broiling Time and Temperature; Calories, Daily Recommendations; Cholesterol Control; Food, Composition; Frozen Food Storage; Frozen Meat Storage Time; Glutamate; Glutamate Addition; Grades, Meat; Iron, Daily Recommendations; Liver; Meat and Meat Products Composition; Meat Composition; Meat, Frozen Storage; Meat Identification; Meat Label; Meat, Nutritive Value; Meat, Servings Per Pound; Meat Storage; Minerals, Food; Minerals, Plant or Animal Tissue; Nicacin, Daily Recommendations; Pork Carcass, Retail Yield; Pork, Chart; Pork Cookery; Pork, Cooking; Pork Cooking Methods; Pork Cooking Yield; Pork Cuts; Pork Cuts and Uses; Pork Loin Carving; Pork Loin Cooking; Pork Loin Nomenclature; Pork, Percentages of Daily Recommended Allowances; Pork Storage; Pork Wholesale Cuts; Pork Yield; Riboflavin, Daily Recommendations; Roasting Meat; Roasting, Time and Temperature; Sausage Composition; Simmering Meat; Specific Heat, Meat; Thiamin, Daily Recommendations; Thiamin, Food; Vitamin A, Food

pork and beans  See Part 2: Beans, Peas and Nuts

pork and beef sausage  A moist, cooked or uncooked, smoked or unsmoked American or Irish sausage made from medium chopped, mild or medium seasoned beef and pork and stuffed into pork, sheep, or artificial casings
Composition (American, cooked): moisture 44.5%; protein 13.8%; fat 36%; carbohydrate 2.7%; ash 2.7%; sodium 217 mg/patty (27 g)

pork chop  A single section of pork loin from 1–3 cm thick, often containing a portion of a rib or loin bone
See Part 2: Braising Meat; Braising Time

porker  A pig between 6 and 12 months of age

pork fat  Rendered pork fat is a lower grade of cooking fat than lard, which is rendered from edible organs, bones, cured pork, and cooked pork
See Part 2: Oils and Fats Composition; Unsaturated Fatty Acids

pork gravy  A moist, cooked or uncooked, double-smoked Polish sausage made from fine or medium chopped, medium seasoned beef and pork and stuffed into a beef casing

pork hash  A steamed pork patty with chestnuts, mushrooms, and bamboo shoots

porklet  See Part 2: Pork Loin Cooking

pork link  *Sus domestica*  See Part 2: Meat Composition

pork loaf  *Sus domestica*  See Part 2: Pork, Cooking

pork loucainca  A moist, uncooked Greek sausage made from coarsely chopped, medium seasoned pork and stuffed into a sheep casing

pork, onion, and tomato sausage  A moist, cooked, unsmoked Irish sausage made from medium chopped, medium seasoned pork and stuffed into an artificial casing

Pork Promotion, Research, and Consumer Information Act  Provides for a check-off, referendum and producer-operated promotion and research program for pork

pork roast  A 3 pound or heavier cut of pork shoulder, ham, or loin baked or roasted in an oven

pork roll  A medium to coarsely chopped, cooked, smoked or unsmoked, American sausage available in large diameter links, rings, or large diameter casings; may be fermented and/or dry or semidry; chopped pork is cured and placed in a muslin container; it is then held until a tangy flavor develops; it is normally cooked but not smoked

pork sausage  A sausage made from ground fresh pork with seasoning added; meat ground through the 2-in. plate. Max. 50% trimmable fat; min. 9.4% protein; max. 3% added water. May be fresh or frozen or...
smoked pork. Fresh pork sausage cannot contain pork by-products (cheeks, tongues, heads, lungs, or head meat); may contain antioxidants

Label terminology:

Country style—only natural spices; 75% lean, ground through the 1/4-in. plate. Storage temp: 28-30°F

“Made from” hams, loins, and pork—made from cuts identified in descending order of predominance

Whole hog See whole hog sausage

Seasoning: 30 oz salt, 6 oz black pepper, and 2 oz sage per 100 lb of meat; for hot sausage, add 6 oz of red pepper

Available forms: patties, bulk, or links

<table>
<thead>
<tr>
<th>Composition</th>
<th>Cooked</th>
<th>Raw</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>44.6</td>
<td>44.5</td>
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<tr>
<td>Protein (%)</td>
<td>19.6</td>
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<tr>
<td>Fat (%)</td>
<td>31.2</td>
<td>40.3</td>
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<tr>
<td>Carbohydrate (%)</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>3.6</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Sodium 168 mg per link (13 g)

See Part 2: Niacin, Daily Recommendations; Sausage Identification; Sausage Nutritive Value; Thiamin, Daily Recommendations

pork sausage, country style (rope sausage) Fresh sausage made of coarsely (more coarsely ground than fresh pork sausage) ground, fresh pork; may be smoked or unsmoked; must be thoroughly cooked

pork sausage, fresh A moist, uncooked, unsmoked American sausage made from medium or coarsely chopped, mild, medium, or heavily seasoned pork and stuffed into a pork, sheep, or artificial casing or not stuffed into a casing. Available in bulk, small diameter links, machine formed or extruded patties, and chubs

pork sausage, Irish A moist, uncooked, unsmoked Irish sausage made from fine or medium chopped, mild or medium seasoned pork and stuffed into a pork, sheep, or artificial casing or not stuffed into a casing

pork sausage, Italian style Highly seasoned fresh pork sausage

pork sausage link Fresh sausage (uncooked and unsmoked) made of selected fresh pork; must be thoroughly cooked

pork sausage, smoked country style Uncooked, smoked, mildly cured fresh pork sausage; a moist, cooked or uncooked, smoked, medium or coarsely chopped, mildly seasoned, American, pork sausage that is cured and stuffed into a pork or artificial casing; available in small diameter links or unlinked, in rolls for slicing, or machine formed or extruded

pork trimmings Regular: 50% lean, 50% trimmable fat. Lean: 80% lean, 20% trimmable fat

pork with barbecue sauce Min: 50% meat (weight of cooked and trimmed meat) or 72% uncooked meat

poro metwurst Beef and pork or reindeer salami

porridge A hot breakfast cereal; boiled oatmeal See also oat

---

Portuguese brandy 585

Porto A red, sweet, usually matured, dessert wine from the Douro river valley in northern Portugal; a fortified and blended red wine with a sweet, rich flavor; alcoholic content, 20% by volume

Types:

- Crusted—not from a single year; has a crust; high quality; aged in bottle
- Late bottled vintage—aged; made from single year Madeira—long-lived; burnt flavor
- Bual (boal)—sweet; delicate; dessert
- Malvasia—full body; sweet dessert
- Sercial—dry; bitter; aperitif
- Verdelho—light color and body; dry
- Marsala—Sicilian; dessert wine

Ruby—sweet; robust; deep ruby color; aged in wood
- Gold cap—young; full; rich
- Tawny—blends; tawny brown color; aged in wood
- Directors' bin—aged; rich liqueur wine
- Hunting—light; full body
- Vintage—aged; single year; crusted
- White—white grapes; may be dry; medium or sweet

Port du salut (oka) A dessert cheese with a soft, creamy, buttery, yellow interior; it has a golden crust and a full rich, robust flavor; made from whole or sour cow's milk and ripened 6–8 weeks

See Part 2: Cheese Characteristics; Cheese, Vitamin Content; Vitamin A, Milk and Milk Products

Port du salut cheese A medium flavored (similar to gouda), semisoft, oval (7–10 inches), French, rennet, dessert and supper cheese

Composition: moisture 45–46%; protein 23–24%; fat 28–29%; carbohydrate 0.5–0.6%; fiber 0%; ash 1.5–2.5%

Storage: can be frozen (0°F) if no more than 1 inch thick; use in 6 months

Porter A sweet, low-hops stout; fermented beer brewed from germinated and roasted barley and sugar; English beer having 4.0% alcohol by volume

Porterhouse First steaks taken from the hip end of the short loin; contains a larger portion of the tenderloin muscle than the T-bone

See Part 2: Beef Cuts; Beef Cuts and Uses; Beef Retail Yield; Broiling Meat; Broiling Time and Temperature; Meat Identification; Portion Size

Port glass

1 port glass = 2 oz

Portion control cuts Meat cut to specified weights and/or thicknesses

Portmanteau steak A thick pocket (cut in the side) steak filled with oysters

Porto Rico A moist, sweet variety of sweet potato

Port salut A pale yellow, semisoft, buttery textured cheese with orange and brown wrapping and distinctive flavor

Portuguese cabbage See braganza; couve tronchuda

Portuguese Food habits:

- Animal products—meat for flavor, fish, sausage
- Seasoning—allspice, mace, pepper
- Vegetables—cooked greens

Portuguese brandy A high-alcohol spirit distilled from port
positive balance  Intake of more material (e.g., nitrogen, calcium, or phosphorus) than is excreted; normal during pregnancy and muscle building

post-  A prefix meaning after or behind

post-emergence treatment  Treatment after the plant shows above the soil

posterior  See dorsal (back); in comparative anatomy See caudal (tail)

posterior pituitary  See pituitary gland

postpartum  After birth of young

post-process handling  Conditions to which containers are exposed after sterilizing

Post Toasties  A tradename for a ready-to-eat cereal; 5% sugar

postup  A red wine

potable  Drinkable, e.g., potable water, pure enough to drink

potage  A thick soup

potash  Potassium carbonate, sulfate, or hydroxide  See also potassium  See Part 2: Fertilizer Materials

potassium (K from kalium)  An alkali metal element; at. no. 19; at. wt. 39.100; Group IA of Periodic Table; oxidation state, +1  
electron configuration 2–8–8–1  
orbit K_L_M_N

Body function: in all vegetable and animal cells and it is important along with sodium in water balance in the body

Sources: abundant in almost all plant and animal foods  See Part 2: Beans, Peas and Nuts; Dairy Products, Composition II; Egg Composition, II; Egg Products, Nutritive Value; Fat and Oils, Composition I; Fish and Shellfish Composition I; Fruit and Vegetables Composition; Fruit Composition, Part I; Grain Analysis; Grain Products Composition; Lemon Juice Composition; Macaroni and Noodles Composition; Mau-ure Analysis; Meat Composition; Meat, Nutritive Value; Minerals, Food; Minerals, Plant or Animal Tissue; Normal Solutions; Nutrients in Crops; Olives and Pickles, Composition; pH and Availability of Plant Nutrients; Potassium; Potassium-Rich Foods; Poultry Composition; Soups Composition; Sugars and Sweets Composition; Tomato and Tomato Products, Composition; Vegetable Composition, Part I; Wastes, Agricultural and Industrial; Wheat, Minerals; Wheat Products Composition

potassium acid tartrate (cream of tartar; potassium bitartrate)  [KOOCCCH(OH)CH(OH)COOH]  Used as a food acid or buffer

potassium alginic acid  A potassium salt of alginic acid; equivalent weight 214–238; used as a food thickener, general purpose food stabilizer, and emulsifier

potassium alum  See aluminum potassium sulfate

potassium bicarbonate (KHCO₃)  Comprised of 38.6% potassium; used in food as an alkali or leavening agent; used in low sodium diets; imparts a bitter flavor; a substitute for sodium carbonate in baking soda

Storage: tight container  See Part 2: Normal Solutions

potassium bisulfite (KHSO₃)  Used as a preservative in foods (except meats)  See also sulfur dioxide

potassium bromate (KBrO₃)  Used in food as a dough conditioner, maturing agent, and bleaching agent

Storage: tight container

potassium bromide (KBr)  Colorless or white powder used as a preservative and used to wash vegetables and fruit

potassium carbonate (K₂CO₃)  A general-purpose food additive used as an alkali

Storage: tight container  See Part 2: Normal Solutions

potassium carbonate solution  Usually 50% (weight in weight); used as a food alkali

Storage: tight container

potassium caseinate  A potassium salt of casein

potassium chloride (KC₇)  Used as a nutrient and dietary supplement; also used in food as a salt substitute in low-sodium foods, gelling agent, and yeast food in brewing

Storage: well-closed container  See Part 2: Fertilizer Materials; Normal Solutions

potassium citrate (C₆H₅K₃O₇ • H₂O)  A clear or white odorless powder; used in food as a general purpose additive, buffer, and sequestrant

Storage: tight container

potassium cyanide (KCN)  A poisonous compound used as insecticide and fumigant

See Part 2: Normal Solutions

potassium dichloroisocyanurate  [C₂Cl₂K(NCO)₃]  Used as sanitizer in dishwashing compounds, etc.  See Part 2: Chlorine Availability; Sanitizers

potassium giberellate

potassium glutamate  See monopotassium glutamate

potassium glycerophosphate

used as a food, enzyme activator

Storage: tight container in a dark place

potassium glutamate  See monopotassium glutamate

potassium glycerophosphate

(C₃H₇K₂O₆P • 3H₂O)

Commercial concentrations available from 50–75%; used as a food nutrient or dietary supplement  
Storage: tight container
potassium hydrogen tartrate See Part 2: Reagents, Normal Solutions

potassium hydroxide (caustic potash) (KOH) A food additive and bleaching agent; used as a food alkali
Storage: tight container
See Part 2: Concentration of Commercial Strengths of Acids and Bases; Normal Solutions

potassium iodate (KIO₃) Used as a food maturing agent or dough conditioner
Storage: tight container

potassium iodide (KI) A source of iodine; used as a food nutrient or dietary food supplement; added (0.01%) to salt to improve nutritional value
Composition: dry matter 100%; potassium 21%; iodine 68.2%
Storage: tight container

potassium magnesium sulfate (K₂SO₄·2MgSO₄) Used as a fertilizer ingredient
See Part 2: Fertilizer Materials

potassium metabisulfite (potassium pyrosulfite) (K₂S₂O₅) Used as sanitizer, food preservative, and/or antioxidant
Storage: full, tight container in a cool place
See also sulfur dioxide

potassium metaphosphate (KPO₃) A fertilizer material 0-58-35

potassium nitrate (niter; saltpeter) (KNO₃) Used as a food preservative, in meat curing, and as fertilizer ingredient
Storage: tight container
See Part 2: Fertilizer Materials; Nitrate, Meat Curing

potassium nitrite (KNO₂) Used in meat curing
Storage: tight container
See Part 2: Nitrate, Meat Curing

potassium oxide (K₂O) A chemical reagent and intermediate
See Part 2: Normal Solutions

potassium permanganate (KMnO₄) An oxidizing agent
Gram equivalent wt KMnO₄ (oxidizing agent in acidic solution) = 158/5 = 31.6 grams
Gram equivalent wt KMnO₄ (oxidizing agent in nonacidic solution) = 158/3 = 52.7 grams
See Part 2: Normal Solutions

potassium phosphate
Dibasic (dipotassium monophosphate; dipotassium phosphate)—K₂HPO₄; used as a food sequestrant, buffer, or yeast food
Storage: tight container
Monobasic (monopotassium phosphate; potassium biophosphate; potassium dihydrogen phosphate)—KH₂PO₄; used as a food sequestrant, buffer, or yeast food
Storage: tight container
Polymetaphosphate (potassium Kurrol’s salt; potassium metaphosphate)—(KPO₃)ₙ; used as a moisture-retaining agent or fat emulsifier
Storage: tight container
Pyrophosphate (tetrapotassium pyrophosphate)—K₄P₂O₇; used as a food texturizer or emulsifier
Storage: tight container

200 lb

| N (lb) | 43 | 60 |
| P₂O₅ (lb) | 17 | 10 |
| K₂O (lb) | 77 | 55 |

potassium propionate A food preservative See propionic acid

potassium sorbate

(CH₃CH=CHCH=CH—COOK)

A white, powder, antimicrobial (mold and yeast), food preservative; a mold and yeast inhibitor and fungistat used in beverages, cakes, cheeses, fruit products, margarine, mayonnaise, processed meat, and syrups
Storage: tight container

potassium sulfate (K₂SO₄) A neutral fertilizer material; 0-0-48; a potassium fertilizer that can be used where chlorine is harmful
Storage: tight container
See Part 2: Fertilizer Materials

potassium sulfit e (K₂SO₃) A sulfite salt; used as a food preservative or antioxidant
Storage: tight container
See also sulfur dioxide

potassium tartrate (K₃C₄H₄O₆)
See Part 2: Normal Solutions; Reagents, Normal Solutions

potato [(Irish or white); batata; papa; pomme de terre; Solanum tuberosum] Origin Central and South America; one of the most productive vegetables in terms of food unit per acre. A tuberous root eaten as a vegetable; a perennial herb with rhizomes that become swollen at the tip to produce the edible tubers. Classified according to maturity date and skin color (brown to white); seed ½ bushel per 100 foot row; 60 lb/bu; seed 1500-2000 lb/acre; size of seed approx. 1½ oz; spacing 10 in. in rows 3 ft apart; 110-125 days to maturity (Irish); yield 3 bushels/100 foot rows; yield 15-17 tons/acre. Leave in field until vines are completely dead for best storage; if vines are killed (e.g., frost, etc.) the potatoes will shrivel during storage; if the potatoes are dug when hot they are easily scalded and will not keep; slatted storage is needed for air circulation; if the storage temperature is too hot the potatoes will sweat; if potatoes are dug when green the skin will peel off, a wet product on the market. Freezing point 28-30.9°F; new, intermediate, late maturity dates; round, long shape; brown, white, red, and russet skin color; over 2 in. to less than 1½ in. in size. Used as a cooked vegetable, for making chips, dehydrated potatoes, dextrose, flour, liquor, livestock feed and starch. Approximate nutrient used to grow:
Varieties:

First Early
Arran Pilot—medium tuber; white flesh
Bliss Triumph—round red tuber
Di Vernon—white and purple flesh
Early Ohio—oblong, pink tuber
Early Rose—oblong, flattened, pink tuber; pink flesh
Home Guard—medium tuber; white flesh
Norland—oblong, smooth tuber; red flesh
Ulster Chieftain—medium tuber
Ulster Premier—white flesh
Ulster Prince—kidney-shaped tuber; white flesh

Second Early
Anoka—round to oval tubers; white flesh
Craigs Alliance—white flesh
Craigs Royal—cream and pink flesh
Great Scott—white flesh
Irish Cobbler—round tubers; white flesh
Maris Peer—oval tubers; cream flesh
Norgold—oblong, russet tubers
Ulster Dale—yellow flesh

Main Crop
Dr. McIntosh—kidney-shaped tubers; white skin
Majestic—irregular tubers
Red La Soda—oblong, red tubers
Red Pontiac—oblong, red tubers; stores well
Redskin—round to oval tubers; pink skin; lemon flesh
Superior—tough skin; white flesh

Late Crop
Burbank—long cylindrical, slightly flattened tubers; used for baking
Carmen—oblong, flattened, white tubers
Gold Coin—oblong, flattened white tubers
Golden Wonder—kidney-shaped, russet tubers
Green Mountain—oblong, flattened, white tubers; all-purpose
Katahdin—round, white tubers; keeps well
Kennebec—susceptible to sunburn; white tubers
Late Rose—oblong, flattened, pink tubers; pink flesh
Million Dollar—oblong, flattened, white tubers; all-purpose
Rural—round, flattened tubers; all-purpose
Rural New York—oblong, flattened, white tubers; all-purpose
Rural Russet—oblong, flattened, white tubers; all-purpose
Russet Burbank (Netted Gem; Idaho Russet)—large, cylindrical tuber; used for baking and frying
Sebago—round, white tuber

<table>
<thead>
<tr>
<th>Type of cooking</th>
<th>Variety</th>
<th>Color</th>
<th>Shape</th>
</tr>
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<tbody>
<tr>
<td>Boiled</td>
<td>Early Gem</td>
<td>White</td>
<td>Round</td>
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<tr>
<td>Boiled</td>
<td>Irish Cobbler</td>
<td>White</td>
<td>Blocky</td>
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<tr>
<td>Boiled</td>
<td>Norgold Russet</td>
<td>Lightly russet</td>
<td>Oval</td>
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<tr>
<td>Boiled</td>
<td>Norland</td>
<td>Red</td>
<td>Round</td>
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<tr>
<td>Boiled</td>
<td>Pontiac</td>
<td>Red</td>
<td>Round</td>
</tr>
<tr>
<td>Boiled</td>
<td>Red La Soda</td>
<td>Red</td>
<td>Round</td>
</tr>
<tr>
<td>Boiled</td>
<td>Superior</td>
<td>White</td>
<td>Oblong</td>
</tr>
</tbody>
</table>
Designations
Baking—Russet Burbank best known
General purpose—boiling, frying, and baking
Idaho—large; baking
Long—mealy; baking and mashing
New or early—freshly harvested during late winter
or early spring or potatoes dug before they reach
maturity; do not keep well
Old—later, more mature crop; stores and ships
well
Round or intermediate—harder; waxier; boiling

<table>
<thead>
<tr>
<th>Size</th>
<th>Minimum</th>
<th>Maximum</th>
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<tr>
<td>Small</td>
<td>$1\frac{3}{4}$ in.</td>
<td>$2\frac{3}{4}$ in. or 6 oz</td>
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<tr>
<td>Medium</td>
<td>$2\frac{3}{4}$ in. or 5 oz</td>
<td>$3\frac{3}{4}$ in. or 10 oz</td>
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<tr>
<td>Large</td>
<td>3 in. or 10 oz</td>
<td>$4\frac{3}{4}$ in. or 16 oz</td>
</tr>
<tr>
<td>Not designated</td>
<td>$1\frac{3}{4}$ in.</td>
<td>No maximum</td>
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</tbody>
</table>

16–20% parings as refuse

Equivalents:
1 barrel = 165 pound (lb)
1 bushel = 60 lb
1 bag = 50 lb
100 lb, fresh = 23–25 lb, dried
1 peck = 15 lb
1 lb, fresh = 2–4 servings
\[= 3 \text{ small baking potatoes} \]
\[= 2\frac{3}{4}–3 \text{ cups, diced} \]
\[= 2\frac{3}{4} \text{ cups, cooked} \]
\[= 1.75 \text{ cups, mashed} \]
\[= 4–5 \text{ medium sized potatoes} \]
\[= 4 \text{ small, new potatoes} \]
1 lb, dried granules = $2\frac{3}{4}$ cups
1 lb, dried granules = 10.5 cups, reconstituted
16 ounces (oz), canned = 3–4 servings
1 quart (qt), peeled and cubed
\[= 4 \text{ medium potatoes} \]
1 qt, canned = 4–5 lb, new potatoes
\[= 4–6 \text{ lb, fresh potatoes} \]
1 large potato = 0.5 lb
1 large red potato = 0.4 lb
1 medium potato = 0.25 to 0.3 pound
\[= 0.7 \text{ to 1 cup, peeled and cubed} \]
\[= 0.5 \text{ cup, mashed} \]
\[= 1 \text{ serving} \]
1 small potato = 0.75 cup, peeled and cubed
1 small new potato = 2 oz
1 cup, peeled and cubed = 0.9 medium size potato
1 cup, raw, chopped = 5.2 oz
1 cup, raw, diced = 5.5 oz
1 cup, raw, slices = 5.2 oz
1 cup, boiled, diced = 5.6 oz
1 cup, boiled, mashed = 7.4 oz
1 cup, boiled, riced = 8 oz
1 cup, boiled, sliced = 5.6 oz
1 cup, hash brown = 6.8 oz
2 $\times \frac{1}{2} \times \frac{1}{2}$ in., French fried = 0.2 oz
1 cup, dehydrated = 1.6 oz
1 cup, granules = 7 oz
1 cup, dried granules, reconstituted
\[= 210 \text{ g (7.5 oz)} \]
1 serving = 0.4–0.5 lb

Very waxy—use for salads
Color:
green—caused by exposure to natural or artificial
light; green color contains the alkaloid solanin,
which is bitter and may be poisonous to some
people
red

russel—brownish, rough, scaly, or netted
white—white to buff

Shape: long to round

Types:
New—not a particular kind; they come from field
to market and are not stored; they are not ma­
ture
Round and long white—slightly mealy and used for
boiling, baking, mashing, and frying or all pur­
pose

Round red—waxy; good for boiling
Russet—long, reddish brown; good for baking;
mealy and fall apart when boiled
Cooking: Cover in water after paring to prevent dark­
ening
Baking—400°F for 45 min or until soft
Boiling—diced potato, 20 min; whole potato, 30
min
Frying: 370°F

Canned styles:
Cut
Diced
French fried shoe strings—crisp throughout
Sliced—crisp throughout
Whole

Frozen styles (many sizes and shapes):
Fried—diced, patties, puffs, sliced, strips (mod­
erately crisp on surface)
Unfried—diced, ready to cook patties, shredded,
sliced, whole

Composition

<table>
<thead>
<tr>
<th>Composition</th>
<th>Cooked</th>
<th>Dried</th>
<th>Raw, fresh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>7</td>
<td>77–80</td>
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<tr>
<td>Protein (%)</td>
<td>7</td>
<td>2–2.2</td>
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<tr>
<td>Fat (%)</td>
<td>0.7</td>
<td>0.1</td>
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<tr>
<td>Carbohydrate (%)</td>
<td>82</td>
<td>17–18</td>
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<tr>
<td>Fiber (%)</td>
<td>3.4</td>
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</tr>
<tr>
<td>Ash (%)</td>
<td>3</td>
<td>1–1.1</td>
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</tr>
<tr>
<td>pH</td>
<td>5.5–6</td>
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</tr>
</tbody>
</table>

Storage: 50–75°F; dark and humid; well ventilated
(85–90% relative humidity); cool room (early crop
50–55°F; late crop 38–50°F); use within 1–4 weeks; if
too cold, starch will turn to sugar that will darken on
cooking; if too hot the potato will sprout and shrivel;
if exposed to light or sunburned they will turn green
(undesirable) and be bitter; pits and cold cellars are
often used; freezing point 28°F

See vegetable grade

See Part 2: Ascorbic Acid; Calcium, Daily Recommen­
dations; Calories, Daily Recommendations; Canned
Spoilage Related to pH; Food, Composition; Fruit and
Vegetables Composition; Fruit and Vegetables, Dis­
eease; Frying Time; Iron; Iron, Daily Recommendations;
Microwave Cooking, Fresh Vegetables; Microwave
Processing Time; Minerals, Food; Niacin;
Niacin, Daily Recommendations; Nicotinic Acid, Food;
Nutrients in Crops; Pectin Content; Phosphorus; pH
Values of Biological Materials; Plant Foods, Composition; Planting Density; Poisonous Plants; Portion Size; Potassium; Riboflavin; Riboflavin, Food; Starches and Starchy Roots Composition; Standards, Processed Fruit and Vegetable Products; Starch, Microappearance; Storage; Storage, Dry; Storage Times; Sugar, Vegetables; Sweet Potato and Irish Potato; Thiamin; Thiamin, Daily Recommendations; Thiamin, Food; Transit Temperature; Vegetable Boiling; Vegetable Composition; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Plants; Vegetables, Classification; Vegetable Servings; Vegetable Storage; Vegetable Yield, Canned and Frozen; Vegetable Yield, Frozen, Canned and Fresh; Vegetable Yields; Vitamin A, Food; Vitamin C

**potato aphid** (*Macrosiphum euphorbiae*). A green and pink aphid that also damages spinach in the fall

**potato apple (gadelles)** The small (berry size), purple fruit (seed pod) of the potato plant; eaten raw or as a marmalade

**potato bean** See yam bean

**potato blight** A disease of potatoes caused by fungus *Phytophthera infestans* in which the leaves have a moist, black blotch and the tuber decays; caused the Irish famine in 1845–1847

**potato bread** White bread in which some of the flour is replaced by boiled and mashed potatoes or potato flour

**Potato Center (Centro Internacional de la Papa; CIP)** An agricultural research center located in Peru; Part of the Consultative Group for International Agricultural Research (CGIAR)

**potato cheese** A German cheese made from cow’s (sometimes sheep’s or goat’s) milk and containing caraway seeds

**potato chip** Thin slices of deep-fried (350–390°F) potato; cooking oil is often peanut or cottonseed; moisture 3% max; fat absorption during cooking 32–40%

1 cup, crushed potato chips
  = 2.6 cups uncrushed potato chips
  = 2 ounces

1 serving = 1 ounce

Ten, \( \frac{1}{4} \times 2 \frac{1}{2} \) in. chips = 115 calories

Composition: moisture 2%; protein 5%; fat 40%; carbohydrate 50%; ash 3%; sodium 200 mg/10 chips (20 g)

Defect action level: 6% chips show rot

See Part 2: Calories, Daily Recommendations; Vegetable Composition

**potato, cream of, canned soup**

<table>
<thead>
<tr>
<th>Composition</th>
<th>Condensed with milk</th>
<th>Condensed with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>85.4</td>
<td>86.7</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>1.4</td>
<td>2.3</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>1.9</td>
<td>2.6</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>9.1</td>
<td>6.9</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.2</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**potato, dehydrated** To rehydrate add 22 pounds of dry potatoes to 74 pounds water

**potato eelworm** A microscopic pest that attack potatoes and some weeds; it forms brown cysts and causes plants to be dwarfed

**potato flour** A fine powder made from cooked potatoes that have been dried and ground; used for thickening or mixed with wheat or rye flour for potato bread

Composition: moisture 8%; protein 8%; fat 1%; carbohydrate 50%; ash 4%

**potato grade (USDA)** U.S. Fancy; No. 1; U.S. Commercial

**potato, new (early crop)** Young immature potatoes with very thin skins and poor keeping quality

**potato peeling** 1) Mechanical (abrasive); 20–35% loss. 2) Flame, 2000°F for 30 sec. 3) Lye or caustic soda solution. 4) Steam. 5) Boiling in saturated salt brine

**potato powder** Pulverized potato flakes

**potato ring (Swedish style potato ring)** A cooked or uncooked Swedish sausage made from 65% meat (beef or pork) and 20% potatoes

**potato sausage** A medium to coarsely chopped, uncooked, unsmoked, American sausage available as large diameter links or ring sausage; a raw or cooked, Scandinavian sausage generally made from potatoes (30–39%, fresh), meat (beef and/or pork, minimum 45% fresh), vegetables (onions and parsley), and stuffed into a natural casing

**potato scab** A fungus that produces raised, rusty scabs on tubers without affecting quality

**potato skin** Clean potatoes are baked and the potato is scooped out leaving a \( \frac{1}{2} \)-in. thick shell

**potato starch (farina)** A carbohydrate derived from potato and used as a stabilizing agent; potatoes are ground to a pulp and the fiber is removed by washing
potato, sweet (*Ipomoea batatas*) A tuberous root eaten as a vegetable; spacing, 6–12 inches in rows 3½ feet apart; 140 days, average growth period; curing, 5–8 days at 85°F and 90% relative humidity; 50 pounds per bushel, green; 47 pounds per bushel, cured

Equivalents:

- 2–3 pounds (lb), fresh = 1 quart (qt), canned
- 1 pound (lb) fresh = 3–4 servings

1 large sweet potato = 1 lb
- = 1.5 cup, peeled and sliced
- = 1.3 cups, raw shredded
- = 1.3 cups, julienne strips

1 cup, cooked and mashed
- = 0.75–1.3 medium potatoes

Composition: edible energy value 0.48 megajoules per kilogram; protein 1.6%; pH 5.3; freezing point 29.7°F
Storage: cool room, 55–60°F (not below 50°F), moderately dry for several months (at room temperature, will only keep 1 week)

See sweet potato

See Part 2: Sweet Potato Composition; Sweet Potato Forms; Sweet Potato Nutritive Value; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Yields

potato, yellow Finnish A delicate moist potato with a pale yellow skin

pot au feu A rich meat and vegetable soup

pot-bellied A large abdomen

pot cheese See cottage cheese; farmer’s cheese

poteen Whiskey distilled from fermented malted barley, mixed with oats, rye, or wheat

potential Volts are the unit of measurement of electrical potential.

potential food demand The quantity of food that would be sold in a given market during a unit period of time if existing restraints were not a consideration

potentiator A substance that imparts flavor to a food product to a much greater extent than an enhancer; effective in concentrations of parts per billion, compared with parts per thousand for enhancers. The so-called 5’-nucleotides, e.g., riboflavin 5’-phosphate, are typical potentiators.

potheen Irish moonshine; often made from potatoes

pot herb Any herb that is used in cooking See greens

pot liquor The juices obtained when meat and vegetables are cooked together; the broth from boiling meat

Potomac A variety of orchard grass

pot pie A deep-dish pie made from meat or poultry and vegetables; may have one crust (topped with dumplings) or two crusts

See Part 2: Meat Composition

pot pourri A mixture of seasoned meat

pot roast A meat (usually beef) cooked by braising (a method of slow cooking for less-tender cuts) See also braise

See Part 2: Beef Cuts; Beef Cuts and Uses; Beef Retail Yield; Braising Meat; Braising Time; Meat Composition

pot roast pork See kow yuk

potted cheese (club cheese) A cheese made from ripe cheddar, butter, seasoning, spirits, etc. See cold-pack cheese

potted meat (deviled meat) 1) Finely ground, spiced, cooked fresh meat that is canned with or without cereal; meat, poultry, or game in paste form; meat that has been cooked, pounded, and preserved in containers. 2) A fine- to medium-chopped, cooked, unsmoked, American sausage that is canned sterile or shelf-stable

potted meat food A fine- to medium-chopped, cooked, unsmoked, American sausage that is canned sterile or shelf-stable

pouch 1) A bag or sack. 2) A saclike organ

pouchki (pyshki) A square, fried pie made from wheat-flour dough filled with cheese, fish, meat, or fruit

pouchong A scented oolong tea from Formosa; made by combining tea leaves with flowers of jasmine, gardenia, and yulan (magnolia family)

pouch package A fine- to medium-chopped, cooked, unsmoked, American sausage that is canned sterile or shelf-stable

pouilly fuisse A flexible container made from film or a combination of film, paper, and foil

pouilly fumé A dry white wine

pouilly fuisse A dry white wine

pouilly fumé A smokey, dry, sharp, fruity, white wine

poukou A sorghum beer

poulet A chicken less than 3 months old

pouliigny-saint pierre A pyramid-shaped, soft cheese made from goat’s milk; sometimes wrapped in leaves

poultry Young turkey

poultry Domesticated birds raised for their food value (eggs and meat), including chickens, ducks, geese, guinea, fowl, squab, turkeys, and sometimes domestically raised game birds (pheasant and quail). The term applies to any such bird, whether live or dead. Dark meat has four times as much fat as light meat.

Styles:

- Ready to cook (RTC), with giblets and neck inside the body cavity
- RTC halves
- RTC quarters
- RTC cut-up carcass—less the back, neck, and giblets; remainder is same proportion as carcass
- RTC parts

Types:

- Fresh—chilled but not frozen
- Frozen less than 60 days
- Frozen more than 60 days
- Special frozen

Cooked temperature 180–185°F

Yield: edible portion 55%; bone and inedible parts 12%; loss in dressing and drawing 33%

Storage (meat): Coldest part of refrigerator (32°F); use within 1–4 days; frozen (–10°F) storage life 6 months

See chicken; duck; goose; turkey
poultry

See Part 2: Animal Foods, Composition; Bacteria on Chickens at Various Holding Temperatures; Bone; Bone Age; Calories, Daily Recommendations; Egg Incubation Periods; Frozen Food Storage; Glutamate; Meat and Meat Products, Composition; Meat, Frozen Storage; Meat, Servings per Pound; Microwave Processing Time; Molds, Mycotoxins; Niacin, Daily Recommendations; pH, Post Mortem; Portion Size; Poultry Breeds and Varieties; Poultry Class; Poultry Composition; Poultry Cooking, Frozen; Poultry Dressing Percentage; Poultry Grade Stamp; Poultry Inspection and Grade Stamp; Poultry Inspection Stamp; Poultry Roasting; Poultry Yield; Riboflavin, Daily Recommendations; Specific Heat, Meat; Storage Times; Tenderness of Poultry; Thiamin, Daily Recommendations

poultry back Includes the pelvic bones and all the vertebrae posterior to the shoulder joint; the meat shall not be peeled from the pelvic bones; the vertebral ribs and/or scapulae may be removed or included without affecting the appropriateness of the name; the skin shall be substantially intact.

poultry breast quarter Consists of half of a breast with the wing and a portion of the back attached

poultry breast quarter without wing Consists of a front quarter of a poultry carcass, from which the wing has been removed

poultry by-product meal Dry-rendered, ground tissue of poultry exclusive of feathers, gizzard, and intestinal contents.

<table>
<thead>
<tr>
<th>Composition</th>
<th>By-product* (rendered)</th>
<th>Feathers (hydrolyzed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry matter (%)</td>
<td>93</td>
<td>93</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>59</td>
<td>85</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>13</td>
<td>2.9</td>
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<tr>
<td>Fiber (%)</td>
<td>2.3</td>
<td>1.4</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>16</td>
<td>3.5</td>
</tr>
</tbody>
</table>

*Viscera, feet, and head

poultry dressing percentage

dressing percentage = \[
\frac{\text{ready-to-cook weight}}{\text{live weight}}
\]

Broiler-fryers—70%
Hens—74%
Turkey fryers—74%
Turkey hens and toms
Large—80%
Small—76%

poultry fat Composition: dry matter 99%; fat 99.1% (linoleic acid 20%; oleic acid 40%; saturated 30%)

poultry giblets The gizzard, heart, liver, etc., of a chicken or other poultry, usually chopped and added to gravy after long boiling See also giblet

Storage: Remove from bag and rewrap; place in coldest part of refrigerator; use within 1–2 days.

poultry grades US Grade A; US Grade B; US Grade C

poultry halves Prepared by making a full-length back and breast split of an eviscerated poultry carcass so as to produce approximately equal right and left sides

poultry in sausage Chicken and turkey may be added to a maximum of 15% of comminuted cooked product (excluding water) without using a poultry name. If poultry is used in the name of the product, there is no limit to the quantity used, but must be declared in ingredients; the ratio of poultry skin to muscle must be in same proportions as in the whole bird; kidney and sex glands cannot be included. All-meat product must have the poultry skin removed. All-beef product can contain no poultry.

poultry leg Includes the thigh and the drumstick (i.e., the whole leg) and may include the pelvic meat, but not the pelvic bones; back skin is not included.

poultry leg quarter A poultry thigh and drumstick, with a portion of the back attached

poultry leg with pelvic bone A poultry leg with adhering meat and skin and pelvic bone

poultry manure A slow-release fertilizer; should be composted before use

poultry neck The neck, with or without skin, separated from the carcass at the shoulder joint

poultry quarter One portion of an entire eviscerated poultry carcass, excluding the neck, that has been cut into four approximately equal parts

poultry seasoning (poultry spice) A mixture of spices; frequently used combination is white pepper (35%), sage (15%), ginger (10%), marjoram (10%), savory (10%), thyme (10%), allspice (5%), nutmeg (5%), and sometimes rosemary

Composition: moisture 9–10%; protein 9–10%; fat 7–8%; carbohydrate 65–66%; fiber 11–12%; ash 5–6%

poultry spice See poultry seasoning

poultry stripped back Includes the vertebrae from the shoulder joint to the tail and includes the pelvic bones; the meat may be stripped from the pelvic bones

poultry thigh Shall be disjointed at the hip joint and may include the pelvic meat but does not include the pelvic bones; back skin is not included.

poultry thigh with back portion The same as a poultry thigh but with back portion attached

poultry wing portion A poultry wing from which the drummette has been removed

pound [apothecary's (apoth.)] A measure of weight; the same as a troy pound

pound [avoirdupois (avdp.; US or Brit.)] A measure of weight:

1 lb (avdp.) = 45359 \times 10^4 \text{ milligrams (mg)}
= 4.448 \times 10^6 \text{ dynes (dyn)}
= 7000 \text{ grains (gr)}
= 453.5924277 \text{ grams (g)}
= 350 scruples [3; apothecary's (apo)]
= 291.6667 \text{ pennyweight (dwt)}
= 256.00 \text{ drams (avdp.)}
= 116.6667 \text{ drams (troy or apo.)}
pound per foot (lb/ft)

1 lb (avdp.) (continued)
= 32.17 poundals
= 16 ounces [oz (avdp.)]
= 14.58333 ounces [oz (troy or apoth.)]
= 4.448 joules per meter [J/m; 1 J/m = 1 newton (N)]
= approximately 2 cups of liquid
= 1.2152778 lb (troy or apoth.)
= 0.45359 kilogram (kg)
= 0.04448 joules per centimeter (J/cm)
= 0.00454 quintal
= 0.00050 net (short) ton (1 short ton = 2000 lb)
= 0.0004536 metric ton (1 metric ton = 1000 kg)
= 0.0004464 gross (long) ton (1 long ton = 2240 lb)

1 lb water = 27.648 cubic inches (in.3)
= 0.4534 liter (l)
= 1.198 gallon (gal; US)
= 0.01602 cubic foot (ft3)

See Part 2: Weight

pound (troy [US or Brit.]) A measure of weight used for weighing gold, silver, and jewels [same as an apothecary's (apoth.) pound]
1 lb (troy) = 37324 × 105 milligrams (mg)
= 5760 grains (gr)
= 373.24177 grams (g)
= 288 scruples (3; apoth.)
= 240 pennyweight (dwt; troy)
= 210.6514 drams (avdp.)
= 12 ounces (oz; troy or apoth.)
= 0.8228571 pounds (lb; avdp.)
= 0.37324 kilogram (kg)
= 0.0004114 net (short) ton (1 short ton = 2000 lb)
= 0.0003674 gross (long) ton (1 long ton = 2240 lb)

poundal A measure of weight
1 poundal = 13826 dynes (dyn)
= 14.1 grams (g)
= 0.1383 joule per meter (J/m)
= 0.0108 pound (lb)
= 0.0141 kilogram (kg)
= 0.001383 joule per centimeter (J/cm)

pound cake A cake consisting of one pound each of butter, flour, sugar, and whole eggs; leavened by steam
Types (all with or without icing): marble; old-fashioned; plain; raisin; silver
One 3 1/2 x 3 x 1 1/2-in. slice of old-fashioned pound cake contains 140 calories.
Sodium content: 171 mg, 1/3 cake (55 g)

See Part 2: Baked Products, Frozen Storage Life

pound-foot (lb-ft) A measure of work
1 lb-ft = 1.356 × 107 centimeter-dynes (cm-dyn)
= 13,826 centimeter-grams (cm-gram)
= 0.1383 meter-kilogram (m-kg)

pound of water (lb water) See pound (avoirdupois)

pound per bushel (lb/bu [US]) A measure of density—specific weights
1 lb/bu = 21.6962 pounds per cubic yard (lb/yd3)
= 12.8718 kilograms per cubic meter (kg/m3)
= 0.37324177 grams (g) (kg/m3)
= 288 scruples (oz; apoth.) = 0.13368 pound per gallon, liquid (lb/gal; US)
= 240 pennyweight (dwt; troy) = 0.15556 pound per gallon, dry (lb/gal; US)
= 13.165714 ounces (oz; avdp.) = 0.01602 gram per cubic centimeter (g/cm3)
= 231 pounds per gallon, liquid (lb/gal; US) = 27.6797 grams per cubic meter (g/m3)

pound per cubic foot (lb/ft3) A measure of density
1 lb/ft3 = 27 pounds per cubic yard (lb/yd3)
= 16.0184 kilograms per cubic meter (kg/m3)
= 1.24446 pounds per bushel (lb/bu; US)
= 1.24446 pounds per bushel (lb/bu; US)
= 12 ounces (oz; troy or apoth.) = 0.0005787 pound per cubic inch (lb/in.3)
= 0.0004585 pound per cubic inch (lb/in.3)

pound per cubic inch (lb/in.3) A measure of density
1 lb/in.3 = 46,656 pounds per cubic yard (lb/yd3)
= 27,679.7 kilograms per cubic meter (kg/m3)
= 2150.42 pounds per bushel (lb/bu; US)
= 1728 pounds per cubic foot (lb/ft3)
= 268.803 pounds per gallon, dry (lb/gal; US)
= 231 pounds per gallon, liquid (lb/gal; US) = 27.6797 grams per cubic centimeter (g/cm3)

pound per cubic yard (lb/yd3) A measure of density
1 lb/yd3 = 0.59327 kilograms per cubic meter (kg/m3)
= 0.04609 pound per bushel (lb/bu; US)
= 0.005787 pound per cubic inch (lb/in.3)

pound per foot (lb/ft) Mass (weight) per length
1 lb/ft = 14.88 grams per centimeter (g/cm)
= 1.488 kilograms per meter (kg/m)

pound of water per minute (lb water/min) A measure of the rate of flow
1 lb water/min = 2.670 × 10^-4 cubic feet per second (ft3/s)

pound (avdp.) per acre (lb/acre) Weight per unit area
1 lb (avdp.)/acre = 1.121 kilograms per hectare (kg/ha)

pound per bushel (lb/bu [US]) A measure of density—specific weights
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pound per foot (lb/ft) Mass (weight) per length
1 lb/ft = 14.88 grams per centimeter (g/cm)
= 1.488 kilograms per meter (kg/m)
**pound per gallon** (lb / gal (dry; US)) A measure of density—specific weights

1 lb/gal

= 173.570 pounds per cubic yard (lb/yd^3)
= 102.974 kilograms per cubic meter (kg/m^3)
= 8 pounds per bushel (lb/bu; US)
= 6.42851 pounds per cubic foot (lb/ft^3)
= 0.85937 pound per gallon, liquid (lb/gal; US)
= 0.001029 gram per cubic centimeter (g/cm^3)

= 0.003720 pound per cubic inch (lb/in. ^3)
= 1.1983 gram per cubic centimeter (g/cm^3)

powdered cream Dried cream

19 lb milk = 1 lb powdered cream

powdered grapefruit mix A dehydrated grapefruit juice (simulated or diluted) product; the amount of juice (if any) must be stated on the label.

powdered milk Dried milk

1 lb/gal
7.6 lb milk = 1 lb powdered milk

powdered orange mix A dehydrated orange juice (simulated or diluted) product; the amount of juice (if any) must be stated on the label.

powdered sugar Pulverized (crushed and screened)

granulated sugar

powdery mildew 1) A fungal disease of American bunch grapes; may be controlled by the use of folpet or fungicides on moderately susceptible varieties and by special sprays on very susceptible varieties. 2) A fungal (Sphaerotheca macularis) leaf disease of strawberries Prevention: Do not plant strawberries in places that are shaded or that have poor air circulation. 3) A fungus (Erysiphe graminis) that grows on the leaves, sheaths, and heads of wheat See mildew, powdery

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powdery orange mix A dehydrated orange juice (simulated or diluted) product; the amount of juice (if any) must be stated on the label.

powdery sugar Pulverized (crushed and screened)

pound per square foot (lb/ft^2; psf) A measure of pressure

1 lb/ft^2

= 4.882 kilograms per square meter (kg/m^2)
= 0.35911 millimeter of mercury (mm Hg; column of mercury, sp. gr. 13.59593)
= 0.01602 foot of water (ft H_2O; column of water, max. density at 4°C (39°F))
= 0.01414 inch of mercury (in. Hg)
= 0.006944 pound per square inch (lb/in. ^2)
= 0.004882 kilogram per square centimeter (kg/cm^2)
= 0.0004882 kilogram per square centimeter (kg/cm^2)
= 0.0004882 kilogram per square centimeter (kg/cm^2)
= 0.0004725 atmosphere (atm; 1 standard atmosphere = 760 mm Hg)

Pourly A soft, new cheese made from goat's milk

Pourriture noble A gray mold that attacks over-ripe grapes; it extracts water, which concentrates the sugar; the remaining juice produces a very sweet wine. See barsac; sauternes

Pourriche 1) A sweet, dark, after-dinner cordial. 2) A brandy or liqueur served with black coffee. 3) After-dinner-type liquors

poutassou (Gadus (Micromesistius) poutassou) A food fish

Poweon (Coregonus lavaretus) A food fish

powdered cream Dried cream

powdered grapefruit mix A dehydrated grapefruit juice (simulated or diluted) product; the amount of juice (if any) must be stated on the label.

powdered milk Dried milk

1 lb/gal
7.6 lb milk = 1 lb powdered milk

powdered orange mix A dehydrated orange juice (simulated or diluted) product; the amount of juice (if any) must be stated on the label.

powdered sugar Pulverized (crushed and screened)
prairie  Level to rolling, treeless land that is covered with grasses

prairie chicken (Tympanuchus cupido; T. pallicinctus)  An edible, grouse-type wild bird

prairie oyster  1) A mixture made from a raw egg, 1 tap worcestershire sauce, and brandy, sometimes with salt that is usually taken for a hangover. 2) A shellled, unbroken egg dropped into wine containing some vinegar

praline  A burnt-almond or a brown-sugar and pecan candy; a vanilla- and pecan-based confection

praline sauce  Made from the following ingredients:

- 1 cup coarsely chopped pecans
- 1 cup corn syrup
- 1/2 cup sugar
- 1/4 cup margarine
- 1 beaten egg
- 1 tsp vanilla

praseodymium (Pr)  A rare-earth element; at. no. 59; Group III B of the Periodic Table; at. wt. 140.92; oxidation state +3

prato  A Gouda-type cheese

prattigau  A soft to semisoft, strongly flavored, cheese made from partly skimmed cow's milk and ripened by surface bacteria

dike. 80-95% CaCO3; each pound has the neutralizing equivalent of 0.85–1 lb CaCO3 (or approximately this quantity of dolomitic limestone).

precipitation  In serology, the aggregation of a soluble antigen by an antibody

preclusive specifications  Specifications that restrict the number of bidders

preconditioning  Preparing feeder calf for movement to a feedlot by early weaning, vaccination, etc.

precook  To simmer for a short time preliminary to cooking; to cook a food before it is sold

precooked breakfast link (brown-and-serve)  A medium- to coarse-chopped, cooked, unsmoked American sausage; available in small-diameter links, rolls for slicing, machine-formed, or extruded

precrural  Near or in front of the thighs

precursor  A chemical compound that is converted by processes or exposed to products that partially digest the food before eating

pre-emergence treatment  A treatment that is applied after planting but before the plant shows above the soil

preference  1) A high degree of liking. 2) Choosing one above others. 3) A scale that is a continuum based on the degree of liking or disliking

pregelatinized starch  Starch that has been cooked and dried; will form a paste with cold water

pregnancy  Being with young; the time from conception to birth. See also gestation period

preheat  To allow an oven or broiler to reach recommended temperature before cooking

prehension  The intake of feed or water

premalignant cell  A cell that is intermediate between a normal and a tumor cell

premieres côtes de Bordeaux  1) A medium-sweet white wine. 2) An area on the north bank of the Garonne River (in the Bordeaux region of southwestern France) that produces a medium-sweet white wine

precooked breakfast link (brown-and-serve)  A medium- to coarse-chopped, cooked, unsmoked American sausage; available in small-diameter links, rolls for slicing, machine-formed, or extruded

precooked breakfast link (brown-and-serve)  A medium- to coarse-chopped, cooked, unsmoked American sausage; available in small-diameter links, rolls for slicing, machine-formed, or extruded
premium The cost of an option agreed upon between buyer and seller and the premium paid by the option purchaser to the option seller; premiums for options are determined by supply and demand on the option, the price of the commodity, the length of time of the contract, interest rates or carrying charges, and the volatility of price movements of the commodity.

premix A mixture of one or more microingredients with a carrier

prenatal Before birth

prepackaging Packaging before sale

prepaid Describes transportation costs that have been or are to be paid at the point of shipment

prepector al See Part 2: Lymph Nodes, Ox; Lymph Nodes, Pig

prepencenica Brandy distilled from fermented grapes

preplanting treatment A treatment that is applied before a crop is planted

prepotency The unusual ability of an animal to produce young that resemble it more strongly than the other parent

presecapular See Part 2: Lymph Nodes, Ox, Lateral; Lymph Nodes, Pig; Lymph Nodes, Sheep

preschool child In federal regulations, defined as a child between the ages of 1 and 6–7

present A Gouda-type cheese

preservation Maintaining food in edible condition over long periods of time; prolonging the storage life of foods; may be accomplished by canning, freezing, pickling, drying, or making jellies, jams, or preserves See Part 2: Radiation Preservation

preservative A substance (natural or synthetic) that protects against spoilage, discoloration, or decay and that is used to retard or prevent microbial or chemical spoilage; used in food to prevent spoilage from bacteria, molds, fungi, and yeast, to extend shelf life, and to protect natural color or flavor; e.g., antimicrobial substances, fungicides, antioxidants, nitrates, nitrates, and sodium benzoate See antioxidant; preservation

preserves 1) A fruit preserved in its original shape or cut into pieces and packed in a heavy syrup. 2) A semisolid product made by combining 45 parts of fruit with 55 parts of sugar and cooking until the final soluble solids content is 68% (65% for some fruits); a semisolid, jellied fruit spread that contains whole, sliced, or crushed (generally larger pieces than in jam) fruit that has been cooked until tender and transparent and then packed in jars

Classifications:
Pure goods—min. 45 lb fruit per 55 lb sugar
Compounds—min. 25 lb fruit per 55 lb sugar
Imitation—less than 25 lb fruit per 55 lb sugar
Storage: After opening, cover and refrigerate
See jellied products

preskop A fresh, soft, white to straw-colored cheese

pressed cheese Cheese that has been placed in a cheese press, giving it a close texture See farmer’s cheese

pressed ham A product that may contain finely chopped ham shank to the extent of 25% over that normally present in boneless ham; the weight of cured chopped ham may not exceed the weight of fresh uncured ham, exclusive of bone and fat removed, plus the weight of curing ingredients and 3% moisture.

pressed tablets See candy

pressure, water A measure of the force exerted by a volume of water

0.433 lb/in.²—force per square inch of the base of a column of water 1 ft high

1 lb/in.²—force per square inch of the base of a column of water 2.31 ft high

Pressure (in pounds per square inch) = (2.31) × pressure (in pounds per square inch)

Pressure (in pounds per square inch) = (0.433) × (feet of head of water)

See Part 2: Steam, Properties; Temperatures Corresponding to Gauge Pressure at Various Altitudes

pressure cooker (autoclave) An airtight vessel used to cook by means of superheated water under pressure

<table>
<thead>
<tr>
<th>Pounds of pressure</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>°F</td>
<td>°C</td>
</tr>
<tr>
<td>0</td>
<td>212</td>
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<tr>
<td>5</td>
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<td>25</td>
<td>267</td>
</tr>
<tr>
<td>30</td>
<td>274</td>
</tr>
</tbody>
</table>

See autoclave

pressure gauge 1) An absolute gauge reads total pressure, with zero pressure as its reference point (usually reads 14.7 lb/in.² higher than a relative pressure gauge). 2) A relative pressure gauge reads pressure in excess of atmospheric pressure.

pressure ridge The impression on the inside of a can opposite the double seam

presswater A fat-free, aqueous extract of meat or fish that is obtained by pressing the tissue and then separating the fat
**presswurst** 1) A moist, cooked, smoked, fine-, medium-, or coarse-chopped, mildly seasoned beef, pork, and veal stuffed into beef casings. 2) A moist, cooked, unsmoked, medium-chopped, mildly seasoned pork or veal, Australian sausage that is not stuffed into a casing

**presternum** See Part 2: Lymph Nodes, Ox; Lymph Nodes, Pig

**prestost** (saaland pfarr) 1) Cheese mixed with aquavit (spirit). 2) A cheese made from cow’s milk with rennet added. 3) A semihard cheese made from cow’s milk (pasteurized mixed with unpasteurized)

**pretzel** (bretzel) A crisp, crusty, brittle snack food with a cracker and salt taste; its shape is a two-looped ring, a single ring, and thin or thick rods; they may be either hard or soft; the dough is made from water, wheat flour, and yeast; the pretzel is then made by shaping the dough and placing in boiling water containing soda (0.5% NaOH solution); the surface is then sprinkled with flake salt (sometimes with cumin or caraway seed), and the pretzel is baked.

1 cup, coarsely chopped = 3.2 oz
Composition: moisture 3.5-5%; protein 10%; fat 5%; carbohydrate 76%; ash 5%; salt 3-7%; sodium 101 mg/pretzel (6 g) regular twist, 17 mg per 3 small sticks (1 g) 735 mg/oz
Calorie content:
- 1 Dutch pretzel, twisted = 60 calories
- 5 stick pretzels, regular size (3 in. long) = 10 calories
- 10 stick pretzels, small (2½ in. long) = 10 calories

*See Part 2: Fermented Ingredients; Grain Products, Composition*

**prevalence** The number of instances of illness in a specific population without any distinction between new and old cases; the number of illnesses or of persons ill in a specific population

*Point prevalence—at a stated moment*
*Period prevalence—during a given time period*

**prevented planting** When a producer is unable to plant a crop in a field that he or she intended because of wet weather at planting time or because of floods or other natural disaster

**price** The specific amount (in dollars and cents) paid for a given grade and weight selection

**price protection** An agreement between seller and buyer to grant the buyer any reduction in price (or avoidance of any price increase) that goes into effect prior to the shipment of goods

**price supports** A group of programs intended to keep farm prices from falling below specific minimum values

**price trend** The direction in which prices are moving compared with prices paid the previous trading session

*Higher—bulk sale prices are measurably higher than the previous trading session.*
*Lower—bulk sale prices are measurably lower than the previous trading session.*
*Strong—there is a definite, but not quite measurable, indication of higher prices.*

**prick** To make small holes in food or wrapping

**prickly pear** (barbary fig; barberry fig; cactus pear; Indian fig; Indian pear; tuna fig; *Opuntia ficus-indica*) The edible fruit of a variety of cactus that is pear-shaped (ranging from oval to round), 1 oz to 1 lb, with color from yellow to rose to purple, and with a spiny skin that is removed prior to eating; the skin is red when ripe and the flesh is red to yellow; the pulp contains many seeds and is sweet and juicy. The fruit is eaten raw, in salads, cooked, preserved, or pickled.

Composition (fresh): dry matter 17%; protein 0.8%; fiber 2.3%; fat 0.3%; ash 3.4%
Contains a fair amount of vitamin A and C

**prickly West Indian custard apple** *See custard apple*

**priest’s crown** *See dandelion*

**primal cuts** (beef) The major, or wholesale, cuts from a beef carcass: brisket, chuck (shoulder), flank, loin, plate, rib, round, and shank

**primal cuts** (hog carcass) Belly, Boston butt, ham, loin, and picnic; 43-55% of live hog weight

**primary** 1) Having constant composition and high purity. 2) Principal. 3) A carbon atom that is united by a single valence to chain or ring,

\[
CH_3(CH_2)_nCH_2—
\]

**primary muscle fiber bundles** Bundles made up of muscle fibers bound together by perimysium

**primary root** *See Part 2: Corn Kernel; Wheat Kernel; Wheat Kernel Parts*

**primary standards** (Pri. Std.) A designation of a grade of chemical purity; this is the highest grade of purity and can be used for direct preparation of standard solutions. *See also grade*

**prime** Usual meaning is first, or highest, quality
*See Part 2: Casings, Hog Bungs; Grades, Meat; Lamb Quality Guide; Meat Grade Stamps*

**prime rib** A name sometimes (incorrectly) used for a beef rib roast of any grade

**prime-steam lard** Lard rendered in a closed container with steam

**primocane** Cane produced during the current season

**primost** A mysost-type cheese made from cow’s or goat’s milk

**primost cheese** *See mysost cheese; primost* *See Part 2: Cheese Characteristics*

**primrose** A flower; used in salads and to flavor pies

**primula cheese** A processed cheese made from caramelized whey

**prince’s plume** A plant having a toxic principle
*See Part 2: Poisonous Plants*
principal display panel  The area of a label where the food's name appears; the surface of a package that by either typography, design, or general trade practice is customarily displayed to the consumer.

prinskorv  A moist, cooked, smoked Swedish sausage made from finely chopped, mildly seasoned beef and pork stuffed into sheep casings; three pieces are then knitted together.

print  A size of cheese weighing approximately 10 lb

printanier  A vegetable soup made with chicken and beef broth and with vegetables cut into fancy shapes; often served jelled

Pri. Std.  See primary standards

pritch stick  A stick that is sharp on both ends, used to hold a beef carcass on its back while removing the hide; one end is secured in the floor (corrugated plate) and the other end in the brisket.

Prizehead lettuce  A lettuce variety that has green leaves tinged with a reddish bronze color

pro-  A prefix used to indicate before

probability  The likelihood of an event taking place:

\[ P = \frac{a}{a + b} \]

\[ a = \text{the number of ways event "a" can occur} \]
\[ b = \text{the number of ways event "b" can occur} \]

The probability \( P \) of two independent events occurring simultaneously is

\[ P = qr \]

\[ q = \text{probability of first event} \]
\[ r = \text{probability of second event} \]

The probability \( P \) that two mutually exclusive (i.e., if one happens, the other cannot happen) events will occur is

\[ P = q + r \]

\[ q = \text{probability of first event} \]
\[ r = \text{probability of second event} \]

The probability that an event will occur \( r \) times in \( n \) trials is

\[ P = \frac{n(n-1)(n-2) \cdots (n-r+1)p^r(1-p)^{n-r}}{r!} \]

\[ p = \text{probability of the event occurring on a single trial (e.g., the } p = \text{probability of success)} \]
\[ 1 - p = \text{probability of failure} \]

See Part 2: Defectives in Lot; Normal Curve; Paired Comparisons; Paired Taste Tests; Taste Panel, Difference Tests; Triangular Taste Test + Preference; Triangular Taste Test Probability

probable error \((r; R)\)  A method of expressing error for a single observation and an average of a series of observations such that the number of errors greater than the probable error is equal to the number of errors less than the probable error; the probable error \( r \) of a single observation is

\[ r = \pm 0.6745 \sqrt{\frac{\sum(V^2)}{n - 1}} \]

\[ \sum(V^2) = \text{sum of squares of deviation from the average} \]
\[ n = \text{the number of observations} \]

The probable error \( R \) of an average of measurements is

\[ R = \pm 0.6745 \sqrt{\frac{\sum(V^2)}{n(n - 1)}} \]

Probable error \( = 0.6745 \times (\text{mean square error}) \)
Probable error \( = 0.8453 \times (\text{average error}) \)

probe  A metal ruler used to measure backfat in hogs

procaryotic  A type of microorganism with a primitive nucleus that lacks chromosomal organization and a clearly defined membrane, and in which nuclear division is less complex than mitosis

process  To heat a food (either before or after sealing in a container) for a specific time at a specific temperature to secure commercial sterility

process calculation  A procedure used to calculate processing time and temperature for a canned product

process cheddar  A processed cheddar cheese
Composition: moisture 39-40%; protein 22%; fat 31%; ash 4%; salt 1.7%

1 1-in. cube = 0.6 oz

process cheese  A mixture of fresh and aged natural cheese that has been pasteurized; may have added flavors; made by melting various types of cheese together and adding butter, milk or cream, and an emulsifying agent (disodium phosphate or sodium citrate); the mixture is then run into molds.
Composition: moisture 40%; protein 23-26%; fat 26-30%; carbohydrate 1-2%; ash 4-5%

process cheese food  Similar to process cheese but may have added nonfat dry milk, whey solids, and water
Composition: moisture 43%; protein 20%; fat 24%; salt 1%

process cheese spread  Similar to process cheese food but with higher moisture and lower milk-fat content and, therefore, more spreadable
Composition: moisture 47-48%; protein 16%; fat 21-22%; salt 1%

process deviation  A change in any critical factor that reduces the sterilizing value or raises a question regarding public health or commercial sterility

processed cheese  Any of several types of semihard and hard cheese that has been heated and emulsified, with salt added and sometimes flavor and/or color added, to produce a smooth product

processed food can  See can; sanitary can
processed meat  Meat that has been changed by cooking, curing, drying, or freezing (or a combination of these)

processing  Heating food in a closed container to produce canned food; subjecting a material to a sequence of treatments, e.g., mixing, heating, forming, packaging, etc.

See Part 2: Microwave Processing Time

process inspection  The study of a process, including spot-checking the product at various stages of production

procurement lead time  The time required by a buyer to select a supplier and to place and obtain a commitment for specific quantities of material at specified times

produced and bottled by  On a wine label, means that a designated winery fermented, aged, and bottled the wine

producer assessments  Assessments charged against producers to help pay the cost of a specific price support program

producer's risk  The probability of rejecting a lot that has a percentage of defectives equal to the acceptable quality level; the probability that a lot will be rejected by a sampling plan even though the lot conforms to the requirements

producer subsidy equivalents  A subsidy that would be necessary to compensate producers for the removal of government programs

Product 19  The proprietary name of a ready-to-eat cereal (sugar 9.9%)

production control program  Any of several programs intended to limit production (e.g., acreage allotments, acreage reduction, diverted acreage, marketing quotas, payment-in-kind (PIK), reduced acreage, set-aside, and soil bank programs)

production credit association  See farm credit system

product regenerator  A heat exchanger that uses the heat of the sterile product to heat the nonsterile product

product sealing temperature  The recommended product temperature at time of sealing

profilometer  An instrument used to measure surface roughness

profiterolle  Small balls of bread, fish, meat, fruit, custard, or ice cream

proforma invoice  An invoice prepared by the seller before a sale; shows the invoice from the buyer and the amount that will be submitted to the buyer if the sale is consummated

progeny  Offspring

progestational agent  A substance used to improve growth performance by inhibiting estrus and its adverse effects

progesterone  A steroid that is secreted from the corpora lutea and that can block release of gonadotrophins from the anterior pituitary; if present in sufficient quantities, it will inhibit ovulation.

\[
\begin{align*}
\text{CH}_3
\end{align*}
\]

A hormone that is isolated from bovine ovaries and that can be used in treatment of potential abortion and severe dysmenorrhea

program  A set of coded instructions that directs a computer to perform a particular function

program benefits  Assistance available to farmers who agree to comply with the requirements of government farm programs

program yield  The yield of a crop on a given farm

proklada  A low-fat, sour liquid that is made from milk whey and may have sugar or fruit syrup added to produce a sweet drink or vegetable extracts and salt to produce a savory drink

prokupac  A red wine

prolamin  A simple protein that is insoluble in water, dilute salt solutions, or absolute alcohol but soluble in 70-80% alcohol

prolific  Bearing many young

proline (2-pyrrolidine carboxylic acid)  A heterocyclic amino acid; a dietary supplement and culture medium obtained by hydrolysis of protein

\[
\begin{align*}
\text{CH}_2-\text{CH}_2
\end{align*}
\]

Storage: tight container in a dark place

See Part 2: Amino Acids; Amino Acid, Solubilities; Corn, Amino Acids; Grain Analysis; Manure Analysis; Wheat, Amino Acids; Wheat Products, Amino Acid Compositions

promethium (Pm)  A radioactive rare-earth element of the lanthanide series; at. no. 61; Group IIIB of the Periodic Table; mass number of most stable isotope 147; oxidation state +3; electron configuration 2–8–18–23–8–2

orbit K L M N O P

promoter  A substance that enhances the activity of a catalyst

promotion  A slow cell proliferation that requires prolonged exposure to promoting agent

pronghorn (Antilocapra americana)  An edible, antelope-like, horned ruminant

proof (US)  A measurement of alcoholic strength

1 degree of proof

= one-half of the percentage of alcohol (by volume); e.g., 90 proof = 45% alcohol content
proof spirit  A spirit that contains 50% alcohol by volume; 25% over proof is 75% alcohol by volume See British proof spirit; proof

pro-oxidant  A substance that accelerates oxidation; a substance that speeds up rancidity in fats, e.g., metals such as copper or iron

propachlor (2-chloro-N-isopropyl-acetanilide)  An herbicide
See Part 2: Corn Herbicides

propagate  To reproduce; to have young

propane (C₃H₈) A flammable hydrocarbon gas; used as a fuel and refrigerant
See Part 2: Refrigerants

propazine [2-chloro-4,6-bis(isopropylamino)-S-triazine] A pre-emergence herbicide
See Part 2: Corn Herbicides

propellant  A liquefied gas with a vapor pressure greater than 14.7 lb/in.² at 105°F

propargyl guaethol

\[ \text{O} - \text{CH}_2\text{CH}_3 \]
\[ \text{HC} = \text{CHCH}_3 \]

Used as a vanillin-like flavoring agent in food
Storage: tight container in the dark

prophase  A phase of meiosis
  Prophase I—chromosomes shorten and then thicken
  Prophase II—chromosomes began to unravel

propionaldehyde (C₃H₆O) Used as a sharp flavoring agent
Storage: tight container

propionic acid

\[ \text{CH}_3 - \text{CH}_2 - \text{C} = \text{O} \]

A saturated acid that is sometimes found as a free fatty acid in natural fat and that can be metabolized by humans; the acid and its sodium, potassium, and calcium salts are antimicrobial agents used to prevent mold and rope in bakery products and mold in milk products.
Levels used: 0.32% of flour in white bread and rolls; 0.38% of flour in whole wheat products; 0.3% in cheese products
Storage: tight container

propyl anisole

\[ \text{CH}_3 \text{O} - \text{CH}_2\text{CH}_2\text{CH}_3 \]

Used as an anisielike flavoring agent in food; sp. gr. 0.940–0.944
Storage: full, tight container in a cool, dark place

propylene glycol \( \text{(CH}_3\text{CHOHCH}_2\text{OH}) \) A bitter-tasting, viscous liquid that is used as an emulsifier, humectant (to maintain moisture and give texture to food), solvent, stabilizer, texturizer, thickener, wetting agent and to prevent discoloration; sp. gr. 1.034–1.038
See Part 2: Antioxidant Mixtures

propylene glycol alginate \( [(\text{C}_9\text{H}_{14}\text{O}_7)\text{J} \) The propylene glycol ester of alginic acid, derived from seaweed; used as an emulsifier, stabilizer and thickener in salad dressings and ice cream
Storage: tight container
See algin

propylene glycol monoesters and diesters Produced by treating propylene glycol with fatty acids; used in shortening (to make baked goods light)

propylene glycol monostearate A cream-colored wax; used as a dough conditioner, an emulsifier, a lubricant, and a stabilizing agent in food
Storage: tight container

propylene oxide \( \text{(CH}_3\text{CHCH}_2\text{O}) \) A flammable gas used for the sterilization of food, particularly cocoa, dried and glazed fruit, gums, nutmeats, spices, and starch

propyl gallate A white, bitter-tasting powder that is an antioxidant and is used to retard rancidity in fat; 0.01% in fat (total antioxidant 0.02% in combination)

\[ \text{OH} - \text{C} = \text{O} - \text{CH}_2\text{CH}_2\text{CH}_3 \]

Storage: tight container
See Part 2: Antioxidants, Formulas; Antioxidant Mixtures; Antioxidant Structure

propylparaben

\[ \text{HO} - \text{C} = \text{O} - \text{COO(CH}_2\text{O})_2\text{CH}_3 \]

Used as an antimicrobial agent in food or as a preservative in beverages, cake-type pastries, relishes, and salad dressings.
Storage: tight container

prosciutti [(the plural form of prosciutto) sweet ham capocollo] A dry-cured ham coated with black pepper and originating in Italy; a flat ham (12–20 lb) cured under pressure, with the skin remaining on the ham, and processed at a low temperature for several days; sliced paper-thin for eating; “senza cotica senz ossos” on the label means without skin and without bone. Small prosciutto (prosciuttini) is similar to a prosciutto except it is cooked, and ground black pepper is used as the principal seasoning.

prosciutto A dry, salt-cured (no nitrite or nitrate), aged (air-dried for 1 yr) country ham that is often eaten without cooking; lower salt content than dry-cured hams; flavor varies considerably with processor; also made in a boneless style; usually thin-sliced;
the spices often used are black pepper, cinnamon, coriander, dextrose, mustard, nutmeg, and white pepper.

1 cup, thin strips = 5.2 oz

See prosiutti; prosiutti

prosciutto cotto  Cooked ham

prosciutto crudo  Raw, salted ham

prosciutto ham  Italian-style ham with the skin left on; it is dry-cured under pressure, given a mild heating process, and smoked; it is sliced very thin for eating.

Prosecco di Conegliano  A clear, (still or sparkling) Italian white wine made from Prosecco grapes

prosek  A strong white wine

Proskauer Beck medium  See Part 2: Microorganism, Media

proso  See millet

prostaglandin  Any of several chemically related hydroxy fatty acids that control inflammation, vascular permeability, and certain hormones

prostate gland  A two-lobed body that surrounds the urethra at the neck of the bladder in the male; it secretes an alkaline fluid that cleans and lubricates the urethra prior to ejaculation.

prosthetic group  An active chemical group, such as an enzyme or vitamin, that promotes essential chemical transformation within the body; such groups are sometimes called metabolites.

prostokvasha  Yogurt

protaclinium (Pa)  A radioactive element of the actinide series; at. no. 91; at. wt. 231; Group IIB of the Periodic Table; oxidation states +5, +4; electron configuration 2-8-18-32-20-9-2 orbit K L M N O P Q

protamine  Any of several simple natural proteins that contain only a few amino acids (mostly arginine); they are basic, water-soluble, and not coagulated by heat; found in sperm cells

protective coating  A thin layer of a material that protects the substrate from oxidation or other chemical attack, e.g., electroplated metals, lacquers, packaging films, and paints

protective colloid  A colloidal substance, such as gelatin, that coats particles of fats in a mixture and thus keeps them from coalescing; this function is performed by lactalbumin in milk.

protective food  A food of special value for physical development and the protection of health; a food high in essential nutrients

protein (primary)  Any large complex polymer of a-amino acids (containing nitrogen) linked through peptide bonds; molecular weight may be up to several million daltons. Essential in nutrition and required by all life forms, protein is the chief tissue-builder of every cell in the body. The amino acid composition (18 or more possible amino acids, over half of which the body can make its own supply) of protein determines its nutritive value; highest values are given to proteins with essential amino acids in the ratio needed by the body. The coefficient of digestibility normally varies from 75% to 97% with different foods.

Protein efficiency ratio (PER): Greater than casein (2.5)—USRDA 45 g Less than casein—USRDA 65 g Equivalents: Protein equivalent to 2–3 oz of cooked meat, poultry, or fish = 2 eggs = 1 cup cooked beans or peas = 4 tbsp peanut butter Percentage of protein = (percentage of nitrogen) × 6.25 Guideline: women from 23 to 50 years old need 45–65 g/day on average.

See Part 2: Bananas, Composition; Beans, Peas, and Nuts; Beef, Percentages of Daily Recommended Allowances; Cereal Nutrient Content; Cheese Composition; Cherry Composition; Composition of Food; Concentrated and Dried Milk Products; Corn Kernel Composition; Creams, Butter, and Frozen Desserts; Cultured Dairy Products, Composition; Dairy Products, Composition; Egg Composition; Egg Specifications; Fats and Oils, Composition; Fish and Seafood, Composition; Flour, Extraction Rates; Fluid and Fermented Milks, Composition; Food, Composition; Fruit Composition; Grain Analysis; Grain Products, Composition; Histochemical Test; Lamb, Percentages of Daily Recommended Allowances; Lemon Juice, Composition; Lime Juice, Composition; Macaroni and Noodles, Composition; Manure Analysis; Meat and Meat Products, Composition; Meat Composition; Meat, Nutritive Value; Milk and Cheese, Composition; Milk Breeds, Composition; Milk Composition; Milk, Concentrated Products; Milk, Dry Products; Milk, Mammals, Composition; Milk, Species; Minerals (Trace), Limits; Minerals, Plant or Animal Tissue; Myofibrillar Proteins of Muscle; Oils and Fats, Composition; Oil Meals, Composition; Olives and Pickles, Composition; Packinghouse By-Products Composition; Plant Foods, Composition; Pork, Percentages of Daily Recommended Allowances; Poultry Composition; Protein and Amino Acids, Color Reactions; Protein Factors; Pulses, Nuts, and Seeds, Composition; Recommended Daily Dietary Allowance; Sausage Composition; Sausage Nutritive Value; Seed, Chemical Composition; Seed Composition; Soups, Composition; Soybean Composition; Starches and Starchy Roots, Composition; Sugars and Sweeteners, Composition; Sugars and Syrups, Composition; Sweet Potato Nutritive Value; Tomato and Tomato Products, Composition; Turkey Composition; Variety Meat, Percentage of Daily Recommended Allowances; Vegetable Composition; Wheat and Flour, Composition; Wheat, Parts of Grain; Wheat Products, Composition

proteinase  An enzyme that hydrolyzes protein

protein bumps  Appear as an allergic reaction to certain proteins or to an excess of some amino acids

protein-calorie  A measure of the metabolizable energy of the dietary proteins; obtained by multiplying the crude protein content by 4:

\[
\text{Protein-calorie} = \frac{N \times 6.25 \times 4}{25}
\]

protein-calorie malnutrition  A pathological condition arising from coincident lack of protein and calories
protein concentrate An edible product containing at least 50% protein

protein, conjugated A protein combined with other types of molecules, e.g., hemoglobin, nucleoprotein

protein efficiency ratio (PER) A measure of protein quality, defined as the weight gained divided by protein consumed and usually determined by a test conducted on rats for a 4-week feeding trial with a test protein and a casein-based diet; rat growth rate measured when fed a single protein source in an otherwise adequate diet; also found using 21-day-old rats fed a standardized diet containing 10% protein under standardized conditions

<table>
<thead>
<tr>
<th>Food</th>
<th>PER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole egg</td>
<td>3.5</td>
</tr>
<tr>
<td>Whey protein</td>
<td>3.2</td>
</tr>
<tr>
<td>Beef</td>
<td>2.6</td>
</tr>
<tr>
<td>Casein</td>
<td>2.5</td>
</tr>
<tr>
<td>Soy flour</td>
<td>2.0</td>
</tr>
<tr>
<td>Wheat flour</td>
<td>0.6</td>
</tr>
<tr>
<td>Gelatin</td>
<td>-1.2*</td>
</tr>
</tbody>
</table>

*Missing an essential amino acid, which causes a weight loss

PER = \( \frac{\text{body-weight gain (in grams)}}{\text{protein consumed (in grams)}} \)

protein equivalent The total nitrogenous contribution of a substance compared to a protein (usually plant), e.g., urea protein equivalent of 281%

protein extender (protein filler) Concentrated plant protein, used as an ingredient in animal products

protein filler See protein extender

protein food A formulated food designed to meet a protein nutritional need

protein hydrolysate A partially hydrolyzed protein containing amino acids and polypeptides

protein isolate A pure or almost pure edible product, usually 90% or more protein

pro tem Pro tempore (for the time being)

proteolysis The hydrolysis of protein, e.g., digestion

proteolytic enzyme An enzyme that decomposes proteins to their component amino acids, as occurs in the digestion of foods, e.g., pepsin See also enzyme

proteose A hydrolytic product of proteins that is water-soluble, not coagulated by heat, and is precipitated by saturated ammonium sulfate

proteose agar See Part 2: Microorganism, Media

proteose tryptone agar See Part 2: Microorganism, Culture Media, Dairy and Food Products

Proteus A genus of intestinal microorganisms

See Part 2: Intestinal Microorganisms; Intestinal Microorganisms in Triple-Sugar Agar; Microorganism, Media; Microorganism Reactions on Differential Tube Media; Spoilage, Protein Foods

proteose A single-celled organism (one of the Protista):

Lower—bacteria; blue-green algae
Higher—fungi; higher algae; protozoa

Protista A division of autonomously synthetic (i.e., self-contained or independent) unicellular organisms that lack differentiation of the cell parts for specific metabolic purposes; this kingdom contains algae, bacteria, fungi, protozoa, rickettsia, and viruses

proto- A prefix used to indicate first or primitive

proton A positively charged particle that is present in all atomic nuclei; it has a mass of 1.0076 and is identical with the hydrogen ion (H⁺); charge 4.802 \( \times 10^{-10} \) absolute electrostatic units (esu); diameter 2.8 \( \times 10^{-13} \) cm

See Part 2: Constants, Fundamental

protoplast See cowpea

protoplasm The basic material of all plant and animal cells; a complex mixture of proteins, amino acids, phosphorus, and ribose sugars

See Part 2: Moisture in Biological Materials

protoplast 1) A cell. 2) A cell that does not have a cell wall

Prototista A division of motile, single-celled animal organisms (e.g., amoeba, paramecium) of the higher Protista kingdom

See Part 2: Culture Media

provascular See Part 2: Wheat Kernel Parts

provatura A small, mozzarella-type cheese made from buffalo's or cow's milk

prove To allow bread dough to rise

provengale A style of cooking using garlic, tomatoes, and oil

proven yield Yield that is substantiated by records

providence A medium-flavored, semisoft cheese

provitamin The precursor of a vitamin, e.g., carotene (provitamin A) and ergosterol (provitamin D)

provola A mild, spun-curd (pasta filata) dessert cheese that is made by stretching the curd in hot water; may be smoked

provolette cheese See Italian cheese

provoloni A small, ball-shaped, provolone-type cheese made from cow's milk

provoloncini See Italian cheese

provolone (provolette; provoloncini; provoloni; salami provolone) An Italian hard cheese; hard, smooth, spun-curd (pasta filata) cheese (used for dessert or for grating) usually made from cow's milk, with rennet added, and weighing from 200 g to 30 kg; matured from 2 months to 2 years, with a mellow to sharp flavor (may have a smoky and salty taste) and a firm, smooth texture; light creamy yellow to white interior and thin, light brown to golden shiny surface; may be smoked
Available shapes: ball; pear; sausage; stretch cheese  
Composition: moisture 38–41%; protein 25–28%; fat 26–28%; carbohydrate 2–3%; fiber 0%; ash 4–5%; salt 3% (sodium 248 mg/oz)  
Similar types of cheese are mozzarella and scamorza.  
Storage: can be frozen (0°F) if no more than 1 in. thick; use within 6 months  

See also Italian cheese; provoloni  
See Part 2: Cheese Characteristics; Cheese, Vitamin Content; Dairy Products, Composition II

provoloni A hard, white, mellow-to-sharp, piquant, smoky, tangy cheese made from whole milk; it has a golden yellow to brown shiny surface bound with a cord, and a light, creamy to yellowish white interior; pear- to sausage-shaped See also Italian cheese; provolone

proximate analysis A chemical analysis that shows the content of moisture, protein, fat, carbohydrate (including fiber [cellulose]), and ash

p.r.r Latin for as needed

prune (Prunus domestica) A fruit that is 83% edible; the primary sugar is dextrose. 1) A dried plum, usually purplish black. 2) A variety of plum whose high-sugar fruit is suitable for drying (can be dried whole, without fermentation of the pit); the purplish blue-black fruit has a moderately firm flesh that separates easily from the pit; available both fresh and dried. Before drying, prunes are lye-dipped to puncture the skin and make it thinner, which promotes rapid drying and improves the skin texture; the lye is removed by washing before drying.

Types:  
French or Agen (also called Sweet, California, or Santa Clara)—oval; dark blue, glossy thick skin; meat clings to the smooth pit  
Imperial, Large Imperial—extra large  
Italian or Oregon—tart; oval; dark blue, thin, wrinkled skin; meat separates from round pit  
Large sugar  
Silver—large, oval; golden when ripe; thin tough skin; mild sweet flavor

Number of prunes per pound:  
French—30–40; 40–50; 50–60; 60–70; 70–80; 80–90; 90–100; 100–120; 120 up  
Imperial—15–20; 18–24; 20–30  
Italian—25–35; 35–45; 40–50; 50–60; 60–70; 70–80; 80–90; 90–100

Pitted prunes: max. 3% may contain whole pit or a pit fragment exceeding 2 mm

Refuse: 6–20% (smaller prunes may yield more waste)  
1 lb, dried = 2 1/2 lb California prunes, fresh  
= 3–4 lb other prunes, fresh  
= 2–3 cups  
1 lb, dried, whole  
= 2 1/2 cups [1 cup = 175 g (6.2 oz)]  
= 4–4 1/2 cups, cooked [230 g (8.1 oz)]  
1 lb, dry, unpitted  
= 90 small prunes  
= 55 med. prunes  
= 25 large prunes  
1 lb, canned = 10–14 prunes  
1 cup, pitted, ground = 9.7 oz  
1 cup, canned = 9.2–9.4 oz

1 cup med. prunes, whole, with pits = 6.6 oz  
1 cup, pitted, chopped = 6.3 oz  
1 serving = 5 dried prunes  
1 large prune, dried = 9 g  
1 med. prune, dried = 7 g  
1 small prune, dried = 5 g

Canned styles:  
Dried—ready-to-serve  
Breakfast (or prepared) prunes—packed in own juice

<table>
<thead>
<tr>
<th>Variety</th>
<th>Flavor</th>
<th>Name</th>
<th>Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>French</td>
<td>Sweet</td>
<td>Prunes in syrup or prepared dried prunes</td>
<td>Dried, with syrup</td>
</tr>
<tr>
<td>Italian or Oregon</td>
<td>Tart</td>
<td>Fresh prunes or Italian prunes</td>
<td>Dried, without syrup</td>
</tr>
<tr>
<td>Italian</td>
<td>Tart</td>
<td>Fresh prunes</td>
<td>Fresh, whole, unpitted</td>
</tr>
</tbody>
</table>

prunes in syrup Dried, with or prepared syrup  
Dried, without syrup  
Prunes in syrup or prepared dried prunes  
Canned dried prunes  
Dried, without syrup

<table>
<thead>
<tr>
<th>Count per can</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can size</td>
</tr>
<tr>
<td>No. 2</td>
</tr>
<tr>
<td>No. 2 1/2</td>
</tr>
<tr>
<td>No. 10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dried prunes</th>
<th>Juice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>3–24</td>
<td>80</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>2–3</td>
<td>0.4</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>0.5</td>
<td>0.1</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>71–91</td>
<td>19</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>pH</td>
<td>3.1–5.4</td>
<td>3.7–4.3</td>
</tr>
</tbody>
</table>

Sugar 4 tsp/3–4 med., dried  
See also plum and other prune entries

See Part 2: Food, Composition; Fruit, Availability; Fruit, Canning Dates; Fruit Classification; Fruit Composition; Fruit, Dried, Simmering; Fruit, Frozen Yield; Fruit Harvest Dates; Fruit Servings; Microwave Cooking, Fruit; Minerals, Food; Plant Foods, Composition; Potassium-Rich Foods; Standards, Processed Fruit and Vegetable Products

prune, breakfast See prunes, prepared

prune butter See prune lekvar

prune juice The water and some of the pulp (obtained by pressure) from dried, cooked, pitted, and strained prunes  
1 cup = 8.6–9 oz

prune-kernel paste Produced by cooking blanched, ground prune kernels with sugar
prune lekvar (prune butter) A thick puree of prunes; used in baking and as a spread

prunella A plum-flavored, brandy-based liqueur

prunelle Liquor flavored with sole berries; used as an after dinner cordial

prunes, canned In addition to prunes, may also contain natural and artificial flavors, spices, vinegar, lemon juice or other organic acid, and unpeeled pieces of citrus fruits.

Sucrose in syrup:
- Extra light—20%
- Light—20–24%
- Heavy—24–30%
- Extra heavy—30–45%

prunes, prepared (breakfast prune) Dried prunes packed in their own juice

pruning The removal of plant parts; trimming the branches of a plant for a specific purpose

prussic acid (hydrocyanic acid) (HCN) Hydrocyanic acid; hydrogen cyanide; a glucoside toxin produced by several plants (e.g., sorghum)

pry-off (side seal) A closure with gasket material contacting the side of the glass container; it is removed by prying off the lid.

PSE Pale, soft, exudative pork

See Part 2: pH, Post-Mortem

Pseudomonas A genus of gram-negative rods; often responsible for low-temperature spoilage; an intestinal microorganism

See Part 2: Intestinal Microorganisms; Intestinal Microorganisms in Triple-Sugar Agar; Microbiological Media; Microorganism Reactions on Differential Tube Media; Spoilage, Fat in Food; Spoilage, Protein Foods

pseudomonas blight (blossom blight; false fire blight; lilac blight; Pseudomonas syringae) A bacterial disease of pears that usually starts in the fruit flowers

pseudosel agar See Part 2: Microbiological Media

psEnhichnaya A vodka made from wheat

psi 1) (ψ, ϕ) The Greek letter with an English equivalent of ps. 2) An abbreviation for pounds per square inch (used in measuring the pressure of air and liquids)

psig Pounds-per-square-inch gauge

psosas major A muscle of the lumbar area that lies under the lumbar vertebrae; in cross section it is larger and more dorsal than the psosas minor; in combination with the psosas minor, it is often called the tenderloin or fillet.

psosas minor A muscle of the lumbar area that lies under the lumbar vertebrae See also psosas major

P/S ratio The ratio of enzymatically determined polyunsaturated and saturated fatty acids

psychology The study of the behavior of animals

psychrophilic bacteria Bacteria that grow at a low temperature; minimum growth temperature −5 to +5°C; optimum growth temperature 20–30°C; maximum growth temperature 35–45°C; generation time at 0°C is less than 48 hours.

<table>
<thead>
<tr>
<th>Bacteria genera</th>
<th>Mold genera</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achromobacter</td>
<td>Cladosporium</td>
</tr>
<tr>
<td>Flavobacterium</td>
<td>Mucor</td>
</tr>
<tr>
<td>Pseudomonas</td>
<td>Penicillium</td>
</tr>
<tr>
<td>Thamnidiun</td>
<td></td>
</tr>
</tbody>
</table>

psychrotrophic (cold-tolerant) Describes microorganisms that are capable of reproduction on foods at temperatures used for refrigeration but grow even more rapidly at room temperature, e.g., bacteria with a low (10°C) temperature requirement that grow best at warm temperatures (10–45°C) and slowly at low temperatures (0–28°C)

See Part 2: Microbiological Standards, Dairy

psylla See pear psylla

psyllium seed (fleaseed) A seed that can be chewed or used as a cereal or in vegetable drinks

PT (press-on, twist-off) cap A deep-skirted cap with flowed-in plastisol gasket; the cap can be removed by hand.

Pt The symbol for the element platinum

ptomaine poisoning Ptoamine means decarboxylated amino acids; because they are not detrimental to health when eaten, this is a misnomer; as used today, the term is synonymous with staphylococcus food poisoning.

ptyalin An enzyme in saliva that breaks down starch

Pu The symbol for the element plutonium

puber 

puant de Lille See gris de Lille

puant macéré See gris de Lille

puberty The age at which organs become capable of reproduction; for the ages of farm animals See gestation period.

pubescence The covering of fine hair on leaves or fruit, e.g., peach

public symphysis The point at which the two pelvic bones fuse and at which they are separated in splitting of the carcass

pubis The flat bone forming the floor of the pelvic bone

published method A method that has been published and subjected to a ruggedness test in an FSIS science laboratory but that has not been thoroughly evaluated outside the originating laboratory; it may be used in nonrecurring analyses and requires the development of a rigorous protocol for sample analysis. Before acceptance of analytical results for regulatory action, it is necessary to repeat the entire series of analyses using an official method.

puckery Astringent; causing the mouth to contract

puda A type of dosa

pudding 1) A dessert, usually baked or boiled, based on bread, rice, apples, plums, etc., together with milk, flour, sugar, and flavoring

Types:
- Custard—thickened with eggs
- Gelatin pudding—not baked
Types (continued)
Indian pudding; cornmeal pudding; rice pudding;
bread pudding
Soufflé—delicate
Spanish cream (Bavarian)
Steamed fruit
Thickened with arrowroot, cornstarch, or flour
2) The sweet or dessert course of a meal. 3) A crust containing fruit
See Part 2: Portion Size; Stabilizers, Thickeners

pudding, instant  Store at room temperature (below 70°F); shelf life 1 yr

puddling  Compacting wet clay soil by eliminating water and air, e.g., as heavy soil worked when wet

Puerto Rican food habits
Animal products—salt cod; pork; beef
Fruits and vegetables—bananas; beans and other legumes; oranges, pineapples, plantains; tomatoes; tubers or root vegetables
Grain—rice
Spices—onion; pepper

Puerto Rico rum  A light-colored rum with a light flavor

puff-ball (Calvatia gigantea)  A large edible fungus (when young and firm-fleshed); it is white and turns yellow and brown as it matures.

puffed oats  A breakfast cereal
Composition: moisture 3%; protein 12%; fat 5%; carbohydrate 74%

puffed rice 1) A breakfast cereal made by heating rice under pressure and then rapidly releasing the pressure causing the superheated steam in the rice to expand the kernel. 2) A ready-to-eat rice cereal made from the endosperm with a small portion of the embryo
1 cup = ½ oz
Composition: moisture 3%; protein 6–7%; fat 0.5–7%; carbohydrate 85–89%; sugar 0.1%

puffed wheat 1) A breakfast cereal made by heating wheat in a closed container to a temperature of 288°C; the cylinder is suddenly opened and the superheated water changes to steam inside the grain, causing it to increase in size. 2) A ready-to-eat wheat cereal made from the endosperm with most of the bran and most of the embryo
1 cup = 0.4 oz
Composition: moisture 3%; protein 14–15%; fat 1.5–7%; carbohydrate 71–77%; sugar 0.5%

puffer (globefish; puff-fish; Sphaeroides spp.)  A food fish

puffiness  In citrus fruit, the rind becomes thickened, soft, loose, separated from the segments, and sometimes cracked; it is probably caused by a loss of water and is usually found in over-ripe fruit

puff paste  Flaky pastry

puff pastry  Tender, flaky layers of dough and butter (which makes the dough light)

pulas(s)an (Nephelium mutabile)  A single-seeded fruit that is native to southeast Asia and is similar to the lychee, with a pink, pebbly skin and grapelike flesh; eaten raw

pulgogi  Slices of barbecued beef
puligny-montrachet  A dry white wine
pul ko-kee  Broiled beef
pulla  A plaited tea bread flavored with cardamom
pull date  The last day a retail store may offer an item for sale; the date is designed to offer a reasonable amount of time to store and use the product at home.
pullet  A young female chicken before it reaches the age of egg laying

pulley bone  See wishbone, poultry

pulley size  The formula for calculating the size of pulley is as follows

\[
\text{pulley size} = \frac{\left[D\left(\text{driver pulley}\right)\right] \left[\text{rpm}\left(\text{driver}\right)\right]}{\text{recommended rpm of driven pulley}}
\]

\[
\text{pulley size} = \frac{\left[D\left(\text{driven pulley}\right)\right] \left[\text{rpm}\left(\text{driver pulley}\right)\right]}{\text{rpm of driver pulley}}
\]

\[
\text{speed of driven machine} = \frac{\left[D\left(\text{driver pulley}\right)\right] \left[\text{rpm}\left(\text{driver pulley}\right)\right]}{D\left(\text{driven pulley}\right)}
\]

rpm = revolutions per minute

D = diameter

pullman  A product packed in a long, usually rectangular or square, container

pull-up  The distance from the leading edge of the closure lug to the vertical neck ring seam

pulmonary artery  The artery that transfers blood from the heart to the lungs

pulmonary vein  The vein that transfers blood from the lungs to the heart

pulp (pomace)  The residue remaining after extraction of juices of fruit, roots, or stems; a suspension of fibers in water; molded pulp is often used for packaging eggs.
pulp fed  Livestock fed sugar beet pulp

pulpy  Describes a moist, cohering mass; a fleshy texture

pulque  A white, viscous, alcoholic drink made by fermentation of the juice of the century plant (Agave spp.) or the fruit of the prickly pear cactus (Opuntia spp.) See also tequila

pulsating dc  Direct current that varies in magnitude

pulse (family Leguminosae)  The edible dried seed of a leguminous plant; used as food in both the green, or fresh, state and in the mature, or dried, state; the edible seed of leguminous crops, e.g., beans, lentils, peas (or split peas), and soybeans
1 bu = 60 lb
See Part 2: Pulses, Nuts, and Seeds, Composition; Water Activity, Organisms and Food
pultost A soft, yellow to dark Norwegian cheese made from sour, skinned cow’s milk, with rennet added. See knoost

puma See kumiss

pumice A volcanic rock that is used as an abrasive in fine-ground form

pummelo See pomelo

pump A device for raising, transferring, or forcing a solution

pumpernickel (rye graham; rye meal) A hard, coarse, black, sourdough bread with a heavy crumb; made primarily from rye flour with some dark wheat flour, sometimes leavened with sour dough; a hard bread that is made from coarsely ground whole-rye flour and has a slightly acid flavor.

pumping Introducing a pickle into meat under pressure by injection through a needle.

pumpkin (Cucurbita moschata (winter crookneck; crushaw pumpkin); C. pepo (summer pumpkin; autumn pumpkin; bush pumpkin)) A climbing herbaceous plant, related to squash, that produces a large, round to oblong, yellow to orange pepo with a grooved surface; when cooked, the pulp (almondlike flavor) is difficult to tell from winter squash and is often used as a pie filling; the seeds are also edible (rich in protein and fat) and may be dried and eaten with or without the seed coat. Seed 1 oz/ 100-ft row, 4–7 lb/acre; plant 4 ft apart in rows 5 ft apart; mature in 75 days.

<table>
<thead>
<tr>
<th>Pumpkin variety</th>
<th>Size</th>
<th>Color (flesh)</th>
<th>Shape</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecticut field pumpkin (C. pepo)</td>
<td>—large (some &gt; 100 lb), orange-yellow, slightly ribbed fruit (season about 100 days) used for display and baking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Big Max</td>
<td>100 lb</td>
<td>Pink-orange (yellow-orange flesh)</td>
<td>Round to flattened; rough skin</td>
</tr>
<tr>
<td>Big Tom</td>
<td>18 lb</td>
<td>Orange (yellow flesh)</td>
<td></td>
</tr>
<tr>
<td>Boston Pie (Sugar)</td>
<td>2–3 lb</td>
<td>Golden or brownish yellow</td>
<td>Flattened</td>
</tr>
<tr>
<td>French Tours</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Golden Oblong</td>
<td>7–8 lb</td>
<td>Golden orange</td>
<td>Twice as long as thick</td>
</tr>
<tr>
<td>Jack O’Lantern</td>
<td>Med.</td>
<td>Orange (orange-yellow flesh)</td>
<td>Round to elongated</td>
</tr>
<tr>
<td>Mammoth Tours</td>
<td>100 lb</td>
<td>Mottled green, orange-yellow</td>
<td>Twice as long as thick</td>
</tr>
<tr>
<td>Omaha Pie</td>
<td>4 lb</td>
<td>Orange</td>
<td>Oblong; pointed toward stem</td>
</tr>
<tr>
<td>Sandwich Island</td>
<td>7–10 lb</td>
<td>Orange-yellow</td>
<td>O long; twice as long as thick; tapering toward stem; grooved</td>
</tr>
<tr>
<td>Small Sugar</td>
<td>7 in.</td>
<td>Orange-yellow (orange flesh)</td>
<td>Round; slightly ribbed</td>
</tr>
<tr>
<td>Sugar (New England Pie)</td>
<td>4–5 lb</td>
<td>Golden; brownish yellow</td>
<td>Flattened</td>
</tr>
</tbody>
</table>

Sugar Pie

Winter Luxury

Winter Queen

Cheese pumpkin (C. moschata)—used for canning and stock feed; keeps reasonably well

Calhoun | 5–6 lb | Cream-buff | |
| French Cocoanut | 15 lb | Cream-buff | Elongated; tapering ends |
| Kentucky Field | | Gray-orange rind; salmon flesh | |
| Large Cheese | 10 lb | Cream-buff | |
| Quaker Pie | 9–10 lb | Buff | Pear |

Sweet Cheese

Crookneck (C. pepo)—used as summer squash; soft, white or yellow, warty rind; crookneck at stem end

Connecticut Straightneck | Yellow | Straight stem; smoother skin |
| Giant Summer Crookneck | Large | Crookneck |
| Strickler Pie | White | Crookneck |
| White | | |
| Yankee Hybrid | Yellow | Crookneck |

(Continued)
<table>
<thead>
<tr>
<th>Pumpkin variety</th>
<th>Size</th>
<th>Color</th>
<th>Shape</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cushaw (C. moschata)—slight to very crooked neck; large blossom end</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japanese Pie</td>
<td>Dark green with light green stripes</td>
<td>Pear; straight neck</td>
<td></td>
</tr>
<tr>
<td>Jonathan</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mammoth Golden</td>
<td>12 lb</td>
<td>Gold</td>
<td>Crooked stem</td>
</tr>
<tr>
<td>Small Golden</td>
<td>7 lb</td>
<td>Gold</td>
<td>Crooked stem</td>
</tr>
<tr>
<td>Striped</td>
<td>12 lb</td>
<td>Netted green stripes</td>
<td>Slightly crooked stem; neck is edible part</td>
</tr>
<tr>
<td>Tennessee Sweet Potato</td>
<td>15 lb</td>
<td>White or light green stripes</td>
<td>Pear or bell</td>
</tr>
<tr>
<td>White</td>
<td>12 lb</td>
<td>White</td>
<td>Slightly crooked stem</td>
</tr>
<tr>
<td>Fordhook (C. pepo)—summer and fall; good for baking; best flavor soon after picking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delicata</td>
<td>2–3 lb</td>
<td>Orange and green stripes</td>
<td>Oblong</td>
</tr>
<tr>
<td>English Cream Marrow Fordhook</td>
<td>4-in. diam.</td>
<td>Cream to yellow</td>
<td>Oblong; slightly grooved tapering toward stem</td>
</tr>
<tr>
<td>Fordhook Bush</td>
<td>4-in. diam.</td>
<td>Cream to yellow</td>
<td>Oblong; slightly grooved tapering toward stem</td>
</tr>
<tr>
<td>Panama</td>
<td>1–2 lb</td>
<td>Yellow</td>
<td>Bell; deeply grooved</td>
</tr>
<tr>
<td>Perfect Gem</td>
<td>Tan</td>
<td>Spherical; flattened at both ends</td>
<td></td>
</tr>
<tr>
<td>Table Queen</td>
<td>2 lb</td>
<td>Dark green</td>
<td>Elongated; pointed at blossom end</td>
</tr>
<tr>
<td>Winter Nut</td>
<td>4 lb</td>
<td>Cream</td>
<td>Apple; grooves from depressed stem</td>
</tr>
<tr>
<td>Pattypan (C. pepo)—used when fruit is immature</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cymlin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early White</td>
<td>8–14 in.</td>
<td>White</td>
<td>Flat; scalloped</td>
</tr>
<tr>
<td>Golden Custard</td>
<td>8–14 in.</td>
<td>Golden</td>
<td>Flat; scalloped</td>
</tr>
<tr>
<td>Long Island White Bush Scallop</td>
<td>8–14 in.</td>
<td>White</td>
<td>Flat; scalloped</td>
</tr>
<tr>
<td>Mammoth White Bush Scallop</td>
<td>8–14 in.</td>
<td>White</td>
<td>Flat; scalloped</td>
</tr>
<tr>
<td>Mammoth Yellow Bush Scallop</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pattypan Yellow Bush Scallop</td>
<td>8–14 in.</td>
<td>Yellow</td>
<td>Flat; scalloped</td>
</tr>
<tr>
<td>Vegetable marrow (C. pepo)—summer; used when immature and tender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cocozelle</td>
<td>5 lb</td>
<td>Dark green with light green to yellow stripes</td>
<td>Cylindrical; three times as long as thick</td>
</tr>
<tr>
<td>Green Bush Marrow Italian</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long White Marrow</td>
<td>3–4 lb</td>
<td>Yellow to white</td>
<td>Cylindrical; three times as long as wide</td>
</tr>
<tr>
<td>Running White Vegetable Marrow</td>
<td>5 lb</td>
<td>Yellow to white</td>
<td>Cylindrical; three times as long as wide</td>
</tr>
<tr>
<td>Vining Cocozelle</td>
<td>5 lb</td>
<td>Dark green with light green to yellow stripes</td>
<td>Cylindrical; three times as long as wide</td>
</tr>
<tr>
<td>Zucchini</td>
<td>3–5 lb</td>
<td>Green with gray mottling</td>
<td>Cylindrical; three times as long as wide</td>
</tr>
<tr>
<td>Vegetable spaghetti—cooked flesh is stringy</td>
<td>10 x 5 in.</td>
<td>White</td>
<td>Cylindrical</td>
</tr>
</tbody>
</table>

Canned pumpkin: made from field pumpkins and certain varieties of squashes, cooked in steam; the consistency is light, medium, or heavy, depending on the amount of moisture removed.

Freezing point: 30.5°F

<table>
<thead>
<tr>
<th>Composition</th>
<th>Pumpkin (raw)</th>
<th>Seed (dried)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>92</td>
<td>4</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>1–3.8</td>
<td>29</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>0.1–0.6</td>
<td>47</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>6–23</td>
<td>15</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>pH</td>
<td>4.8–5.3</td>
<td></td>
</tr>
</tbody>
</table>

One-eighth of a 9-in. pie contains 240 calories.

Storage: gather before hard frost; store in well-ventilated place at a little above 50°F; 70–75% relative
humidity; storage life 3 months; frozen (cubed or pureed) storage life 6 months

See squash, winter

See Part 2: Cucurbit Crops, Spacing and Depth of Planting; Frozen Food Storage; Fruit Classification; Minerals, Food; Plant Foods, Composition; Planting Density; Protein Factors; Seed, Chemical Composition; Standards, Processed Fruit and Vegetable Products; Storage; Sugar, Vegetables; Vegetable Composition; Vegetable Frozen Yield; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Plants, Vegetables, Canning Dates; Vegetable Storage; Vegetable Yields

pumpkin kernel See Part 2: Beans, Peas, and Nuts

pumpkin pie Available ready-made; sodium content 169 mg/ ⅛ pie (71 g)

pumpkin pie spice mixture A frequently used combination is cinnamon (40%), ginger (20%), nutmeg (20%), allspice (10%), and cloves (10%)

Composition: moisture 8–9%; protein 5–6%; fat 12–13%; carbohydrate 69–70%; fiber 14–15%; ash 3–4%

punch A fruit-flavored drink that may or may not contain liquor

1 gal = 40 three-oz servings

See Part 2: Flavors, Beverage

puncheon A variable-sized wine container

1 puncheon = 133 gal California wine
= 120 gal brandy
= 114 gal rum

pungency 1) The "hot" sensation produced by a spice. 2) A characteristic of a food that is responsible for the sharp sensations perceived by the tongue and olfactory gland (e.g., the strength of pepper products can be determined by this characteristic); e.g., the following are some of the substances responsible for pungency of foods:

Capsaicinoids—in fruits of Capsicum spp.  Gingerols—in ginger  Piperine—in peppercorns

Usually found in oleoresins and not in distilled essential oils

pungent. Describes an astringent or acrid, sharp odor or flavor (often caused by tannin, strong spices, or excessive alcohol)

purana Yellow, dried balls that are made from a cereal or a legume and are deep-fat fried

punte A bitter, dry vermouth

pupate To pass through the pupal stage, in which an insect changes from a larva to an adult

pura See pura

purd A rice wine

purchase order A purchaser's written offer to a supplier formally stating all terms and conditions of a proposed transaction

purchase part variance The difference in price between what was paid to the vendor and the standard cost of that item

purchasing lead time The time required to obtain a purchased item; includes procurement lead time, vendor lead time, transportation time, receiving, inspection, and put-away time

purebred An animal that is eligible for registration in any breed

Purebred Dairy Cattle Association An association made up of representatives of the organizations that sponsor Ayrshire, Brown Swiss, Guernsey, Holstein, and Jersey cattle

pure culture A culture composed of a single type of microorganism

puree 1) Cooked and sieved vegetables or meat, or a soup made from them; fruit that has been boiled to a pulp and passed through a sieve or strainer. 2) To press through a sieve or ricer. 3) To remove connective tissue from meat

See Part 2: Tomato and Tomato Products, Composition

pure steam Air-free saturated steam

purgative A laxative compound; a substance used to cause extreme bowel movement

purified (Purif.) A designation of a grade of chemical purity; a low purity that should not be used for analysis See also grade

purified diet A mixture of known essential dietary nutrients in a pure form feed in nutritional test studies

purine (C₅N₄H₄) A derivative of pyrimidine and a component of many end products of animal metabolism, including uric acid, adenine, guanine, and various allopurines; nucleic acids contain purine compounds. The chemical structure is two fused heterocyclic rings. See also pyrimidine

\[
\begin{align*}
\text{H} & \quad \text{N} \\
\text{N} & \quad \text{N}
\end{align*}
\]

purple broth base See Part 2: Microorganism Reactions on Differential Tube Media; Microorganism, Selective and Differential Broths and Media, Water Filtration Plant

purple granadilla See passion fruit

purple hull See pea, black-eyed

purple lactose agar See Part 2: Microorganism, Media

purple laver See red laver

purple milk See Part 2: Microorganism, Media

pur porc A dry, uncooked, smoked Belgian sausage (pepperoni) made from medium-chopped, heavily seasoned pork, fermented and stuffed into pork casings

purslane (pussley; Portulaca oleracea) A mild, slightly acid, European annual herb that is used in salads or as a potherb; 64,000 seed/oz; germination time 4 days

Foliage—used as spinach, in soup and green salads

Shoots—used in salads and soup; pickled in salt and vinegar

Tuberous root

Cuban winter purslane (Claytonia perfoliata) is a perennial that is also used for salads.
purveyor  Supplier; provider, wholesaler

pussley  See purslane

pusztador  A semihard, limburger-like cheese made from cow's milk

puto  A steamed bread made from rice (may contain wheat or maize)

put option purchase  The right, but not the obligation, to sell a futures contract of a commodity at a specific price during a specified period of time; the put purchaser pays a fixed amount to the seller and for that finite amount of money, just like the call option, the purchaser has limited to this fixed amount the amount that can be lost.

putrefaction  The anaerobic microbial decomposition of organic compounds, producing foul-smelling compounds; the decomposition of proteins by microorganisms; spoilage (usually by microorganisms); the process of rotting; decomposition; becoming putrid

putrefactive  Describes bacteria that break down protein and cause putrid odors See putrefaction

putrid  Describes the flavor and odor of proteolytic spoilage See putrefaction

PV  See peroxide value analysis

PVC  See Part 2: Blood

PVP (polyvinylpyrrolidone)  Used as a stabilizer; bodying agent; clarifying agent; dispersant and tableting adjuvant

pyo-  A prefix used to indicate pus

pyrantel tartrate  A drug that is used as a wormer

pyrazine  The basic structure (which may have substituted side groups) of several flavor-producing compounds of cooked and roasted foods (and of some uncooked foods)

pyréenées  A semihard, esbareich-type French cheese that is pressed but uncooked and contains very little water

pyrethrin  Insecticide used to curtail infection in food stuff

\[
\begin{align*}
H_3C- & C=CHC \\
R & H_3C \\
H_3C & / \ \\
\text{CH}_3 & \text{O} \\
\text{CH}_2\text{CH}=&\text{CHCH}=&\text{CH}_2 \\
R = & -\text{CH}_3 \\
R = & \text{CH}_3-O-C- (in pyrethrin II) \\
\end{align*}
\]

pyrethrum (Chrysanthemum cinerariaefolium; C. coccineum)  A plant whose fully opened flower can be made into an insecticide

Active insecticidal ingredients: cinerin I; cinerin II; pyrethrin I; pyrethrin II

The insecticide has low mammalian toxicity.

Pyrex Brand glass  Proprietary name for a heat-resistant borosilicate glass suitable for high baking temperatures; widely used both in the laboratory and home; practically insoluble in food

pyridine (C_4H_5N)  Used in flavoring

pyridoxine (adermin; pyridoxin)  Exhibits vitamin B_6 activity

\[
\begin{align*}
\text{HO--C--CH}_2\text{OH} \\
\text{CH}_3- & \\
\text{C--N} & \\
\end{align*}
\]

pyridoxal

\[
\begin{align*}
\text{HO--C--CH}_2\text{OH} \\
\text{CH}_3- & \\
\text{C--N} & \\
\end{align*}
\]

pyridoxamine

The coenzymetically active form is

\[
\begin{align*}
\text{HO--C--CH}_2\text{OPO}_3\text{H}_2 \\
\text{CH}_3- & \\
\text{C--N} & \\
\end{align*}
\]

pyridoxal-5-phosphate

A water-soluble vitamin that, if deficient in the diet of the rat, will result in dermatitis.

Sources: cereal bran; egg yolk; kidney; leafy vegetables; liver; meats; milk; yeast

Often used as pyridoxine hydrochloride.

Storage: tight container in the dark See Part 2: Egg Products, Nutritive Value; Grain Analysis; Vitamins; Vitamin Sources, Functions, and Stability; Wheat, Parts of Grain, Vitamins; Wheat Products, Composition

pyrimidine  A basic nitrogenous compound from which purine, uracil, and thymine are derived; obtained by hydrolysis of nucleic acid

\[
\begin{align*}
\text{N} \\
\end{align*}
\]

pyroligneous acid  A yellow, acidic (approximately 6% acetic acid) liquid obtained by destructive distillation of wood; used for smoking meat
pyrolysis Chemical decomposition achieved by applying heat, e.g., heating organic matter in the absence of oxygen. See destructive distillation.

pyrometer A temperature measuring device that uses a thermocouple.

pyrophosphate Used to aid antioxidants and as a flavoring; a cleaning compound that is very stable at high temperature and high alkalinity; slow to dissolve and lacks calcium sequestering power. See also phosphate. See Part 2: Phosphate.

pyrophyllite \( \text{Al}_2\text{O}_3 \cdot 4\text{SiO}_2 \cdot \text{H}_2\text{O} \) A carrier for insecticides.

pyruvic acid \( \text{CH}_3\text{CO} \cdot \text{COOH} \) An intermediate acid formed during metabolism of carbohydrates.

pyshki See pouchki.
q.d. Abbreviation for the Latin meaning once a day
Q.E.D. (Quod erat demonstrandum) Latin for which was to be demonstrated
Q fever See Part 2: Diseases, Food-Borne
q.(x)h. Latin for every x hours
q.i.d. (Quater in die) Latin for four times a day
qoorma A dry, mutton ragout
quacheq A sheep’s milk cheese
quackgrass (Agropyron repens (L.) Beauv.) A perennial weed
quadrants (angle)
1 quadrants = 90 degrees = 1.571 radians = 0.0054 minutes = 0.0000324 seconds
quadratic equation \[ ax^2 + bx + c = 0 \]
\[ x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \]
quadriceps Four muscles on the anterior section of the thigh, attached to the top of the femur and to the patella and to the tibia. Made up of Vastus lateralis (most lateral); Vastus medialis (most medial); Vastus intermedius (between Vastus lateralis and Vastus medialis & cranial to the femur); Rectus femoris (most cranial of the group)
quahog (quahaug; Venus mercenaria) A round, New England, hard-shelled clam See also clam
quail (bobwhite; partridge; Ptix virginiana) An edible, game bird (many species) related to the partridge and sometimes called a partridge.
Composition (flesh and skin, raw): moisture 69.6%; protein 19.6%; fat 12.1%; carbohydrate 0%; ash 0.9%
qualitative Analysis to determine substances present and not the amount
qualitätswein A category (quality wine) of German wine made from approved grape varieties grown exclusively in 11 regions; official government panels must analyze for quality requirements and give control numbers
qualitätswein mit prädikat A category (specially graded quality wine; highest category) of German wine that is specially graded and must be from approved grape varieties See auslese; beerenauslese; elswein; kabinett; sakt; spätlese; trockenbeerenauslese
quality Desirability or acceptance of a food product; the degree or grade of excellence of a food product as determined by some objective standard
See Part 2: Egg Quality; Egg Quality, Broken; Grades, Meat; Meat Grade Stamps
quality assurance date (freshness date) The date at which a product will have the same quality as when it left the processing plant
quality control A program to prevent or minimize variation in quality attributes; the maintenance of a uniform, consistent, or predetermined quality. It is usually divided into three categories—raw material control, process control, and finished product inspection See also sample size; standard deviation
quality of protein Amount and ratio of amino acids compared with what is needed by the body
quamasht (Camassia quamash) A west coast plant whose bulb may be boiled, roasted, or dried and used as food
quanabana See soursop
quandong An edible, stone fruit similar to a peach; the stone holds an edible kernel called a quandong nut
quantification The determination of the amount of residue present in a sample
quantitative Analysis to determine the amount of a substance present
quantity Amount
quantity discount An allowance determined by the purchase quantity or value
quarantine To segregate individuals that have a contagious disease
quarenden (quarrender) A red, early apple often used for cider
quarg A fresh, low-fat, acidic, soft, cheese made from cow’s milk
quargel A smooth, white to yellow, sharp and pungent cheese with a red to yellow skin
quark A fresh, low-fat, acidic, soft, curd or cottage cheese made from cow’s milk; sometimes contains fruit, spices, or sugar
See Part 2: Milk and Cheese Composition
quart (Brit. fluid; Canadian; Imperial) A measure of volume
1 quart (Brit. fluid) = 1136.49 milliliters (ml) = 40 fl. ounces (Brit. fluid) = 2 pints (Brit. fluid) = 1.136 liters
quart (Brit.; dry; Imperial) A measure of volume
1 dry quart (Brit.) = 40 ounces (oz) = 1.136 liters (l)
quart  (dry; dry qt; U.S.)
1 dry qt (U.S.) = 67.2006 cubic inches (in.\(^3\))
   = 2 dry pints (pt; dry)
   = 1.16365 U.S. liquid quarts (U.S.; liquid qt)
   = 1.10123 cubic decimeters (dm\(^3\))
   = 1.101 liters (l)
   = 0.29901 U.S. liquid gallon (U.S.; liquid gal)
   = 0.25 U.S. dry gallon (U.S.; dry gal)
   = 0.03889 cubic foot (ft\(^3\))
   = 0.03125 U.S. bushel (U.S.; bu)
   = 0.001440 cubic yard (yd\(^3\))

quart  (liquid; liquid qt; U.S.; U.S. fluid) A measure of volume
1 liquid qt (U.S.) = 946.333 milliliters (ml)
   = 256.00 drams (fluid)
   = 57.749 cubic inches (in.\(^3\))
   = 32 fluid ounces (fl.; oz)
   = 2 liquid pints (liquid; pt)
   = 0.94636 liter (l)
   = 0.94636 cubic decimeter (dm\(^3\))
   = 0.85937 U.S. dry quart (U.S.; dry qt)
   = 0.25 U.S. liquid gallon (U.S.; liquid gal)
   = 0.21484 U.S. dry gallon (U.S.; dry gal)
   = 0.03342 cubic foot (ft\(^3\))
   = 0.02686 U.S. bushel (U.S.; bu)
   = 0.001238 cubic yard (yd\(^3\))
   = 0.0009464 cubic meter (m\(^3\))

See Part 2: Volume
quarter  \(\frac{1}{4}\); e.g., quarter of beef
quartern  See noggin
quarters  Inside of thighs of a horse or rear fourth of hoof on each side of the foot
quartirolo  A soft, mozzarella-type cheese made from cow’s milk
quart, le  A cow’s milk cheese
quart maroilles  A small, strong-flavored, cow’s milk cheese
quassia extract  (bitter ash; bitter wood)  A food and beverage flavoring
quaternary ammonium compound (QUATS)  Any of a group of complex organic compounds comprised of a cation and an anion; strong disinfectants and sanitizers; wetting agent with germicidal powers. The ionic structure may be represented as
\[
\begin{align*}
R & \\
R-N-R & X^{-}
\end{align*}
\]
where R is an organic group and X is a negatively charged atom or group
See Part 2: Sanitizers; Sanitizing Chemicals
QUATS  See quaternary ammonium compound
quay tepong manis  A wheat flour doughnut
Queensland nut  (Macadamia ternifolia)  A macadamia nut; a thick-shelled nut that can be used as a snack or in confectionery; fat content, 70% See macadamia nut
queijo  Cheese
queijo fresco  A panir-type cheese
queijo seco  A white, brined cheese
quenelle  A dumpling made of chopped, seasoned, meat or fish and eggs
quenepa  See mamoncillo
quenette  See mamoncillo
quercitron  A yellow colorant derived from the bark of the black oak and used to color food
quesadilla  A fried, baked or grilled, folded tortilla with cheese, chilies, and/or beans
quesillos  A semisoft, mildly acidic, smooth, cheese made from cow’s milk and wrapped in banana or maize leaves
queso  Cheese
queso anejo  5–10 kg, low-fat, hard, salty, crumbly cheese made from cow’s or goat’s milk and matured for 6–10 months
queso blanco (Latin American white cheese)  A semisoft, mildly acidic, smooth cottage cheese made from skimmed cow’s (sometimes buffalo’s, goat’s, or sheep’s) milk; usually eaten fresh
queso blue  Blue cheese
queso cocido  A processed cheese
queso crioillo  A semisoft, mildly acidic, smooth cheese
queso de bagoes  A strong-flavored, semihard, acid curd, salty cheese made from cow’s milk
queso de bola  An edam-type cheese
queso de cabra  A low-fat, hard, salty, crumbly cheese made from goat’s milk; may be eaten fresh or aged
queso de cincho  A semisoft, mildly acidic (sour milk), smooth, spherical, 200–400 mm in diameter, cheese wrapped in palm leaves
queso de hoja  Leaf-shaped, slices of hoja cheese made from fresh, cow’s milk
queso de la estrella  See estrella
queso de la tierra  A semisoft, mildly acidic, smooth cheese made from whole or partly skimmed, cow’s milk
queso del pais  A semisoft, smooth cheese that has sodium carbonate added to reduce curd acidity
queso de mano  A mozzarella-type cheese made from sour cow’s milk and stored in banana leaves
queso de maracay  A semisoft, mildly acidic, smooth cheese made from skimmed cow’s milk with rennet added
queso de matero  A semisoft, mildly acidic, smooth cheese made from raw milk
queso de palma melida  A semisoft, mildly acidic, smooth cheese wrapped in palm leaves
queso de pera  A provolone-type cheese made from cow’s milk

See Part 2: Sanitizers; Sanitizing Chemicals

\[\text{R} \quad N \quad \text{R} \]
\[\text{X}^{-} \]
queso de perga A semisoft, mildly acidic, smooth cheese

queso de prensa A semisoft to hard, mildly acidic, smooth, pressed cheese made from whole cow's milk with rennet added

queso de puerco A moist, cooked, unsmoked Mexican sausage made from coarsely chopped, medium seasoned, pork and not stuffed into a casing

queso de puna A fresh, semisoft, mildly acidic cottage cheese made from rennet-coagulated, skimmed cow's milk

queso descremado A semisoft, mildly acidic, smooth cheese made from skimmed cow's milk

queso do los montes A golden, hard, pressed cheese made from sheep's milk

queso enchilado A low-fat, hard, salty, crumbly loaf-shaped cheese made from cow's or goat's milk and covered with red chili powder

queso estera A semisoft, mildly acidic, smooth cheese made from whole or partly skimmed cow's milk

queso fresco A semisoft, mildly acidic, cheese made from rennet-coagulated skimmed cow's milk

queso huloso A semisoft, mildly acidic, smooth cheese made from skimmed cow's milk

queso llanero See llanero

queso oaraca A provolone-type cheese made from cow's milk

queso pasteurizado A semisoft, mildly acidic, smooth cheese made from pasteurized cow's milk

queso zuliano A semisoft, mildly acidic, smooth cheese

quetsch A clear brandy distilled from blue switzen plums (Prunus)

quetsch d'alsace An after dinner cordial made from spirits of wine (50% alcohol) and flavored with sole berries and aromatic herbs

quiana nut See souari nut

quiche An open-faced; fruit, egg, fish, or vegetable flan or tart

quick cereal These cereals are normally preheated and rolled into fine flakes; a few have a phosphate salt additive to raise the boiling point of cooking

quick cure A meat-curing pickle containing some nitrite

quick frozen food A food frozen so rapidly that only small ice crystals have time to form and close to normal flavor is thus retained; usually frozen at −20°F or lower

See Part 2: Freezing Rate

quicklime (CaO) Calcium oxide, made by roasting limestone

\[ \text{CaCO}_3 \xrightarrow{\text{heat}} \text{CaO} + \text{CO}_2 \]

quill Curled bark

quinone (1,4-benzoquinone)

quinbombo See okra

quince (Cydonia oblonga; C. vulgaris) A tree that produces a fruit similar to an apple or pear but has many ovules in each section; it is hard and acid but makes good jam, jelly, or marmalade; can be baked or stewed or used in sauce or puddings; contignac and marmelo candies made from puree and sugar; yellow flesh that turns pink when cooked; very astringent even when ripe; strong odor, yellow or greenish yellow with a gray bloom when ripe; bruises easily; round to pear shape

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Season</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Champion</td>
<td>November</td>
<td>Cold hardy</td>
</tr>
<tr>
<td>Orange (apple)</td>
<td>September</td>
<td>Most popular;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>good quality;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>tender with</td>
</tr>
<tr>
<td></td>
<td></td>
<td>good flavor</td>
</tr>
<tr>
<td>Pear</td>
<td></td>
<td>Hard, tough,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>good flavor</td>
</tr>
<tr>
<td>Pineapple</td>
<td>September</td>
<td>Good quality</td>
</tr>
<tr>
<td>Portugal</td>
<td></td>
<td>Scarce</td>
</tr>
</tbody>
</table>

1 basket = 48 pounds
3 medium fruit = 1 pound
Composition (raw): moisture 84%; protein 0.4%; fat 0.1%; carbohydrate 15%; ash 0.5%; pH 3.2
Storage: 32°F, 90–95% relative humidity; storage life, 2 months.
See Part 2: Fruit and Nut Rootstock; Fruit Classification; Fruit Composition; Minerals, Food; Storage

quince, Japanese (Cydonia japonica) A warm weather quince that bears green fruit that is made into jelly

quinic acid (chinic acid) \([\text{C}_6\text{H}_7(\text{OH})_4\text{COOH} \cdot \text{H}_2\text{O}]\)
An organic acid obtained from the bark of the cinchona tree; also present in cranberries, plums, and prunes

See Part 2: Organic Acids in Fruits and Vegetables

quinine \((\text{C}_{20}\text{H}_{24}\text{N}_2\text{O}_2 \cdot 3\text{H}_2\text{O})\) An alkaloid drug extracted from the bark of the cinchona tree; especially useful in treating malaria.

See Part 2: Organic Acids in Fruits and Vegetables

quinine extract A bitter flavoring used in beverages

quinine hydrochloride

\[
\begin{align*}
\text{CH}_3\text{O} & \quad \text{CH} \quad \text{N}^+ \\
\text{OH} & \quad \text{CH}_2 \\
\text{CH}_2 \quad \text{CH} & \quad \text{CH} = \text{CH}_2 \\
\end{align*}
\]

A bitter, flavoring agent for food
Storage: tight container in the dark

quinine sulfate \([\text{C}_{20}\text{H}_{24}\text{N}_2\text{O}_2\cdot 2\text{H}_2\text{O} \cdot \text{H}_2\text{SO}_4 \cdot 2\text{H}_2\text{O}]\)
Used as a bitter, flavoring agent for food
Storage: tight container in the dark

quinnat Chinook salmon See salmon

quinoa A grass with edible leaves and seed; a plant
614 quinone (1,4-benzoquinone)

whose seed is used for broth, cake, salads, and livestock feed
See Part 2: Cereal Composition

quinone (1,4-benzoquinone) A toxic chemical used in dye manufacture; obtained by oxidation of aniline with chromic acid

\[
\text{O} \quad \text{O}
\]

quinual (metric) A measure of weight
1 quintal = 100,000 grams (g)
= 220.46 pounds (lb; avdp)
= 129.54 pound (lb; Brazil)
= 101.47 pound (lb; Mexico)
= 101.43 pound (lb; Peru)
= 101.41 pound (lb; Chile)
= 101.28 pound (lb; Argentina)
= 100 kilograms (kg)
= 1 hectoliter (hec)

quinual (Spanish) A unit of weight used in Chile, Costa Rica, El Salvador, Guatemala, Philippines, Spain, and Venezuela
1 quintal = 0.046 metric ton
In Cuba and Peru:
1 quintal = 0.046009 metric ton

quinual (metric) per hectare (ha) Weight per unit area
1 quintal/ha = 1.486 bushel (60 pounds)/acre
= 0.892 hundred weight
(100 pounds)/acre
= bushel acre \times pounds \times 0.01121

quinua An edible cereal

quotation A price and availability statement

quotation expiration date The date beyond which quotation is not valid

quotation request A buyer's invitation to bid; it is sent to potential suppliers

qurut See karat

q.v. (quod vide) Latin for which see
R 1) Symbol used in formulas for any organic group (aryl or alkyl). 2) Symbol for degrees Rankine and degrees Réaumur. 3) Symbol for electrical resistance. 4) On labels, means that the trademark is registered with U.S. patent office See also ohm

R • Symbol for a free radical

Rx Pharmacists symbol for ingredients of a prescription (recipe)

Ra Symbol for the element radium

rabacal A firm, panir-type cheese made from goat's or sheep's milk

rabagyongye A creamy, semisoft, mild flavored cheese that is ripened by surface bacteria

rabbit (hare; old hare; Oryctolagus cuniculus) A small, long-eared mammal that is a member of the hare (rodent) Lepus family; its meat is edible. Myxomatosis is a disease of rabbits that has been used to reduce the population See hare

race A top class of wine

rad A unit of ionizing radiation; it is a dosage that results in absorption of 100 ergs of energy per gram of tissue See Part 2: Constants, Fundamental

radappertization Radiation to achieve commercial sterility similar to that obtained in the canning industry; treatment of food with ionizing radiation sufficient to reduce the number and/or activity of viable microorganism so that no spoilage or toxicity of microbial origin is detectable no matter how long or under what conditions the food is stored

radar Microwave frequencies used in cooking; wavelength from 0.1-1.0 cm See Part 2: Waves, Energy-Producing

raden A hard, Emmenthaler-type cheese made from skimmed milk with rennet added

radian An arc whose length is equal to the radius

1 radian = 206300 seconds
= 3438 minutes
= 57.296 degrees
= 0.6366 quadrants

1 radian per second = 57.2958 degrees per second
= 9.549 revolutions per minute
= 0.159155 revolution per second

1 radian per second per second = 572.96 revolutions per minute per minute
= 9.549 revolutions per minute per second
= 0.1592 revolutions per second per second

radiation Radiant energy; in food irradiation, the term is limited to gamma rays, x-rays, and electron beams. 1) Energy emanating from the unstable nuclei of certain elements (radium, uranium) in the form of alpha particles (helium nuclei), beta particles (electrons), and gamma rays. Such elements are said to be radioactive. 2) Radiant energy comprising the electromagnetic spectrum and consisting of photons See Part 2: Radiation Preservation
radiation absorbed dose (rad)  An outdated term for absorbed dose. Absorbed dose equals 100 ergs of absorbed energy per gram; 1 gray (Gy) = 100 rad

radical  A charged group of connected atoms that maintains this connection and acts as a unit through chemical changes, i.e., OH−, SO42−  See also group

radication  Treatment of food with ionizing radiation sufficient to reduce the number of viable, specific, non-spore-forming, pathogenic bacteria to such a level that none is detectable in the treated food; radiation used to eliminate the non-spore-forming pathogenic bacteria in food; results are similar to the pasteurization of milk

radicle root  See Part 2: Corn Kernel

radioactivity  See radiation

radioisotope  An isotope, either natural or artificial, that emits radiation. Carbon-14 is naturally radioactive, but many artificial radioisotopes are made by neutron bombardment of such elements as sodium, iodine, and cobalt and are used as curative agents in medicine

radiolysis  Chemical decomposition as a result of exposure to radiation

radionuclide  An unstable isotope that decays or disintegrates spontaneously, emitting radiation. The term radionuclide replaced the older term radioisotope

radio waves  Electromagnetic energy in the form of waves from 7000 to 2 × 10^6 cm in length; also called Hertzian waves  See Part 2: Waves, Energy-Producing

radish  (Raphanus sativus)  A salad root plant that is usually eaten raw; has sharp, biting taste; origin Asia. 2,000–2,800 seeds per ounce; seed 1 ounce per 100-foot row; plant 1 inch apart in rows 12–15 inches apart; 5–7 day germination period (winter radish 9 day germination period); fast maturing (matures in 50 days); yields 1 bunch per foot or row

Types:
Wild (R. raphanistrum)—used like horseradish
Rat-tailed (R. caudatus)—edible seed pods
Shape: cylindrical, round, tapered (icicle), turnip-shaped
Color: dark brown, red, red and white, white

<table>
<thead>
<tr>
<th>Type of radish</th>
<th>Shape</th>
<th>Variety</th>
<th>Season (days)</th>
<th>Skin color</th>
<th>Flesh color</th>
<th>Size (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring (quick growing)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flat or oblate</td>
<td></td>
<td>Burpee Hybrid Early Breakfast White</td>
<td>25</td>
<td>White</td>
<td>White</td>
<td>1 and up</td>
</tr>
<tr>
<td>Half Long</td>
<td></td>
<td>Half Long Scarlet White Ice Icicle</td>
<td>28</td>
<td>White</td>
<td>Red</td>
<td>5</td>
</tr>
<tr>
<td>Long</td>
<td></td>
<td>Cincinnati Market Long Scarlet Short Top</td>
<td></td>
<td>Red</td>
<td>Red</td>
<td></td>
</tr>
<tr>
<td>All Season</td>
<td></td>
<td>French Breakfast</td>
<td></td>
<td>Red</td>
<td>White</td>
<td>Up to 18</td>
</tr>
<tr>
<td>Oblong</td>
<td></td>
<td>No Plus Ultra Red Boy</td>
<td>22</td>
<td>Red</td>
<td>White</td>
<td>0.75</td>
</tr>
<tr>
<td>Round</td>
<td></td>
<td>Champion</td>
<td></td>
<td>Red</td>
<td>White</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cherry Belle</td>
<td></td>
<td>Red</td>
<td>White</td>
<td>0.75</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Comet</td>
<td></td>
<td>Red</td>
<td>White</td>
<td>1</td>
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<tr>
<td></td>
<td></td>
<td>Mailstone (White Globe) Red Price</td>
<td>25</td>
<td>Red</td>
<td>White</td>
<td>0.75</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Scarlet Globe</td>
<td></td>
<td>Red</td>
<td>White</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Scarlet Knight</td>
<td></td>
<td>Red</td>
<td>White</td>
<td>0.75</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Scarlet Prince</td>
<td></td>
<td>Red</td>
<td>White</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Scarlet Turnip</td>
<td></td>
<td>Red, white tip</td>
<td>White</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sparkler</td>
<td></td>
<td>Scarlet white tip</td>
<td>White</td>
<td>1.25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tendersweet</td>
<td></td>
<td>Red</td>
<td>Small</td>
<td></td>
</tr>
<tr>
<td>Summer (matures slowly)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cylindrical</td>
<td>Lady Finger or White Vienna</td>
<td>24</td>
<td>White</td>
<td>White</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long</td>
<td>Long Cardinal</td>
<td></td>
<td></td>
<td>Red</td>
<td>Red</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Long Scarlet</td>
<td></td>
<td></td>
<td>Red</td>
<td>Red</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Short Top</td>
<td></td>
<td></td>
<td>Red</td>
<td>Red</td>
<td></td>
</tr>
<tr>
<td>Long Slender</td>
<td>White Strassburg</td>
<td></td>
<td></td>
<td>Red</td>
<td>White</td>
<td></td>
</tr>
</tbody>
</table>

(Continued)
### Types of Radish

<table>
<thead>
<tr>
<th>Type of Radish</th>
<th>Shape</th>
<th>Variety</th>
<th>Season (days)</th>
<th>Skin Color</th>
<th>Flesh Color</th>
<th>Size (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer (continued)</td>
<td>Oval</td>
<td>Chartier or Stuttgart (also long variety)</td>
<td></td>
<td>White</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winter (matures very slowly, larger)</td>
<td>Large (very long)</td>
<td>Sakurajima Mammoth White Globe</td>
<td>60</td>
<td>White</td>
<td>White</td>
<td>Up to 15 lb</td>
</tr>
<tr>
<td></td>
<td>Long Oblong</td>
<td>Long Black Spanish Chinese Mammoth</td>
<td>75+</td>
<td>Black</td>
<td>White</td>
<td>3 x 8</td>
</tr>
<tr>
<td></td>
<td>Round</td>
<td>Round Black Spanish Chinese Rare Winter (Celestial)</td>
<td>75+</td>
<td>Red</td>
<td>White</td>
<td>7 x 2</td>
</tr>
</tbody>
</table>

Chill in ice water to curl; leaves used as salad; seed pods resemble capers; 30% refuse
1 bushel = 35 pounds
Medium size = \( \frac{3}{4} - 1 \) inch diameter
Japanese radish (daikon) = 3 foot long \( \times 4 \) inches in diameter
1 cup, trimmed, whole = 4.7 ounces
1 cup, trimmed, sliced = 4 ounces
Composition (raw): moisture 95%; protein 1%; fat 0.1%; carbohydrate 4%; ash 1%; pH (red) 5.8–6.5; pH (white) 5.5–5.7
Storage: Remove tops and store covered (90–95% relative humidity) in refrigerator (32°F); use in 1–2 weeks (spring) or 2 months (winter); store winter types in pits or cold cellars
See Part 2: Minerals, Food; Minerals, Plant or Animal Tissue; Nitrate, Vegetables; Plant Foods, Composition; Planting Density; Root Crop Characteristics; Storage; Sugar, Vegetables; Vegetables, Classification; Vegetable Composition; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Plants; Vegetable Storage; Vegetable Yields

### Radish, Black
A large, black-skinned radish; resembles the turnip or rutabaga and is often cooked before eating

### Radish, Pickled
Pickled Japanese radish or daikon (Raphanus sativus)

### Radium (Ra)
A radioactive metallic element; at. no. 88; mass number of most stable isotope 226; isotopes 223, 224, 226, 228; Group IIA of Periodic Table; oxidation state +2; electron configuration 2–8–18–32–18–8–2
orbit K L M N O P Q

### Radius
1) One of the fore shank bones associated with the ulna. 2) Distance from the center of a circle to its circumference, e.g., one-half the diameter, or from the center of sphere to its surface
See Part 2: Bone

### Radnor
A hill breed of British sheep

### Radon (Rn)
A gaseous radioactive element; at. no. 86; mass number of most stable isotope 222; noble gas group of Periodic Table; oxidation state 0; electron configuration 2–8–18–32–18–8
orbit K L M N O P

### Radurization
Treatment of food with ionizing radiation sufficient to enhance its keeping quality by causing a reduction in the number of viable, specific, spoilage microorganisms; radiation to reduce numbers of spoilage bacteria and extend keeping quality of food

### Raffinose (melitose melitriose) \((C_{18}H_{32}O_{16})\)
A trisaccharide made up of fructose, glucose, and galactose; found in cottonseed, beets, and cereals. Relative sweetness 32 (sucrose = 100)
See Part 2: Sugar, Legumes

### Ragi
1) Gray-white, dried balls of starter containing bacteria, molds, and yeast on starch or cereal base; used as inoculum for lao-chao, sake, tape, and other fermented foods. 2) Africa millet or finger millet; a small grain that can be made into flour See millet

### Ragi Beras
A starter culture used to inoculate fermented foods

### Ragi Ketjap
A starter culture used to inoculate soy sauce

### Ragi-Peuyeum
A starter culture used to inoculate tape

### Ragi-Roti
A starter culture used to inoculate nan

### Ragi-Tempe
A starter culture used to inoculate tempe

### Ragout
1) A thick, savory stew of meat, vegetables and spices. 2) A garnish

### Ragusano
1) A type of caciocavallo cheese 2) A hard, sweet or sharp, provolone-type cheese made from cow's milk; sometimes smoked or stored in olive oil; when old it can be used for grating

### Ragweed \((Ambrosia artemisiifolia)\)
An annual weed

### Rail
Continuous metal used for transport or as a barrier; overhead track on which rollers or trolleys move carcasses; minimum of 2 ft from fixed portion of building (3 ft for heavier traffic); height: sausage cages, 7 1/2 ft; headless hog and calves, 9 ft (12-in. trolleys); beef quarters, 7 1/2 ft
raimie  A fiber crop
rain beetle  (Pleocoma spp)  2½-inch long grubs that are white with brown heads; will attack pear tree roots
rainbow trout  (Salmo gairdneri irideus)  A North American, light delicate meat, very light, delicate, excellent flavor, freshwater, 5–10 ounces, fin fish; a lean game fish; also raised commercially in fish farms in northwestern United States, Denmark, and Japan
raised  Yeast is added to dough
raisin  A dried (mostly sun-dried) grape; may be dried on the vine, or ripe bunches are cut and dried; grapes used are usually wine grapes because of higher sugar content and firm flesh
Color:
Dark—natural color
Light—bleached, seedless raisin
Grape type:
Black corinth; zante current—tiny seedless raisin
Golden seedless Thompson—light color; sulfured to retain color
Muscat of Alexandria (muscatel)—large; dark; sweet; seed removed; not seeded, loose; not seeded, clusters
Sultana (sultanina)—smaller; yellow tinge; round; tart; usually seedless
Thompson seedless—sweet flavored; thin skin; most popular; purple; seedless; oblong
Current (not the berry) is a mutation of the corinth grape; the name Zante comes from the Greek island of Zakynthos where the current first grew
1 pound (lb) raisins = 4 lb, fresh grapes
1-lb package
  = 2½–2¾ cups, seedless (1 cup = 150 grams (g) or 5.2 ounces (oz))
  = 2 cups, chopped seedless (190 g or 6.7 oz)
  = 3½ cups, seeded (1 cup = 140 g or 5 oz)
  = 2½ cups, chopped seeded (1 cup = 180 g or 6.4 oz)
1 cup = 4.7–5.3 oz
Composition (raw): moisture 17–24%; protein 1–3%; fat 0.2–0.5%; carbohydrate 64–77%; ash 2%; pH 3.8–4.0
Raw—at 12% moisture a grape becomes a raisin
4 tsp sugar per 0.25 cups
Defect action level—average of 5% showing mold; average of 40 mg sand and grit per 100 g; 10 insects or equivalent and 20 Drosophila (fruit fly) eggs per 8 ounces
Storage:
High temperature—will dry out
High humidity—will cause sugar to crystallize
Cool temperature—can be stored for 2 years
After opening refrigerate in an air tight container; freeze for longer storage. If sugar crystallizes, soak in hot water for 15 min See also currant; sultana
raisen, crown  Size of Muscat raisins
 Cannot pass screen opening smaller than

<table>
<thead>
<tr>
<th>Crown</th>
<th>Can't pass through</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>18η inch</td>
</tr>
<tr>
<td>2</td>
<td>32η inch</td>
</tr>
<tr>
<td>3</td>
<td>32η inch</td>
</tr>
<tr>
<td>4</td>
<td>Cannot pass through 31 η inch</td>
</tr>
<tr>
<td>5</td>
<td>Extra large or jumbo</td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>
raisin bread  A bread containing a minimum of 50 parts or raisins by 100 parts of flour; a tea bread containing raisins; minimum of 3 ounces raisins per pound loaf
raisin pie  ¼ of 9-inch pie = 320 calories
raisin, puffed  Muscat raisins processed so they are not sticky and remain loose in the box
raisin, seedless 1) Sultana. 2) Seedless dried grape
raisin, seedless white  See sultana
raita  Yogurt with cucumber, mint, onions, and spices
rajadane  A wine fermented from Alstonia venenata or Mimuscos hexandra grapes
rakefisk  A mild-flavored trout
raki  An herb liqueur; a type of arrack beverage
rajka  An herb liqueur
rajika  An herb liqueur
rakorret  A mild-flavored, salted, salmon, trout, Salmo, or perch
rakshi  A rice beer
ralgro  A growth-promoting implant used on slaughter steers and heifers
rallarsnabb gilde (club)  A dry, uncooked, smoked Norwegian sausage (salami) made from medium chopped, medium seasoned, beef, pork, and reindeer that is fermented and stuffed into an artificial casing
ram  An uncastrated male ovine animal (sheep) of any age that shows secondary sexual characteristics
See Part 2: Sheep Market Classes and Grades
rambol cheese  A mild processed, dessert cheese made from cow's milk; often flavored with hazelnuts or walnuts
Rambouillet  A fine-wool breed of sheep developed in France and Germany, but originating from the Spanish Merinos; they have white lips and hooves and the rams have horns (also a polled strain); ewes are without horns
See Part 2: Sheep Breeds
rambutan (Nephelium lappaceum) A large south­east Asian tree that produces clusters of plum-sized (2 x 1/2 inch), red to yellow fruit covered with red or yellow soft, long, hairlike spines; the white translucent edible part is a fleshy aril, in the center of which is a single pointed seed; the fruit has a sweet-acid taste and may be eaten raw or stewed. See Part 2: Fruit Classification; Fruit Storage; Saturated Fatty Acids

ramekin An individual-size, baking dish

ramie (China grass; grass linen; rhea; Boehmeria nivea) A perennial fiber producing plant or shrub in which the inner bark of the stems produces one of the strongest plant fibers known; used to make coarse fabrics and cordage; the leaves and tops are high in protein and are used as livestock feed

rampion (Campanula rapunculus) A biennial (or perennial) weed or pot herb or vegetable whose white fleshy tap root when young is boiled and used in salads or as a vegetable

ram rack Entire male lamb from weaning to 1st shearing

ranchero “Country” or “cowboy” style food

rancid Having a foul odor or taste similar to that of an old oil, due to degradation caused by oxidation or bacteria; staleness; odor of C-9 and -10 aldehydes; fats that have decomposed (often oxidation) and have an unpleasant, stale smell or taste; rancidity is evident when only 0.05-0.10% of the weight of fat has reacted with oxygen; also destroys fat-soluble vitamins. See Part 2: Spoilage, Fat in Food; Spoilage, Protein Foods

rancidity A stage of fat oxidation characterized by sharp, acrid, and pungent off-flavors and odors

random An impartial (without system bias) sampling; each sample has an equal opportunity of being selected

randomization Interesterification of fat

randomized group comparisons Two groups of equal size (approximately equal variance)

Pooleled .x2 = .x2 (1st group) + .x2 (2nd group)

Ho: .1 - .2 = 0 or .1 = .2

\[ t = \frac{(\bar{x}_1 - \bar{x}_2) \sqrt{n(n-1)}}{\text{pooled } \Sigma x^2} \]

\[ s^2 = \frac{\text{pooled } \Sigma x^2}{(n-1)n} \]

Unequal numbers per group

\[ t = \frac{(\bar{x}_1 - \bar{x}_2) \sqrt{n_1n_2(n_1 + n_2 - 2)}}{(n_1 + n_2) \text{ pooled } \Sigma x^2} \]

\[ s^2 = \frac{\text{pooled } \Sigma x^2}{(n_1 + n_2 - 2)} \]

\[ df = n_1 + n_2 - 2 \]

\[ n_1 = \text{number in group 1} \]

\[ \bar{x}_1 = \text{mean in group 1} \]

random mating Allowing mating to occur at random

random sample A sample drawn so that every item in the lot has an equal chance of being selected

range 1) The difference between upper and lower limits of a variable. 2) Naturally low-productivity, vegetated areas used for grazing (rangeland)

rangeland Land (usually in the western U.S.) that is used for grazing of animals

rangiport A soft to semisoft, strongly flavored cheese made from cow’s milk and ripened by surface bacteria

rangpur A red-skinned, citrus fruit that has orange flesh and is high in acidity

rangy Body too long

Rankine (R) A temperature scale based on the absolute zero of the Fahrenheit scale; 0° Rankine = -460°F See also absolute temperature

ranking test Panelists receive three or more coded samples and are asked to rank them on a specific characteristic

rank preference A ranking of coded samples from the one you like best to one you like the least

ranu A starter culture used to inoculate sake

rape (cole, coleseed; Brassica napus, B. campestris) An herb belonging to the wallflower family; an annual grass of the mustard family used for hog pasture

<table>
<thead>
<tr>
<th>Part of plant</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Root</td>
<td>Vegetable</td>
</tr>
<tr>
<td>Seed</td>
<td>Oil (35-50%)</td>
</tr>
<tr>
<td>Seed cake</td>
<td>Livestock feed</td>
</tr>
<tr>
<td>Stem and leaves</td>
<td>Livestock feed</td>
</tr>
<tr>
<td>Stem and leaves</td>
<td>Salad or greens</td>
</tr>
</tbody>
</table>
Compositions of seed cake: protein 35–40%; carbohydrate 20–25%; fiber 12–16%; ash 5–7%; pH 5.5–6.0 
Weight: 50–60 pounds per bushel 
Seeding: 3–8 pounds per acre 
See Part 2: Seed, Chemical Composition; Seed, Germination; Unsaponifiable Matter

**Rape Meal** A slow release fertilizer

<table>
<thead>
<tr>
<th>Meal</th>
<th>Dry matter (%)</th>
<th>Protein (%)</th>
<th>Fiber (%)</th>
<th>Fat (%)</th>
<th>Ash (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seed mechanically extracted</td>
<td>92</td>
<td>36</td>
<td>12</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Seed solvent-extracted</td>
<td>91</td>
<td>37</td>
<td>12</td>
<td>1.7</td>
<td>7</td>
</tr>
<tr>
<td>Boiled, summer seed mechanically extracted</td>
<td>94</td>
<td>35</td>
<td>15.2</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Boiled, summer seed solvent-extracted</td>
<td>92</td>
<td>40</td>
<td>9</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Turnip, seed mechanically extracted</td>
<td>94</td>
<td>35</td>
<td>13</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Turnip, seed solvent-extracted</td>
<td>91</td>
<td>37</td>
<td>12</td>
<td>2</td>
<td>6</td>
</tr>
</tbody>
</table>

**Rapeseed Oil (Colza Oil)** Called mustard oil in India; a vegetable oil expressed or solvent-extracted from rapeseed.

<table>
<thead>
<tr>
<th>Properties</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Acid number</td>
<td>0.34</td>
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<tr>
<td>Iodine value</td>
<td>81–110</td>
</tr>
<tr>
<td>Melting point</td>
<td>9°C</td>
</tr>
<tr>
<td>Refractive index</td>
<td>1.474–1.476</td>
</tr>
<tr>
<td>Saponification value</td>
<td>165–180</td>
</tr>
<tr>
<td>Saturated fatty acids</td>
<td>3–8%</td>
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<tr>
<td>Specific gravity</td>
<td>20°/4°C–0.9114</td>
</tr>
<tr>
<td>Titer</td>
<td>10–18°C</td>
</tr>
<tr>
<td>Unsaponifiable</td>
<td>1.5%</td>
</tr>
</tbody>
</table>

See Part 2: Fats and Oils, Composition; Fats and Oils, Fatty Acid Composition; Fats and Oils, Physical and Chemical Properties; Fatty Acids, Fats and Oils; Iodine and Saponification Values; Oil or Fat, Characteristics; Rapeseed Oil, Triglyceride Mole Percent Composition; Saturated Fatty Acids; Spoilage, Fat in Food; Titer, Fats and Oils; Tocopherols; Unsaturated Fatty Acids

**Rapeseed Protein Concentrate (RPC)** Highest nutritional quality (PER 3.0–3.5) of all plant proteins and contains only a trace (< 0.2%) of glucosinolates

**Rare (Meat)** A state of “doneness” at which the internal beef temperature is 140°F; center of meat is still red in color 
See Part 2: Beef Degrees of Doneness; Beef Roasting; Broiling Time and Temperature

**Rarebit** A cheese and toasted bread mixture often containing ale or beer

**Rare Earth Element** An element with atomic number from 58 through 71, that comprises the lanthanide series of Group III B of the Periodic Table

**Ras** A provolone-type cheese made from cow’s milk

**Rascasse** A fish used primarily for stew or soup

**Raschera** See nostrale

**Rasher** A thick or thin slice of bacon or raw ham that is fried or broiled 
No. 3-4—thin 
No. 5-6—medium 
No. 7—thick

**Raspail** A yellow, angelica-, calamus-, and myrrh-flavored, digestive liqueur

**Raspberry (Black Cap; Rubus idaeus; R. stigosus)** An aggregate fruit used for food; the canes produce a berry comprised of numerous round one-seeded drupelets that are contained close together in a small core; the fruit may be red, yellow (white raspberries), black or purple (black-red raspberries)

Types:
- Black (Rubus occidentalis)—stronger flavor than red; a good shipper
- Allan
- Black Hawk
- Bristol
- Morrison
- Everbearing
- Fall bearing
- August Red—ripen's earlier
- Heritage
- Purple (hybrids of black and red)
- Amethyst
- Clyne
- Purple Autumn
- Red—delicately flavored
- Fallred
- Hilton
- Latham
- Thornless Canby
- Summer fruiting
### Raspberry Cultivars

<table>
<thead>
<tr>
<th>Raspberry cultivar</th>
<th>Color</th>
<th>Size</th>
<th>Quality</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allegheny</td>
<td>Black</td>
<td>Medium-large</td>
<td>Good</td>
<td>Vigorous, productive</td>
</tr>
<tr>
<td>Allen</td>
<td>Black</td>
<td>Large</td>
<td>Good</td>
<td>Vigorous, preserves</td>
</tr>
<tr>
<td>Amethyst</td>
<td>Shiny, purple</td>
<td>Large, round</td>
<td>Good, firm</td>
<td>Vigorous, hardy</td>
</tr>
<tr>
<td>Augustred</td>
<td>Red</td>
<td>Medium</td>
<td></td>
<td>August, hardy, medium vigor</td>
</tr>
<tr>
<td>Black Hawk</td>
<td>Black</td>
<td>Large</td>
<td>Firm</td>
<td>Very productive, hardy</td>
</tr>
<tr>
<td>Brandywine</td>
<td>Purple</td>
<td>Large—very large</td>
<td>Good, tart</td>
<td>Vigorous, hardy</td>
</tr>
<tr>
<td>Bristol</td>
<td>Black</td>
<td>Medium—Large</td>
<td>Good, firm</td>
<td>Vigorous, hardy, heavy bearing</td>
</tr>
<tr>
<td>Canby</td>
<td>Red</td>
<td>Large</td>
<td>Firm</td>
<td>Vigorous, hardy, thornless</td>
</tr>
<tr>
<td>Citadel</td>
<td>Red</td>
<td>Large</td>
<td>Firm</td>
<td>Medium vigor</td>
</tr>
<tr>
<td>Clyde</td>
<td>Purple</td>
<td>Large</td>
<td>Tart</td>
<td>Vigorous, hardy</td>
</tr>
<tr>
<td>Cumberland</td>
<td>Black</td>
<td>Large</td>
<td>Good, firm</td>
<td>Vigorous</td>
</tr>
<tr>
<td>Dundee</td>
<td>Black</td>
<td>Large</td>
<td></td>
<td>Vigorous, hardy</td>
</tr>
<tr>
<td>Fairview</td>
<td>Red</td>
<td>Large</td>
<td>Good</td>
<td>Vigorous</td>
</tr>
<tr>
<td>Falgold</td>
<td>Yellow</td>
<td>Large</td>
<td>Sweet</td>
<td>Old canes—June, New canes—August</td>
</tr>
<tr>
<td>Falired</td>
<td>Red</td>
<td>Medium</td>
<td></td>
<td>Everbearing, hardy</td>
</tr>
<tr>
<td>Haida</td>
<td>Red</td>
<td>Medium</td>
<td></td>
<td>Everbearing</td>
</tr>
<tr>
<td>Heritage</td>
<td>Red</td>
<td>Medium</td>
<td>Fine, firm</td>
<td>Everbearing, strong cane, heavy crop</td>
</tr>
<tr>
<td>Hilton</td>
<td>Red</td>
<td>Large</td>
<td></td>
<td>Hardly, vigorous</td>
</tr>
<tr>
<td>Huron</td>
<td>Black</td>
<td>Large</td>
<td></td>
<td>Hardly, fresh, jam</td>
</tr>
<tr>
<td>Latham</td>
<td>Red</td>
<td>Medium</td>
<td>Average</td>
<td>Vigorous</td>
</tr>
<tr>
<td>Meeker</td>
<td>Red</td>
<td>Large</td>
<td></td>
<td>Harder than most drought resistant</td>
</tr>
<tr>
<td>Munger</td>
<td>Black</td>
<td>Large</td>
<td>Firm</td>
<td>Very productive</td>
</tr>
<tr>
<td>Newburgh</td>
<td>Dark red</td>
<td>Large</td>
<td>Good</td>
<td>Vigorous, hardy</td>
</tr>
<tr>
<td>New Logan</td>
<td>Black</td>
<td>Medium</td>
<td>High</td>
<td>Vigorous, hardy</td>
</tr>
<tr>
<td>Plum Farmer (Farmer)</td>
<td>Black</td>
<td>Large</td>
<td></td>
<td>Vigorous, hardy</td>
</tr>
<tr>
<td>Puyallup</td>
<td>Red</td>
<td>Large</td>
<td>Good</td>
<td>Vigorous, hardy</td>
</tr>
<tr>
<td>Reveille</td>
<td>Red</td>
<td>Large</td>
<td>Good</td>
<td>Medium vigor</td>
</tr>
<tr>
<td>Scepter (Scepter)</td>
<td>Red</td>
<td>Large</td>
<td></td>
<td>Vigorous, hardy</td>
</tr>
<tr>
<td>Sentinel</td>
<td>Red</td>
<td>Medium—Large</td>
<td>Sweet, firm</td>
<td>Vigorous, hardy</td>
</tr>
<tr>
<td>September red</td>
<td>Red</td>
<td>Large</td>
<td></td>
<td>Autumn</td>
</tr>
<tr>
<td>Sodus</td>
<td>Purplè-red</td>
<td>Large</td>
<td>Firm</td>
<td>Heavy bearing, midwest</td>
</tr>
<tr>
<td>Southland</td>
<td>Red</td>
<td>Medium</td>
<td></td>
<td>Medium vigor</td>
</tr>
<tr>
<td>Sumner</td>
<td>Red</td>
<td>Medium</td>
<td></td>
<td>Vigorous, hardy</td>
</tr>
<tr>
<td>Taylor</td>
<td>Red</td>
<td>Large</td>
<td>Good</td>
<td>Vigorous, hardy</td>
</tr>
<tr>
<td>Williamette</td>
<td>Red</td>
<td>Large</td>
<td>Good</td>
<td>Very productive, vigorous</td>
</tr>
</tbody>
</table>

Yellow (related to red)
- Amber
- Fall Gold
- Gall Gold

They are consumed fresh, cooked, canned, frozen, or made into jams, jellies, and drinks. Bearing age 2 years; yield per plant 2 pounds. Juice is a popular drink.

Canned style:
- Black, packed in syrup
- Black, packed in water
- Red, packed in syrup (good color)
- Red, packed in water

Frozen style:
- Black
- Red packed in sugar syrup
raspberry (black cap; *Rubus idaeus*; *R. stigosus*)

Equivalents:
100 pound (lb), fresh = 17–23 lb, dry
24 quart crate = 36 lb
1 crate [24 pints (pt)], fresh = 24 pt frozen
1 pt, frozen = 1 pt, fresh
1 lb, fresh = 4 servings
1 pt, fresh = 13 ounces (oz), frozen = 4–5 servings
10 oz, frozen = 2–3 servings
1 cup, canned = 8.8–10 oz
1 cup, raw, red = 123 grams (g)
1 cup, without caps and stems = 123 g
1 servings = 0.75 cup

Defect action level: average microscopic mold count of 60%; average 4 larvae per 500 g or average of 10 insects (larvae or other insects) per 500 g (excluding thrips, aphids, and mites)

Composition (raw): Moisture 82%; protein 1%; fat 1%; carbohydrate 15%; ash 0.5%; pH 3.2–3.7; vitamin A in red is 130 IU per 100 g; ascorbic acid in red is 24 mg/100 g

Storage: Short term (7 days), 31°F, 85–90% relative humidity; long term (1 year), −10°F

See Part 2: Canned Yield; Flavor Ingredients, Taste and Flavor Type; Flavors, Beverage; Frozen Food Storage; Fruit Classification; Fruit Composition; Fruit Frozen Yield; Fruit Harvest Dates; Fruit Servings Per Pound; Minerals, Food; Rot Spoilage; Standards, Processed Fruit and Vegetable Products; Storage; Sugar, Fruit; Wine, Sweet

**raspberry cane borer**

Host: raspberry, blackberry, and some roses
Damage: canes are girdled and wilt
Control: burn infected canes and use insecticide

**raspberry, canned** In addition to raspberries, may also contain natural and artificial flavors

Type: black, red
Amounts of sucrose in syrup:
Extra light—11–15%
Light—15–20%
Heavy—20–27%
Extra heavy—27–35%

**raspberry crown borer**

Host: raspberry, blackberry, loganberry, and boysenberry
Damage: bores into lower cane or crown area; reduces cane vigor
Control: burn infested plants and use insecticide

**raspberry flavoring** A synthetic flavor mixed with fruit juice, extract, water, and alcohol, used with red coloring

**raspberry leaf** Used as an herb and for tea

**raspberry leaf curl** A virus disease spread by small leaf-feeding aphids
Symptoms: leaves are rounded and curled; new canes are dwarfed
Control: use control methods recommended for raspberry mosaic

**raspberry mosaic** A virus disease, widespread except on Pacific coast; causes more severe damage on black and purple than on red raspberries
Symptoms: small, deformed leaves with large green blisters; cane growth is stunted

Control: plant state-certified raspberries free of mosaic diseases; remove and burn infected plants

**raspberry vinegar** A mixture of raspberries, vinegar, and sugar used for flavoring beverages and diluted and used as a beverage

**raspegat** Fine, stale, bread crumbs

**raspegest** A fish- or meat-filled, fried, wheat flour, dough pie

**rat** (*Mus*) A destructive and disease-carrying rodent Type (U.S.):
- Alexandrian rat (roof rat; *Rattus rattus alexandri-nus*)—Gulf states, seaport
- Black rat (ship rat; *Rattus rattus*)—southern U.S.
- Brown rat (barn rat; bush rat; gray rat; Norway rat; sewer rat; water rat; *Rattus norvegicus*)—northern U.S.

Rats are carriers of bubonic plague, leptospiral jaundice (Weil’s disease), trichinosis

**rat acrodynia** See pyridoxine

**ratatouille** A vegetable stew that includes eggplant, garlic, green pepper, olive oil, squash, and tomatoes

**rate of passage** The time from ingestion to excretion

**ratio** The quotient of a value divided by another of the same type

**ration** A fixed amount of food and water for individual consumption; food consumed in 24 hours; a fixed allowance of a specific food or combination of foods made available to certain individuals or categories of individuals

**ratio-scaling** An estimation of magnitude of a characteristic for a sample; an assigned number is given to the first sample. Each additional sample is given a score in relation to the first sample

**ratoons** See sugar cane

**rattail** (*Macrourus* spp.) A food fish

**rattle** Part of forequarter of cattle consisting of the arm, brisket, shank, and short plate; in veal and lamb it consists of breast, shank, and shoulder

**rattlebox** A plant having a toxic principle See Part 2: Poisonous Plants

**rattleran** A fish- or meat-filled, fried, wheat flour, dough pie

**rattlerbox** A plant having a toxic principle See Part 2: Poisonous Plants

**rauchsalami** A dry, uncooked, smoked Swiss sausage (pepperoni) made from fine, medium, or coarsely chopped, heavily seasoned beef and pork that is fermented and stuffed into a beef or artificial casing or not stuffed into a casing

**raven’s beak** See Part 2: Bone

**ravigote** 1) An egg- and mayonnaise-based sauce used on fish. 2) Mixture of burnet, chervil, chives, parsley, and tarragon

**ravioli** An Italian dish made from a mixture of finely ground, well-spiced (carrots, celery, mushrooms, onions) meat (often beef or chicken) and cheese cooked inside a noodle pasta (small square or round envelopes with the edges crimped); often cooked in a tomato sauce

See Part 2: Microwave Processing Time
raisons oil  A type of rapeseed oil from Black Sea area.  
See Part 2: Fatty Acids, Fats and Oils; Iodine and Saponification Values; Oil or Fat, Characteristics
raw  Natural state; not exposed to heat; unchanged state; uncooked
rawboned  Underfinished
rawhide  Untanned skin
raw milk  Milk that is not pasteurized
ray  A food fish (Raja spp.):  
Blonde—R. brachyura  
Cockoo—R. naneus  
Painted—R. microcellata  
Sandy—R. circularis  
Shagreen—R. fulonica  
Spotted, homely—R. montagui  
Starry—R. radiata  
Thornback, roughback—R. clavata  
Undulate, marbled—R. undulata
rayless goldenrod  A plant having a toxic principle  
See Part 2: Poisonous Plants
rayon  1) A dry, hard Emmenthaler-type grating cheese.  
2) Fiber made from regenerated cellulose, usually by the viscose process
razi  A starter culture used to inoculate rice beer
raznici  Pork and veal grilled on skewers
razorback  Thin, narrow-back hogs
razor shell (Solen siliqua)  A 6 inch bivalve
Rb  Symbol for the element rubidium
RBC  Red blood cells  
See Part 2: Blood
RDA  See recommended daily allowance
Re  Symbol for the element rhenium
rea-  A prefix meaning back or again
reach  The difference between average merit of flock and average merit of those selected to be parents of the next generation
reactant  One of the original chemicals in a chemical reaction
reactivity  The ability to undergo chemical change
reactor  Cattle reacting to tuberculin test
ready-to-cook poultry  Poultry free from protruding pinfeathers and vestigial feathers (hair or down) and from which the head, feet, crop, oil gland, trachea, esophagus, entrails, mature reproductive organs, and lungs have been removed, and with or without the giblets; suitable for cooking without need of further processing.  Ready-to-cook poultry also means any cut up or disjointed portion of poultry or other parts of poultry such as reproductive organs, head, or feet that are suitable for cooking without need of further processing
ready-to-eat  Prepared for consumption; precooked; may be eaten without further heating
ready-to-eat ham  A ham that has reached an internal temperature of 148°F and held to at least this temperature for 2 hours  See also smoked meat
ready-to-serve  See cooked; smoked meat
ready-to-slice ham  A ham that has been tenderized but must be cooked further before eating; internal temperature has reached approximately 142°F
reagent  1) A chemical compound used in laboratory analysis to identify specific constituents of the material being analyzed.  2) Designation of a grade of chemical purity; a purity suitable for analytical use; it will show lot analysis or maximum limits of impurities  See also grade
See Part 2: Reagents, Normal Solutions
real rate of interest  Interest earned after deducting the average rate of inflation
ream  1 ream = 500 sheets
rearrangement  See interesterification
Reaumur (R)  A measure of temperature; zero Reaumur is the melting point of ice and 80° Reaumur is the boiling point of water
°R = °C • \frac{9}{5}  
°R = (°F - 32) \frac{9}{5}  
°C = °R \frac{5}{9}  
°F = (°R \frac{9}{5}) + 32
rebate  A discount offered as a buyer's refund after original payment
reblochon (an imitation is known as brizecon)  
A French, semihard to semisoft, cheese made from whole cow's milk with rennet added; soft, buttery consistency with a mild nutty flavor; a round, flat, creamy texture; medium flavored, washed, reddish brown or golden crust cheese; aged 1 month  
See Part 2: Cheese, Vitamin Content; Milk and Milk Products, Vitamin Content
receme  A cluster of flowers having stems coming from the main stem
receptor  A cell with increased irritability to certain stimuli
recessive  The tendency of a gene not to express itself, usually because of dominance from another gene
rechauffe  Recooked, reheated or recombined food
recioto  A sweet, Italian wine
recipe (receipt)  Details given for preparation of food; a list of ingredients to be used in a food product, with instructions for blending and cooking
reciprocity  The practice of giving preference to suppliers who also are customers of the buying firm
recollet  A cow's milk cheese
recombinant derived bovine growth hormone (bSTH)  Increases milk production and mammary growth in cattle
recombinant DNA molecule (spliced genes)  DNA fragments from two different species are spliced (by highly selective enzymes) together. Transformation is inserting the new hybrid DNA into a host cell. The hybrid DNA is passed on to daughter cells that produce a new protein
recommended daily allowance (RDA)  The Food and Agricultural Organization (FAO) and the World Health Organization (WHO) of the United Nations and the U.S. Food and Drug Administration and the
recommended daily allowance (RDA)

Canadian Council on Nutrition and the Committee on Nutrition, and British Medical Association all publish a nutrient intake list; not all groups agree on quantities. The term RDA replaced minimum daily requirement (MDR) and is a guide to nutrient intake; energy and nutrients that will maintain a good state of nutrition in healthy people of all ages including a margin of safety to cover individual variation. See recommended daily dietary allowance; recommended dietary allowance

recommended dietary allowance (RDA) Specified vitamins, minerals, and protein adequate for maintenance of good nutrition of a healthy person in the U.S. population; developed by NAS-NRC; they are generally higher than minimum daily requirements. See Part 2: Ascorbic Acid; Cereals, Vitamin and Mineral Content; Recommended Daily Dietary Allowance

reconstitute To replace missing components; to restore concentrated or dried food to its original state, usually by adding water

reconstituted Returned to original form, usually by the addition of water

recording tachometer An instrument that records revolutions per minute

recorking Replacing old wine corks with new ones

recourse loan Loans that would have to be repaid in cash rather than delivering commodities

recovery See Part 2: Food, Water Intake

rectification Purification of an alcoholic product by repeated contact of the liquid distillate with the vapor formed in the first evaporation

rectified spirit Whiskey mixtures. In the United States, 91% alcohol (84% in England)

rectified whiskey Straight whiskey mixed with silent spirit or water and/or caramel

rectifier A device for converting alternating to direct current

Rectus abdominis Flank steak

Rectus femoris See quadriceps

recuit 1) A ricotta-type cheese made from cow's milk

red 1) A herring that has been dry salted and smoked

red 2) A deep red type of salmon See Part 2: Fish, Smoke-Cured; Salmon and Trout

red algea A seaweed from which agar and carrageenin are extracted See Irish moss

Red Angus See Part 2: Beef and Dual-Purpose Cattle

Redbanded leafroller An insect found throughout the eastern U.S.; a greenish caterpillar about $\frac{3}{4}$ in. long; it spins a web to protect itself while feeding on grape leaves; may be controlled by spraying

red bean See rice bean

red beans and rice A stewlike meal containing red beans, ham bone, smoked sausage, and red peppers and served over rice

red blood cell An erythrocyte comprising $\frac{1}{3}$ of blood volume; 5 million per cubic millimeter; contains hemoglobin; cell is $8.8 \times 1.9 \, \mu m$ See also erythrocyte

red Bordeau See claret

Red Brangus Red, polled, American, cattle breed based on Angus and Brahman ancestry. See Part 2: Beef and Dual-Purpose Cattle

red bream A Northeast Atlantic, food fish See common bream; sea bream;

red-brown earths Acid to neutral, reddish-brown, loams or clay loams

red bug See apple red bug

red cabbage A purple cabbage that requires longer cooking time than white or green cabbage

red caviar A purple cabbage that requires longer cooking time than white or green cabbage

red currant (Ribes sativum) A hybrid (R. petraeum, R. rubrum, and R. vulgare) berry used in confectionery, jams, and jelly

Red Danish A dairy breed of cattle that originated in Denmark

Red Delicious A variety of apple that is in season from October to March; excellent for eating and fair for cooking; too sweet for most cooking purposes

red dog flour See low-grade flour

red dressing A type of salad dressing See Part 2: Salad Dressing and Mayonnaise Variations

red drum See bass

red fiber (red fibre) Red-colored muscle fiber; Sudan black B (lipid stain) positive

redfin (shiner; Luxilus cornutus; Lythrurus unbratilis) A small, silvery, freshwater carp

red fish (Oncorhynchus nerka) A red- or blue-backed salmon that is a food fish See ocean perch

red goatfish A red mullet, food fish found in Florida

red gram See pigeon pea

red grouper See grouper
red gurnard (gurnet) A small (maximum of 16 inches), spiny finned, saltwater fish of the Trigidae family used for food
red hake See hake
redhaven season Peach cultivars that ripen early, 3-5 weeks before Elberta
red herring Herring cured with salt peter and heavy salt and smoked about 10 days
red hot Colloquial term for frankfurter
red-humped caterpillar A 2-in. long insect with yellow and black stripes on its body, a red head, and a bright red hump on its back near the head. The young larvae skeletonize leaves and older larvae eat the entire leaf.
red in snow Pickled vegetables used for cooking with ground meat
red laver (purple laver; slouk; stoke; Porphyra vulgaris) Edible seaweed that may be pickled, used in soup, as a vegetable, or in salads
red mombin (ciruela; jocote; Spanish plum) A 1-2-in., red to yellow, fruit that has yellow flesh and a sweet acid flavor similar to an olive
red mouth See grunt
red mullet A food fish
Europe—Mullus barbatus
Florida—M. auratus
red-necked cane borer Host: raspberry, blackberry, and dewberry Damage: canes enlarge and swell and frequently die Control: burn canes and use insecticide
red No. 1 A FD & C food color additive
red No. 40 A FD & C food color additive
redox An oxidation-reduction reaction; a measure of the oxidizing or reducing power of a system
red palm oil See palm oil, red
red pepper (cayenne; Capsicum frutescens L.) Ripe pods of fresh peppers or dried, ripe fruit of capsicum; very hot to the taste Composition standards: moisture max. 10%; ash max. 8%; acid insoluble ash max. 1%; Scoville pungency 30,000–55,000 See capsicum
red pepper oleoresin A deep red liquid obtained by solvent extraction of long, moderately pungent capsicum; 80,000–500,000 Scoville units 1 kg of 20,000 Scoville units = 10 kg good quality red pepper 0.6–3.9% capsaicin Up to 20,000 maximum ASTA color units Available: free flowing and on carriers
red pinot A red wine made from pinot grapes
red Poll An English dual-purpose type of cattle that is hornless See Part 2: Beef and Dual-Purpose Cattle; Gestation Periods
red rowan (Chrysoblephus laticeps) A food fish
red salmon See salmon
red sausage See vorosaru
red sheep The symbol of genuine, roquefort cheese
red snapper (king of the fish market: Lutjanus blackfordi) A lean fish caught in the Gulf of Mexico, off the middle Atlantic coast of the United States, and off Taiwan Species: mangrove (gray snapper; Pensacola snapper) —A 2 foot long, white, food fish, with moderate rich flavor, sweet taste and firm flesh; 1.5–2 pounds dressed 1 fillet = 0.25–0.6 pounds See Part 2: Minerals, Food
red sorrel Dark brown, fermented balls of oil-rich seed used in soup and stews
red spider An insect (tiny mite) that infects certain evergreen trees, cucumbers, melons, and some greenhouse plants; a problem when weather is dry See Part 2: Insect Control
red steenbras (Dentex rupes) A food fish
red tide Red algae that periodically “bloom” in such numbers as to make the ocean surface appear red. They produce a strong toxin that is absorbed by shellfish in shallow waters (paralytic shellfish poison). Often occurs along North Atlantic coast See also algae
redtop (herds grass; Agrostis alba; A. stolonifera) A perennial grass; seed weight 14 pounds, uncleaned per bushel; 30–38 pounds, cleaned per bushel; seeding, 5 pounds per acre; pH 5–5.5; used for hay and pasture See Part 2: Seed, Germination
reduce To boil to obtain a smaller liquid volume
reduced acreage program See acreage reduction program
reduced-calorie ¾ fewer calories than conventional counterparts
reduce to Boil to concentrate and/or thicken
reducing agent A substance that loses electrons and is oxidized
reducing sugar A sugar that is easily oxidized by weak oxidizing agents (silver, mercuric, or cupric salts); it will reduce Fehling’s solution and form cuprous oxide. These sugars contain a free aldehyde or ketone group (includes monosaccharides and some disaccharides); examples are glucose; fructose, maltose, and lactose Properties: Combine with nitrogen at elevated temperatures to cause browning (Maillard reaction) Inhibit oxidation degradation Help retain bright colors in food
reduction 1) A gain of electrons; the loss of a positive charge or the gain of a negative charge; loss of oxygen or gain of hydrogen. 2) To make of lesser amount or size
redware (sweet tangle; tangle; Laminaica saccharina; Porphyra laciniata) An edible seaweed

red water Finely divided particulate matter in water giving a brown or red cast

red wine A red-colored, alcoholic beverage made by fermenting (12–14 days at 21–29°C) grape (Vitis vinifera) juice and skins; often stored before consumption

redwood bark See Part 2: Insulation

reed canarygrass (Phalaris arundinacea) A perennial grass used for hay, pasture, silage, and erosion control

reed fat Fat obtained around the third and fourth stomach

reference man A model human male between the ages of 20 and 39, who weighs 65 kg and is healthy and free of disease. He is employed for 8 hours in a moderately active occupation, spends 8 hours in bed, 4–6 hours sitting (excluding time at work), and 2 hours walking. He is adequately clothed and housed and he consumes an adequate diet in which he neither gains nor loses weight; 3000 kcal/day (12.5 MJ) is considered adequate for a 65 kg man

reference price The official average weekly market price. The EEC reference prices are based on weighted averages from the individual countries

reference protein A protein of high biological value, containing a specified pattern of amino acids that is completely utilisable for anabolic purposes

reference woman A model human female between 20 and 39 years of age, who weighs 55 kg, and is healthy and free from disease. She spends 8 hours a day in general household work, 8 hours in bed, 4–6 hours sitting, and 2 hours walking. She is adequately clothed and housed and consumes an adequate diet in which she neither loses nor gains weight; 2200 kcal/day (9.20 MJ) is considered adequate for a 55 kg woman

referendum A vote by producers of a specific commodity for a proposed program that will obligate all producers to participate

refine Removing impurities from material, e.g., sugar cane

refined lard Lard that has been bleached using fuller’s earth

refiner’s sugar See molasses

refiner’s syrup A syrup obtained as a by-product of refining brown sugar; it is lighter in color and milder in flavor than molasses; 25% max. moisture

refining 1) Removal of fatty acids and impurities from fat; processes used: caustic soda, steaming, water wash, liquid-liquid extraction. 2) Removal of impurities from sugarcane or beet syrup by filtration, crystallization, adsorption on charcoal, etc. 3) Fine grinding and bolting of cereal grains for white flour

Refinite Trademark for silicates used to soften water See also hardness (water)

reflux A technique used in distillation in which condensed vapor (liquid) flows back downward through the tower, thus mixing intimately with the rising vapor; this gives greater separation efficiency; also called countercurrent flow

refractive index (R.I.) The ratio of the speed of light in a vacuum to the speed of light in a substance; a number that indicates how much the direction of light is deflected when it passes through a substance; \( n_D \) is \( n \) at 20°C using the D-line of sodium as a light source. The R.I. is characteristic of a fat and saturation; it is affected by free fatty acids, oxidation, and heat treatment; the R.I. increases during frying and oxidation. Test of authenticity; used to identify fats and oil; most domestic vegetable oils range from 1.4600–1.4768

See Part 2: Refractive Indices, Fats and Oils

refractometer An instrument that uses variation in the path of light traveling through materials of different densities to determine the proper consistency or finish point of jellies

refrigerant A chemical used in artificial refrigeration. Examples: ammonia (NH₃), butane (C₄H₁₀), carbon dioxide (CO₂), ethane (C₂H₆), ethyl chloride (C₂H₅Cl), isobutane ((CH₃)₃CH), methyl chloride (CH₃Cl), propane (C₃H₈), sulfur dioxide (SO₂), and various fluorocarbons

See Part 2: Refrigerant

refrigeration Cooling, usually to near the freezing point, to preserve or prolong the keeping quality of food

refritos Refried

refuse Damaged, defective, discarded, or superfluous edible or inedible material remaining after manufacturing or industrial processes; percentage of food as purchased that is not usable or eaten; waste

regalaii White and red, dry wine produced in Sicily

reggiano cheese A superior grade of parmesan cheese made from a better grade of milk See parmesan cheese

See Part 2: Cheese Characteristics

regniette See noodles

register To position one part accurately in regard to another

regreening Oranges that turn green when they mature late in the season

regression (multiple)
\[
\begin{align*}
\Sigma y^2 &= \Sigma Y^2 - \frac{(\Sigma Y)^2}{n} \\
D &= \frac{\left(\Sigma x_1^2\right)(\Sigma x_2^2) - (\Sigma x_1 x_2)^2}{n} \\
b_{y_1z} &= \frac{\left(\Sigma x_2^2\right)(\Sigma x_1 y) - (\Sigma x_1 x_2)(\Sigma x_2 y)}{D} \\
b_{x_1y} &= \frac{\left(\Sigma x_2^2\right)(\Sigma x_2 y) - (\Sigma x_1 x_2)(\Sigma x_1 y)}{D} \\
a &= \bar{y} - (b_{y_1z})(\bar{x}_1) - (b_{x_1y})(\bar{x}_2) \\
\hat{Y} &= a + b_{1.2} x_1 + b_{2.1} x_2
\end{align*}
\]

**regression coefficient (b; of sample)** Unit change in the dependent variable (\(Y\)) per each unit of the independent variable (\(X\)):

\[
b = \frac{\Sigma xy}{\Sigma x^2} = \frac{\Sigma XY - (\Sigma X)(\Sigma Y)}{n} - \frac{\Sigma X^2 - (\Sigma X)^2}{n}
\]

\(x = \text{deviation from mean of } X\text{s}\)  
\(y = \text{deviation from mean of } Y\text{s}\)  
\(n = \text{number of } X\text{ or } Y\text{ values}\)  
+\(b\) upward slope,  
-\(b\) downward slope  

*See also regression equation for significant test*

**regression equation (linear)**

\[
\hat{Y} = \bar{y} + b(X - \bar{x})  \quad \hat{Y} = a + bX
\]

\(\bar{y} = \text{mean of } Y\text{s}\)  
\(\bar{x} = \text{mean of } X\text{s}\)  
\(b = \text{see regression coefficient}\)  
\(a = \bar{y} - b\bar{x}\)  
\(n = \text{number of } X\text{s or } Y\text{s}\)

Sum of squares of deviation:

\[
\Sigma d_{y,x}^2 = \Sigma Y^2 - \frac{(\Sigma Y)^2}{n} - \left[\frac{\Sigma XY - (\Sigma X)(\Sigma Y)}{n}\right]^2 - \frac{\Sigma X^2 - (\Sigma X)^2}{n}
\]

Mean square deviation from regression:

\[
s_{y,x}^2 = \frac{\Sigma d_{y,x}^2}{n-2}
\]

Sample standard deviation from regression:

\[
s_{y,x} = \sqrt{s_{y,x}^2}
\]

Sample standard deviation of regression coefficient:

\[
s_b = s_{y,x} / \sqrt{\Sigma x^2 - (\Sigma X)^2 / n}
\]

Test of significance of \(b\):

\[
t = b / s_b, \quad df = n - 2
\]

or test \(H_0: b = 0\):

\[
t = b - \beta / s_b
\]

Confidence limits on \(b\)

\[
b - t_{0.05}s_b < \beta < b + t_{0.05}s_b, \quad df = n - 2
\]

Confidence limits for regression line:

Confidence limits for an average on \(Y\)s for each \(X\)

\[
\hat{Y} - t_{0.05}s_y \leq \mu \leq \hat{Y} + t_{0.05}s_y
\]

\[x = X - \bar{x} \quad \text{(calculated for each value of } X)\]

\[
s_y = s_y \sqrt{1/n + x^2 / \Sigma x^2}
\]

\[
\Sigma x^2 = \Sigma X^2 - (\Sigma X)^2 / n
\]

Confidence limits for individual \(Y\)s for each \(X\)

\[
\hat{Y} - t_{0.05}s_y \leq \mu \leq \hat{Y} + t_{0.05}s_y
\]

\[
s_y = s_y \sqrt{1 + (1/n) + x^2 / \Sigma x^2}
\]

**regressive** A policy that works to the disadvantage of lower income persons

**regular grind** Medium particle size for boiled coffee  
*See Part 2: Coffee Granule Designation; Coffee Particle Size*

**regular plate** See Part 2: Pork Shoulder

**regular pork trimmings** Consists of 50% fat

**regular roll (rib eye)** Longissimus dorsi and multifidus dorsi in the rib area

**regurgitate** The upward movement of food from the stomach back to the mouth

**regurgitation** Casting up of undigested material

**rehydrate** To soak or cook dried foods in liquid to restore lost water

**rehydrated** Food to which water has been restored

**rehydration** Replacement of previously removed water

**reibkase** See saanen

**Reichert-Meissl (RM) number** The number of milliliters of 0.1 \(N\) KOH required to neutralize the water-soluble, steam-volatile fatty acids (short-chain) hydrolyzed from 5 grams of fat; e.g., lard near 0 RM, butterfat 20–33 RM
reindeer (*Rangifer larandus*) A species of large deer with antlers; inhabits northern latitudes. A mammal used for hide, milk, and meat (resembles beef; flesh of a 3-year-old female is considered the best)

See Part 2: Milk, Mammals, Composition

reindeer milk cheese A rennet cheese

reino A golden, soft, mild, cheese made from sheep’s milk

reinsdyrpulse A moist, uncooked, smoked Norwegian sausage made from medium chopped, medium seasoned, beef, pork, goat, and reindeer that is fermented and stuffed into an artificial casing

reinsdyrpulse A moist, uncooked, smoked Norwegian sausage (salami) made from medium seasoned, medium chopped, beef, pork, goat, and reindeer that is fermented and stuffed into an artificial casing

reis Rice

reishu A melon liqueur

rejectable quality level (lot tolerance; percent defective) The level of percent defective that is always rejectable

rejection level The number in each sampling plan at which a lot is rejected for excessive defects

relative biological effectiveness (RBE) An obsolete term now replaced by the dose biological effectiveness equivalent index (H)

relative humidity Ratio of water vapor present in the air to the quantity that would be present if the air were saturated at the same temperature

See Part 2: Relative Humidity

relative standard deviation See coefficient of variation

relaxation Return to position of rest after strain

relay An electromechanical device in which a change in current or voltage in one circuit will produce a change of electrical condition in another circuit

release agent A substance to facilitate removal

release price The price of stored grain in reserve that may be sold without incuring penalties

release purchase order An order to deliver all or a portion of the items covered by a previous purchase contract

releasing hormone A hormone that initiates release of another hormone from another site in the body

relish (piccalilli) 1) A sweet mixed pickle, usually chopped or ground. 2) Olives, celery, etc., served with a meal as an appetizer. 3) Spicy or piquant items eaten with plainer foods, e.g., chili sauce, corn relish, horseradish, pepper-onion, piccalilli, tomato-apple chutney, and tomato-pear chutney

Types:

Olives

Sour relish—chopped sour pickles or sour pickles mixed with other sour cured vegetables and spices

Sweet relish—chopped sweet pickles or sweet pickles mixed with other sweet cured vegetables and spices

Vegetable relish—chopped fresh vegetables (cabbage, green beans, green tomatoes, onion, salt, spice, sugar, sweet red pepper, turmeric, vinegar, and water) placed in a jar and pasteurized

1 tablespoon = 0.5–0.9 gram

1 cup = 8.6 ounces

Composition: moisture 63%; protein trace; fat trace; carbohydrate 33%; sodium (sweet relish) 124 mg/tsp (15 g)

See Part 2: Olives and Pickles, Composition; Stabilizers, Thickeners

releno de pollo Spiced, shredded chicken filling

rem See Part 2: Constants, Fundamental

remouladou A highly flavored, slightly salty, herve-type cheese made from cow’s milk See romadour

remoulade dressing A dressing made from egg yolk, lemon juice, olive oil, pepper, and salt

removal torque The force required to remove a glass closure

renal Of or pertaining to the kidney

See Part 2: Lymph Nodes, Ox; Lymph Nodes, Pig

rendering Freeing fat from cells by means of heat. Animals unfit for human food are rendered to obtain their fat and protein values

rendzina A black soil that is shallow and has a fine texture

reniform nematode (*Rotylenchulus reniformis*) Parasitic nematodes that reduce yield and quality of sweet potatoes

reennet Concentrated extract of rennin. Used in making some cheese; speeds curdling and keeps the curd that is formed from breaking up easily; shortens the cheese-making process, results in less acid, and larger curd cheese

Types:

Powder—reennet enzyme, sugar, and flavoring Tablet form—reennet enzyme and salt; junket tablets extract

Use:

1/4 rennet tablet to 2 tbsp of cool water

1 tbsp of solution to each gallon of milk

See Part 2: Casings, Terms

rennet (chymosin) An enzyme produced by gastric glands and found in the gastric juices of young mammals. It is extracted from the inner membrane of the fourth stomach (lining or mucosa) of suckling calves and is used to coagulate (clot, curdle) milk to form a curd that may be made into cheese, rennet casein, junket, and rennet curdants. Denatures and initiates the hydrolysis of milk protein; inactivated at 60°C; may be used to make kosher cheese if it is obtained from kosher-slaughtered animals

renutrition Treatment to restore an undernourished person to normalcy

rep 1) Unit of dosage equivalent to 93 ergs of energy absorption per gram of material of unit density. 2) A silk or wool fabric having a ribbed surface
REPD  Residue Evaluation and Planning Division  (commonly referred to as Residue Division) of FSIS
repletion  Full
representative sample  A sample selected in such a way that it tends to reflect the quality of the lot
reproduction efficiency  Production of a large number of offspring in a given span of time
requesjao  A ricotta-type cheese made from cow's milk
requesjao de norte  A processed cheese made from cow's milk
reserve burgundy  A full-bodied, dry wine
reserve chablis  A crisp, flavorful, dry wine
reserve premiums  Producers entering grain into the reserve have been eligible to add premiums to their loan rates
residue  1) The unusable portion of a product that remains after refining and separation of the valuable portion; portion remaining after removal of a part of the original. In soap making it is called foots, in wine technology lees, and in flour milling tailings. 2) The presence of remnants of a drug, agricultural or industrial chemical, or trace metal in a food animal or product
resin  A hardened, brittle, transparent, or translucent material formed from the liquid of plants that have been injured. A water-insoluble (organic-soluble) mixture of terpenes and fatty acids found in coniferous trees. Synthetic resins are man-made high polymers
resistance ($R$)  Opposition to current flow measured in ohms; power given off by resistance:

\[ P = I^2R = EI = \frac{E^2}{R} \]

$P$ = power = watts = joules per second
$I$ = current in amps
$R$ = resistance in ohms
$E$ = potential in volts
resistor  An electrical device that has deliberately introduced resistance
resolution  The ability of a lens to separate images
respiration  1) Cellular utilization of oxygen with production of carbon dioxide and energy. 2) Oxidation in which oxygen serves as a terminal hydrogen and electron acceptor
restaurant  A public place where meals are served
rest harrow (ground furze)  A plant; young shoots may be pickled in brine or eaten fresh in salads
rest period  A period of nonvisible growth, controlled by internal factors; growth will not occur, even when environmental conditions are favorable
restructured-beef, steak-like  An uncooked, unsmoked, American sausage made from ground, coarsely chopped, or chunks of beef restructured by being pressed, formed, molded, or sliced
restructured food  Pieces of traditional food that are formed and shaped to resemble the original whole piece
retail  Sale in small quantities; sale to ultimate consumer
retail cut  See Part 2: Meat Label
retained  Held back, usually for further inspection
retention time ($t_r$)  In gas chromatography, time from injection to peak maximum
retention volume  In gas chromatography, the gas volume required to elute

\[ V_R = (t_r)(F_c) \]

$t_r$ = retention time
$F_c$ = flow of carrier gas
reticulum  1) The second stomach of a ruminant animal located on its left side and often called the honeycomb or fore-stomach; acts as a screening device letting only small particles into the omasum; a bovine reticulum may contain from 1 to 3 gallons; used for tripe. 2) The network of protoplasm in most cells
retinene (C$_{20}$H$_{28}$O)  The aldehyde form of vitamin A; a component of rhodopsin, a pigment of the eye  See also rhodopsin; vitamin A aldehyde
retinoic  See vitamin A acid
retinol  See vitamin A  See Part 2: Vitamins
retort  A closed vessel for thermal processing, for distillation of heavy oils, or for cooking by heat; autoclave. Retort water-treatment agents used to prevent staining of cans:

- Calcium chloride (CaCl$_2$)
- Diocetyl sodium sulfosuccinate (C$_{32}$H$_{37}$NaO$_7$S)
- Disodium phosphate (Na$_2$HPO$_4$)
- Propylene glycol (C$_3$H$_6$O$_2$)
- Sodium bicarbonate (NaHCO$_3$)
- Sodium carbonate (Na$_2$CO$_3$)
- Sodium dodecylbenzenesulfonate (C$_{16}$H$_{29}$NaO$_4$S)
- Sodium hexametaphosphate [Graham's salt; (NaPO$_4$)$_6$]
- Sodium lauryl sulfate (C$_{15}$H$_{29}$NaO$_4$S)
- Sodium metasilicate (Na$_2$SiO$_3$)
- Sodium tripolyphosphate (Na$_3$P$_3$O$_10$)
- Zinc oxide (ZnO)
- Zinc sulfate (ZnSO$_4$)
retort pouch (flexible can)  A flexible, heat-sealable container that can withstand the heat of sterilization. Outer layer (0.0005 inch) polyester; middle layer (0.00035 inch) aluminum foil; third or food-contact layer (0.0003 inch) propylene or ethylene
retrogradation  The reverse of gelatinization
retrograded starch  (smooth thick serum starch)
630 retropharyngeal

retropharyngeal See Part 2: Lymph Nodes, Pig

retsina A rosé wine with pine resin added; also a white wine

return to vendor Material that has been rejected by the buyer and is awaiting return to the supplier

revenir A change in color affected by cooking in a fat

reverse Inside a glass closure

reversion An undesirable change in flavor or other property

revivification Reactivation of charcoal

revolution One complete cycle of circular rotation

1 revolution = 360 degrees
= 4 quadrants
= 6.283 radians

revolution per minute

1 revolution per minute
= 6 degrees per second
= 0.1047 radians per second
= 0.01667 revolutions per second

revolutions per minute per minute

1 revolution per minute per minute
= 0.01667 revolutions per minute per second
= 0.001745 radian per second per second
= 0.0002778 revolutions per second per second

revolution per second

1 revolution per second
= 360 degrees per second
= 60 revolutions per minute
= 6.283 radians per second

revolutions per second per second

1 revolution per second per second
= 3600 revolutions per minute per minute
= 60 revolutions per minute per second
= 6.283 radians per second per second

rewit A low-fat, sour beverage made from milk whey and combined with horseradish, leek, and dill or juniper extract to produce a savory drink or mixed with sweetened orange or apple juice for a sweet drink

rex sole A white meat, very light, delicate flavor, fin fish See sole

Rh 1) The symbol for the element rhodium. 2) Rhesus (blood factor)

rhamnose (C_6H_12O_5) Methyl pentose sugar; \( \frac{1}{3} \) as sweet as sucrose

Rheingau A region in Germany, north of the Rhine, that produces distinctive, elegant, riesling wine

Rheinhessen A region in Germany, south of the Rhine, that produces soft, aromatic wine from Sylvaner grapes

rheinischer A low-fat, high-protein, semisoft cheese made from cow's milk

Rheinpfalz (wine cellar of the Holy Roman Empire) A region in Germany, west of the Rhine, that products full-bodied, rich, spicy wine

rheinwald See schamser

rhenish (hock) A Rhine wine

rhenium (Re) Metallic element; at. no. 75; at. wt. 186.22; Group VIIb of Periodic Table; oxidation states +2, +3, +4, +5, +6, +7, +8; electron configuration 2-8-18-32-13-2; orbit K L M N O P

rheostat A variable resistor

Rhine A river in western Germany; the valley is famous for its wine produced from Sylvaner grapes, which are grown on chalk, marl, quartz, some slate, and, in some areas, red limestone soil

Rhine wine (hock) A dry, tart, white, table wine; strictly speaking, wine produced only in the Rhine valley; less strictly speaking, also wine produced in the Moselle valley and other places in Germany. Often made from Riesling grapes; keeps well; light in alcoholic content; ageing not as important as in other wines

rhiz- A prefix meaning root

rhizobia Bacteria that live in a symbiotic relationship with legumes. They live in nodules on the roots and fix nitrogen that can be used by the host plant

rhizobium A symbiotic bacteria associated with legumes. 300-51,000 cells per seed is recommended for inoculation

Rhizoctonia A type of mold See Part 2: Mold, Food

Rhizoctonia stalk rot See Part 2: Sorghum Diseases

rhizome A swollen, rootlike stem partially or wholly underground See Part 2: Vegetables, Classification

Rhizopus A type of mold See Part 2: Mold, Food; Molds, Mycotoxins; Rot Spoilage; Spoilage, Carbohydrate Foods

Rhizopus rot (Rhizopus stolonifer) A fungus found on avocados, peaches, strawberries, and other fruit and vegetables. On avocados held at room temperature it is quite common; the decayed area will turn brown, may or may not be covered with a white mycelium, fruit will crack and exude amber-colored liquid, and the flesh pulls easily from seed and has an unpleasant odor; fungus enters the fruit by scars; is retarded by storage at 45-50°F

rho (P, ρ) Greek letter with an English equivalent of r

Rhode Island Bent See colonial bent

Rhode Island Red An American class of chicken that lays a brown-shelled egg

Varieties: rose comb and single comb (also a bantam variety); both have red plumage with some black in the tail feathers, dark yellow shanks, and reddish beaks. See Part 2: Poultry Breeds and Varieties

Rhode Island White An American class of chicken that lays a brown-shelled egg.

Variety: rose comb—white plumage, yellow shank, yellow beak

rhodesgrass See Part 2: Seed, Germination

rhodinol A mixture of terpenic alcohols, primarily 1 citronellol. Used as a roselike, flavoring agent in food; sp. gr. 0.860-0.881

Storage: full, tight, glass container in a cool, dark place
**rhodinyl acetate** A mixture of acetates of terpene alcohols. Used as a roselike, flavoring agent in food; sp. gr. 0.894–0.908
Storage: full, tight, glass container in a cool, dark place

**rhodinyl formate** A mixture of formates of terpene alcohols. Used as a roselike, flavoring agent in food; sp. gr. 0.900–0.908
Storage: full, tight, container in a cool, dark place

**rhodium (Rh)** A metallic element; at. no. 45; at. wt. 102.91; Group VIII of Periodic Table; oxidation state +3
electron configuration 2–8–18–16–1;
orbit K L M N O

**rhodope** A white, brined cheese made from sheep's milk

**rhodopsin (visual purple)** The pigment of the eye that is sensitive to red light; comprised of opsin (a protein) and retinene

**rhomboid muscle** A muscle attached to the medial surface of the scapula and to the thoracic spinous processes

**Rhône** A river valley region in southeast France famous for its great variety of wine
Chateauauneuf du Pape—big, full-bodied wine
Côte Rotie—light, soft wine
Tain l’Hermitage—big, robust wine

**rhubarb (pieplant; Spinach rhubarb; Rheum hybridum; R. rhamphoticum; R. undulatum; Rumex abyssinicus; R. officinale; R. palmatum; R. sibiricum)** A cool-weather perennial plant whose red (sometimes green) leaf-stalks (66% edible) are used like fruit in pies, preserves, and wine-making. Rhubarb leaves are sometimes used as a spinach substitute but are very rich in soluble oxalic acid or oxalates, which, in sufficient quantities, can act as a poison; therefore they are not often eaten and some recommend never eating them. Plant 4 feet apart in rows spaced 4 feet apart; matures in 1 year; yield 2.5 stalks per foot of row

Types:
Field (garden)—coarse, fleshy, dark red stalks; dark green leaves
Forced—light pink stalk; yellow–green leaves
Champagne
Dawes Champion
Green stalk (often forced to produce pink–red color)
German wine
Linnaeus
Prince Albert
Strawberry
Suttons’ Seedless
Victoria
Red stalk
Canada red
Crimson wine–large stalks
McDonald (MacDonald)
Ruby
Valentine (Red Valentine)

Picked when 10–20 inches long; has an acid flavor

Equivalents:
1 bushel fresh = 50–55 pounds (lb)
= 24–28 quarts (qt), canned
15 lb, fresh = 15–22 pints (pt), frozen
2–3 lb, fresh = 1 qt, canned

<table>
<thead>
<tr>
<th>Rhubarb variety</th>
<th>Stalk size</th>
<th>Color</th>
<th>Use</th>
<th>Season or growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada Red</td>
<td>Large</td>
<td>Red</td>
<td>Pies, stewed</td>
<td>Outdoor growth</td>
</tr>
<tr>
<td>Cherry Red</td>
<td>Large</td>
<td>Red skin and flesh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chipman’s Canada Red</td>
<td>Large</td>
<td>Red skin and flesh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crimson Cherry</td>
<td>Giant</td>
<td>Red</td>
<td>Pie, sauce</td>
<td>Outdoor</td>
</tr>
<tr>
<td>Crimson White</td>
<td>Large</td>
<td>Red</td>
<td></td>
<td>Outdoor growth</td>
</tr>
<tr>
<td>Crimson Wine</td>
<td>Medium</td>
<td>Green</td>
<td></td>
<td>Indoor growth (forced)</td>
</tr>
<tr>
<td>German Wine</td>
<td>Medium</td>
<td>Green</td>
<td></td>
<td>Indoor growth (forced)</td>
</tr>
<tr>
<td>(Mac) McDonald</td>
<td>Medium</td>
<td>Red</td>
<td>Sauces, pie</td>
<td>Outdoor growth</td>
</tr>
<tr>
<td>Ruby</td>
<td>Medium</td>
<td>Red</td>
<td></td>
<td>Outdoor growth</td>
</tr>
<tr>
<td>Strawberry</td>
<td>Medium</td>
<td>Green</td>
<td></td>
<td>Indoor growth</td>
</tr>
<tr>
<td>Sutton’s Seedless</td>
<td>Medium</td>
<td>Green</td>
<td></td>
<td>Indoor growth (forced)</td>
</tr>
<tr>
<td>Valetine</td>
<td>Medium, 18–22 in., 1 in. thick</td>
<td>Red</td>
<td>Pie, stewed</td>
<td>Outdoor growth</td>
</tr>
<tr>
<td>Victoria</td>
<td>Medium broad thick</td>
<td>Green shaded with red; red stem; green outdoors</td>
<td>Tart flavor</td>
<td>18 months; indoor growth (forced)</td>
</tr>
</tbody>
</table>
632 rhubarb

1 lb, fresh or frozen (1 inch pieces)
= 2.6 cups
= 4 servings
= 4-8 pieces
= 2 cups, cooked [240 grams (g) or 8.5 ounces (oz)]
6 stalks, fresh = 14 oz; frozen
1 pt, frozen = 0.68-1 lb, fresh
1 cup, fresh, diced = 4.4 oz
1 cup, frozen = 7.8 oz

<table>
<thead>
<tr>
<th>Area grown</th>
<th>Grades</th>
<th>Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michigan</td>
<td>Choice</td>
<td>5 lb pounds in master 50-lb box</td>
</tr>
<tr>
<td>Washington</td>
<td>Fancy,</td>
<td>15 lb</td>
</tr>
<tr>
<td></td>
<td>Extra fancy</td>
<td></td>
</tr>
</tbody>
</table>

Frozen with high proportion of sugar
Canned style:
Fancy—heavy syrup
Choice—medium heavy syrup
Standard—without sugar
Composition (raw): moisture 95%; protein 0.5%; fat 0.1%; carbohydrate 4%; ash 0.7%; pH 3.1-3.4
1/6 of 9-inch pie = 300 calories

Ripen: Uncovered, room temperature, out of sun
Storage: Uncovered (90-95% relative humidity), refrigerated (32°F); when ripe use in 3-5 days

rib back An English term for the pork loin area from approximately the third lumbar vertebra to the third thoracic vertebra

rib cap See Part 2: Beef Rib Nomenclature
rib chop See Part 2: Lamb Yield; Pork Loin
rib eye See Part 2: Beef, Boneless Cuts; Beef Rib Nomenclature; Roasting, Time and Temperature
rib fingers Tissue between the ribs
riblets See Part 2: Lamb Cuts; Veal Chart; Veal Cuts
riboflavin (lactoflavin; vitamin B2; vitamin G)

\[
\text{Reduced state}
\]

A water-soluble vitamin that functions in the oxidative processes that take place in the cell; it is also the growth-promoting factor of the B complex. Used as a food nutrient to maintain or improve nutritional value or as a dietary supplement or color (yellow) additive.

Sources: brewer's yeast, eggs, green leafy vegetables, kidney, legumes, liver, milk, and muscle
Deficiency symptoms: redness and scaling of skin in face area; loss of hair; stunted growth
Storage: tight container in the dark

rib sauce A fruit sauce made from cooked rhubarb and sugar

riabenovka An after dinner cordial made from vodka and flavored with ashberries

rib 1) An area of the forequarter of beef usually consisting of the thick portion of the sixth through twelfth rib; about 9% of a choice carcass.
2) Curved costal bone of the thorax; attached to the spine Camel—12 ribs (8 sternal; 4 asternal)
Cattle, goats, sheep, and deer—normally have 13 ribs (8 sternal, 5 asternal), sometimes 14 (14th usually floating)
Horses—18 ribs (10 sternal, 8 asternal)
Swine—14-16 ribs (7 sternal; 7 asternal, and the rest floating)

See Part 2: Beef Chart; Beef Chuck; Beef Cuts; Beef Cuts and Uses; Beef Retail Yield; Beef Rib Carving; Beef Rib Nomenclature; Beef Roasting; Beef Wholesale Cuts; Beef Yields; Bone; Bone-in Retail Cuts; Lamb, Wholesale Cuts; Meat Identification; Meat Label; Meat, Servings per Pound; Microwave Processing Time; Pork Cookery; Pork Cuts; Pork Loin Cooking; Pork Wholesale Cuts; Potassium-Rich Foods; Roasting, Time and Temperature; Veal Chart; Veal Cuts; Veal Cuts and Uses; Veal Wholesale Cuts
Daily Dietary Allowance; Riboflavin; Riboflavin, Daily Recommendations; Riboflavin, Food; Sausage Composition; Sausage Nutritive Value; Seed, Chemical Composition; Soups, Composition; Sugars and Sweets Composition; Sweet Potato Nutritive Value; Tomato and Tomato Products, Composition; Variety Meat Percentage of Daily Recommended Allowances; Vegetable Composition; Vitamin Retention, Meat; Vitamins; Vitamin Sources, Functions, and Stability; Wheat, Parts of Grain, Vitamins; Wheat Products Composition; Wheat, Vitamins

**riboflavin phosphate** A mononucleotide containing riboflavin and phosphoric acid

\[
\text{CH}_2\begin{array}{c}
\text{H} \\\\
\text{O}
\end{array} \text{CH}_3\begin{array}{c}
\text{CH}_2
\end{array} \begin{array}{c}
\text{OP}=\text{O}
\end{array} \begin{array}{c}
\text{OH}
\end{array}
\]

\[
\text{H}_3\text{C} \begin{array}{c}
\text{N} \end{array} \begin{array}{c}
\text{N} \end{array} \begin{array}{c}
\text{N} \end{array} \begin{array}{c}
\text{N} \end{array} \begin{array}{c}
\text{N} \end{array} \begin{array}{c}
\text{O}
\end{array}
\]

*Take on H here
Used as a nutrient or dietary supplement
Storage: tight container in the dark

**ribonucleic acid (RNA)** Contains ribose; present in cytoplasm and nuclei; site of protein synthesis. A nucleotide that acts on the instructions of DNA in cells in carrying out the mechanisms of the genetic code. There are several types, namely messenger RNA, ribosomal RNA, and transfer RNA. See also *deoxyribonucleic acid; ribosome*

**ribose** [CH\(_2\)OH(CHOH)\(_3\)CHO] A five-carbon monosaccharide (pentose) found in nucleic acids

See Part 2: Sugar, \(\alpha\)-aldehydeydo

**ribosome** A particle in a cell composed of ribonucleic acid and the site of protein synthesis

**rib rack** A wholesale cut of lamb consisting of the fifth through twelfth ribs

**rib roast** See Part 2: Beef Cuts and Uses; Beef Rib Carving; Beef Rib Nomenclature; Pork Loin Cooking

**rib roll** A boned and tied rolled rib

**rib steak** See Part 2: Broiling Meat: Broiling Time and Temperature

**rib streak** An English term for the pork belly area from approximately the third lumbar vertebra to the thoracic third vertebra

**rib wing** See Part 2: Beef, Boneless Cuts

**ricard** An aniseed-flavored liqueur

**rice (Oryza glaberrima; O. sativa, most important)** Originated in eastern and southeastern Asia. Has best quality of protein of any cereal. An important grain crop particularly in Asia; an annual cereal whose seed is used for food. Maturity: 4 weeks in nursery and 4 months in field

Growing systems
Deep water or floating rice—grown in water depth of 1-5 meters

Dry land (Indian rice, Tuscarora rice; upland rice; *Zizania aquatica*)—has higher protein content but is difficult to harvest

Standing water—hollow stem allows oxygen to reach roots; water drained a few weeks before harvest; water is used for weed and insect control

Plant height 60-180 centimeters; penicle 100-150 grains; kernels 3.5-8 millimeters (mm) length, 1.7-3 mm width, and 1.3-2.3 mm thickness

**Rice name:**
Brown or cured or natural on hulled rice—removal of husk (hull); contains outer layer of rice and germ (does not keep well); almost all bran retained

Coated rice—polished rice with glucose (corn syrup)-talc coating for appearance (huster) and for preserving properties

Converted—some bran retained; yellow but turns white when cooked

Enriched rice—is fortified with iron (13-26 mg/lb), thiamine (2-4 mg/lb), riboflavin, and sometimes niacin or niacinamide (16-28 mg/lb)

Paddy—rough rice; threshed (contains 40% fibrous husk)

Parboiled (called converted)—heat treated or steamed under pressure and dried before it is hulled and milled; the milled product contains more minerals and vitamins than polished white rice. Converted rice transfers much of the B vitamins from the outer layer to the grain before it is milled, retains shape, and is less sticky on cooking; yellow in uncooked state; improves nutritive value and keeping qualities

Polished or milled or white—removal of bran layers (retaining endosperm and a small portion of the embryo) and germ; all fine dust removed

Precooked—cooked and dried

Unpolished—almost white; rough surface

Unpolished white—almost all bran removed

Processing: Milling removes outer husk; pearling removes outer brownish layer (bran) and yields white grain (polished); does not have to be ground

Milled rice = 65% of weight of original paddy rice
= 45-60% head rice (whole to \(\frac{1}{2}\) whole kernels)
= 10-20% broken grains
= 3% brewers rice (small broken kernels)
= 18% rice bran

Types:

Bulu—usually hairlike awns

Glutinous or waxy or sweet rice—little amylose

Indica—little cold or drought tolerance; medium-long to long grain; amylose content medium to high

Japonica—grain is short and wide; amylose content is low

Oryza glaberrima—grown only in west Africa; usually considered inferior

**Size:**

Long—6.61-7.5 mm; 4-5 times as long as wide

Basmatti
Carolina
Java
Patna

Medium—5.51-6.6 mm
634  rice (Oryza glaberrima; O. sativa, most important)

Size (continued)

Short—5.5 mm or less; shorter and plumper
Piedmontese

Size:
Head rice—whole and some \( \frac{3}{4} \) grains
Second head—\( \frac{1}{2} \) & \( \frac{3}{4} \) grains
Screenings—\( \frac{1}{4} \) & \( \frac{1}{2} \) grains
Brewers—small particles

Equivalents
100 pound (lb), milled rice = 152 lb, rough or unhulled
45 lb, rough or unhulled rice = 1 bushel
1 lb, raw = \( \frac{1}{2} \)–\( \frac{2}{3} \) cups, uncooked rice
1 lb, cooked = 2.34 cups cooked
1 cup, raw rice + \( \frac{1}{2} \) cups, water
= \( 2 \frac{1}{2} \)–4 cups, cooked rice
1 cup, uncooked, quick cooking rice
= 3 ounces (oz)
= 2 cups, cooked rice
1 cup, uncooked, converted rice
= 3–4 cups, cooked rice
1 cup, uncooked, long grain rice
= 4 cups, cooked rice
1 cup, long grain, precooked = 2 cups, cooked rice
1 cup, uncooked wild rice = 3–4 cups, cooked rice
1 cup, brown rice = 3.7 oz
1 cup, instant, long grain — 3.8 oz
1 cup, regular — 7.0 oz
1 cup, brown, parboiled = 6.3 oz
1 cup, white instant, cooked, no butter = 5 oz
1 cup, regular, cooked = 7.2 oz

Composition (rough rice): bran 8–14%; brewers 2–5%;
head rice 37–65%; hull 17–21%; loss and trash 1–3%;
polish 1.8–4%; screening 3–11%; second heads 3–12%
Composition:

<table>
<thead>
<tr>
<th>Moisture</th>
<th>Protein</th>
<th>Carbohydrate</th>
<th>Fiber</th>
<th>Ash</th>
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</thead>
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<tr>
<td>Bran, bran with germ</td>
<td>9–10</td>
<td>12–13</td>
<td>13–16</td>
<td>51</td>
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<tr>
<td>Brown, cooked</td>
<td>11</td>
<td>8</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Grain ground</td>
<td>11</td>
<td>7</td>
<td>7.2</td>
<td>0.4–1</td>
</tr>
<tr>
<td>Grains, polished</td>
<td>11</td>
<td>7</td>
<td>6.6</td>
<td>0.7</td>
</tr>
<tr>
<td>Grains, polished broken</td>
<td>11</td>
<td>6</td>
<td>7.6</td>
<td>0.7</td>
</tr>
<tr>
<td>Hulls</td>
<td>10</td>
<td>7</td>
<td>8</td>
<td>0.2</td>
</tr>
<tr>
<td>Instant, dry</td>
<td>12</td>
<td>7</td>
<td>8</td>
<td>0.1</td>
</tr>
<tr>
<td>Rice, brown</td>
<td>72–73</td>
<td>2.8</td>
<td>0.1</td>
<td>24</td>
</tr>
<tr>
<td>Rice, brown (entire kernel without husk)</td>
<td>12</td>
<td>7–8</td>
<td>1–2</td>
<td>77–79</td>
</tr>
<tr>
<td>Amylopeptin (%)</td>
<td>Amylose (%)</td>
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<tr>
<td>Glutinous, waxy</td>
<td>100</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonwaxy, milled</td>
<td>Above 80</td>
<td>Below 20</td>
<td></td>
<td></td>
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<tr>
<td>Low</td>
<td>Medium</td>
<td>High</td>
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</tr>
<tr>
<td>75–85</td>
<td>20–25</td>
<td>Above 25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

14.8 MJ/kg edible energy value
Cereal flakes, 1 oz (about 1 cup) = 110 calories
Cereal puffed, (about 2 cups) = 115 calories
Cereal, presweetened, 1 oz (about \( \frac{3}{4} \) cup) = 110 calories
Cereal, shredded, 1 oz (about 1 \( \frac{1}{4} \) cup) = 115 calories
Food value: Excellent source of starch; protein content lower than most grains; thiamine present in bran; parboiling before milling causes some of thiamine to diffuse through the grain; lysine is the first limiting amino acid and threonine is the second
Storage: Moisture content should be 12.5%
2) To pass through a sieve
See Part 2: Calories, Daily Recommendations; Cereal Composition; Cereal Enrichment; Cereal Fortification; Cereal Nutrient Content; Cereals, Vitamin and Mineral Content; Food, Composition; Grain Products Composition; Microwave Processing Time; Minerals, Food; Nicotinic Acid; Food; Nutrients in Crops; Plant Food, Composition; Portion Size; Protein Factors; Rice Kernel; Seed, Chemical Composition; Seed, Germination; Soups, Composition; Starch, Microappearance; Storage, Dry; Storage Times; Thiamin, Food; Tocopherols; Vitamin A, Food; Water Activity, Organisms and Food

rice bean (red bean; Vigna umbellata) A short-term perennial; dry seed is used as a pulse and green seed and pods are eaten as a vegetable; the crop is also grown for green manure and fodder

rice beer A low alcohol beverage made by fermenting (30 hours at 20–28°C) milled rice (Oryza sativa) and water after cooking and adding a regai starter; the liquid is then poured off of the solid material

rice blast disease A fungus (Pyricularia oryzae) that produces spots or lesions on rice

rice bran Bran, germ, and some hulls of rice; outer layers of rice removed during polishing; relatively high in protein; often used as livestock feed
Composition:

- Bran of parboiled rice—35% oil
- Bran polish, includes germ—15–20% oil
- 0.8 pounds per quart; 26 pounds per bushel. See also bran

See Part 2: Fat and Oils, Fatty Acid Composition; Iodine and Saponification Values; Titer, Fats and Oils; Unsaponifiable Matter

rice bran pig See Fungcheng

rice bran wax Used as a food coating agent or as a masticatory base in chewing gum; melting point 75–86°C; saponification value 75–120
Storage: tight container

rice, brown A long-grain, tan-colored, nutlike flavored, kernel rice that has had only minimal processing (least processed) in which only the hull and a small portion of the bran were removed; considered a whole grain product that contains the germ and the outer layers of the grain where the B vitamins and minerals are located; can be substituted for white rice. It takes longer to cook, with slightly more liquid than white rice, when cooked the inner portion becomes tender but outer portion is slightly crunchy
Storage: refrigerate, in tightly closed container

rice, cereal Types:

- Ready to eat
  - Oven puffed rice
  - Puffed rice
  - Rice flakes
  - Rice mixed with other cereals
  - Shredded rice
  - Uncooked (e.g., cream of rice)—farina-like products, often enriched with vitamins and minerals
- 1 cup, crisp rice cereal, crushed = 1.1 ounce
rice, converted  See rice, parboiled
rice extract agar  See Part 2: Microorganism, Media
rice flakes  Breakfast cereal that may be eaten cold
  1 cup = 1.1 ounce
  Composition: moisture 3%; protein 6–7%; fat 1%; carbohydrates 85–88%
  See Part 2: Grain Products Composition
rice flour  A starchy flour made from white rice; fundamentally rice starch; rice ground to a very fine powder; maximum of 30% may be used in bread baking; waxy rice flour is made from waxy rice and contains amylpectin, which is useful in frozen products
  1 cup, stirred, spooned = 5.6 ounces
rice, glutinous (sweet rice)  A dessert rice low in starch
rice grade  Milled white rice: U.S. Grades 1, 2, 3, 4, 5, 6; brown rice: U.S. Grades 1, 2, 3, 4, 5
rice, grits  Coarsely ground brown rice grains  See also grits
rice, ground  Slightly coarser than rice flour
rice, Honduras  A long slender rice with a sweet taste
rice, instant
  Storage: tightly closed container on shelf; long storage time  See rice
Rice Krispies  A ready-to-eat cereal made by Kellogg
  1 cup = 1 ounce
rice, long  Rice flour noodles that are thin and opaque
rice, long-grain  Length is 4–5 times as long as it is wide; when cooked the grains separate and are fluffy  See rice
rice macaroni  Macaroni made from rice; thin and flexible and similar to vermicelli except whiter in color  See spaghetti; vermicelli
rice, medium-grain  Rice that is shorter and plumper than long-grain; will cling and works well for molding. Used for risotto, molds, or rice desserts
rice, minute  See rice, quick cooking
rice miso  A flavorful paste made from soybean and rice
rice oil  Oil extracted from rice bran and polish
rice paper  A white, glossy edible material made from the pith of a Formosan tree
rice, parboiled (converted rice)  Rough rice that is processed by steam or hot water before milling, which causes it to be hard, translucent, and shiny and causes a migration of vitamins from the hull to the center of the rice. The hull is then removed by milling
  Non-parboiled rice contains 10% of the thiamin of raw rice
  Parboiled rice contains 75% of the thiamin of raw rice
  Parboiled rice is intermediate in food value between highly milled (polished rice) and brown rice. To cook this rice requires more liquid and a longer time and it cooks dryer and fluffier than regular rice  See rice
rice polish  The inner bran layers and some endosperm of the rice grain; finer and heavier than bran; high in fat and carbohydrates
rice, precooked  Rice that is milled, cooked, and dried; water rehydrates this rice quickly and it re-cooks fast
rice, puffed  A breakfast cereal made of exploded rice kernels; a cereal that may be eaten cold
  1 cup = 0.5 ounce
  See puffed rice
  See Part 2: Grain Products Composition
rice, pulverized  Rice that is cooked and served as a hot cereal
rice, quick cooking  Milled rice that is precooked in such a manner that the grain remains porous
  Types:
  Precooked—requires up to 15 minutes to cook
  Minute—requires 2 minutes to cook
rice, short-grain  Cooks softer than long grain; more tender and clingy than longer grain. Used for sushi
rice, shredded  A breakfast cereal
  Composition: moisture 3%; protein 5%; fat 0.3%; carbohydrate 88%
rice stick  A noodle-like product used in soup, as a separate course in meat sauce, as a crunchy garnish when deep fried, or used as a rice substitute
rice vinegar (rice wine vinegar)  Vinegar made from rice starch. The product is made by the alcoholic and subsequent acetic fermentation of sugars derived from rice or a rice concentrate, without distillation
rice, white  Storage: tightly closed container on shelf; long storage time  See rice
rice, white, regular-milled  Outer layer and bran layer removed until grain is white
rice, wild  (Zizania aquatica)  See wild rice
rice wine  See sake
ricey  When a cauliflower head begins to separate; granular appearance of the curd in cauliflower. Caused by flowerettes beginning to open
richebourg  A perfumed, flavored red wine
ricing  1) Cutting or sieving into small particles, e.g., potatoes. 2) Early stage of flowering (e.g., cauliflower)
ricinoleic acid  An unsaturated fatty acid found in castor oil.
  See Part 2: Fatty Acids and Their Properties; Fatty Acids, Fats and Oils; Oils, Seed and Fruit
rickettsias  Obligate intracellular parasites found in various insects; generally smaller and less well defined morphologically than bacteria
ricketsia  Bacteria that have the size and characteristics of viruses
rickettsiae  Obligate intracellular parasites found in various insects; generally smaller and less well defined morphologically than bacteria
rickey  A beverage containing gin, lime juice, and carbonated water
ricotone  A ricotta-type cheese made from cow's milk whey with skimmed milk
ricotta A soft, moist, and grainy white cheese that is bland, semisweet, and saltier in flavor than cottage cheese; made from whey and whole or skimmed milk, or whole or part-skimmed milk. A mild, cooked whey cheese often combined with skimmed milk, whole milk, or cream; has a nutlike flavor; often eaten fresh (unripened), but may be dried and used for grating; packaged in containers

<table>
<thead>
<tr>
<th>Composition</th>
<th>Made from part skimmed milk</th>
<th>Made from whole milk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>72-75</td>
<td>71-72</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>11-13</td>
<td>11-13</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>8-10</td>
<td>10-13</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>5-6</td>
<td>2.5-3.5</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>1-4</td>
<td>1-4</td>
</tr>
<tr>
<td>Salt (%)</td>
<td>1.2</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Storage (ripe or fresh ricotta): cover, refrigerate and use in 5–7 days

See Part 2: Cheese Characteristics; Dairy Products, Composition II

ricotta pecorino A mild, soft, white, Italian cheese made from sheep’s milk whey

rider A medium-flavored, semisoft cheese

ridge bone The raised area of the scapula (blade bone in shoulder)

ridgling A male with one or more testicles in the body cavity or with only one testis See cryptorchidism

riesengebirge A soft, cheese made from goat’s milk with rennet added

riesling 1) A collective term for the varieties of white grapes that are fermented to yield Rhine wine. 2) A fruity, white, Italian wine

rig An imperfectly castrated pig

riga bread A malt-flavored rye, and wheat bread

rigatoni Ribbed tubes of pasta

1 cup = 2 ounces

See macaroni

rigid container A sturdy container (e.g., can) that can withstand some internal and external pressure without damage

rigor mortis Post-mortem rigidity; stiffening of muscles after death

rigotte A disc-shaped, soft, bland, French ricotta-type cheese made from cow’s or goat’s milk; may have an annatto (red) exterior

rigotte de pelusin A truncated cone-shaped, ricotta-type cheese made from cow’s or goat’s milk

rigotte du condrieu A disc-shaped, ricotta-type cheese made from cow’s or goat’s milk and coated with yellow annatto

rings Cryptorchids

rijst Rice

rijst(t)afel A Javanese meal of many courses; rice table

rikrost (farmer’s cheese) A Swedish hard cheese

rillette A fried pork preparation or fried chitterlings; often finely ground

rillon (rillaud, rillot) A whole rillette

rind 1) The outer coating of a fruit, vegetable, pork, bacon, or cheese; the skin on fat tissue; removal is called rinding 2) Coating caused by drying of the surface

rinderpest An infectious disease of cattle, sheep, etc., caused by a virus, and often fatal; only partially controlled by vaccines

rindfleisch Beef

rindfleischknackwurst A moist, uncooked, smoked eastern German sausage made from coarsely chopped, heavily seasoned, beef and stuffed into a beef casing

rindfleischsalami A dry, uncooked, smoked eastern German sausage (pepperoni) made from medium chopped, heavily seasoned beef that is fermented and stuffed into a beef or artificial casing

ring bologna A sausage product made from beef and pork; it is placed in a casing and the ends tied together

ringbone An unsoundness in horses

ring compound An organic compound in which the carbon atoms are arranged in the form of closed rings of various shapes, i.e., hexagonal (benzene), pentagonal (heterocyclic compounds), or “boat” or “chair”-shaped (alicyclic compounds)

Ringer’s solution 100 cc of boiled, purified water with the addition of 820–900 mg NaCl, 25–35 mg KCl, 30–36 mg CaCl₂

ringneck (black duck; Anas rubripes) An edible, freshwater duck

ring nematode (Criconemoides spp.) A parasitic nematode that reduces the yield and quality of sweet potatoes

ring pox A virus of apricot trees that causes leaves to develop irregular rings and angular spots

ring spot 1) A virus infection of apricot trees; rings and yellowed patterns on leaves may develop. Rare on most apricot hybrids. 2) A virus disease affecting red raspberries on the Pacific coast and in the northeast U.S.

Symptoms: In the spring a few leaves show pale green rings that disappear as canes mature; infected plants grow slower than normal. Caused by tomato ring spot virus spread by the dagger nematodes (xiphinema species)

Control: plant certified stock free of tomato ring spot virus on land free from xiphinema species

3) A virus disease of sour cherry trees that cause holes in leaves and poorer quality fruit

ringworm A fungus infecting the skin of domestic animals and man

rinnen A sour milk cheese flavored with caraway seed

rioja A sparkling wine; a red wine; a rosé wine or a white wine
riola A strong, soft cheese made from sheep’s or goat’s milk
rioo snot gem season Peach cultivars that ripen late, after Elberta
ring Mature; ready for use
ripe fruit rot See brown rot
ripening Maturing; in aging of beef it is the enzymatic and bacterial changes that occur as the meat is held in cold storage and its benefits are an improvement in tenderness and flavor; in cheese the same as aging and causes the development of characteristic flavor and texture; to approach or come to full development and become usable as food; the composite of the processes that occur from the latter stages of growth and development through the early stages of senescence and that result in characteristic aesthetic and/or food quality as evidenced by changes in composition, color, texture, or other sensory attributes See aged meat; aging; cured cheese; ethylene
ripe rot A fungus disease of the American, bunch grape; more prevalent in the southern U.S.; may appear as the fruit begins to mature
Control: Regular sprays for black rot and downy mildew See anthracnose
rippled Variegated flavors in ice cream
ris 1) Rice 2) Sweetbread
riserva An aged, chianti wine See chianti
rishtaya A lamb dish containing noodles and lentils
risi e bisi An Italian dish made with rice and peas
riso Rice
risotta alla milanese Rice cooked in wine and broth, flavored, and topped with cheese
risotto A creamy, firm, rice dish that often contains cheese; Italian rice mixed with vegetables
rissole 1) Ground meat in a deep-fat-fried pastry envelope (small meat pie). 2) To obtain a crispness by heating. 3) Brown slowly in fat
ritual food A food that is used during religious or magic ceremonies and has acquired a symbolic value
Ritz A tradename for a cracker
1 cracker = 3 grams
Sodium 32 mg per cracker
river pear See anchovy pear
riverside grape A black, sour, American grape that must be cooked before eating
rivet wheat See wheat
riz Rice
rizi Rice
rms Root mean square; a value used to measure the amount of ac current that will produce the same amount of heating in a resistance as will an identical dc current
Rn Symbol for the element radon
RNA Ribonucleic acid
See Part 2: Histochemical Test
roach A freshwater, carplike, food fish
Europe—Leuciscus (Rutilus) rutilus
U.S.—Leiostomus xanthurus
roadster A horse usually of the standard-bred breed shown only at the trot or walk; the trot has three speeds: jog, road gait, and trot at speed; either pulls a bike or buggy
Roanoke A variety of soybean
roast 1) To cook meat by dry heat (do not add water or liquid), uncovered in an oven (325°F) or on a spit over open flame; the term applies specifically to meats, whereas “bake” refers to bread, cake, etc., as well as to meat. After removing from oven, large cuts of meat will continue to cook for 15 min and temperature will rise 5°F in the center. 2) Main course of a meal, usually roast meat. 3) A thick cut of meat
Storage: Refrigerate uncooked meat in coldest part of refrigerator; original wrapper for 1–2 days; unwrap and cover loosely for 3–5 days
See Part 2: Animal Foods, Composition; Beef Chart; Beef, Cooking; Beef Cuts; Beef Degrees of Doneness; Beef Roasting; Beef Yields; Braising Time; Frozen Food Storage; Lamb Cuts; Lamb Cuts and Uses; Lamb Roasting; Meat Composition; Meat, Frozen Storage; Meat, Servings per Pound; Pork Chart; Pork Cookery; Pork, Cooking; Pork, Cooking Methods; Pork Cooking Yield; Pork Cuts; Pork Cuts and Uses; Pork Loin Cooking; Pork Storage; Portion Size; Potassium-Rich Foods; Poultry Class; Poultry Roasting; Roasting Meat; Roasting, Time and Temperature; Veal Chart; Veal Cuts; Veal Cuts and Uses; Veal Roasting; Vitamin Retention, Meat
roast beef
1 cup, chopped, cooked roast beef = 4 ounces
See Part 2: Meat and Meat Products Composition
roast beef hash A cooked, unsmoked, American, jellied and/or specialty sausage available in links, loaves, or canned
roast beef loaf A medium to coarsely chopped, cooked, unsmoked, American, jelled and/or specialty sausage available in links, loaves, or canned
roaster (roasting chicken) Tender-meated with soft, pliable, smooth-textured skin and breastbone cartilage that may be somewhat less flexible than that of a broiler or fryer; poultry of size suitable for roasting
Chicken—bird of either sex, 3 to 6 months old; weighing above 4 1/2 pounds
Duck—bird of either sex, about 16 weeks old
roasting ear Green ears of early maturing, field corn
roba Yogurt
robalto (Centropomus undecimalis) A saltwater fish
robbie See Part 2: Cheese, Vitamin Content
robiola A soft cheese made from cow’s or goat’s milk
Rob Roy (Scotch Manhattan) A mixed drink containing 1 1/2 oz (1 jigger) scotch, 3 oz sweet vermouth, and a dash of angostura bitters; stir with ice, strain, and add a cherry or lemon twist
Rob Roy’s pleasure Venison served with chestnut puree and red currant jelly
rocamadour cheese A small, rennet cheese made from goat’s or sheep’s milk

roccal A quaternary ammonium detergent that is quite effective as a disinfectant. Concentrations usually used are 1:1000 and 1:5000

Rochelle salt Sodium potassium tartrate used as buffer and sequestering agent. See cream of tartar

Rock Alpine A breed of goat See Part 2: Goats, Milk Breeds

rock and rye A mixture of rock candy syrup and spirits (e.g., rye) to which a slice of lemon is added

rock bass (Ambloplites rupestris) A food fish See striped bass

rock candy Large hard crystals of sugar made by slow evaporation See sugar, candy

rock cod (Epinephelus gigas) A saltwater fish

rock cork See Part 2: Insulation

Rock Cornish fryer, roaster, or hen A small breed of poultry obtained from a cross of a Plymouth Rock hen and a small game or bantam cock; cross between a purebred Cornish and a purebred Rock chicken without regard to the weight of the carcass involved; however, the term fryer, roaster, or hen shall apply only if the carcasses are from birds with ages and characteristics that qualify them for such designation

1 medium hen = 1 pound

Rock Cornish game hen (Cornish game hen) A young, immature chicken (usually 5–7 weeks of age) weighing not more than 2 pounds, ready-to-cook weight, which was prepared from a Cornish chicken or the progeny of a Cornish chicken crossed with another breed of chicken

rock eel (Anarrhicas lupus) A species of catfish

Rockefeller Foundation A philanthropic organization with offices at 1133 Avenue of the Americas, New York, N.Y. 10036

rocket (roquette; rucola; Eruca sativa; E. vesicaria) An annual, cresslike herb whose peppery leaves are used in green salads; older leaves are cooked like spinach

rocket salad Winter cress

rockfish A general name for several saltwater fish; over 60 species of rockfish or rock cod are caught along the Pacific coast. A light meat, firm, fine-textured, light to moderate flavor, fin fish

Black rockfish—Sebastodes mystinus

Blue rockfish (northeast Pacific)—Sebastosomus roosaceus

Pacific (continued)
Speckled rockfish
Vermillion rockfish
Widow rockfish
Yelloweye rockfish
Yellowtail rockfish
Red rockfish—Sebastodes ruberrimus
Rockfish (northwest Pacific)—Sebastodes flamelus
Rosy rockfish (northeast Pacific)—Sebastosomus roosaceus
Striped bass
See bass; striped bass
See Part 2: Vitamin A, Fish; Vitamin D, Fish

rock hind (Amelanchier ovalis) A saltwater grouper

rock medlar (grape pear; savoy medlar; sweet pear) A small, blue-black, fruit of the shad bush similar to juneberry

Amelanchier bartramiana
A. canadensis
A. florida
A. laevis
A. oblongifolia
A. ovalis

rock phosphate Mined phosphate rock containing from 20–34% P₂O₅; may contain toxic amounts of fluorine (average 3.5%)

rock salmon (Pollachius virens; Zonichthys fasciatus) Skinned dogfish; a large saltwater fish, available fresh, dried, and smoked; sometimes used for any white fish; amberfish

rock salt Large crystals of sodium chloride. Rock salt added to firewood produces an orange flame. See salt

1 cup = 11–16 ounces

rock sole (Lepidopsetta bilineata) A white meat, light to moderate flavor, fin, food fish

rock weed See hair seaweed

rock wool (mineral wool) An insulating material made by blowing air through molten slag or rock
See Part 2: Insulation

Rocky Mountain whitefish (Coregonus williamsoni) A freshwater, white fish

rockrooi A strong, blue-black (matured 2–3 months in wood ashes), low-fat, semisoft cheese made from cow’s milk with rennet added; lactic acid bacteria develops; shaped into cones, discs, or pyramids

rod (perch; pole; rd) 1) A unit of measurement of length

1 rd = 198 inches (in.)
= 25 links (Gunter’s)
= 16.5 feet (ft)
= 5.5 yards (yd)
= 5.02921 meters (m)
= 0.25 chain (Gunter’s)
= 0.005029 kilometer (km)
= 0.003125 statute mile
= 0.002714 U.S. nautical mile

4 rd = chain (Gunter’s)
40 rd = furlong

2) A cylindrical-shaped microorganism
See Part 2: Bacteria, Molds and Yeasts
rodent (Rodentia) A gnawing mammal, e.g., mouse, rat, squirrel

rodenticide A poison used to kill rodents See pesticide
See Part 2: Chemical Poisoning

roe 1) A solid mass of fish eggs; roe of some female fish (e.g., cod, haddock, lake herring, salmon, shad, sturgeon, and whitefish) are used for food
Roe of female—Hard roe or spawn.
Roe of male—soft roe or milt.
Cooking: parboil for 2–5 minutes, dip in cornmeal or in eggs and crumbs, and fry
2) European deer
See caviar (roe of sturgeon or salmon)
See Part 2: Fish Cross Section; Plant and Animal Poisoning

roentgen (R) The dose of gamma or X-radiation that produces ion pairs carrying one electrostatic unit of charge per cubic centimeter of standard air, surrounded by air; it equals 88 ergs per gram of air See X-ray
See Part 2: Constants, Fundamental

roentgen equivalent man (rem) An obsolete unit of dose equivalence; now replaced by the Seivert (Sv)
1 Sv = 100 rem

roentgen equivalent physical (rep) An obsolete term for radiation dose in physical material other than air; it equals 93 ergs per gram See rep 1

rogeret des cevennes A valençay-type cheese made from goat's milk and cured for 1 month

roggelchen A rye or rye and wheat flour, dark, shiny crust roll

roggons Cock's kidneys

rogosa agar See Part 2: Microorganism, Media

rohe krakauer A pork and beef cervelat

rohe polnische A moist, uncooked, smoked eastern German sausage made from coarsely chopped, heavily seasoned, pork and stuffed into a pork or artificial casing

rohu (Labeo rohita) An Indian, food fish

rohwurst A beef or pork or beef and pork salami; a finely to coarsely chopped, uncooked, smoked or unsmoked, American sausage available in medium to large diameter links or rings or large diameter casings for slicing

roi, le A small, creamy, soft, triple-cream (75% milk fat) cheese

rojak A salad made of cooked vegetable (beans, bean sprouts, cabbage, carrots) and raw fruit (pineapple) and served with a sauce

rokadur A blue cheese made from ewe's milk

rokepolsje A moist, cooked, smoked Norwegian sausage made from finely chopped, mildly seasoned, beef and pork and stuffed into a pork casing

rol: A blue cheese

rokt medister A moist, cooked, smoked Norwegian sausage made from finely chopped mildly seasoned, beef and pork and stuffed into a beef casing

roktmedvurst A beef and pork salami; a semidry or dry, uncooked, smoked Swedish sausage made from medium chopped, medium seasoned, beef and pork sausage, fermented and stuffed into an artificial casing

roletti A spiral (½ inch) shaped pasta

roll (bun) 1) A small breadlike baked product, usually served hot; a small, wheat or rye, or mixed, aerated piece of nonsweet bread; it has a crisp crust and a soft-crumb inside texture
Shapes:
Bow tie—make a dough rope, ½ inch in diameter and 8 inches long and tie into a knot
Butterfan—place five or six vertical strips into a cup and allow to rise and bake
Cloverleaf—allow three balls to rise and bake in a cup; make a X cut in top of dough, let rise, and bake
Crescent—roll a wedge of dough and curve into a half moon
S-roll—make a dough rope, ½ inch in diameter and 9 inches long; form into an S shape, let rise, and bake

Styles:
Plain
Dinner—a miniature, hearth-baked loaf
Finger (long)—5 inches long, 1 inch wide; tapering ends
Frankfort (Columbin)—similar in shape to finger but larger and longer; rounded ends
Parker house (pocketbook)
Plain—round and square
Sandwich (barbecue)—round (5–6 inches in diameter)

Sweet
Butterfly
Butter horn
Cinnamon
Coffee pretzel
Pecan
Raisin

Composition, brown and serve: sodium 138 mg per roll (28 g); refrigerated dough: sodium 342 mg per roll (35 g)
2) To make flat with a rolling pin, e.g., pastry dough.
3) A hard cheese made from whole cow's milk with rennet added
See Part 2: Baked Products, Frozen Storage Life; Calories, Daily Recommendations; Frozen Food Storage; Grain Products Composition; Portion Size

rollatine Meat rolled around a stuffing of prosciutto, cheese, and spices

rolled Compressed between rollers

rolled in Light, flaky, bakery goods made by rolling out dough after fermentation and making alternate layers of dough (5 parts) and fat (or shortening; 1 part)

rolled oats A breakfast cereal made by steaming oat kernels, crushing them on rollers, and then drying;
rolled oats

the cereal is heated just before serving. Contains little gluten and is often used in combination with wheat flour to make baked products. Regular rolled oats—dehulled, steamed, flattened, and dried oats. Quick oatmeal—made from oat groats that are steel-cut into pieces after dehulling and flattened thinner than regular rolled oats. Instant or cook-in-the-bowl—prepared like quick oatmeal except 0.1–1.0% of a gum is placed on the surface to speed up hydration.

1 pound, uncooked = 5 cups = 12 (3/4 cups) servings
1 cup, dry = 100 grams
Composition (dry): fiber 9%
See also oat

rolled rib roast  Boned standing rib roast that is folded into a roll and held together with strings

rolling  Excessive side shoulder motion in horses

roll mix  A dry commercially prepared mixture containing most roll ingredients; only liquid items need to be added.
Storage: room temperature away from heat of the range or refrigerator

roll mop  Herring that are split, boned, spiced, and rolled around a pickle or onion; they are marinated or preserved in a brine (salt, spices, sugar, vinegar, and wine)

rollot  A strong-flavored, soft, heart-shaped or cylindrical cheese made from cow’s milk and covered with a red crust

rolpens  A moist, cooked, unsmoked Dutch sausage made from coarsely chopped, medium seasoned, beef and stuffed into a beef casing

romadour (remou dou; roman tur)  A limburger-type cheese

romadur  A soft to semisoft, ripened, strongly flavored blue cheese made from partly skimmed or whole cow’s milk; has some holes; ripened by surface bacteria

romaine lettuce (cos)  Lettuce with a strong nutty flavor and coarse spoon-shaped leaves; has an elongated head. See also cos; lettuce

romanest  A low-alcohol, Bordeaux-type, red wine

romanian brand sausage  A sausage made from finely chopped, medium seasoned, beef and not stuffed into casings

rombell  A moist, uncooked, smoked Australian sausage made from finely chopped, medium seasoned, beef and not stuffed into casings

romberg  A red wine

rooibosch tea  A noncaffeine tea

room  Cream

roos  A ball-shaped cheese made from sheep’s or goat’s milk and matured 6 months

rooster  A mature male chicken one year or older that has developed spurs and comb. See also cock

root beer  Caramel-colored carbonated water and sugar and flavored with starry root beer extract (fermenting and infusion of sassafras, wintergreen, sarsaparilla, and ginger) or root beer concentrate (oil of sassafras and oil of sweet birch or oil of wintergreen)

1 fluid ounce = 30.8 grams = 12.5 calories

root crop  See Part 2: Root Crop Characteristics

root knot  Occurs in tomatoes and is caused by worm-like, nematode larvae that feed on roots; causes enlargements (root knots or galls) that vary from % to 2 inch in diameter. Severe infestations will reduce yield 80%; damage is most severe in sandy soils. Control: plant resistant varieties

root knot nematode  Small microscopic worms (parasitic nematodes) that affect tomatoes, sweet potatoes, and other plants. Infected plants become yellow, stunted, and wilt easily; yield is reduced; roots can be galled, pruned, matted, or decayed. Several types cause galling (or knots) on roots and cracking of tubers:

Cotton—Meloidogyne incognita acrita
Northern—M. hapla
Oriental or peach—M. javanica
Peanut—M. arenaria
Control: soil fumigants or nematicides

root-lesion nematode (Pratylenchus spp.)  An extremely small worm that attacks strawberries and most other cultivated crops, most trees and ornamentals, and many weeds by entering the roots to feed...
Control: plant stock that is substantially free of root-lesion nematodes; soil fumigation is also recommended

**root mean square** See rms; mean square

**root rot** 1) A rice disease caused by any one of several fungi including *Fusarium* spp.; *Pythium* spp. and *Rhizoctonia solani*; nematodes including *Hirschmanniella oryzae* and *Tylenchorhynus martini*. Control: crop rotation, balanced fertilizing, and other cultural practices or draining
2) A disease (Texas root rot) that causes a firm brown rot (*Phymatotrichum omnivorum*) in sweet potatoes

**rootstock (stock)** Rootlike underground stem or rhizome; part of root used in plant propagation; root material to which other varieties of fruit are united by grafting or budding; a thickened stem that lies horizontally near the surface of the ground and is filled with plant food. It is not a root

**root vegetable** A group of vegetables in which the edible part is under ground, e.g., beet, carrot, celery, chervil, dasheen, parsnip, potato, radish, rutabaga, salsify, sweet potato, turnip, turnip-rooted parsley

**rootworm** See grape rootworm

**rope** 1) A measure of distance
   1 rope = 20 feet
2) Gelatinous threads produced by bacteria in bread

**ropy** A slimy condition in bread caused by spore-forming bacilli of the subtilis-mesentericus group

**ropy milk** A thick, fermented, low-medium acid (pH 4.4–4.7), cow's milk

**roquefort** An unpressed, soft, uncooked, blue-veined cheese made from unscalded sheep's milk; mold-ripened (*Penicillium roqueforti* or *P. glaucum*); matured in caves (46°F, high humidity); often 4.5–5 pounds. Used for cooking dressing, and eating; it has a sharp, rich, pungent, salty flavor and a creamy but crumbly texture. Sold in cylindrical shape; ripened 2–5 months by internal molds. American roquefort is made from cow's milk.
   1 inch cube = 0.6 ounces

Composition: moisture 39–40%; protein 21–22%; fat 30–33%; carbohydrate 2%; fiber 0%; ash 5–7%; salt 4%; pH 4.7–5.9; sodium 513 mg/oz

Storage: can be frozen (0°F) in small quantities if used for salads or dressings; use in 6 months

See Part 2: Cheese Characteristics; Cheese Composition; Cheese, Vitamin Content; Milk and Cheese Composition; Milk and Milk Products, Vitamin Content; Vitamin A, Milk and Milk Products

**roquefort dressing** A temporary emulsion of oil, seasoning, vinegar, and crumbled roquefort cheese. See Part 2: French Dressing Variations; Salad Dressing and Mayonnaise Variations

**roquette** An annual, 8 foot herb that produces mildly pungent, strong-flavored greens

**rosa rugosa** See dog rose

**Roscommon** A long-wool, British breed of sheep

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**rose** A fresh, fruity, rose-colored wine

**roseapple** A fragrant fruit

Varieties:
Egg-shaped—red in color
Pear-shaped—white to pink in color

See Australian native plum

**rosé aux fruit** Medoc, white wine mixed with the extract of several fruits

**rose Bulgarian (atar of roses; trice otto oil)** An extract of rose petals used as a flavoring and as colorant

**rose chafer** A small white grub in its larval stage. In beetle stage (gray or tan bettle, reddish brown head; long-legged and slender; ½ inch long) they are general feeders (buds, flowers, foliage, and fruit); they damage many kinds of fruits and ornamental plants

Control: Apply a spray containing methoxychlor

**rosé d’anjou** Well-balanced, semidry, French (Loire river), pale rosé wines

**rosé de marsannay** A rosé wine

**rosefish (Sebastes marinus)** A north Atlantic hard-dock. See ocean perch

See Part 2: Vitamin A, Fish

**rose hip** Urn-shaped seed receptacle at the base of the blossom, used to make jam, soup, syrup, and tea

See also dog rose

**roselle (Hibiscus sabdariffa)** An annual herb whose large yellow flowers are used as food; also a source of a fruit acid to make a cranberry-like jelly or fermented into a drink. The fruit resembles a cranberry and the yield is 8–10 pounds/plant. Bark contains a useful fiber

Type: red and white See rozella

**rosemary (Rosa Maria; Rosmarinus officinalis L.)**

A hardy, 3 foot, perennial (85 days) evergreen of the mint family; has grayish leaves used dried or fresh as an herb; leaf looks like a 1-inch pine needle. Used as a spice for flavoring meat, savory dishes, and salads.

Aroma: camphoraceous, herby

Flavor: aromatic, warm, woody, bitter

Forms:
Cracked—usually cracked with particles varying up to ¼ inch
Ground—leaves are dried and ground into a fine powder; if the stems are also ground, the product will have a reduced oil content

Whole

Source: Portugal and Yugoslavia

Composition (dry): moisture 7–10%; protein 4–5%; fat 15–16%; carbohydrate 64–65%; fiber 18.5–18.5%; ash 6–7%; average volatile oil 1.3% volume per weight (1.2% volume per weight minimum)

Has antioxidative activity

See Part 2: Essential Oils; Flavoring Agents, Natural

**rosemary butter** Soften one-half stick of unsalted, sweet butter and add 1 tsp finely minced fresh rosemary or ½ tsp of dried rosemary; cream together, adding a few drops of lemon juice

**rosemary jelly** A jelly made from an infusion of rosemary. Infusion is prepared by using 2½ cups boiling water over 1 cup of fresh rosemary; cool and strain 2 cups of rosemary infusion and add ¼ cup of
vinegar or apple cider and 4 1/2 cups sugar; heat until sugar is dissolved; then add 1/2 bottle of liquid pectin and boil for 1.5 minutes; remove from heat and add 1-2 drops of food coloring if desired. Fill sterilized glasses and seal with melted paraffin

**rosemary oil**  A volatile oil obtained by steam distillation of *Rosmarinus officinalis* flowers; used as a rosemary, flavoring agent in food; sp. gr. 0.894-0.913 Storage: full, tight container in a cool place

**rose oil**  A volatile, essential oil obtained by steam distillation from *Rosa alba, R. centifolia, R. damascena,* or *R. gallica* flowers; used as a roselike, flavoring agent in food; sp. gr. 0.848-0.864 30°/15°C Storage: full, tight container in a cool, dark place

**rose petal**  Candied for food; used for preserves and jams; used to flavor pies; made into fritters; made into brandy or wine; in some cases, crystallized

**rose petal jam**  A preserve made from cabbage roses

**rosette**  1) Double blossom caused by fungus *Cercospora rubi,* which affects blackberries. Symptoms are short, broomlike growths that emerge along infected canes; flower buds are larger, coarser, and redder than usual; petals are wrinkled and twisted; blossoms fail to form fruit
   
   Control: remove wild blackberries from vicinity of cultivated blackberries
   
   2) A dry, uncooked, unsmoked French sausage (salami) made from coarsely chopped, mildly seasoned, pork and fermented and stuffed into pork casings

**rose vinegar**  A vinegar made by placing 3 ounces of red rose petals in 1 quart of wine vinegar for 10 days and then straining

**rose water**  A flavoring distilled from rose petals and used in cooking

**Rose, William C.**  The person who identified threonine

**rothé wine**  An all-occasion, pink wine made from French-American hybrid grapes. A pink-colored, alcoholic beverage made by fermenting grape juice

Made by:
   
   Fermenting with skin of pink grapes
   
   Fermenting with skin of dark grape for 12-36 hours and then continuing fermentation without skin
   
   Blending white and red wine

**rosin**  A yellow to dark brown resin obtained from the sap of some pine trees *See gum rosin; resin: wood rosin*

**rosquillo**  A wheat flour, anise-flavored, ring doughnut

**rosso conero**  A dry, robust, red, Italian wine

**rosso piceno**  A soft, ruby-red Italian wine

**roast beef**

**rot**  See brown rot

**rotary capper**  A closing machine in which the containers travel in a circular path during closing

**Rotbunte**  German red and white cattle

**rote kirsch**  A bitter, sweet, dark red, cherry brandy

**rotelle (wagon wheel)**  Pasta shaped like a wagon wheel

**rotenone**  $(C_{23}H_{22}O_6)$ A moderately toxic insecticide extracted from derris root; it is extremely poisonous to fish

**rothestein**  See blast

**rou Meat**

**rouennais**  A cow's milk cheese

**rough**  Degree of astringency of wine

**roughage**  Indigestible (nonruminant) material in the diet; high fiber, high bulk, and low in total digestible nutrients; opposite of concentrate *See fiber*

**Rough Fell**  A hill breed of British sheep

**rough spot**  See Part 2: Sorghum Disease

**rougue**  A plant with fernlike leaves; usually undesirable

**roulade**  Meat wrapped around a stuffing; a beef dish

**round**  The area of a hind quarter of beef located to the rear of the rump and loin area; its major muscles consist of the tip, top, eye, and bottom; about 20% of a choice carcass is round; if rump is included this would add about 5%

*See Part 2: Beef Chart; Beef Cuts; Beef Cuts and Uses; Beef Retail Yield; Beef Roasting; Beef Round, Bone Structure; Beef Round Cuts; Beef Rounds; Beef Wholesale Cuts; Beef Yields; Bone-in Retail Cuts; Meat Identification; Meat Label; Potassium-Rich Foods; Veal Chart; Veal Cuts; Veal Roasting*

**round barrel**  See kiangsu

**round bone sirloin**  A sirloin steak found in the loin end wholesale cut; it is located between the wedge bone sirloin and the double bone sirloin
round fish 1) Whole fish; fish that have not been gutted; fish as it comes from water. 2) New England whitefish  See whitefish
round gourd A yellow gourd that is usually consumed before maturity
round herring (Etrumeus sadina) A Caribbean, food fish
rounding Anything above 50,000, etc., round up, and below round down; at 5,000, etc., round to the nearest even number
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roundness Wine with abundant alcohol and no acidity
rounds Beef and pork small intestine used as natural casings in the meat trade
See Part 2: Casings, Animal; Casings, Hog and Beef; Casings, Terms
round scad (Decapterus punctatus) A food fish
round steak See Part 2: Braising Meat; Braising Time
round tip See sirloin
roundworm A food-borne parasite (Ascaris lumbricoides; A. suis) found in human feces
roux A slow cooked paste used for thickening; made from shortening (various types) and flour; the length of cooking affects color and flavor. The base for a number of sauces and soups
rouy A cow's milk, muenster-type cheese
Rowan A variety of lespedeza
roxarsone A drug used to promote growth, increase feed efficiency, treat dysentery, and change pigmentation
royal brabant A soft to semisoft, strongly flavored, cheese made from cow's milk and ripened by surface bacteria
royal colombier A yellow liqueur flavored with 24 herbs
royale A cooked and cooled, molded, egg custard; often cut and added to clear soup
royale cherry Duke cherry
royaled A variegated flavor in ice cream
royal fizz An effervescent alcoholic beverage containing gin and eggs
royal mint See apple mint
royal mint chocolate A liqueur flavored with mint and chocolate
royalp A 4-5 kg, Swiss cheese made from cow's milk
royal provence cheese A French, dessert, cream-type cheese containing olives
rozella (roselle) A hibiscus plant
Uses:
- Flowers—jams, jellies, pies
- Leaves—curries, pot herbs, salads
- Seed pods—jams, jellies
- Young stems—jams, jellies
RSP cherries Red, sour, pitted cherries
r.s.v.p. Respondez, s'il vous plait; French for please reply
Ru Symbol for the element ruthenium
rubber (C\textsubscript{5}H\textsubscript{8})\textsubscript{n} A natural high polymer useful for insulation, vibration damping, etc.
See Part 2: Insulating Value
rubber hydrochloride A stretchable film used in food packaging
rubber stopper

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rubberweed A plant having a toxic principle
See Part 2: Poisonous Plants
rubbery 1) Resistant or rubberlike texture. 2) Odor of natural or synthetic rubber or butyl phenol
rubidium (Rb) A metallic element; at. no. 37; at. wt. 85.48; Group IA of Periodic Table; oxidation state +1
electron configuration 2-8-18-8-1;
orbit K L M N O
Rubner, Max The person who stated that the body must obey the laws of energy and determined fuel values of fat, protein, and carbohydrates
ruby A slightly red port between tawny and full
rubin cabernet A red wine
rucola See rocket
ructus Belching
rudd (Scardinius erythrophthalmus) A freshwater food fish
rudesheimer A full-bodied, white wine

rudimentary shoot (leaves)  See Part 2: Corn Kernel

rue (herb of grace; Ruta graveolens) A small, aromatic, perennial shrub with bitter, blue-green, serrated leaves; used in food, in pickles, in salad, and as a tea

rue oil A volatile oil obtained by steam distillation of Ruta bracteosa, R. graveolens, or R. montana flowers. An essential oil used for flavoring cheeses; used also as a fatlike flavoring agent in foods (especially salads) and to make tea; sp. gr. 0.825-0.838

Storage: full, tight, glass container in a cool, dark place  See Part 2: Essential Oils

ruffec A valencay-type cheese made from goat's milk; eaten fresh or matured for 1 month (bluish rind)
ruffed grouse (ruffed partridge; Bonasa umbellus) A game bird

ruffle fat Intestinal fat of meat animal carcass

rugenwalder teewurst A beef or pork teewurst

rubu A rice wine

rullepolse A moist, cooked, unsmoked Danish sausage made from coarsely chopped, mildly seasoned, pork and not stuffed into a casing

rum An alcoholic distillate from fermented juice of sugar cane or sugar cane by-products (molasses) distilled at less than 190° proof. A spirit of high alcohol (35-60%) content produced by distillation of fermented (28-33°C for 30-48 hours) juice of sugar cane or molasses

Classes:
- Aromatic—Barbados
- Dry, light-bodied—Cuba
- Rich, full-bodied—Jamaica
- Strong, heavy—New England

1 fluid ounce = 28 grams
1 fluid ounce, 80 proof = 63 calories
86 proof = 70 calories
90 proof = 73 calories

See sugar cane

See Part 2: Flavor Ingredients, Taste and Flavor Type; Minerals (Trace), Limits

rum baba An open-textured, sponge cake soaked in rum

rum, Cuban A light colored and light flavored rum

rumen (paunch; plain tripe) The first and largest stomach of a ruminant animal located on its left side; this compartment breaks feed down into smaller particles, and is where microorganisms digest most of the cellulose; a bovine rumen may contain from 20 to 50 gallons

rum ether See ethyl oxyhydrate

rum, flavoring A synthetic flavoring
1 tbs of flavoring = 3 cup of rum

ruminant A cud-chewing, herbivorous, animal with four stomachs that can utilize roughage as a source of food. Examples: antelope, buffalo, cattle, camel, deer, goats, and sheep

ruminant A digestive process that takes place in ruminant animals in which the food in the rumen and reticulum is regurgitated, rechewed, and again swallowed

rum 'n coke (rum 'n cola) An alcoholic beverage made from the juice and rind of ½ lime added to ice, 1½ oz (1 jigger) light rum, filled with cola and stirred

rump On a live animal, the part between the hips and the tail head; meat between loin and round

See Part 2: Beef Cuts; Beef Cuts and Uses; Beef Retail Yield; Beef Roasting; Bone; Roasting; Time and Temperature; Veal Chart; Veal Cuts; Veal Cuts and Uses; Veal Roasting

rump back An English term for the pork loin area from the aitch bone to approximately the third lumbar vertebra

rump knuckle bone Superior extremity of the femur

rump roast An unboned rump contains the pelvic bone, the sacrum, and rump knuckle bone; however, it is usually retailed as a boneless, rolled, and tied roast

rump steak An English term for the pork flank area from approximately the aitch bone to approximately the third lumbar vertebra

runesten A cured, Danish or Swiss cheese made from cow's milk and wrapped in a red, transparent film

runner A fish
Amber fish—Elegatis bipinnulatus
Jurel (blue runner)—Caranx chrysos
See Part 2: Casings, Animal

runt (dolly, anthony) The smallest animal in a brood or litter; a small, nonthriving animal

Rural New Yorker A variety of potato

rush nut See chufa

rusk (zwieback) A hard, twice-baked, brown, crisp, wheat flour bread or biscuit used as a breakfast cereal or as an ingredient in sausage; may be sweet or plain; protein 6%; fat 8%; carbohydrate 82%  See zwieback

russell A red, strong-flavored, alcoholic beverage made from beetroot juice

russet A green apple mottled with brown

russet crack A virus of sweet potatoes that causes disfiguring lesions on the surface of the roots

russeting Tan, brown, or blackish, lacy motting or specking over the skin of Florida and Texas oranges and other fruit; does not effect eating quality

Russett Burbank A variety of potato used for baking and frying

Russian dressing A salad dressing that usually contains corn syrup, garlic, lemon juice, onion, spices, sugar, sweet pepper, tomatoes, and vinegar. Others made from chili sauce, eggs, olives, onion, and parsley. Often made using 1 part chili sauce and 2 parts mayonnaise; sometimes chopped vegetables are added

Composition: sodium 133 mg/tbsp (15 g)

See Part 2: French Dressing Variations; Salad Dressing and Mayonnaise Variations
Russian knapweed (Centaurea repens L.) A perennial weed

Russian salad Diced cooked vegetables covered with salad dressing; often contains apples, beets, carrots, chicken, cucumbers, dry mustard, gherkins, hard-boiled eggs, herring, potatoes, sugar, turnips, and vinaigrette

Russian sturgeon (Acipenser guldenshtadi) A food fish

Russian thistle (Salsola kali L.) An annual weed

Russian 

An annual weed

russkii A low-fat, sour drink made from milk whey and combined with sodium caseinate; may be sweetened

rust 1) A disease of plants, especially cereal grasses, characterized by the appearance of reddish discoloration of the leaves; caused by virus infestation (Basidiomycetes group). A fungus (Puccinia asparagi) disease of asparagus and mint. 2) Fungus (Tranzschelia discolor) that affects the leaves (yellow spots on upper surface; underside thickens; orange yellow tubelike structure on each spot; leaves may turn yellow and drop) and fruit (similar lesions on calyx end of fruit) of apple, pear, and peach trees. Control: disease-resistant varieties and fungicide spray. 3) A condition in tin cans caused by not properly drying cans after retorting See scurf, smut

See Part 2: Sorghum Diseases

rustenberg A red wine

rust mite A very tiny (less than \( \frac{1}{100} \) inch) insect that is brown in winter and white or pale beige in summer; causes fruit and leaves to turn uniform reddish brown; attacks leaves and cause blisters on underside of leaf that are \( \frac{1}{5} \) inch in diameter and may completely cover the underside of the leaf

rutenberg A red wine

rutabaga (swede; Swedish turnip; yellow turnip; Brassica campestris var. napobrassica) A vegetable whose root is used as food; a turniplike plant with a long, yellow or white root that may be purplish near stem end; flavor similar to kohlrabi. Seed 10,000 per ounce; 1 oz per 250 foot row; plant 4 inches apart in rows spaced 15 inches; matures in 50 days; yield 1 bushel per 50 foot row

<table>
<thead>
<tr>
<th>Variety</th>
<th>Shape</th>
<th>Color</th>
<th>Season (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>American purple top</td>
<td>Globe</td>
<td>Light yellow; upper part purple; yellow flesh</td>
<td>90</td>
</tr>
<tr>
<td>Burpee's Purple Top Yellow</td>
<td>Globe; large</td>
<td>Light yellow; upper part purple; orange flesh</td>
<td>90</td>
</tr>
<tr>
<td>Golden Ball (Orange Jelly)</td>
<td></td>
<td>Yellow flesh</td>
<td>90</td>
</tr>
<tr>
<td>Laurentian</td>
<td>Pale smooth root; upper part purple; yellow flesh</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Sweet German</td>
<td>White flesh</td>
<td></td>
<td>90</td>
</tr>
</tbody>
</table>

Types:
Yellow fleshed—American Purple top; Golden neckless; Purple top yellow
White fleshed—Sweet German (white Swede; sweet Russian); Sweet perfection; White-fleshed neckless

Prepared by boiling (20-40 minutes; leave whole or mash), frying, steaming, or stewing; 30% refuse

Equivalents
1 bushel (bu) = 56 pounds (lb)
1-1.5 lb, fresh = 4 servings
1 lb, fresh = 2.5 cups, cubed
= 2 cups, cooked
1 large, peeled and cut into 1.5 inch cubes = 5-6 cups
1 small = 8 ounces (oz)
1 cup, cubed = 140 grams (4.9 oz)
1 cup, boiled, diced, drained = 6 oz
1 cup, boiled, mashed = 8.6 oz
1 serving = 0.3-0.5 lb

Composition (raw): moisture 87%; protein 1%; fat 0.1%; carbohydrate 11%; ash 1%

Storage: Cool room temperature, relative humidity 90-95%; will keep 2 months at 60°F. For long storage they may be coated with paraffin to prevent moisture loss and shriveling (paraffin is removed by peeling); they give off odor during storage See Swede

See Part 2: Minerals, Food; Plant Foods, Composition; Planting Density, Root Crop Characteristics; Storage; Sugar, Vegetables; Vegetable Composition; Vegetable Planting Chart; Vegetable Plants; Vegetable Storage

ruthenium (Ru) A metallic element; at. no. 44; at. wt. 101.1; Group VIII of Periodic Table. Oxidation states +3, +4, +5, +6, +8

Electron configuration 2-8-18-15 - 1;
Orbit K L M N O

Rutherford See Part 2: Constants, Fundamental

rutland A cheddar-type cheese flavored with garlic, parsley, and beer

ruzica A rosé wine

ryazhenka A light brown (caramel) yogurt

ryba Fish

rye (Secale cereale) Originated in central Asia. An annual grass used for grazing; a grain that can withstand cold climate and poor soil; similar in composition to wheat; plant 48-112 lb/acre; variety Abruzzi; used to make black bread (schwartzbrot), whiskey, gin, and beer. Young plants used as fodder and older plants for bedding, thatching, paper-making, and straw products. Rye sometimes contains a parasitic fungus called ergot (Claviceps purpurea), which is poisonous to man and animals

Other grade names:
Dark—includes a part of the outer portion of the grain
Light—inner portion (endosperm) of grain
Medium—blend of light and dark

Red dog
Rye bran
Straight—all of the flower from grain; 30% dark and 70% light

1 bushel = 56 pounds (lb)
1.7 lb rye seed per quart
1.5 lb ground rye per quart

Also contains:
Rye bran
Rye flour
Rye meal
Comparative approximative nutrient used for growth:

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>20 bushels of rye</th>
<th>1 ton straw</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>21 lb</td>
<td>10 lb</td>
</tr>
<tr>
<td>P&lt;sub&gt;2&lt;/sub&gt;O&lt;sub&gt;5&lt;/sub&gt;</td>
<td>8 lb</td>
<td>6 lb</td>
</tr>
<tr>
<td>K&lt;sub&gt;2&lt;/sub&gt;O</td>
<td>6 lb</td>
<td>16 lb</td>
</tr>
</tbody>
</table>

Flour, by-product less than 8.5% fiber, rye middlings. Whole grain:

<table>
<thead>
<tr>
<th>Composition</th>
<th>Distiller's grain, dehydrated</th>
<th>Feed, less than 9.5% fiber</th>
<th>Flour, by-product less than 8.5% fibers, rye middlings</th>
<th>Whole grain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>8</td>
<td>10</td>
<td>11</td>
<td>11–12</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>21.6</td>
<td>16.7</td>
<td>16.2</td>
<td>12–15</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>7</td>
<td>3.4</td>
<td>3.2</td>
<td>1.5–2</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>72</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>12</td>
<td>4.6</td>
<td>4.8</td>
<td>2.2</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2</td>
<td>3.8</td>
<td>3.7</td>
<td>1.6–2</td>
</tr>
</tbody>
</table>

pH 5–5.5. For green manure, plant in fall and turn under in spring.

Food storage: tightly closed container in a cool place or freeze for longer storage. See *pumpernickel*.

See Part 2: Cereal Composition; Cereal Nutrient Content; Minerals, Food; Minerals, Plant or Animal Tissue; Nutrients in Crops; Plant Foods, Composition; Protein Factors; Seed, Chemical Composition; Seed, Germination; Vitamin A, Food.

**rye bread** A dark-colored sourdough bread made from all rye or rye and wheat flour. See *bread, rye*.

**rye cracker**

1 wafer = 6–7 grams (g)

Composition: fiber 10%; sodium 70 mg per cracker (6 g)

**rye flour** Flour from rye grain; low in gluten and elasticity. Available in white, medium, and dark; the darker the color the more outer portion of the grain included and the more pronounced the rye flavor; usually mixed with wheat flour to make baked products; makes a more compact loaf of bread.

1 cup, unsifted, spooned, light = 3.6 ounces (oz)
1 cup, sifted, spooned, light = 3.1 oz
1 cup, unsifted or stirred, dark = 4.5 oz
100 lb, rye flour = 2.23 bushels, rye

Composition: moisture 11%; protein 9–16%; fat 1–3%; carbohydrate 68–78%; ash 1–2% See *Bohemian rye flour*.

**rye flour, dark** A whole grain flour that includes the germ and the outer layers where the B vitamins and minerals are concentrated.

**ryegrass**

Annual (Italian)—*Lolium multiflorum*

Perennial (English)—*L. perenne*

An annual and perennial grass. When eaten by cattle, it will sometimes give an off-flavor to milk; seeding 40 lb/acre; 24 lb/bushel.

**Ryeland** A medium wool, British breed of sheep.

**rye meal** 4 1/2 cups = 1 pound

Composition: moisture 11%; protein 13–14%; fat 2%; carbohydrate 71–72%; ash 1–2% See *pumpernickel*.

**rye wafer** See Part 2: Grain Products Composition.

**rye whiskey** Whiskey made from a mixture of rye or barley malt and unmalted rye; a full-bodied whisky distilled from fermented rye, mixed with maize and barley; aged in new charred barrels.

**rye, wild** Perennial bunchgrass, not related to ryegrass.

Species:
- Canada wild rye—*Elymus canadensis*
- Russian wild rye—*E. junceus*

**ryzhik** See *chanterelle*.
S The symbol for the element sulfur
saaland pfarr  See prestost
saanen (hartkäse; reibkäse; walliskäse) A very hard, long cured, deep yellow, emmenthaler-type cheese with small holes and made from cow's milk
Saanen A breed of goats
See Part 2: Goats, Milk Breeds
sabayon A dessert made of egg yolk, vanilla, sugar, and white and sherry wine
SABHI agar  See Part 2: Microorganism, Media
sable A high-fat pastry
sableau A soft, white, triangular cheese made from goat's milk and used fresh or cured 1 week
sablefish (black cod; butterfish; Anoplopoma fimbria) A saltwater food fish that weighs about 8 lb and has a high fat content, light meat, and a mild, delicate flavor
See Part 2: Vitamin A, Fish; Vitamin D, Fish
sabo  See nkyekyere
sabodet coudenat A moist, uncooked, unsmoked French sausage made from coarsely chopped, mildly seasoned pork fermented and stuffed into beef or pork casings; cooked before eating
sabouraud medium See Part 2: Microorganism, Media
sabra A liqueur flavored with orange and chocolate
sacahuista A plant having a toxic principle
See Part 2: Poisonous Plants
saccharase An enzyme that uses sugars as a substrate See invertase
saccharide One of a series of carbohydrates
saccharimeter [saccharometer (sometimes reserved for density measurements)] An instrument for determining the concentration of sugar by measuring the angle of rotation of polarized light
saccharin A non-nutritive sweetener 500 times as sweet as cane sugar (sucrose); mp 227°C; used by diabetics as a substitute for sugar; used in dietetic foods (but it leaves a bitter aftertaste); excreted by the kidneys. A known weak carcinogen, the Food and Drug Administration proposed (1977) a ban on the use of saccharin; instead, the warning "Use of this product may be hazardous to your health. This product contains saccharin, which has been determined to cause cancer in laboratory animals." must appear on the label of all products containing saccharin.

\[
\text{\[\text{SO}_2\text{N}^{-}\text{H}}\]
\]
Storage: tight container
See Part 2: Sweetening Agents; Sweetening Compounds; Sweetness of Sweeteners
saccharometer  See Part 2: Wine, Sugar Addition
Saccharomyces A genus of molds
See Part 2: Spoilage, Carbohydrate Foods
saccharose  See sucrose
sack A strong, dry, light-colored wine
sacral vertebrae The portion of the backbone behind the slip joint and before the tail bone (loin end area); between the lumbar and caudal vertebrae
Number of sacral vertebrae: beef 5; chicken, fused; lamb 4; pork 4; rabbit 3 or 4
See Part 2: Bone
sacramento perch A fish belonging to the sunfish family
sacroiliac The joint in which the sacrum meets the iliac
See Part 2: Bone
sacrum  See sacral vertebrae
saddle The unseparated (unsplit) loins (back area); a cut of meat (usually mutton or lamb) that includes the lower back, with kidneys; in an unsplit carcass, the foresaddle and hindsaddle are usually divided between the 12th and 13th ribs. See Wessex Saddleback
Saddleback A breed of hogs; the British Saddleback is a cross between Essex and Wessex Saddlebacks, which produced a black lop-eared pig with a white saddle over the shoulder
sadecka A semi-dry, cooked Polish sausage made from double-smoked, fine- or medium-chopped medium-seasoned beef and lamb, with plasma, stuffed into beef or artificial casings
sadilly A white wine
saenjeot Pickled shrimp
saeterpolse A salami made from beef and pork, containing offal; a dry, uncooked, smoked Norwegian sausage made from medium-chopped, medium-seasoned beef and lamb, with large quantities of plucks added, fermented and stuffed into artificial casings
safalade A moist, cooked, smoked Yugoslavian sausage made from finely chopped, mildly seasoned
beef and pork stuffed into 55–58-mm pork or artificial casings, or not stuffed into a casing

**safe and suitable** A regulatory term indicating that a food ingredient performs an appropriate function, is used at a minimum level to achieve this function, and is not a food additive as defined by the Federal Food, Drug, and Cosmetic Act, unless used in conformity with appropriate regulations covering these additives

**safe level of intake (protein)** The quantity of protein necessary to meet the physiological needs and maintain the health of most of the people in a specific population

**safety button (flip panel)** The round portion of a can lid that changes from convex to concave when container has a vacuum

**saffian** Leather made from goat or sheep skin

**Saffie (Georgia bind)** The amount of fat (in grams) emulsified per gram of meat

**safflower** (false saffron; *Carthamus tinctorius*) A plant that is grown for its seed, which yields a polyunsaturated oil and protein feed; the light yellow oil is sometimes used for coloring food. The seeds may be prepared for eating by roasting (whole or after dehulling); the flowers produce an orange dye brighter than saffron. (Safflower is called false saffron because it is sometimes used to adulterate saffron.) Yield from seed:

- Hull (1% oil, 4% protein)—35–40%
- Oil—40%
- Protein—15%

Storage (seed): moisture content 10% max.

See also **safflower oil**

See Part 2: Seed, Chemical Composition; Unsaponifiable Matter

**safflower meal** The ground press cake of safflower seed from which the oil has been expressed; contains 1% oil; protein content varies from 23% (unhulled seed) to 43% protein (dehulled seed); used for human (dehulled) and livestock (unhulled) nourishment

<table>
<thead>
<tr>
<th>Composition</th>
<th>Mechanically extracted</th>
<th>Solvent-extracted Seed</th>
<th>Hull removed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>9</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>20</td>
<td>23</td>
<td>43</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>6</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>32</td>
<td>30</td>
<td>13</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>4</td>
<td>5</td>
<td>7</td>
</tr>
</tbody>
</table>

See Part 2: Oil Meals, Composition

**safflower oil** A highly unsaturated oil obtained from pressing and/or solvent-extraction of safflower seed. Composition (fatty acids): arachidic 0.4%; eicosenic 0.6%; linoleic 70–78%; linolenic 3%; myristic 0.1%; oleic 13–19%; palmitic 5–7%; stearic 3%

Properties:

- Iodine value—143–145
- Melting point—18 to 15°C
- Saponification value—190–192
- Specific gravity 60°C—0.90

Equivalents:

- 1 qt = 4 cups
- 1 cup = 210 g (7.4 oz)

See Part 2: Fats and Oils, Composition I; Fats and Oils, Fatty Acid Composition; Fats and Oils, Physical and Chemical Properties; Fatty Acids, Fats and Oils; Free Fatty Acid, Smoke, Flash, and Fire Points; Iodine and Saponification Values; Oil, Triglyceride Mole Percent Composition; Refractive Indices, Fats and Oils; Specific Gravities, Fats and Oils; Titer, Fats and Oils; Tocopherols

**saffron** (French saffron; Spanish saffron; vegetable gold; *Crocus sativus* L.) The dried orange-yellow stigmas of the saffron flower (a crocus-like bulbous plant); 200,000–225,000 stigmas (from 75,000 plants) per pound; used as a seasoning (aromatic odor and bitter aftertaste) in bread, cakes, rolls, sauces, soups, and rice; also a yellow-red color obtained from the saffron plant, used to color food

- Dye—saffron yellow
- Spice—orange-red: three-branched style; bitter, aromatic odor

Source: Spain

Composition:

- moisture 11–12%;
- protein 11–12%;
- fat 5–6%;
- carbohydrate 65–66%;
- fiber 3–4%;
- ash 5–6% (6% max.);
- HCl-insoluble ash 1% max.

See Part 2: Colors Permanently Listed

**saffron bread** A plaited tea bread covered with almonds and colored yellow with saffron

**saffron cod** (*Eleginus gracilis*) A food fish

**safranin counterstain** See Part 2: Gram Stain

**safrole** A flavoring obtained from the sassafras root; no longer approved by the Food and Drug Administration

**sagamite** Mush made from hominy

**sage** (*Salvia officinalis* L.) A low-growing (1–2 ft), perennial (75 days) shrub (thin to 10 in. apart in rows 15 in. apart); the leaf (fresh or dried) is used as an herb; sold in fresh or dried bunches; the leaf is the only part used.

Available forms (dried, in airtight containers): whole; cut (various particle sizes); crushed or rubbed (fluffy) and ground (finely pulverized) to specified granulations

- Aroma—camphoraceous, herby
- Flavor—aromatic, bitterish, warm, slightly astrin gent

Used to flavor cheese, dressing, meat stuffing, poultry stuffing, sauces, sausages, and soups; has antioxidant activity and a high affinity for fats

Names:

- Bethlehem sage (*Puimonaria saccharata*)
- Black sage (*Audibertia stachyoides*)
- Crimson sage (*Au. grandiflora*)
- Dalmation sage (*Salvia officinalis* L.)
- Jerusalem sage (*Phlomis fruticosa*)
- Meadow clary (clary) sage (*S. sclarea*)
- Purple sage (*Au. nivea*)
- Sagebrush (*Artemisia tridentata*)
- Spanish sage (*S. lavandulaefolia vahl. S. hispanorum lag.*)
- White sage (*Au. polystachya*)

Leaf colors:

- gray-green (common);
- green; reddish
Sago palm (Metroxylon sagu; M. rumphii) A subtropical tree that contains starch in the pith of the trunk; the trunk is split and the pith scooped out; it is then ground; the starch washed out and dried to form sago flour. A similar flour is also manufactured from other plants such as maize, palm fern, potato, sweet potato, and tapioca.

Composition: protein 0.2%; fat 0.2%; carbohydrate 94%;

See palm

See Part 2: Starch, Microappearance; Vitamin A, Food

Sago, pearl Spherical sago particles, made by forcing sago through sieves into a hot iron pan

Sagu See cassava

Saguaro A cactus, from which an alcoholic drink is made

Saguerro A palm wine; a sweet, cloudy white wine made from the sap of the nipa palm

Saigon cinnamon See cassia

Sai-krok-spies A fermented, semidry sausage made from pork or beef

Sailfin (sandfish) A food fish

Sailfish (Istiophorus spp.) A food fish

Saim Fat or lard

Saimin Noodle soup

Sainfoin See Part 2: Seed, Germination

Saino A thick porridge gruel made from sorghum or millet

Saint-Agathon A cheese made from cow's milk

Saint-Albray A cream cheese made from cow's milk

Saint-André An excelsior-type cheese

Saint-Benoit cheese A soft, münster-type cheese made from cow's milk with rennet added

Saint-Benout A camembert-type, soft cheese that is made from cow's milk and has an ashen rind

Saint-Bernard A gouda-type cheese with a black rind

Saint-Claude cheese A fresh or ripened cheese made from goat's milk

Saint-Croix-du-Mont 1) A high-quality, medium-rich white wine. 2) A commune on the north bank of the Garonne River in the Bordeaux region of southwestern France that produces a medium-rich, high-quality, sometimes sweet, white wine

Saint-Cruz See sebu

Sainte-Anne-d'Auray A cheese made from cow's milk

Sainte-Marie A soft, white cheese made from cow's milk

Sainte-Maure A small, bar-shaped, French, valencay-type cheese, with a close, white curd, white and blue mold, a natural rind, and a mellow flavor; made from goat's milk

Saint-Emilion A full-bodied red wine

Saint-Estèphe A red wine

Saint-Florentin A münster-type cheese made from cow's or goat's milk

Saint-Flour A blue cheese

Leaf types: broad (best for drying); narrow; variegated

Varieties:

Dwarf golden (S. officinalis nana)

Golden (S. officinalis aurea)

Tricolor (S. officinalis tricolor)

Sources: Albania; Yugoslavia (Dalmation sage)

Composition: moisture 7–8%; protein 10–11%; fat 11–13%; carbohydrate 60–70%; fiber 17.5–18.5%; ash 7–8%

The dried product contains:

- Not less than 1% volatile ether extract
- Not more than 25% crude fiber
- Not more than 12% stems (excluding petioles) or foreign matter
- Not more than 10% total ash
- Not more than 1% acid-insoluble ash

Storage: airtight containers

See Part 2: Essential Oils; Flavoring Agents, Natural; Spices, Microbial Content

Sage cheese A cheddarlike cheese containing sage leaves, which give it a green appearance

Sage derby A derby cheese that is flavored with the juice of sage leaves soaked in chlorophyll See derby

Sage grouse (Centrocercus urophasianus) A game bird

Sage jelly A jelly that is flavored with a sage infusion

1. Make infusion by pouring 2 1/2 cups boiling water over 1 cup fresh sage leaves.
2. Let cool; strain.
3. To 2 cups of sage infusion, add 1/4 cup vinegar or apple cider, 1 1/2 cups sugar.
4. Boil until the sugar dissolves.
5. Add 1/2 bottle liquid pectin and boil for 1 1/2 minutes.
6. Cool and add 1–2 drops food coloring if desired.
7. Fill sterilized containers and seal with melted paraffin.

Sage lancashire A lancashire cheese that contains sage See lancashire

Sage leicester A leicester cheese flavored with sage leaves

Sage oil A light yellow to yellow-green oil obtained by steam distillation of partially dried leaves of sage; optical rotation -30 to +29°; refractive index 1.457–1.473; sp. gr. 0.903–0.932 g/ml See sage

Sage oil, Dalmatian An oil obtained by steam distillation of Salvia officinalis leaves; used as a sagelike flavoring agent in food; saponification value 5–20; sp. gr. 0.902–0.926

Storage: full, tight, glass container in a cool, dark place

Sage oil, Spanish An oil obtained by distillation of Salvia hispanorum or S. lavandulaefolia plants; used as a sagelike flavoring agent in foods; saponification value 15–60; sp. gr. 0.910–0.933

Storage: full, tight, glass container in a cool, dark place

Sage oleoresin A dark green, viscous liquid obtained by solvent extraction of the leaves of sage and subsequent removal of the solvent; oil content 48–52%

Sago Refined starch from the pith of the sago palm; sold in pearl (very small) form and used in preparing blancmange, custards, puddings, and soup; also used as a thickening agent
Saint-Germain A style of preparing food with green peas
Saint-Gildas A small (200 g), excelsior-type cheese
Saint Hallvard An herb liqueur
Saint John’s bread The carob bean See also carob pod
Saint-Julien A red wine
Saint-Marcellin A soft cream cheese made from goat’s and cow’s milk
Saint-Marcellin cheese (tomme de Saint Marcelle) A small, French, münster-type cheese that is made from cow’s or goat’s milk and has a white mold-covered rind, a close white curd, and a mild flavor; sometimes wrapped in chestnut leaves
Saint-Michels See limburger cheese
Saint-Nectaire cheese A soft to semihard type of tomme de savoie, French cheese, made from whole cow’s milk with rennet added, that is pressed but uncooked, contains very little water, and is matured for 2 months on rye straw
Saint-Paulin A pressed but uncooked, disc- or wheel-shaped (250 g–2 kg), medium-flavored, semisoft French cheese, made from cow’s milk that contains very little water, ripened by surface bacteria, and has a thin rind
Saint-Raphael A quinine-flavored, red or white, aperitif wine
Saint-Rémi A cheese made from whole cow’s milk
Saint Remy cheese A soft münster-type cheese made from cow’s milk with rennet added
Saint Stephano A creamy, semisoft mild-flavored cheese made from cow’s milk and ripened by surface bacteria
saishikomi shoyu A dark brown soy sauce
sai-yau thick soy sauce
saj A leavened, thin flatbread, usually made from high-extraction wheat flour
sajur asin Pickled Brassica rugosa
sak A wine made from fermented bark of Acacia arabica
Sakaguchi See Part 2: Protein and Amino Acids, Color Reactions
sake (rice wine; saki; Samshu) A clear or amber-colored, sweet, rich, rice wine with alcohol content of 14–20%; rice is steamed (30–60 min); starter is added; the mixture is fermented at 10–15° C for 3 weeks, then filtered and diluted
salsische leverworst A moist, cooked, smoked or unsmoked Dutch sausage made from finely chopped, medium-seasoned beef and pork stuffed into pork or artificial casings
sal The pharmacist’s term for a salt, e.g., sal ammoniac is ammonium chloride
salad (salade) Uncooked vegetables and sometimes meat that are cut up, mixed, and seasoned (often with dressing); usually served as a side dish, but may be a separate course (e.g., the appetizer or first course, the main course, between main course and dessert, or as the dessert)
Types:
Cold salads
   Fruit—fresh; often mixed fruits
   Meat—cooked meat, poultry, and/or seafood
   (e.g., anchovy, crab, fish, lobster, shrimp);
   sometimes with vegetables
   Vegetable—raw or cooked; often crisp
   Green salads—mixed raw vegetables
   Starchy salads—may be hot or cold
   Macaroni
   Potato
   Served with:
   Cheese—as a separate course
   Dressing—as hors d’oeuvres
   Game—served after the main dish
   Meat—as an accompaniment
   Poultry—as a side dish
See Part 2: Portion Size
salad berry A berry of Gaultheria shallon
salad burnet (Sanguisorba minor) A perennial herb with fernlike leaves that are used fresh and have a cucumbery taste; used to flavor salads, vinegar, and wine
salad burnet vinegar Vinegar flavored with salad burnet
1. Rinse and pat dry salad burnet and place in a container.
2. Heat cider or wine vinegar and pour over salad burnet.
3. Cover and leave at room temperature for 2–3 weeks.
4. Strain through cheesecloth and pour into a bottle.
salad combination A canned mixture of asparagus tips, carrots (diced), green beans (cut into 1 inch pieces) lima beans, peas, and pimiento
salad cream A dressing made from olive oil and eggs
salad dressing 1) A combination of mayonnaise and a cooked paste base with a minimum of 30% vegetable oil
   Acid—vinegar or lemon juice (citric acid permitted to \[\frac{1}{3}\] acetic in vinegar)
   Emulsifying ingredient—a minimum of 4% liquid egg yolk
   Starch paste—tapioca, wheat flour, or rye flour is required
2) A term used to describe dressings placed on salads; often classified into three types: cooked; French; mayonnaise
   1 tbsp = 0.5–0.6 oz
   Composition: moisture 40%; protein 1%; fat 42%; carbohydrate 14%; ash 2%
   Calorie content (regular):
   Blue cheese—1 tbsp = 75 calories
   Commercial, plain, mayonnaise type—1 tbsp = 55 calories
   French—1 tbsp = 65 calories
   Home-cooked, boiled—1 tbsp = 25 calories
   Italian—1 tbsp = 70 calories
   Mayonnaise—1 tbsp = 100 calories
   Russian—1 tbsp = 75 calories
   Thousand island—1 tbsp = 60 calories
Calorie content (low-calorie):
  French—1 tbsp = 20 calories
  Italian—1 tbsp = 15 calories
  Thousand island—1 tbsp = 25 calories

Storage: Refrigerate after opening; if home-made, keep refrigerated; do not freeze
See also cooked salad dressing; French dressing; mayonnaise; Russian dressing

See Part 2: Mayonnaise and Salad Dressing; Salad Dressing and Mayonnaise Variations; Stabilizers, Thickeners

**SALAD FRUIT** See fruits for salad; tropical fruit salad

**SALAD GREENS** Vegetables that are used in salads, such as cabbage, celery, dandelion, endive, escarole, lettuce, and watercress
Storage: wash; drain well and place in crisper or plastic bag; refrigerate; use within 1 week

**SALAD PLANTS** Plants that are used in salads; most can be eaten raw; e.g., beet, beetroot, celery, chicory, chives, corn salad, cress, cucumber, dandelion (blanched), endive (blanched) lettuce, mustard, nasturtium, onion, parsley, radish, rampion, and tomato

**SALAD OIL** (table oil; vegetable oil) A refined, bleached, deodorized, and winterized (if needed) edible oil, e.g., olive oil; it remains unclouded and pourable at 40–50°F and will remain clear for 5.5 h at 32°F. Made from cooking oil by the removal of fractions that crystallize at low temperature (winterization), a step that olive oil and peanut oil do not require. One tablespoon contains 120 calories. To remove stain from cloth: scrape off excess; use laundry pretreatment spray or cleaning fluid, and rinse in cool water; wash in hot sudsy water. Storage: Short-term, at room temperature; long-term, refrigerate. If oil becomes cloudy or solid, this is not harmful and will clear upon warming.

**SALAD VEGETABLES** Vegetables that are eaten raw with salt, pepper, vinegar, and salad oil, or with mayonnaise or other dressings; e.g., celery, endive, lettuce, parsley, and upland cress

**SALAMA LETNA** A moist, cooked, unsmoked Yugoslavian sausage made from medium-chopped, mildly seasoned pork stuffed into 50-mm beef or artificial casings

**SALAMA CHEESE** A soft, strong-flavored cheese made from sheep's milk

**SALAMAVRA** A strong-flavored, white, brined cheese made from goat's milk

**SALAMA ZEMSKA** A dry, uncooked, smoked Yugoslavian sausage made from medium-chopped, mildly seasoned pork, fermented and stuffed into 35–40-mm beef or artificial casings

**SALAME** A dry, uncooked, unsmoked Argentinean sausage made from fine- or coarse-ground medium-seasoned beef and pork, with white wine, stuffed into pork casings

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**SALAME, CHACARERO** A dry or semidry, uncooked, smoked Uruguayan sausage made from coarsely chopped, mildly seasoned beef and pork, fermented and stuffed into beef or artificial casings

**SALAME CHEESE** A large, provolone-type cheese made from cow's milk See Italian cheese

**SALAME FABRIANO** A dry, uncooked, unsmoked Italian sausage made from medium-chopped, medium-seasoned, beef and pork, fermented and stuffed into pork casings

**SALAME FELINO** A dry, uncooked, unsmoked Italian sausage made from medium-chopped, medium-seasoned pork, fermented and stuffed into pork casings

**SALAME GENOVESE** A dry, uncooked, unsmoked Italian sausage made from coarsely chopped, medium-seasoned beef and pork, fermented and stuffed into beef or pork casings

**SALAME MILANO** A dry or semidry, uncooked, smoked or unsmoked Italian or Uruguayan sausage made from fine- to medium-chopped, medium- to heavily seasoned beef and pork, fermented and stuffed into pork, beef, or artificial casings

**SALAME NAPOLETANO** A dry, uncooked, smoked Italian sausage made from coarsely chopped, medium-seasoned beef and pork, fermented and stuffed into pork casings

**SALAME TIPO CERVELAT** A semidry, cooked, smoked Brazilian sausage made from medium-chopped, medium-seasoned beef and pork, stuffed into artificial casings

**SALAME TIPO FRIOLANO** A dry, uncooked, unsmoked Brazilian sausage made from finely chopped, mildly seasoned pork, fermented and stuffed into artificial casings

**SALAME TIPO ITALIANO** A dry, uncooked, unsmoked Brazilian sausage made from finely chopped, medium-seasoned beef and pork, fermented and stuffed into an artificial casing

**SALAME TIPO MILANO** A dry, uncooked, unsmoked Brazilian sausage made from finely chopped, medium-seasoned pork, fermented and stuffed into artificial casings

**SALAME TIPO POLONES** A dry, cooked, smoked Brazilian sausage made from medium-chopped, medium-seasoned beef and pork, stuffed into artificial casings

**SALAMETTI** A dry, uncooked, unsmoked Swiss sausage (salami) made from medium- or coarse chopped,
heavily seasoned beef and pork, fermented and stuffed into pork or artificial casings

**salami varzi** A dry, uncooked, unsmoked Italian sausage made from coarsely chopped, medium- or heavily seasoned pork, fermented and stuffed into beef or pork casings

**salame veronese** A dry, uncooked, unsmoked Italian sausage made from medium-chopped, medium-seasoned beef and pork, fermented and stuffed into pork or artificial casings

**salami (frizelles; salame; soppresate; soppressata)**
A generic term for dry Italian salame, German salami, and kochsalami; a coarsely ground, cooked Italian sausage of many varieties. Salami, thought to have originated in Cyprus, is a dry sausage that is usually made with beef (50%) and pork (40%) and is usually highly seasoned. Some familiar ones are arles (French), beerwurst (German), and calabrese, capicola, cotta, and genoa (all Italian). An American version is a dry or semidry, uncooked, smoked or unsmoked, medium- to coarse-chopped, heavily seasoned (with garlic, paprika, and red or black pepper), fermented beef and pork stuffed into pork casings; the product is air-dried for 60–100 days and is available in links, rings, or large-diameter casings. An Austrian version is a dry uncooked, smoked, coarsely chopped, medium-seasoned (with nitrate) beef and pork, fermented and stuffed into artificial casings with a diameter of greater than 40 mm.

Meats used:
- Beef—50–80% (normally 60%)
- Beef fat plate—0–35%
- Heart meat—0–20%
- Pork—20–60% (normally 40%)
- Pork cheek meat—0–25%

Other ingredients (amount per 100 lb):
- Ice—0–24%
- Sugar*—8 oz
- Cardamom*—1 oz
- Coriander—0–3 oz
- Cracked black pepper*—2–6 oz
- Garlic powder*—1 oz
- Mace—0–1 oz
- NaNO2—1 oz
- NaNO3—2 oz
- Paprika—0–1 oz

The asterisk indicates the combination used in some formulations.

Processing procedure:
1. Grind with 1/4-in. plate.
2. Mix; add cure and spices.
3. Stuff into casings.
4. Hang until dry.
5. Smoke 80–90°F for 14 h then at 150–160°F until internal temperature reaches 142°F.
6. Rinse with hot water.
7. Shower for 10 minutes.
8. Hang at room temperature for 2 hours.
9. Store in cooler.

**Types:**
- Abruzzese—moisture-to-protein ratio must be 1.9:1 or less
- BC salami—MPR must be 1.9:1 or less; made with beef and pork and seasoned with garlic; less highly flavored but more heavily smoked than Italian; tied with twine (gives scalloped appearance)
- Burgermeister—artificial casing
- Cosenza—high quality; oriental spices, including whole black pepper
- DiLusso Genoa—deluxe; mildly seasoned, coarse-chopped, unsmoked; air-dried 90–110 days; 6–8 lb
- Dry or hard—MPR must be 1.9:1 or less; may be cooked
- Genoa (Italian hard)—primarily pork, flavored with garlic and wine or grape juice; not smoked; long drying time
- Gran valore Genoa—higher in fat than DiLusso Genoa
- Hard—very lean; deep red color; dash of garlic; moderately smoked; 4.5 lb
- Hungarian (winter)—cured and dried for several months
- Italian—80% finely chopped pork and 20% chopped beef; MPR 1.9:1 or less
- Messina—mostly pork, medium-chopped; whole peppercorns; 16 × 2.25 in. 3 lb
- National—hard; light mahogany color
- Piccolo—southern Italian type; primarily pork; black peppercorns
- San Remo Genoa—artificial casing; large slices; 4.75 lb
- Sicilian—uncooked (trichina treatment required); very dry; medium-chopped; not smoked; contains no garlic but contains whole peppercorns; MPR 1.9:1 or less
- Southern Italian—highly spiced (no garlic); not smoked, high processing temperature
- Sodium content: 226–255 mg/slice

1 cup, diced = 4.8 oz

See German salami

See Part 2: Meat Composition; Sausage Identification; Sausage, Nutritive Value; Sausage, Types; Water Activity, Organisms and Food

**salami (dry)** A dry sausage made from predominantly pork with some beef; it is allowed to cure 2 days before stuffing; it is then dried without smoking.

Types:
- BC salami (German type)—stuffed into beef middle casings 11–15 in. long; smoked
- Genoa—stuffed into sewed hog bungs 16–20 in. long
- Milano stuffed into hog bungs 18–30 in. long

See salami, dry or hard

**salami, aeros** A dry, uncooked, smoked or unsmoked Greek sausage made from coarsely chopped, moderately seasoned (with garlic and grains of black pepper) beef and pork with pieces (1 cm³) of pork fat fermented and stuffed into sheep or artificial casings

**salami, Austrian** A moist, cooked, unsmoked Irish sausage made from coarsely chopped, medium-seasoned, beef and pork stuffed into artificial casings

**salami, BC** A medium- to coarse-chopped, cooked, smoked, American sausage, available in large-diameter links, rings, or large-diameter casings for slicing

**salami, beef, cooked** An all-beef salami similar to Kosher salami but not made under rabbinical supervision See salami, cooked, beef
salami, Berliner  A moist, cooked, unsmoked Irish sausage made from finely chopped, mildly seasoned pork stuffed into artificial casings

salami cheese  A processed cheese with pieces of salami; used for snacks

salami, cooked, beef  A moist, cooked, smoked medium- to coarse-chopped, mildly seasoned beef, with cereals and extenders cured for 48 h, cooked, air-dried a short time or not at all, and stuffed into large-diameter links or large beef or artificial casings for slicing. See salami, beef, cooked

salami, cooked, beer (beerwurst)  A moist, cooked, smoked American sausage medium- to coarse-chopped, mildly seasoned (with garlic and pepper) beef and pork, cured for 48 h, cooked, air-dried a short time or not at all, and stuffed into large beef or artificial casings and available in large-diameter links or large-diameter casings for slicing. It is softer than dry sausage and must be refrigerated.

salami, Danish-type  A moist, cooked, smoked Greek sausage made from finely chopped, medium-seasoned beef and pork stuffed into artificial casings

salami danoix  A dry, uncooked, smoked French sausage made from medium-chopped, medium-seasoned pork, fermented and stuffed into pork casings

salami, d’Arles (Arles, de Arles)  A dry, uncooked, unsmoked American sausage made from coarsely chopped, mildly seasoned beef and pork, fermented and stuffed into beef, pork, or artificial casings; the product is corded in a “crisscross” style and is air-dried for 60–100 days.

salami de Milan  A dry, uncooked, unsmoked French sausage made from medium-chopped, mildly seasoned beef and pork, fermented and stuffed into beef casings

salami de Strasbourg  A dry, uncooked, smoked French sausage made from medium-chopped, medium-seasoned beef and pork, fermented and stuffed into artificial casings

salami, dry or hard  A dry or semidry, uncooked, smoked or unsmoked American sausage made from medium- to coarse-chopped, mildly seasoned beef and pork (may contain extenders), fermented and stuffed into pork or artificial casings; the product may be cooked to speed drying time and is available in links, rings, or large-diameter casings. Types:
- Genoa—moistened with wine or grape juice; seasoned with garlic; cord-wrapped lengthwise
- Milano—Italian salami made from pork and finely cut beef; spiced with garlic
- Sicilian—Italian salami made from coarsely chopped pork and finely cut beef; spiced with garlic

salami, extra  A dry, uncooked, smoked Belgian sausage made from medium-chopped, medium-seasoned beef and pork, fermented and stuffed into pork or artificial casings

salami, garlic  A moist, cooked, smoked or unsmoked Irish sausage made from medium-chopped, medium- or heavily seasoned beef and pork stuffed into artificial casings

salami, genoa  A dry, uncooked, unsmoked American sausage made from medium- to coarse-chopped, mildly seasoned (with garlic and grape juice or wine) beef and pork, fermented and stuffed into pork casings and is given an end-to-end cord wrapping; the product is air-dried for 60–100 days and is available in links, rings, or large-diameter casings.

salami, German  A dry, uncooked, smoked (more heavily than Italian) American sausage made from medium-chopped, mildly to highly seasoned (with garlic) beef and pork, fermented and stuffed into pork or artificial casings and given a scalloped cord wrapping; the product is air-dried for 60–100 days.

salami, gullstjerna  A dry, uncooked, smoked Norwegian sausage made from medium-chopped, heavily seasoned beef and pork, fermented and not stuffed into casings

salami, ham  A moist, cooked, unsmoked Irish sausage made from finely chopped, mildly seasoned pork stuffed into artificial casings

salami hongrois  A dry, uncooked, smoked French sausage made from medium-chopped, medium-seasoned pork, fermented and stuffed into beef casings

salami, Hungarian  A dry, uncooked, smoked (heavier than Italian) Hungarian sausage made from medium-chopped, heavily (less than Italian) seasoned (with garlic) pork, fermented and stuffed into artificial casings

salami, Hungarian-type  A moist, cooked, smoked Greek sausage made from finely chopped, medium-seasoned beef and pork stuffed into artificial casings

salami, hungar  A dry, uncooked, smoked Mexican sausage made from finely chopped, medium-seasoned beef and pork, fermented and stuffed into artificial casings

salami, Irish farmhouse  A dry, uncooked, smoked Irish sausage made from coarsely chopped, medium-seasoned beef and pork, fermented and stuffed into artificial casings

salami, Irish whiskey  A dry, uncooked, smoked Irish sausage made from coarsely chopped, medium-seasoned beef and pork, fermented and stuffed into artificial casings

See salami (dry)
654  salami, Italian

salami, Italian 1) Refers to many varieties (e.g., genoa, milano, and sicilian) of salami that are made from coarsely chopped, cured, lean pork and finely chopped, lean beef, moistened with wine or grape juice, and are highly seasoned (contains garlic), air-dried, and chewy. 2) A moist, cooked, unsmoked Irish sausage made from coarsely chopped, medium-seasoned beef and pork stuffed into artificial casings See salami (dry)

salami, Kosher A moist, cooked, smoked American sausage made from medium- to coarse-chopped, mildly seasoned (with coriander, garlic, mustard and nutmeg) beef stuffed into artificial casings and available in links, rings, or large-diameter casings for slicing; must be produced under rabbinical supervision See Kosher salami

salami, Mailand A dry, uncooked, unsmoked Austrian sausage made from finely chopped, medium-seasoned (with nitrate) beef and pork, fermented and stuffed into artificial casings with a diameter of greater than 40 mm

salami, milano A dry, uncooked, unsmoked American or Mexican sausage made from medium-chopped, mild- to medium-seasoned (with garlic) beef and pork, fermented and stuffed into pork or artificial casings; the product is air-dried for 60–100 days and shows distinct cording.

salamines A dry, uncooked, unsmoked Argentinean sausage made from finely chopped, medium-seasoned beef and pork, with white wine, stuffed into pork casings.

salami, Norwegian A dry, uncooked, smoked Norwegian sausage made from medium-chopped, heavily seasoned beef and pork, fermented and stuffed into artificial casings

salami, nostrano A dry, uncooked, unsmoked Swiss sausage made from coarsely chopped, heavily seasoned meat, fermented and stuffed into beef, pork, or artificial casings

salami, Polish A dry, uncooked, smoked Polish sausage made from finely chopped, medium-seasoned beef and pork, fermented and stuffed into beef casings

salami, San Francisco, Italian-style A dry, uncooked, unsmoked American sausage made from medium-chopped, mildly seasoned beef and pork, with nonfat dry milk (NFDM) and fermented and stuffed into pork casings; the product is air-dried for 60–100 days.

salami, serai A moist, cooked, unsmoked Greek sausage made from finely chopped, medium-seasoned (with garlic) beef and pork stuffed into pork, sheep, or artificial casings; often canned

salami, Sicilian A dry or semidry, uncooked, unsmoked American sausage made from medium- to coarse-chopped, mildly seasoned (no garlic) beef and pork, fermented and stuffed into pork casings; the product is air-dried for 60–100 days and is available in links, rings, or large-diameter casings.

salami, skordato A moist, cooked, unsmoked Greek sausage made from finely chopped, heavily seasoned (with garlic) beef and pork stuffed into pork, sheep, or artificial casings

salamisnabb (chub) A dry, uncooked, smoked Norwegian sausage made from medium-chopped, heavily seasoned beef and pork, fermented and stuffed into artificial casings

salami, Swedish A semidry or dry, uncooked, smoked Swedish sausage made from medium-chopped, medium-seasoned beef and pork, fermented and stuffed into artificial casings

salami, Swiss A dry, uncooked, unsmoked Swiss sausage made from medium-chopped, medium-seasoned beef and pork, fermented and stuffed into beef, pork, or artificial casings

salami, ungarische A dry, uncooked, smoked Austrian sausage made from coarsely chopped, medium-seasoned with nitrate) pork, fermented and stuffed into artificial casings with a diameter of greater than 40 mm

salami, varzi A dry, uncooked, unsmoked Mexican sausage made from coarsely chopped, medium-seasoned beef and pork, fermented and stuffed into a sheep caecum or round, or into an artificial casing

salami, Vienna A moist, cooked, smoked or unsmoked Irish sausage made from medium- or coarse-chopped mild or medium seasoned beef and pork stuffed into artificial casings

salami, vlatsto A moist, cooked, smoked Greek sausage made from finely chopped, medium-seasoned beef and pork stuffed into a sheep caecum or round, or into an artificial casing

salami, western German A dry, uncooked, smoked western German sausage made from coarsely chopped, medium-seasoned beef and pork, fermented and stuffed into artificial casings

salana A Portuguese sausage containing pork, green onions, parsley, vinegar, spices, and garlic

salaneuros A gouda-type cheese

salat Salad

salcesson A moist, cooked, unsmoked Irish sausage made from coarsely chopped, medium-seasoned pork stuffed into artificial casings

salchicha 1) Sausage; 2) moist, uncooked, unsmoked Uruguayan sausage made from finely chopped, medium-seasoned veal, with fresh cheese, stuffed into sheep casings

salchicha fresca A moist, uncooked, unsmoked Argentinean sausage made from finely chopped, mildly seasoned (with ground cinnamon, ground cloves, ground white pepper, nitrate, salt, water, and white sugar) beef and pork, with backfat, stuffed into sheep casings

salchicha tipo Frankfurt A moist, cooked, smoked, finely chopped, mildly seasoned beef, lamb, pork, and veal, Argentinian sausage, made with beef brisket fat and pork backfat and stuffed into sheep or artificial casings

salchichon con jamon A moist, cooked, smoked Argentinean sausage made from finely chopped, mildly seasoned beef, lamb, and veal, with pork ham and
backfat and wheat flour, stuffed into beef, pork, or artificial casings

sale or return An agreement between buyer and seller by which the goods are sent on approval directly to the customer for use; if the customer decides not to buy them, the goods may be returned to the seller

salep (salop) Dried tubers of Orchis mascula or O. latifolia; used to make a drink or jelly

salteratus Baking soda (sodium or potassium bicarbonate)

salicylage The preservation of food with salicylic acid

saligny A munster-type cheese made from cow’s milk

saligot Water chestnut

salimeter (salinometer; salometer) A hydrometer, a floating (specific gravity) instrument used to test the strength or salinity (salt) of a pickle or brine.

Pure water = 0°; saturated salt (26.4%) solution at 38°F = 100°
60° brine = 0.60 x 26.4
= 15.8% salt at 38°F

See Part 2: Brine, Meat Curing; Salt Brine; Salt, Brine

saline Pertaining to salt See physiological saline; salty

salinometer See salimeter

salisbury steak Ground beef mixed with bread and seasoning and fried or broiled
See Part 2: Portion Size

saliva The clear, alkaline, viscid, digestive-fluid secreted by salivary glands (parotid, submandibular, and submaxillary) located in the mouth; it provides lubrication (mucin, a glycoprotein) for swallowing and assists in carbohydrate breakdown (amylase); it contains ptyalin, potassium thiocyanate, and albumin; produces 1-1.5 liter (1.1-1.6 qt) per day.

See Part 2: Moisture in Biological Materials; pH Values of Biological Materials

salivary glands See Part 2: Organ Weights

Sally Lunn A bread; baked as muffins or cut into squares

salmagundi A mixture of meat, eggs, and pickled vegetables served as a salad; almost any fancy mixture of food

salmi Birds or game stewed in wine or cooked as a ragout or stew

salmon (Oncorhynchus spp.; Salmo spp.) A large, soft-finned, fat fish with reddish to red-yellow flesh; the percentage of fat varies from 0 to 14% depending on when caught; salmon live in both fresh and salt water. Pacific salmon are different species from Atlantic salmon, which are true salmon.

Types:
Atlantic salmon (S. salar)—related to huchen, but more closely related to trout; 5-10 lb; pink flesh; delicate flavor
Australian salmon (Arripis trutta)
Australian salmon bass—kabeljou
Cherry (O. masou)—also called Japanese or masu salmon

Chinook (O. tshawytscha)—also called quinnat, king, spring, and tyee salmon; the first and last months of its life are spent in fresh water and the remainder in salt water; 5-30 lb; high fat content; excellent flavor, soft texture; deep pink to white flesh; caught in Alaska
Coho—also called silver salmon; 4-9 lb; high fat content; light to dark pink color
Chum (O. keta)—also called keta, fall, and dog salmon; 7-8 lb; lower fat content; light pink flesh
Danube (Hucho hucho)—also called huchen; caught in the Danube
Pacific salmon (Oncorhynchus spp.)
Pink (O. gorbuscua)—also called humpback or humpy; 4 lb; low fat content; soft flesh; caught in the Great Lakes
Sebago salmon (S. sebago)
Shark salmon (Lamna nasus)
Silver (O. Kisutch)—also called coho, red salmon, and silversides; North Atlantic
Sockeye (O. nerka)—also called red or blueback salmon; caught along the Pacific coast

Stages of growth:
Parr—a young fish (to 8 in.) before leaving fresh water
Smolt—2 yrs when it goes to sea for the first time
Grilse—2-6 lb, when it returns from sea to fresh water (to its birth place) for the first time
Kelt—fish that has spawned
Mature—slighter form

Consumed: fresh; salted; pickled; smoked; dried; canned in oil; frozen

one 1-in.-thick steak = 8 oz

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Composition

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<tr>
<td>Silver</td>
<td>75</td>
<td>20</td>
<td>5</td>
<td>1.2</td>
</tr>
<tr>
<td>Sockeye</td>
<td>66</td>
<td>21</td>
<td>10</td>
<td>1.4</td>
</tr>
</tbody>
</table>

Cholesterol 30 mg/3 oz (canned); calcium 167 mg/3 oz (canned, with bone)

See also fresh water fish

See Part 2: Cholesterol Control; Fish and Shellfish, Composition: Fish, Smoke-Cured; Fish, Storage;
salmon (Oncorhynchus spp.; Salmo spp.)

Food, Composition; Frozen Food Storage; Glutamate; Minerals, Food; Salmon and Trout; Vitamin D, Fish; Vitamin D, Food

salmonberry (Rubus spectabilis) A salmon-colored, wild raspberry

Salmonella A genus of gram-negative, rod-shaped, non-spore-forming bacteria that are facultative anaerobes including a group of pathogens causing gastroenteritis (and a variety of other illnesses); there are about 1500 different serotypes. Salmonellae are the second most common type of food-poisoning (infection) bacteria; the salmonella death rate for infected people is low; optimum temperature for growth is 98–100°F; bacteria killed by heating to 150–180°F for 15 min; the human infection is called salmonellosis, which can be obtained by eating food with large numbers of salmonellae growing in it, from contact with people who are infected, or from contact with a carrier. Animals can harbor Salmonella spp. without obvious gross infection.

Prevention: Keep food below 40°F or above 140°F.

See Part 2: Egg Specifications; Food Poisoning, Bacteria; Illness from Food; Infectious Agents; Infectious Diseases, Food-Borne; Intestinal Microorganisms; Intestinal Microorganisms in Triple-Sugar Agar; Microbiological Standards, Dairy; Microorganism Reactions on Differential Tube Media

salmonellae See Part 2: Bacterial Food Borne Illnesses

salmonellosis A salmonella infection in humans

See Part 2: Bacterial Food-Borne Illnesses; Diseases, Food-Borne

salmonette See goat fish

salmon fry A smolt

salmon oil See Part 2: Iodine and Saponification Values

salmon, smoked Salmon (with head and backbone removed) that has been dry-salted and heavily cold-smoked with juniper wood

salmon trout 1) Char. 2) Lake trout. 3) Sea trout See freshwater fish

salmo-sa A snake wine

salmura A blue cheese made from ewe’s milk and placed in brine

saloio cheese A cheese made from skimmed cow’s milk

saloio, queljo de A cheese made from goat’s and ewe’s milk

salometer See salimeter

salpicao A smoked sausage made from pork

salpicon A stuffing

salsa Sauce

salsa cruda An uncooked sauce made from tomatoes, chilies, and onions

salsa para enchilada Enchilada sauce

salsa verde A green sauce made with tomatillos, chilies, onions, and garlic

salsicca A fresh, rope-style, highly spiced (with paprika) Italian sausage made from finely cut pork
Composition: dry matter 100%; ash 99.6%; calcium 0.15%; magnesium 0.14%; phosphorus 0.05%; potassium 0.01%; sodium 5.5 mg/kg salt; manganese 4 mg/kg salt; zinc 7.7 mg/kg salt

Salt added to firewood produces a yellow flame.

Storage: room temperature; may be stored indefinitely

1 barrel = 280 lb
1 qt = 2.6 lb
50 lb = 1 bu
1 lb = 1 cup
50 lb = 1 bu
1 cup = 290 g (10.2 oz)
1 tbsp = 1 oz

Table salt added to water lowers its freezing point (about 2°F for every 1% of salt added) and raises its boiling point. See also brine

2) Organic salts: The generalized formula is

\[
\text{R—C—O—M}
\]

where M is a metal, e.g.,

\[
2\text{CH}_3\text{COOH} + \text{CuO} \rightarrow \text{Cu(C}_2\text{H}_3\text{O}_2)_2 + \text{H}_2\text{O}
\]

A metallic salt of a fatty acid is called a soap.

See Part 2: Boiling Points, Sodium Chloride, Calcium Chloride; Brine, Meat Curing; Chloride Salt, Injury; Fish, Smoke-Cured; Ham, Curing; Hide Curing; Hide, Layers; Hides, Salt Absorption; Meat Curing Ingredients; Normal Solutions; Reagents, Normal Solutions; Salt Brine; Salt, Brine Table; Salt Penetration Rate; Salt Solution, Freezing; Water Activity, Organisms and Food

Salt analysis Determined by digesting the sample with nitric acid in the presence of excess silver nitrate; the silver ion precipitates the chlorides, and the amount of silver nitrate used can be determined by titrating the excess with ammonium thiocyanate; the quantity of chloride can thus be calculated and the results reported as sodium chloride.

Salt beef Usually dried brisket

Salt cake Sodium sulfate (Na_2SO_4), a salt of sulfuric acid found naturally in the western United States; made by the reaction

\[
2\text{NaCl} + \text{H}_2\text{SO}_4 \rightarrow 2\text{HCl} + \text{Na}_2\text{SO}_4
\]

Salt cod Dried codfish (Gadus spp.)

Salted fish A general term for dried fish

Salt, flake (Kosher salt) Coarse salt made by evaporating salt brine

Salt-free diet A diet that contains 150–500 mg sodium per day

Salt hay (marsh hay) Hay grown on wet, salty areas; makes a good mulch but does not break down easily

Saltimbocca Thin veal covered with prosciutto and sage leaf and sautéed in butter

Saltine crackers Two crackers (6 g) contain 70 mg sodium

Salt-marsh caterpillar (wooly bear; Estigmene acrea) A moth larva; can consume large quantities of lettuce

Salt meat Dried beef, goat, lamb, mutton, or pork

Salt petter (salt petre, niter) Can be any of the following:
- Chile salt petter (cubic nitre, sodium nitrate)
- Ordinary salt petter; Bengal salt petter; nitre; potassium nitrate
- Wall salt petter; Norwegian salt petter; calcium nitrate

Chile salt petter and ordinary salt petter are used in meat curing and as a source of nitrite for botulism control.

Salt petter, Chile As mined, 48–75% sodium nitrate (NaNO_3) and 20–40% sodium chloride (NaCl)

Salt petter, ordinary Potassium nitrate (KNO_3)

Salt pork Salt-cured pork

Sodium content (raw) 399 mg/oz (28 g)

Salt-rising bread A wheaten bread that uses Clostridium perfringens as a rising agent

Salt stick A crisp, pencil-shaped French bread with a salt coating

Salty (saline) Describes the taste sensation of sodium chloride

Salvador, strictly hard bean An aromatic, medium-body coffee

Salvia Sage

Salway A variety of freestone peaches

Samarium (Sm) A rare-earth element of the lanthanide series; Group IIIB of the Periodic Table; at. no. 62; at. wt. 105.35; oxidation states +2, +3; electron configuration 2–8–18–24–18–2

Sam-bal tempo-jak See tempoyak

Sambuca An herb liqueur flavored with elderberry (Sambucus spp.) and liquorice (Glycyrrhiza glabra)

Sam-cheou A rice wine or a rice beer

Samnane A clarified butter made by churning yogurt or kefir

Samneh Rendered butterfat

Samovar A metal container that is used for boiling water to make tea

Samp Corn that has been ground larger than mean and smaller than hominy See hominy

See Part 2: Cereal Composition

Sapphire (poor man's asparagus; sea fennel; Crithmum maritimum) A piquant, aromatic perennial; cooked like asparagus; the leaves are used to make pickles or, are used in salads.

Types:
- Golden samphire (Inula crithmoides)
- Marsh samphire or glasswort (Salicornia herbacea)

Often used in place of fennel, French St. Peter's cress, prickly samphire, or saltwort

Samp hominy Coarse hominy grits. See also: hominy
sample A part taken to represent the whole of a production run or shipment; e.g., a collection of items drawn from a lot See curtailed sampling; double sampling; random sample; representative sample; sequential sampling; single sampling

sample size The appropriate size of a sample, determined in the following ways.

Paired analysis: With a given size sample, the odds are 1:1 that a difference of \( \delta \) could be detected at the 5% level,

\[
\delta = \frac{s_D t_{0.05}}{\sqrt{n}}
\]

\( \delta \) = difference to be detected
\( s_D \) = sample standard deviation
\( df \) = degrees of freedom \((n - 1)\)
\( n \) = sample size in each group
\( t \) = student \( t \) at 0.05

To determine sample size, state the difference to be detected; because \( t \) changes with \( n \), guess at \( n \) and solve, adjust size \( n \), resolve until desired value is obtained.

Group analysis (difference between means):

\[
\delta = \frac{\sqrt{2} s t}{n} \quad \text{or} \quad n = \frac{2t^2 s^2}{\delta^2}
\]

\( n \) = sample size in each group
\( s \) = estimate of standard deviation
\( t \) = table value \([\text{for } df = 2(n - 1)]\)
\( \delta \) = difference to be detected

Analysis of variance:

\[
\delta = \frac{(Q_a, f)}{(s_0)} F_{f, f_0}
\]

\( s_0 \) = estimate of standard deviation
\( f_0 = df \) in \( s_0 \)
\( a \) = treatments in new experiment
\( n \) = individuals per treatment
\( f \) = \( a(n - 1) \) of new experiment
\( \delta \) = difference to be detected
\( Q_a, f \) = table value
\( F_{f, f_0} \) = table value \((f = f_1; f_0 = f_2)\)

Probability = \((1 - \text{probability of success or probability of detecting } \delta \text{ if it exists})\)

sample standard deviation \( (s_D) \) A measure of sample variability

In paired analysis:

\[
s_D = \sqrt{\frac{\sum d^2}{n - 1}}
\]

\( D = X_1 - X_2 \)
\( d = (\sum D)/n \)
\( \bar{d} = D - \bar{d} \)
\( n \) = number of pairs
\( X_2 \) = observations

sampling inspection The evaluation of material by inspecting some of the material

sandwich Two pieces of bread with a filling of meat, jelly, peanut butter, etc., between them; also made as an "open sandwich," for which the "filling" is placed on one slice of bread and is usually covered with gravy; named for the Earl of Sandwich

sandwich cookie Available in chocolate or vanilla; one 1 1/2-in. cookie \((\frac{3}{8}\text{ in. thick})\) contains 50 calories.
sandwich spread A mixture of meat, salad dressing, and pickle relish
Composition (pork, beef): moisture 60%; protein 8%; fat 17%; carbohydrate 12%; ash 2.8%
sandy Describes a fine, granular, dry texture
San Francisco salami A salami made from medium-chopped pork and beef with dried skim milk
sangak A triangular, sourdough flatbread made from 85–87% extraction flour
sangaree A spiced drink made of wine or spirits (brandy, gin, or whiskey) with sugar and water
sang-hak A fish sauce made from anchovies
Sangiovese A grape variety used in Italy to make a full-bodied, well-balanced, red wine that is improved by age
sangria A punch made with red wine
sang-suhn kook A fish soup
Sangue di Giuda A red, Italian, table wine
Sanho A breed of cattle obtained by crossing native Mongolian cows with Siberian and Friesian bulls; native to northeastern Inner Mongolia; black and white (dairy) or brown and white (dual-purpose, beef, and milk)
sanitary Hygienic; pertaining to health
sanitary can An open-top can with soldered side seams
sanitation Cleaning or cleanliness; the process of keeping something free from contamination; the practice of reducing the number of microorganisms as a protective measure for cleanliness and health; the process of making an object safe to use
sanitize To reduce the number of bacterial contaminants to a safe level, connoting cleanliness
sanitizer A cleaning preparation; a substance that reduces microbial population levels; an effective germicide
Types:
- Amphoteric compounds
- Halogens—bromine; chlorine; iodine
- Quaternary ammonium
- e.g., chlorinated trisodium phosphate
See Part 2: Sanitizers; Sanitizing Chemicals
San Jose scale (Quadraspidiotus perniciosus) A scale that infests the bark, foliage, and fruit of pear; other hosts are ornamental trees and shrubs as well as other deciduous fruit trees (e.g., apple, apricot, cherry, gooseberry, nectarine, peach, plum, and quince)
Damage: the sucking insect attacks branches and causes red spots to form on apples
Ctrl: insecticide
Sanka Proprietary name for a coffee from which most of the caffeine has been removed
san michele A mandarin-orange liqueur
San Pierre No. 1 A black and white breed of hogs produced from a Berkshire and Chester White cross
sansa The residue from olives after oil has been removed
San severo Any of several wines grown in southeastern Italy
- White—dry; high alcohol content
- Red—produced in Montepulciano
san simon A mild-flavored, dark yellow, smoked, provolone-type cheese made from cow’s milk
Santa Claus melon (Christmas melon) An oblong melon (6 × 12 in.) with thick, sparsely netted green skin with black and yellow splotches; it has a sweet, green-yellow flesh and is the best melon for winter storage.
Santa Gertrudis The first breed of beef cattle originated in the United States, developed by R. J. Kleberg of King Ranch, Kingsville, Texas; the breed originated from Brahman bulls of the Nellore strain and Shorthorn cows and are approximately ²⁄₃ Shorthorn and ⅓ Brahman; they have almost no hump and are deep red in color. See also Monkey
See Part 2: Beef and Dual-Purpose Cattle
Santalol
\[
\text{H}_2\text{C} - \text{C} - \text{C} - (\text{CH}_2)_2\text{C} = \text{CH}_2\text{OH}
\]
\[
\text{H}_2\text{C} - \text{C} - \text{CH}_3
\]
\[
\text{H} - \text{CH}_3
\]
\[
\text{H}_2\text{C} - \text{C} - (\text{CH}_2)_2\text{C} = \text{CH}_2\text{OH}
\]
\[
\text{H}_2\text{C} - \text{C} - \text{CH}_3
\]
\[
\text{H} - \text{CH}_3
\]
\[
\alpha\text{ isomer}
\]
\[
\beta\text{ isomer}
\]
Obtained from sandalwood oil; used as a sandalwood-like flavoring agent in food; sp. gr. 0.964–0.976
Storage: fill, tight, glass container in a cool, dark place
santalyl acetate Obtained by acetylation of santalol; used as a sandalwood-like flavoring agent in foods; sp. gr. 0.980–0.986
Storage: full, tight, glass container in a cool, dark place
Santa Maddalena 1) A wine-producing area of northern Italy. 2) A dry red wine
sante cheese A soft, fermented, Kosher cheese made from fresh milk
santol A type of mangosteen; pickled fruit
See Part 2: Fruit Classification; Fruit Storage
santos See Brazilian santos
san-xuat A fish sauce made from anchovies
sao See cream cracker
sao jorge A piquant-flavored, crumbly cheddar cheese
sao-o-juhn Fried shrimp
SAP  1) Subject to approval of price. 2) Sodium acid pyrophosphate

sap  The natural circulating juice in a plant or tree; primarily a sugar solution; a few species also contain latex, which is different from sap.

sapago  See sapsago cheese

sap beetle  An insect pest of most fruits and vegetables bores into and eats the fruit, transmitting rot-causing organisms.
Control: remove insect-damaged fruit

saperasi  A light red wine

sapindor  A green, spicy, herb liqueur

sapo  Soap; sodium salt of a fatty acid

sapodilla (mamey; mammee apple; naseberry plum; sapote; sawos manila; zapota; Achras zapota) A medium-sized tree that produces a brown fruit (1.5-6 in.) with delicious, soft, yellow-brown, gray, or red-yellow pulp and one or two black seeds; the flavor is somewhat like brown sugar. The fruit can be eaten fresh (raw) or cooked. Cuts in the bark yield a latex called chicle, the base for chewing gum. See Part 2: Fruit Composition

saponification The reaction of a fatty acid ester (usually a triglyceride) and an alkali-metal compound; the products are a soap (a metallic salt of a fatty acid) and an alcohol.

R—C—O  + NaOH → R—C—ONa  + R—OH

saponification value (or number) analysis The number of milligrams of potassium hydroxide required to saponify 1 g of fat, determined by adding an excess of potassium hydroxide to fat, saponifying the fat, and then titrating the excess potassium hydroxide with a standard acid; from the saponification value it is possible to calculate the mean molecular weight. See Part 2: Fats and Oils, Fatty Acid Composition; Fats and Oils, Physical and Chemical Properties; Iodine and Saponification Values; Wheat Products, Composition

saponins  A glycoside, found in plants, that foams (suds) when shaken with water and makes an excellent emulsifier

sapor  Taste

sapota  See Part 2: Fruit Composition; Fruit Storage

sapote (sapota) A fruit with an appearance like that of green (or yellow-green) apple without an indentation in the bottom; eaten fresh or used in preserves; ripened at room temperature.
Storage: refrigerate
See sapodilla

sapote mamey  See mamey sapote

sapro-  A prefix used to indicate rotten or putrid

sapsago  A low-fat small, hard, pale green cheese made from cow's milk

sapsago cheese  A hard, light, sweet, greenish dessert cheese from Switzerland; a clover (dried alpine clover) supplies the unique color and flavor; made from skimmed and soured cow's milk, buttermilk, and whey; ripened for 5 months and sold in small (4 in. high, 3-in. diam.) cone shapes; used in seasoning.
Composition: moisture 37%; protein 41%; fat 7-8%; salt 4.5%
See Part 2: Cheese Characteristics

sapucaia nut  The nut of the palmito tree

saracen  Buckwheat

saraimandie  A starter culture used to inoculate sake

Saran  See polyvinylidene chloride

sarap  Wine

Saratoga chop  Lamb chops made from the inside shoulder muscle that has been rolled and skewered. See Part 2: Lamb Cuts

Saratoga water  A mineral water from New York

sarawak  A white pepper

sarciado  A mixture of fowl, meat, or seafood with eggs and tomatoes

sarcina  Any coccus (especially of the genus Sarcina) that divides to form a cuboidal-packet arrangement of cells (containing eight or more cells). See Part 2: Spoilage, Protein Foods

sarco  A prefix used to indicate flesh

sarcoptis  A parasite (especially of the genus Sarcoptis) that is found in the skeletal muscle fibers of all classes of livestock and man

sarcolemma  A membranous envelope (composed of proteins and lipids) approximately 100 Å (7.5-10 nm) thick surrounding the muscle fiber; the cell nuclei are just inside this covering (muscle fiber covered by a lipid bilayer and the plasmalemma)

sarcomere  A repeating unit of muscle structure, the area between two adjacent Z lines of a muscle fiber

sarcoplasma  The cytoplasm of muscle cells; surrounds the myofibrils; equivalent to protoplasm

sarcoplastic reticulum  A network surrounding the myofibrils of a muscle

sardellrings  Rolled (with or without capers) filleted anchovies packed in olive oil

sardine  A small saltwater food fish of the herring family
Australia—Sardina neopilchardus
California—Californian (Sardinops sagax) pilchard
England—pilchard (Sardinops neopilchardus)
India—Sardinella fimbriata
Japan—Japanese pilchard (Sardinops melanosticta)
Maine—Clupea harengus
Northeastern Pacific—Sardinops caeruleus
Northwestern Atlantic—Clupea pilchardus pilchardus
Northwestern pacific—Sardina melanosticta
satellite cell

An uncooked, unsmoked or smoked American sausage made from medium- to coarse-chopped beef and pork, with no garlic, fermented and/or dry or semidry and available in links, rings, and large-diameter casings.

sardino A hard cheese made from cow’s and ewe’s milk.

sargasso (Sargassum spp.) Any of several edible seaweeds; used in salads.

sari-sari A mixture of stewed vegetables.

sarno An uncooked, unsmoked or smoked American sausage made from medium- to coarse-chopped beef and pork, with no garlic, fermented and/or dry or semidry and available in links, rings, and large-diameter casings.

sarn sch A snake wine.

sarrasin 1) Buckwheat. 2) A blue cheese made from cow’s milk.

sarsaparilla 1) (Smilax officinalis) A tropical climbing vine; the root, has a very acrid taste, is used as a flavoring. The term also refers to any of various other species of the genus Smilax. 2) A beverage flavor made from the root of any of several species of the genus Smilax and carbonated water or mineral water.

sarteno An esbareich-type cheese.

sasde A golden, hard, pressed cheese made from sheep’s milk.

sashimi Thinly sliced raw fish or meat that is dipped in sauce before eating.

sassafras (ague-tree; Sassafras albidum) An extract of the bark or root of a tree of the laurel family; used as flavoring in food and as an herbal tea.

sassafras A dry Italian red wine.

sassenage A hard blue cheese made from cow’s milk with rennet added.

satay Beef, chicken, or mutton that is marinated in soy sauce, garlic, sugar, and tamarind juice and broiled on skewers.

satellite cell A mononucleated, spindle-shaped cell that is closely applied to the surface of a myofiber and lies within the endomysial sheath surrounding the myofiber; this kind of cell is the source of regenerated cells in damaged muscle and contributes to the growth of hypertrophied muscle tissue.
satiety  The state of being satisfied to the fullest or of experiencing satisfaction of the appetite; the feeling or state of being fed to full capacity; fulfilled; property of satisfying; lacking appetite; not hungry

satiety value  The degree of satisfaction provided by a food, measured by how long it takes to become hungry again after having eaten; food providing a sense of comfort

saturno  A southern Sicilian wine

sauce  A liquid mixture placed over a food to alter its flavor

sauce alone  A potherb

sauce alone  A potherb

saucisse  Fresh sausage

saucisse a frire paysanne  A moist, uncooked, unsmoked French sausage made from fine and medium chopped, mildly seasoned beef and pork and stuffed into a pork casing

saucisse au foie  A moist, cooked or uncooked, smoked Swiss sausage made from medium chopped, medium seasoned pork with chopped cabbage added and stuffed into a beef or pork casing

saucisse au vin blanc  A moist, uncooked, unsmoked French sausage made from finely chopped, mildy seasoned, beef and pork and stuffed into a sheep casing

saucisse blanche a frire  A moist, uncooked, unsmoked French sausage made from finely chopped, mildly seasoned, beef and pork and stuffed into a sheep casing

saucisse cocktail  A moist, cooked, smoked French sausage made from finely chopped, mildly seasoned beef, pork, veal, and goat and stuffed into 18–22 mm sheep or artificial casings

saucisse d’auvergne  A pork salami. A dry, uncooked, unsmoked French sausage made from medium or coarsely chopped, mildly seasoned pork that is fermented and stuffed into a pork casing

saucisse de biere  A moist, cooked, smoked French sausage made from medium chopped (1/3 inch plate), medium seasoned beef and pork and stuffed into beef, pork, or artificial bladders

saucisse de coufinne  A moist, uncooked, unsmoked French sausage made from medium or coarsely chopped, mildly seasoned pork that is fermented and stuffed into a pork casing

saucisse de foie  A moist or semidry, uncooked, unsmoked French sausage made from medium or coarsely chopped, medium seasoned pork with liver added and fermented and stuffed into pork casings. Product is to be cooked

saucisse de frafort  A moist, cooked or uncooked, smoked French sausage (mortadello) made from finely chopped, mildly seasoned pork, which may be fermented and stuffed into 20–25 mm sheep or artificial casings

saucisse de Lorraine  A coarsely chopped, very thin salami

saucisse de Lyon  A dry, uncooked, unsmoked French sausage (salammi) made from mixed fine and coarsely chopped, medium seasoned pork that is fermented and stuffed into a pork casing

saucisse de morteau  Pork, farmer sausage; a semidry, uncooked, smoked French sausage made from coarsely chopped, mild or medium seasoned pork and fermented and stuffed into pork casings

saucisse de morteau  Pork, farmer sausage; a semidry, uncooked, smoked French sausage made from coarsely chopped, mild or medium seasoned pork and fermented and stuffed into a pork casing

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saucisse de morteau  Pork, farmer sausage; a semidry, uncooked, smoked French sausage made from coarsely chopped, mild or medium seasoned pork and fermented and stuffed into a pork casing

saucisse de morteau  Pork, farmer sausage; a semidry, uncoo
**saucisse de Strasbourg** A moist, cooked, smoked French sausage made from finely chopped, mildly seasoned beef and pork and stuffed into 18–24 mm sheep or artificial casings

**saucisse de Toulouse** A moist, uncooked, unsmoked French sausage made from medium to coarsely chopped, mildly seasoned pork and fermented and stuffed into pork or sheep casings

**saucisse fleischwurst** A moist, cooked, smoked French sausage made from finely chopped, mildly seasoned beef and pork and stuffed into 40–60 mm beef ring casings

**saucisse Marsillaise** A moist, uncooked, unsmoked French sausage made from medium chopped, medium seasoned meat and stuffed into beef or artificial casings

**saucisse ou cervelas a curie** A semidry, uncooked, unsmoked French sausage made from medium to coarsely chopped, mildly seasoned beef and pork and fermented and stuffed into beef or pork casings. Product is to be cooked

**saucisse Viennoise** A moist, cooked, smoked French sausage made from finely chopped, mildly seasoned lamb and pork and stuffed into sheep or artificial casings

**saucisson** A moist, semidry or dry, uncooked, smoked Swiss sausage made from medium or coarsely chopped, medium seasoned pork and stuffed into beef or pork casings

**saucisson brioché** A moist, cooked, unsmoked French sausage made from medium chopped, mildly seasoned pork that is fermented and embedded in a hard bun and not stuffed into a casing

**saucisson cuit a l ail** A moist, cooked, smoked or unsmoked French sausage made from fine and medium chopped, mildly seasoned pork and goat and stuffed into beef or pork casings

**saucisson de Cambridge** A moist, cooked, smoked French sausage made from finely chopped (mixed with diced ham meat, poultry, and beef tongue), mildly seasoned beef, pork, and goat and stuffed into beef or artificial casings

**saucisson de cracovie** A moist, cooked, smoked French sausage made from finely chopped (mixed with 1/4 inch plate ground pork), mildly seasoned pork and veal

**saucisson de foie et veau** A moist, cooked, smoked French sausage made from finely chopped, mildly seasoned pork and veal and stuffed into pork or artificial casings

**saucisson de francfort** A moist, cooked, smoked French sausage made from finely chopped (mixed with 3/4–1 inch plate ground head meat), mildly seasoned pork and veal and stuffed into beef, sheep, or artificial casings

**saucisson de jambon** A moist, cooked, smoked French sausage made from finely chopped (mixed with diced ham or shoulder), mildly seasoned pork, veal, and goat and stuffed into beef, sheep, or artificial casings

**saucisson de Langue** A moist, cooked, smoked French sausage made from finely chopped (mixed with diced pork and pork tongue), mildly seasoned pork with added pistachio nuts and stuffed into pork casings

**saucisson de Lyon** A moist, cooked, smoked French sausage made from finely chopped (mixed with 1 inch plate ground meat), mildly seasoned pork and veal and stuffed into 55–60-mm beef or artificial casings

**saucisson de Paris** A moist, cooked, smoked or unsmoked French sausage (mortadello) made from medium chopped, mildly seasoned pork and fermented and stuffed into beef casings

**saucisson Neuchâtelois** A moist, cooked or uncooked, smoked Swiss sausage made from medium or coarsely chopped, medium seasoned pork and stuffed into beef or pork casings

**saucisson noir schwarzwurst** A moist, cooked, smoked French blood sausage made from medium chopped, medium seasoned pork with rinds, ears, head, feet, fatty tissue, and onions and stuffed into beef casings

**saucisson princesse** A moist, cooked, smoked French sausage made from finely chopped (mixed with diced beef and tongue), mildly seasoned beef and pork and stuffed into beef or artificial casings

**saucisson Vaudois** A moist, cooked or uncooked Swiss sausage made from coarsely chopped, medium seasoned, pork and stuffed into pork casings

**sauerbraten** Beef soaked in water, vinegar, onion, salt, pepper, and bay leaves; cooked with soaking liquid and sour cream

**sauerkohl** Sauerkraut

**sauerkraut** Shredded cabbage (Brassica oleracea) and 2 1/2 salt are fermented (16–22°C for 1–2 weeks) to produce 1.8–2.5% lactic acid (pH 3.5–3.8). Microorganism:

- Lactobacillus brevis
- L. plantarum
- Leuconostoc mesenteroides
- Pediococcus cerevisiae

Major acid produced is lactic acid; air should at least be partially excluded; salt is used and sometimes vinegar.

Procedure: 2 inches of shredded cabbage is placed in a 10 or 20 gallon keg or crock; the layer is covered with a handful of salt; layering continues until container is filled then stomped until liquid covers cabbage; a weighted wooden top keeps cabbage submerged; fermented for up to 1 month in a warm place; stored in cool place.

May be flavored with peppers, pimientos, tomatoes, and various spices. Cook in water or wine, 1–4 hours

50 pounds of cabbage = 14–15 quarts, sauerkraut

1 cup, canned, drained solids = 5 ounces (oz)
1 cup, canned, solids and liquids = 8 oz
664 sauerkraut

1 cup, canned, juice = 8.6 oz
1 serving = 1/2 pound
Available: canned, refrigerated, semifresh
Composition (canned solid and liquid): moisture 93%; protein 1%; fat 0.2%; carbohydrate 4%; ash 2%; sodium 1755 mg/cup
Storage: 34–38°F
See pickle
See Part 2: Spoilage, Carbohydrate Foods; Standards, Processed Fruit and Vegetable Products; Vegetable Composition

sauerkraut juice Filtered, fermented cabbage juice

sauerruben Pickled turnip; lactic acid fermentation of shredded turnips that is made like and tastes like sauerkraut

sauger (Stizostedion canadensis) A white meat, light to moderate flavor, food fish

Saumon du Rhin Grilled or baked salmon

saumur A sparkling wine

saurel (Trachurus trachurus; T. symmetricus) Atlantic horse mackerel; a saltwater food fish

saury (Cololabis brevirostris; C. saira) A Pacific, food fish

saury pike (skipper; Scophoeresox saurus) An Atlantic, food fish

sausage
1) Meat mixed with salt and spices and often stuffed into casings, natural or artificial, Comminuted meat; chopped pork and/or beef with added salt, curing salts, and seasoning; may or may not be cooked and/or smoked and may or may not be fermented. Includes cold cuts.

Types:
Cooked—bologna, frankfurter, liver sausage
Cooked specialities—head cheese, meat loaf, minced ham
Dry or semidy—cervelat, salami
Fresh—bokk wurst, fresh pork sausage, fresh thuringer

Uncooked, smoked—Polish, smoked country style
2) A moist, uncooked, unsmoked British sausage made from fine, medium, or coarsely chopped, mild or medium seasoned beef, lamb, pork, veal, and goat mixtures and stuffed into beef, pork, sheep, or artificial casings or not stuffed into a casing. 3) Lay people often restrict this term to fresh pork sausage

Storage:
Frozen—30 days
Fresh or thawed, package opened—3 days under refrigeration

See Part 2: Animal Foods, Composition; Frozen Food Storage; Frozen Meat Storage Time; Meat Composition; Meat, Frozen Storage; Meat Storage; Pork Carcass, Retail Yield; Pork Storage; Pork Yield; Portion Size; Riboflavins, Daily Recommendations; Sausage Composition; Sausage Identification; Sausage, Types; Thiamin, Food; Water Activity, Organisms and Food

sausage, beef A moist, uncooked, unsmoked British sausage made from fine, medium, or coarsely chopped, mild or medium seasoned beef, lamb, pork, veal, and goat and stuffed into beef, pork, sheep, or artificial casings or not stuffed into a casing

sausage bulls Lean, aged, male cattle

sausage casing The covering of a sausage, made of natural or synthetic materials See also casing
Storage: 40–45°F, 85–90% relative humidity

sausage chipolote A moist, uncooked, unsmoked British sausage made from fine, medium, or coarsely chopped, mild or medium seasoned beef, lamb, pork, veal, and goat and not stuffed or stuffed into an artificial casing

sausage dough A sausage emulsion

sausage, English-style A type of sausage that has a lower meat content, higher water content, and higher filler content than most American sausages

sausage meat A moist, uncooked, unsmoked British sausage made from fine, medium, or coarsely chopped, mild or medium seasoned beef, lamb, pork, veal, and goat and not stuffed or stuffed into a casing

sausage pork A moist, uncooked, smoked or unsmoked American or British sausage made from fine, medium, or coarsely chopped, mild or medium seasoned beef and pork and stuffed into beef, pork, sheep, or artificial casings or not stuffed into a casing

Composition (smoked link): moisture 39%; protein 22%; fat 32%; carbohydrate 2%; ash 4.7%

sausage, pork and beef A moist, uncooked, smoked or unsmoked American or British sausage made from fine, medium, or coarsely chopped, mild or medium seasoned beef and pork and stuffed into beef, pork, or sheep casings or not stuffed into a casing

composition

<table>
<thead>
<tr>
<th>Composition</th>
<th>Smoked links</th>
<th>Smoked links with NFDM</th>
<th>Smoked links with NFDM and flour</th>
</tr>
</thead>
</table>

| Moisture (%) | 52 | 54 | 57 |
| Protein (%)  | 13 | 13 | 14 |
| Fat (%)      | 30 | 28 | 21 |
| Carbohydrate (%) | 1.5 | 2 | 4 |
| Ash (%)      | 2.7 | 3.3 | 3.2 |

sausage seasoning See pork sausage

sausage, skinless A moist, uncooked, unsmoked British sausage made from fine or medium chopped, mild or medium seasoned beef, lamb, pork, veal, or goat and not stuffed into a casing

sausage, smoked, country-style A moist, cooked or uncooked, smoked American sausage made from medium or coarsely chopped, mildly seasoned beef and pork and stuffed into pork or artificial casings. Product available in link or unlike casing form

sausage, snack A dry, cooked, smoked American sausage made from medium chopped, mild, medium, or heavily seasoned beef and pork that is fermented with starter cultures and stuffed into narrow (10 mm or less) diameter sheep or artificial casings

sausage, tomato A moist, uncooked, unsmoked British sausage made from fine, medium, or coarsely chopped, mild or medium seasoned beef, lamb, pork, veal, and goat and stuffed into beef, pork, sheep, or artificial casings or not stuffed into casing

sausage trimmings Approximately 12% of a normal hog carcass

sausage, whole hog A moist, uncooked, unsmoked American sausage made from medium or coarsely

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American sausage made from medium chopped, mild, or medium seasoned beef and pork that is fermented with starter cultures and stuffed into narrow (10 mm or less) diameter sheep or artificial casings

sausage, tomato A moist, uncooked, unsmoked British sausage made from fine, medium, or coarsely chopped, mild or medium seasoned beef, lamb, pork, veal, and goat and stuffed into beef, pork, sheep, or artificial casings or not stuffed into casing

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sausage trimmings Approximately 12% of a normal hog carcass

sausage, whole hog A moist, uncooked, unsmoked American sausage made from medium or coarsely
chopped, mild, medium, or heavily seasoned meat used in proportions as normal to a single animal carcase and stuffed into pork, sheep, or artificial casings or not stuffed into a casing. Available in small diameter links, rolls for slicing, and machine formed or extruded patties; sausage may be prepared with fresh or frozen meat from swine: maximum of 50% trimmable fat; maximum of 3% added water.

**sauté (sauter)** Cooked in a small amount of fat over high heat; pan fry

**sauterne (Barsac)** A full, sweet, white, French wine produced in Bordeaux (southwest France) and made from overripe grapes. A full, sweet (some are dry), white (to golden), table (some are dessert) wine. Grapes are allowed to become overripe and are attacked by *Pourriture noble* or gray mold (*Botrytis cinerea*) that extracts water from the juice and concentrates the sugar.

- **Type:**
  - Chateau sauterne—very sweet, dessert
  - Chateau yquem—sweet, best quality
  - Haut sauterne—sweet, dessert, or table

- **Communes:**
  - Barsac—chateau d’Yquem
  - Bommes
  - Fargues
  - Prignac
  - Sauternes

**savignron blanc** A fresh, crisp, aromatic, sweet or dry, white wine

**savarin** Round, often doughnut-shaped, open textured, wheat flour, sponge cake; often moistened with sugar syrup and center filled with fruit and cream

**savaron** A tomme de savoie-type cheese made from whole milk

**saveloy**

1. A dried, light to highly seasoned, cooked, smoked pork sausage.
2. A moist, cooked, smoked British sausage made from fine or medium chopped, mild or medium seasoned pork and stuffed into beef, pork, or artificial casings.
3. A moist, uncooked, unsmoked Australian sausage made from fine chopped, mildly seasoned beef and stuffed into beef or pork casings

**savoria** A creamy, semisoft, mild-flavored, cheese made from cow’s milk and ripened by surface bacteria

**savoie** A tomme de savoie-type cheese

**savor** Taste or flavor; also the odor of prepared food

**savory (bean herb)**

1. Dried, brown-green leaf (9/8 inch in length) and flowering tops of an herb in the mint family; 16-inch plant (annual and perennial forms) used as an herb; sold whole or ground; the green or dried leaves and young shoots are used to flavor stuffing, meat pies, sausage, sauces, and vegetables. Thin plants to 6 inches apart in rows 16 inches apart. Leaves are dried, reduced to a fine powder, and stored in an air-tight container;
2. 1 plant = 1/4 cup of leaves
3. Summer (*Satureia hortensis*)—annual; highest grade
4. Winter (*Satureia montana*)—perennial; not as aromatic as summer

*Used as a tea*

*Source: Albania, France, Yugoslavia*

Composition: moisture 8.5–9.5%; protein 6–7%; fat 5–7%; carbohydrate 68–69%; fiber 15–16%; ash 9–10% (max. 13.5%)

2) Agreeable flavor; appetizing

*See Part 2: Spices, Microbial Content*

**savory oil, summer** A volatile oil obtained by steam distillation of the *Satureia hortensis* plant; used as a thyme-like, flavoring agent in food; sp. gr. 0.874–0.954

Storage: full, tight, glass container in a cool, dark place

**savoy** (*Brassica oleracea bullata major*; *B. oleracea var. caprata*) A dwarf-type, loose-headed, cabbagelike plant with crimped leaves

*Types:*
   1. Early
      - Best of All
      - Early Drumhead
      - Savoy King
      - Midseason
      - Ice Queen
      - Tom Thumb
      - Late
      - Omega
      - Winter King

*See cabbage*

*See Part 2: Vegetable Composition, Part I*

**savoy medlar** *See rock medlar*

**sawdust** Small particles of wood produced by sawing; good for mulching or composting purposes; should be composted before adding to soil; often mixed with limestone before application

*See Part 2: Insulation; Wastes, Agricultural and Industrial*

**sawos manilla** *See sapodilla*

**Say’s stink bug** (*Chlorochroa sayi*) A ½-inch-long, shield-shaped, green sucking bug covered with white dots

**Sb** Symbol for the element antimony

**SBG** *See Part 2: Microorganism, Media*

**sbrinz** A large, very hard and dry (ripened 2–3 years), cheese made from cow’s, sheep’s, or goat’s milk; has small eyes

**Sc** Symbol for the element scandium

**scab**

1. A field disease of citrus fruit that produces an irregular scabby area or warty protuberances that are buff to dark olive green in color. It affects only the skin of the fruit and does not spread during storage; scab areas are not invaded by other fruit rotting organisms

   *Australia and Argentina*
   - Tryon’s scab—*Sphaceloma fawcettii* var. *scabiosa* (Mc Alp and Tryon), Jenkins
   - Orange scab—*Elsinoe fawcettii*, Bitanc and Jenkins
   - South America
     - Sweet orange scab—*E. australis*, Bitanc and Jenkins

2. A fungus disease of nectarines that appears as black spots or freckles on the surface of the fruit. It affects only the skin of the fruit and does not spread during storage; scab areas are not invaded by other fruit rotting organisms

   *North America*
   - Orange scab—*Elsinoe fawcettii*, Bitanc and Jenkins
   - South America
     - Sweet orange scab—*E. australis*, Bitanc and Jenkins
or petiole of apple, peach, apricot, and nectarine trees. The fruit spots may be dark or scabby.

Control: plant resistant varieties; destroy all fallen leaves; fungicide spray

4) A fungus (Gibberella zeae) disease that attacks the seedling and head of wheat plants. Pink-colored masses of spores are evident. Milling value of wheat is lowered; when fed to animals will make them sick

5) A disease of pears (Venturia pyrina); disease of apples (V. inaequalis)

**scabbardfish** A food fish

Northeast Atlantic—Lepidopus caudatus
Northwest Atlantic—Trichiurus lepturus

**scad** A food fish

Australian—Trachurus nova-zelandiae
Northeast Atlantic—jack mackerel
Oceania (horse mackerel)—Trachurus nova-zelandiae

**scald** 1) To rinse with boiling water, or to heat just below boiling (180°F). 2) A defect of stored apples indicated by irregular-shaped tan or brown areas; a defect or blemish or brownish discoloration that occasionally develops on the skin of apples or other fruit in cold storage; usually does not seriously affect eating quality. 3) Large, dark brown, abruptly sunken areas often producing an acorn shape are sometimes found on Florida Valencia oranges stored in a modified atmosphere. Oxygen levels below 5% and carbon dioxide levels higher than 5% often lead to this condition.

**scaldberry** Blackberry

**scaldfish** (Arnoglossus laterna) A food fish

**scalding** Briefly heating in hot water or steam. Hog and chicken scalding water temperature 150–160°F; packing plants (hog) with long tanks often use lower temperatures; birds, 60–90 seconds. See also semi-scalding

<table>
<thead>
<tr>
<th>Type</th>
<th>Temp (°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semiscald</td>
<td>125–130</td>
</tr>
<tr>
<td>Subscald</td>
<td>131–140</td>
</tr>
<tr>
<td>Hardscald</td>
<td>140</td>
</tr>
</tbody>
</table>

**scalding water additives** Compounds used to aid in hair removal of a hog carcass; must be rinsed from carcass: caustic soda, diocyl sodium sulfosuccinate, lime, methyl polysilicone, sodium carbonate, sodium dodecylbenzene sulfonate, sodium hexametaphosphate, sodium laurylsulfate, sodium metasilicate, sodium tripolyphosphate, trisodium phosphate

**scale** 1) A thin layer of hard material firmly attached to a substrate, e.g., boiler scale. 2) A standard set of values (degrees) established for measuring temperature, etc. 3) A device for measuring weight. 4) An insect that forms small disk-like bodies on twigs and fruit and disfigures it. Tiny soft-bodied insects less than 1/8 inch in diameter that have a waxy covering; crawlers (young) appear in mid May, move to new feeding sites, molt, and loose their legs; they suck plant juices, cause discolored (red) spots on leaves, stems, and fruit. Waxy shells on citrus fruit are secreted by this insect and the most common are California red scale [Aonidiella auranti (Maskell)], Chaff scale [Paltotria pergandii (Comstock)], Florida red scale [Chrysomphalus anisandrius (L.)], Glover scale [Lepidosaphes gloverii (Packard)], purple scale [Lepidosaphes beckii (Newman)], yellow scale [Aonidiella citrina (Coquillet)].

Control: fruit tree oil spray

5) Flat, horn, outgrowth on skin of fish. 6) Range of numbers or geometrical divisions for measuring See calico scale; cottony maple scale; European fruit lecanium; grape mealybug; Italian pear scale; San Jose scale

**scaled sardine** (Harengula pensacolae) A food fish

**scaleneus** Muscle in the neck area between the first rib and the last four cervical vertebrae

**scaling test** A means to evaluate the intensity of a specific trait on a structured (descriptive words; adective) or unstructured (continuum line; no words) scale

**scallion** [often incorrectly called shallots]; ciboule; Welsh onion] A member of the onion family. Bulbless green onions; green onions that resemble leeks that have no bulbs; sometimes used to describe green onions, shallots, and leeks

**scallop** (escallop) 1) A lean, bivalve mollusk; shellfish; fan-shaped shell (2–3 inches in diameter); the large (1 1/2–2 inches thick) adductor (eye) muscle that controls shell movement is used as food (the rest of the muscle is very soft and not used as food); meat may be white, tan, orange, or pink; 20% edible (average 20% protein). Meat is firm, low in fat, and has a mild, sweet, nutty odor. Sold in natural cylindrical form (100–200 per gallon)

<table>
<thead>
<tr>
<th>Kind</th>
<th>Ounces per serving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bay</td>
<td>4–6</td>
</tr>
<tr>
<td>Breaded</td>
<td>4</td>
</tr>
<tr>
<td>Sea</td>
<td>4–6</td>
</tr>
<tr>
<td>Shucked</td>
<td>5</td>
</tr>
</tbody>
</table>

(63% yield) 5

1 bushel of scallops = 2 1/2–3 quarts of meat

Frying oil temperature: 177–190°C (350–375°F) Composition (raw): moisture 80%; protein 15%; fat 0.2–0.7%; carbohydrate 3%; ash 1%; sodium 217–225 mg/3 oz (85 g); cholesterol 45 mg/3 oz (85 g)

Storage: coldest part of the refrigerator; use in 2 days

2) To bake small bits of food in a casserole usually in a cream sauce; baking cooked vegetables with white sauce and a topping of breadcrumbs in a casserole; to bake food that has been cut into pieces and combined with sauces or liquids

See Part 2: Fish and Shellfish Composition I; Fish, Storage; Frozen Food Storage; Frying Time; Minerals, Food
<table>
<thead>
<tr>
<th>Scallop type</th>
<th>Variety</th>
<th>Where caught</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bay</td>
<td><em>Argopecten irradians</em></td>
<td>North Atlantic</td>
<td>Small; 70-120/lb</td>
</tr>
<tr>
<td></td>
<td><em>Pecten caurinus,</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Weathervane,</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Alaska</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Pecten aequiradians</em></td>
<td>North America</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Pecten laquaeatus</em></td>
<td>Pacific</td>
<td>More tender and favorable</td>
</tr>
<tr>
<td>Cilico</td>
<td><em>Aequipecten gibbus</em></td>
<td>Atlantic,</td>
<td>Slightly larger than bay</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial</td>
<td><em>Pecten meridionalis</em></td>
<td>North America</td>
<td></td>
</tr>
<tr>
<td>Common</td>
<td><em>Pecten yessoensis</em></td>
<td>Japan</td>
<td></td>
</tr>
<tr>
<td>Coquille St. Jacques</td>
<td><em>Pecten maximus</em></td>
<td>Northeast Atlantic</td>
<td></td>
</tr>
<tr>
<td>Great</td>
<td><em>Pecten jacobaeus</em></td>
<td>Atlantic,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mediterranean</td>
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</tr>
<tr>
<td>Iceland</td>
<td><em>Chlamys islandica</em></td>
<td>North Atlantic</td>
<td></td>
</tr>
<tr>
<td>New Bedford</td>
<td><em>Pectinidae</em></td>
<td>Massachusetts</td>
<td></td>
</tr>
<tr>
<td>New Zealand</td>
<td><em>Pecten novaeezalandiae</em></td>
<td>New Zealand</td>
<td></td>
</tr>
<tr>
<td>Queen</td>
<td><em>Chlamys opercularis</em></td>
<td>Atlantic</td>
<td></td>
</tr>
<tr>
<td>Scallop</td>
<td><em>Pecten varius</em></td>
<td>Atlantic</td>
<td></td>
</tr>
<tr>
<td>Scallop Saucer</td>
<td><em>Amusium ballotii</em></td>
<td>Australia</td>
<td></td>
</tr>
<tr>
<td>Sea; Giant; Smooth</td>
<td><em>Pecten magellanicus</em></td>
<td>Atlantic,</td>
<td>Large; 10-70/lb</td>
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<tr>
<td>Variegated</td>
<td><em>Chlamys varius</em></td>
<td>North America</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mediterranean</td>
<td></td>
</tr>
</tbody>
</table>

**scalloped** 1) Sliced vegetables, meat, or fruit cooked in liquid in the oven and served in the dish in which they were cooked. 2) A white to yellow, flat, summer squash with scalloped edges

**scalloped summer squash** See marrow

**scaly apple** See custard apple

**scamorze (scamorza; scamozza)** A mozzarella-type cheese made from buffalo's or cows' milk; usually pear shaped; a semihard cheese packaged in small rolls; has a creamy white interior, and is mild and slightly firm. It has an elastic texture and when heated, becomes stringy. See Part 2: Cheese Characteristics

**scamp** See grouper

**scampi (Nephrops norvegicus)** Saltwater crustaceans; prawnlike seafood; giant prawn with shrimp-like flavor See prawn

**scandium (Sc)** A metallic element; at. no. 21; at. wt. 44.96; oxidation state +3; Group IIIB of Periodic Table

  electron configuration 2–8–9–2;
  orbit K L M N

**scapula** A flat, triangular, shoulder blade bone; spine is lateral and bone is attached only to the humerus. Dorsal bone of the pectoral girdle See Part 2: Beef Rib Nomenclature; Bone

**scapular cartilage** Cartilage on the blade bone on the end opposite the area where it is attached to the humerus

**scarification** Abrasion of the seed coat that increases water permeability and, therefore, germination

**scarlet fever** A viral disease of children accompanied by high fever

See Part 2: Illness from Food

**Scarlet Runner (Phaseolus coccineus)** A variety of green bean (usually a climber, but there are a few nonclimbing varieties) with a pod 8-24 inches in length

**scavenge** To search for and retrieve small amounts of usable material after the major part has been removed, e.g., to scavenge a corn field

**scent** A light, usually pleasant odor or smell See odor

**scented tea** A blend of black oolong or green tea with herbs, spices, oils, or flavors to achieve a desired aroma or flavor

**Schaal test** An accelerated rancidity test. Food is heated at 145°F and the time until rancidity is detected by odor (or peroxides) is measured See Part 2: Antioxidant Activity

**schabzieger (green cheese)** A rindless, dry (grating), pungent Swiss cheese made from skimmed milk and mixed with blue melilot; initially it is green (melilot) but turns brown with age See glarner

**schamser (rheinwald)** A cheese made in Switzerland from skimmed cow's milk with rennet added

**schaum torte** A meringue and fruit pastry
schaumwein  A general term for sparkling wine
schenk beer  A young beer
schenkbiere  See beer, draught
Schiedam  Holland gin
schinken  Ham
schinkenbockwurst  A moist, cooked, smoked eastern German sausage made from finely chopped, mild-seasoned beef and pork and stuffed into a pork casing
schinkennmettwurst  A coarse, pork salami
schinkenpolnischer  A beef or pork farmer sausage; a semidry, uncooked, smoked eastern German sausage made from coarsely chopped, medium seasoned beef and pork that is fermented and stuffed into pork casings
schinkenspeck  A dry-cured and cold-smoked ham with fat and skin still attached
schickenwurst  1) A product that contains an emulsion of ham, pork, beef, or a combination of them; also contains at least 50% ham chunks. 2) A moist, cooked, smoked or unsmoked, Swiss sausage made from coarsely chopped, medium seasoned beef and pork and stuffed into beef or artificial casings; a moist, cooked, smoked or unsmoked, Austrian sausage made from coarsely chopped, medium seasoned (nitrite) beef and pork and stuffed into artificial casings with a diameter of greater than 60 mm. See bolognese, ham-style
schizo-  A prefix meaning divide
schluckwurst  A semidy, uncooked, smoked eastern German Sausage (cervelat) made from medium chopped, mildly seasoned beef and pork that is fermented and stuffed into a pork casing
schloss cheese  (castle; schlosskäse) A soft-cured, Austrian, limburger-type cheese made with rennet added; a tangy, golden, brick cheese with a soft, ripened texture
schlosskäse  A soft to semisoft, strongly flavored cheese made from cow's milk and ripened by surface bacteria. See schloss cheese
schmierwurst  A beef or pork cervelat
schnaps  A clear, high-alcohol spirit, fermented (20–30°C) from cereal (usually rye) grain and then distilled; a liquor manufactured by fermenting cooked potatoes; a strong alcoholic drink; vodka
schnitt  A collective term for semihard cheese
schonland  A creamy, semisoft, mild flavored cheese made from cow's milk and ripened by surface bacteria
School Breakfast Program  A U.S. government program that offers children a nutritious breakfast prepared at school and available to all public and nonprofit private schools and child care institutions often free or at a reduced cost. See Child Nutrition Act of 1966; Child Nutrition Programs
school feeding  Provision of food to children while they are in school
schottenziger  A ricotta-type cheese made from cow's milk
schou oil  An emulsifying agent
schrippen  A wheat flour roll
scherock  A plant having a toxic principle. See Part 2: Poisonous Plants
schusterjungen  A rye or rye and wheat flour roll
schutzen  See limburger cheese
schutzenwurst  A moist, cooked, smoked Swiss sausage made from medium seasoned beef, pork, and veal and stuffed into beef or artificial casings
schwartzenmagen  1) A moist, cooked, smoked western German sausage made from coarsely chopped, medium seasoned pork with ground skin added and stuffed into a pork casing. 2) A moist, cooked or uncooked, unsmoked, Swiss sausage made from coarsely chopped, medium seasoned beef, pork, and veal and stuffed into artificial casings or not stuffed into casings
schwartzbrot  See rye
Schwarzbunte  German Friesian cattle
schwarzenberg cheese  A cheese made from partly skimmed, cow's milk with rennet added
Schwarzthai  A milk breed of goat native to Switzerland
schwarzwalder  A round, wheat and rye bread
schwarzwalderschinken  Smoked, country ham
schwarzwurst  A moist or semidy, cooked, smoked or unsmoked Swiss sausage made from fine, medium, or coarsely chopped, medium seasoned beef and pork and stuffed into beef, pork, or artificial casings
schweinekopfsalzwurst  A moist, cooked, unsmoked eastern German sausage made from medium seasoned pork and stuffed into pork or artificial casings
schweinsbratwurst  A moist, cooked or uncooked, unsmoked Swiss sausage made from medium or coarsely chopped, medium seasoned beef, pork, and veal and stuffed into beef, pork, or sheep casings
schweinswurst  A moist, cooked, smoked Swiss sausage made from coarsely chopped, medium seasoned beef and pork and stuffed into pork or sheep casings
Science and Education Administration (SEA)  An organization (1978) of USDA made by merging the following agencies: Agricultural Research Service (ARS), Cooperative State Research Service (CSRS), Extension Service (ES), and National Agricultural Library (NAL)
scion (clone)  Part of a plant, usually the desired cultivar, grafted or budded to a specific rootstock or interstem; a shoot of one season's growth used in budding or grafting
sclerocystosis  See granulation
scleroprotein  See albuminoid
sclerotin  See pectin
Sclerotinia  A type of mold
Sclerotiorum  See Part 2: Mold, Food
Sclerotium rot  A rot of citrus fruit caused by a soil fungus (Sclerotium rolfsii); is inhibited by not allowing the fruit to touch the ground and refrigerated storage. On grapefruits and lemons it is yellowish green and slightly darker than normal; on oranges it is dark brown with slightly lighter margins. The decay is fairly soft and watery
scolymus (golden thistle; Spanish oyster plant; Spanish salsify; Scolymus hispanicus) A white-rooted plant that is a member of the salsify family and is used as such. Flavor between salsify and parsnip

scone (baking powder biscuit) A small (8 inch) cake made of wheat, barley, or oatmeal; used chiefly in England and Scotland as a tea cake; a sour milk or buttermilk bun that has a crumbly texture and may contain currants and eggs; it may be chemically aerated

scoop A utensil used to measure volume

<table>
<thead>
<tr>
<th>Scoop number</th>
<th>Volume</th>
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<tbody>
<tr>
<td>40</td>
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<tr>
<td>30</td>
<td>2 ( \frac{1}{2} ) tsp</td>
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<td>24</td>
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<tr>
<td>12</td>
<td>5 + tsp</td>
</tr>
<tr>
<td>10</td>
<td>6 + tsp</td>
</tr>
<tr>
<td>8</td>
<td>1 ( \frac{1}{2} ) cup</td>
</tr>
<tr>
<td>6</td>
<td>10 + tsp</td>
</tr>
</tbody>
</table>

See Part 2: Scoop Size

-score A suffix meaning look at or observe

core To cut into the outer hard surface of a material; to make criss-cross cuts on the surface

scorzonera (black oyster plant; black salsify; viper’s grass; Scorzonera hispanica) Similar to salsify; 2,000 seeds per ounce; 8-14 day germination period. A plant of the daisy family. The cylindrical root has a black skin and white flesh and is eaten as a cooked vegetable. Root contains inulin, a coffee substitute; leaves are used as salad greens

Scotch ale A strong ale

Scotch and water A highball of Scotch whiskey and water

Scotch broth, canned soup

<table>
<thead>
<tr>
<th>Composition</th>
<th>Condensed, prepared with water</th>
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<tbody>
<tr>
<td>Moisture (%)</td>
<td>83.8</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>4.0</td>
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<tr>
<td>Fat (%)</td>
<td>2.1</td>
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<tr>
<td>Carbohydrate (%)</td>
<td>7.7</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Scotch cap Wild raspberry

Scotch egg Hard-boiled eggs wrapped in sausage and cooked; served cold

Scotch ham A country ham

Scotch Highland A long-coated (black, brindle, red, light red, yellow, silver), hardy breed of cattle developed in the Hebrides Islands near west Scotland.

Scotch Manhattan See rob roy

Scotch oatmeal Ground oatmeal; not rolled oats

Scotch tender (chuck tender) Supraspinaturs muscle that ties lateral to the scapula and dorsal to the spine

Scotch whiskey Whiskey made in Scotland primarily from barley malt heated over a smoky, peat-coal fire, which imparts a smoky taste; usually blended

Scottish Black Face See Part 2: Sheep Breeds

scour To clean by friction, usually with a metal wool or stiff brush

scoured wool Greasy wool that has been subjected to a cleaning process before manufacturing

scours Persistent diarrhea

scouse A seaman’s term for vegetables and biscuit

Scoville The person who developed an organoleptic method for evaluating pungency (heat) of capscicum products

SCP See single-cell protein

scrapped eggs Hard-boiled eggs mixed with butter, salt, and pepper

scrambled eggs Eggs mixed with milk or cream and fried with constant agitation

scrap Food scraps

scrap Waste; fragment; disconnected; leftover or discarded food

scrape To remove vegetable peel by running a knife at right angles over its surface

scraper A device (bell scraper) for scraping (rubbing the surface) to remove hair from hog carcasses

scraped (pawn-haus; ponhaws) A sausage that consists of pork and pork by-products (minimum 40% meat and/or meat by-products), meal or grain flour (buckwheat, corn meal, or rye), and seasoning (black pepper, mace, nutmeg, salt, and thyme); head meat, feet, hearts, tongues, and pork trimmings are cooked in water; bones are removed and meat is ground and cereal (usually corn meal) and/or soybeans added. A medium to coarsely chopped, cooked, unsmoked, American, jellied and/or specialty sausage available in links, loaves, rolls, or canned

scratched Whole, cracked, or coarsely cut grain

screened Separated into sizes by passing over or through screens

screening 100% inspection with rejection of all defective items

screening method A semiquantitative method used to quickly determine the presence or absence of compounds; enables rapid screening of large numbers of samples in less time than would be required by more accurate methods; positive results above a specific level require further analysis by an official method

screwdriver An alcoholic beverage made by placing ice cubes in a 6-oz glass, adding 1 \( \frac{1}{2} \) oz (1 jigger) of vodka, filling with orange juice, and stirring

screw pine See pandanus

scribe See Part 2: Beef Rib Nomenclature

serod See Part 2: Beef Rib Nomenclature

serod A young codfish; market name for haddock or cod weighing 1.5-2.5 pounds. Sometimes called Boston scrod because many of the fish come from Boston. See also cod; haddock

scrotum The skin holding the testicles

scrow Small bits of hide used to make glue

scrub Livestock of mixed or unknown breeding; inferior
scrumpy  A high-alcohol cider  

scruple (apothecary; s)  A measure of weight  
1 scruple = 20 grains  
= 1.2959784 grams (g)  
= 0.833333 pennyweight  
= 0.7314286 dram (avoirdupois)  
= 0.333333 dram (apothecary)  
= 0.0457143 ounce (oz; apothecary)  
= 0.0416667 ounce (oz; apothecary; troy)  
= 0.003472222 pound (lb; apothecary; troy)  
= 0.002857143 pound (lb; avoirdupois)

scudding  A process in cleaning hides prior to tanning; the hides are placed over a wooden beam and cleaned with a special knife

sculpin  A light meat, light to moderate flavor, finfish

scup (menhaden; poggy; paugy; Pagrus pagrus; Stenotomus versicolor)  A lean, sea-bream type of fish caught along the middle Atlantic coast; a sparus-type of saltwater, food fish that averages 10 inches in length

scupl porgie  A light meat, light to moderate flavor, finfish

scuppernong  1) Muscadine, a wine grape. 2) A white wine made from muscadine grapes

scurf (Jersey mark; rust; soil stain; Mompha floridana)  A sweet potato disease that produces a black surface discoloration on the sweet potato

scurfs  In polled animals small horning “buttons” attached to the skin but not to the skull in the area where horns are normally found

scurvy  A disease caused by deficiency of vitamin C in the diet; symptoms are loss of weight, fatigue, and shortness of breath; gums become swollen and bleed and bruise easily

scutellum  A layer that separates the embryo and endosperm of a seed; part of the germ
See Part 2: Corn Kernel; Wheat Kernel; Wheat Kernel Parts; Wheat, Parts of Grain; Wheat, Parts of Grain, Vitamins

Se  Symbol for the element selenium

SEA  See Science and Education Administration

sea arrow  See squid

sea bass  Several species of saltwater food fish; a lean, spiny-finned fish caught off both the Pacific and Atlantic coasts.

Variety and habitat:  
Barfish (Morone mississippiensis)—freshwater, North America  
Bass (Dicentrarchus labrax)—Mediterranean; North Sea  
Black (Centropristis striata)—Atlantic, North America  
Comber (Serranus cabrilla)—Mediterranean; Atlantic  
Giant (Stereolepis gigas)—Pacific, North America  
Japan (Lateolabrax japonicus)—Pacific, Japan  
Kelp (Paralabrax clathratus)—Pacific, North America  
Rock (Centropristis philadelphia)—Atlantic, North America  
Sand (Paralabrax nebulifer)—Pacific, North America  

Sand Perch (Diplectrum formosum)—Atlantic, North America  
Striped (Morone saxatilis)—Atlantic, Pacific, and freshwater, North America  
White (Morone chrysops)—freshwater, North America  
White Perch (Morone americana)—Atlantic and freshwater, North America  
Wreckfish (Polyprion americanus)—Atlantic  
Yellow (Roccus interruptus)—freshwater, Europe

Types:  
Black—Atlantic coast; 1 ½ pounds; firm white and delicately flavored flesh  
Common (blackfish, black sea bass)—Atlantic coast  
Grouper—3–20 pounds; firm, white, rich-flavored flesh  
Baquetta  
Florida grouper  
New Zealand grouper  
Red grouper  
Striped—Atlantic, Gulf, and Pacific coasts; 1–15 pounds; flakey, white flesh with minimum fat  
White (not true bass but in the croaker family)—Pacific; 10 pounds  
Sea bass (Japan)—Lateolabrax japonicus  
See bass, white (California)—Atractoscion nobilis

sea bream Various species of the Parelulus centrodontus or Sparidae (including red bream) family

Sea bream, common—Pagellus centrodontus

Sea bream, north Atlantic—Brama spp. and Tereites princeps  

Composition: Moisture 76–78%; protein 19–21%; fat 0.5–2%; carbohydrate 0%; ash 1–2%

sea bread  Hardtack

sea buckthorn  A shrub that produces an edible, orange–red berry

sea cole  See sea kale

sea cow  Manatee

sea date  See sea cole  

sea date  See sea cole

sea ear  See abalone

seafood  Food from the sea, including all types of vertebrate fish, shellfish, oysters, clams, etc.

Per serving: 0.5 pounds headless and dressed fish; 0.3 pounds of fillets or steaks

Storage: leakproof wrap in coldest part of refrigerator; use within 1–2 days

See Part 2: Frying Time; Microwave Processing Time; Portion Size

sea herring  (Atlantic or Pacific herring) A fat, soft-finned fish caught almost worldwide

sea kale  See sea kale

sea kale (sea cole; sea kail; silver beet; Crambe maritima)  A plant of the mustard family whose blanched leafstalks (head 15 cm) are used like asparagus; young shoots (cut when 4–6 inches, 6 week season) are used as greens; blanched leaves are used as a salad; fresh curly fronds are used as a salad or like celery

Variety:  
Lily white  
Ivory white

sea-kale beet (chard; sea-kale spinach; Swiss chard; Beta vulgaris cicla) A plant that resem-
bales a beet but is grown for its leaves and leafstalk, which are boiled and consumed as a vegetable.

Midrib—substitute for sea kale

Rest of leaves—substitute for spinach

Lemon juice in cooking water keeps midribs white

Storage: Wash and drain; store in refrigerator crisper or plastic bag; use within 1–2 days

See chard

sea-kale spinach See sea-kale beet

seal To close hermetically; the point of hermetic closure See closure

See Part 2: Animal Foods, Composition; Glass Jar Tops

sea lettuce A green seaweed

sealing surface Part of the container surface that contacts the gasket

seam See Part 2: Can

seamer See closing machine

seam height See seam width

seam length See seam width

seamless One piece; without joint

seamless steel container A two-piece drawn-steel container

sea moss Carrageen See carrageen

sea out To separate muscles at the natural seam

seam thickness The maximum distance across (or perpendicular to the layers of the seam) the double seam of a can

seam width (length, height) The maximum distance of a can’s double seam, parallel to the folds of the seam

sea oxeye A plant that is pickled and used as a condiment

sea perch (white perch; Morone americanus) A food fish

sea pie A suet crust containing beef stew

sea pike (snook) An Australian food fish

sea purslane See orache; sea sandwort

sear To brown, char, burn, or cauterize a meat surface by a short application of intense heat. Helps seal in meat juices when cooking

sea raven (Hemitripterus americanus) A food fish

sea robin (Peristedion spp.; Prionotus carolinus) A moderately lean, moderately dark flesh, food fish

sea rocket A weed that grows near the coast and whose young leaves may be used in salads

sea salt Sodium chloride obtained by evaporation of sea water; this salt is high in trace minerals

sea sandwort (notchweed; sea purslane) A weed that may be pickled or preserved like sauerkraut

seashell macaroni A shell-shaped pasta

seasoning A condiment, spice or herb (e.g. whole spice, ground spice, essential oils or oleoresin of spice, hydrolyzed plant protein flavorings, monosodium glutamate), sauce, dressing, or other stimulant added to food to enhance its flavor. May also contain salt and sweeteners. Food ingredients such as sugar and/or blends of spices; sometimes also includes salt and pepper. A blend of two or more condiments, spices, or herbs that may contain other ingredients (commonly salt or sugar) added to food to enhance flavor

Soluble seasoning: spice oil or oleoresin placed on a salt or dextrose base.

Improves or enhances the flavor of the food; does not impart its own flavor, e.g., dressing, garlic, mustard, onions, pepper, salt, sauces

SEATO South-East Asia Treaty Organization

sea trout (gray trout; weakfish; Salmo trutta trutta) A lean, sharp-tooth, food fish

Type and habitat:

Gray (weakfish, squeteagues)—middle and south Atlantic

Spotted (speckled)—middle and south Atlantic and the Gulf

White (sand)—Gulf

sea truffle (Venus verrucosa) A ridged-shell, mollusk

sea urchin (Echinoidea) An edible (strong flavor), spiny, sea animal whose flesh and roe are used for food or used to make a sauce

seawater Water from the ocean ("sea" and "ocean" are not exact synonyms, as there are many enclosed bodies of water called seas, some of which are more saline than the ocean)

Composition: moisture 96.4%; NaCl 2.6%; MgCl₂ 0.4%; MgSO₄ 0.2%; CaSO₄ 0.1%; KCl 0.1%; trace percentages of bromine and many metals

seaweed Kelp (marine algae); Irish moss (carrageenin); available fresh and dried.

Uses:

Flavoring

Like chewing gum

Soup stock

Classes:

Brown algae (Phaeophyceae)—algae, laminarin, mannanol

Green algae (Chlorophyceae)

Red algae (Rhodophyceae)—agar, carrageenin, human food

Edible marine plants include (see each):

Agar-agar

Agar mar

Badderlocks

Carrageen

Dulse

Hai tai

Hair seaweed

Lettuce laver

Red laver

Red ware

Sargasso

Sea-wreck

Sloke

Composition (kelp, dehydrated): moisture 9–13%; protein 6.5%; fiber 6.5%; fat 0.5%; Ash 22–35%; nitrogen 2%; humus-forming material and alignates 63%

Good, slow acting, fertilizer containing all the major and trace elements

See Part 2: Minerals (Trace), Limits; Wastes, Agricultural and Industrial

sea wife (Labrus vetula) A wrasse used for soup

sea wrack See hair seaweed
sebaceous Glands that secrete fatty, tallowlike matter on the skin

sebago salmon (Salmo sebago) A food fish

sebastopol See goose

sec In beverages means dry (absence of sugar); in champagne means sweet

secant A trigonometric function: secant = hypotenuse/absissa; also a straight line cutting through the circumference of a circle

secci disc A 20-cm disc with white and black quarters that is lowered into water to measure turbidity by the depth where it disappears

second (angle)

1 second = 0.01667 minutes
= 0.0002778 degrees
= 4.848 \times 10^{-6} \text{ radians}
= 3.087 \times 10^{-6} \text{ quadrants}

secondary carbon A carbon atom that is united to a chain or ring by two of its valences being satisfied by carbon

\[
\begin{array}{c}
\text{H} \\
\text{H} \\
\text{C} \quad \text{C} \quad \text{C} \\
\text{H} \\
\end{array}
\]

\text{secondary carbon}

secondary host Host to a disease organism, usually without suffering any effects

secondary malnutrition Malnutrition mainly caused or aggravated by pathological conditions not directly caused by nutrient intake

second operation The last operation in double-seaming cans; initially formed hooks are now rolled tightly

section-comb honey See comb honey

security Residual clamping force remaining in closure application when the gasket is seated after container cooling

sediment Material that settles out of and falls to the bottom of a liquid; lees; dregs; precipitation in wine that indicates bottle age

seed 1) Fertilized and ripened ovule of a plant; mature ovula, composed of an external skin (perisperm or testa) and a nucleus (kernel) Germination test: Place seed on a paper towel and keep moist and warm. Seed should sprout in a few days.

Storage for future planting: Dry, sealed container, cool (35–55°F) place

2) To remove seed. 3) Sprinkle with seed. 4) Introduction of crystal nuclei

See Part 2: Fruit and Nut Rootstock; Moisture in Biological Materials; Oils, Seed and Fruit; Orange Structure; Pulses, Nuts and Seeds Composition; Saturated Fatty Acids; Seed Composition; Seed, Germination; Unsaturated Fatty Acids; Wheat Grain; Wheat Kernel; Wheat Kernel Parts

seed cake 1) A sweet cake containing seeds. 2) Oil cake

seed coat The persperm or outer skin of a seed

See Part 2: Corn Kernel; Wheat Grain; Wheat Kernel; Wheat Kernel Parts

seedling A young plant

seedling blight A rice disease caused by primitive soil fungi known as water molds

Causal organism: Drill-seeded—Helminthosporium oryzae; Pythium spp.; Fusarium spp.; Helminthosporium oryzae; Pythium spp.

Water-seeded—Achlya spp.; Pythium spp.

Control: seed treatment; shallow seeding if drilled in early spring; flooding

seedstalk The stem of the plant that produces the seed

seelach (coalfish) Smoked, dried coalfish

seen loan-ngaon See longan

seethe to exhibit surface agitation, as boiling water

seg A male animal castrated after masculine features have developed

segedy A dry, uncooked, Australian sausage

segesta A well-balanced Sicilian wine

Types: red and white

segment A geometrical portion of a circle or sphere

See Part 2: Orange Structure

sego A plant of the lily family that has an edible root

segregation Cellular division (meiosis) in which the normal number of chromosomes is cut in half

seishu A rice wine used for seasoning

seivert (Sv) A unit of dose equivalent; it replaces the older term rem; for absorbed dose [gray (Gy)], 1 Sv = 100 rem

sekt Sparkling wine with characteristics of Rhine and Mosel; German champagne

selamathans Special meals eaten at celebrations

selar (Caranx) A dried fish

sele See beref

selective agar See Part 2: Microorganism, Selective and Differential Broths and Media, Water Filtration Plant

selenite broth See Part 2: Microorganism, Media; Microorganism, Selective and Differential Broths and Media, Water Filtration Plant

selenite F broth See Part 2: Microbiological Media

selenium (Se) A nonmetallic element; at. no. 34; at. wt. 78.96; Group VIA of Periodic Table; oxidation states +4, +6, −2

Orbital electron configuration 2−8−18−6−2

Vegetation grown on soils that contain selenium may cause alkali disease in animals; some evidence seems to indicate that small quantities may be an essential dietary factor; has a “sparing action” on vitamin E Sources: content in food depends on the amount available to the growing plant or animal

See Part 2: Grain Analysis; Water Drinking Standards; Wheat Products Composition

self-fed Animals have free access to individual components or mixed feeds

self-feeder A trough that is automatically kept full of feed so animals can eat as much and as often as they please

self-fruitful A plant capable of producing a crop, even if grown as a single or isolated plant See self-unfruitful
self-rising flour  A mixture of flour, salt, and baking powder (3–4%)

self-unfruitful  A plant unable to produce full crops without the benefit of cross-pollination  See self-fruitful

sell by  The date at which a product should be sold to allow the consumer a reasonable time to use it after purchase

sell date  The final date on which the product should be sold

seller's lien  Seller's right to withhold or to lay claim on goods sold, surrendering them only upon receipt of payment

seller's market  When goods cannot easily be obtained and when the economic forces of business tend to cause goods to be priced at the vendor’s estimate of value

self-unfruitful  A plant unable to produce full crops

self-rising flour  A mixture of flour, salt, and baking powder

selles-sur-cher  A valencia-type cheese made from goat's milk that has a blue tinted rind and is covered with charcoal

selling order  An order with a supplier to furnish a given amount of material at specified intervals until future notice

selsner  See samne

semit  A ring-shaped, wheat flour roll with sesame seeds

semitendinosus (eye of round)  A round-shaped muscle of the thigh that runs from the ischium to the back of the tibia; it is caudal to the biceps femoris and caudal and lateral to the semimembranosus

semitendinosus  Composed in part of tendinous structure  See also eye of round; semimembranosus

semnne  See samne

semolina  A coarse flour; fine starchy endosperm of hard wheat (durum); it is yellow in color and used to prepare pasta products; known as purified middlings; middlings of Triticum durum; coarse, granular, high gluten flour made from durum wheat and used to make alimentary pastes, manufacture macaroni products or paste, and for milk pudding, cake, molds, whips, and thickening  See macaroni

semolina meal  A pale yellow meal made from the middlings of hard durum wheat; milled endosperm of durum wheat that contains less than 3% flour; used in macaroni products

semi-preparatory  The process that follows physiological maturity or horticultural maturity and leads to death of tissue

senescence  The phase of plant growth from maturity to death characterized by an accumulation of metabolic products, increase in respiratory rate, and a loss in dry weight, especially in fruit and leaves; the process that follows physiological maturity or horticultural maturity and leads to death of tissue

senescent  characterized by the accumulation of metabolic products, increase in respiratory rate, and a loss in dry weight, especially in fruit and leaves; the process that follows physiological maturity or horticultural maturity and leads to death of tissue

sense  To perceive objectively by stimulation of organs of the body

sensitive  Ability to receive impressions from external forces

sensory  Examination by taste, smell, feeling, and appearance; quality of food as perceived by the senses. Replaces the term organoleptic

seokbaki  Acidic, carbonated, oriental radish

sepal  The calyx of a flower  See Part 2: Flower, Perfect

sepsis  Poisoning caused by products of putrefaction

septic  Infective, usually with pus-forming organism; causing or affected by putrefaction

sepsis  Poisoning caused by products of putrefaction

semipermeable membrane  A membrane that permits passage of some substances but not others, depending on the size of their molecules

semirigid container  Normally metal foil formed into a tray shape. It holds its shape in atmospheric pressure but cannot withstand internal or external pressure

semiscalding  Using 125–132°F water to scald poultry followed by a mechanical picker

semisweet chocolate  Solid in bar-shaped packages containing 1-oz squares; it is slightly sweet and melts easily

semisweet chocolate pieces  Unsweetened chocolate plus cocoa butter, sugar, and a vanilla-type flavoring

semit  A ring-shaped, wheat flour roll with sesame seeds

semihigh dough  A mixture of flour, salt, and baking powder

semimembranosus  A broad medial muscle of the thigh that runs from the ischium to the back of the tibia; the most medial and caudal muscle of the round

seminal vesicle  A gland attached to the urethra that produces fluid to carry and nourish sperm

senecio  A plant having a toxic principle

sendi  Sweet, cloudy, white, palm sap wine

senecio  A plant having a toxic principle

sendcho  See atole

sendi  Sweet, cloudy, white, palm sap wine
septmoncel (jura blue) A semihard to hard, blue-veined, roquefort-type cheese made from cow’s or goat’s milk with rennet added

septoria leaf blight A fungus that causes circular leaf spots that are tan in the center with a purple margin on the leaves and canes of raspberry and blackberry plants.

Control: remove and burn infected areas; fungicide spray

septoria leaf spot 1) One of the most destructive leaf diseases in tomato plants; prevalent in middle Atlantic and north central states; infected leaves develop water-soaked spots that are circular, with gray centers and blackish borders.

Control: rotate crops; control weeds; maneb or zineb may be used as a chemical control

2) A sweet potato fungus (Septoria bataticola) that produces white spots on the upper surface of the leaves

sepulchral spot Spots or pits on citrus fruit caused by Septoria citri; the spots are surrounded by a green halo that later turns reddish brown. In advanced stages the pit extends deeply into the discolored rind

septum A partition between two cavities of the body

sequelki A moist, cooked, smoked Polish sausage made from finely chopped, medium seasoned beef and pork sausage with plasma and textured vegetable protein added, and stuffed into a sheep casing

sequential sampling Sampling in which a decision to accept or reject a lot may be reached after one, two, three, or more sampling selections have been taken from the lot and inspected

sequestrant (chelating agent) A chemical compound that reacts with metals to form a complex, thus minimizing the effect of the metal, also a food additive that will separate or segregate, usually in the inactive form, ingredients that will interfere with processing. Chemically bound minerals in beverages that might otherwise settle out and cloud the drink; e.g., in other fluids: chlorophyll, citric acid, EDTA, hemoglobin

serac A ricotta-type cheese made from cow’s milk that is sometimes matured or smoked or spiced

Serbian coffee See Turkish coffee

Serbian-type salami A semidry, cooked, unsmoked Greek sausage made from finely chopped, medium seasoned beef and pork that is fermented and stuffed into artificial casings

serdelki (serdelowa) A cooked, smoked, Polish sausage

serdelowa See serdelki

serendipity The sweet berry of Dioscoreophyllum cumminsii

serial Arranged in a series

sericin (silk gelatin) A protein cement used to hold the principal constituent (fibroin) together in silk fiber

sericulture Production of silk by raising silkworms

series circuit

\[ R_T = \sum R_i \]

where \( R_T \) = Resistance total

\( R_i \) = Resistance in resistor #i

Current (or amp) in each component is the same

\[ R_T = R_1 + R_2 + \ldots + R_n \]

The total potential = algebraic sum of the potentials

serine A nonessential, monoamino-monocarboxylic-monoxydroxy amino acid

\[ \text{CH}_2 - \text{CH} - \text{C} = \text{O} \]

OH NH_2

Used as a nutrient or dietary supplement

Storage: tight container

See Part 2: Amino Acids; Amino Acid, Solubilities; Corn, Amino Acids; Egg Products, Nutritive Value; Grain Analysis; Manure Analysis; Wheat, Amino Acids; Wheat Products, Amino Acid Compositions

serology See immunology

serous A thin watery body fluid; pertaining to serum

See also serum

See Part 2: Intestine, Cross Section

serra A soft, yellow, sharp cheese with small eyes, made from ewe’s or goat’s milk

serra da estrela A soft, aged cheese made from sheep’s milk

serradoys A good red or white Portuguese wine

serrano A smooth-skinned, 1.5 inch long, 0.5 inch diameter, small, pointed, cylindrical shaped, chile pepper; medium green when fresh, red when mature; very, very hot

serrano chile A dark green to red, hot to very hot, 1–2 inch long, chile pepper; a substitute for jalapeno pepper See serrano

Serratia See Part 2: Spoilage, Carbohydrate Foods; Spoilage, Fat in Food

serratus dorsal A back muscle that runs from the spina processes of the thoracic vertebrae over the longissimus dorsi to the rib; in cross section it is most prominent on the lateral side of the longissimus dorsi

serré (seray) A whey cheese that is dried and mixed with herbs and butter

serum (blood) That part of the plasma remaining after clot, blood corpuscles, and fibrin have been removed (defibrinated)

Composition: moisture 90%; glucose 1%; fat 1%; NaCl 0.85%; Na bicarbonate and salts 0.15%; protein 7% Colorless liquid remaining after clotting (removal of corpuscles). It is different from plasma because fibrinogen has been removed. The serum of milk is whey

serum butter Butter made from the fat left in whey (a by-product of cheese making)

serum test A test to indicate the species of meat used and to detect adulteration. Rabbits are injected with solution of X-protein; the rabbit builds up antibodies against X-protein; if a meat is suspected of containing X-protein it is mixed with serum obtained from the rabbit and if X-protein is present it will be destroyed
by the serum and if it is not present, the serum will be unaffected

**servelat** A moist, cooked, smoked Finnish sausage made from medium chopped meat and stuffed into 90-mm casings

**servelat** A moist, cooked, smoked Icelandic sausage made from finely chopped, medium seasoned beef and pork with pork fat added and stuffed into artificial casings

**servelat, chub** A moist, cooked, unsmoked Norwegian sausage made from medium chopped, mildly seasoned beef and pork and stuffed into artificial casings

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<th>Servings per pound (Meat)</th>
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<th>Cost Per Serving</th>
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<tr>
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<td>Frankfurters</td>
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<tr>
<td><strong>Lamb</strong></td>
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<td>Shoulder roast</td>
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<td>Boston butt (bone in)</td>
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<td>Blade steak</td>
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<td><strong>Pork, cured</strong></td>
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<tr>
<td>Picnic (bone in)</td>
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<tr>
<td>Ham, fully cooked</td>
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<td>Center slice</td>
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<tr>
<td><strong>Poultry</strong></td>
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<tr>
<td>Broiler, or ready-to-cook</td>
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<td>Breast</td>
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<tr>
<td>Turkey, ready-to-cook</td>
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<tr>
<td>Under 12 lb</td>
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<tr>
<td>12 lb &amp; over</td>
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<td>Porterhouse, T-bone, rib steak</td>
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<tr>
<td>Short ribs</td>
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<td>Stew meat (boneless)</td>
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<td>Heart, liver, kidney</td>
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<td>Ham, fully cooked</td>
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## Ham, fully cooked (cont)

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<td>3.14 3.22 3.29 3.67 3.44 3.52 3.59 3.67 3.74 3.82</td>
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## Poultry

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<td></td>
</tr>
<tr>
<td>Chicken</td>
<td>1 1/2</td>
<td>3.99 3.97 4.04 4.12 4.19 4.27 4.34 4.42 4.49 4.57</td>
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<td>Legs, thighs</td>
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<td>1.73 1.76 1.80 1.83 1.86 1.90 1.93 1.96 2.00 2.03</td>
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<tr>
<td>Breast</td>
<td>4</td>
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<tr>
<td>Turkey, ready to cook</td>
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<td></td>
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<tr>
<td>Under 12 lb</td>
<td>1</td>
<td>5.19 5.29 5.39 5.49 5.59 5.69 5.79 5.89 5.99 6.09</td>
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</tr>
<tr>
<td>12 lb &amp; over</td>
<td>1 1/2</td>
<td>3.89 3.97 4.04 4.12 4.19 4.27 4.34 4.42 4.49 4.57</td>
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<td><strong>Beef</strong></td>
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<tr>
<td>Sirloin steak</td>
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</tr>
<tr>
<td>Rib roast (boneless)</td>
<td>2½</td>
<td>2.48 2.52 2.56 2.60 2.64 2.68 2.72 2.76 2.80 2.84</td>
<td></td>
</tr>
<tr>
<td>Rib roast (bone in)</td>
<td>2</td>
<td>3.10 3.15 3.20 3.25 3.30 3.35 3.40 3.45 3.50 3.55</td>
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</tr>
<tr>
<td>Rump, sirloin roast</td>
<td>3</td>
<td>2.06 2.10 2.13 2.16 2.20 2.23 2.26 2.30 2.33 2.36</td>
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</tr>
<tr>
<td>Ground beef</td>
<td>4</td>
<td>1.55 1.57 1.60 1.62 1.65 1.67 1.70 1.72 1.75 1.77</td>
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<tr>
<td>Short ribs</td>
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<td>3.10 3.15 3.20 3.25 3.30 3.35 3.40 3.45 3.50 3.55</td>
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</tr>
<tr>
<td>Heart, liver, kidney</td>
<td>5</td>
<td>1.24 1.26 1.28 1.30 1.32 1.34 1.36 1.38 1.40 1.42</td>
<td></td>
</tr>
<tr>
<td>Frankfurters</td>
<td>4</td>
<td>1.55 1.57 1.60 1.62 1.65 1.67 1.70 1.72 1.75 1.77</td>
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</tr>
<tr>
<td>Stew meat (boneless)</td>
<td>5</td>
<td>1.24 1.26 1.28 1.30 1.32 1.34 1.36 1.38 1.40 1.42</td>
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<tr>
<td><strong>Lamb</strong></td>
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<tr>
<td>Loin, rib shoulder (chops)</td>
<td>3</td>
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<tr>
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<tr>
<td>Shoulder roast</td>
<td>2½</td>
<td>2.48 2.52 2.56 2.60 2.64 2.68 2.72 2.76 2.80 2.84</td>
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<tr>
<td>Leg of lamb</td>
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<td>2.06 2.10 2.13 2.16 2.20 2.23 2.26 2.30 2.33 2.36</td>
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<tr>
<td><strong>Pork, fresh</strong></td>
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</tr>
<tr>
<td>Center cut or rib (chops)</td>
<td>4</td>
<td>1.55 1.57 1.60 1.62 1.65 1.67 1.70 1.72 1.75 1.77</td>
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</tr>
<tr>
<td>Loin or rib roast</td>
<td>2½</td>
<td>2.48 2.52 2.56 2.60 2.64 2.68 2.72 2.76 2.80 2.84</td>
<td></td>
</tr>
<tr>
<td>Boston butt (bone in)</td>
<td>3</td>
<td>2.06 2.10 2.13 2.16 2.20 2.23 2.26 2.30 2.33 2.36</td>
<td></td>
</tr>
<tr>
<td>Blade steak</td>
<td>3</td>
<td>2.06 2.10 2.13 2.16 2.20 2.23 2.26 2.30 2.33 2.36</td>
<td></td>
</tr>
<tr>
<td>Spare ribs</td>
<td>1½</td>
<td>4.64 4.72 4.79 4.87 4.94 5.02 5.09 5.17 5.24 5.32</td>
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</tr>
<tr>
<td><strong>Pork cured</strong></td>
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<tr>
<td>Picnic (bone in)</td>
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<td>3.10 3.15 3.20 3.25 3.30 3.35 3.40 3.45 3.50 3.55</td>
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<tr>
<td>Ham, fully cooked</td>
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<tr>
<td>Bone in</td>
<td>3½</td>
<td>1.77 1.80 1.83 1.85 1.88 1.91 1.94 1.97 2.00 2.03</td>
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<tr>
<td>Boneless &amp; canned</td>
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<td>1.24 1.26 1.28 1.30 1.32 1.34 1.36 1.38 1.40 1.42</td>
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<tr>
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<td>4½</td>
<td>1.46 1.48 1.50 1.53 1.55 1.57 1.60 1.62 1.64 1.67</td>
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<td>Center slice</td>
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<tr>
<td><strong>Poultry</strong></td>
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<td>Broiler, ready-to-cook</td>
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<tr>
<td>chicken</td>
<td>1½</td>
<td>4.64 4.72 4.79 4.87 4.94 5.02 5.09 5.17 5.24 5.32</td>
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<tr>
<td>Legs, thighs</td>
<td>3</td>
<td>2.06 2.10 2.13 2.16 2.20 2.23 2.26 2.30 2.33 2.36</td>
<td></td>
</tr>
<tr>
<td>Breast</td>
<td>4</td>
<td>1.55 1.57 1.60 1.62 1.65 1.67 1.70 1.72 1.75 1.77</td>
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</tr>
<tr>
<td>Turkey, ready to cook</td>
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</tr>
<tr>
<td>12 lb &amp; over</td>
<td>1½</td>
<td>4.64 4.72 4.79 4.87 4.94 5.02 5.09 5.17 5.24 5.32</td>
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</tr>
<tr>
<td><strong>Price Per Pound</strong></td>
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<tr>
<td><strong>Servings per lb</strong></td>
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<td>7.19 7.29 7.39 7.49 7.59 7.69 7.79 7.89 7.99 8.09</td>
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</tr>
<tr>
<td><strong>Cost Per Serving</strong></td>
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</tr>
<tr>
<td><strong>Beef</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sirloin steak</td>
<td>2½</td>
<td>2.88 2.92 2.96 3.00 3.04 3.08 3.12 3.16 3.20 3.24</td>
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</tr>
<tr>
<td>Porterhouse, T-bone, rib steak</td>
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<td>3.60 3.65 3.70 3.75 3.80 3.85 3.90 3.95 4.00 4.05</td>
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<td>Round steak</td>
<td>3½</td>
<td>2.05 2.08 2.11 2.14 2.17 2.20 2.23 2.26 2.28 2.31</td>
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<td>3.60 3.65 3.70 3.75 3.80 3.85 3.90 3.95 4.00 4.05</td>
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</tr>
<tr>
<td>Rib roast (boneless)</td>
<td>2½</td>
<td>2.88 2.92 2.96 3.00 3.04 3.08 3.12 3.16 3.20 3.24</td>
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</tr>
<tr>
<td>Rib roast (bone in)</td>
<td>2</td>
<td>3.60 3.65 3.70 3.75 3.80 3.85 3.90 3.95 4.00 4.05</td>
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</tr>
<tr>
<td>Rump, sirloin roast</td>
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<td>2.40 2.43 2.46 2.50 2.53 2.56 2.60 2.63 2.66 2.70</td>
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<tr>
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<td>Meat Type</td>
<td>Option</td>
<td>Servings per lb</td>
<td>Cost Per Serving</td>
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<td>-----------------</td>
</tr>
<tr>
<td>Beef</td>
<td>Sirloin steak</td>
<td>2 3/4</td>
<td>3.32</td>
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<tr>
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<td>Porterhouse, T-bone rib steak</td>
<td>2</td>
<td>4.10</td>
</tr>
<tr>
<td></td>
<td>Round steak</td>
<td>3 3/4</td>
<td>2.34</td>
</tr>
<tr>
<td></td>
<td>Chuck roast (bone-in)</td>
<td>2</td>
<td>4.10</td>
</tr>
<tr>
<td></td>
<td>Rib roast (boneless)</td>
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<td>3.28</td>
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<td>Rib roast (bone-in)</td>
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<td>Ground beef</td>
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<td>Short ribs</td>
<td>2</td>
<td>4.10</td>
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<tr>
<td></td>
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<td>Frankfurters</td>
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<td>Stew meat (boneless)</td>
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<td>1.64</td>
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<td>Loin, rib shoulder (chops)</td>
<td>3</td>
<td>2.73</td>
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<td>Breast, Shank</td>
<td>2</td>
<td>4.10</td>
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<td></td>
<td>Shoulder roast</td>
<td>2 3/4</td>
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<td></td>
<td>Leg of lamb</td>
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<td>2.88</td>
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<td>Boston butt (bone-in)</td>
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<td>Blade steak</td>
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<td>Cost Per Serving</td>
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<td>7.59</td>
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**Pork cured**

<table>
<thead>
<tr>
<th>Item</th>
<th>Servings</th>
<th>Cost Per Serving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pig (bone in)</td>
<td>3 1/2</td>
<td>5.00</td>
</tr>
<tr>
<td>Breast</td>
<td>3</td>
<td>5.00</td>
</tr>
<tr>
<td>Shank</td>
<td>4 1/2</td>
<td>5.00</td>
</tr>
<tr>
<td>Center slice</td>
<td>5</td>
<td>5.00</td>
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**Poultry**

<table>
<thead>
<tr>
<th>Item</th>
<th>Servings</th>
<th>Cost Per Serving</th>
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<tbody>
<tr>
<td>Broiler or ready-to-cook</td>
<td>1 1/2</td>
<td>8.99</td>
</tr>
<tr>
<td>Turkey, ready to cook</td>
<td>1</td>
<td>6.89</td>
</tr>
<tr>
<td>Under 12 lb</td>
<td>2</td>
<td>6.89</td>
</tr>
<tr>
<td>12 lb &amp; over</td>
<td>3 1/2</td>
<td>6.89</td>
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**Beef**

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<tr>
<th>Item</th>
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</thead>
<tbody>
<tr>
<td>Sirloin steak</td>
<td>2 1/2</td>
<td>3.68</td>
</tr>
<tr>
<td>Porterhouse, T-bone rib</td>
<td>3 1/2</td>
<td>3.68</td>
</tr>
<tr>
<td>Chuck steak</td>
<td>3</td>
<td>3.68</td>
</tr>
<tr>
<td>Chuck roast (bone in)</td>
<td>3 1/2</td>
<td>3.68</td>
</tr>
<tr>
<td>Rib roast (boneless)</td>
<td>3 1/2</td>
<td>3.68</td>
</tr>
<tr>
<td>Rib roast (bone in)</td>
<td>3</td>
<td>3.68</td>
</tr>
<tr>
<td>Rump, sirloin roast</td>
<td>3</td>
<td>3.68</td>
</tr>
<tr>
<td>Ground beef</td>
<td>4</td>
<td>3.68</td>
</tr>
<tr>
<td>Short ribs</td>
<td>2</td>
<td>3.68</td>
</tr>
<tr>
<td>Heart, liver, kidney</td>
<td>5</td>
<td>3.68</td>
</tr>
<tr>
<td>Stew meat (boneless)</td>
<td>5</td>
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**Lamb**

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<th>Item</th>
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</thead>
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<tr>
<td>Loin, rib shoulder (chops)</td>
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<td>3.06</td>
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<tr>
<td>Breast</td>
<td>2</td>
<td>3.06</td>
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<tr>
<td>Shoulder roast</td>
<td>2 1/2</td>
<td>3.06</td>
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**Pork, fresh**

<table>
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<tr>
<th>Item</th>
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</thead>
<tbody>
<tr>
<td>Center cut or rib (chops)</td>
<td>4</td>
<td>2.30</td>
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<tr>
<td>Loin or rib roast</td>
<td>2 1/2</td>
<td>2.30</td>
</tr>
<tr>
<td>Boston butt (bone in)</td>
<td>3</td>
<td>2.30</td>
</tr>
<tr>
<td>Blade steak</td>
<td>3</td>
<td>2.30</td>
</tr>
<tr>
<td>Spare ribs</td>
<td>1 1/2</td>
<td>6.89</td>
</tr>
</tbody>
</table>

**Pork cured**

<table>
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<tr>
<th>Item</th>
<th>Servings</th>
<th>Cost Per Serving</th>
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</thead>
<tbody>
<tr>
<td>Pig (bone in)</td>
<td>3 1/2</td>
<td>5.00</td>
</tr>
<tr>
<td>Boneless &amp; canned</td>
<td>5</td>
<td>5.00</td>
</tr>
<tr>
<td>Shankless</td>
<td>4 1/2</td>
<td>5.00</td>
</tr>
<tr>
<td>Center slice</td>
<td>5</td>
<td>5.00</td>
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**Poultry**

<table>
<thead>
<tr>
<th>Item</th>
<th>Servings</th>
<th>Cost Per Serving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broiler or ready-to-cook</td>
<td>1 1/2</td>
<td>8.99</td>
</tr>
<tr>
<td>Turkey, ready to cook</td>
<td>1</td>
<td>6.89</td>
</tr>
<tr>
<td>Under 12 lb</td>
<td>2</td>
<td>6.89</td>
</tr>
<tr>
<td>12 lb &amp; over</td>
<td>3 1/2</td>
<td>6.89</td>
</tr>
</tbody>
</table>
sesame (bene; benne seed; benniseed; sesamo; sim-sim, *Sesamum indicum* L.; *S. orientale*)
An annual herb; a tropical or subtropical plant that produces a small, oval, flat, white to black (sometimes orange) seed; sweet, nutty flavor when toasted, similar to toasted almonds.

**Sold:**
- **Ground**
  - Hulled (most common)—small, pearly-white, glossy seed, used as toppings and on rolls
  - Toasted
- **Unhulled**—natural, used in bread
- **Whole**
  - Toasting heightens mild, nutty odor and taste; cook in ungreased skillet until golden or 300°F oven for 10 minutes

**Sources:** Guatemala, Honduras, Mexico, Nicaragua
Seed may be used as food or the oil extracted (45-55%); the cake left after extraction is used as a protein-rich livestock feed;

46 pounds sesame seed = 1 bushel

**Composition**

<table>
<thead>
<tr>
<th>Moisture (%)</th>
<th>Decorticated</th>
<th>Dry seed composition</th>
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</thead>
<tbody>
<tr>
<td>4-5</td>
<td>5</td>
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</tr>
</tbody>
</table>

**Storage of seed:** cool, dark, dry place

See Part 2: Oils and Fats Composition; Protein Factors; Pulses, Nuts and Seeds Composition; Seed, Chemical Composition; Unsaponifiable Matter

**sesame meal** Sesame seed after oil extraction of de-hulled seed
Composition: dry matter 93%; protein 43-45%; oil 7-9%; carbohydrate 23%; fiber 6%; minerals 4-11%
Its protein is high in methionine and cystine, but deficient in lysine

**sesame oil (benne oil; gingli oil)** An oil obtained from the seed of the sesame plant (*Sesamum indicum*)
Properties: iodine number 103-112; melting point -6°C; refractive index (15.5°C) 1.474-1.476; saponification number 188-193; sp. gr. (25°C) 0.919
Composition: arachidic 1%; linoleic 40-42%; oleic 38-45%; palmitic 9%; stearic 4%

See Part 2: Fats and Oils, Composition; Fats and Oils, Physical and Chemical Properties; Fats and Oils, Characteristics; Fatty Acids, Fats and Oils; Iodine and Saponification Values; Oil or Fat, Characteristics; Oil, Triglyceride Mole Percent Composition; Refractive Indices, Fats and Oils; Specific Gravities, Fats and Oils; Titer, Fats and Oils; Tocopherols

**set** When nonfluid, starch paste becomes stiff without gel formation

**set-aside** A proportion of crop land diverted to soil conserving uses

**setting out** Mechanical extraction of surplus water from leather after tanning

**setting the hair** Occurs when hog carcasses are overscalded and the hair becomes extremely hard to remove

**settle** To conceive, after being bred

**settlement price** The average price on the close of the day or a price determined to be in line with actual closing values

**setubal** A white or amber, dessert wine made from muscatel grapes

**seve** Orange-colored and -flavored, herb liqueur based on cognac

**seven-day beer** A viscous, brown-colored, slightly bitter, mildly alcoholic beer made by added malt to maize porridge

**Seventh-Day Adventists** See vegetarian, lacto

**Seville orange** See sour orange

**Sevin** Trademark for a toxic, carboxyl insecticide See Part 2: Insect Control

**sevruga** (*Acipenser stellatus*) A Russian food fish

**sewa** golden, hard, pressed cheese made from sheep's milk

**sewage** Municipal waste See also sludge
See Part 2: Fertilizer Materials; Microorganism, Culture Media, Water and Sewage, Standard Methods; Wastes, Agricultural and Industrial

**sex** The state of a plant (or part of a plant) or animal that is expressed in the production of ova in the female or sperm in the male

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**Key:**
- **X** = ♀ chromosomes
- **Y** = ♂ chromosomes

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**germ cells**
Type of sex in plants:
   Dioecious—male and female are different plants
   Diclinous—male and female flowers on same plant
   Hermaphroditic—male and female elements in same flower
   🐷 or 🐫 symbol for male; 🐣 or 🐓 symbol for female

**SF broth** See Part 2: Microbiological Media

**SFP agar** A medium used to grow *Clostridium perfringens*
See Part 2: Microorganism, Media

**shall** To feed upon stubble or fallen grain after harvest

**shad** (buck, roe; king of herring; white roe)
Alewife (*Alosa pseudoharengus*)—Atlantic, freshwater; North America
Allis, Allie (*A. alosa*)—European
American (*A. sapidissima*)—Atlantic, Pacific, freshwater
Blueback herring (*A. aestivalis*)—Atlantic, freshwater; North America
Gizzard (*Dorosoma cepedianum*)—Atlantic, freshwater; North America
Hickory (*A. mediocris*)—Atlantic, North America
Threadfin (*Dorosoma petenense*)—Atlantic, freshwater; North America
Twaite (*A. finta*; *Clupea aestivalis*)—France
Twaite (*A. menhaden*)—U.S.

A fat, very bony fish similar to a herring but with a deeper body. Saltwater fish of the herring family and found along the Atlantic and Pacific coasts and in U.S. coastal rivers; 3-4 pounds; may be obtained fresh, smoked, and canned; roe may be fresh or canned

Type:
   - Buck—male shad
   - Roe—female shad

See Part 2: Fish and Shellfish Composition

**shallberry** See service berry

**shad bush** (service berry; *Amelanchier canadensis*) A small tree, whose red fruit is used for pies and canned See June berry

**shaddock** See grapefruit; pomelo
See Part 2: Essential Oils

**shad-waiter** Whitefish See whitefish

**shagbark** A native hickory-type tree that produces sweet tasting nuts that are harder than pecans

**shaggy parasol** (*Lepiota rhacodes*) A large (3-7 inch cap) edible fungus with yellow-brown scales on the cap

**shake**

<table>
<thead>
<tr>
<th>Composition</th>
<th>Thick Chocolate</th>
<th>Thick Vanilla</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>72.2</td>
<td>74.4</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>3.0</td>
<td>3.9</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>2.7</td>
<td>3.0</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>21.1</td>
<td>17.7</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0.2</td>
<td>0.06</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td>Sodium 266 mg per shake (308 grams)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

“shall” Requirements are mandatory

**shallot** (often incorrectly applied to scallion; *Allium cepa ascalonicum*) A perennial, small onion of the multiplier type. A vegetable whose bulb (purplish white bulb that resemble mild garlic) contains several cloves or sections and is used as food; a variety of onion; mild and used for flavoring and as a pickle. Grown in clusters. Can be used like green onions or as a dry bulb (1 inch; very little swelling at base)

Types:
   - Red (common)
   - Yellow

Variety:
   - Dutch Yellow—10-20 side shoots; good storage
   - Giant Red—10-20 side shoots; used uncooked; good storage

Use fresh and freeze dried (1-3% moisture). They may be diced (1/4 x 1/4 or 1/4 x 1/2 inch) or finely ground (100%—No. 7 U.S. screen) or powder (100%—No. 40 U.S. screen). Freeze dried has a fresh weight replacement value of 1: 8 to 1:13

Composition (raw bulb): Moisture 80%; protein 2-3%; fat 0.1%; carbohydrate 17%; ash 1%

See onion, green

See Part 2: Planting density

**shallot, freeze dried**

Forms: dice (3 inches), granules, powder See shallot

**shamit** A sorghum beer flavored with spices

**shampansky** A white, sparkling wine

**shamsy** A pocket, flat bread

**shandygaff** A mixture of ale or beer with ginger ale or ginger beer; beer and ginger beer

**shanezhki** A small size bread that sometimes contains dried fruit

**Shanghai White** white pigs that have turned-up snouts and short semierect ears and are from the Shanghai area; obtained by crossing Yorkshire with Fungcheng and Maishan breeds

**shankaliash** A hard, dry, grating cheese

**shank (fore) bone** Shin; the leg between the knee and ankle; radius-ulna

See Part 2: Beef Chart; Beef Cuts and Uses; Beef Retail Yield; Beef Wholesale Cuts; Braising Meat; Cooking in Liquid, Time; Lamb Cuts; Lamb, Wholesale Cuts; Meat, Servings Per Pound; Pork Wholesale Cuts; Veal Chart; Veal Cuts; Veal Cuts and Uses; Veal Wholesale Cuts

**shank (hind) bone** Tibia-fibula

**shank knuckle bone** The inferior extremity of the femur

See Part 2: Beef Cuts

**Shantung Cattle** Yellow-brown, humped (bullocks), dual purpose (beef and draft) cattle found in Shantung (Shandong, northeast China) Province, China

**shao chiu** A spirit distilled from sorghum

**shaohsing** A deep-colored, rice with some wheat or millet wine

**sharab** Wine

**shark**

- Basking—*Cetorhinus maximus*
- Great blue—*Prionace glauca*
- Greenland—*Somniosus microcephalus*
- Hammerhead (smooth)—*Sphyrna zygaena*
- Salmon—*Lamna nasus*
- Silver—*Chimaera monstrosa*
sheath spot A fungus (Rhizoctonia oryzae) disease of rice that may be controlled by planting resistant varieties, timing of nitrogen, and crop rotation

shechitah Ritual slaughter

sheddor A crab

sheen Luster; glistening; shine

sheep (Ovis aries) Ovine ruminant animals of all ages and sex; in common practice one year or older in age; a mature sheep is 3 years or older. Ovis laticauda, broad tailed; Ovis montana, bighorn. Dressing percentage, 48%. Grown for meat and wool production

Age at puberty—4-10 months
Duration of estrus—24-48 hours
Female—ewe
Frequency of ovulation—16-17 days
Gestation period—146 days
Male—ram
Millions of sperm per milliliter semen—2,000
Number of females served by one male—15-50
Number of offspring—1-2 per gestation
Semen volume per ejaculate—1 milliliter
Time of ovulation—near end of estrus

Most are seasonal in reproductive habits resulting in a lamb crop in early spring

See Part 2: Bone Age; Gestation Periods; Milk and Cheese Composition; Milk, Species; Muscle and Body Weight; Reproductive Cycle; Sheep Breeds; Sheep Market Classes and Grades; Teeth Eruption

sheepberry See black haw

sheep casing See casing

sheep milk
Composition (Whole, fluid): moisture 80.7%; protein 6.0%; fat 7.0%; carbohydrate 5.4%; ash 1.0%

sheepshead (gaspergou croaker; white perch) Name used for different species of food fish; an 8-10-pound food fish of the porgy family; in western U.S. a large freshwater fish; a light meat, light to moderate flavor, fin fish.

California (Pimelometopon pulchrum)—Pacific Freshwater drum, white, or silver perch (Aplodinotus grunien)—freshwater; North America
Sheepshead (Archosargus probatocephalus)— Atlantic, N. America

shehitah Jewish method of slaughter

shelf curing Applying dry cure to meat and placing it so the juices will drain from the product while curing

shelf-life The storage time of a canned or packaged food product; it is greatly lengthened by use of antioxidants and other preservatives. Period within which quality and safety are maintained; code date often indicates this time span

shell A hard fibrous or calcareous plant or animal part covering; e.g., egg, nut, oyster 1) The hard external coating of a nut, composed chiefly of cellulose 2) The body covering of lobsters, clams, oysters, etc., composed largely of calcium carbonate See also shellfish 3) The hard, friable coating of avian eggs, composed of lime and calcium carbonate 4) A pastry container for creamed meats, fish, or custard fillings; a patty shell 5) Emaciated cattle 6) An electron orbit of an atom, designated by letters K, L, M, etc. 7) Pasta in the shape of a shell; shell-shaped macaroni-
like product:
Large shells are 1 1/2 inch
Medium shells are 1 inch
Tiny shells are 1/2 inch
See Part 2: Egg Structure

shellbark A native hickory-type tree that produces sweet tasting nuts that are harder than pecans

shellfish An invertebrate covered with a shell; divided into two major groups which are mollusks and crustaceans; hard outer covering composed chiefly of calcium carbonate
Types:
  Crustaceans—barnacles, crabs, crawfish, crayfish, hermit crabs, lobsters, prawns, scampi, shrimps, spider crabs
  Echinoderms—sea slugs, sea urchins
Mollusks—abalone, clams, cockles, limpets, muscles, oysters, periwinkles, razor shells, scallops, sea dates, sea truffles, whelks
Yield: can be as low as 20–40%
1 cup cooked shellfish meat = 8 ounces
Storage: refrigerate in ice for a maximum of 2 days
See Part 2: Animal Foods, Composition; Fish and Shellfish Composition; Fish, Storage; Frozen Food Storage; Plant and Animal Poisoning; Storage Times

shelling Removing corn kernels from the cob; removing peas from pods or shells from nuts See also shuck

shell loin Beef, short loin, without the tenderloin

sheneena Buttermilk

shepherd's pie (cottage pie) A dish of ground meat, onions, seasoning, and a rich gravy, covered with crusty mashed potato and baked; baked mashed potatoes filled with slice meat

shepherd's purse See corn salad

sherbet (sorbet) A frozen mixture (tart dessert) containing milk but not as much fat as ice cream and unlike ices they may contain milk or egg yolks. They are sweeter (approximately 2 times the quantity of sugar as in ice cream) and softer than ice cream but not as rich. A sweetened, flavored water ice; sweetened, diluted fruit juice. More often, a frozen dessert made from sugar, milk solids, stabilizer, food acid, flavoring, and water
Types:
  Fruit—contains fruit or fruit juice
  Nonfruit—contains spices, infusion of coffee or tea, chocolate, candy, liqueurs, wine, or other natural or artificial flavors
Freezing point — 4 to −5°C
1 quart = 4 cups
1 cup = 195 grams (6.8 ounces)
Composition: moisture 66–67%; protein 1–1.2%; fat 1.2–2%; carbohydrate 30–31%; fiber trace; ash 0.1–0.4%; milk fat 1–2%; milk solids 2–5%; sugar 6–8 tap/0.5 cup; 135 calories per 1/2 cup
See Part 2: Calories, Daily Recommendations; Creams, Butter and Frozen Desserts; Dairy Terms; Frozen Food Storage, Stabilizers, Thickeners

Sherman bourquin unit The quantity of daily riboflavin necessary to obtain an average weekly gain of 3 grams per rat

Sherman, Henry Clapso A nutrition research worker

Sherman–Munsell unit The quantity of daily vitamin A necessary to obtain an average weekly gain of 3 grams per rat

Sherman unit 0.5–0.6 milligrams of ascorbic acid

shermute Beef jerky

sheroo A rice beer

sherry A wine that is full-bodied, fragrant, fortified, and blended (15.5–20% alcohol by volume); it is made from the juice of white grapes and sold in three grades: pale dry, regular, and cream, the last being the sweetest. An amber-colored, fortified alcoholic wine with a nutlike flavor. Ranges from dry to sweet and from light golden to dark brown, e.g., palomino
Types:
  Fino—clean, clear to pale in color and dry, 15½% alcohol by volume
  Oloroso—early maturing; richer and fuller in taste; 17½% alcohol by volume
  Palo cortado—blend
  Raya—coarse; rich

sherry cobbler A cold beverage made of sherry, lemon juice, etc.

sherry glass 1 glass = 2 ounces

sher-woo Food

shield Heavy skin on the shoulder of some boars.
See Part 2: Butter Grade; Cheese Shield; Cottage Cheese Shield; Egg Quality and Size Label; Lamb Quality Guide; Lamb Yield Guide

shifting cultivation Periodic abandonment of cropped lands to allow the regrowth of natural vegetation, regeneration of soil fertility, and then reutilization for crop land

shigellosis Food-borne bacterial disease (food poisoning) caused by Shigella boydii, S. Flexnerii, S. sonnei and S. dysenteriae. An organism destroyed by pasteurization
See Part 2: Illness from Food; Infectious Agents; Infectious Diseases, Food-Borne; Intestinal Microorganisms in Triple-Sugar Agar; Microorganism, Media; Microorganism Reactions on Differential Tube Media

shih Strong-flavored, salted, dark brown, soybeans in dark brown paste that is dried and has a long shelf-life

shih-yu A soy sauce made with meat

shiitake A black, dried mushroom that is soaked in water before use

shikar Hunting

shima See nshima

shimshiki shoyu A flavorful, light brown, high salt, paste made from soybeans, often mixed with cereals

shinosu miso A flavorful, light brown, high salt, paste for fermented foods

shikara Pickled vegetable

ship biscuit Hard bread that has good keeping qualities. See hardtack
686  shipper-style hog carcass

shipper-style hog carcass A carcass that is not split, and the head and leaf fat is left with the carcass

shipping fever A high fever and general depression in cattle after shipping; to reduce this condition, avoid overexposure during shipping; there is also a preventive vaccination

shipping release A form used by the buyer to specify shipping instructions of items purchased for delivery at an unstated future date or to an unstated destination

shirara (Wallago attu) An Indian, food fish

shortcake A cake or biscuit made with a substantial proportion of shortening; serve with sweetened fruit (strawberries, peaches, etc.) and cream

Ingredients: flour (3 cups), liquid (\(\frac{2}{3}-1\frac{1}{2}\) cups), eggs (1\(\frac{1}{2}-5\) eggs), sugar (1-2 cups), shortening (\(\frac{1}{4}-1\) cup), salt, and leavening agent

shortbread A sweet biscuitlike cake; cracker; a rich (butter) cookie

shortbread cookie

Composition: sodium 116 mg/4 cookies (30 grams)

shortcake A cake or biscuit made with a substantial proportion of shortening; served with sweetened fruit (strawberries, peaches, etc.) and cream

Ingredients: flour (3 cups), liquid (\(\frac{2}{3}-1\frac{1}{2}\) cups), eggs (1\(\frac{1}{2}-5\) eggs), sugar (1-2 cups), shortening (\(\frac{1}{4}-1\) cup), salt, and leavening agent

short circuit A no-resistance connection

shortening  1) A fatty substance (lard, butter, hydrogenated oil) used in baked products to give a light, crisp texture. This results from formation by the shortening agent of a lubricant layer between the particles of flour, giving the cooked product a less resistant, flaky structure, which makes a mixtures “short” or tender.
   - 2 cups = 1 pound
   - 1 cups = 8 ounces
   - \(\frac{3}{4}\) cup, shortening = 1 cup, butter for shortening
   - 1 tsp = \(\frac{1}{8}\) oz

Composition (vegetable shortening): saturated fatty acids 23%; oleic 23%; linoleic 6-23%
  2) Alteration for altitude see altitude 3) Contraction or decrease in size, e.g., cold shortening in meat

See Part 2: Fats and Oils, Composition; Oils and Fats Composition

shortening value (shortness) The force required to break a standard crust or cracker; the less the force, the higher the shortening value and the flakier and lighter the pastry

short-fed cattle Cattle placed in a feedlot at 750-850 pounds and fed for 60-130 days; below choice finish

Shorthorn A breed of beef cattle that may be red, roan, white, or red and white; horns curve downward and forward. Origin, northeast England; imported to America by Gough and Miller of Virginia

Color determination (x = gene for white; y = gene for red):
- Red (yy) \(\times\) red (yy) \(\rightarrow\) red offspring (yy)
- White (xx) \(\times\) white (xx) \(\rightarrow\) white offspring (xx)
- Roan (xy) \(\times\) roan (xy) \(\rightarrow\) 25% red (yy) + 50% roan (xy) + 25% white (xx)
- White cattle (xx) \(\times\) red cattle (yy) \(\rightarrow\) roan offspring (xy)

roan cattle (xy) \(\times\) red cattle (yy) \(\rightarrow\) \(\frac{1}{2}\) roan offspring (xy) + \(\frac{1}{2}\) red offspring

There is also an American Milking Shorthorn, which is the dairy branch of this breed

See also Polled Shorthorn; Single Standard Polled Durham; Double Standard Polled Shorthorn.

See Part 2: Beef and Dual-Purpose Cattle; Gestation Periods; Milk Breeds, Composition

short loin The front area of the loin extending from the flat edge of the hip bone to the last rib; it contains the porterhouse, T-bone, and club steaks (back to front)

See Part 2: Beef Cuts; Beef Cuts and Uses

shortmeter An instrument used to measure resistance to breaking or crushing

shortness See shortening value

shortnin' bread A biscuit type bread made from all-purpose flour, brown sugar, and butter

short order A small meal in a quick-service restaurant

short plate A cut of beef.

See Part 2: Beef, Boneless Cuts; Beef Retail Yield; Beef Rib Nomenclature; Beef Wholesale Cuts

short ribs A cut of beef made from 2- to 3-in. strips removed across the ribs of the plate
shorts  Fine particles of bran, flour, germ, or offal from the tail of the mill during commercial flour milling

See Part 2: Casings, Hog Bungs; Wheat and Flour Composition; Wheat Products Composition

short wool  See fine-wool sheep

shote  See shoot

shot-hole  A fungus on apricot trees that cause defoliation of trees and malformation of fruit

shot-hole borers (Scolytus rugulosus)  Many species of insects in which the larvae or grubs are white, yellowish white, or brown and are 1-1 1/4 inches long. Adults are beetles or moths that vary in size and color. Hosts are apple, peach, pear, plum, cherry, and other fruit. The larvae feed (small holes eaten through bark) on growing tissues of trunks, limbs, and roots and trees weaken and die.

Control: keep trees healthy; insecticides

shoat  See shoat

shote  See shoat

shovel-nose sturgeon (Scaphirhynchus platorhynchus)  A food fish

showbread  Bread placed in a Jewish sanctuary

showyang  A white-headed sheep grown for wool and mutton and found in Shansi (Shanxi, northeast China) province

shoyu  A variable-flavored sauce made from soybeans, wheat, yeast, and salt; soy sauce  See ketjap

shredded coconut  Made by shredding ripe coconut meat, mixing with salt and sugar, and partially drying

shredded wheat  A ready-to-eat cereal. A breakfast cereal prepared from cooked, dried, and tempered whole wheat grain; the grain is passed between grooved rollers; the resulting strands are pinched into biscuits which are then baked.

1 cup (spoon size) = 1.5 ounce
1 biscuit = 25 grams
Composition: moisture 7%; protein 10%; fat 2-4%; carbohydrate 77-81%; fiber 12%; sugar 0.6%

shrikhand  Yogurt with honey or sugar

shrimp (prawns in England)  A lean, marine crustacean; a shellfish; crustaceans in which the meat is creamy white, firm, and has a distinctive flavor.

Brown: (Crangon vulgaris)—gray spotted brown when raw; pink spotted brown when cooked
Pink: (Leander squilla)—red gray when raw; bright pink when cooked

General types:
Alaska pink—Alaska
California—Maine and worldwide imports
White, brown, pink prawn—South Atlantic, Gulf of Mexico

Common name
Bay
Blue
Brown
California bay
Northern
Pink
Rock
White (prawn)

Type:
Bay
Crangon franciscorum, C. nigricanda, C. nigromaculata—Pacific; North America
Blue (Penaeus stylirostris)—Pacific; Central America
Brazilian (Penaeus brasiliensis)—Atlantic, Gulf; America
Brown
Crangon crangon, C. vulgaris—Europe, Africa
Penaeus aztecus—southwest Atlantic
Penaeus californiensis—east Pacific
Penaeus canaliculatus—India
Common (Crangon crangon)—Europe
Coon-Stripe (Pandalus hypsinotus)—north Pacific
Grass (Palaeomonetes vulgaris)—west Atlantic
Humpy (Pandalus goniurus)—north Pacific
Pink
Penaeus brevirostris—south Pacific
Penaeus duorarum—south Atlantic
Penaeus aztecus—southwest Atlantic
Penaeus kroyeri—south Pacific
Royal Red (Hymenopenaeus robustus)—south Pacific
Sand (Crangon septemspinosus)—northeast Atlantic
Side-Stripe, Giant red (Pandalus dispar)—northeast Pacific
Spot (Pandalus platyceros)—northeast Pacific

See Part 2: Beef Cuts; Beef Cuts and Uses; Beef Retail Yield; Braising Meat; Braising Time; Portion Size

See Part 2: Bone in Retail Cuts; Braising Time; Cooking in Liquid, Time; Lamb Cuts; Lamb Cuts and Uses; Lamb Roasting; Lamb, Wholesale Cuts; Lamb Yield; Meat and Meat Products Composition; Meat Composition; Pork Cookery; Pork, Cooking; Pork, Cooking Method; Pork Cooking Yield; Pork Cuts; Pork Shoulder; Pork Yield; Roasting Meat; Roasting, Time and Temperature; Veal Chart; Veal Cuts; Veal Cuts and Uses; Veal Roasting

shoulder  1) The forearm area of a pork carcass (in pork, vertebrae and ribs removed); about 16% of hog carcasses (head and leaf fat on) See also New York style shoulder
2) In beef or lamb carcass it is usually referred to as chuck and contains the first five ribs
3) The part of a glass container where maximum diameter decreases to join the neck
4) The part of a cap between the panel and the skirt

See Part 2: Pork Cuts; Pork Cooking Yield; Pork Cuts; Pork Cooking Method; Pork Cuts and Uses; Veal Roasting

shoulder arm roast  A beef roast made from muscles on the fore shank in front of the arm bone

shoulder clod  See clear cut shoulder

shoulder roll  See Part 2: Pork Cookery

shoulder vein  Junction of the neck and shoulder

shoun  A rice beer

shrive-nose sturgeon (Scaphirhynchus platorhynchus)  A food fish

showbread  Bread placed in a Jewish sanctuary

showyang  A white-headed sheep grown for wool and mutton and found in Shansi (Shanxi, northeast China) province

shoyu  A variable-flavored sauce made from soybeans, wheat, yeast, and salt; soy sauce  See ketjap

shred  To cut into long narrow strips, e.g., cabbage
shrimp (prawns in England)

White
Penaeus setiferus—northwest Atlantic
Penaeus schmitte—southwest Atlantic
Penaeus occidentalis—southeast Pacific
Available fresh, frozen headless, peeled and deveined, cooked, battered and breaded, and canned; 50% edible.
Size (Note: Other size systems are also used):
Jumbo = less than 25 per pound
Large = 25-30 per pound
Large medium = 28-30 per pound
Medium = 30-35 per pound
Small = 35 or more per pound

Yield

<table>
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<tr>
<th>As purchased</th>
<th>(%)</th>
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<tbody>
<tr>
<td>Headless</td>
<td>50</td>
</tr>
<tr>
<td>Peeled and cleaned</td>
<td>60</td>
</tr>
</tbody>
</table>

Breaded: 50% flesh content
Amount needed per serving:
Breaded—3.5 ounces
Canned—3 ounces
Cooked, peeled, cleaned—3 ounces
In shells—6 large or 6 ounces
Shelled—4 ounces

Size of raw headless:
Extra colossal—less than 10 per pound
Colossal—10–15 per pound
Extra jumbo—16–20 per pound
Jumbo 21–35 per pound—less than 3.5 regular per ounce, drained.
14–16 per pound in shell—less than 3.8 cleaned (deveined) per ounce, drained
Extra large—26-30 per pound; less than 3.5 regular per ounce, drained; less than 3.8 cleaned (deveined) per ounce, drained
Large—31–35 per pound; 3.5 or more per ounce, drained; 3.8 or more cleaned (deveined) per ounce, drained; 8 ounce (13–15 shrimp) per serving
Medium large—40–50 per pound; 5 or more per ounce, drained; 5.4 or more cleaned (deveined) per ounce, drained; 8 ounce (20–25 shrimp) per serving
Medium—40–50 per pound; 5 or more per ounce, drained; 5.4 or more cleaned (deveined) per ounce, drained; 8 ounce (35–40 shrimp) per serving
Small—50–60 per pound; 9 or more per ounce, drained; 9.8 or more cleaned (deveined) per ounce, drained; 8 ounce (35–40 shrimp) per serving
Extra small—61–70 per pound
Tiny or cocktail—more than 70 per pound; 17 or more per ounce, drained; 18.4 or more cleaned (deveined) per ounce, drained
1 pound, cooked, shelled = 3 cups, finely chopped
1 cup, dry packed and drained = 22 large
= 76 small
= 4.5 ounces

1 cup, canned = 130 grams (4.6 ounces)
12 large, raw shrimp in shell
= 7–8 ounces raw shelled shrimp
= 4½–5 ounces, canned shrimp
= 1 cup, cooked, shelled, shrimp.

Canned style:
Can—less expensive; cooked
Dry—no liquid; cooked
Glass—better grade; hand packed; cooked
Wet—in brine; cooked

Small and medium shrimp more tender than larger shrimp
Composition (raw): moisture 78%; protein 18%; fat 0.8–1.6%; carbohydrate 2%; ash 1%; pH 6.8–7.0; 12–17% fat absorption during frying; sodium 137 mg/3 oz raw, 159 mg/3 oz fried, 1,955 mg/3 oz canned; 128 mg cholesterol/3 oz canned
Composition (shrimp paste canned): moisture 61%; protein 20%; fat 9%; carbohydrate 2%; ash 7%

See Part 2: Cholesterol Control; Fish and Shellfish Composition; Fish, Storage; Frozen Food Storage; Frying Time; Minerals, Food; Portion Size; Shrimp

shrimp a la Canton  See Canton shrimp

shrimp, brown  Refers to several species
Where caught:
Atlantic/Mediterranean (common shrimp)—Crangon crangon; C. vulgaris
East Pacific—P. californiensis
Indian Ocean—P. canaliculatus
Southwest Atlantic, Gulf—Penaeus aztecus

shrimp cracker  A crisp, puffy, cracker made from dried shrimp and egg white and deep-fat-fried. Can be purchased prefried

shrimp, cream of, canned soup

Composition

<table>
<thead>
<tr>
<th>Composition</th>
<th>Condensed</th>
<th>Condensed, prepared with milk</th>
<th>Condensed, prepared with water</th>
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<tbody>
<tr>
<td>Moisture (%)</td>
<td>84.5</td>
<td>86.4</td>
<td>92.2</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>2.2</td>
<td>2.7</td>
<td>1.1</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>3.7</td>
<td>4.1</td>
<td>8.1</td>
</tr>
<tr>
<td>Carbohydrate%</td>
<td>6.5</td>
<td>5.6</td>
<td>3.4</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.3</td>
<td>1.5</td>
<td>1.2</td>
</tr>
</tbody>
</table>

shrimp paste A fermented salty (20–25%), shrimp paste condiment; a mixture of shrimp, chilies, and curry
Types:
Eastern—pungent condiment
European—cooked, mashed shrimp flavored with salt, onion, Worcestershire sauce, and cayenne pepper

Shrimp, potted  Shrimp preserved in butter

shrimp salad (broken shrimp; pieces of shrimp)  Canned pieces of shrimp

shrimp, sun dried  Shrimp cooked in brine, head and shell removed, and sun dried

shrink  Loss of weight; loss in weight of grease wool in the cleaning process
shrinkage (drift)  Loss in livestock weight from farm to market; reduction in size or weight, e.g., difference between hot and chilled carcass weight

shrink film  Film that will shrink on reheating

shrink wrap  Plastic film that will shrink when heated

Shropshire A medium-wood, mutton-type breed of sheep that originated in west central England from several native types of sheep; its face is covered with wool except the mouth and nose area, which is usually brown to black; it has no horns and approximately ½ grade fleece
See Part 2: Sheep Breeds
shropshire blue A piquant-flavored, hard rind, blue cheese made from cow's milk
shroud Unbleached cotton duck cloth used on beef carcasses; used to improve carcass appearance and to reduce shrinkage
shrouding Placing wet shrouds on a warm beef carcass to absorb the blood and smooth the fat while the carcass is cooling
shrub A beverage made of sweetened fruit juice and alcohol
shuck To remove covering (pod, husk, or shell) from corn, peas, shellfish, etc.
shuckworm See hickory shuckworm
shui-guo Fruit
shungiku (Chrysanthemum spatiou; C. coronarium) Young plants that are used as cooked green vegetables. Aromatic greens cooked like spinach
shunt To provide an alternate pathway
shuring Pleating and compressing sausage casings to shorter length
shurpanir Dried, hard spheres of fermented milk or milk curds
SI 1) The international system of units 2) The metric system
Si Symbol for the element silicon
sibamu A beer made by adding skimmed milk to maize porridge
Siberian cisco (Coregonus sardinella) A food fish
sibling Offspring having one or both parents in common
sican gwyn Sour buttermilk and oatmeal gruel
sicer Strong drink
sicharon Skin and a thin layer of fat that is salted, fried, and stored in lard
Sicilian salami A coarse-chopped salami made from beef and pork
sicille An esbareich-type cheese matured from 1 month to 1 year
sickle hock A hock that has too much bend in it when viewed from the side
SIDA Swedish International Development Authority
sida Small (usually Barbus), dried fish packed in fish oil
side A half-carcass of pork or beef
See Part 2: Pork Cuts; Pork Wholesale Cuts; Pork Yield
side bone 1) An unsoundness in horses 2) Hip bone
side chain A straight chain attached to one of the atoms of a ring
side dressing Applying fertilizer along the row beside the plants
sidemeat Offal; organs; variety meat
side seal Sealing surface on containers; vertical portion of finish
side seam The body blank seam joining the two edges to form a can body
side wall The part of a glass container between the heel and the shoulder
sidi rais A red wine
sidi saad A red wine
siedlecka A semidry, uncooked, hot smoked Polish sausage made from medium or coarsely chopped, medium seasoned beef and lamb with plasma added and stuffed into beef casings
siedwurst A moist, cooked or uncooked Swiss sausage made from unsmoked, finely chopped, medium seasoned beef and pork and stuffed into beef casings
sierra A king mackerel, food fish
sierra rice A cooked, stable of fermented rice
sieve A perforated device for separating fine from coarser particles; a metal screen from 100 to 400 mesh
sift To put through a sieve (e.g., flour)
sifted Separation of material according to size by passing through wire sieves. The separation of finer material would be done by screening
sight glass A glass tube used to determine liquid level in a retort
sigma (Σ, σ) A Greek letter with an English equivalent of s; σ often used to denote standard deviation; Σ often used to denote "sum of"
significance (statistical) States that differences between samples are real and not due to chance variation. Significant difference (0.05; *) is a difference that has a 5% probability of occurring by chance alone; a highly significant difference (0.01; **) is a difference that has a 1% probability of occurring by chance alone
See Part 2: Correlation Significance; F-Distribution
significant Important; meaningful
significant effect One in which a treatment resulted in an average that was different (greater than that normally caused by chance) from another group(s)
significant figures The number of digits in a value that differentiates this value from the one next to it; it is independent of decimal points and zeros;

\[
\begin{align*}
231 & \quad \text{all have 3 significant figures} \\
0.00231 & \quad \text{If next number that could be read is 23200} \\
2.31 & \\
23100 & \\
\end{align*}
\]
si-iu A soy sauce
sikokiyana A viscous, brown-colored, slightly bitter, mildly alcoholic beer
silage Stored cattle fodder produced by fermentation (in a silo or trench protected from the air) of green fodder with the production of lactic acid, acetic acid, and sometimes other acids. Corn harvested when it reaches full maturity or black layer stage (kernel attachment is black; immature corn will be white). Can sometimes impart flavor to milk. Weight per cubic foot 30–45 pounds depending on depth in the silo, packing, and the substance from which the silage is made. Trench type, whole corn 50–60 cubic feet per ton; upright (16–24 foot diam) 45–55 cubic foot per ton
silba A medium-flavored, semisoft cheese
sild Young herring
silent cutter A bowl chopper, used for comminuting meat from sausage
silent spirit Distilled spirit with most of the products removed except ethyl alcohol and water

silesian cheese A cheese made from skimmed cow's milk and flavored with caraway seed and onions

silica See sand

silica, activated Sodium silicate that is precipitated by reducing the pH below 9. At a critical point of the precipitation (gel), it becomes a flocculation aid

silica gel A dehydrated form of sodium silicate, used as a dehumidifying agent in food packaging because of its highly porous structure, which enables it to absorb water molecules from the air

silicic Pericarp or seed vessel

silicon (Si) A nonmetallic element; at no. 14; at. wt. 28.09; Group IV A of Periodic Table; oxidation states +2, +4, −4

silicon dioxide (hydrated silica, silica aerogel) (SiO₂) used as a food defoaming agent or anticaking agent

silique Fruit of cabbage or related plants; pods of mustard family

Siljan's crispsbread A cracker containing no sugar

silk Cellulosic fibers within the corn husk

silk fiber An animal protein fiber constructed of the protein fibroin cemented together by the protein sericin. Obtained from the cocoon of the silkworm, which feeds upon leaves of the mulberry tree. The cocoons are dry-heated to kill the silkworm and placed in boiling water to soften the substance holding the threads together; the silk is then unwound, twisted or spun (called throwing), and then is ready for weaving on a loom. Processed silk fiber (yarn) is almost pure fibroin

silo A large cylindrical chamber or a trench in which silage is fermented and stored

silt Fine soil material

silver (Ag) A metallic element; at. no. 47; at. wt. 107.880; Group IB of the Periodic Table; oxidation state +1; highest electrical conductivity of any metal.

silver maple A tree that makes good firewood; 19 million Btu's per cord (20% moisture); medium-easy to start; easy to split; light smoke; excellent coals and few sparks

silver mullet See mullet

silver nitrate (AgNO₃) May be used as a germicide and antiseptic

silver perch A freshwater, drum, food fish

silver (coho) salmon A light meat, light to moderate flavor, fin fish See salmon

silverside (half-round) 1) The top or inside or medial or upper part of a beef round; cured beef from this area 2) A salmon

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silver skin Thin membrane on an onion

silver weed A weed whose roots are eaten like parsnips

silvex Chemical name: 2-(2,4,5-trichlorophenoxy)propionic acid. A phenoxy herbicide

simazine See Part 2: Corn Herbicides

simit A ring-shaped, wheat flour roll with sesame seed

SIM medium See Part 2: Microorganism, Media; Microorganism Reactions on Differential Tube Media; Microorganism, Selective and Differential Broths and Media, Water Filtration Plant

Semmental (Fleckvieh; Pie Rouge; spotted breed) A large, dual purpose, breed of cattle originally from Switzerland

Name
Czechoslovakian Strain—Czechoslovakia
Fleckvieh—Germany
Kula—Bulgaria
Polish Strain—Poland
Red Pied Friuli—Italy
Romanian Stain—Romania
Russian Strain—Russia
Simmental—Switzerland
Tachete Rouge—France
Yugoslav Pied—Yugoslavia

European red and white cattle; mature bull weight 2300 pounds

See Part 2: Gestation Periods

simmer To cook in a liquid at a temperature of approximately 185°F

See Part 2: Fruit, Dried, Simmering; Fruit, Simmering; Lamb Simmering; Meat Composition; Simmering Meat

Simmons citrate agar See Part 2: Microorganism Media; Microorganism Reactions on Differential Tube Media; Microorganism, Selective and Differential Broths and Media, Water Filtration Plant
simonsulei  A white or red wine
simple fruit  Fruit formed from a simple ovary; e.g., apple, peach, pear, and plum
simple glyceride  A glyceride in which all three acids of the triglyceride are alike
simple protein  A naturally-occurring protein made up primarily of amino acids
simple syrup  Solutions of sugar and water of various concentrations; usually boiled down to maximum of 35% water; used in confectionery, soda fountain syrups, etc. See gum syrup
simpson  A semihard, full fruity flavored cheese made from cow's milk
sim-sim  See sesame
sinasan  Shallow-fried cakes made from millet or sorghum flour
Sinchin  Black pigs with white marks, turned-up snouts, and erect ears found in northeast China and obtained by crossing Berkshire and local pigs
Sinclair, Upton  Author of The Jungle See Jungle, The
sine (sin)  A trigonometric function; \[ \sin = \frac{\text{ordinate}}{\text{hypotenuse}} \]
sinew  The tendon of a muscle
singe  To slightly burn the surface; to use a flame to remove hair or feathers; e.g., to burn hair when slaughtering hogs
singha  A rice beer
singhara nut  See water chestnut
single cell protein (SCP)  Potential food protein from microorganisms
single crust pie  A fruit pie with pastry top
single sampling  A decision to accept or reject a lot is made after examining one sample (usually not one item) from the lot
Single Standard Polled Durham  Cross of native polled cows with horned Shorthorn bulls; since 1905 all cattle must be traced to recorded stock; in 1919, Shorthorn was substituted for Durham in the name; in 1923 the association was disbanded and the pure polled Shorthorn was registered in the Shorthorn herdbook
Single Standard Polled Hereford  Registered from 1900 to 1907 and are a cross between a polled breed sire (e.g., Angus or Red Poll) and a horned Hereford cow; never were registered in American Hereford Record; since 1949 all lines must be traced to registered Hereford
single stimulus  See Part 2: Taste Panel, Difference Tests
sinigang  Meat or fowl soup cooked with tomatoes and vegetables and seasoned with sour fruit
Sinkiang fine-wool sheep  A white, fine-wool (60/64s quality), sheep raised for wool and found in northern China. Developed from Merino rams and Kazakh and Mongolian ewes
sintered glass  See fritted glass
sinus  A cavity in the bone structure; a blood channel

**sirup (syrup)**  A solution of sugar in water. May come from sugar cane, molasses, sorghum, maple, corn, or fruit

<table>
<thead>
<tr>
<th>Concentration</th>
<th>Cups</th>
</tr>
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<tbody>
<tr>
<td>for fruit</td>
<td>Sugar</td>
</tr>
<tr>
<td>Thin</td>
<td>1</td>
</tr>
<tr>
<td>Moderate</td>
<td>1</td>
</tr>
<tr>
<td>Medium (stock)</td>
<td>1</td>
</tr>
<tr>
<td>Heavy</td>
<td>2</td>
</tr>
<tr>
<td>Simple (bar, gomme, gum)</td>
<td>4</td>
</tr>
<tr>
<td>Stock</td>
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</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Sugar (cups)</th>
<th>Water (cups)</th>
<th>Sirup yield (cups)</th>
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<tr>
<td>30%</td>
<td>2</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>35%</td>
<td>2.5</td>
<td>4</td>
<td>5.3</td>
</tr>
<tr>
<td>40% (used for most fruits)</td>
<td>3</td>
<td>4</td>
<td>5.5</td>
</tr>
<tr>
<td>50%</td>
<td>4.75</td>
<td>4</td>
<td>6.5</td>
</tr>
<tr>
<td>60%</td>
<td>7</td>
<td>4</td>
<td>7.75</td>
</tr>
<tr>
<td>65%</td>
<td>8.75</td>
<td>4</td>
<td>8.7</td>
</tr>
</tbody>
</table>

1 pound = 1.33 cups
1 cup = 12 ounces
1 tbsp = 3 ounces
1 tsp = 3 ounces
Composition: table blends, 1 tbsp = 55 calories
sirup (syrup)

See also candy; syrup
See Part 2: Minerals, Food; Sugars and Sweets Composition

sirup, bar (sirup; gomme; sirup, gum) Bring 4 cups of sugar and 1 cup of water to a boil; simmer until clear; bottle

sirup, gomme See sirup, bar

sirup pack Food packed in a sugar sirup solution

siral (henequen; Agave sisalana) A plant used to produce coarse, strong, hard fibers

si-sek-chai Pickled mixed vegetables

site Pertaining to food

sitology Study of food, diet, and nutrition

sitophobia Refusal to eat; fest of food

sitosterol (C29H46O) A sterol that is found in the unsaponifiable fraction of vegetable oils such as corn, cottonseed, linseed, and wheat

situta See kumiss

six digit code See container specification code

si-yau A soy sauce made with wheat

size 1) To bring to dimensions. 2) A thin coating

size neutral A policy that would give benefits, in an amount such as to neither encourage nor discourage change in farm operation size

skabupurta A sour gruel made with buttermilk, milk, and barley

skaddon Larva of bee

skate A type of ray

Raja batis—skate; Europe; Atlantic
R. binoculata
R. erinacea—little; eastern U.S.; Pacific
R. laevis—Europe; Atlantic
R. lineca—sharp-nosed
R. marginata—owl
R. oxyrhynchus—long-nosed

A large flat fish
See Part 2: Vitamin D, Fish

skeel A vessel for milk

skeletal muscle Voluntary, striated muscle that is connected to the skeleton

skeleton The bony system of an animal or human body
See Part 2: Organ Weights

skeleton weed (Lygodesmia juncea) An annual weed

skewer (skiver) A long metal or wooden pen for fastening meat. May also be used to hold meat for grilling

skhou A spirit distilled from kefir

skhow See skhou

skid Single-faced platform used for supporting material during transportation or storage See pallet

skiddler (dead-head; spinner) A can with an incomplete double seam due to slipping on the base plate See dead-head

skillet A shallow frying pan

skim To remove the top layer, e.g., of fat from a liquid
See Part 2: Dairy Terms; Milk and Cheese Composition; Milk Composition; Milk, Concentrated Products; Nicotinic Acid, Food; Riboflavin, Food; Vitamin A, Milk and Milk Products

skimmed milk (nonfat milk; separated milk) A class name for skimmed milk, concentrated skimmed milk and nonfat dry milk; milk from which the fat has been removed by skimming or separating. Milk containing less than 0.5% milk fat and at least 8.25% nonfat milk solids. Addition of vitamin A (2,000 I.U. vitamin A per quart) is required and vitamin D (400 I.U. vitamin D per quart) is optional

1 cup = 245 g (8.5 oz).
See Part 2: Calories, Daily Recommendations; Microorganism, Culture Media, Dairy and Food Products; Microorganism, Media; Milk and Milk Products, Vitamin Content

skimmer See clam

skin 1) The exterior coating of the body, composed of epidermis, corium, and the subcutis as the major layers. 2) A small hide (in cattle, weighing under 30 pounds after curing. 3) A pelt of a small wild or domestic animal. 4) Animal hide used for holding liquids, e.g., wine. 5) To remove the skin
See Part 2: Gland Weights; Organ Weights; Poultry Yield; Turkey Composition

skinkupyls A moist, cooked, unsmoked Icelandic sausage made from finely chopped, medium seasoned pork with pork fat added and stuffed into artificial casings

skinless wiener A wiener that is cooked and smoked in an artificial casing, which is then removed

skip Light common pig or lamb
See Part 2: Casings, Hot Bungs

skipjack (Euthynnus pelamis) A food fish See tuna

skip-lot sampling When a specified number of consecutive lots have been accepted by sampling, with no lots rejected, the sampling frequency may be decreased by prescribed procedures

skipper (saury pike) A food fish
See Part 2: Cheese Skipper

skirret (Sium sisarum) A perennial, hardy vegetable producing a small, tender, sweet, fleshy, semicylindrical white root used similar to cooked salsify (cone must be removed)

skirt 1) The nonmuscle membrane of the diaphragm that separates the thoracic cavity from the abdominal cavity or the diaphragm muscle; narrow thin muscle used for steak or sausage. 2) Beef flank. 3) Vertical portion of a container closure
See Part 2: Beef Rib Nomenclature

skiver 1) The outer layer (wool side) of a split sheep skin made into leather and used to line shoes. 2) A skewer

skolepølse A dry, uncooked, smoked Norwegian sausage made from medium chopped, heavily seasoned beef and pork with plucks added and stuffed into artificial casings
skorup  Yogurt

skunky (lightstruck; sunstruck) A 3-methyl-2-butene odor and flavor of beer caused by exposure to light

skuta  A ricotta-type, cheese made from cow's milk with herbs; usually eaten fresh

skyr  A fresh, soft, low-fat, acidic, cheese made from cow's milk and eaten with sugar and milk or cream

slack  See slake

slack scalding  See semiscalding

slag  Waste material resulting from reduction of a metallic ore

See Part 2: Fertilizer Materials; Liming Materials

slag bush  See black haw

slake (slack)  To add water to CaO (calcium oxide), thus producing calcium hydroxide, or slaked lime;

\[
\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2
\]

slant  A sloping surface of agar used for microbiological growth

slapjack  A large pancake (also called flapjack)

slaughter  To kill or butcher an animal for a source of meat

slaughterhouse  A building in which animals are killed for market; an abattoir

slaw (coleslaw)  Cabbage served as a salad or relish, usually shredded and dressed with vinegar, etc. See coleslaw

slice  To cut into thin pieces or sections

slicing sausage  A moist, uncooked, unsmoked British sausage made from fine, medium or coarsely chopped, mild or medium seasoned beef, lamb, pork, veal, and goat and stuffed into artificial casings or not stuffed into casings

sliding rotation  The can rotation phase in a continuous agitating retort when cans slide producing slight product agitation

slime  A thin mucilaginous mixture of proteins, molds, etc.

See Part 2: Bacteria on Chickens at Various Holding Temperatures; Spoilage, Protein Foods

slimy  1) A thick, mouth coating, not readily dissolved by saliva, texture. 2) A food fish (Leiognathus equula)

slign  A long, strong, alcoholic drink (cocktail) that contains some sugar.

Types: brandy, gin

slink veal  The carcass of an unborn or stillborn calf

slinkweed  A plant having a toxic principle

See Part 2: Poisonous Plants

slip  Incompletely caponized male chicken See deadhead

slipcote  A soft, unripened cheese made from cow's milk with rennet added

slip joint  A section between bones that can be cut with a knife. A joint between ilium and vertebrae.

See Part 2: Beef Wholesale Cuts; Bone; Lamb, Wholesale Cuts; Pork Wholesale Cuts; Veal Wholesale Cuts

slippery elm (moose elm; red elm)  An herb used in botanic medicine

slit  A cut into food, usually to allow steam to escape

sliver  To cut into long, thin pieces

sli vered  See bean, green

slivovitz  Yellow-brown (aged in wood), plum brandy

slisowitz  Plum brandy

sljivovica  Yellow-brown (aged in wood) plum brandy

sloe  1) A dark blue, hard, sour, astringent, plumlike fruit from the blackthorn tree used for jam, flavoring, or gin. 2) Fruit of the U.S. native plum; fruit from wild plums

slo gin  Deep red liqueur made from macerated sloeberry (Prunus spinosa) and gin

slok  Several types of edible sea algae

slop  Dealcoholized beer

slop-fed  Fed on distillers slop

slopper  A buttermilk pancake

slouk  See red laver

slow cooker (crockery cooker)  A device for cooking foods at low temperature for periods up to 12 hours. To ensure bacterial safety, the temperature should be checked at the top of the food after 4 hours of cooking and it should be a maximum of 140°F

sludge  A thick mixture of solids and water, especially in reference to municipal wastes (sewage sludge)

See Part 2: Wastes, Agricultural and Industrial

sludge, activated  A process of secondary waste treatment that encourages the growth (forcing air into waste material) of aerobic bacteria and recycles viable bacteria back into incoming waste

sludge, volume of  Cubic feet of sludge per million gallons of waste flow

sludge, weight of dry solids  Pounds of dry sludge solids per million gallons of waste flow

slug  1) A vegetable garden pest

Host: many different kinds of plants

Damage: feed on foliage and berries

Control: soot and egg shells around plants seem to help; commercial slug baits See pear slug

2) 1 slug = 32.17 pounds (lb)

= 14.58 kilograms (kg)

sluice gate price  The cost of producing pork in non-EEC countries

slunk  A prematurely born or unborn animal

slunk skin  Skin of an unborn or stillborn calf

slurry  A mixture of starch and water (may contain other portions of corn) during corn refining

SM  See somatomedin

Sm  Symbol for the element samarium

smallage (Apium graveolens)  Wild celery See celery; lovage

small casings  Pork casings, often called rounds See also rounds
smallfish  See whitebait

smallholder  Cheddar cheese made on farms

small intestine  A long tubular digestive organ receiving contents from the stomach; the place where digestion is essentially completed and where monosaccharides, amino acids, fatty acids, and other small molecules are absorbed into the blood. Sections include duodenum, jejunum, and ileum; pH 6–8; juice from the pancreas and bile from the liver aid in digestion

small-mouth buffalo  (Ictiobus bubalus)  A food fish

small packers hides  Hides taken off by relatively unskilled labor

Small Yorkshire (Small White)  A small, white (occasionally with black spots) hog native of England

smartweed  (Polygonum pensylvanicum)  An annual weed

smash  An alcoholic (brandy, gin, whiskey) drink containing sugar, mint, and water

smatana  Sour cream

smear  A specimen of a body fluid placed on a glass slide for microscopic study

smearcase  A cottage cheese

smearing  Causing fat to coat lean tissue giving the appearance of a much fatter product; can be caused by any of the following: dull grinding equipment; rise in meat temperature; warm meat-handling equipment

smearwurst  See mettwurst

smell  To detect a scent or odor by the olfactory nerves  See odor

smelt (bay smelt; candlefish; Columbia river smelt; grunion eulachon smelt; jacksmelt; silverside; surf smelt; whitebait)  A number of small, troutlike fish caught in North Atlantic; Pacific coast, Columbia river, and bays from Mexico to Canada and Great Lakes.

American (Osmerus eperlanus mordax)—5% fat; Atlantic; freshwater, Lake Michigan; North America

Arctic (O. dentex)—Pacific; freshwater, North America

Columbia River—eulachon

Eulachon candlefish  (Thaleichthys pacificus), 10% fat

European (O. eperlanus), northeast Atlantic Pond (Hypomesus olidus)

A small (10–12 inch; 1–8 oz), both fresh and saltwater, finfish; color is greenish above and silver below; a light meat with a high fat content and a rich mild, very light delicate flavor.

Composition (raw): moisture 79%; protein 19%; fat 1–2%; ash 1%; fat-to-lean composition changes with type

American smelt (Osmerus mordax) 5% fat.

Eulachon or candlefish  (Thaleichthys pacificus) 10% fat.

See Part 2: Fish, Storage

smelt, green  Freshly caught smelt

smetana  Sour cream

smierkäse  Cottage cheese

smiggins  Barley soup

Smithfield ham  A deep red, heavily smoked, country ham cured with salt, saltpeter, and pepper and smoked with hickory and applewood; it is then aged from 7 to 18 months

Smith–Lever Act  The act passed in 1914 that established the Agricultural Extension Service

smjor  A cream cheese made from cow's milk

smoke  1) A colloidal suspension of a solid in air (or other gas). 2) To hang in smoke and apply smoke to food for flavor, color, and preservation, e.g., fish or meats

See Part 2: Fish, Smoke-Cured; Free Fatty Acid, Smoke, Flash, Fire Points

smoked meat  Meat that has been dried or cured and then wood smoke deposited on it; any hardwood makes a satisfactory smoke.

Smoked product—Minimum internal temp. 137°F; recommended internal temp. 140°F

Tender—140°F minimum internal temperature and a process leading to tenderizing

Cooked (fully cooked, ready-to-eat, ready-to-serve) —148°F minimum internal temperature and a description of the process which ensures partial separation of meat from bone, easy separation of tissue; and cooked color, flavor and texture throughout

smoked pork sausage  Pork sausage that has been smoked with hardwood or other nonresinous materials; maximum of 50% trimmable fat; maximum of 3% added moisture  See pork sausage

smokehouse  A building or container in which food is smoked and often heated

smokehouse shrink  Loss of weight, mostly moisture, during smoking and/or cooking

smoke point  Temperature at which fat starts to smoke.

<table>
<thead>
<tr>
<th>Fat</th>
<th>°C</th>
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<tbody>
<tr>
<td>Average lard</td>
<td>185</td>
</tr>
<tr>
<td>Leaf lard</td>
<td>220</td>
</tr>
<tr>
<td>Old lard</td>
<td>190</td>
</tr>
<tr>
<td>Crisco</td>
<td>230</td>
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</tbody>
</table>

High smoke points (215–230°C) are desirable for good frying fats or oils; smoke point temperature decreases as surface area exposure increases  See also flash point and various fats

smokie link  A cooked, smoked sausage; made with coarsely ground beef and pork and seasoned with pepper

smokies  A moist, cooked, heavily smoked, cured American sausage made from coarsely chopped, mildly seasoned (with black pepper) beef and pork and stuffed into pork or artificial casings

See Part 2: Fish, Smoke-Cured

smoking  Meat or fish preserved by drying in wood smoke

smoko  Morning and afternoon tea

smoky  1) A burntlike odor or flavor. 2) Cloudy appearance. 3) Emitting smoke
smooth An even (not rough) surface texture; free from hair, roughness, or indentations
smooth-hound A smooth dogfish used as a food fish
smooth (involuntary) muscle A muscle constructed of cells with a single nucleus found in the visceral area and the walls of most tubes in the body; it has slow, rhythmic contractions
smørbrød A moist, cooked, smoked Norwegian sausage made from medium chopped, mildly seasoned beef and pork and not stuffed into casings
smørk See morel
smorgasbord A sandwich table; a display of hors d’oeuvres; appetizers; a table with a variety of food, chiefly cold fish of several kinds; originated in Sweden
smorrebrod Open-faced sandwiches
smut Basidiomycetes, especially Ustilago triticici and Tilletia tritici that cause fleshy galls on corn stalks, leaves, tassels, and ears See rust
Sn Symbol for element tin
snack Food prepared and eaten quickly in place of a meal; a meal consisting of a small quantity of food; light meal; a very narrow (less than 10 mm), cooked and smoked, dry, beef and pork sausage
snail (Helix pomatia (most common) H. aspersa (smaller)) Edible type (Helix pomatia) called escargot. Available fresh, cleaned, or canned. Composition (raw): moisture 79%; protein 16%; fat 1%; carbohydrate 2%; ash 1%
snake gourd A tropical gourd that may be up to 6 feet in length; used as food; picked when immature, sliced, and boiled
snakeroot A bitter-tasting herb; grass whose leaves are used like spinach
snake squash See loofah gourd
snakeweed A plant having a toxic principle See Part 2: Poisonous Plants
snake wine A beverage made by soaking a snake in alcohol
snapper (mangrove; red; yellowtail; vermilion; Lutjanus spp.; Lutianus) Sometime refers to Pacific ocean perch, or small haddock less than 1.5 pounds 1) Several varieties of fish; a saltwater food fish weighting up to 30 pounds Types: Gray or mangrove Pargo or mutton fish Red Saltwater food fish Black (Apsilus dentatus)—northwest Atlantic Lane (Lutjanus synagris)—northwest Atlantic Mangrove (Lutjanus griseus)—north Atlantic Mutton (Lutjanus analis)—northwest Atlantic Pargo Colorado (Lutjanus colorado)—Pacific Red Emperor (Lutjanus sebae)—Australia Red Snapper (Lutjanus campechanus)—northwest Atlantic Schoolmaster (Lutjanus apodus)—northwest Atlantic

sockeye See salmon

soapy (slimy) A food fish
soave A white, dry, Italian wine
soba Buckwheat noodles
sockeye See salmon

See Part 2: Salmon and Trout
sockeye (red) salmon A darker meat, light to moderate flavor, finfish used for food

soda A general term for various sodium compounds; bicarbonate of soda; baking soda See also baking soda; caustic soda; ice cream soda; soda alum, sodium carbonate

soda alum (sodium alum) Aluminum sodium sulfate; used as a food additive and in baking powders See aluminum soda sulfate

soda ash See sodium carbonate

soda bread Bread that uses bicarbonate of soda or baking soda as a leavening agent; buttermilk or sour milk is also often used

soda cracker A crisp, flaky, nonsweet, usually salty, thin wheat flour biscuit made by fermentation and chemical aeration; a cracker made with cream of tartar
1 cracker = 2.8 grams
Composition: sodium 43 mg per cracker
See Part 2: Fermented Ingredients

soda glass Glass with a low melting point and a high coefficient of expansion that breaks easily under thermal shock

soda lye See caustic soda

soda pop A carbonated, nonalcoholic beverage

soda water Carbon dioxide in water under pressure (a misnomer)

sod buster bills Bills to prevent the plowing of range land and the planting of grain crops

sodium (Na) An alkali metal element; at. no. 11; at. wt. 22.997; Group IA of the Periodic Table; oxidation state +1
electron configuration 2–8–1
orbit K L M
Body function: found in buffer system, in saliva, pancreatic and intestinal juices; and in blood plasma and fluids outside the body cells; helps to maintain normal water balance
Body requirements (23–50-year-old female): 1,100–3,300 mg per day
Salt (sodium chloride) is 40% sodium
mg salt = mg of sodium/0.4
mg sodium = mg salt × 0.4
millequivalents of sodium (mEq) = mg of sodium/23
mg of sodium = millequivalents of sodium (mEq) × 23
Good sources: eggs, fish, many processed foods (salt added), meat, poultry
1 teaspoon, salt = 2,000–2,400 mg of sodium
1 shake of an average salt shaker = 144 mg sodium
See Part 2: Egg Products, Nutritive Value; Fruit and Vegetables Composition; Grain Analysis; Lemon Juice Composition; Macaroni and Noodles Composition; Manure Analysis; Maple Syrup Composition; Minerals, Food; Normal Solutions; Sodium-Restricted Diet; Tomato and Tomato Products, Composition; Wheat, Minerals

sodium acetate, hydrous (CH₃COONa·3H₂O) Can be used as a source of acetic acid for pH control in food; used as a preservative and as a food buffer
Storage: tight container

sodium acid carbonate See baking soda

sodium acid pyrophosphate (disodium dihydrogen pyrophosphate; disodium acid pyrophosphate; disodium pyrophosphate; SAP) (Na₂H₂P₂O₇) Used as a food buffer, sequestrant, acid in leavening mixtures, and to speed up color and development in sausage
Storage: tight container
See phosphate

sodium acid sulfate (sodium bisulfate) (NaHSO₄)
Used to bleach and swell leather

sodium acid sulfite (sodium bisulfite) (NaHSO₃)
Used as a disinfectant, bleach, and an antiseptic in fermentation

sodium alginate (alginate) [(C₆H₇O₆Na)n] A cream-colored powder used as a clarifying agent; a carbohydrate extracted from seaweed and used as an emulsifying and thickening agent and to prevent growth of ice crystals in ice cream See also alginate

sodium alum See aluminum sodium sulfate; soda alum

sodium aluminosilicate Used in washing compounds

sodium aluminum phosphate Used in cheese and as a buffer in flour

sodium aluminum phosphate, acidic

\[Na_2Al_2H_{15}(PO_4)_8 \text{ or } NaAl_3H_{14}(PO_4)_8 \cdot 4H_2O\]
Used as a food leavening agent
Storage: tight container

sodium aluminum phosphate, basic (kasal) Used as a food emulsifier
Storage: tight container

sodium alum Used as a food leavening agent

sodium ascorbate (vitamin C, sodium) (C₆H₇O₆Na)
Used as a food antioxidant; dietary supplement; nutrient
Storage: tight container in the dark
See ascorbic acid

sodium bentonite A fine grade of clay used to bind pellets

sodium benzoate (benzoate of soda)

\[
\begin{array}{c}
\text{O} \\
\text{C} \\
\text{Na}
\end{array}
\]
A food preservative and antimicrobial additive used in acid foods (pH 2.5–4.0), fruit products, and margarine; in use, it is converted to benzoic acid, the active form
Storage: tight container
See also benzoic acid

sodium bicarbonate (baking soda; bicarbonate of soda; sodium acid carbonate) (NaHCO₃) Used as a food alkali, buffer, or leavening agent; 27% sodium
sodium hypochlorite  697

Storage: tight container

See baking soda

sodium bisulfate (niter cake; sodium acid sulfate) (NaHSO₄) Used as a food acid
Storage: tight container

sodium bisulfite (sodium acid sulfite; sodium hydrosulfitie) (NaHSO₃) Often also contains sodium metabisulfite (Na₂S₂O₅); used as a food preservative
Storage: tight container in a cool place
See sulfur dioxide

sodium calcium alginate A food stabilizer, thickener, and texturizer

sodium carbonate (soda ash, washing soda) (Na₂CO₃) Used as a food alkali, food neutralizer, and water softener; an alkaline cleaner with good buffer capacity; poor water softener, fair emulsifier and deflocculant
Storage: tight container
See Part 2: Concentration of Commercial Strengths of Acids and Bases; Detergent Properties; Normal Solutions

sodium carboxymethylcellulose (cellulose gum; CMC); Used as a food stabilizer or thickening agent
Storage: tight container
See carboxymethylcellulose

sodium caseinate See casein

sodium chloride (salt) Used as a flavoring agent in food and intensifier, preservative, and nutrient
Storage: tight container
See salt (1)

sodium citrate (trisodium citrate) White, odorless, granules, crystals, or powder used as a complexing agent for iron and calcium in food; prevents coagulation of blood. Also used for pH control, as an emulsifier, buffer, sequestant, and nutrient for cultured buttermilk
Storage: tight container
See also citrate

sodium cyclamate (C₆H₁₂O₃NSNa) A nonnutritive artificial sweetener; prohibited for use in foods by FDA due to possible carcinogenicity

sodium decaphosphate See Part 2: Detergent Properties

sodium dehydroacetate

\[ \text{H}_3\text{C} - \text{O} - \text{O} - \text{C} - \text{CH}_3 \cdot 2\text{H}_2\text{O} \]

Used as a food preservative
Storage: tight container

sodium diacetate

\[ (\text{CH}_3\text{COONa} \cdot \text{CH}_3\text{COOH} \cdot \frac{1}{2}\text{H}_2\text{O}) \]

Can be used as a source of acetic acid; used as a food, mold, and rope inhibitor, sequestant, preservative, and antimicrobial food additive; often used in baked goods
Storage: tight container

sodium dichloroisocyanurate

[NaNC(O)NClC(O)NClCO]

Used as sanitizer and cleaning agent
See Part 2: Chlorine Availability; Sanitizers

sodium dihydroacetate A food stabilizer used in peeled squash

sodium erythorbate (sodium isoascorbate) (C₆H₇NaO₆ • H₂O) Used as a food preservative and antioxidant; used in cured meat
Storage: tight container in a dark place
See ascorbic acid

sodium ferric pyrophosphate (Na₈Fe₄(P₂O₇)₅ • xH₂O) Used as a food nutrient or dietary supplement
Storage: tight container

sodium ferrocyanide (yellow prussiate of soda) [Na₄Fe(CN)₆ • 10H₂O] Used as a salt, anticaking agent
Storage: tight container

sodium fluoride (NaF) An inorganic insecticide; an antifever; fluoridation of drinking water (1 part per million). It is poisonous

sodium gluconate [CH₂OH(CHOH)₄COONa] Used as a food sequestrant, nutrient, or dietary supplement
Storage: tight container

sodium hexametaphosphate A detergent sold under the trade mark of Calgon. Used as an emulsifier, sequestering agent, texturizer, or water softener
See Part 2: Detergent Properties; Phosphate

sodium hydrogen carbonate See Part 2: Reagents, Normal Solutions

sodium hydrogen sulfite See sulfur dioxide

sodium hydroxide (caustic soda; soda lye) (NaOH) Equivalent weight 40; molecular weight 40. Used as a food alkali, modifier of food starch, glazing agent, peeling agent, refiner of oils and fats, or neutralizer
Storage: tight container
See caustic soda

sodium hydroxide solutions

<table>
<thead>
<tr>
<th>Concentrations (wt/wt)</th>
<th>Freezing points</th>
</tr>
</thead>
<tbody>
<tr>
<td>50%</td>
<td>15°C</td>
</tr>
<tr>
<td>73%</td>
<td>63°C</td>
</tr>
</tbody>
</table>

sodium hypochlorite (NaClO) A disinfectant and deodorant used on food-handling material and for chlorination of water. Proprietary forms include Clorox and Purex. Household use should contain 2–6% chlorine and industrial use should contain 10–18% chlorine.

Recipe for disinfectant (0.4% solution):
2 oz fresh chloride of lime
4 oz washing soda
1 gallon of water

Decant or filter
See Part 2: Chlorine Availability; Chlorine Compounds; Sanitizers
sodium isoascorbate (sodium erythorbate) See ascorbic acid

sodium lauryl sulfate [CH$_3$(CH$_2$)$_{10}$CH$_2$OSO$_3$Na] Used as a food surfactant Storage: tight container

sodium metabisulfite (Na$_2$S$_2$O$_5$) Used as a food preservative (prevents fermenting of syrups and sugars and is also used as a preservative in beers, wines, vegetables, and fruit juices) or antioxidant (prevents cut fruit from turning brown); a preservative for silage Storage: tight container See also sulfur dioxide

sodium metaphosphate (Graham's salt; insoluble sodium metaphosphate; Kurrol's salt; sodium hexametaphosphate; sodium polyphosphate; sodium tetrametaphosphate; sodium tetraphosphate, sodium trimetaphosphate) [NaPO$_4$]$_x$ or Na$_2$H$_2$P$_2$O$_7$x-1 or Na$_2$P$_2$O$_{7x+1}$] Used as a food texturizer, emulsifier, and sequestrant Storage: tight container

sodium metasilicate (Na$_2$SiO$_3$) An alkaline cleaner that has good deflocculating and emulsifying properties; it is a fair water softener; also an emulsifier used in egg whites Storage: tight container in a cool place See Part 2: Detergent Properties

sodium methylate (sodium methoxide) (CH$_3$ONa) Used as a catalyst in transesterification of fats Storage: tight container in a cool place

sodium nitrate (Chilean saltpeter) (NaNO$_3$) Used in meat, poultry, and fish curing and fertilizers; fertilizer notation 16-0-0.2. A food preservative; prevents bacterial growth that causes botulism poisoning. Maximum of 500 parts per million nitrate in cured food; maximum of 10 parts per million nitrate in smoked cured tuna Storage: tight container See Part 2: Fertilizer Properties; Nitrate, Meat Curing

sodium nitrite (NaNO$_2$) Used in meat, poultry, and fish curing; content restricted to 200 parts per million and may be further restricted due to the possible formation of nitrosamines. A food preservative; prevents bacterial growth that causes botulism poisoning. Maximum 156 parts per million nitrite in cured foods; maximum 10 parts per million nitrite in smoked cured tuna Storage: tight container

sodium orthosilicate (Na$_2$SiO$_3$·2NaOH) A heavy-duty cleaner See Part 2: Detergent Properties

sodium oxide See Part 2: Normal Solutions

sodium phosphate (glassy sodium phosphate; Graham's salt; insoluble sodium metaphosphate; Kurrol's salt; sodium hexametaphosphate; sodium metaphosphate; sodium polyphosphate; sodium tetratetraphosphate; sodium trimetaphosphate) Range of composition from (NaPO$_4$)$_x$ through Na$_2$H$_2$P$_2$O$_7$x+1 to Na$_2$P$_2$O$_{7x+1}$. Sodium phosphate, dibasic (disodium monohydrogen phosphate; disodium phosphate) (Na$_2$HPO$_4$) Used as a food emulsifier, buffer, texturizer, nutrient, or dietary supplement Storage: tight container

sodium phosphate, monobasic (acid sodium phosphate; monosodium dihydrogen phosphate; monosodium orthophosphate; monosodium phosphate; primary sodium phosphate; sodium biphosphate) (NaH$_2$PO$_4$) Used as a food emulsifier, buffer, nutrient, or dietary supplement Storage: tight container

sodium phosphate, tribasic (trisodium phosphate) (Na$_3$PO$_4$) Used as a food emulsifier, buffer, nutrient, or dietary supplement Storage: tight container

sodium pyrophosphate (tetrasodium diphasphate; tetrasodium pyrophosphate) (Na$_4$P$_2$O$_7$) Used as a food emulsifier, buffer, nutrient, or dietary supplement Storage: tight container

sodium sesquisilicate (Na$_2$SiO$_3$) alkaloidal reagent

sodium sesquicarbonate (Na$_2$CO$_3$·NaHCO$_3$·2H$_2$O) used as a food alkalizer or neutralizer; inhibits bacterial growth in bakery products Storage: tight container See proprionic acid

sodium saccharin (sodium o-benzosulfimide) (C$_7$H$_7$NaO$_7$S·2H$_2$O) A nonnutritive sweetener approximately 500 times as sweet as sucrose Storage: tight container See saccharin

sodium selenite (Na$_2$SeO$_3$) alkaloidal reagent

sodium sesquisilicate See Part 2: Detergent Properties

sodium silicate (waterglass) Na$_2$SiO$_3$; Used as a preservative for eggs; in dried form as silica gel

sodium silicoaluminate (sodium aluminosilicate) (Na$_2$O/Al$_2$O$_3$/SiO$_2$) Made in the ratio of 1:1:13.2; used as a food anticaking agent Storage: tight container

sodium sorbate

\[
\text{CH}_3\text{CH}═\text{CHCH}═\text{CHC}═\text{O}═\text{Na} \quad \text{O}
\]

An antimicrobial food additive used in beverages, cakes, cheeses, fruit products, margarine, mayonnaise, processed meat, and syrups

sodium stearate (C$_{18}$H$_{35}$NaO$_2$) General purpose, food emulsifier
**sodium stearoyl-2-lactylate**  Used as a dough conditioner, emulsifier, volume increaser in bakery products, plasticizer, stabilizer, and whipping agent. Storage: tight container in a cool, dry place.

**sodium stearyl fumarate**  
\[
\text{NaOOCC} \quad \text{HCCOOC}_{18} \text{H}_{37}
\]
Used as a dough conditioner, maturing agent, or bleaching agent.
Storage: tight container

**sodium sulfate**  \(\text{(Na}_2\text{SO}_4\text{)}\) Used in caramel production.
Composition (decahydrate, \(\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}\): dry matter 97%; sodium 13.8%; sulfur 9.65%
Storage: tight container

**sodium sulfide**  \(\text{(Na}_2\text{S}\text{)}\) An ingredient of sheep dips.
See Part 2: Normal Solutions

**sodium sulfite**  \(\text{(Na}_2\text{SO}_3\text{)}\) Light pink, salty crystals or powder used as a food preservative and antioxidant; prevents browning in cut fruit.
Storage: tight container

**sodium tartrate**  \(\text{C}_4\text{H}_4\text{Na}_2\text{O}_6 \cdot 2\text{H}_2\text{O}\) Disodium salt of tartaric acid. Used as a food sequestrant.
Storage: tight container

**sodium tetrapolyphosphate**  \(\text{(STPP)}\) A heavy-duty detergent and cleaner.
See Part 2: Detergent Properties

**sodium thiosulfate**  \(\text{(sodium hyposulfite)}\)
\[
\text{(Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O})
\]
Used as a food sequestrant and antioxidant.
Storage: tight container

**sodium tripolyphosphate**  \(\text{(STPP)}\) A sequestering agent and detergent builder. Used in meat to reduce shrinkage; used as a texturizer; used as a water softener. See **sodium phosphate**
See Part 2: Detergent Properties

**soft**  1) A subjective term (soft to touch) used to describe maturity or ripeness of fruit; yields to physical pressure. 2) Pleasant to the senses. 3) Water free of minerals. 4) No alcohol. 5) Wheat low in gluten

**soft cider**  See **cider**

**soft crab**  Breakdown in a sanitary can; damaged can flange resulting in a hole between the end and body of the container.

**soft crack**  Hot syrup dropped in cold water yields hard but not brittle threads

**soft curd milk**  A milk treated (removal of 20% of calcium and phosphorus and by brief digestion with pancreatic enzymes) to form soft, more easily digestible curd for infant and convalescent feeding; milk from some cows has a lower percentage of casein, calcium, and phosphorus and forms a softer curd during digestion

**soft drink**  A nonalcoholic beverage that comes in many flavors (pH 2–4).

Includes:
- Any fruit drink, squash, crush, or cordial
- Soda water, Indian or quinine tonic water, and any sweetened, artificially carbonated water
- Ginger beer and any herbal or botanical beverage

1 quart = five 6 ounce servings

Stain removal from cloth: soak in cold water; wash in warm soaps and rinse. If stain remains in washable cloth, soak 15 minutes in 1 tablespoon of bleach and 1 quart of water; in colored cloth soak 1.5 hours in 2 tablespoon hydrogen peroxide and 1 gallon of water.

Cola composition: caffeine 46.8 mg caffeine/12 oz
Does not include natural spring water; fruit juice; tomato or vegetable juice; any drink based on milk, egg, meat, yeast, vegetable extract, tea, coffee, or cocoa.
See Part 2: Minerals (Trace), Limits; Portion Size; Stabilizers, Thickeners

**soft glass**  See **soda glass**

**soft hog**  A hog fed on acorns or peanuts

**soft roe**  Sperm or milt of male fish. See **milt**

**soft rot**  1) A fungus (collar rot; ring rot; **Rhizopus stolonifer**) rot caused by the "bread mold"; enters sweet potatoes through wounds and bruises. 2) Rot of fresh figs caused by **Rhizopus nigricans** and **Mucor spp.**, in which the fruit becomes soft and leaky, flesh turns brown, and the surface is covered with a coarse gray mycelium. Retarded by cooling to 50°F. See **black rot**; endospermia

**soft-serve frozen desserts**  Similar to ice milk but specially processed

**soft-shell turtle**  \(\text{(Trionychidae)}\) A freshwater, edible turtle

**soft soap**  Potassium soap

**soft water**  Water that is low in mineral salts; e.g., \(\text{CaCO}_3\) or \(\text{CaSO}_4\)

**soft-wheat flour**  Dough made from this flour tends to break rather than stretch, giving a light, porous structure to the baked product.

**softwood**  Wood from all species of coniferous trees (evergreens).
See Part 2: Fuel, Heating Value

**soggy**  Saturated; soaked; wet

**sognekorr**  A beef, lamb, pork, and horse salami that contains offal

**sognekorv gilde**  A dry, uncooked, smoked Norwegian sausage made from medium chopped, medium seasoned beef, lamb, pork, and horse with plucks added and fermented and stuffed into artificial casings

**sognemorr gilde**  A dry, uncooked, smoked Norwegian sausage made from medium chopped, medium seasoned beef, lamb, pork, and horse with large quantities of plucks added and fermented and stuffed into a beef casing

**soil**  The layer of weathered rock, silica, clay, etc., that covers much of the earth's land area.

Classification:
- Gravel—over 2 millimeters
- Sand, coarse—0.2–2.0 millimeters
- Sand, fine—0.02–0.2 millimeters
Silt—0.002–0.02 millimeters
Clay—less than 0.002 millimeters
Light and heavy—refers to amount of force needed for tillage, not to weight
Warm and cold—refers to power of the soil to hold the sun’s heat
Arid—soil that receives little rainfall
Alkaline—contains large deposits of mineral salt; carbonate of soda often present; more than 0.25% will prevent germination of seed; usually in arid or semiarid regions

See Part 2: Soil Classes

soilage Green crop
soil bank A program to achieve both soil conservation and production control objectives
soil-borne mosaic See mosaic
soil rot (ground rot; pox; Streptomyces ipomoea) A sweet potato disease that produces dwarfed plants and large pits in the often dumbbell-shaped potatoes
soil stain See scurf
soir Cheese made from sour, milk curd and flavored with caraway seed
soja See soybean
soju Vodka
solan A white, brined cheese
solanaceae See Part 2: Vegetables Classification
solanine A toxic glycoside in potato sprouts (0.04%)
solano A dry sherry
solder A low-melting alloy (98% lead, 2% tin) used for joining metals
Low tin: 5% or less tin
See also tin can
sole A lean, flat fish that has small mouth and gill openings, and eyes placed close together
Types:
Achirus—U.S.
Australian (Pseudorhombus spp.)—Pacific
Azovia (Solea azovia)—Portugal
Common (S. vulgaris vulgaris)—North Atlantic
Dover—Europe
In England the name used for common sole—England
Microstomus pacificus; Pacific (also called Slippery, Slime, and Short-Finned)—Pacific
English (Parophrys vetulus)—Europe (Queenselia azevia)—North Atlantic
Eyyed (Microchirus ocellatus)—Mediterranean
Flounder—in U.S., may be referred to as sole
French, sand—Mediterranean
Gray (witch flounder)—Pacific and Atlantic coasts;
Canada and central and northern Europe
Indian (Cynoglossus seminascens)—India
Lascar (Solea lascaris)—Atlantic, Mediterranean
Lemon (winter flounder)—Pacific and Atlantic coasts; Canada and central and northern Europe
Linnaeus (S. solea)—Europe
Malacostracea subbrachia
Megrim—England
New Zealand (Petrorhamphus novaeezalandiae)—Also called Common, or English

Pacific (petrale; rex; sand)—Pacific and Atlantic coasts; Canada and central and northern Europe
Petrale (Eopsetta jardani)—Pacific and Atlantic coasts; Canada and central and northern Europe
Rock sole—East Pacific
South African (Austroglossus microlepis, Austroglossus pectoralis)
Solea profundicola—deep water
Solonette—England
Symphurus—U.S.
Synaptura—Portugal
Thickback, variegated (Microchirus variegatus)—Mediterranean, England, Atlantic
Torbay—England
Witch—England
Yellow (Buglossidium luteum)—Atlantic, Mediterranean

delicacy and texture. White fleshed fish often substituted are flounder and fluke
Fillet = 0.25–0.75 pounds
Composition: protein 16.7%; fat 0.8–1.4%
See also demersal fish; flounder
See Part 2: Fish, Storage; Vitamin A, Fish; Vitamin D, Fish
solenoid An electromagnet coil with a moveable iron core
solid fat index Proportion of solid to liquid in a fat
See also dilatometry
solid foam A colloidal system in which a gas is dispersed in a solid, e.g., pumice
solidifying point The temperature at which an oil hardens to a soft solid
See Part 2: Margarine Production
solid mouth A mouth with a full set of good teeth
solid pack Canned without liquid and without sugar
solids The nonliquid portion of a food; nonvolatile
See Part 2: Cherry Composition; Lemon Juice Composition; Lime Juice Composition; Milk Breeds, Composition; Milk Composition; Milk, Mammals, Composition; Milk, Species; Milk, Total Solids
solids-not-fat The solids in milk excluding fat, e.g., calcium, casein
solnechnaya bolina A white, dessert wine
solomon's seal A wild lily whose shoots are used like asparagus
solubility The amount of a product (solute) that will dissolve in a given solvent at a given temperature
solubility product (K_sp)
When AB (solid) ⇔ A^+ + B^-
K_sp = (A^+)(B^-)
solubilizer A substance that will cause dispersion of an insoluble flavorant in water
soluble Capable of being dissolved; sugar and salt are among the many compounds that are soluble in water
solubles Dissolved substances and sometimes some suspended solids
soluble spice A dry mix of oils and/or resins combined with salt or dextrose. These spices dissolve easily and do not appreciably change the color of the
product. The potency is less stable (due to large surface area when placed on a carrier) than volatile oils

solute A substance dissolved in a solvent

solution A combination of solvent and solute; a uniformly dispersed mixture of two or more substances, which may be either liquids or solids

solvent A substance having the power to dissolve other substances; e.g., acetone, alcohol (ethyl, isopropyl), benzene, propylene glycol, vegetable oil, water

solvent-extracted Extraction of oils with an organic solvent

dolvaks stabbur A dry, uncooked, smoked Norwegian sausage (salami) made from medium chopped, medium seasoned, beef and horse with blood added and fermented and stuffed into artificial casings

som A Russian food fish See sheatfish

som-fak An affix that means body

somatomedin (SM) A factor induced by somatotropin; insulin-like polypeptide growth factor

somatostatin (SS) A chemical that inhibits somatotropin release

somatotropin (ST) A growth hormone (GH) that increases growth rate, improves feed efficiency, increases muscle mass, and decreases fat

sombrorski An esbareich-type cheese made from sheep’s and cow’s milk and cured for 3 weeks

sombrero An alcoholic beverage made by filling an 8-oz glass with ice cubes, adding 1½ oz (1 jigger) of coffee liqueur, filling with chilled milk, and stirring

somen Fine, wheat flour noodles

som-fak A fermented, salty (20-25%), fish paste, condiment

som khay Dried, salted fish Roe with fermented cooked rice and minced fish

somlo A dry, white wine

somloi furmint A firm, balanced, soft, Hungarian wine

somloi riesling A clean, delicate, Hungarian wine

SONAFAP Société Nationale de Farine Alimentaire de Poisson

soncoya See annonaceous fruit; custard apple

sondertysk spegepolse A beef and pork salami

song-i jim Mushrooms with beef

songknaden A pine-floral, fermented, duck egg

sonti See pachwai

sool A rice beer

soot A fairly rapid nitrogen fertilizer; should be well weathered

soothy blotch A fungus that appears as sooty or cloudy blotches on apple and pear surfaces

Control: fungicide spray

sooty stripe See Part 2: Sorghum Diseases

SOP Standard operating procedures

sop Food dipped in a liquid

sopra Soup

soporific A substance used to induce sleep

soppresata See frizzie

soppressata An Italian, pork salami with some marbling, chewy texture, and no garlic; a dry (moisture-to-protein ratio of 1.9:1 or less) sausage, lightly flavored (with garlic and hotly seasoned with red or black pepper) beef and pork salami; sausage placed in wrinkling hog middles See frisses

sor Strong chicha

sorhais A strong, semihard cheese made from cow’s milk that has a reddish brown rind and yellow interior

sorbet A frozen dessert or palate refresher or cleanser that contains no dairy products or egg yolks; texture comes from egg whites and fruit; vegetables may also be used; a water, ice, and liquor mixture See sherbet

sorbic acid (hexadienoic acid)

\[
\text{CH}_3\text{—CH—CH—CH—COOH}
\]

White powder, unsaturated fatty acid with two double bonds in the alkyl chain; used as a fungistatic agent in some foods (beverage, bread, cake, catsup; cheese, fruit products, margarine, mayonnaise, processed meat, syrups); it is a harmless substance that can be metabolized by humans. Occurs in unripe fruit of Sorbus aucuparia. The acid and its sodium and potassium salts are antimicrobial agents used in food for protection against molds and yeasts and some bacteria at levels from 1000 to 3000 ppm. Storage: tight container in a dark, cool (below 38°C) place

sorbirer A brandy made from rowan berries (Sorbus aucuparia) macerated and soaked in natural brandy

sorbitan esters Made from fatty acids and sorbitol. Used for gloss retention in coatings and as an emulsifier

sorbitan monooleate Polysorbate 80

sorbitan monostearate A food additive and emulsifier. Used as a food stabilizer, defoaming agent, flavor dispenser, and to prevent bloom in chocolate

Storage: tight container

See Part 2: Antioxidant Mixtures

sorbitol

\[
\text{HOCH}_2\text{—C—C—C—C—CH}_2\text{OH}
\]

A six-carbon alcohol found in food; used in ascorbic acid fermentation and to sweeten diabetic food; 60% as sweet as sucrose. Used as a texturizing agent, sequestrant, humectant, to thicken candy, and to inhibit crystallization of sugar; in large quantities it has a laxative effect. Occurs naturally in Pyrus aucuparia

Storage: tight container

sorbitol agar See Part 2: Microorganism, Media
sorbose (ketohexose)

\[\text{CH}_2\text{OH} (\text{CHOH})_4 \text{CO} \cdot \text{CH}_2\text{OH}\]

A six-carbon sugar used in manufacture of ascorbic acid and in special diets

sorghum (brown corn; dura; erron; Sorghum bicolor; S. vulgare)

Size: 1–5 meters tall (15–30 joints)
Growth period: average 110 days
Use: human and animal food, molasses, alcoholic beverages, bread, porridge; flour used for mush, pancakes, pudding, and wheat flour additive
Types:
- Broomcorn—panicle used to make brooms
- Grain sorghum—livestock and human consumption; seeds thresh clean; more grain in relationship to vegetative part than other grain plants
- Grass sorghum—posture or green chop (e.g., sudan grass)
- Grassy—wild types
- Sweet sorghum or sorgos—forage and syrup; seed enclosed by glumes; abundant sweet juice

Seed:
- Color—brown, pink, red, yellow, white (white and yellow preferred for human food)
- Shape—roundish ovoid to flat
- Texture—chalky, flinty
- Drought tolerant
- Weight:
  - 1 bushel = 56 pounds
  - 1 bushel in head = 80 pounds
- Feed value compared to corn at 100%:
  - Poultry and swine—95–98%
  - Cattle and sheep—85–90%

14.9 megajoules per kilogram edible energy value See sorghum grain

See Part 2: Sorghum Diseases; Sugars and Sweets Composition

sorghum beer

A clear, sour, thick, mildly alcoholic beverage fermented from sorghum or millet or sometimes maize or banana

sorghum, distillers grain

Composition (dehydrated): dry matter 94%; protein 32%; fiber 12%; fat 9%; ash 3.6%

sorghum grain (grain; gyp corn; higear; kafir corn; millet; milo maize; Holcus sorghum; Sorghum vulgare) Milo maize, kafir corn, and maize are often applied to sorghum but are misnomers. An annual grass plant that can be used for grain (small, oval, pointed, black, or brown), syrup, silage, and food. It includes basic groups in U.S.:
- chicken corn (now considered a weed), durra, feterita, guinea corn (no longer used), hegari, kafir (most popular) and kaoliang, milo (most popular), and shallu

Hybrids:

<table>
<thead>
<tr>
<th>Maturity class</th>
<th>Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earlier Than Norghum</td>
<td>300</td>
</tr>
<tr>
<td>Norghum</td>
<td>400</td>
</tr>
<tr>
<td>Rilance</td>
<td>500</td>
</tr>
<tr>
<td>Martin</td>
<td>600</td>
</tr>
<tr>
<td>Plainsman</td>
<td>700</td>
</tr>
<tr>
<td>Dwarf kafir 44-14</td>
<td>800</td>
</tr>
</tbody>
</table>

Series 500 and 600 are major grain sorghum areas. Grain can be wet-milled (starch, edible oil, and gluten feed) or dry-milled (flour and a number of industrial products).

Approximate nutrient used for:

<table>
<thead>
<tr>
<th>40 bushels of grain</th>
<th>2 tons of fodder</th>
</tr>
</thead>
<tbody>
<tr>
<td>N (lb)</td>
<td>33</td>
</tr>
<tr>
<td>P₂O₅ (lb)</td>
<td>20</td>
</tr>
<tr>
<td>K₂O (lb)</td>
<td>7</td>
</tr>
</tbody>
</table>

Sudangrass: 40–50 lb/bu; plant 25–40 lb/acre
Grain: 56 lb/bu; plant 5–8 lb/acre
Forage: 50 lb/bu; plant 5–10 lb/acre

Lysine is the first limiting amino acid and threonine is the second; grain storage 12% moisture; pH 5–5.5. Starch is of the waxy (devoid of amylose) type. Feeding value similar to corn; deficient in lysine; devoid of carotenoid pigments and vitamin A precursors; high in niacin. When priced 95% or less than corn per hundredweight it is a good buy.

Process for feeding:
- Swine and sheep:
  - Cracked
  - Ground
  - Rolled
- Cattle:
  - Flaked
  - Steam rolled

Pastured secondary growth can cause prussic acid (HCN) poisoning.

Other uses:
- Food—dextrose; substitute for tapioca
- Industrial—alcohol; building material; adhesives

See millet; sorghum

See Part 2: Cereal Composition; Cereal Fortification; Cereal Nutrient Content; Cereals, Vitamin and Mineral Content; Nutrients in Crops; Poisonous Plants; Seed, Chemical Composition; Seed, Germination; Sugars and Syrups Composition; Sweetness of Sweeteners; Sweetening Agents

sorghum syrup (sargo; sorghum molasses)

Made by concentrating juice of sugar sorghum (Sorghum bicolor). Juice is squeezed from stalk and heated over a slow fire for concentration; during heating, protein and green coloring matter rise to the surface and are skimmed off. Peculiar favor

1 cup, sugar = 1 cup, sorghum syrup

Maximum 30% water; max. 6½% ash (dry wt basis); 36% sucrose; 27% glucose

1½ cups = 1 pound
1 cup = 330 grams (11.6 ounce)
sorghum webworm (Celama sorghiella) An insect that attacks sorghum
sorgo See sorghum syrup
soria A goat's milk cheese
sorosis See Part 2: Fruit Classification
sorrel (herb patience; patience dock; sour grass; sourock; Rumex acetosa) 1) A perennial vegetable or herb with arrow-shaped, slightly acid (oxalate of potash) leaves that are used fresh as greens, salads, in soups, and cooked like spinach; similar to dock; reddish in color. Variety French broad leaf French sorrel (R. scutatus; R. montanus)—less acid; mildest Garden sorrel (R. scutatus) Spanish dock (garden patience; monks rhubarb; R. patientia) Wood (Oxalis acetosella) or mountain (Oxyria digyna)—strongest 2) A rum liqueur or nonalcoholic beverage flavored with sorrel flowers (Rumex) See Part 2: Organic Acids in Fruits and Vegetables; Planting Density; Vegetable Plants sorrel, French (Rumex scutatus) A perennial herb whose fresh leaves are used in greens, as spinach, and in soup See sorrel sorrentini A small, provolone-type cheese made from cow's milk sorrento A medium to coarsely chopped, uncooked, unsmoked, American sausage that is fermented and/or dry or semidry and available in links, rings, or large diameter casings sorte maggena A parmesan cheese sorte verenga A parmesan cheese sosisser A moist, cooked, unsmoked Norwegian sausage made from finely chopped, mildly seasoned beef, pork, and veal sausage and stuffed into sheep casings sosho shosha A Japanese trading company souari nut (butter nut; guiana nut; paradise nut; swarri nut) A rich-flavored, South American nut in a thick woody shell soubressade A semidry, uncooked, unsmoked French sausage made from medium chopped, heavily seasoned, beef and pork and fermented and stuffed into beef or pork casings soufflé A fluffy beaten egg-white dish similar to an omelet except it uses a white sauce base and cheese or vegetables or ground meat as flavor and is usually baked in a 350°F oven. Usually a dessert but there are meat (also fish and poultry) and vegetable types. Puff, whip, and gelatin-based desserts are also referred to as soufflé; a fluffy sherbet with eggs (2 per gallon); a light pudding; made light by beating and cooking soum A clear, mildly alcoholic, sorghum beer soumaintrain A muenster-type cheese made from cow's milk; a soft, yellow cheese made from cow's milk and with an orange rind soumbala A type of dawadawa soumbara A type of dawadawa sound Free from disease and with no abnormality of structure that will interfere with usefulness soundness Healthiness of animal or some part of animal; performing properly sound, velocity In dry air at 0°C and 1 atmosphere the velocity of sound is 33,136 centimeters per second or 1,089 feet per second soup A liquid food made by boiling meat and/or vegetables in water with various seasoning agents, broth; a creamed soup also contains fat, flour, and milk. Classes: Clear—cold; hot; jellied; liquid Thick—not pureed; pureed or creamed Types: Thin clear soup—stimulates appetite Bouillon Broth Chicken Consomme Fruit Julienne Thin light cream soup Cream of asparagus Cream of celery Cream of lettuce Cream of peas Cream of tomato Cream of watercress Heavy thick soups Bisques Chowders Fish soup Mulligatawny Pepper pot Scotch broth Vegetable soup Jellied soup Other type classifications: Chicken Clear Combinations Meat Vegetable Procedure: Cut meat into small cubes Brown (unless white soup stock is desired) 1/3 of meat cubes at a time; add water to dissolve brown matter; add broth liquor and browned cubes to cold water Soak 1/2–1 hour in cold water Simmer 3–4 hours with bone and fat Vegetables are added in last hour of cooking Pour through colander Cool and remove fat from top Clarify if desired, with one egg white and one crushed shell per quart of broth, heat to boiling and strain through several thicknesses of cheesecloth See Part 2: Portion Size; Soups, Composition soup bone A bone used in making soup soup, dehydrated Soup, quick dried to preserve flavor souffin shark (Galeorhinus zyopterus) A food fish See shark
soup mace  Pasta

soup stock  A concentrated solution in which meat (beef, chicken, fish, pork) has been stewed

soupy  Undesired dilution; too much liquid

sour  1) An acid flavor; a taste sensation of tart or acid; fermented. 2) Spoiled; distasteful or unpleasant such as spoiled, rancid, or below standard. 3) An alcoholic drink made by shaking ice with 3 oz (½ jigger) lemon juice, 1 tsp sugar and 1½ oz (1 jigger) bourbon, rye, applejack, brandy, gin, or rum and straining into a glass and adding a cherry or orange slice on rim

sour cherries  See cherry

sour cream  A cultured cream product made by adding Streptococcus lactis (lactic acid-producing) and Lactococcus lactis (flavor) to pasteurized coffee cream (light cream). A viscous, thick, high-fat, cow's milk cream that is fermented or has lactic acid added. USDA grade is "Quality Approved" (good quality and manufactured in a clean plant)

sour cream, acidified  Sour cream made by adding food grade acid to light cream instead of a bacterial culture; same degree of wholesomeness

sour cream dip
1 serving = 1 ounce

sour cream, imitation (nondairy)  Composition: moisture 71%; protein 3.9%; fat 14%; carbohydrate 9%; fiber 0%; ash 0.4%

sour cream sauce

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dehydrated</th>
<th>Prepared with milk</th>
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</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>16.6</td>
<td>69.0</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>15.7</td>
<td>6.1</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>31.4</td>
<td>9.6</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>48.3</td>
<td>14.4</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>3.0</td>
<td>1.2</td>
</tr>
</tbody>
</table>

sourdough bread  An acid-tasting, fermented, aerated bread made from rye, wheat, or mixed flour

sour grass  See sorrel

sour half and half  Made like sour cream except half-and-half is the starting product; low-fat, sour cream. Composition (cultured): moisture 80%; protein 2.9%; fat 10.5–12%; carbohydrate 4.5%; ash 0.7%

sour, half and half, acidified  Sour half and half, made by adding good grade acid, to half and half, instead of a bacterial culture

souring (milk)  The action induced by bacteria on lactose (milk sugar), producing lactic acid, which gives the sour taste and causes coagulation (curd formation). Optimum temperature for souring is 40°C

1 cup, sour milk  = 1½ tbsp, vinegar + 1 cup, sweet milk
= 1½ tbsp, lemon juice + 1 cup, sweet milk
= 1½ tsp, cream of tartar + 1 cup, sweet milk
= 1 cup, buttermilk

See also curd; lactic acid; whey.

sour mash  A type of fermentation used in the manufacture of whiskey in which the yeast is obtained from "spent" beer (beer from which alcohol has been removed by distillation). It is slower (72 hours) than sweet mash and yields less whiskey, but has a distinctive flavor

sour milk  Yogurt

sour orange (Seville, bitters; Citrus aurantium)  An orange that has a bitter taste and is used to make marmalade; also has been used for root stock for other citrus plants See also citrus fruit

sour pickles  Cucumbers are cured in salt brine 4–6 weeks, desalted with hot water, and placed in pure distilled vinegar with spices

Types: chow chow, mixed sour, sour relish, whole sour See chow-chow

sour rot  1) Decomposition of eggs in which the egg white becomes thin and yolk thickens; when broken, the egg has an ammonia odor. 2) Rot of ripe or overmature citrus fruit in storage or transit caused by the soil fungus Geotrichum candidum. Symptoms are: slightly raised, waxy, water-soaked spot that is buff-yellow colored; later a water-soaked layer of compact cream-colored growth develops on the surface. The tissue is very sour smelling. Storage below 40°F retards growth.

soursop (guanabana; Annona muricata)  A small, tropical American tree that produces a large, pear- or custard apple; also has been used for root stock for other citrus plants See also annonaceous fruit; custard apple

sour-sour  See masha

souse (sulz; sulze)  1) A jellied product made from pork (cheeks, feet, heart, shoulder hocks, skin, snouts, and tongues); vinegar and commercial gelatin are added and it is then cooked. A coarsely chopped to chunked, cooked, unsmoked, American, jellied and/or specialty sausage available in links, loaves, or canned; similar to head cheese; often contains dill pickles, sweet red peppers, and bay leaves. 2) To immerse, steep, or soak in a liquid

sousage  See Part 2: Sausage, Types

sousing  Marinating and cooking in salt, vinegar, and spices, often used for fish

South American braided  A golden, braided, sheep's milk cheese

Southdale  A breed of sheep originated by USDA by crossing Southdown and Corriedale
South Devon A dual (beef and milk) purpose (Devon in contrast to South Devon is primarily beef), medium red cattle developed in southwest England

Weight:
Bulls—2000–2800 pounds
Cows—1500–1600 pounds

Southdown A medium-wool, mutton-type breed of sheep that originated in southeastern England from native Sussex sheep; face is brown to gray-brown in color; body is small and compact; no horns; fleece grades from 1 to 3

See Part 2: Sheep Breeds

Southern Comfort A trade name for a high alcoholic, peach- (Prunus persica) flavored liqueur

Southern corn rootworm An insect that bores into corn stalks just below the ground; bud of young plant wilts; worse after a heavy green manure crop

Southern flounder A white meat, very light delicate flavor, finish

Southern pea (Vigna unguiculata) Used as fresh-shelled peas or mixed with immature pods and as dry peas See cowpea; pea; pea, black eye

See Part 2: Vegetable Composition, Part I

Southernwood (lad’s love; old man; Artemesia abrotanum) A perennial herb with sweet foliage that is sometimes used to flavor beer; plant whose leaves are used in salads or eaten cooked

South sea island tea See yapon

Southwestern corn borer (Diatraea grandiosella) An insect that attacks grain plants

Southjoukia A dry or semidry, cooked, unsmoked Greek sausage made from coarsely chopped, heavily seasoned lamb sausage and fermented and stuffed into sheep casings; eaten after cooking in sheep fat

Sovetskii A 12–15-kg, brick-shaped, Swiss cheese made from cow’s milk

Sow 1) A female hog that has or soon will farrow a litter of pigs. Average gestation period: 114 days (range 110–120); average duration of heat 2–4 days; normal recurrence of heat 21 days. 2) To scatter seeds; to plant

See Part 2: Liver; Swine Market Classes and Grades

Sowans A sour (buttermilk, milk, or yogurt) oatmeal and husk gruel

Sow thistle See milkweed

Soxhlet A device used for extraction in chemical laboratories

Soy See soybean; soy sauce

Soya See soybean

Soybean (boyabean; Chinese pea; Lincoln bean; Manchurian bean; soja bean; soy; soya; soybean; Glycine max; Soja hispida; S. max) Origin eastern and southeastern Asia. An annual leguminous herb of the pea family grown for its oil (20%) and protein content (40%). It contains a trypsin inhibitor that is inactivated by heat. Contains 25% carbohydrate. Pods are straight or slightly curved, straw, gray, brown, or nearly black in color and contain 1–7 seeds per pod, which are small, round to oval or elliptical, white, yellow (most popular), brown, green, black, black and green, and black and yellow. Used for hay, flour, meal, oil, soy sauce, meat substitutes, and young bean sprout (2–3 inches long). Plant in rows 30–60 pounds per acre; drilling 90–120 pounds per acre; 110 to 130 days to maturity. Nitrogen fixing bacteria Rhizobium japonicum

Forms:
Fresh green—vegetable; some varieties are suitable for human food
Canned green
Coffee substitute
Curd—prepared from soy milk; canned, fresh, instant
Dry—roasted
Flour—defatted, full fat
Green manure—soy plant
Grits
Isolate
Mash or pulp—solid left when making soy milk
Milk—made from dry beans; beverage
Oil
Protein concentrate
Sauce—fermented
Sprouts—salad vegetable
Textured protein
Garden type—harvest green bean like lima; roast dried beans like peanuts
Edible type—2–3 oval-shaped, green beans per pod; can be frozen or canned
Vegetable soybean varieties—bean color yellow, green, black and green, black and yellow

Soybean, human food

<table>
<thead>
<tr>
<th>variety</th>
<th>Pod</th>
<th>Bean Use</th>
<th>Season (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiskeby V</td>
<td>3 in.</td>
<td>2–3 per pod</td>
<td>Garden</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Early, 70</td>
</tr>
<tr>
<td>Frostbeater</td>
<td>2 per pod,</td>
<td>cook to slimey green</td>
<td>Green shell, dry beans, sprouts</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Early, 75</td>
</tr>
<tr>
<td>Giant Green</td>
<td>2–3 per pod,</td>
<td>oval, bright green</td>
<td>Garden</td>
</tr>
<tr>
<td>Kanrich</td>
<td>2–3 per pod,</td>
<td>oval, bright green</td>
<td>Green shell, frozen, canned, dried, sprouts</td>
</tr>
<tr>
<td>Prize</td>
<td>2–3 per pod,</td>
<td>oval, bright green</td>
<td>Garden</td>
</tr>
<tr>
<td>Other varieties:</td>
<td>Dormann, Jackson, Laredo, Lee, Ogden, Ottalan, Roanoke, Wabash</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Parts of plant used for:
Dried bean—vegetable, human food
Fermented bean—vegetable, human food
Flour—baking
Fresh bean—vegetable, human food
Milk (extracted from seed)—cooking
Oilseed cake—livestock feed
Soy plant—livestock feed
Soy sauce—flavoring
Young bean sprouts—vegetable, human food

Harvest hay when beans are fully developed and lower leaves yellowing. Green beans are difficult to remove from pod unless they are boiled (10 minutes) or steamed (4–5 minutes) to facilitate shelling
To soak dry beans: 3 cups of water to 1 cup of dried beans
1 bushel = 60 pounds (lb)
1 quart = 1.8 pound (lb)
1 lb = 2 cups
1 cup = 210 grams (7.4 ounces)
1 cup, dried = 2.5–3 cups, cooked
Storage: maximum of 10% moisture

See Part 2: Beans Dry, Cooking; Minerals, Food; Nutrients in Crops; Oils, Seed and Fruit; Plant Foods; Composition Planting Density; Pulses, Nuts and Seeds Composition; Seed, Chemical Composition; Seed Composition; Seed, Germination; Soybean Composition; Sugar, Legumes; Unsaponifiable Matter; Vegetable Composition; Vegetable Planting and Maturity Chart; Vegetable Plants; Vegetable Yields; Wastes, Agricultural and Industrial

soybean curd A cooked, curdled, soft, firm, soy bean product prepared from soy milk; may be obtained fresh, canned, or as an instant powder
1 1/2 cakes (2 1/4 x 2 1/4 x 1 inch)
= 1 cup of 1-inch cubes
10 ounce, can (drained weight)
= 2 cups, of 1-inch cubes
Storage: cover with water (change daily) and refrigerate; will keep for several days
See tofu

soybean, dry
Drying:
Pick when mature and spread in warm, dry place
until dry or after pods are ripe pull and dry bean plants like hay
Protection after drying:
Refrigerate at 0°F or lower for 4 days or heat in oven at 180°F for 15 minutes and leave in oven for 1 hour with heat turned off
Soak: 4 cups of water and 1 cup of dry beans. Boil 2 minutes, removed from heat, let stand for 1 hour, or boil for 2 minutes and refrigerate overnight
Boil: soak, add 1 tablespoon salt per cup of dry beans, cover, and simmer 2–3 hours
1 cup, dry beans = 2 1/2 cups, cooked
Storage (dry beans): cool (32–40°F), dry place; storage life is many years
Storage (cooked beans): cover, refrigerate for 1 week

soybean, edible Used like green bean when immature; dry beans used like limas; 200 seeds per ounce

soybean, field type Smaller and less mild than vegetable type; used for oil and commercial flour production

soybean flour (soya flour; soy flour) Flour made from soybeans. A high-protein, low-carbohydrate flour (100 mesh or finer) made from ground, dried soybean meal; lacks gluten-forming properties. Usually mixed up to 20% with wheat flour to make baked products.

Types:
Full fat—soybean ground with only hull removed
Low fat—made from presscake from removal of oil
Defatted—fat has been removed by hexane extraction

Used in baking:
Browns quickly
Finer texture
Increases moisture
Increases tenderness
Keeps baked products from becoming stale
Reduces fat absorption
Richer color
1 cup, defatted, stirred = 3.6 ounces (oz)
1 cup, low fat, stirred = 3.1 oz
1 cup, full fat, stirred = 2.5 oz

soybean grits (soya grits; soy grits) A cooked, mushlike product made from soybean presscake (usually made in defatted form). Similar to soy flour but more coarsely ground.
soybean, sprouts  707

<table>
<thead>
<tr>
<th>Particle size</th>
<th>U.S. screen mesh</th>
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<tbody>
<tr>
<td>Coarse</td>
<td>10-20</td>
</tr>
<tr>
<td>Medium</td>
<td>20-40</td>
</tr>
<tr>
<td>Fine</td>
<td>40-80</td>
</tr>
</tbody>
</table>

1 cup, high fat = 4.9 ounces

Storage: after opening, cover tightly and store in a cool, dry place

See also grits

soybean hay
Composition (dry hay): moisture 11%; protein 15.4%; fiber 22.3%; nitrogen-free extract 39%; fat 5%; ash 7.2%

soybean meal
Ground presscake (oil-free) made from the cotyledons of the soybean; used as cattle feed and fertilizer (7-1.2-1.5)
1 bushel = 48-50 pounds (lb)
1.28 lb, soybeans = 1 lb, soybean meal
1 quart = 1.4 lb
41, 44, or 49% protein meal

<table>
<thead>
<tr>
<th>Composition</th>
<th>Seed, mechanical extracted</th>
<th>Seed, solvent extracted</th>
<th>Seed, without hulls, solvent extracted</th>
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<tbody>
<tr>
<td>Dry matter (%)</td>
<td>90</td>
<td>90</td>
<td>90</td>
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<tr>
<td>Protein (%)</td>
<td>43</td>
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<td>Fat (%)</td>
<td>5</td>
<td>0.5-1.2</td>
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<tr>
<td>Carbohydrate (%)</td>
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<td>33</td>
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<tr>
<td>Fiber (%)</td>
<td>6</td>
<td>5.8</td>
<td>3.4</td>
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<tr>
<td>Ash (%)</td>
<td>6</td>
<td>6-6.3</td>
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</tbody>
</table>

See Part 2: Oil Meals Composition

soybean mash (soybean, pulp)
Solid material remaining after making soybean milk. Must be heated thoroughly (1 hour over boiling water in a double boiler) to remove beany flavor and prevent spoilage. Add 1 teaspoon salt, cool and refrigerate. It has a bland flavor and coarse texture.
1 pound, bean prepared for milk = 1 quart mash

soybean milk
Extract of soybean used for people allergic to cow's milk

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<tr>
<th>Composition</th>
<th>Dry</th>
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<tbody>
<tr>
<td>Moisture (%)</td>
<td>4</td>
<td>92</td>
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<tr>
<td>Protein (%)</td>
<td>42</td>
<td>3.5</td>
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<tr>
<td>Fat (%)</td>
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<tr>
<td>Carbohydrate (%)</td>
<td>28</td>
<td>2</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>6</td>
<td>0.5</td>
</tr>
</tbody>
</table>

See soy milk

soybean mill feed
Soybean hulls used as feed; 13% protein, not more than 32% crude fiber

soybean mill run
Soybean hulls used as feed; 11% protein, not more than 32% crude fiber

soybean oil
A bland, light to brownish yellow, oil extracted from soybean with hexane or pressure; 5.45 pounds soybeans yields 1 pound soybean oil
Types:
Processed—light color; mild flavor
Unrefined—dark brown color; strong flavor

Composition:
Arachidic—0.2%
Eicosanoic—0.8%
Linoleic—51-55%
Linolenic—6-8%
Myristic—0.1%
Oleic—22-29%
Palmitic—10%
Stearic—3%

Properties: acid number 3.50; free fatty acid 0.014%; iodine value 120-141; melting point -16°C; phospholipids 1.8-3.2%; saponification value 185-195; saturated fatty acids 10-18%; sp. gr. 20°/4°C 0.9228; titer 20-27°C; unsaponifiable 0.5-2.0

Smoke point  Flash point  Fire point
<table>
<thead>
<tr>
<th></th>
<th>(°F)</th>
<th>(°C)</th>
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<td>181</td>
<td>564</td>
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<td>crude</td>
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<td>210</td>
<td>603</td>
<td>317</td>
<td>670</td>
<td>354</td>
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<tr>
<td>Refined</td>
<td>492</td>
<td>265</td>
<td>618</td>
<td>326</td>
<td>673</td>
<td>356</td>
</tr>
</tbody>
</table>

Storage: store in refrigerator after opening

See Part 2: Fat and Oils, Fatty Acids Composition; Fats and Oils, Characteristics; Fats and Oils, Composition; Fats and Oils, Physical and Chemical Properties; Fatty Acids, Fats and Oils; Free Fatty Acid, Smoke, Flash, Fire Points; Iodine and Saponification Values; Oil or Fat, Characteristics; Oil, Triglyceride Mole Percent Composition; Refractive Indices, Fats and Oils; Specific Gravities, Fats and Oils; Titer, Fats and Oils; Tocopherols; Unsaturated Fatty Acids

soybean paste
See miso

soybean proteinate
Water-soluble soybean protein made by washing precipitated globin (pH 4.6) with water and neutralizing with NaOH and spray-drying; contains no sugar or fiber

soybean protein concentrate
A product made from defatted soybean flakes or flour by removing water-soluble sugars. Used as a binder in meat products up to 3.5%
Composition: protein (dry basis) 70-74%; crude fiber 3.6%; fat 0.5%; ash 5.8%

soybean protein isolate
A soybean derivative containing 97% average protein on a dry basis (min. 90%). Used as a binder in meat products (up to 2%); insoluble in water at its isoelectric point. Ash 4.5%; sodium 1.7%; crude fiber 0.3%

soybean pulp
See soybean milk

soybean, sprouts
Any dry soybeans (special varieties are also used) can be used to make sprouts
Soak beans overnight in three times their volume of water
Rinse and place in a container that will drain
Place in a cool place
Rinse with cool water four or five times a day
Yields 2-3 inch sprouts in 3-5 days
1 volume, dry beans = 6 volumes, sprouts
1 pound, fresh sprouts
= 4 cups, ready-to-use sprouts
2 cups, raw sprouts = 1 cup, cooked sprouts
708 soybean, sprouts

Storage: rinse with water and place with dampened towel in tightly sealed plastic bag; refrigerate, 3-5 days

soy cheese See tofu

soy flour See soybean flour

soy jam A flavorful, thick viscous paste made from soybeans, often mixed with other cereals; may be sediment from making soy sauce

soy milk Available in dry, concentrated, and ready-to-use forms.
  To prepare 2 quarts of soy milk:
    Wash and sort 1 pound (2 1/2 cups) dry beans
    Soak in 2 quarts of water overnight or boil 2 minutes and let stand for 1 hour or boil 2 minutes and refrigerate overnight
    Drain and discard soaking water
    Remove skin if bean mash or pulp is to be used
    Use 3 quarts of water and grind beans in blender until very fine (2 minutes)
    Strain through two layers of cheese cloth
    Boil milk for 30 minutes with stirring
    Add 2 tablespoons sugar and 1 teaspoon salt
    Cover tightly and refrigerate
    Strain milk before use to remove skin
See soybean milk

soy milk, fermented Acidic, fermented, low-fat, sweetened, soy milk

soy nut Dry soybeans that have been soaked in water overnight (skins may or may not be removed), cooked 6-8 minutes in deep fat (350°F), and salted
Storage: tightly covered

soy sauce A spicy, sweet, double-fermented and hydrolyzed, clear dark brown, thick, syrupy liquid sauce made from mashed, steamed soybeans, with or without wheat or cereal or starch. This liquid is used as flavoring; an ingredient in Worcestershire sauce Prepared from: salt, soybean (steamed and mashed), water, and wheat or barley (roasted and pulverized); fermented (rice ferment) 6-18 months and pressed and strained
Types: dark, light
Composition (ready-to-serve): moisture 68%; protein 8.7%; fat 0%; carbohydrate 8.3%; ash 15.5%; sodium 1,029 mg/tbsp (18 grams)
See also ketjap; shoyu

soy sauce, sweet (ketjap) A sweet, dark, thick, soy sauce used to flavor food

soyu See shoyu

spacing The distance allowed between plants in a row or between rows
See Part 2: Acre, Plants; Acre, Trees

spadefish See paddlefish

spadic Leaves of the coca shrub (narcotic)

spaeipylsA dry, uncooked, smoked Icelandic sausage (pepperoni) made from medium chopped, heavily seasoned, beef and pork with pork fat added and fermented and stuffed into artificial casings

spaghetti A mixture of wheat flour and water (sometimes also milk and eggs) that has been dried into a 3/4-in. diameter solid rod (0.06-0.11 in. diameter range); pasta; a variation of macaroni; often canned in tomato-based sauce. May be but seldom is tubular
Other variations:
  Elbow spaghetti—1-inch elbow shape, 1/2-inch diameter
  Fedelini—less than 3/4-inch diameter solid rod
  Fidelini (fettuccelle)—flat strips
  Forati—1/2-inch diameter solid rod
  Trenette—flat strips half as wide as fidelini
  Vermicelli—1/2-inch diameter solid rod (straight or coiled)

<table>
<thead>
<tr>
<th>Ounces uncooked</th>
<th>Circumference of bundle (in.)</th>
<th>Cups cooked</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>6.5</td>
<td>8-10</td>
</tr>
<tr>
<td>12</td>
<td>5.5</td>
<td>6.5-7.5</td>
</tr>
<tr>
<td>8</td>
<td>4.5</td>
<td>4-5</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>2-2.5</td>
</tr>
</tbody>
</table>

1 pound (lb), dry = 8-12 cups, cooked
1 lb, broken = 4-5 cups
1 cup, broken, uncooked = 2 cups, cooked
1 cup, broken
= 2.5-3.3 ounces (oz) [71-85 grams (g)]
1 cup, cooked = 4.9-5.6 oz (160 g)

Enriched type:
  Added  Per pound (mg)
  Iron     13-16
  Niacin or niacinamide 27-34
  Riboflavin 1.7-2.2
  Thiamin 4-5

Composition (dry): moisture 10%; protein 12%; fat 1%; carbohydrate 75%; ash 1%. With meat and sauce has minimum of 12% meat; with meatballs and sauce has minimum of 12% meat.

See spaghetti
See Part 2: Cereal Composition; Grain Products Composition; Microwave Processing Time; Minerals, Food; Portion Size

spaghettini A pasta slightly smaller than spaghetti

spaghetti sauce Made from carrots, celery, cottonseed oil, flour, mushrooms, olive oil, onions, salt, spices, sugar, and tomato puree

Dehydrated, with mushrooms

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dehydrated</th>
<th>Dehydrated, with mushrooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>3.7</td>
<td>3.0</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>6.0</td>
<td>10.0</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>1.0</td>
<td>9.0</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>64</td>
<td>49</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>25</td>
<td>29</td>
</tr>
</tbody>
</table>

spaghetti squash A football-shaped (approximately 10 x 7 inch), white-skinned, winter squash. The cooked, mild-flavored flesh separates into spaghetti-like strands. See squash, winter

spalen (stringer) A very hard, sharp (short matura­tion), nut-flavored, emmenthaler-type cheese made from cow's milk

Spam A canned, comminuted meat product manufactured by Hormel

span A linear measure of distance
1 span = 9 inches
spanakopita  A Spanish, cheese pie
Spanish  A Mediterranean class of chickens that lays a white-shelled egg. Variety: White-Faced Black
Spanish brand  A high alcoholic spirit distilled from sherry
Spanish cheese  A semisoft, mildly acidic, rennet-coagulated, smooth, cheese made from cow's milk
Spanish cream  A gelatin, custard (egg-white) whip
Spanish leaves  Tart and tangy salad greens
Spanish lime  See mammoncillo
Spanish mackerel (Scomberomorus maculatus)  A light meat, more pronounced flavor, finfish used for food. See mackerel
Spanish olives  Green olives stuffed with pimiento
Spanish omelet  See tortilla
Spanish oyster  See scolymus
Spanish paprika  See paprika
Spanish plum  See red mombin
Spanish potato  See sweet potato
Spanish salsify  See scolymus
Spanish sheep  Merino sheep
spare  A short-maturation, hard, cow's milk cheese
spareribs  Ribs removed from the belly area of a hog (sometimes beef) carcass. Spareribs are 24–4% of hog carcass. Sold fresh, pickled, or smoked. 40% bone
See Part 2: Braising Meat; Braising Time; Meat Label; Meat, Servings per Pound; Pork Carcass, Retail Yield; Pork Cuts and Uses; Pork Wholesale Cuts; Pork Cooking Methods; Pork Cooking Yield; Pork Cuts; Pork, Cooking; Pork, Cooking Yield; Pork, Roasting Meat; Pork, Roasting Time and Temperature
sparking burgundy  A coralline-red, dry wine with a vinous flavor but not the robustness of other burgundies
sparking wine  A wine with an excess of carbon dioxide (several atmospheres pressure at room temperature). A gassy (2–4 atmospheres), wine made from grape juice (Vitis vinifera); effervescence is due to a second fermentation after bottling and this is caused by adding sugar and yeast at time of bottling
sparsing (smelt)  A food fish
spastic  Exaggerated muscular reflexes resulting in rigidity and spasms
spatlese  Grapes gathered later than the normal vintage; they will be riper, and have a higher sugar content. Wines that have body and have a pleasant sweetness
spatula  An implement with a thin, flexible blade designed for spreading thick mixtures, turning foods during frying, and detaching baked products from pans. The smaller sizes are used in pharmacies and chemical laboratories, and the larger ones in cooking
spawn  Propagating material (made from spores) used by mushroom growers for planting beds
spay (spay)  To remove the ovaries from a female animal to prevent conception. Leaves a scar in front of left hip of a heifer
SPCA  Society for Prevention of Cruelty to Animals
spearfish (Makaira spp.)  A saltwater food fish related to the swordfish
spearmint (garden mint; green lamb mint; lamb mint; mackerel mint; pea mint; potato mint)  A perennial (80 days); 18 inches tall. A flavoring agent containing carvone, linalol, and pinene obtained from leaves and tops of Mentha spicata L. Used to make mint sauce that is served with lamb. Oil of spearmint is distilled from the flowering plants; used for flavoring liquor (e.g., mint julep), confectionery, chewing gum, etc. 80–100 pounds oil per acre 1 part, freeze-dried weight = 10.5 parts, fresh weight
See Part 2: Essential Oils
spearmint, Scotch (Mentha cardiaca)  More vigor than common spearmint
spemint oil  A volatile oil obtained by steam distillation of Mentha specata or M. cardiaca plants. Used as a spearmint, flavoring agent in food; sp. gr. 0.916–0.934
Storage: full, tight, container in a cool, dark place
spec code  See container specification code
special dietary use food  A food designed to meet the special needs of persons with diet-related diseases
Special K  A ready-to-eat cereal; 5.4% sugar; sodium 227 mg/oz
Special Milk Program for Children  A program that allows eligible children to purchase milk at a reduced price or receive it free. See Child Nutrition Programs
special pork trimming  Approximately 80% meat and 20% fat
Special Supplemental Food Program for Woman, Infants, and Children (WIC)  A program that provides specified nutritious food supplements to pregnant, breast feeding, and postpartum women as well as to infants and to children under 5 years of age, all of which categories are certified as “nutritional risks”
species (both singular and plural)  A taxonomic category below a genus and above a variety. The species is the second word used in a scientific name and it is not capitalized; a plant that grows true from seed; a group of potential interbreeding organisms that do not crossbreed with other organisms; a group possessing the same genetic constitution
specification  Definition of limits of acceptability
specific deficiency  A pathological state due to the lack of a given essential nutrient
specific dynamic action (SDA)  Heat produced as the result of food ingestion above the basal heat production
specific dynamic action of foods  Energy expenditure required for ingestion and assimilation of food; protein 30%; fat 6%; carbohydrate 4%
specific gravity (sp. gr.) Ratio of the density of a given substance compared to that of a standard (usually air or water)

\[
\text{sp. gr.} = \frac{\text{density of substance}}{\text{density of standard}}
\]

The temperature is usually also given; it is often in the form of a fraction; temperature of substance/temperature of standard. Used to determine relative amounts of fat and lean tissue in the body. As fat increases, specific gravity decreases

\[
\text{sp. gr.} = \frac{\text{body weight in air}}{\text{body weight in air} - \text{body weight under water}}
\]

See Part 2: Brine, Meat Curing; Specific Gravities, Fats and Oils

specific heat The heat absorbing capacity of a substance compared to that of water. The amount of heat expressed in Btu required to raise the temperature of one pound of a substance 1°F, or heat required to raise the temperature of 1 gram 1°C, apparent specific heat = 0.20 + (0.008 x % water); specific heat in Btu/°F = apparent specific heat x wt in lb x temp in °F; specific heat in calories = apparent specific heat x wt in g x temp in °C.

See Part 2: Specific Heat, Meat

specific rotation \((\alpha; [\alpha]_D)\) The angle of rotation produced by a cubic centimeter of a material at 20°C using a sodium light

specific volume The volume that 1 gram will occupy at a specific temperature and pressure; reciprocal of density

speculaus foot long, gingerbread men

spegepolse A semidy, uncooked, smoked Danish sausage made from coarsely chopped, medium seasoned, pork and stuffed into beef or artificial casings; a beef and pork salami

spekeskinke A country ham

speck A German species of grain; coarse wheat. Intermediate between wheat and barley

spent grain See pomece

spermaceti A liquid, waxy substance obtained from whale and used in soap; used to make bright candles that are used to calibrate candle power, and used for lubricants; iodine number 3–5; saponification number 120–135

spermatogenesis Synthesis of sperm cell in testes

spermatozoa Reproductive cells of the male; present in semen

sperm concentration The number of sperm cells in a given quantity of semen

sperm mobility The movement of sperm cells in a semen sample

sperm oil Oil obtained from the head cavity of the sperm whale. Its use is now prohibited in U.S.

See Part 2: Fats and Oils, Physical and Chemical Properties; Iodine and Saponification Values, Titer, Fats and Oils; Unsaturated Fatty Acids

spaghnum peat moss Organic matter used to improve dry, sandy soil; holds up to 15 times its weight in water

sphere (solid angle)

\[1 \text{ sphere} = 12.57 \text{ steradians}\]

sphingomyelins A phospholipid found in nerve, brain, and heart tissue

sphingosine \([C_{18}H_{33}(OH)_{2} \cdot \text{NH}_{2}]\) A nitrogenous base

spice A plant (whole, broken, or ground) having a fragrant or aromatic odor and a pungent flavor used to season food; usually contains essential oils. Any dried plant product used for culinary purposes to enhance the flavor and appearance of food; an aromatic substance of vegetable origin used to add color and flavor to food; bark, berries of plants, bud flowers, fruit, leaves, root, or seed usually of tropical origin; some definitions do not include dehydrated vegetable seasonings; often includes aromatic seed, dehydrated vegetables, herbs, true spices, and other dried plant products used as seasonings; some definitions include only tropical plants.

May be dried, used whole, or after grinding

Spice—natural spice

Spice extractives or extractives of spice—oil or oleoresins

Exceptions—celery, garlic, and onion are traditionally regarded as food

<table>
<thead>
<tr>
<th>Mesh Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small or fine</td>
</tr>
<tr>
<td>Large</td>
</tr>
</tbody>
</table>

Degree of fineness is specified by screen sizes, e.g., 25/50 means 95% of grains will pass through #25 and 96% of grains will not pass through #50
spinach (calaloo; *Spinacia oleracea* var. *inermis*)

Storage: cool, room temperature in tightly closed, airtight container. See spice, true

See Part 2: Flavoring Agents, Natural; Minerals (Trace); Limits; Spices, Microbial Content; Storage, Dry; Storage Times; Vinegar, Spiced; Wastes, Agricultural and Industrial

**spice, purified** (or sterilized) Treated with ethylene oxide or gamma irradiation. 100 or less total plate count per gram

**spice, true** Derived from bark, berry, fruit, or root of perennial plants usually grown in tropical zones

**spickekorv** A dry, uncooked, unsmoked Swedish sausage made from coarsely chopped, heavily seasoned (heavily salted), beef and pork sausage and fermented, and stuffed into beef casings.

**spicy** Flavorful; spice flavor; piquant; aromatic

**spider mite** 1) An insect that has the following characteristics: less than 1⁄-in. long; 8 legs; wingless; soft; round body; green, yellow, or red color. They suck sap from cotton leaves and produce webbing causing leaves to become yellow or red. 2) Insect that damages tomato plants.

Control: dicofol

3) Very tiny, reddish, greenish, or brownish mites that may be found on the underside of fruit tree leaves. They make yellow specks and fine webs on leaves; plants and fruit are stunted.

Control: use a dormant fruit tree oil spray to kill overwintering eggs and reduce population during the next growing season.

**spignel** A celery-flavored herb used in salads and stews

**spiked rampion** A plant sometimes used in salads

**spikekorv** A beef and pork chorizo

**spike lavender oil** A volatile oil obtained by steam distillation of *Lavandula latifolia* flowers. Used as a lavender flavoring agent in food; sp. gr. 0.892–0.910.

Storage: full, tight, glass container in a cool, dark place

**spikenard** A fragrant oil obtained from the root of a valerian plant. Used in perfume and the bitter flavor is used in Malayan cooking.

See Part 2: Essential Oils

**spinach (calaloo; *Spinacia oleracea* var. *inermis*)**

Origin central Asia. An annual whose leaves are used as a boiled vegetable or in salads and soups; can be frozen or canned. Broad, tender, dark green, wrinkly leaves that grow in a rosette. 2,500–2,800 seeds per ounce; plant 3–4 ounce seeds per 100 foot row; 8-14 day germination time; thin to 3-5 inches in rows 12-15 inches apart; matures in 65 days; yield 3 bushels per 100 foot row.

For salad it must be washed thoroughly; wilts quickly.

Available styles: chopped leaf, cut leaf, some with sauces and flavoring, and whole leaf.

To cook: steam until wilted.

Canned grades:

- High—dark green uniform color of leaves, no stalks—some stalks
- Low—some stalks and some off-colored leaves

<table>
<thead>
<tr>
<th>Spinach variety</th>
<th>Leaves</th>
<th>Use</th>
<th>Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>America</td>
<td>Deep green, distinctly savoyed</td>
<td>Will withstand heat, garden</td>
<td>Late spring, early summer, 40-50 days</td>
</tr>
<tr>
<td>American Early Hybrid</td>
<td>Deep green semicrinkled</td>
<td>Raw, boiled</td>
<td>44 days</td>
</tr>
<tr>
<td>Avon Hybrid</td>
<td>Thick, crinkled, dark green, productive</td>
<td>Raw, cooked, most popular</td>
<td>Early spring, main crop, 40-48 days</td>
</tr>
<tr>
<td>Bloomsdale Long Standing</td>
<td>Dark green and crinkly</td>
<td>Garden</td>
<td>Fall planting</td>
</tr>
<tr>
<td>Chesapeake</td>
<td>Smooth, medium size, dark green</td>
<td>Garden</td>
<td>43 days</td>
</tr>
<tr>
<td>Crisp n' Tender</td>
<td>Dark green, upright</td>
<td>Canning</td>
<td>Winter</td>
</tr>
<tr>
<td>Dixie Market</td>
<td></td>
<td></td>
<td>Fall planting, cold hardy</td>
</tr>
<tr>
<td>Early Smooth</td>
<td>Large plant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Giant Prickly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Giant Thick Leaf</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Hybrid No. 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Juliana</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>King of Denmark</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long Standing</td>
<td>Semierect, dark green, semisavoyed, oval shaped</td>
<td>Home garden, raw, cooked, processing, freezing</td>
<td>Spring seeded, raw, autumn, 42-50 days</td>
</tr>
<tr>
<td>Melody</td>
<td></td>
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</table>

(Continued)
Spinach variety | Leaves | Use | Season |
---|---|---|---|
Monstrous Viroflay | Thick, large size | Will withstand heat, freezing | Summer |
New Zealand (not a true spinach); “cut and come again,” perennial (Tetragonia expansa) | | | |
Nobel | Upright, semisavoyed, light green | All purpose | Summer |
No. 8 Hybrid | Thick and crinkly | | |
Old Dominion | Large plant, round leaves | | |
Prickly Seeded or winter spinach | | | |
Resistoflay | | | |
Sandwell | | | |
Summer Savoy | Round leaves | | |
Victoria | | | |
Victoria Long Standing | | | |
Virginia Savoy | Dark green and crinkly | Blight resistant | Fall planting |
Viroflay | | | |

Canned in 3.5% salt brine; drained weight 66–87%
1 part, freeze-dried weight = 10 parts, fresh weight
100 pounds (lb), fresh = 8–16 lb, dry
1 bushel, fresh = 18–20 lb
2–3 lb, fresh = 1 quart (qt), canned
1 lb, fresh = 4–12 cups, torn
1.5 cups, cooked = 2–3 servings
2 cups, cooked = 1 lb
16 ounce (oz), canned = 2–4 servings
10 oz, frozen = 2–3 servings
1 cup, raw, chopped = 1.8–2 oz
1 cup, boiled, whole leaves, drained = 5.5 oz
1 cup, canned, solid and liquid = 7.8–8.1 oz
1 cup, canned, drained solids = 8 oz
1 serving = 8 oz raw
1 leaf spinach = 25 grams
Refuse: 18% stalks and outer leaves
Composition (raw): moisture 91%; protein 3%; fat 0.3%; carbohydrate 4%; ash 1–2%; pH 5.1–5.7; fiber 3.6%; sodium (raw) 20 mg/oz; sodium (cooked) 90 mg/cup
Storage: Wash, dry, store in refrigerator (32°F) in crisper or plastic bags (90–95% relative humidity); use in 1–4 days; frozen (0°F) storage, 1 year

See Malabar spinach; New Zealand spinach; tam-pala spinach
See Part 2: Canned Spoilage Related to pH; Food, Composition; Frozen Food Storage; Glutamate; Iron; Microwave Cooking, Fresh Vegetables; Microwave Cooking, Frozen Vegetables; Microwave Processing Time; Minerals, Food; Nicotinic Acid, Food; Nitrate, Vegetables; Nutrients in Crops; Pentosans; Plant Foods, Composition; Planting Density; Portion Size; Potassium; Riboflavin; Riboflavin, Daily Recommendations; Riboflavin, Food; Standards, Processed Fruit and Vegetable Products; Storage; Sugar, Vegetables; Thiamin; Vegetable Boiling; Vegetable Composition; Vegetable Cooking, Frozen; Vegetable Frozen Yield; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Plants; Vegetables, Boiling Time, Frozen; Vegetables, Canning Dates; Vegetables, Cooking Frozen; Vegetable Servings; Vegetables, Panned; Vegetable Yield; Vegetable Yield, Canned and Frozen; Vegetable Yield, Frozen, Canned and Fresh; Vegetable Yields; Vitamin A; Vitamin A, Daily Recommendations; Vitamin C; Wastes, Agricultural and Industrial

spinach aphid See green peach aphid
spinach, beet (spinach, perpetual; Beta vulgaris) 1,950 seeds per ounce; 14 day germination time. A plant that resembles a beet but is grown for its leaves and stalks, which are used as a cooked vegetable
spinach egg noodles A type of pasta
spinach juice A green coloring material often used to color food
spinach, New Zealand (Tetragonia expansa) A warm season spinach-like plant, native to Australia and New Zealand; not related to common spinach See Part 2: Planting Density; Vegetable Planting Chart
spinach of the East See amaranth
spinach, perpetual See spinach, beet
spinalis dorsi See Part 2: Beef Rib Nomenclature
spine The backbone of a vertebrate See Part 2: Beef Wholesale Cuts; Bone; Bone Age
spinner See dead-head; skidder
spinous processes See feather bone
spiral can A laminated fiber container formed by winding material at an angle to its axis
spiral nematode (Helicotylenchus spp.; Seutelonema spp.) A parasitic nematode that reduces the yield and quality of sweet potatoes
spirillae (plural of spirellum) A subdivision of bacteria indicating their shape, resembling that of a corkscrew (Latin, coil shaped)
spirit Volatile or distilled liquid or volatile material. High-alcohol beverage made by fermentation and distillation, e.g., brandy, gin, rum, and whiskey
spirit of orange Alcohol containing oil of orange peel
spirit of turpentine A volatile oil of turpentine See also gum spirits of turpentine; wood turpentine
spirit of wine Ethyl alcohol solution
spirit vinegar Distilled vinegar See distilled vinegar
spirochetes Corkscrew-shaped microorganisms
spit A skewer on which meat is placed and rotated while roasting
spittle bug A wedge-shaped insect with brown or gray markings that can jump or fly quickly when disturbed. The young are pinkish, orange, yellow, or yellowish green, up to \( \frac{3}{8} \) inch long and produce masses of white froth or spittle. The young damage the plant (hosts: over 400 species of plants) by sucking juices from buds, shoots, and nut clusters, which reduces yield and causes stunted berries (e.g., strawberries)
Control: insecticide
spitzkase A low-fat, high-protein, roll or bar-shaped, semisoft cheese made from cow’s milk with caraway seed and surface smear
spleen (melt; milt) A highly vascular, ductless, purple gland near the gullet end of the stomach. It is concerned with maintenance of blood (disintegrates red blood cells and liberates the hemoglobin) and formation of lymphocytes. Used as food and is part of haslet
See Part 2: Gland Weights; Organ Weights
splenius A triangular muscle in the neck area that lies dorsal and lateral to the complexus
splint A bony growth occurring on the cannon bone
split delivery A method by which a larger amount is ordered on a purchase order to secure a lower price but delivery is spread out over time to control inventory investment
split items Different items manufactured simultaneously by the buyer
spoilage Unwholesome; unsalable; decay; loss of valuable qualities; rancidity; rot
See Part 2: Canned Spoilage Manifestations; Canned Spoilage Related to pH; pH, Post Mortem; Rot Spoilage; Spoilage, Carbohydrate Foods; Spoilage, Fat in Food
spondias See ambarella
sponge 1) The fibrous skeleton of Euspongia officinalis. 2) Gelatin combined with egg white or whipped cream. 3) Dough mixture used in baking; batter containing yeast
sponge cake A light sweet cake made without shortening; air is added by whipping egg whites and yolks to produce the leavening. An unshortened cake containing whole eggs or egg whites, flour, sugar, and salt.
Types:
White or angel food—contains egg whites
Yellow—contains whole eggs
spotted wolffish (Anarhichas minor) A food fish
spotted wolffish (Anarhichas minor) 713
1\( \frac{3}{4} \)-inch sector of \( \frac{9}{2} \)-inch round cake
= 145 calories
spongy Loose, open, elastic, porous, spongelike texture
spongy bone tissue See cancellated bone tissue
spool joint See break joint
See Part 2: Bone Age
spoon Sherbet made with syrup or fruit juices or wine and mixed with a meringue
spoon A concave utensil of various sizes used for eating soup, vegetables, etc.; used for stirring and mixing and for measuring ingredients See tablespoon; teaspoon
spoon-billed catfish See paddlefish
spoonbread A loaf cornbread that contains cornmeal, milk, eggs, oil, baking powder, and salt
Composition (white, whole cornmeal): moisture 63%; protein 7%; fat 11%; carbohydrate 17%
spor- An affix that means seed
spore Reproductive element of lower organisms that are in the resting state and are highly resistant to heat and chemicals. Reproductive element of a lower organism; a highly resistant microorganism resting stage that may last for years; they are formed within the cell (endospore)
See Part 2: Sanitizing Chemicals; Thermal-Death-Time Curve; Thermophiles
sporicide A substance that will kill bacterial spores
sporophyte See embryo
sport (bud sport) Strains or mutations of a cultivar that have different growth and fruiting characteristics; a mutant, e.g., polled
sportsgrill A moist, cooked, smoked Norwegian sausage made from finely chopped, mildly seasoned beef and pork and not stuffed into casings
sportswiener A moist, cooked, smoked Norwegian sausage made from finely chopped, mildly seasoned beef and pork and stuffed into artificial casings
sposti A soft, cream cheese
spot (goody; Lafayette; Leiostomus xanthurus) A lean fish caught from New Jersey to Florida. A light meat, light to moderate flavor, finfish. Name also given to fish called red drum (Sciaenops ocellata) and spottail pinfish (Diplodus halbooki)
spot goods Items actually ready and available for delivery
spotted cabrilla A white, very light, delicate flavor, finfish used for food
spotted catfish See spotted wolffish
Spotted Poland China A meat-type, breed of hogs originating in Ohio from the blending of several strains (Bedfordshire, Big China, Big Spotted China, Byfield, Irish Grazier and Russian strains); their color is black and white (20–80% white) spotted and they have drooping ears
See Part 2: Swine Breeds
spotted sea trout A white meat, light to moderate flavor, finfish used for food
spotted trout See sea trout
spotted wolffish (Anarhichas minor) A food fish
spotting  Transplanting small seedlings
spragg  Cod between 63 and 76 centimeters in length
sprat (brisling; garvock; kilkie; stilfin; Sprattus sprattus)  A fish related to herring  
Europe—Clupea sprattus  
New Zealand—Maugeclupea antipodum  
2-4-inch food fish that is available, fresh and smoked  
See Part 2: Fish, Storage
spray  Liquid applied in small drops, usually mixed  
with air. Often applied to materials and used to  
prevent insect damage
spray-dehydrated  Material is sprayed on the sur­  
facing of a heated drum and then scraped off
spray drift  Movement of airborne spray from the  
area of intended application
spray drying  A method of drying a liquid-solid mix­  
ture, such as milk, by spraying it into a hot, tall  
chamber; the solids are quickly dried and moisture  
is removed while the product falls through the chamber
sprayed cracker  See Part 2: Fermented Ingredients
spread  A soft mixture, often containing cheese, used  
for sandwiches. Substances usually spread on slices  
of bread such as butters, jams, jellies, meat spreads,  
and sauces  
See straddle  
See Part 2: Stabilizers, Thickeners
spring  A small branch
spring  See Part 2: Frost Date, Spring
spring cankerworm (Paleacrita vernata)  A pear-leaf, feeder worm
spring dwarf (Aphelenchoides fragariae)  A disease of strawberries that is caused by nematodes that  
live inside leaf buds  
Prevention: plant stock that is free of dwarf nema­  
todes
springer  That which is a source of supply: 1) Young  
plants. 2) Due to freshen (usually cow). 3) Salmon that has finished a run. 4) A defective tin can. 5)  
Various animals  
See also fryer
springerle  A cookie with raised designs
spring lamb  Lamb under one year of age; between  
lamb and yearling in age. 1) Genuine spring lamb  
(milk lamb) are lambs fattened on mother's milk. They  
are marketed April-July and are 3-5 months old. 2)  
Spring lamb (grass lamb) are fed on grass and  
grain and marketed in fall and winter and are 5-10  
months old
spring onion  The name applies to various types of  
onions: scallion, shallot, and welch onion. Seedling  
pulled before they bulb
spring salmon  See salmon
spring wheat  Wheat planted in the spring and har­  
vested in the fall
springy  Elastic, surface texture
sprinkle  To apply in small particles
tspritzig  A nonsparkling wine that tastes effervescent;  
white, slightly effervescent wine. A natural efferves­  
ceence of wine
spout  1) A young growing shoot or bud. Isopropyl  
N-(3-chlorophenyl) carbamate is used to inhibit  
sprouting in potatoes. 2) Pea or bean, white or yel­  
low; tender sprouts are used as food  
See Part 2: Vegetable Composition; Vitamin A, Food
sprout-depressing  See Part 2: Radiation Preservation
SPS agar  A medium used to grow Clostridium per­  
fringens  
See Part 2: Microorganism, Media
spud  1) Bread boiled in oil. 2) Slang for potatoes
spumante  A white, sparkling wine
spumone (spumoni)  A light, foamy, neapolitan ice  
cream, often flavored with vanilla, chocolate, and  
strawberry and/or pistachio with fruit and/or nuts  
See spumoni
spumoni  Ice cream containing nuts and fruit  
See spumone
spur  1) A sharp spine on the wings and legs of some  
birds. 2) A projecting root or branch of a plant
spur blight  A fungus (Didymella applanata) disease  
that effects red raspberries in northern U.S. Brown  
or purple spots appear at nodes and at buds and  
tissue around the buds darkens and shrivels. Later  
the bark splits and black pimplelike structures ap­  
pear. No fruit is produced as a result.  
Control: Remove infected canes and use control sprays  
recommended for anthracnose
spurdog  A food fish  
See dogfish
spur, renewal  Canes pruned to two or three buds
spur-type tree  Smaller and less vigorous than a nor­  
mal tree with shorter stems, leaves closer together,  
and more spurs on which fruit is produced
SQC Statistical Quality Control  
See statistical quality control
squab  Young poultry, particularly pigeon, that has  
ever flown. Young (less than 4 weeks) pigeon weigh­  
ing 0.5-1 pound; often less than 14 ounces; dressed  
weight is approximately 12 ounces; flesh is light col­  
ored and tender  
Composition (flesh and skin, raw): moisture 56.60%;  
protein 18.47%; fat 23.80%; ash 1.40%; total carbohy­  
drates 0%  
See pigeon; poultry grades  
See Part 2: Animal Foods, Composition
squab broiler  A small (1-1 1/2 pounds) size broiler  
(chicken)
square  Square-shaped pasta (1/4 inch)
square centimeter (cm²)  A measure of area  
1 cm² = 197,300 circular mils  
= 100 square millimeters (mm²)  
= 0.1550 square inch (in.²)  
= 0.001076 square feet (ft.²)  
= 0.0001196 square yards (yd²)  
= 10⁻⁴ square meters (m²)  
= 3.861 x 10⁻¹¹ square miles
square chain  A measure of area  
1 square chain = 16 square rods  
10 square chains = 1 acre
square cut shoulder  A shoulder cut of meat with shank and neck removed. Difficult to carve because of odd-shaped bones

square degree
1 square degree = 0.00030462 steradians

square foot (ft²)  A measure of surface area
1 ft² = 1.833 × 10⁸ circular mils
= 92.900 square centimeters (mm²)
= 929.0 square centimeters (cm²)
= 144 square inches (in.²)
= 0.09290 square meter (m²)
= 0.00009290 hectare (ha)
= 0.0000009290 square kilometer (km²)
= 0.0000003557 square mile (statute)

9 ft² = 1 square yard

square inch (in.²)  A measure of surface area
1 in.² = 1.273 × 10⁶ circular mils
= 1 × 10⁵ mils
= 645.2 sq millimeters (mm²)
= 6.452 square centimeters (cm²)
= 0.006944 square foot (ft²)
= 0.000001594 acre (A)
= 0.00000006452 square kilometer (km²)
= 0.00000003557 square mile (statute)

144 in.² = 1 square foot (ft²)
0.155 in.² = 1 square centimeter (cm²)

square kilometer (km²)  A measure of surface area
1 km² = 1 × 10¹² square centimeters (cm²)
= 1.550 × 10⁸ square inches (in.²)
= 10,763,867 square feet (ft²)
= 1,000,000 square meters (m²)
= 25.29 square miles (mi²)
= 1 square perch
= 1/160 acre

160 square rods = 1 acre
40 square rods = 1 rood
= 1/4 acre

square root  The factor of a number, which if squared will yield the number. To determine (long hand):

Start at decimal and mark off every second place on both sides of decimal
Start with one or two numbers to the left of the last mark on the left
First number of answer is the largest square root that will go into this number
Write this number squared under the number and subtract
Bring down the next two numbers
Multiply by 2 the number(s) in the answer to this point and write it to the left of the subtracted answer
The next number in the answer will be determined by dividing the value in the previous step into the remainder. This number is written to the right of the value from the previous step and also in the answer. The number just placed in the answer is multiplied by the new value, and written under the remainder
Subtract and bring down next two numbers and repeat the previous two steps and this step for as many decimals as required

Example: Square root of 20507013.0

\[
\sqrt{20507013.0} = 4528.467
\]

1 square mile = 640 acres (A)
= 259,000 hectares (ha)
= 2,590,000 square kilometers (km²)

square millimeter (mm²)  A measure of surface area
1 mm² = 1,973.5 circular mils
= 0.01 square centimeters (cm²)
= 0.000155 square inches (in.²)
= 0.000001076 square feet (ft²)

square perch  See square rod

square rod  A measure of surface area
1 square rod = 625 square links
= 272.25 square feet (ft²)
= 30.25 square yards (yd²)
= 25.29 square meters (m²)
= 1 square perch
= 1/160 acre

40 square rods = 1 rood
= 1/4 acre
716 square yard (yd\(^2\))

square yard (yd\(^2\)) A measure of surface area
1 yd\(^2\) = 8.36 \times 10^5\) square millimeters (mm\(^2\))
= 8361 square centimeters (cm\(^2\))
= 1,296 square inches (in.\(^2\))
= 9 square feet (ft\(^2\))
= 0.83613 square meter (m\(^2\))
= 0.0002066 acre (A)
= 0.00008361 hectare (ha)
= 0.0000008361 square kilometer (km\(^2\))
= 0.000003228 square mile (statute)

30.25 yd\(^2\) = 1 square rod
1.196 yd\(^2\) = 1 square meter (m\(^2\))

squash (\textit{Cucurbita maxima}; \textit{C. mixta}; \textit{C. moschata}; \textit{C. pepo}) 1) A climbing herb of the gourd family that produces a pepo that is used as food; there are many varieties of different shapes and colors; they are eaten as cooked vegetables, jams, chutneys, and soups and fermented into wines. Seed 3 pounds per acre; 1 ounce per 100-foot row; space 3 feet between plants in rows 4 feet apart; matures in 60–120 days.

Variety of marrows, pumpkins, and gourds:

- Autumn and winter (hard rind; \textit{C. maxima})—marketed when fully mature; large; firm; keeps well; eaten ripe; seeds are removed before cooking (boil and mash or bake until tender); may be canned and frozen similar to pumpkin; cooked and ready to use as a vegetable or pie filling, e.g., butternut, corn
- Variety of marrows, pumpkins, and gourds (continued)

Cushaw (\textit{C. moschata})
Pumpkin—strong flavor; not used for baking
Summer (\textit{C. pepo melopepo})—harvested when immature; small; eaten unripe as a vegetable; seeds are cooked with squash. Canned and frozen; small squares cut crosswise, e.g., scallop, zucchini

Seeds may be fried and/or salted and are also a popular food

Plant:
- Bush type—three plants per hill with hills 3 feet apart
- Vining type—5 feet apart in 6 foot rows

Harvest:
- Summer type—rind still soft; 3–7 days after flowering
- Scalloped—2–3 inches in diameter
- Rest—6–8 inches long
- Winter type—may be picked early and treated like summer squash; hard rind; picked after leaves have turned brown; leave 2–3-inch stem
- If stem is dark, hard, shriveled, or dry the squash is not fresh. Skin should be glossy and blemish free

Refuse: 50%

1 spaghetti squash = 2–2.5 pounds (lb)
1 medium butternut = 2 pounds (lb)
1 medium acorn = 1 pound (lb)
1 baby golden nugget = 5 ounces (oz)
1 cup, sliced = 0.28 pound (lb)

= 1.5 medium squash

<table>
<thead>
<tr>
<th>Squash type</th>
<th>Variety</th>
<th>Season (days)</th>
<th>Size and shape</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer—commonly called squashes but by botanical classification, they are pumpkins; should be used when young and tender and have a soft rind See Pumpkin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black Summer Variety</td>
<td>Black Zucchini</td>
<td>62</td>
<td>10–12 in. long</td>
<td>Greenish black</td>
</tr>
<tr>
<td>Green Summer Variety</td>
<td>Ambassador</td>
<td>17 \times 8 in., cylindrical</td>
<td>Dark green</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aristocrat</td>
<td>42</td>
<td>Cylindrical</td>
<td>Dark green</td>
</tr>
<tr>
<td></td>
<td>Caserta</td>
<td>6–7 in.</td>
<td>Gray</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clarita</td>
<td>14 in., cylindrical</td>
<td>Cork green, light green striping</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cocozelle</td>
<td>60</td>
<td>best when 4–5 in.</td>
<td>Greenish white</td>
</tr>
<tr>
<td></td>
<td>(Italian Marrow)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elite</td>
<td>Greyzini</td>
<td>55</td>
<td>Cylindrical</td>
<td>Light green, dark green flecks</td>
</tr>
<tr>
<td></td>
<td>Scallopini Hybrid</td>
<td>50</td>
<td>Flattened, fluted, 2–4 in. best</td>
<td>Dark green</td>
</tr>
<tr>
<td></td>
<td>Seneca Zucchini</td>
<td></td>
<td></td>
<td>Raw; salads; cooked; steamed; fried; baked; boiled</td>
</tr>
<tr>
<td></td>
<td>Zucchini</td>
<td>54</td>
<td>6–7 in., cylindrical</td>
<td>Dark green</td>
</tr>
<tr>
<td></td>
<td>Zucchini Hybrids</td>
<td>50</td>
<td>Cylindrical, 6–8 in.</td>
<td>Medium green</td>
</tr>
</tbody>
</table>

(Continued)
### Squash (Cucurbita maxima; C. mixta; C. moschata; C. pepo) 717

#### Summer (continued)

<table>
<thead>
<tr>
<th>Squash type (continued)</th>
<th>Variety</th>
<th>Season (days)</th>
<th>Size and shape</th>
<th>Color</th>
<th>Skin</th>
<th>Flesh</th>
<th>Skin</th>
</tr>
</thead>
<tbody>
<tr>
<td>White or Yellow Summer (bush)</td>
<td>Butterbar</td>
<td>41</td>
<td>Long cylindrical</td>
<td>Yellow</td>
<td>Smooth</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dixie Hybrid</td>
<td>50</td>
<td>Semicrookneck</td>
<td>Yellow</td>
<td>Smooth</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Early Prolific Straightneck</td>
<td></td>
<td>14 in. x 3.5 in., 4-6 in. best</td>
<td>Yellow</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Goldbar</td>
<td>45</td>
<td>Crookneck, 10-12 in. long</td>
<td>Yellow</td>
<td>Smooth</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Golden Swan</td>
<td>54</td>
<td>Slender Cylindrical</td>
<td>Golden</td>
<td>Glossy</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Golden Zucchini</td>
<td>45</td>
<td>Crookneck</td>
<td>Yellow</td>
<td>Smooth</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Italian Vegetable (cocozelle) Seneca Butterbar</td>
<td>51</td>
<td>Cylindrical tapered at blossom end</td>
<td>Yellow</td>
<td>Smooth</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Seneca Prolific St. Pat Scallop</td>
<td>50-75</td>
<td>Bell, 1.5 in. best</td>
<td>Light green</td>
<td>Shiny</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vegetable Marrow (cocozelle)</td>
<td>70</td>
<td>Flat disk shape, 7 x 3 in., scalloped edge</td>
<td>Greenish white</td>
<td>White</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>White Bush Scallop (Pattypan; Cymling)</td>
<td>54</td>
<td></td>
<td>White</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yellow Summer Crookneck</td>
<td>53</td>
<td>5-6 in. best, small curved neck, 10 x 3 in.</td>
<td>Yellow</td>
<td>Warted; freezing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Novelty type</td>
<td>Naked seeded pumpkin squash</td>
<td></td>
<td>Pumpkin shape, Yellow, green markings</td>
<td>Flesh not suitable for eating; hulless seed consumed raw or toasted</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vegetable Spaghetti (winter)</td>
<td>70</td>
<td>9 in. best</td>
<td>Yellow</td>
<td>Yellow</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Winter—hard rinds; stores well

<table>
<thead>
<tr>
<th>Acorn or Danish—small; corrugated</th>
<th>Variety</th>
<th>Season (days)</th>
<th>Size and shape</th>
<th>Color</th>
<th>Skin</th>
<th>Flesh</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bush Acorn, Table King</td>
<td>75-80</td>
<td>6 x 5 in., 1.25 lb</td>
<td>Dark green</td>
<td>Golden</td>
<td>Glossy; hard shell; keeps well</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bush Table Queen (Acorn bush)</td>
<td>80</td>
<td>Ribbed, 5 x 4 in.</td>
<td>Green, hard</td>
<td>Orange</td>
<td>Storage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Royal Acorn</td>
<td>82-90</td>
<td>7.5 x 6 in.</td>
<td>Dark green, orange on storage</td>
<td>Dull</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Banana—elongated; tapering at both ends; large fruit; 110 days

<table>
<thead>
<tr>
<th>Banana</th>
<th>Variety</th>
<th>Season (days)</th>
<th>Size and shape</th>
<th>Color</th>
<th>Skin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alligator</td>
<td></td>
<td>25 x 8 in.</td>
<td>Dark green</td>
<td>Smooth; irregular</td>
<td></td>
</tr>
<tr>
<td>Banana (Blue Banana)</td>
<td></td>
<td>115</td>
<td>15 x 6 in.</td>
<td>Greenish gray</td>
<td>Orange</td>
</tr>
<tr>
<td>Gilmore</td>
<td></td>
<td>15 x 7 in.</td>
<td>Salmon flecked with blue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mammoth Whale</td>
<td></td>
<td>30 x 8 in.</td>
<td>Olive green, lighter stripes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plymouth Rock</td>
<td></td>
<td>15 x 6 in.</td>
<td>Greenish gray, flecked with lighter color</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winnebago</td>
<td></td>
<td>11 lb</td>
<td>Dark green</td>
<td>Lightly warty</td>
<td></td>
</tr>
</tbody>
</table>

(Continued)
### Squash (*Cucurbita maxima; C. mixta; C. moschata; C. pepo*)

<table>
<thead>
<tr>
<th>Variety</th>
<th>Season (days)</th>
<th>Size and shape</th>
<th>Color</th>
<th>Skin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hubbard—ovoid; pointed at flower end; stem end tapered; large fruit; 110 days</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arikara</td>
<td>12 x 9 in., 8 lb</td>
<td>Light salmon, blue gray stripes</td>
<td>Light salmon, blue gray stripes</td>
<td></td>
</tr>
<tr>
<td>Autumnal Marrow</td>
<td>Straight ends, 9 x 5 in., 8 lb</td>
<td>Light orange</td>
<td>Pocked</td>
<td></td>
</tr>
<tr>
<td>Blue</td>
<td>120</td>
<td>Slightly ridged, 13 lb</td>
<td>Greenish blue</td>
<td>Orange—red, cream colored stripes</td>
</tr>
<tr>
<td>Chicago Warted</td>
<td>115</td>
<td>15 lb</td>
<td>Dark green</td>
<td>Dark golden—hard shell</td>
</tr>
<tr>
<td>Delicious</td>
<td>Top shaped, 8 x 12 in., 8 lb</td>
<td>Dark green, light stripes</td>
<td>Orange—red, cream colored stripes</td>
<td></td>
</tr>
<tr>
<td>Golden</td>
<td>90</td>
<td>8 lb</td>
<td>Orange—red, cream colored stripes</td>
<td>Orange—moderately wartyed</td>
</tr>
<tr>
<td>Golden Delicious</td>
<td>100</td>
<td>Top shaped, 8 x 12 in., 8 lb</td>
<td>Golden yellow</td>
<td>Orange—hard shell</td>
</tr>
<tr>
<td>Green</td>
<td>120</td>
<td>13 lb</td>
<td>Dark green, white stripes</td>
<td>Yellow—orange, slightly wartyed hard rind</td>
</tr>
<tr>
<td>Ironclad</td>
<td>15 x 12 in., 16 lb</td>
<td>Silvery gray, light stripes</td>
<td>Silvery gray, light stripes</td>
<td></td>
</tr>
<tr>
<td>Kitchenette</td>
<td>100</td>
<td>5 lb</td>
<td>Dark green</td>
<td>Slightly wartyed hard rind</td>
</tr>
<tr>
<td>(Baby)</td>
<td>family size</td>
<td>family size</td>
<td>family size</td>
<td>family size</td>
</tr>
<tr>
<td>Marblehead</td>
<td>Lemon shape, 9 x 12 in., 8 lb</td>
<td>Bluish gray</td>
<td>Bluish gray</td>
<td></td>
</tr>
<tr>
<td>Prolific Marrow</td>
<td>Lemon shape, 9 x 4 in., 15 lb</td>
<td>Orange—red</td>
<td>Orange—red</td>
<td></td>
</tr>
<tr>
<td>Sibley</td>
<td>13 x 12 in.</td>
<td>Slate gray</td>
<td>Slate gray</td>
<td></td>
</tr>
<tr>
<td>Mammoth—large; up to and over 100 lb</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atlas</td>
<td>Egg-shaped, 20 x 13 in., 35 lb</td>
<td>Reddish yellow</td>
<td>Grooved</td>
<td></td>
</tr>
<tr>
<td>Estampes</td>
<td>10 x 18 in., 30 lb</td>
<td>Reddish orange, grooves of lighter color</td>
<td>Rough</td>
<td></td>
</tr>
<tr>
<td>(Etampes)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mammoth Chili</td>
<td>12 x 16 in., over 100 lb</td>
<td>Mottled orange and yellow, lighter stripes</td>
<td>Mottled orange and yellow, lighter stripes</td>
<td></td>
</tr>
<tr>
<td>Turban</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American</td>
<td>7 x 10 in.</td>
<td>Yellow</td>
<td>Yellow</td>
<td>Rough</td>
</tr>
<tr>
<td>Bay State</td>
<td>7 x 10 in., 7 lb</td>
<td>Slate gray</td>
<td>Slate gray</td>
<td></td>
</tr>
<tr>
<td>Buttercup</td>
<td>105</td>
<td>4.5 x 6.5 in.</td>
<td>Dark green, gray spots, white stripes</td>
<td>Orange—red, keeps well</td>
</tr>
<tr>
<td>Essex Hybrid</td>
<td>6 x 9 in., 10 lb</td>
<td>Yellow to orange, sometimes green splashed</td>
<td>Yellow to orange, sometimes green splashed</td>
<td></td>
</tr>
<tr>
<td>Turk’s Turban</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Victor</td>
<td>6 x 9 in., 8 lb</td>
<td>Orange—red</td>
<td>Orange—red</td>
<td></td>
</tr>
<tr>
<td>Warren</td>
<td>8 x 10 in., 15 lb</td>
<td>Orange—red</td>
<td>Orange—red</td>
<td>Warty</td>
</tr>
</tbody>
</table>

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Winter (continued)
Summer:
100 lb, fresh = 7–9 lb, dry
1 bushel = 40 lb
= 32–40 pints, frozen
2–4 lb, summer squash in shell = 1 qt, canned
2–2 1/2 lb, summer squash in shell = 1 quart, frozen
1 lb, fresh = 3–4 servings
= 1.7 cups, cooked and mashed
1 cup, cooked and mashed = 240 gram (8.4 ounces)
1 medium squash = 1.5 cups, cooked squash
1 small squash = 1 cup, cut into 1-inch cubes
one, 5-inch squash = 100 grams
Winter squash:
3 lb, winter squash in shell = 1 quart, frozen
1 1/2–3 lb, winter squash in shell = 1 quart canned
1 pound = 2–3 servings
= 1 cup, cooked and mashed
1 cup, cooked and mashed = 245 grams (8.6 ounces)

<table>
<thead>
<tr>
<th>Composition</th>
<th>Seed, dry</th>
<th>Summer</th>
<th>Winter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>4</td>
<td>94</td>
<td>85–89</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>29</td>
<td>1</td>
<td>1.4–1.5</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>46</td>
<td>0.1</td>
<td>0.3</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>15</td>
<td>4</td>
<td>9–12</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>5</td>
<td>0.6</td>
<td>0.8–1.0</td>
</tr>
</tbody>
</table>

pH 5.0–5.4
Fiber:
Summer, raw—3%
Summer, cooked—2.2%
Storage (freezing point 30.5°F)
Summer—gather before seeds ripen or rind hardens; 32–40°F, 85–95% relative humidity; 2 week storage life
Winter—gather only after well mature but before hard frost; store in pits or cold cellars. Low room temperature (50–55°F; 70–75% relative humidity); keeps several months at 60°F; keeps 1 week at higher temperatures
2) Orange drink

See Part 2: Calories, Daily Recommendations; Cucurbits, Spacing and Depth of Planting; Frozen Food Storage; Fruit Classification; Microwave Cooking; Fresh Vegetables; Microwave Cooking, Frozen Vegetables; Minerals, Food; Nitrate, Vegetables; Plant Foods, Composition; Planting Density; Portion Size; Protein Factors; Pulses, Nuts and Seeds Composition; Riboflavin, Daily Recommendations; Standards, Processed Fruit and Vegetable Products; Storage; Sugar, Vegetables; Vegetable Boiling; Vegetable Composition; Vegetable Cooking, Frozen; Vegetable Frozen Yield; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Plants; Vegetables, Boiling Time, Frozen; Vegetables, Canning Dates; Vegetables, Classification; Vegetables, Cooking Frozen; Vegetable Servings; Vegetables, Panned; Vegetable Storage; Vegetable Yield; Vegetable Yield, Canned and Frozen; Vegetable Yield, Frozen, Canned and Fresh; Vegetable Yields; Vitamin A, Daily Recommendations

squash bug
Eggs: yellow brown to bronze; 1/16 inch long; laid on underside of leaves in clusters
Nymph: green and red to brown and later to gray

Adult: 3/16 inch, brownish black
Host plants: cucumber, melon, pumpkin and squash; leaves turn crisp and brown

squash kernel See Part 2: Beans, Peas, and Nuts

squash seed May be fried in oil and salted and used as a snack

squaw grass See bear grass

squateegues See sea trout

squid (bone squid; calamare; calamare; calamary; cuttlefish; inkfish; sea arrow; taw taw; Loligo pealii; Ommastrephes illecebrosa) A cephalopod with 10 arms used as food and fish bait. Mollusks with a usual body length of 3–9 inches (can be up to 50 feet). The skeletal shell is on the inside of the elongated body and there are fins on one end and tentacles (10) on the other; the gill is a rigid clear, plastic-like cartilage along the top of the body cavity

Types:
Arrow (Nototodarus sloani)—New Zealand
Atlantic (Loligo pealei)—North America
Broad (Sepioteuthis bilineata)—New Zealand
Common (Loligo vulgaris)—Pacific, Mediterranean
Japan (Ommastrephes sloani pacificus)—Pacific
Little (Alloteuthis media)—Mediterranean
Pacific (Loligo opalescens)—Pacific
South African (Loligo reyaudi)—South Atlantic

Meat is firm, white, lean and will be tough if overcooked
Composition (raw): moisture 80%; protein 16%; fat 1%; carbohydrate 1–2%; ash 1%

squirrel A rodent with a meat flavor between chicken and rabbit; white meat similar to chicken See hake

squirrel hake (Urophycis chuss) A food fish

Sr Symbol for the element strontium

sredna gova A pork salami

sremske kobasica A coarsely chopped, pork pepperoni

SR medium base See Part 2: Microorganism, Media
SS See somatostatin
SS agar See Part 2: Intestinal Microorganisms; Microorganism, Media
SSDT Society of Soft Drink Technologists

sta- An affix that means make stand or stop

stabbur A dry, uncooked, smoked Norwegian sausage (salami) made from medium chopped, medium seasoned beef and horse with blood added and fermented and stuffed into artificial casings

stabburnhadd (chub) A dry, uncooked, smoked Norwegian sausage made from medium chopped, medium seasoned beef and lamb with plucks and blood added and fermented and stuffed into artificial casings

stability Relative resistance of a food to undesirable breakdown or change in character

stabilizer A food additive that thickens, prevents separation, prevents flavor deterioration, retards oxidation by increasing the viscosity, and gives a smoother product. Normally works by absorbing wa-
stabilizer

...they also prevent evaporation and deterioration of volatile flavor, e.g., agar, carrageenan, cellulose gum, gelatin, gum arabic, modified starch, pectin, and starches

See Part 2: Stabilizers, Thickeners

stable A product that does not change (e.g., clarity, texture, viscosity) with stress (e.g., acid, age, freeze–thaw, shear)

Stachyobotrys A type of mold

See Part 2: Molds, Mycotoxins

stachyose See Part 2: Sugar, Legumes

stacking feature Container bottoms designed to aid in stacking

stag 1) A male animal of several species castrated after reaching the age to develop a masculine character; compared to an animal castrated early in life, the stag will have a thicker neck and shoulders, coarse hair and bones, and considerable hardening of the breastbone. 2) A young male chicken 9–12 months old and beginning to develop spurs; cooked by stewing, steaming, or braising. 3) The uncastrated male of several wild animals (particularly red deer, which is also called a hart)

See Part 2: Swine Market Classes and Grades

stag-bush See black haw

staggergrass A plant having a toxic principle

See Part 2: Poisonous Plants

stain A chemical used to color tissue for microscopic study

stainless steel An alloy steel containing a high percentage of chromium (minimum of 4%) and often nickel. A well-known type has 18% Cr and 8% Ni. Used in corrosion-resistant food-processing equipment. Strong, durable, light weight, easy to clean, poor heat conductor unless bonded with copper or aluminum. May develop hot spots and warp. Must be dried off after use to prevent water spots. Does not react with alkalies or most acids. Is dissolved by halogenated acids (e.g., hydrochloric). No serious question has arisen concerning food safety

See Part 2: Stainless Steel

staking Flexing a tanned hide over a metal blade to make the fibers pliable

stale Of food, dried out and/or not fresh; chemical deteriorative changes that lead to undesirable alterations of taste, odor, flavor, toughness, or lack of crispness and texture with time; of carbonated beverages, flat; of animals, to urinate

stalk The main stem of a herbaceous plant, often with its dependent parts See stem

stalkage See corn, aerial part

starky Harshness in wine

stallion A male horse (not castrated)

stamen The male part of a flower that bears the pollen

See Part 2: Flower, Imperfect; Flower, Perfect

staminate A small, male flower (no pistils)

stamp Mark with a die or pattern; label; brand

stanchion A device that is usually used to hold cows in place in a barn, usually for milking. Has two bars, one on each side of the neck, behind the head and in front of the shoulders

standard 1) A stated quality or performance requirement or specification. 2) Standard rootstock; the type of rootstock that will produce a full size tree (up to 35–40 feet)

See Part 2: Grades, Meat; Meat Grade Stamps; Microbiological Standards, Dairy; Standards, Processed Fruit and Vegetable Products; Water Drinking Standards

standard deviation (σ) Variation of observations; a σ of one population cannot be compared with the σ of another population because the σ is somewhat dependent on the sample magnitude.

u ± 1σ = point of inflection in a normal distribution

u ± 1σ = 3/4 of observations in normal distribution

u ± 2σ = 95% of observations in normal distribution

u ± 3σ = 99.74% of observations in normal distribution

Estimated by sample standard deviation(s):

\[ s = \sqrt{\frac{\sum x^2}{n - 1}} = \text{(same units as original data)} \]

\[ x = \text{deviations from mean} \]

\[ n = \text{sample size} \]

A quick but inefficient estimation of σ:

\[ \text{rough estimation of } \sigma = \frac{\text{largest value of } X - \text{smallest value of } X}{C} \]

\[ \frac{n}{C} \]

\[ 5 \quad 2 \]

\[ 10 \quad 3 \]

\[ 25 \quad 4 \]

\[ 100 \quad 5 \]

Interval estimate of σ (95% level):

\[ \frac{\sum x^2}{\chi^2_{0.025}} \leq \sigma^2 \leq \frac{\sum x^2}{\chi^2_{0.975}} \]

Test of σ^2:

\[ \chi^2 = \frac{\sum x^2}{\sigma_0^2} \]

\[ \sigma_0^2 = \text{value is assigned according to your HO} \]

(Example: comparing with known σ of another sample) df = n – 1
standard error \( (s/\sqrt{n}) \) Approximated by estimator of standard error \((\overline{S})\)

\[
\overline{S} = \frac{s}{\sqrt{n}} \quad s = \text{estimation of standard deviation}
\]

\[
\overline{S} = \sqrt{\frac{s^2}{n}} \quad s^2 = \text{estimation of mean square}
\]

**standard method** See Part 2: Microorganism, Culture Media, Water and Sewage, Standard Methods.

**standard methods agar** Agar used for standard plate count.

See Part 2: Microbiological Examination of Dairy Products; Microbiological Media.

**standard of identity** A regulation stating (recipe) the kind and amount of ingredients and processing requirements for a specific food; a statement of basic composition and permitted ingredients for preparing of processed foods maintained by the government for regulation purposes.

**standard plate count** Agars used include plate count agar and standard methods agar See plate count See Part 2: Microbiological Standards, Dairy.

**standard solution** A solution containing a known substance at a known amount in terms of normality or molarity.


**standing rib roast** A roast made from the fore quarter of beef that comes from the seventh to twelfth rib area; the inside portion of the backbone is removed and the ribs are cut at the end of the rib eye muscle.

**standing rump roast** A triangular roast from the rump area with knuckle bone removed but parts of tail bone and aitch bone remaining.

**stangen cheese** A low-fat, high-protein, semisoft, cheese made from cow’s milk and with surface smear.

**stangenkäse (bierkäse)** A soft, creamy, sour cream cheese made from cow’s milk.

**stangkorv** A moist, cooked, unsmoked Swedish sausage made from coarsely chopped, medium seasoned meat with barley grain, flank, rind, and internal organs added and stuffed into pork casings.

**Stanley, Wendell M.** The person who crystallized the first virus.

**stannous chloride** (tin chloride; tin dichloride) \((\text{SnCl}_2 \cdot 2\text{H}_2\text{O})\) Used as a food antioxidant; reducing agent.

Storage: tight container.

**staph** See *Staphylococcus*.

**staph poisoning** See *Staphylococcus aureus*.

**staphylococcal** See Part 2: Bacterial Foodborne Illnesses.

**staphylococci** Irregular clusters of coci cells resembling a bunch of grapes.

*Staphylococcus (staph)* A spherical type of infectious bacteria (coci) that produce toxins (enterotoxins) that causes disturbances of the gastrointestinal tract; a quite common microorganism that forms a stable (not destroyed by boiling or baking) toxin; a spherical type of bacteria of genus *Staphylococcus* that occurs in pairs, tetrads, and clusters; some are pathogenic or infectious bacteria (coci).

See Part 2: Diseases, Food-Borne; Food Poisoning. Bacteria; Illness from Food; Infectious Diseases; Food-Borne; Intestinal Microorganisms in Triple-Sugar Agar; Microbial Toxins; Microbiological Media; Microbiological Standards, Dairy; Microorganism, Media; Water Activity, Organisms and Food.

*Staphylococcus aureus* The coagulase-positive bacteria often found in grape-like clusters, some strains of which produce a toxin responsible for the most frequently occurring type of food poisoning (staph poisoning); they are gram-positive cocci, facultative anaerobes, and are easily destroyed by elevated temperature; people having this type of food poisoning usually recover in 1–3 days. Heating to 60°C will kill this bacteria, but the toxin is stable to boiling temperature for extended periods. \(1\mu g\) enterotoxin per gram of food will induce food poisoning; \(0.0000005\) grams of toxin will cause vomiting; resides in nose and skin. Growth and toxin production reduced below 77°F (25°C); toxin production inhibited below 50°F (10°C).

Enterotoxin: will withstand boiling for 20 minutes; heat treatment given to most foods will not destroy enterotoxin formed prior to heat treatment.

Enterotoxins A—often involved in food poisoning.

Enterotoxins B—seldom involved in food poisoning.

Enterotoxins C₁—seldom involved in food poisoning.

Enterotoxins C₂—seldom involved in food poisoning.

Enterotoxins D—often involved in food poisoning.

Enterotoxins E.

Staphylococci cell count is primarily a screening test. Growth temperature 45–115°F (7–46°C); pH range 4–9.8; \(\text{NaCl}\) tolerance 10–20%. Implicated foods usually contain \(1 \times 10^3\) per gram.

Toxic level:

\(1 \times 10^5\) per gram in nonfermented food

\(1 \times 10^7\) per gram in fermented food.

Produces an enzyme that coagulates animal serum (coagulase); thus isolates are often referred to as coagulase positive.

Media used for growth: tryptic soy agar and Baird–Parker agar.

See Part 2: Bacterial Foodborne Illnesses.

**staphylococcus enterotoxin** A heat-resistant toxin produced by *Staphylococcus aureus*.

**Staphylococcus pyogenes (aureus)** See *Staphylococcus aureus*.

**staple** 1) Food products that are essential for daily consumption. 2) A vegetable fiber.

**staple food** Food that is regularly consumed in a given country or community; food in an area that makes up a large portion of the total calories consumed; food used in times of food shortage.

**Stapleton blend** A full body, lively taste, restaurant (forgiving when left heated for long periods of time) blend of coffee that will satisfy a wide range of coffee preferences.
star anise A spice that has a star-shaped fruit and an anise seed overtone but is not related to the anise seed spice and has a distinctive flavor

star anise blend A scented tea made from black tea with an anise flavor

starch (C₆H₁₀O₅)ₓ A carbohydrate (polysaccharide) made up of many glucose units [1 and 4 α (helical or spiral) linkage]. Most starches are a mixture of two polysaccharides. Found in seeds and roots; major source of food and feed energy. Edible starch is purified and made from corn, potatoes, rice, or wheat; laundry starch is made from the same products but is unpurified. A white granular polymer that is the principle part of the endosperm. Starchy foods are not flavorful if eaten raw; cooking swells the starch granules, breaks them open, improves the flavor, and increases digestibility; when heated the starch swells and can be used for thickening.

Amylose content:
- Corn 25–30%
- Potato 20–29%
- Rice 15–18%
- Wheat 25–35%

See also amylopectin; amylose; binder; sago

starch, palm See Part 2: Amylose and Amylopectin; Bananas, Composition; Corn Kernel; Corn Kernel Composition; Grain Analysis; Gums and Gelling Agents; Gums and Gelling Agents, Characteristics; Minerals, Trace, Limits; Starch; Starch, Microappearance; Starch, Modified; Starch, Roots Composition; Wheat and Flour Composition; Wheat, Carbohydrate Composition; Wheat Kernel; Wheat Kernel Parts; Wheat, Parts of Grain; Wheat Products Composition

starch, acid conversion Starch hydrolyzed by acid (pH 2.0) to produce corn syrup (D.E. 20–55)

starch, acid-modified Made by controlled acid (hydrochloric or sulfuric) hydrolysis (of alpha-D-glucosidic bond) of water suspension of granular starch at temperatures too low for gelatinization. When appropriate hydrolysis has been obtained, the acid is neutralized, the starch is filtered, washed, and dried, and this produces a starch with reduced molecular size

starch, bleached Starch oxidized with ammonium persulfate, hydrogen peroxide, peracetic acid, potassium permanganate, sodium hypochlorite, or sodium chloride to remove color. Also reduces bacterial numbers

starch, conversion Starch hydrolyzed (usually by acid) to dextrose, maltose, and other sugars See starch, acid conversion

starch, converted Starch that has been treated to reduce the viscosity (higher percentage can be used in final product) and this also increases the solubility in water. Treatments include acid, oxidizing with chlorine, and roasting in dry state (produces dextrins)

starch, cross-linked Starch treatment (mixed anhydride of acetic and adipic acid, phosphorus oxychloride, sodium trimetaphosphate, and/or epichlorohydrin) so that hydroxyl groups form different molecules; can increase their hydrogen bonding and thus the granule will maintain its integrity at higher temperatures
stave Wooden pieces that make the side of a barrel, cask, or bucket
Stayman Winesap A variety of apple that is in season from November to February; excellent cooking and sauce apples; good eating apples
stay-on-tab end An easy-open end with nondetachable tab and retainer tear strip
steak A large, thick (1/2–1 1/2 inches), boneless or bone-in, slice of meat; also a cross-section cut of large fish
Storage: Coldest part of refrigerator; original wrapper for 1–2 days storage; unwrap and cover loosely for 3–5 days storage
See Part 2: Animal Foods, Composition; Beef Chart; Beef Yields; Broiling Griddle, Meat; Broiling Meat; Broiling Time and Temperature; Fish Forms; Fish Steaks; Fish Yields; Frozen Food Storage; Lamb Cuts; Lamb Cuts and Uses; Meat Composition; Meat, Frozen Storage; Meat Identification; Meat, Servings Per Pound; Minerals, Food; Pork Chart; Pork, Cooking; Pork Cooking Methods; Pork Cuts; Pork Cuts and Uses; Pork Loin Cooking; Portion Size; Sauce, Beef Steak
steam 1) Water in a vapor state at 212°F and 1 atm pressure. Water increases more than 1600 volumes when converted to vapor. 2) To cook in steam (with or without pressure) in a steamer or in a pressure cooker
See Part 2: Steam, Properties
steam bone meal A dried, ground product obtained from cooking bones with steam under pressure
steam distillation The introduction of "dry" steam in a separate boiler into a still to remove the essential oils from a product
steam-distilled wood turpentine Wood turpentine distilled with steam from the oleoresin in wood or extracted from wood
steam dome Area in a hydrostatic retort where sterilization is accomplished
steamed Steam used to alter physical and/or chemical properties
steam-flow capper A capper that sweeps air from the container headspace with steam to produce a vacuum
steam header A pipe that supplies steam to a number of retorts
steam inlet A hole through which steam is admitted to the retort
steam jacket A double-walled cooking vessel in which steam between the walls is used for heating
steam-pressure canner A large, heavy container with a tight-fitting cover, a safety valve, steam vent, and gage (may be weighted) that may be used for canning (normally 10 pounds of pressure at sea level; 240°F) low acid foods
steam-pressure saucepan A vessel similar to, but smaller than, a steam pressure canner
steam-rendered lard Live steam under 30–50 lb pressure is introduced into a container with the fat
steam spreader A steam line with perforations inside a retort through which steam is distributed into a load of containers
steam-water interface The interface between water (used for hydrostatic pressure) and steam (used for processing) in a hydrostatic cooker
steapsin Pancreatic lipase; converts triglycerides to fatty acid and glycerol
stearic acid (octadecanoic acid)
\[
\text{CH}_3(\text{CH}_2)_{16}\text{COOH}
\]
An 18-carbon saturated fatty acid found in animal and vegetable fats, especially beef. Used as a food lubricant, defoaming agent, and to manufacture other food additives.
Physical properties: acidic value 206–210; iodine value 3–7; melting point 69°C; saponification value 207–210; titer 54–55°C
Storage: tight container
See Part 2: Fat and Oils, Fatty Acid Composition; Fatty Acids; Fatty Acids and Their Properties; Fatty Acids, Fats and Oils; Milk, Fatty Acids, Seasonal; Oils, Seed and Fruit; Saturated Fatty Acids; Seed, Chemical Composition; Wheat, Fatty Acids; Wheat Products Composition
stearine (stearin) A hard hydrogenated fat (tristearate); iodine value below 20; melting point 135–155°F
stearyl 2 lactylc acid A food emulsifier used in shortening
stearyl monoglyceride A food emulsifier used in some shortening
stearyl monoglyceryl citrate Used as a food emulsion stabilizer
Storage: tight container
steatite See soapstone
steatosis Degeneration of fatty tissue and accumulation of this degenerate fatty tissue in a muscle
steel 1) A hand tool (smooth or ribbed) used to straighten the wire edge of a knife and to keep it sharp. 2) Purified iron containing 0.1–1.5% carbon. Often used to make a cooking utensil and there seems to be no serious question concerning safety; soluble to varying degrees in food
steel cut oatmeal Cut oatmeal; not rolled oats
steelhead (Salmo gairdneri) A rainbow trout
See Part 2: Salmon and Trout
steelhead trout A food fish See rainbow trout, North America
steel wool A mass of fine steel threads used as an abrasive for cleaning
steep (soak) 1) To soak in liquid. 2) Immerse barley to induce germination in the malting process. 3) To extract in liquid just below the boiling point, e.g., tea
steep-extracted Soluble materials removed from organics by soaking in water or other liquids
steepwater Liquid containing soluble materials extracted by steep extraction
steer A male bovine that has been castrated before developing any masculine characteristics
steer-bull Cryptorchid

steer-oid A growth promoting implant used on slaughter steers

steffens waste Desaccharified beet-sugar molasses

steinbuscher A soft to semisoft, strongly flavored cheese made from cow's milk and ripened by surface bacteria

steinbuscher-käse A sour, semihard, full cream cheese

steinhager A type of gin

steinwein A dry, full body, white, moselle, table wine

See franconia

stellete A small, star-shaped pasta

stem The principal body of a plant; a stalk; coarse, aerial part of plant that supports buds, fruit, leaves, etc.

See Part 2: Corn; Vegetables, Classification; Wastes, Agricultural and Industrial

Ste. Maure A very strong, goat's milk cheese with a creamy outside and chalky inside

stem correction Temperature correction applied to a thermometer reading to correct for the thermometer liquid that is above the sample being measured, and consequently at a different temperature

stem-end See blossom end

stem-end rind breakdown See aging

stem-end rot 1) A strawberry disease caused by a fungus (Gnomonia fructicola) similar to the fungus that causes leaf blight. Proper spacing and correct timing of fertilizer application are the most important preventive measures. Fungicides are also helpful.

2) A citrus fruit rot that causes a softening of the rind and underlying pulp and usually begins at the stem end. Dead ripe fruit is very susceptible. The rind turns from tan to brown and sometimes black. It is caused by two fungi:

Diplodia natalensis rot is very rapid and tissues do not shrink. The decay is rapid down the center axis and also develops in the rind along the lines that separate the segments. Odor is sour and fermented

Phomopsis citri rot is slower and some shriveling is noted. It progresses down the center core. The taste is flat, bitter, and rancid and the pulp is mushy.

Low-temperature (33–34°F) storage is desirable when it is not prohibited by possible peel injury. 3) Rot of mango and papayas caused by Diplodia natalensis or Phomopsis citri or other fungi. It is encouraged in mangos by storage temperatures above 55°F. Rot starts at stem end or injured areas and skin turns light brown to black, with a soft watery rot and a sour odor. In papayas (also Dothiorella gregarea) the skin may turn brown. A soft watery rot is formed with a sour odor

St. Emilion (Burgundies of the Gironde) A deep-colored, full-bodied wine having a fine bouquet, e.g., Chateau Ausone, Chateau Cheval Blanc

stem rot 1) A rice disease caused by a fungus (Sclerotium oryzae) that lives in the soil. It may be controlled by planting resistant varieties, balanced fertilizing, draining, crop rotation, or by foliar fungicides. 2) Blue stem; fusarium wilt; yellow blight. A sweet potato fungus (Fusarium oxysporum) disease that causes vines to die and formation of a black ring \( \frac{1}{4} \) inch below the top surface of the root

stem rust (Puccinia graminis) A disease (parasitic fungi) of the wheat stem. Causes shriveling and reduced yield

stepnøy A tilsit-type cheese sometimes flavored with caraway seed

steppe A tilsit- or gouda-type cheese made from whole milk or often made with partially skimmed milk

steradian

1 steradian = 3283 square degrees

= 0.6366 spherical right angles

= 1.1922 hemispheres

= 0.07958 spheres

sterculia gum See gum karaya

stere (kiloliter) A solid measure

1 stere = 999.973 liters (l)

= 35.316 cubic feet (ft\(^3\))

= 1 cubic meter (m\(^3\))

stereoisomer A chemical compound having two three-dimensional structural configurations, but the same molecular formula. Two types exist:

Geometric isomers, which have cis and trans configurations

Optical isomers, which have right-handed (dextro) and left-handed (levo) configurations

sterile 1) A substance that contains no microorganisms. 2) An animal unable to reproduce

sterile-male technique A method of controlling pests by producing and releasing sterile males of the species

sterility, commercial Food free of viable forms of microorganisms having public health significance, as well as any microorganisms of nonhealth significance capable of reproducing in food under normal nonrefrigerated conditions of storage and distribution

sterilization 1) The process of destroying microorganisms by dry heat (320°F for 1 hour) or by radiation. 2) Destruction or removal of all living organisms; act or process of eliminating all living forms of life. Whole milk is sterilized by heating to 270–280°F for 6–10 seconds and then aseptically canning. It has a slight cooked flavor. 3) An operation that renders an animal incapable of reproduction

See Part 2: Radiation Preservation

sterilizer A product that will destroy or eliminate all forms of life, e.g., ethylene oxide in specially constructed devices or betapropiolactone in the fumigation of tightly closed spaces

sterlet (sterlijad; Acipenser ruthenus) A small, sturgeon-type, food fish found in the Volga or Danube Parts used: caviar, flesh, isinglass

sterling silver (solid silver) An alloy that must be 925/1000 pure silver; balance usually copper
sternal rib  A rib that articulates directly with the sternum. See also rib.

sternebrae  See Part 2: Bone.

sternum  The breast bone; keel bone; eight sternal and five asternal bones in this group. See Part 2: Bone; Bone Age.

sternum sternebrae  Breast bone that attaches first ribs together (hog has 6).

steroid  A compound that contains the ring structure.

Examples: bile acids, vitamin D, and sex hormones. See Part 2: Steroids.

sterol  An alcohol derived from a steroid; a group of cyclic alcohols of complex structure with a base consisting of three six-membered rings and one five-membered ring; secondary alcohol and various side chains are also in the structures; cholesterol is best known.

stew  1) To cook (150–190°F) slowly in liquid, just below the boiling point. 2) A dish containing a minimum of 25% meat on a fresh meat weight basis, cooked in gravy or meat sauce; small pieces of meat and/or vegetables simmered in water.

Types:
- Bohemian—pumpernickel crumbs
- Brunswick—squirrel and chicken
- Calabrese—tomato juice
- Carbonade—brown gravy
- Goulashes
- Ham
- Irish—lamb; white gravy
- Pork
- Pot roast

See Part 2: Meat Composition; Meat, Servings Per Pound; Microwave Processing Time; Portion Size; Poultry Class; Simmering Meat; Veal Chart; Veal Cuts; Veal Cuts and Uses.

stewing chicken  See hen.

St. Galler Schublig  A moist, cooked, smoked Swiss sausage made from medium chopped, medium seasoned beef and pork and stuffed into pork casings.

stick  1) Tankwater collected in evaporators. 2) Row of containers the weight of the conveyor chain used to transport containers through a hydrostatic retort.

sticking  Exsanguinating by cutting the carotid arteries; meat from the region of the throat or breast.

sticking knife  A knife with a 6–7 in. blade, sharpened on both sides.

stickwater  The aqueous, fat-free extract of cooked meat or fish. It contains water condensed from steam used in processing, aqueous cell solution, and soluble glue proteins.

stifado  Spiced, braised beef and onions.

stiffs  See osteomalacia.

stifle joint  The joint between hind shank and leg bone (femuro-tibia-patello joint); in live animals just behind rear flank.

See Part 2: Beef Rounds, Bone Structure; Beef Wholesale Cuts; Bone; Lamb, Wholesale Cuts; Pork Wholesale Cuts; Veal Wholesale Cuts.

stigma  That portion of the pistil of a plant where pollen is applied. See Part 2: Flower, Perfect.

stilbestrol (diethylstilbestrol)  A synthetic estrogen (female sex hormone) that was implanted and fed to cattle to promote growth. Because of its possible carcinogenic effects, the federal government has prohibited its use.

still  1) Equipment used for separating liquids by distillation, i.e., boiling with subsequent condensation. 2) A noneffervescent (nonsparkling) wine.

stillage  Grain mash after fermentation and removal of alcohol.

stillagia  See Part 2: Iodine and Saponification Values.

still retort  A batch type, nonagitating vertical or horizontal pressure vessel used for processing food at temperatures above 212°F.

stilton  A smooth-textured, crumbly, sharp, rich, blue-veined cheese made from cow’s milk and with a wrinkled, melonlike rind and formed into a tall cylinder (2–8 kg).

stilton cheese  A semihard cheese from England; similar to Roquefort (milder) or blue (more crumbly). Made from cow’s milk that is pasteurized and inoculated, rennet added, not scalded, not pressed, and mold ripened 2–6 months. Molds responsible for the blue-green appearance are *Penicillium roqueforti* or *P. glaucum*.

Types:
- Blue—tangy flavor; close; soft texture
- White—mild; crumbly.

See Part 2: Cheese Characteristics; Cheese, Vitamin Content; Milk and Milk Products, Vitamin Content; Vitamin A, Milk and Milk Products.

stimulant  A substance that will speed up a system.

stimulus  An energy change in the environment that affects one of the senses.

stinger  An alcoholic beverage made with 1 1/2 oz (1 jigger) brandy and 3 oz (1/2 jigger) white creme de menthe shaken with ice and strained.

stingfish  A foodfish. See great weever.

sting nematode (*Belonolaimus* spp.)  1) An extremely small worm that attacks strawberries (and several other crops) by feeding on the exterior of the root. To prevent, plant stock that is substantially free of sting nematodes; soil fumigation is also recommended. 2) A parasitic nematode (*B. longicaudatus*) that reduces the yield and quality of sweet potatoes.

stingray (*Dasyatis* spp.)  A food fish.

stink bug (plant bug)  A brown, green or black (some have markings), shield-shaped, up to 3/8 inch long and 3/8 inch wide insect. The nymphs resemble adults but are smaller and give off a foul odor. They suck sap.
from plants See consperse stink bug; Say's stink bug
See Part 2: Insect Control
stinker See sulfite
stink fish A strong flavored, dried, salted fish used as a flavoring
stinking smut See smut and dwarf smut
stir Mixing in a circular motion, usually with a tool or machine
stir frying Cooking of sliced food quickly in a small amount of oil in a skillet or wok
stirk Weaned calves (usually male or female)
Stirling's approximation formula See factorial
stitches Individual injections of a pickle into meat about to be cured
stjernelux A beef and pork salami; a dry, uncooked, smoked Norwegian sausage made from medium chopped, medium seasoned beef and pork and fermented and stuffed into artificial casings
St. John's bread See locust bean gum
St. John's wort A plant having a toxic principle. Also used as an herb
See Part 2: Poisonous Plants
stock 1) A short name for livestock. 2) A solution of water-soluble food components, e.g., broth
Types:
Brown—meat, bones, and vegetables are browned before simmering
Brown bone—only bones are used
Light—meat and vegetables not browned before simmering
3) Seedling tree used in budding or grafting
See bouillon; carryover; rootstock
stock cattle (stocker) Young, light, thin steers or cows
stockfish A South African (*Merluccius capensis*) food fish. Cod (*Gadus*), saithe (*Pollachius*), or blue ling (*Molva*), dried (17–18% moisture) fish; fish dried and cured without salt; air-dried cod See codfish
See Part 2: Vitamin D, Fish
stockpot, canned soup

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Stoddard oat agar See Part 2: Microorganism, Media
stoichiometry Study of the laws governing the quantities of substances that enter into and are produced by chemical reactions; determination of the proportions in which elements combine
stoke See red laver

**Stokes' law** An equation defining the rate of settling of particles from a suspension

**Stolichnaya** A tradename for a vodka

stollen German coffee cake, made with unbleached flour, citrus fruits, and raisins. A high-fat, tea bread with fruit

stolon (runner) A horizontal stem below or along the top of the ground, e.g., strawberries

**stomach** A pouch (10 inches long and 4 1/2 inches in diameter in humans) between the esophagus and the intestine in which most of the digestive process occurs.
Capacity (human adult): 1—2 liters
Food passage: 1.5–4 hours
Gastric juice volume: 2 liter per day
pH 1.5–3.0
See Part 2: Casings, Animal; Casings; Hog and Beef; Gland Weights; Organ Weights

**stomachic** Strength to stomach; stimulate appetite

**stomach poison** A pesticide that kills an insect that ingests it

**stomata** Pores located on the underside of leaves

**stomach** Food with a hard stony pit, e.g., apricot, cherry, nectarine, peach, plum

**stony pit** A virus disease that causes stony tissue in pear fruit usually at the base of depressions; some fruit is misshapened

**stool** Fecal discharge; feces evacuated in one bowel movement

**STOP** Swab test on premises; a rapid, on-site microbiological procedure that uses an antibiotic screening test

**storage** Place or process of keeping safe or in reserve
See controlled atmosphere storage; shelf-life
See Part 2: Fruit, Growing Season, Storage Life; Fruit Storage; Meat, Frozen Storage; Meat Storage; Pork Storage; Vegetable Storage

**storage payment** Payment a farmer receives when he/she places a commodity in the farmer-owned reserve

**storax (styrax)** A balsamic resin
See Part 2: Essential Oils

**store cheese** A general term for cheddar; Canadian cheddar cheese

**stores** Young weaned pigs; lean cattle prior to fattening

**stot** Castrated male cattle

**stout** A strong, dark (black malt is used) beer; an English beer with 3.9–5.3% alcohol by volume. A dark, heavy, alcoholic beverage fermented from barley

**stover** Mature, cured, dried stalk and leaves of corn from which ears have been removed; mature, cured stalk of sorghum after the heads have been removed
See corn, aerial part
STP  Abbreviation for standard temperature and pressure, e.g., 0°C and 760 mmHg
STPP  Sodium tripolyphosphate
stracchino  A creamy, semisoft, mild flavored cheese made from cow’s milk and ripened by surface bacteria See stracchino cheese
stracchino cheese  Several varieties of a pungent cheese; a soft fresh cheese made from whole milk See stracchino
straddle (spread)  The purchase of one future month against the sale of another future month of the same commodity or the sale of one month against an existing position in a different month
straight-grade flour  A grade of white flour that comprises from 97–100% of all the white flour milled
straighthead  A rice physiological disease that develops from an abnormal soil condition. It may be controlled by planting resistant varieties and draining
straight line capper  A container closing machine in which the containers travel in a straight line through the capping operation
straightneck  A creamy yellow, long cylindrical, summer squash
straight whiskey  See bottled in bond
strain  1) To pass through a filter, strainer, or sieve. 2) A microbial isolate or culture
strained food (baby food; pureed food)  Smooth and uniform processed canned food that has been strained
strained honey  Honey separated from comb by straining after the comb has been crushed
Strassburg  A moist, cooked, unsmoked Australian sausage made from finely chopped, mild seasoned pork and stuffed into artificial casings See muenster
Strassburg brand sausage  A cooked, smoked sausage
Strassburg, liver sausage  A high-grade, liver sausage made from pork and veal livers, diced calves liver, whole pistachio nuts, onions, and spices; it is cooked but not smoked. Goose style is in 4 inch links
Strassburg, smoked  A moist, cooked, smoked Australian sausage made from finely chopped, medium seasoned pork and stuffed into artificial casings
stravecchio  Three-year-old parmesan cheese
straw  The stem of grain after threshing. The plant residue, including chaff, remaining after threshing. Good “mulching material (limited in nutrients), but it is a fire hazard; oat straw is softer than wheat or rye straw; barley straw has bars See corn, aerial part
strawberry (Fragaria fam; wild variety, F. vesca)  The small red edible fruit of the species Fragaria; a perennial herb that sends out runners that will root into new plants. The edible fruit is an enlarged receptacle and the seeds are imbedded in its surface. This dessert fruit is very perishable and may be consumed fresh, canned, frozen, or made into jam
Registered plants: grown under state supervision; plants are substantially virus-free
Certified: grown under state supervision; plants are free of most noxious diseases and insects, however they may carry virus
Bearing age: 2 years
Yield per plant: ½–1 pound
Canned style:
- Berries—limited quantities
- In syrup (better color)
- In water
- Pie filling
Frozen style:
- Halves—sugared
- Slices—sugared
- Whole—sugared and unsugared
For freezing: add 1 cup of sugar and 1 teaspoon of ascorbic acid to 4.5 cups of washed and hulled berries
Tea is sometimes made from roots and leaves
Refuse: 5%
Equivalents:
- 1 bushel, fresh = 40–50 pounds (lb)
- = 10–16 quarts (qt), canned
- 1 crate (24 qt), fresh = 38 pints (pt), frozen
- = 36 lb
- = 24 pt, canned
- 20 ounce (oz) bag, frozen, unsweetened
- = 4 cups, whole berries
- = 2.5 cups, sliced berries
- = 2.25 cups, pureed berries
- 6–8 cups, fresh = 1 qt, canned
- 1½–4 qt fresh = 1 qt canned
- 1 qt, fresh = 20 ounces
- = 4 cups, sliced
- = 4 servings
- = 1 pound, sliced, in sugar, frozen
- 1.5 lb, fresh = 10 oz, whole, frozen
- 1½ lb, fresh = 4 cups (1 cup = 145 g or 5.1 oz)
- = 4 cups, sliced
- 1 lb, fresh = 1 pt
- 1 small basket = 1 pt
- 4 cups, whole = 3.5 cups, sliced
- 1 pt = 3.25 cups, whole berries
- = 2.5 cups, of slices
- = 1.6 cups, pureed
- = 1 cup, mashed
- = 12 large, stemmed berries
- = 36 small, stemmed berries
- = 3 to 6 servings
- 1 pt, frozen = 0.7 qt, fresh
- 10 oz, frozen, sliced and sweetened
- = 1.25 cups, sliced berries and syrup
- = 2–3 servings
- 1 cup, frozen, sweetened, whole = 9 oz
- 1 cup, fresh, whole, capped = 5.1 oz
- 1 cup, whole = 4 oz
- 1 cup, mashed or pureed = 1.6 cups, fresh or frozen
- 1 serving = 0.75 cup
Composition (raw): moisture 90%; protein 1%; fat 0.5%; carbohydrate 8%; fiber 2%; ash 0.5%; pH 2.3–3.8 (lowest acidity for jelly is pH 3.4); vitamin A 60 IU/100 g; ascorbic acid 60 mg/100 g
Handling: do not hull prior to washing. Wash, dry, and twist off caps
Storage: remove damaged berries; do not wash; leave caps on until ready to use,
- Short term (fresh; 4 days)—31°F, 85–90% relative humidity
strawberry (*Fragaria* fam; wild variety, *F. vesca*)

<table>
<thead>
<tr>
<th>Strawberry type</th>
<th>Production</th>
<th>Area</th>
<th>Shape</th>
<th>Color</th>
<th>Flavor</th>
<th>Use</th>
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<td><strong>Everbearing (F. vesca)</strong>—fruit production summer and fall</td>
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<td>Large, firm</td>
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<td>Gem</td>
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<td><strong>Sweet Abundance</strong></td>
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### Strawberry type

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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vesper</td>
<td>Late</td>
<td></td>
<td></td>
<td></td>
<td>Good</td>
<td></td>
</tr>
</tbody>
</table>

### Storage (continued)

**Long term (frozen):** 1 year at 0°F

**See Part 2:** Ascorbic Acid; Canned Yield; Flavor Ingredients, Taste and Flavor Type; Flavors, Beverages; Food, Composition: Frozen Food Storage; Fruit, Availability; Fruit Classification; Fruit Composition; Fruit Frozen Yield; Fruit, Growing Season, Storage Life; Fruit Harvest Dates; Fruit Servings Per Pound; Iron; Minerals, Food; Plant Foods, Composition; Potassium-Rich Foods; Rot Spoilage; Storage; Sugar, Fruit; Vitamin C; Wine, Sweet

**Strawberry, canned**

Most often as strawberry pie filling. In addition to strawberries, may also contain natural and artificial flavors.

**Syrup percentage:**

- Extra light — <14%
- Light — 14–19%
- Heavy — 19–27%
- Extra heavy — 27–35%

**Strawberry cream pie**

Composition: sodium 101 mg per 1/8 of 9-inch pie (66 g)

**Strawberry, flavoring** A synthetic flavor mixed with fruit juice, extract, water, and alcohol. Used with red coloring

**Strawberry, frozen**

Style: halves, slices, whole

Packed: with and without sugar

**Strawberry guava** A reddish purple fruit smaller than ordinary guava

**Strawberry pie**

1/8 of 9-inch pie = 185 calories

**Strawberry preserves**

2 pints strawberries and 4 cups sugar

**Strawberry spinach** See chard

**Strawberry tomato** See gooseberry

**Strawberry tree** See arbutus

**Strawberry weevil clipper**

Host: strawberry, blackberry, raspberry and dewberry

Damage: cuts stems of fruit buds

Control: insecticide

**Strawbreaker (Cercosporella herpotrichoides)** A fungus that attacks the stems of wheat at the soil level causing the straw to break over

**Straw mushroom (tobo; Volvariella voloaraceae)** Mushrooms grown on rice straw

**Straw potatoes** Match-sized French fried potatoes

**Streak mosaic** A virus affecting wheat

**Strega** A yellow, sweet, perfumed (herb), after-dinner cordial

**Strechleberwurst** A moist or semidry, cooked, smoked or unsmoked Swiss sausage made from fine or medium chopped, medium seasoned beef, pork, and veal and stuffed into beef, pork or artificial casings

**Streptococci** Rows of coci cells; beadlike; chainlike

*Streptococcus* Spherical or oval-shaped bacteria of genus *Streptococcus*, occurring in chains; some are pathogenic; responsible for early souring of milk; used in butter and cheese starters; produced 0.8–1% lactic acid

**See Part 2:** Bacteria, Molds and Yeasts; Food Poisoning, Bacteria; Illness from Food; Infectious Agents; Infections Diseases, Food-Borne; Intestinal Microorganisms, in Triple-Sugar Agar; Microbiological Media; Microorganism, Culture Media, Dairy and Food Products; Microorganism, Media; Spoilage, Carbohydrate Foods; Spoilage, Fat in Food; Spoilage, Protein Foods; Thermophiles

**Streptomycin** An antibiotic agent obtained from *Actinomyces griseus* and active against a variety of gram-negative and some gram-positive bacteria. It is very useful in controlling fire blight in pome fruit.

**See Part 2:** Antibiotic Standards; Wastes, Agricultural and Industrial

**Streptosel agar** See Part 2: Microbiological Media

**Stress** 1) An unusual physiological or psychological force; adverse conditions that disrupt the normal functioning of the body. 2) A stimulus, such as pain or fear, that disturbs normal physiological equilibrium. 3) A mechanical force per unit of area
stretch  To draw out; lengthen; extend; elongate

striated (voluntary) muscle  A skeletal muscle tissue that has parallel cross stripes (striations) that may be seen under a microscope. There are two types:
White (based on gross color)—shorter twitch, time-faster; can be extremely active but fatigues rapidly.
Dark or red (based on gross color)—contracts slowly but can sustain activity; has greater oxygen uptake; higher sarcoplasmic-myofibril ratio; more myoglobin; large energy phosphate supply; higher glycolytic capacity.

strike price  The price that the buyer and seller of an option have agreed upon for the futures contract. Various strike prices are offered on options and their different premiums are a reflection of whether the strike prices are below, at, or above the current selling price for the commodity. Strike prices are set by the Exchange at predetermined times.

string cheese  A mild, fresh, soft or semisoft cheese pulled into strings and then wound.

stringer  See spalen.

strip  1) A beef short loin (steak or roast) with the tenderloin removed. If the bone is removed it is called a boneless strip steak or roast. 2) One-half of a dried, salted, boned cod.
See Part 2: Meat Identification; Pork Loin Cooking.

strip chart  Continuous recording equipment that monitors electrical impulses (e.g., thermometer thermocouples).

striped bass (rock; rock bass; rock fish; Morone saxatilis; Roccus saxatilis)  A lean fish caught on the Atlantic and Pacific coasts. A light meat, light to moderate flavor, finfish prepared like salmon. See bass; sea bass.

striped mullet (Mugil cephalus)  A food fish. See mullet.

striped tuna (skipjack)  A food fish.

stripe rust (Puccinia striiformis)  A disease (parasitic fungi) of the wheat leaf; causes fewer heads and shriveled seeds.

stripped cap  Results when cap lugs have passed over glass lugs due to too much closure torque. May have vacuum but no security value.

stripping  Last milk removed during milking.

strip steak (top loin)  Often called New York strip steak or Kansas City steak. A steak from the loin strip.

stroboscope  An intermittent source of light whose frequency can be controlled to coincide with movement of machine parts.

stroganoff, sauce

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dehydrated, prepared with milk and water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>4.6</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>12.1</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>9.5</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>57.7</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>1.3</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>16.1</td>
</tr>
</tbody>
</table>

stroma  Framework connective tissue of an organ. The salt-insoluble protein fraction of muscle.

strontium (Sr)  A metallic element; at. no. 38; at. wt. 87.63; Group II A of Periodic Table; electron configuration 2–8–18–8–2. orbit K L M N O. Oxidation state +2. See Part 2: Grain Analysis.

struck through  When salt has penetrated to the center of tissue.

structural formula  A chemical formula that indicates the geometric contour of an organic compound and the relationship of its constituent atoms.

structured scale  A scoring system used in preference evaluation that includes numbers and descriptive words.

strudel  A confection made from paper-thin, flaky, almost transparent dough that is filled with a variety of sweet or savory material (e.g., apple, fruit, or cheese).

strychnine  (C21H22N2O2)  A highly toxic alkaloid used as a pest exterminator; derived from strychnos nuts.

Stuart medium base  See Part 2: Microorganism, Media.

stubble  The lower portion of herbaceous plant remaining after harvesting. The stalk of grain left in the ground after cutting.

stuck  Wine container. 1 stuck = 264 gallons.

stuck yolk  An egg yolk that adheres to the shell membrane.

stud  To place seasoning into the surface of food.

stuff  To fill forcibly; to force-feed; to fill a cavity, e.g., fish, fowl, chops.

stuffed  Filled tightly.

stuffed chops  See Part 2: Pork Loin Cooking.

stuffing (dressing)  Dressing placed in meat, usually fowl.

Ingredients (many combinations):
Flavoring:
- Garlic
- Onion
- Shallots

Fruit:
- Apples
- Cranberries
- Pineapple
- Prune.
Herbs:
- Celery tops
- Parsley

Meat:
- Oysters
- Sausage

Seasoning:
- Sharp Ingredients:
  - Cucumber
  - Pickle
- Starch:
  - Bread (base)
  - Chestnut
  - Corn
  - Cornmeal
  - Potatoes
  - Rice

Must be cooked to at least 165°F during roasting.

Storage of leftover: remove from bird; cool immediately and store separate from bird; use in 1–2 days

stuifin  See sprat

stun  To render unconscious; usually accomplished prior to slaughter by mechanical, electrical, or gas techniques  See stunning

stunning  Rendering an animal unconscious by voltage or with a captive bolt prior to humane slaughter  See stun

sturgeon
- Atlantic (common; Acipenser sturio)
- Atlantic Sturgeon (Acipenser oxyrhynchus)—Western Atlantic; freshwater
- Beluga (Huso huso)—Caspian Sea; Danube
- Great (Acipenser huro)—Caspian Sea
- Green (Acipenser medirostris)—Caspian Sea
- Lake (Acipenser fulvescens)
- Osetr (Russian; Acipenser gueldenstaedtii colchicus)—Caspian Sea; Danube
- Sevruga (Acipenser stellatus)—Caspian Sea
- Ship (Acipenser nuditennis)
- Shortnose (Acipenser brevoirostrum)—Western Atlantic; freshwater
- Shovelnose (Scaphirhynchus platorhinynchus)
- Sterladi (Acipenser ruthenus)
- White (Acipenser transmontanus)

A salt and freshwater fish used for food; its eggs are called caviar; dried spinal marrow is called vesiga. Often up to 8 feet long; eggs 1/4 inch in diameter and often comprise 1/3 of the weight of the fish.

Consumed: fresh, dried, smoked, and canned
Type:
- Freshwater
- Live in saltwater but spawn in freshwater
- Saltwater

Composition (raw): moisture 79%; protein 18%; fat 2%; ash 1%

See Part 2: Unsaturated Fatty Acids

stylar-end breakdown  A physiological condition in limes and lemons that causes a collapse of the rind frequently on the stylar end. The first symptom is a grayish tan water-soaked spot at the base of the nipple that becomes darker with age and sinks below the tissue. There is tissue breakdown beneath this area, a water soaking of the core tissue, and development of gum pockets. The tissue is then often invaded by other fungi

style  A thread-like extension of the ovary of a flower terminating in the stigma

See Part 2: Flower, Perfect

styrax  See storax

Styrofoam  Proprietary name for a rigid polystyrene foam used for insulation

See Part 2: Insulation

su  A vinegar

sub-  Prefix meaning under or below

subacute  A milder form of a disease or illness

subclover  A winter annual grass

subcutaneous  Beneath the skin; injected beneath the skin

subcutis  The third layer of the skin that attaches it to the lower structures; it consists of collagenous and elastin fibers and fatty deposits

subgroup  Generally a small group of sample units representing a portion of a sample

subjective  Affected by personal bias or individual preference, as in a taste panel; a value that cannot be precisely measured; the opposite of objective

sublime
1) To pass from the solid to the gaseous state without formation of liquid. 2) To purify

sublime olive oil  See virgin olive oil

subliminal  Below the threshold

sublumbar  See Part 2: Lymph Nodes, Ox; Lymph Nodes, Pig

submaxillary  See Part 2: Lymph Nodes, Pig

submucous  See Part 2: Intestine, Cross Section

subprimal  Primal cuts of meat with most of the bone and other waste trimmed away; a subdivision of a primal cut usually by sectioning out whole muscles; e.g., top round, whole tenderloin, rib eye  See subprimal cuts

subprimal cuts  Cuts smaller than primal, used in the boxed beef programs; e.g., primal round is divided into top, bottom, eye, and sirloin tip  See subprimal

subscapularis  A muscle of the chuck located medial to the scapula

subsidy  A government payment

subsoil (deeper soil)  The soil below plowed or cultivated area

substance  An element or a compound; broad definition also includes mixtures

substituent  An element or group replacing hydrogen

substitution  Replacement of one atom or group by another in a chemical reaction; e.g., in phenol a hydroxyl group is substituted for the ortho hydrogen atom of benzene

substrate  A substance acted upon by an enzyme or ferment; media on which microorganisms may be grown

subterranean clover (Trifolium subterraneum)  A pubescent annual that resembles white clover

subtilin  An antibiotic from Bacillus subtilis
subtle A delicate blend of flavor; no flavor predominates

sucaryl A trade name for an artificial sweetener (sodium cyclamate)

succinic acid \((\text{HOOC—CH}_2—\text{CH}_2—\text{COOH})\) An organic acid found in food and sometimes used as an additive; melting point 185-190°C. Odorless but has a strong, acid taste. Used as a food neutralizing agent or buffer or to retard plant growth

Storage: tight container

See Part 2: Acidulants; Maple Syrup Composition; Normal Solutions; Organic Acids in Fruits and Vegetables

succinic anhydride See Part 2: Acidulants

succinylated monoglyceride Used as a food emulsifier; dough conditioner, surfactant

Storage: tight container

succory See chicory

succotash A mixture of 50-75% whole kernel corn (sometimes cream style) and 25-50% lima or green beans. May be with or without tomatoes.

1 cup, frozen, boiled, drained = 6.6-6.8 ounces

pH 6

succulence Plants that are appetizing to animals

succulent Juicy

sue de monbazillac Yellow- and green-colored types of herb liqueur

sucker 1) Buffalo fish \(\text{(Ictiobus spp.)}\), quillback \(\text{(Carpiodes cyprinus)}\), redhorse \(\text{(Moxostoma spp.)}\), white, common white, buffalo fish \(\text{(Catostomus commersoni)}\); a North American, freshwater, food fish. 2) Candy on a stick. 3) Shoots arising from roots or the lower part of a plant stem See sucker, white

sucker, white \(\text{(Catostomus commersoni)}\) A moderately high-fat, white flesh, food fish See sucker

suckle To nurse

sucrase A carbohydrate digestion enzyme that converts sucrose into glucose and fructose See also invertase

sucrol A sweetening agent 200 times as sweet as sucrose

See Part 2: Sweetening Agents; Sweetness of Sweeteners

sucrose \(\text{(saccharose)}\) A carbohydrate made up of a molecule of glucose and a molecule of fructose; used as a sweetening agent and food.

\[
\begin{align*}
\text{H} & \quad \text{H} \\
\text{C} & \quad \text{C} \\
\text{O} & \quad \text{OH} \\
\text{HO} & \quad \text{C} \\
\text{H} & \quad \text{COH} \\
\text{HO} & \quad \text{H} \\
\text{H} & \quad \text{H} \\
\text{HO} & \quad \text{OH} \\
\text{H} & \quad \text{COH} \\
\text{H} & \quad \text{H} \\
\text{H} & \quad \text{H}
\end{align*}
\]

Found in sugar cane (15-20%), sugar beet (10-17%), sugar maple, and some palm trees; often called cane sugar or sugar; does not reduce Fehling’s solution. Used to sweeten food and as a ingredient in fermentation. The boiling point of sucrose solutions varies according to percentage of sucrose

<table>
<thead>
<tr>
<th>Sucrose (%)</th>
<th>Boiling point (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>10</td>
<td>100.4</td>
</tr>
<tr>
<td>20</td>
<td>100.6</td>
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<td>103</td>
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<td>70</td>
<td>106.5</td>
</tr>
<tr>
<td>80</td>
<td>112.0</td>
</tr>
<tr>
<td>90.8</td>
<td>130.0</td>
</tr>
</tbody>
</table>

See also sugar

Sudan grass An annual grass used for grazing and hay; seeding 32-40 lb per bu; 10-40 lb/acre; pH 5-5.5. Harvest when heading out

<table>
<thead>
<tr>
<th>Variety</th>
<th>Maturity</th>
<th>Resistance</th>
<th>Where grown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greenleaf</td>
<td>Late</td>
<td>Low</td>
<td>Midwest</td>
</tr>
<tr>
<td>Piper</td>
<td>Early</td>
<td>Low</td>
<td>Northern cornbelt and northeast</td>
</tr>
<tr>
<td>Georgia 337</td>
<td>Late</td>
<td>High</td>
<td>South</td>
</tr>
</tbody>
</table>

See sorghum

See Part 2: Poisonous Plants; Seed, Germination

suede Leather made from the inner layer of sheep skin

suckwurst A moist, cooked, unsmoked Irish sausage made from coarsely chopped, heavily seasoned pork and stuffed into artificial casings

suero A ricotta-type cheese made from cow’s butter-milk

suet Fatty tissue, especially kidney fat or scrotal (cod) fat, about 4% of a choice steer carcass; when rendered it yields tallow; hard fat surrounding the kidney and loins of beef and mutton

Physical properties: beef suet smoke point 235-245°F; iodine number 30-45; melting point (beef) 45-50°C; mutton coefficient of digestibility 88%; mutton suet melting point 50°C; saponification number 190-195

Volume (chopped medium fine):

1 pound = \(\frac{3}{4}\) cups

1 cup = 120 grams (4.2 ounces)
Suffolk
1) A medium-wool, mutton-type breed of sheep originating in southeastern England; it was started by crossing the Southdown with the Old Norfolk; they have a jet black face with no wool on face or ears and no horns; their fleece grade is approximately 5/8. 2) A white hog, probably of a small Yorkshire

See Part 2: Sheep Breeds

Suffolk ham
A black, surfaced, country ham that is smoked in molasses

sufu
A fruity, light, pale yellow or colored red, salty, molded cubes of soybean curd See tofu

sugar (sucrose)
Cane and beet sugar are chemically the same

sugar
A class name for sucrose and invert sugar

<table>
<thead>
<tr>
<th>Coarse</th>
<th>Lump</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanding—coarsely granulated</td>
<td>Fine granulated—principle sugar of commerce</td>
</tr>
<tr>
<td>Extra fine granulated</td>
<td>Berry or fruit or-fruit powdered (not powdered)</td>
</tr>
<tr>
<td>Coating</td>
<td>Powdered (not crystalline, machine ground)</td>
</tr>
<tr>
<td></td>
<td>Coarse powdered</td>
</tr>
<tr>
<td></td>
<td>Standard powdered</td>
</tr>
<tr>
<td></td>
<td>XXXX or confectioner’s 6X or special XXXX</td>
</tr>
<tr>
<td></td>
<td>Fine</td>
</tr>
</tbody>
</table>

Melting point 320°F (160°C); caramelization point 338°F (170°C)

Equivalents:
1 ton, raw sugar = 0.93 ton refined sugar
1 barrel = 350 pounds (lb)
3 1/4 cups confectioner’s sugar = 1 lb
2 1/4–3 cups, granulated sugar = 1 lb
2–2 1/4 cups, brown sugar = 1 lb
2 tbsp = 1 ounce (oz)

Substitution:
1 cup, granulated sugar
- 1 1/4 cups (lightly packed), brown sugar
- 1 1/4 cups, confectioner’s sugar
- 1 cup, molasses + 1/3 tsp, baking soda - 1/4 less liquid
- 1 cup, syrup + 1/3 tsp baking soda - 1/4 less liquid
- 1 cup, honey + 1/3 tsp, baking soda - 1/4 less liquid
- 1 1/4 cup, maple syrup - 1/4 less liquid

Composition: 99.9% pure; white, 1 tsp = 15 calories; granulated, 1 tsp = 15 calories; brown (packed), 1 tsp = 15 calories

Storage: at room temperature in tightly closed container (may be stored indefinitely)

Alteration for altitude See altitude
See also sucrose; sweeteners

See Part 2: Altitude Adjustments for Baking; Bananas, Composition; Brix Table; Brix, Temperature Correction; Calories, Daily Recommendations; Food, Composition; Fruit, Dried, Simmering; Fruit Sauces; Fruit, Simmering; Honey Composition; Lemon Juice

sugar beet root maggot
733

sugar beet root maggot
A class name for sucrose and invert sugar

Composition; Lime Juice Composition; Microbiological Media; Minerals (Trace), Limits; pH, Post Mortem; Storage, Dry; Storage Times; Sugar Cane Composition; Sugar, D-Aldehydo; Sugar, Fruit; Sugar, Legumes; Sugars and Sweets Composition; Sugars and Syrups Composition; Sugar Solutions; Sugar, Vegetables; Sweetening Agents; Sweetening Compounds; Sweetness of Sweeteners; Wheat and Flour Composition; Wheat, Carbohydrate Composition; Wheat, Parts of Grain; Wine, Sugar Addition

sugar agar
See Part 2: Microorganism, Media; Microorganism Reactions on Differential Tube Media

sugar alcohol
Alcohols that have a sweet taste but are chemically different from sugars; e.g., mannitol, sorbitol, and xylitol

sugar apple (Annona squamosa)
A small tree that produces a fruit with soft pulp and many seeds similar (except aroma) to the cherimoya See annonaceous fruit; custard apple

See Part 2: Fruit Storage

sugar, Barbados (moist sugar; dark brown sugar)
A dark (almost black), soft and moist, coarse-grained brown sugar

sugar, barley
A sugar that has been slowly melted and cooled to form an amorphous mass

sugar beet (Beta vulgaris cicla)
A cone-shaped, white beet (2–10 pounds; average 2 pounds) that grows in temperate climates and yields 15–20% sugar; matures in 130–140 days; tops and pulp used for cattle feed; molasses is also used for cattle feed and manufacture of industrial alcohol; filter cake used as a fertilizer.

2 large roots = 1 cup, sugar + 1/4 cup, blackstrap molasses

Composition: moisture 3.7%; sucrose 86.5%; invert sugar 8.8%; ash 1%; pH 4.2–4.4

See Part 2: Minerals, Food; Nutrients in Crops; Pectin Content; Sugar Beet Yield

sugar beet crown borer
Dirty white larvae with a distinct greenish tinge found in silken tubes, 2–6 inches long radiating out from the beet crown just under the soil surface. Larvae remain in tubes during daylight hours and come out and feed on beet crowns at night. Full grown larvae are 3/4 inch long. No satisfactory control is known

sugar beet root aphid
Pale yellowish insect found on roots surrounded by a white moldlike substance. May be found in all sizes up to 1/4 inch long. Feeds by sucking sap from roots, causing leaves to become light or yellowish green, wilt, and often die

sugar beet root maggot
Larvae of shiny black fly, 1/4 inch long, with transparent wings. Maggots are 1/4–1/3
734 sugar beet root maggot

inch long, tough skinned, and firm to the touch. Found on roots of wilting or drying beets
Control: aldicarb, diazinon, fensulfothion, fonofos, or phorate

sugarberry See hackberry

sugar, boiling

<table>
<thead>
<tr>
<th>Stages</th>
<th>Temperature (°F)</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short or small thread</td>
<td>115–220</td>
<td>Butter cream, water ice</td>
</tr>
<tr>
<td>Long thread, large thread, feather</td>
<td>225–230</td>
<td></td>
</tr>
<tr>
<td>Soft ball, small ball</td>
<td>240</td>
<td>Frosting</td>
</tr>
<tr>
<td>Hard ball, large ball</td>
<td>245–250</td>
<td></td>
</tr>
<tr>
<td>Small crack</td>
<td>310</td>
<td></td>
</tr>
<tr>
<td>Caramel</td>
<td>325</td>
<td>Dipping fruit</td>
</tr>
<tr>
<td>Black jack, burnt caramel</td>
<td>400</td>
<td>Coloring</td>
</tr>
</tbody>
</table>

sugar, brown (soft sugar) Semirefined (or highly refined mixed with filtered refiner’s sugar) sugar that contains molasses, ash, and moisture; adds color and flavor to cooked items; less sweet than granulated sugar.
Types:
- Less intense molasses flavor (sweeter)
  - Yellow—milder flavor
  - Golden brown
  - Light brown
  - Brownwashed-granulated
  - Dark (old-fashioned)-stronger flavor
- More intense molasses flavor (less sweet)
Firmly pack; keeps shape of cup when emptied for measuring
1 cup, brown sugar = 1 1/3 cup, granulated, brown sugar
1 cup, brown sugar, packed = 1 cup, granulated sugar
1 cup, light = 200 grams [g; 7.1 ounce (oz)]
2 cups, dark = 1 lb
1 cup, dark (packed) = 210 g (7.5 oz)
1 cup = 5 3/8 oz
1 tbsp = 1 3/4 oz
1 tsp = 1/3 oz
Composition: moisture 2%; carbohydrate 96%; ash 1.5%; sucrose 91-96% See sugar, Barbados; sugar, demerara

sugar, candy (coffee sugar; rock candy) Large (2.5 cm) to deep brown (sometimes dyed) sugar crystals often formed on a string

sugar cane (Saccharum officinarum) Origin India, eastern and southeastern Asia. A perennial grass (Cuba, Hawaii, Louisiana, Puerto Rico) that produces sap from which sugar is made. Plant requires 50 inches per year of moisture and temperatures of 70–95°F. Harvest just prior to flower formation; should be milled within hours after cutting. Planted by stem cuttings or sets and can be harvested in approximately 1 year; new stems, called ratoons, grow from the cut root and can be harvested in 1 year; yield decreases and new plantings are made about every 4 years; stem contains 65–80% juice (pH 5.2–6.2), which contains 20–21% sucrose
1 gallon cane syrup = 5 pounds, sugar
Waste is used as insulating board (Celotex) and fuel

sugar cane brandy Rum

sugar cane fiberboard See Part 2: Insulation

sugar cane syrup (cane syrup) A syrup made by concentrating sap of the sugar cane; max. 4.5% ash in unsulfured; 6% ash in sulfured; max. 30% moisture See also top syrup

sugar cane wine An alcoholic wine made from sugar cane juice

sugar, caster (sugar castor; sugar, superfine) Table sugar whose crystals are smaller than granulated sugar See sugar, castor; sugar, superfine

sugar, confectioner's See sugar, powdered

sugar cookie
2 1/2 inch, cookie = 35 calories
Sodium 108 mg per cookie (26 grams)

sugar, corn (dextrose of glucose) Obtained by crystallizing hydrolyzed cornstarch. It is 3/4 as sweet as sucrose; color is light brown or pale yellow. Sold as lump or granular

sugar cube (sugar lump) Moist sugar placed in molds and dried; 80–200 per pound. All sides are smooth; dissolves quickly

sugar, cut tablets Sugar molded in slabs and cut. The two long sides are rough due to cutting

sugar, demerara Raw, light amber, crystal sugar in which only the coarse impurities have been removed

sugar, foot Raw sugar, containing large quantities of molasses; coarser than Barbados; a very unrefined, almost black sugar

sugar-free agar See Part 2: Microbiological Media
sugar, frozen fruit
Designation:
3 + 1—3 parts fruit and 1 part sugar
4 + 1—4 parts fruit and 1 part sugar
5 + 1—5 parts fruit and 1 part sugar
sugar, granulated Most common type of white sugar; sugar crystals up to 0.05 cm in length
Regular—uniform in granulation
Extra fine—smaller crystals
1 cup = 200 grams (7.1 ounces)
2 1/3 cups = 1 pound
Composition: moisture 0.5%; carbohydrate 99.5%
Storage: 50–80°F, relative humidity below 60%; storage life 1–2 years
sugar, granulated, finest Sparkling crystals that are more uniform and smaller than granulated sugar
sugar, icing See sugar, powdered
sugar, invert See invert sugar
sugar, light brown (sugar, soft) Sugar that looks like slightly damp sand
sugar liquor Partially concentrated sugar solution
sugar, loaf Made by processing wet sucrose into a cake; when hard it is cut into a cube or tablet, which is called lump See pineapple
sugar, lump White sugar compressed into lumps See sugar cube; sugar, solid
sugar, maple Maple sap concentrated into syrup and sugar by long boiling; the concentrated thick syrup is whipped (5–10 minutes) and poured into molds to harden into sugar; light brown in color. The average tap hole produces 8–15 gallons of sap that averages 2.5% sugar; tapping time February 15 to March 25. Produced in New Hampshire, New York, and Vermont

<table>
<thead>
<tr>
<th>Boiling point</th>
<th>Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugar on snow</td>
<td>234 (°F)</td>
</tr>
<tr>
<td>Soft sugar</td>
<td>235</td>
</tr>
<tr>
<td>Hard sugar</td>
<td>239</td>
</tr>
<tr>
<td>Indian or crumb</td>
<td>250–252</td>
</tr>
</tbody>
</table>

Composition: moisture 4%; sucrose 86–99%; invert sugar 0–9%; ash 1%
See also maple syrup sugar
sugar maple (Acer saccharum) An excellent firewood; 24 million Btus/per cord (20% moisture); difficult to start; easy to split; light smoke; excellent coals and few sparks
sugar millet See sorghum grain
sugar pack Sugar added directly and gently mixed with food; sugar is added to food, usually prior to freezing, to draw juice
sugar palm (Arenga saccharifera) A palm that produces sugary sap (3 pints per day for 7 weeks) when it is tapped; the sap is concentrated by boiling to produce a dark brown sugar See palm
sugar pea (mangetout, edible-podded pea) Peas that have tender pods and can be eaten whole when young and still flat; have a “string” along the top and base of the pod that along with the stem should be removed prior to cooking
sugar pear See service berry
sugar, powdered (confectioner’s sugar; icing sugar) A very fine, pulverized, and fine silk-cloth-sifted sugar. White textured sugar used for icings and pastries; contains a small amount of cornstarch (3%) as an anticaicking agent
Types:
Dessert powdered
Extra fine powdered—finely pulverized sugar
Sprinkle sugar
Superfine powdered
Confectioner’s (confectioner’s XXX)—very finely pulverized sugar
Absorbs moisture rapidly
3–4 cups, unsifted = 1 pound (lb)
1 cup, unsifted = 125 grams [g; 4.3 ounces (oz)]
4 1/3 cups, sifted = 1 lb
1 cup, sifted = 95 g (3.4 oz)
1 1/3–1 1/3 cup, confectioner’s, sifted
= 1 cup granulated
1 tbsp = 1 3/4 oz
1 tsp = 1/6 oz
Composition: moisture 0.5% carbohydrate 99.5%
See sugar
sugar, preserving White, irregular-shaped crystals up to 1 cm in length
sugar, preserving crystal Crystals sized between granulated and coffee that do not settle as quickly and cause little frothing
sugar, pressed tablets Moist sugar placed in molds and dried See sugar, cube
sugar, raw Unrefined crystalline sugar; contains the molasses portion that makes it dark (tan to brown), coarse, and sticky; obtained from evaporation of sugar cane sap
1 ton = 0.93 ton, refined sugar
sugar, sand (sugar, soft) Pale brown, moist sugar
sugar, soft (light brown sugar; sand sugar) See sugar, light brown; sugar, sand
sugar, solid Also called cube, small cube, sugar lump, and tablets. Some dissolve faster than others; all have the same sweetening power See sugar, cube
sugar, spun (candy floss) Weblike sugar used to decorate food; sugar and water cooked to the brittle stage and worked into fine threads
sugar, superfine (castor) Very fine sugar that dissolves quickly See sugar, castor
sugar syrup See simple syrup
sugar, turbinado Produced by washing raw sugar crystals with steam to remove impurities and most of the molasses
sugar vinegar (cane sugar vinegar; cane vinegar) The product made by the alcoholic and subsequent acetic fermentation of sugar syrup, molasses, or refiner’s syrup; a derivative of sucrose
suggested practical allowance Intake that will meet the needs of a great majority of a defined population
sugiki A thick chicha made from maize
suimono A clear soup
suint A substance found in wool; it is associated with wool grease but is water-soluble
suitable for regulatory use An analytical procedure that:
  Generally requires no more than 2 hours of analytical time per sample to perform
  Requires no instrumentation not customarily available in a residue laboratory
  Meets the criteria for an FSIS Official Method
  Has an MPL at or below the tolerance or action level
suki Thin sliced
sukiyaka Thinly sliced or fried
sulfate group The SO_4 group; when ionized it becomes the sulfate ion or radical SO_4^{2-}
See Part 2: Water Drinking Standards
sulfate of potash-magnesia A neutral fertilizer material; K_2SO_4; MgSO_4; 0-0-22; 11% available magnesia (MgO)
sulfhydryl group SH group, characteristic of thiol (mercaptan) compounds
sulfide buildup The reaction of sulfur-containing meat and fish with iron of a container; causes discoloration
sulfite 1) An antioxidant often used on lettuce to prevent browning, avocado dips to prevent discoloration, French fries to prevent discoloration, and beer and wine to control fermentation; also used in some fruit drinks, dried fruit, and medications. May cause a reaction with some people (particularly those with asthma) such as a cough, wheeze, tightness of chest, shortness of breath, shock, loss of consciousness, and abdominal pain. 2) A stinker; cans do not swell because hydrogen sulfide is soluble in water; hydrogen sulfide is produced by *Clostridium nigrificans*
sulfite agar See Part 2: Microbiological Media
sulfonic The —SO_3OH group
sulfonic acid (R—SO_3OH) A hydrocarbon in which a hydrogen atom has been replaced by the sulfonic acid group —S(=O)_3OH
sulfur (S) A nonmetallic element; at. no. 16; at. wt. 32.066; Group VIA of Periodic Table; oxidation states +4, +6, −2
  electron configuration 2−8−6
  orbit K L M
Body function: necessary for growth and reproduction; occurs in methionine, cystine, and glutathione. An ingredient of health tonics; present in eggs and cabbage.
Plant deficiency: causes reduced growth of shoots and leaves and leaf tenting or yellowing; stems become thin and woody
Sullivan See Part 2: Protein and Amino Acid, Color Reactions
sulphur See sulfur compounds

sulfur dioxide (SO_2) A toxic gas used as a preservative, disinfectant, or bleaching agent in some foods; is dissipated during boiling. Not permitted in meats or other sources of vitamin B_1. It is obtained by burning sulfur or from compressed liquid; in water, produces sulfurous acid (H_2SO_3), bisulfite ion (HSO_3^-) and sulfite ion (SO_3^{2-}); inhibits yeast, molds, and bacteria. Campden tablets yield SO_2 in the presence of fruit juice. Used as a sanitizing agent in wine making; to preserve color and flavor of dried fruit; to prevent darkening of color, and to act as an insecticide in fruit; sulfites restore bright color to stale meat products. Maximum permissible concentration of SO_2 in air is 5 ppm; causes photochemical smog. When dissolved in water,

\[
\begin{align*}
\text{SO}_2 \quad \text{dissolved} & \quad \Rightarrow \quad \text{HSO}_3^- \quad \text{ion} \\
\text{ion} & \quad \Rightarrow \quad \text{SO}_3^{2-} 
\end{align*}
\]

See Part 2: Fumigants; Refrigerant

sulfuric acid (H_2SO_4) The highest-volume chemical produced in U.S. Mol. wt. 98.08; eq. wt. 49.04

<table>
<thead>
<tr>
<th>Mole per liter</th>
<th>Gram per liter</th>
<th>% by wt</th>
<th>Specific gravity</th>
<th>Normality</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.0</td>
<td>1766</td>
<td>96</td>
<td>1.84</td>
<td>36.0</td>
</tr>
<tr>
<td>—</td>
<td>—</td>
<td>94</td>
<td>1.831</td>
<td>35.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Beaumé (Be)</th>
<th>% H_2SO_4</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>.77.67</td>
</tr>
<tr>
<td>66</td>
<td>93.19</td>
</tr>
</tbody>
</table>

Milliliters of 94% H_2SO_4 Approx. to dilute to 10 liters normality

<table>
<thead>
<tr>
<th>Approx. to dilute to 10 liters normality</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.8</td>
</tr>
<tr>
<td>5.7</td>
</tr>
<tr>
<td>28.4</td>
</tr>
<tr>
<td>141.8</td>
</tr>
<tr>
<td>283.5</td>
</tr>
</tbody>
</table>

Storage: tight glass container

See Part 2: Concentration of Commercial Strengths of Acids and Bases; Normal Solutions; Reagents, Normal Solutions; Sulfuric Acid Solution

sulfurous acid (H_2SO_3) Aqueous solution of sulfuric acid
Sullivan See Part 2: Normal Solutions

sulle spale A short maturation, hard cow's milk cheese

sulphur See sulfur compounds
sultana (raisins, seedless white; seedless raisins)  A small, usually white, very sweet, seedless raisin; dried fruit of a white seedless grape.
Grape type: Sultana grape and Thompson seedless grape.
Composition (dry): protein 1.7%; available carbohydrate 65%

sultana bread  A tea bread with sultanas

sulze  A coarsely chopped to chunked, cooked, unsmoked, American, jellied and/or specialty sausage available in links, leaves, or canned; a moist, cooked, unsmoked jellied eastern German sausage made from coarsely chopped, medium seasoned pork and not stuffed into casings. See sausage

sulzfleischwurst  A moist, cooked, unsmoked eastern German sausage made from medium chopped, medium seasoned pork and stuffed into pork or artificial casings

sumac  A plant used in tanning, dyeing, and as a bitter flavoring with grilled meat

Sumatra mandeling  A balanced, mild, mellow Indonesian coffee

summation  To add; the sign £ is used in statistics to indicate the addition of quantities

summer coating  A mixture of vegetable fat, milk solids, sugar, and vanilla that looks like white chocolate

summer dwarf (Aphelenchoides besseyi)  A disease of strawberries that is caused by nematodes that live inside leaf buds.
To prevent: plant only stock that is free of dwarf nematodes

summer flounder (Paralichthys dentatus)  A white meat, very light delicate flavor, finfish used for food

Summer Food Service Program for Children  Provides meals for children during extended school vacation periods. See Child Nutrition Programs

summer sausage  A finely chopped (sometimes coarse ground) sausage that is either semidry or "fresh-out-of-smoke"; it was originally produced in winter for summer use. A dry sausage originating in Germany made from pork and beef: it is seasoned (2 pounds of salt per 100 pounds of meat), reground, and cured in thin trays for several days; it is stuffed into casings; smoked or cooked, and aged in a cool place for several weeks.
Composition: moisture 48%; protein 16%; fat 30%; carbohydrate 2.3%; ash 3.7%.
See cervelat; dry and/or semidry sausage. See Part 2: Sausage Identification; Sausage Nutritive Value

summer sausage, tangy  An all-pork, heavily smoked, zesty-flavored, summer sausage

summer sausage, Viking  A moderately smoked summer sausage in an artificial casing

summer savory  The fresh or dried leaves of an annual (60 days) plant (1 ft tall) used in flavoring

summer topping  The removal of terminal or tip growth on new shoots to stimulate branching

**Sumner, J. B.** A biochemist who purified and crystallized urease.

**sum of squares** $(\sum x^2)$  Values are squared and then summed; sum of squares (corrected) of deviations from sample mean $(\sum x^2)$

$$\sum x^2 = \sum X^2 - \frac{(\sum X)^2}{n}$$

or

$$\sum x^2 = \sum X^2 - \bar{X} (\sum X)$$

or

$$\sum x^2 = \sum X^2 - n \bar{X}^2$$

**sun-dried food**  A food dried without the use of artificial heat, e.g., apricots, and fish, raisins

sunfish  A general name that is applied to many different species of fish, such as fish of the families Centrarchidae and Lamprididae, Eupomotis gibbosus, Leomis spp. (North American freshwater fish, including the bluegill), and Mola mola (Europe) and other fish of the family Molidae. 1) Freshwater fish of the perch family. 2) Any of several large marine fish. See perch

sunflower  A plant (Helianthus annuus) grown for seed, animal feed, and oil; a member of the daisy family (grows to 5–20 ft tall)
Parts used:
Seed head—(3- to 24-in. diam., constitutes 50% of the dry matter of plant)
Seeds—constitute 50% of dry weight of dried head; 20–46% oil; parched seed may be consumed; used for human food, to produce oil, and as poultry feed
Oil cake—35% protein if made from whole seed; used for livestock feed
Stem and leaves—herb; used for fodder and silage
Tuberous root—used as human food (like an artichoke)
Whole plant—source of paper and cloth; green manure
Young flowers—eaten like the bud of an artichoke

Classes:
Oil-seed class—plants produce smaller and darker seeds than garden-class plants; high in oil and low percentage of hull
Confectionery or garden—easy to decorticat
738 sunflower

Varieties:
Grey Stripe—8 to 12-ft plant; produces large (20 in.) seed head; season 80 days
Mammoth—tall plant; produces huge seed head with thin-shelled, striped seeds; season 80 days
Miss Mellish
Soleil D'Or

Yield: 24-32 lb sunflower seeds per bushel
Composition (seed, dry): moisture 6%; protein 19-24%; fat 47-59%; carbohydrate 12-20%; ash 4%
See Part 2: Fats and Oils, Fatty Acid Composition; Fats and Oils, Physical and Chemical Properties; Fats and Oils, Characteristics; Fatty Acids, Fats and Oils; Iodine and Saponification Values; Oil Meals, Composition; Oil, Triglyceride Mole Percent Composition; Pectin Content; Protein Factors; Pulses, Nuts, and Seeds, Composition; Refractive Indices, Fats and Oils; Seed, Chemical Composition; Seed, Germination; Specific Gravities, Fats and Oils; Titer, Fats and Oils; Tocopherols; Unsaponifiable Matter

sunflower meal can be used as textured vegetable protein

<table>
<thead>
<tr>
<th>Composition</th>
<th>Mechanically extracted</th>
<th>Solvent-extracted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry matter (%)</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>24</td>
<td>50</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>8</td>
<td>2.9</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>6.5</td>
<td>7.6</td>
</tr>
</tbody>
</table>

sunflower oil: A pale yellow, nearly odorless oil extracted from sunflower seed (30-45%); used as food, salad oil, and in making candy and margarine
Composition (fatty acids): linoleic 66-75%; oleic 14-25%; palmitic 5-7%; stearic 2-3%
Properties:
Acid number—2.76
Iodine value—125-136
Melting point—18 to —16°C
Refractive index (15.5°C)—1.474-1.478
Saponification value—185-195
Saturated fatty acids—8-14%
Titer—16 to 20°C
Unsaponifiable matter—1.5%

sunflower seed: The dried seeds are often soaked in salt brine and roasted in an oven (nutlike flavor) and are sold by nut vendors as a snack; roasted and used as a coffee substitute; also used as a source of oil
Yield: 60 bu/acre
1 metric ton = 400 Kg oil = 350 Kg meal = 200 Kg hulls
1 bu = 1 gal oil

<table>
<thead>
<tr>
<th>Composition</th>
<th>Meal (dehulled seeds)</th>
<th>Whole seeds (with hulls)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>24</td>
<td>50</td>
</tr>
<tr>
<td>Oil (%)</td>
<td>55</td>
<td>4</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>12</td>
<td>36</td>
</tr>
<tr>
<td>Minerals (%)</td>
<td>4</td>
<td>8</td>
</tr>
</tbody>
</table>

sunkarica: A moist, cooked, unsmoked Yugoslavian sausage made from coarsely chopped, mildly seasoned pork stuffed into 44-47-mm beef or artificial casings
sinki: Pickled turnip
sunlight flavor: An off flavor of milk, caused by sunlight accelerating the breakdown of methionine in the presence of vitamin B2
sunshine cake: An unshortened cake containing eggs (more whites than yolks), flour, sugar, and salt; air beaten into the eggs produces the leavening.
sunshine vitamin: See vitamin D
sun valley cheese: A soft, creamy, rich cheese
suomuurain: See lakka
sup: Soup
supercarbonate: Bicarbonate
superficial: Near the surface
superheated: A liquid or gas heated above the liquid-state boiling point, superheated (water) steam (steam at atmospheric pressure and temperature 100°C or higher) overheated
superior: Above; higher than See also cranial
superovulate: To cause more than one ovum to be shed at the same time
superphosphate: A neutral fertilizer material that is primarily calcium dihydrogen phosphate [Ca(H2PO4)2]; 0-18-0 or 0-20-0; rock phosphate that has been treated with sulfuric acid
Types:
Basic superphosphate—superphosphate mixed with lime
Complex polyphosphate—high levels of phosphorus and nitrogen; a slow-release fertilizer
Molybdenized superphosphate—0.03—0.06% molybdenum trioxide added to superphosphate
Single superphosphate—a mixture (acid) of phosphate and gypsum (9.6% phosphorus, 20-22% calcium, and 13% sulfur)
Triple superphosphate—contains a higher percentage of phosphorus; 1.5% sulfur
See Part 2: Fertilizer, Fertilizer Materials
supersaturated solution: A solution that contains a greater concentration of a substance than would be present in a saturated solution (unstable system)
supper: A light evening meal or late evening meal
supplement: A feed that is usually high in some or all of the following: antibiotics; minerals; protein; vitamins
supplementary feeding program: A program that attempts to provide free or low-cost food to supplement the diets of special population groups whose diet is deficient in nutrients and calories
supplementary payments: Similar to deficiency payments
supply: The quantity available for the current day's trading on the market; includes any carry over from the previous day
supply management: A set of programs used to influence and control the supply of a commodity and to maintain a desired price
support buying An EEC trading term that allows direct purchases of specified commodities by an intervention authority

supra- Above or over, e.g., suprarenal

supraliminal Above the threshold

supramammary See Part 2: Lymph Nodes, Pig

suprarenal See adrenal glands; gland weights

supraspinatus A muscle of the chuck located lateral to the scapula and above the spine of the scapula

suprasternal See Part 2: Lymph Nodes, Ox

supreme An excelsior-type cheese

sura Sorghum beer

surati A panir-type cheese made from buffalo’s milk sometimes matured up to 2 weeks

sureau A brandy made from elderberries (Sambucus nigra) macerated and soaked in natural brandy

surface The boundary of a geometric solid
- Surface of a sphere = \(4\pi r^2\) = \(D^2\pi \) (\(\pi = 3.1416\))
- Lateral surface of a right cylinder = \(2\pi rh\)
- Total surface of a right cylinders = \(2\pi rh + 2\pi r^2\)
- Lateral surface of a right cone = \(\pi rs\) (\(s = \) slant height)
- Total surface of right cone = \(\pi rs + \pi r^2\)

surface-active agent (surfactant; wetting agent)
A molecule one portion of which is hydrophobic and another portion of which is hydrophillic; such a substance is active at the interface, reducing the surface tension and increasing spreading and wetting properties. See also detergent; wetting agent

surface color Color that can be measured by reflectance

surface rot (Fusarium oxysporum) A disease that causes circular sunken spots to appear on sweet potatoes during storage

surface tension A phenomenon resulting from the attraction exerted by the interior molecules of a liquid upon its surface (sometimes called internal pressure); this reduces the tendency of the liquid to flow. Water has rather high surface tension compared to organic liquids such as alcohols. Mercury has the highest surface tension of any liquid. Detergents act by reducing surface tension.

surface treatment The application of outside lubrication to glass containers to aid in handling

surfactant A material that aids in surface-modifying properties; compounds that make it easier to effect contact between surfaces. Classifications:
- Detergents
- Dispersants
- Emulsifiers
- Foaming agents
- Spreading agents
- Stabilizers
- Viscosity modifiers
- Wetting agents
See surface-active agent

surf smelt See smelt

surge tank A pressurized, sterile container used to store cooled, sterile product

surimi A mechanically deboned, washed, and stabilized fish protein paste; salt-soluble muscle protein from fish

surinam See pitanga

surinam cherry (Brazilian cherry) A large (\(\frac{1}{2}-1\) in.), red, soft, acid cherry that is eaten fresh or preserved

surnone A thick pancake made from rice, coconut, and buttermilk

surprin A sour-milk cheese made from whey

surstromming Strong, salted fish used for seasoning

surveillance A subprogram of the (FSIS) National Residue Program that deals with specific problem areas where adulterating levels of residues are suspected; involves sampling and analysis of particular carcasses and/or products; the resulting data are used to investigate and control the movement of potentially adulterated carcasses and/or products.

survey of nutritional status The investigation of population groups to determine their states of nutrition

sushi 1) A dark, salty, fermented, fish paste. 2) Non-fermented canapes. 3) Rice, vegetables, and fish served with a vinegar sauce

suspect Describes a carcass or sample believed to be abnormal or inferior; the item is usually retained for further analysis.

suspending agent A substance that causes particles to mix but remain undissolved in a liquid or solid

suspension A colloidal system in which a solid is dispersed in a liquid, e.g., muddy water

Sussex 1) An English class of chickens with white skin, single-comb, and white shanks; lays a brown-shelled egg
- Varieties: Light; Red; Speckled
2) A dark red (with white tail tip), large, hardy, British breed of beef animal

Sussex pudding Blackberries cooked in cider

susumber An acid Jamaican berry

suwalska A moist, cooked, smoked Polish sausage made from coarsely chopped, medium-seasoned, beef and pork, with plasma, stuffed into beef or artificial casings

su-zuke Pickled fish

Suzuki Umetaro The person who isolated nicotinic acid

svapski A ricotta-type cheese, with herbs, made from cow’s milk and usually eaten fresh

svargla A moist, cooked, smoked or unsmoked Yugoslavian sausage made from coarsely chopped, medium-seasoned pork stuffed into 66-75-mm pork or artificial casings

svecia A cheddar cheese (in large wheel shapes) made from partially skimmed milk, resulting in a lower fat content

svecioast cheese An aged (6 weeks to 6 months), dry-salted Swedish cheese that is made from whole cow’s milk, and has a granular texture with small irregular holes; may be flavored with cloves and caraway
svinabjugu A moist, cooked, smoked Icelandic sausage made from medium-chopped, medium-seasoned beef and pork, with pork fat added, stuffed into artificial casings

svinemorr A moist, cooked, unsmoked Norwegian sausage made from coarsely chopped, medium-seasoned beef and pork stuffed into beef casings

svinina Pork

swab A wad or bundle of fabric or cotton; used for wiping a surface to obtain a specimen or sample, often for microbial examination

swab test A microbiological, antibiotic, screening test

Swaledale A hill breed of British sheep similar to the Scottish Blackface

Swaledale A blue cheese made from sheep's or cow’s milk

swampbuster bills Refers to legislative restrictions on the draining of natural wetlands

swarri nut See souari nut

sway 1) An exudation from body pores. 2) Fat-steaming (to cook gently in fat). 3) To bond together by heating surfaces to which solder has been applied See Part 2: pH Values of Biological Materials

sweating The condensation of moist air onto cold containers

swede (rutabaga; Swedish turnip; turnip-rooted cabbage; Brassica napobrassica; B. napus) The root of a plant (Swedish turnip) used for food; 10,000 seed/oz; germination period 2-20 days; a biennial turniplike plant grown for its root, which consists of both the hypocotyl and the base of the swollen leaf stem; it may be purple-white or yellow, with yellow or white flesh that is firmer (less moisture) than a turnip; used in stews, mashed, or used as livestock feed

Varieties: Great Scot; Lord Derby; Purple Top; Tipperary

Composition: protein 1%; fat 0.01%; carbohydrate 4.3%

See rutabaga

See Part 2: Nicotinic Acid, Food; Vegetable Composition

swedish meatballs Small, fried balls made from beef mixed with bread crumbs, milk, onions, eggs, and seasoning, with gravy poured over the balls, which are then simmered

Swedish sausage See goteborg

Swedish turnip See swede

sweet The taste sensation of sucrose (sugar) or honey

See Part 2: Flavor Ingredients, Taste and Flavor Type; Sugars and Sweets, Composition; Sweetening Agents; Sweetening Comounds; Sweetness of Sweeteners; Water Activity, Organisms and Food

sweet and sour A description applied to various dishes that may be made with chocolate, raisins, soy sauce, sugar, or vinegar

sweet and sour dressing A dressing made from celery, chives, green pepper, mustard, olive oil, pepper, salt, sugar, vinegar, and Worcestershire sauce

sweet and sour sauce A sauce flavored with honey, sugar (sweet), and vinegar (sour); available as a dehydrated mix
sweet potato (long potato: Spanish potato; Ipomoea batatas)  
Coumarin gives the forage crop its characteristic odor and taste. If mold growth occurs, the toxic substance dicoumarol (which reduces the clotting of blood) is formed. See also dicoumarol

sweet cooking chocolate Sold in 4-oz bar containing 18 squares; rich and light flavor

sweet dough See Part 2: Fermented Ingredients

sweetened condensed milk A product made by evaporating about half the water from whole milk and adding sugar or corn sugar so that the final product contains 40–45% sugar (by weight); the sugar is added as a preservative, and the product will keep without sterilization. Marketed in 14-oz cans

1 lb sweetened condensed milk  
= 2 1/2 lb fresh whole milk  
+ 6.8 oz sugar
1 cup, canned = 10.8 oz
1 tbsp = 0.7 oz
1 fluid oz = 1.3 oz

Composition: moisture 27–28%; total solids 70%; protein 7–8%; fat 8.7%; carbohydrates 54–55%; total milk solids 28%; fiber 0%; ash 1.2%; milk fat 8.5% min.; sodium 389 mg/cup (306 g)

sweetened condensed skimmed milk Condensed skimmed milk sweetened with sucrose or dextrose; min. 24% milk solids

sweetener A sweet-tasting substance used to make the aroma or taste of a food more pleasurable or agreeable

Classification:
Nutritive—(e.g., sugars, which are metabolized to produce energy)
Non-nutritive—(e.g., saccharin, which is not metabolized and produces no energy)

sweetener (sausage) Maximum 2%; corn syrup; invert sugar; corn syrup solids; Sucrose (cane or beet sugar) is self-limiting.

sweetening agent A sweet-tasting substance used in foods

Comparative sweetness ratings (using sucrose as 100):

Sucrose—100  
Fructose—140–173  
Glucose (dextrose)—70–75  
Corn syrup (various dextrose equivalents (DE))—64 DE, 65–70; 54 DE, 60; 42 DE, 50; 36 DE, 45; 28 DE, 40

Xylose—40  
Lactose—16–35  
Maltose—30–35  
Synthetic (non-nutritive) sweeteners
Saccharin—55,000  
Dulcin—25,000  
Sucaryl—3000

Others
Glycerin—70  
Glycine—70

sweet feed Feed that has molasses added

sweet fennel waeedenswil Used in salads or cooked like celery or asparagus; has a licorice taste

sweet javrl (sweet ciciely; Osmorhiza claytoni) A perennial herb with aromatic roots and leaves

sweet lemon See lime

sweet majoram See majoram

sweetmeat Confectionery made with sugar; fruit preserved with sugar

sweet oil See olive oil

sweet orange (Citrus sinensis) A medium-sized tree that bears a citrus fruit that is green to orange in color when ripe and has a sugary pulp; used as fresh fruit or as an orange drink See also citrus fruit

sweet pear See rock medlar

sweet pepper See capsicum; paprika

sweet pickle cure A pickle that contains sodium chloride and sugar dissolved in water and is used to cure meat; it will usually contain some nitrite and nitrate and often other ingredients.

sweet pickles Made from sour pickles by draining the vinegar and placing the pickles in a mixture of water, sugar, and spices

Types: candied chips; mixed; sliced; sweet dills; sweet relish; whole

See sour pickles

sweet potato (long potato: Spanish potato; Ipomoea batatas) A tropical creeping vine originally from Central and South America; not botanically related to the potato; produces a tuberous, swollen root (not a true tuber) that may be elongated to spherical, with white to red outer skin and white to yellow (vitamin A) flesh, containing starch, a small amount of protein and some sugar; usually boiled and mashed for food; the vines may be used as livestock feed and the young leaves may be used as a vegetable: The roots are canned, sun-dried, or dehydrated; may be made into starch and used as livestock feed. The word “yam” is used interchangeably with sweet potato (especially when the flesh is moist) in the United States, but in other countries it is reserved for plants of the genus Dioscorea.

Approximate amount used

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Roots (200 bu)</th>
<th>Vines (1 ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N (lb)</td>
<td>30</td>
<td>11</td>
</tr>
<tr>
<td>P₂O₅ (lb)</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>K₂O (lb)</td>
<td>50</td>
<td>33</td>
</tr>
</tbody>
</table>

Seed 10–12 bu/acre; mature in 140 days; yield 3 bushel/100 foot rows

Types:
Dry—flesh becomes dry and mealy on cooking; light yellow or pale flesh; yellowish, rough skin; long; low in moisture

Varieties—Gold Skin; Jersey Orange; Nemagold; Nugget; Red Skin; Vineless; Yellow Jersey

Moist (wet)—flesh becomes soft on cooking; green-yellow to red-orange flesh; reddish, smooth skin; round; contains more sugar and is sweeter; sometimes incorrectly called a yam

Varieties—Centennial; Goldrush; Nancy Hall; Puerto Rico
### Sweet Potato (Ipomoea batatas)

#### Sweet Potato Variety and Characteristics

<table>
<thead>
<tr>
<th>Variety</th>
<th>Yield</th>
<th>Skin Color</th>
<th>Flesh Color</th>
<th>Type</th>
<th>Canning Quality</th>
<th>Storage Quality</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Food-type sweet potatoes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All gold</td>
<td>Med.</td>
<td>Golden</td>
<td>Golden</td>
<td>Moist</td>
<td>Fairly good</td>
<td>Good</td>
<td>Fresh; processing</td>
</tr>
<tr>
<td>Carogold</td>
<td>Med.</td>
<td>Orange</td>
<td>Moist</td>
<td>Moist</td>
<td>Fair</td>
<td>Good</td>
<td>Fresh</td>
</tr>
</tbody>
</table>
| Centennial*      | High  | Copper      | Orange      | Moist   | Good           | Good            | Fresh; processing;  
|                  |       |             |             |         |                |                 | stores well         |
| Coastal Sweet    | Med.  | Copper red  | Orange      | Moist   | Fairly good    | Good            | Fresh               |
| Early Sweet      | Med.  | Cream       | Orange      | Moist   | Fairly good    | Fair            | Fresh               |
| Gem              | High  | Light copper| Orange      | Moist   | Good           | Good            | Fresh; processing   |
| Georgia Red      | Low   | Red         | Light orange| Moist   | Good           | Good            | Fresh; stores well  |
| Goldrush         | Med.  | Copper orange| Orange   | Moist   | Good           | Good            | Fresh; processing   |
| Jerseys          | Med.  | Tan to red  | Yellow-orange| Dry     | Fairly good    | Short           | Fresh; processing   |
| Julian           | Med.  | Salmon      | Deep orange | Moist   | Good           | Good            | Fresh; processing   |
| Kandee           | Med.  | Orange      | Salmon-orange| Moist  | Good           | Good            | Fresh               |
| Lakan            | Med.  | Red-tan     | Deep orange | Moist   | Fair           | Good            | Fresh               |
| Nemagold         | Med.  | Orange-tan  | Deep orange | Moist   | Fair           | Good            | Fresh; processing   |
| Nugget           | Med.  | Copper to tan| Orange   | Semidry | Fairly good    | Short           | Fresh; processing   |
| Okkamar          | Low   | Purple      | Salmon     | Moist   | Good           | Fairly good     | Fresh               |
| Porto Ricos      | Low   | Copper      | Salmon-orange| Moist  | Good           | Good            | Fresh; processing;  
|                  |       |             |             |         |                |                 | baking              |
| Redgold          | Med.  | Red-purple  | Salmon-orange| Moist  | Fairly good    | Fresh            | Fresh               |
| Sunnyside        | Low   | Tan         | Salmon-orange| Moist  | Good           | Good            | Fresh; processing   |
| Virginian        | Low   | Copper-orange| Orange   | Moist   | Poor           | Good            | Fresh               |
| Pelican          | High  | Cream       | Light cream | High starch| Good          | Feed; starch;     
| Whitestar        | High  | Russet-white| Cream     | Med. starch| Good          | Feed; industrial   |

*Short season (100 days from set plants)*

### Curing

Curing: done as soon after digging as possible (4–7 days at 80–85°F, 85–90% relative humidity) to form wound-cork layers beneath wounds and to convert starch to sugars.

Setting of skin: done prior to shipping; curing period may be extended and relative humidity reduced during last few days.

Refuse: 20%

- 100 lb, fresh = 23–25 lb, dry
- 1 bu = 50–55 lb
- 1 crate = 24 qt = 12 qt, canned
- 2–3 lb fresh = 1 qt canned
- 1 1/2 lb, fresh = 1 qt, frozen
- 1 lb fresh = 3–4 servings
- 1 med. potato = 3–4 servings
- 1 cup, cooked, sliced = 230 g (8.2 oz)
- 1 cup, canned = 7.6 oz
- 1 cup, dehydrated flakes, dry = 4 oz

Available forms: canned; dehydrated; fresh

To cook: bake until tender; or broil, fry, or French fry

Canned types:

- Solid-pack, dry—peeled, pressed; thoroughly cooked
- Syrup-packed—peeled, small pieces; partially cooked
- Vacuum-packed—peeled, small, whole; partially cooked

Canned styles:

- Halves
- In syrup—with or without mandarin oranges and pineapple

Use:

- Fresh: baking
- Solid-pack—with little liquid
- Vacuum-packed—without any liquid
- Whole

Frozen styles: baked; cake; diced; French cut; halved; mashed; sliced; stuffed in shell; whole

Composition (raw): moisture 71%; protein 2%; fat 0.5%; carbohydrate 22–26%; ash 1%; pH 5.3–5.6

Storage: Dry for 2–3 h on the ground; cure at 85°F for 10 days; store at low room temperature (55–60°F; 90–95% relative humidity); will keep for several months below 60°F, 1 week at higher temperatures.

More perishable than Irish potato; do not store in refrigerator. See yam

See Part 2: Calcium, Daily Recommendations; Calories, Daily Recommendations; Minerals, Food; Nicacin, Daily Recommendations; Nutrients in Crops; Plant Foods, Composition; Planting Density; Stabilizers, Thickeners; Standards, Processed Fruit and Vegetable Products; Starches and Starchy Roots, Composition; Storage; Sugar, Vegetables; Sweet Potato and Irish Potato; Sweet Potato Composition; Sweet Potato Forms; Sweet Potato, Nutritive Value; Thiamin; Vegetable Boiling; Vegetable Composition; Vegetable Frozen Yield; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Plants; Vegetables, Canning Dates; Vegetables, Classification; Vegetable Servings; Vegetable Storage; Vegetable Yields; Vitamin A; Vitamin A, Daily Recommendations; Wastes, Agricultural and Industrial

**Sweet rice** See **rice, glutinous**
sweets Candies See candy

sweet sausage A coarsely chopped, unsmoked, Italian, salami-type sausage with a sweet, licorice-like flavor

sweet sausage, pescara An S-shaped fully dried, Italian, sweet sausage made from lean pork stuffed into beef casings (0.75 lb)

sweet sop A fruit with thick, rough, yellow-green skin; sweet custardlike flesh See annonaceous fruit; custard apple

See Part 2: Fruit Composition

sweet sorghum A plant that produces a juice that when extracted and boiled becomes a sweet syrup; the tops are often used for dried arrangements and the seeds are used as bird feed; seed 1 oz/50-ft row

sweet tangle See redware

sweet vermou th A smooth wine with a trace of herbs and aromatics in its flavor

sweet wine A wine having sufficient sugar in the end product to give a sweet taste; in 100 cc (20°C): not less than 1 g sugar; not less than 0.16 g ash in sweet red wine; not less than 0.13 g ash in sweet white wine

sweet woodruff (Galium odoratum) Ground cover whose leaves are used to flavor wine

swell A tin can in which gas production has caused expansion

Flipper—end will bulge when can is struck.

Hard swell—permanently extended ends

Soft swell—ends can be moved but not back to original position

Springer—end can be forced back, but opposite end will bulge

See chemical swell, overrun; physically induced swell; T/A spoilage

Swift’s stability The stability of fat as measured by the active oxygen method See active oxygen method

swimmer A floating grain of barley

swine (Sus scrofa) An inclusive term for (domesticated) hogs, pigs, and sows, which are omnivorous, monogastric animals with the following characteristics:

- Age of puberty—5–7 months
- Duration of estrus—48–72 h
- Female—called a sow
- Frequency of ovulation—21 days
- Gestation period—114 days
- Male—called a boar
- Market age (US)—5–6 months
- Market weight (US)—200–220 lb
- Mature weight—600 lb
- Million of sperm/ml of semen—300
- Number of females served by one male—20–30
- Number of offspring—8–14/gestation
- Semen volume per ejaculation—250 ml
- Time of ovulation—near end of estrus

Used as a source of food; the Jewish and Moslem religions ban the use of pork for religious reasons.

See Part 2: Gestation Periods; Gland Weights; Molds, Mycotoxins; Muscle and Body Weight; Reproductive Cycle; Swine Breeds; Swine Market Classes and Grades; Teeth Eruption

swine’s snout See dandelion

swing churn A churn that functions by swinging rather than rotation

Swiss Alpine See Part 2: Goats, Milk Breeds

Swiss, baby A mild (slight Swiss taste), creamy, firm-textured, cheese used for fondues or sandwiches

Swiss bun A bun with a sugar icing top

swissca A tilsit-type cheese

Swiss chard (Beta vulgaris var. cicla) A beet with a green leafy top that is used in salads or cooked like spinach; the leaf is somewhat like spinach and has a swollen midrib that ranges from crimson to white; 1000–1950 seed/oz; seed 1 oz/100-ft row; germination time 14 days; available canned, fresh, and frozen;

1 cup, boiled = 6.8 oz

Storage: wash well; shake out water and store in crisper; refrigerate in a plastic bag and use within 2 days

See chard; seakale beet; spinach chard

<table>
<thead>
<tr>
<th>Swiss chard variety</th>
<th>Description</th>
<th>Use</th>
<th>Season (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burpee’s Rhubarb Chard</td>
<td>Crimson stalk; savowed green leaves</td>
<td>Midribs cooked like asparagus; leaves cooked like spinach</td>
<td>60</td>
</tr>
<tr>
<td>Fordhook Giant</td>
<td>Tender, dark green, broad, savowed leaves; white stems</td>
<td>Greens</td>
<td>55–60</td>
</tr>
<tr>
<td>Lucullus</td>
<td>Light green stem, midribs, and leaves; savowed leaves</td>
<td>Fresh greens</td>
<td>45–55</td>
</tr>
<tr>
<td>Rhubarb Chard</td>
<td>Looks like rhubarb</td>
<td>Edible and ornamental</td>
<td>60</td>
</tr>
<tr>
<td>Swiss Chard of Geneva</td>
<td>Celery-like stalks</td>
<td>Tops as greens; stalks like asparagus</td>
<td>60</td>
</tr>
</tbody>
</table>
Swiss cheese (emmentaler)  A hard cheese that is creamy colored, with large holes, (or eyes) and a sweet, salty, nutlike flavor; it is made from skimmed cow’s (or sometimes goat’s) milk, using a high-temperature scalding process that produces a medium-strong cheese with a hard, elastic texture; sold as rindless blocks and as large wheels with rind; ripened 2–9 months; used for buffets, sandwiches, and in salads

Types:
Domestic—without eyes
Imported (or “Switzerland”)—full-flavored with eyes

Equivalents:
1 slice 7/8 x 4 x 3/16-in. = 1.25 oz
one 1-inch cube = 0.6 oz (processed cheese)
= 0.5 oz (natural cheese)
1 cup, shredded = 4 oz

Procedure:
1. Milk passed through a separator, used as a clarifier.
2. Warmed and stirred.
3. Starters added. Bacteria used are Streptococcus thermophilus (lactic acid, flavor, breakdown of curd), Lactobacillus bulgaricus or L. lactis (lactic acid, flavor, breakdown of curd), and Propionibacterium shermanii (flavor, eye formation).
  First starter—produces lactic acid from lactose; acid aids in expelling whey from cheese
  Second starter—responsible for flavor and eye formation
  Third starter—aids in acid production and ripening
4. Warmed to setting temperature, 88–94°F.
5. Set with rennet extract.
7. Cooked for 25 min at 120–128°F.
8. Pressed and knit to a compact mass.
9. Placed in 23% salt brine tank for 3 days; room temperature 55°F and relative humidity 85%.
10. Stored in cold room 10 days.
11. Stored in warm room 68–74°F (ripening process, eyes begin to form in 2–3 weeks).
12. Returned to cold room (slower curing).
13. Cured for 6 months at 40°F.

Other types of Swiss cheese: allgauer emmentaler; bellunese; dolce; fontina; fontine d’aosta; formaggio; gruyere; samso; traanen

Grades: U.S. Grade A, B, C, D

<table>
<thead>
<tr>
<th>Composition</th>
<th>Processed</th>
<th>Processed cheese food</th>
<th>Swiss (natural)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>42–43</td>
<td>43–44</td>
<td>37–39</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>24–25</td>
<td>21–22</td>
<td>27–28.5</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>24.5–25.5</td>
<td>24–25</td>
<td>27–28</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>2–2.5</td>
<td>4–5</td>
<td>2–3.4</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>5.6–6</td>
<td>5–6</td>
<td>3.5–4</td>
</tr>
<tr>
<td>Salt (%)</td>
<td></td>
<td></td>
<td>1.3</td>
</tr>
</tbody>
</table>

43% of milk fat in solids; pH 5.1–6.6; calcium 0.9%; sodium 74 mg/oz
Caloric content:
1 oz, natural = 105 calories
one 1-in. cube, natural = 55 calories

1 oz, processed = 95 calories
one 1-in. cube, processed = 60 calories

Storage: wrap tightly and refrigerate; will keep for several months unless mold develops; cut off mold if it develops. Can be frozen (0°F) if no more than 1 in. thick; use within 6 months.

See Part 2: Cheese Characteristics; Cheese, Vitamin Content; Milk and Milk Products, Vitamin Content; Thermophiles; Vitamin A, Milk and Milk Products

Swiss steak  1) Usually, thick slices of rump or round steak, flour and cooked with tomato juice and other vegetables. 2) A method of preparation for less-tender beef steaks by which they are (frequently) mechanically tenderized and prepared by moist-heat cooking

Swiss-style bread  A bread that is made from wheat and rye and has flours top with deep cuts in surface

Switzerland cheese  Genuine imported Swiss cheese

Switzerland Swiss (emmentaler)  A Swiss cheese that has a mild, nutlike flavor and chewy texture, with holes

swizzle  A drink made from bitters, lime juice, liquor, and sugar

sword bean (Canavalia gladiata)  A climbing plant that is closely related to the jack bean

swordfish (broadbill; Xiphius gladius)  A lean, large (60–80 lb), saltwater finfish with a swordlike beak that is an extension of the upper jaw bone; used as a food fish with firm white flesh, medium (4.4%) fat content and light to moderate flavor; normally cut into steaks
1 steak, 1 in. thick = 8 oz
See Part 2: Braising Meat

Swiss cheese food  A drink made from milk and sugar mixed with wine or cider

sycamore  A dry white wine

sylvamine  A flat pepperoni made from beef and pork

symbiosis  Living close together for mutual benefit, in particular, the close association of two dissimilar (noncompeting) organisms

symbol  An arbitrary character or an abbreviation that stands for an object or quantity, e.g., the abbreviation of the name of an element, representing an atom of that element

syn—(syn-)  A prefix used to indicate “together”

synadovska loukanka  A flat pepperoni made from beef and pork

synapase  1) The region of communication between two neurons, or to form such a connection. 2) To come together in synapsis during meiosis

syneresis  The separation of water or fluid that dissociates (exudes) from starch products or jelly due to
concentration and shrinkage of the gel, which squeezes out the dispersing medium; occurs, e.g., in overcooked custard and in the clotting of blood.

**synergism** A phenomenon in which the properties of a mixture are affected to a much greater extent than the sum of the components taken individually would indicate; for example, a copolymer may exhibit much greater strength than the strengths of the individual polymers. Such cooperative materials are called synergists, as in certain antioxidants.

**synergist** A substance that when used in combination with another material provides the combination with greater effect than would be predicted from the sum of the individual effects, e.g., a combination of antioxidants to retard rancidity.

**syneta leaf beetle** A pale brown or yellowish beetle, about \( \frac{1}{8} \) in. long, that scars and deforms fruit; the larva is a small grub with a plump, curved body.

**Sy-no-vex-C** A growth-promoting implant used on slaughter steers and heifers.

**Sy-no-vex-H** A growth-promoting implant used on slaughter heifers.

**Sy-no-vex-S** A growth-promoting implant used on slaughter steers.

**synovia** The lubricating fluid secreted by certain membranes, such as those of the joints.

**synovial** Describes an area where two bones meet and movement is required.

**synthetic** Made outside the body; artificial; the opposite of natural; describes an artificially produced material that is similar to the natural product; synthetic products may be superior to their natural counterparts.

**synthetic broth** See Part 2: Microbiological Media.

**syr** Cheese.

**Syrian food habits**

- Animal products—eggs
- Beverage—black coffee
- Dairy—butter; cheese; fermented milk; sour cream
- Grain—rice; wheat
- Seasoning—honey; onion; pepper
- Vegetables—broccoli; cucumber; dandelion; eggplant; leek; okra; tomato

**Syrian gum** See gum tragacanth.

**syrk** A Russian food fish. See pelyad.

**syrophid fly** An insect; the adult is bright yellow and black, \( \frac{1}{4} - \frac{3}{8} \) in. long; the larva resembles a brown, gray, or mottled slug and eats insects (can consume one aphid per minute).

**syrup (sirup)** A mixture of sugar and water that is a good source of energy but is limited in nutritional value.

<table>
<thead>
<tr>
<th>Strength</th>
<th>Sugar %</th>
<th>Cups</th>
<th>Corn syrup (cups)</th>
<th>Water (cups)</th>
<th>Will make (cups)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thin</td>
<td>1 ( \frac{1}{2} )</td>
<td>—</td>
<td>4</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Medium</td>
<td>3</td>
<td>1 ( \frac{1}{4} )</td>
<td>5</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Medium-heavy</td>
<td>30</td>
<td>2</td>
<td>4 ( \frac{1}{2} )</td>
<td>4 ( \frac{1}{2} )</td>
<td>—</td>
</tr>
<tr>
<td>Heavy</td>
<td>40</td>
<td>3</td>
<td>—</td>
<td>4</td>
<td>5 ( \frac{1}{2} )</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>( 4 \frac{2}{4} )</td>
<td>—</td>
<td>4</td>
<td>6 ( \frac{1}{2} )</td>
</tr>
<tr>
<td></td>
<td>60</td>
<td>7</td>
<td>2 ( \frac{3}{4} )</td>
<td>5 ( \frac{1}{4} )</td>
<td>—</td>
</tr>
<tr>
<td>Extra-heavy</td>
<td>70</td>
<td>7</td>
<td>—</td>
<td>4</td>
<td>7 ( \frac{3}{4} )</td>
</tr>
</tbody>
</table>

Storage: Unopened, at room temperature; opened, refrigerate; if crystals form, dissolve by putting container in hot water.

**syrup, golden** A yellow syrup made by evaporation of sugar-cane juice.

**syrup, gum** See simple syrup.

**systemic insecticide** A pesticide that is absorbed into the plant or animal that it is protecting.

**systole** Muscle contraction.

**szalami** A pork pepperoni.

**szanorodner** A dry, golden, tokay-type, dessert or after-dinner wine.

**Szechwan cabbage** Pickled, hot, Chinese cabbage.

**Szechwan cattle** A breed of yellow draft cattle with a prominent hump; originated in Szechwan (Sichuan) province of central China.

**szegedi** A hot pepperoni made from coarsely chopped pork.

**szekely cheese** A soft cheese made from ewe’s milk and packed in sausage casings.

**szilva** A plum brandy.

**szynka (szynke)** Ham.

**szynkowa, ham** A moist, cooked, double-smoked Polish sausage made from pork coarsely chopped and stuffed into artificial casings.
2,4,5-T A phenoxy herbicide closely related to 2,4-D; its chemical name is (2,4,5-trichlorophenoxy) acetic acid.

Ta The symbol for the element tantalum.

Tabanus A genus of biting flies (e.g., botfly, gadfly, horsefly, and seroot)

tabasco (Capsicum frutescens) A hot red pepper that is used to make a liquid seasoning.

Tabasco (Tabasco sauce) The proprietary name of a very hot pepper sauce from capsicum berries, spirit, vinegar, and salt; made by pickling the pulp of tabasco peppers (Capsicum frutescens) in vinegar or brine; used for flavoring meat, oysters, salads, soups, etc. Sodium content: 24 mg/tsp (5 g)

See capsicum

tabby Concrete made from equal mixtures of lime (made by firing oyster shells), oyster shells, sand, and water.

table A flat-topped piece of furniture used for eating meals.

Table and tablecloth piece of furniture used for eating meals.

<table>
<thead>
<tr>
<th>Shape</th>
<th>Number Seated</th>
<th>Size (in inches)</th>
<th>Table</th>
<th>Tablecloth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oval</td>
<td>6–8</td>
<td>36 × 60–48 × 72</td>
<td>60 × 84</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8–10</td>
<td>36 × 80–48 × 92</td>
<td>60 × 104</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8–12</td>
<td>46 × 80–58 × 92</td>
<td>70 × 104</td>
<td></td>
</tr>
<tr>
<td>Rectangle</td>
<td>4–6</td>
<td>28 × 46–40 × 58</td>
<td>52 × 70</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6–8</td>
<td>36 × 60–48 × 72</td>
<td>60 × 84</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8–10</td>
<td>36 × 80–48 × 92</td>
<td>60 × 104</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8–12</td>
<td>46 × 80–58 × 92</td>
<td>70 × 104</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10–14</td>
<td>46 × 80–58 × 108</td>
<td>70 × 120</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12–16</td>
<td>46 × 116–58 × 128</td>
<td>70 × 140</td>
<td></td>
</tr>
<tr>
<td>Round</td>
<td>4–6</td>
<td>46–58 diam.</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6–8</td>
<td>66–78 diam.</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Square</td>
<td>4</td>
<td>28 × 28–40 × 40</td>
<td>52 × 52</td>
<td></td>
</tr>
</tbody>
</table>

*Size allows a 6–12 in. border to hang over each side of the table.

Table d'hôte 1) A complete restaurant meal at a fixed price. 2) A menu with a fixed number of courses, but with a choice of dishes within a course; a set price is charged for the meal. 3) A common table for guests at a restaurant.

table oil See salad oil

table salt Sodium chloride (NaCl) See also salt

tablespoon (tbsp) A large spoon used at the table; equal to one-sixteenth of a measuring cup

1 tbsp = 3 teaspoons (tp)
15 milliliters (ml)
4 fluid drams
2 dessertspoons

2 tbsp = 1 fluid ounce
16 tbsp = 1 cup
32 tbsp = 1 pint (pt)
64 tbsp = 1 quart (qt)
256 tbsp = 1 gallon (gal)

See Part 2: Volume

tablespoon [British] tbsp]

1 tbsp (British) = ½ fluid ounce

table water Bottled mineral water that is used with meals.

table wine A wine, usually containing less than 14% alcohol that is served with food.

tacama A white, rosé, or red wine.

tachyphagia Rapid consumption of food.

tack Food of a breadlike nature, e.g., hardtack.

tackjoo A rice wine.

tacky Sticky; adhesive.

taco A crisp, fried, corn tortilla folded into a U shape (called a taco shell) and filled with a cooked mixture of ground beef, onions, peppers, and garlic and topped with (fresh) chopped tomatoes, shredded lettuce, grated cheese, and taco sauce; hot peppers may be used.

Sodium content: 401 mg/taco (75 g)

tactile sense The sense of touch.

Taenia saginata A parasite found in cattle; the life cycle takes it from ingestion by cattle to the duodenum, through the intestinal wall to the intramuscular connective tissue; as the meat is eaten by humans the tapeworm grows in the intestines to maturity; the larval stage is called Cysticercis bovis. Thoroughly cooking meat ensures protection for humans.

Taenia solium A parasite found in pigs with a life cycle similar to the Taenia saginata in cattle; the larval stage called Cysticercis cellulosae.

taette A thick,ropy, fermented cow's milk that is low-medium acid and slightly alcoholic.

tafelwein Table wine; a category of German wine that is light and pleasant and consumed locally; tafelweins are produced from approved grape varieties in the Main, Mosel, Nackar, Oberhein, and Rhein regions.

taffy A confection made from brown sugar or molasses and repeatedly stretched or pulled until porous and light-colored.

tafi A semihard cheese made from cow's milk.

tafia A sweet, alcoholic drink that is made in India from sugar cane.

taftoon A flatbread made from 82–84%-extraction flour.
**tagella** A shallow-fried cake made from millet or sorghum flour

**tagetes (Aztec marigold)** A plant that yields natural food-coloring additive

**taginette** See noodles

**tagliarini** A noodle (1/8 in. wide)

**tagliatelle** A ribbon of pasta (1/8-1/2 in. wide)

**tagliati** See noodles

**taglioline** A thin noodle

**tahina (taheneh)** A thin pasta made from sesame seeds

**Tahitian lime** A hybrid citrus fruit grown in the United States

**taho** Yogurt

**tahuli** A sufu soybean curd

**tahuri** A sufu soybean curd

**Taiku** A breed of white-faced, fat-tailed sheep that are raised for wool and mutton and are found in Hopeh (Hebei) and Shensi (Shanxi) provinces of northeastern China

**tail** The hindmost part of an animal, especially when forming a distinct, flexible appendage; the caudal or coccygeal vertebrae; the tails of meat animals are used as food, e.g., ox-tail; 1 lb tail per 1000-lb steer

**tail bone** See caudal vertebrae

**tail head** The region of attachment of the tail to the body

**tailless sheep** Sheep that exhibit the recessive trait of taillessness

**tail tie** A tie on the tailhead

**taint** 1) An unpleasant or offensive odor or flavor. 2) To pollute or poison. 3) To cause an off odor and putrefaction

**tai-pla** A fish sauce

**tairu** A yogurt made from cow's or soy milk

**tai tan tsoi** Pickled turnip

**Takaki, K.** A Japanese surgeon who found that beriberi responded to a change of diet (which had previously been polished rice)

**takammart** Dried hard spheres of fermented whole goat's milk or milk curds stored in goatskin bag

**takana** Pickled mustard (*Brassica juncea*)

**take-all** A fungal (*Ophiobolus graminis*) disease of wheat; causes root and foot rot

**takelit** A pocketed flatbread

**takenoko** Bamboo shoots

**talju** A rice wine

**takra** Buttermilk

**takuan** Japanese radish that is pickled in rice bran

**tala** A sorghum beer

**talani** A leavened, thin flatbread, usually made from high-extraction wheat flour

**tale (talcum; French chalk)** Finely powdered magnesium silicate; used in chewing gum and as an antickaking agent

**taleggio** A creamy, semisoft, mild-flavored, snow-white Italian cheese made from cow's milk and ripened by surface bacteria; has a mellow, slightly piquant flavor

**tal ha'emek** A Swiss cheese made from cow's milk

**tali (eriwani)** A cheese made from sheep's milk

**tall** A 12-oz beer or beverage can

<table>
<thead>
<tr>
<th>Composition (fatty acids)</th>
<th>Mutton (%)</th>
<th>Beef (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linoleic</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Margaric</td>
<td>—</td>
<td>0.5</td>
</tr>
<tr>
<td>Myristic</td>
<td>5</td>
<td>3-6</td>
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<tr>
<td>Oleic</td>
<td>36</td>
<td>44-49</td>
</tr>
<tr>
<td>Palmitic</td>
<td>25</td>
<td>27-29</td>
</tr>
<tr>
<td>Palmitoleic</td>
<td>—</td>
<td>3</td>
</tr>
<tr>
<td>Stearic</td>
<td>30</td>
<td>14-19</td>
</tr>
</tbody>
</table>

**Properties:**
- Iodine value—32-45 (mutton); 35-55 (beef)
- Melting point—42-47°C (mutton); 43-48°C (beef)
- Refractive index (60°D)—1.451 (mutton); 1.449-1.452 (beef)
- Saponification value—192-195 (mutton); 190-200 (beef)
- Specific gravity (99°/15.5°C)—0.858-0.860 (mutton); 0.862 (beef)

**tallow (cutting)** Tallow from a retail store will yield 58% tallow (fat), 22% moisture, 20% meat scraps

**tallow gourd** See wax gourd

**tallowy** Fatty-waxy; having the flavor of oxidized lard, or a rancid lardlike flavor

**talose** See Part 2: Sugar, D-Aldehyde

**tamale (tamal; tamalli)** A Mexican dish made from minced meat (a mixture of lamb, beef, and pork), red pepper, chili powder, garlic, and spices, rolled in a cornmeal pancake (similar to a tortilla); minced meat, sweet red pepper, and garlic, rolled in cornmeal (or other cereal) and wrapped in corn husks or plantain leaves; cornmeal, meat, and oil cooked by steaming, boiling, or baking in a corn husk (or in paper)
tamara 1) A date (Phoenix dactylifera) liqueur. 2) A mixture of aniseed, cinnamon, cloves, coriander, and fennel
tamari A dark brown soy sauce made with 10% wheat

tamarind (assen; assam; tamarindo; Tamarindus indica) A large, tropical tree (related to the carob) that produces a very acid fruit in a brown pod; the white, crisp, sweet-sour pulp is used fresh, made into preserves, packed in syrup, and used in curries, chutneys, sauces (including Worcestershire sauce), relishes, beverages (adlaike drink), and flavoring; the fruit contains acids and salts; a tropical fruit (1 x 8 in) with a thin-shelled pod that contains a brown, acrid, sweet pulp and 1-12 large, flat seeds; the flowers are used in curries.

Uses:
- Juice—pickling fish
- Pulp—preserves
- Tamarind (whole)—chutneys; curries
A natural flavoring is made from the partially dried, ripe fruit.

tambadiang Smoked and dried fish
tambo A Swiss cheese made from cow’s milk
tamie A tilsit-type cheese made from cow’s milk
tammy To strain through cloth
tampala hinn choy (Amaranthus tricolor) A plant with leaves that are used like spinach
tampala spinach Used as a spinach substitute; the leaves are used raw (in salads) or cooked, and the stems are cooked like asparagus
tamper-proof 1) Describes a container that cannot be opened and reclosed without leaving visible evidence. 2) Describes a closure designed so that children cannot open it
tampico fiber (istle) Obtained from a fiber-producing plant
Tamworth (Staffordshire) A bacon-type breed of hogs that originated in central England; it is solid red in color and has erect ears and a long body. See Part 2: Swine Breeds
tanbark Shredded tree bark used as a source of tannic acid See also tannic acid
tan-chey Tempe
tandem An arrangement of two or more machines used in series
tandil A cantal-type cheese
tandoori roti A pocketed flatbread
tane koji A mold-spore inoculum used in making koji
Tang An instant breakfast drink
tang-chai Pickled cabbage
tangelo (Citrus reticulata x C. paradisi) A yellow, globe- or pear-shaped (4 in.) citrus fruit that is a hybrid cross between tangerine and grapefruit and has a sweet-tart flavor; easy to peel; the skin may be thick or thin, smooth or rough.
Varieties: Minneola; Orlando; Temple Tanger (C. sinensis X C. paradisi)

Composition (juice): moisture 90%; protein 0.5%; fat 0.1%; carbohydrate 10%; ash 0.3%

See Part 2: Citrus Fruit Storage; Fruit and Nut Rootstock; Fruit, Availability
tangent 1) A straight line that touches the circumference of a circle at one point and is perpendicular to the radius at that point. 2) A trigonometric function:

\[
tan = \frac{ordinate}{abscissa}
\]
tangerine (China orange; king orange; mandarin; naartje; satsuma; Citrus nobilis; C. reticulata) A citrus fruit similar to the orange but smaller (2 1/4-3 3/4 in., with a deeper orange color, and much easier to peel; pulp is very sweet; used as dessert fruit; segments are canned and the rootstock is used for other citrus plants.
Varieties:
- Clementine—season, December (can be stored on tree)
- Dancy—season, December
- Dwarf Owari Satsuma—Oct. to Dec.
- Honey Mandarin
- Kara Mandarin
- Kimow Mandarin
Equivalents:
- 1/2 box (Fla.) = 45 lb med. tangerines, 2 1/2-in. diam.
- 1 lb = 4 tangerines
- 1 cup juice = 8.8 oz
- 1 cup sections = 6.8 oz

<table>
<thead>
<tr>
<th>Composition</th>
<th>Juice</th>
<th>Raw</th>
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</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>89</td>
<td>87</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>0.5</td>
<td>0.8</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Carbohydrate%</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td></td>
<td>2.1</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>0.3</td>
<td>0.4</td>
</tr>
<tr>
<td>pH</td>
<td>4.0</td>
<td></td>
</tr>
</tbody>
</table>

Ascorbic acid 31 mg/10 g
Storage: 31-35°F, 90-95% relative humidity; storage life 3 weeks
See Part 2: Citrus Fruit Storage; Fruit and Nut Rootstock; Fruit, Availability; Fruit Classification; Fruit Composition; Minerals, Food; Plant Foods, Composition; Tangerine Oil, Composition; Tangerine Oil, Properties
tangerine oil The oil expressed from the peel of ripe Dancy or related varieties of tangerine; used as an orangelike flavoring agent in food; sp. gr. 0.845-0.855
Storage: full, tight, glass container in a cool, dark place
tang-guo Candy
tangle See redware
tangleberry (Gaylussacia frondosa) A sweet, dark blue, piquant-flavored, blueberry- or huckleberry-type berry that may be consumed fresh or cooked
Tan goat See Chungwei goat
tango cocktail A cocktail made with gin, vermouth, and orange juice
tangor A hybrid between tangerine and sweet orange, similar to a tangelo; e.g., Temple (Citrus sinensis x C. paradisi)
tangy  Describes a sharp, tart flavor

Tangyang  A breed of gray, draft water buffalo; originated in Hupeh (Hubei) Province of central China

tankage  The residue from rendering (often slaughterhouse entrails and scraps); used for livestock feed and fertilizer; a protein supplement made from animal tissue and bone but exclusive of digestive tract contents, hair, hooves, and horns

Prevention: Proper spacing and correct timing of fertilizer application are most important; fungicides are also helpful.

tanskalainen meetwurst  A coarse salami made from beef and pork, sometimes with horsemeat

tansy  1) Tanacetum vulgare, a perennial, strongly scented herb used for flavoring food; the foliage is used to produce extracts and as a salad herb (lemon fragrance); an aromatic herb that has a bitter taste and is used in bitter herbs and as a tea; 2) A sweet pudding flavored with tansy

tansy oil (Tanacetum spp.)  An essential oil containing camphor and borneol

See Part 2: Essential Oils

tantalum (Ta)  A metallic element; at. no. 73; at. wt. 180.95; Group VB of the Periodic Table; oxidation state +5; electron configuration 2–8–18–32–11–2

orbit K L M N O P

Tanyang (sheep)  A white-fleeced (carpet-wool grade), fat-tailed sheep with black or brown head and legs, that is raised for pelts, wool, and mutton; found in Kaas (Gansu) and Shensi (Shanxi) provinces (north-central and northeastern China, respectively) and Inner Mongolia

Tanyang goat  A breed of white, polled goat raised for meat and found in Kansu Province, eastern China

Tanzania peaberry  A coffee bean that grows as a single round seed rather than the usual two

tanzenberger  See limburger cheese

tanzenberger  A coffee bean that grows as a single round seed rather than the usual two

tanzenbergen  See limburger cheese

tanzo  A strong, black paste made from soybean and rice flour used as a flavoring

taoko  A flavorful paste made from soybeans, often mixed with cereals

taoc  A strong, black paste made from soybean and rice flour used as a flavoring

tao-yu  A soy sauce

tap  To draw off liquid

tapa  Salted and sometimes spiced and sun-dried beef and pork

tapai  1) A glutinous rice wine. 2) A cake made from eggs, rice flour, sugar, grated coconut, and manisan

tapas  Small dishes of food, ranging from canapés and hors d'oeuvres to appetizer-sized portions of dinner foods
tape Cassava, millet, or maize that has been converted to a sweet-sour, alcoholic paste; consumed after deep-frying or sun-drying

tape cantal A millet tape

tape jagung A maize tape

tape ketan A sweet, slightly alcoholic, glutinous rice

tape ketela A cassava tape

tape nasi A sweet, slightly alcoholic, glutinous rice

tape singkong A cassava tape

tape telo A cassava tape

tapeworm A flat parasitic worm (of the class Cestoda) found in digestive tract of humans and animals; the larvae may be present in beef, pork, or fish and can be transmitted to humans. See Taenia saginata; Taenia solium

tapioca A white herb liqueur made with juniper

tapioca starch Starch extracted from the roots of the cassava plant and used for thickening; an easily digested starch made from the roots of the cassava (manioc) or manihot plant; purified cassava

Forms available: bullet; flake; medium; pearl
1 cup, dry, quick-cooking = 5.4 oz
1 cup, unsifted, spooned = 3.8 oz
See cassava; tapioca flour

tapioca flour Tapioca flour mixed into dough and baked

tapioca flour Starch obtained from the root (6 in. x 2 ft) of a South American tropical woody plant (called the cassava, or manioc); used in puddings and as a thickening agent. Tapioca forms:
Granulated—ground flake tapioca
Quick-cooking—given special processing to reduce cooking time
Pearl (round)—small; medium; large
Powdered (flour)—pulverized starch
Color: green; red; yellow; white (natural)
3 cups = 1 lb
See also flake tapioca; pearl tapioca

See Part 2: Cornstarch Pudding Variations; Minerals, Food; Starch; Starch, Microappearance; Vegetable Storage

tapoi A rice wine

taproot Main central root

tapuy A rice wine

tara 1) A yellow cheese that is made from cow's milk and has small holes and a red rind. 2) A fern with roots that are used like yams

tara gum A gum obtained from plant seed

tarama Dried, salted fish (often gray mullet) roe (eggs)

tardi A white or red wine

tare 1) The weight of a container. 2) A fodder plant of the vetch family. See vetch. 3) Weeds among corn

targeted export assistance Subsidy programs intended to increase exports to specific countries

targeting See tiering
	
target price 1) The buyer's estimate of what will constitute a fair price. 2) A price for certain crops established by law. 3) Deficiency payments

target spot See Part 2: Sorghum Diseases

Targhee A breed of sheep originated by the USDA; about 3 Rambouillet, the remainder being Lincoln and Corriedale
See Part 2: Sheep Breeds

targola The large, round fruit of the tar or tad palm; contains globs of edible, translucent, jellylike pulp

tarhana A dried mixture of fermented milk (2–3 parts) with whole wheat (1 part)

tarhanocirv See kapestoes

tarho Yogurt

tarhonya Small pellets of cooked pasta; used as a garnish

tari A sweet, cloudy, white wine made from date-palm sap

tarnished plant bug (Lygus lineolaris) A sucking insect that attacks the fruit of apple, peach, pear, plum, quince, and many other fruit trees and plants, causing deformed fruit, catfacing, and sunken areas (conical shape) with corky tissue; the insects also puncture young berries, which remain small and hard. Control: sprays; insecticides

taro (cocoym; dasheen; eddo; Egyptian ginger; elephant ear; gab; kalo; malanga; old cocoyam; tanna; tanier; tanah; Colocasia esculenta; C. esculenta schott; C. indica) A tropical perennial plant that produces tender sprouts (similar to a slender white potato with a flavor similar to the oyster plant), called dasheen, and starchy corms (6–20 per plant, 2 1/2–8 lb per plant), called taro, that form underground by thickening of the stem; the starch from this plant is very digestible. Taro is a staple food of the Pacific; the corms are used in some areas as a substitute for the potato and may be boiled, baked, fried, or used in soups; poi (a fermented paste) is made by boiling or steaming the corn and pounding it into a paste.

Parts used:
Corm—30–500 g; cooked like potatoes; used to make poi; smaller, side corms make better eating and store better than the large, central corm
Flesh—usually white; may be pink, red, or yellow
Rind—bitter-flavored; should be removed
Leaves Young, unrolled—used as table greens (like spinach)
Large—used as greens
Shoots, sprouts—blanched and eaten; should be chilled after cutting
Stalks, stems—used like asparagus

Composition (corm): moisture 73%; protein 2%; fat 0.2%; carbohydrate 24%; ash 1%

Storage: dried on ground and stored at 50°F with ventilation; will keep for several months

tarpon A kingfish; a sport fish
Ladyfish (Elops saurus)—Atlantic
Machete (Elops affinis)—Pacific; fresh water
Silverfish (Megalops atlantica)—Atlantic
tarragon (estragon; taragona; tarragan; Artemisia dracunculus L.) The dark green leaves (dried or fresh) of an aster plant [a bushy (2 ft) perennial (90 days) herb]; sweet-anise-mint flavor; used as a flavoring in fish, French mustard, meat, pickles, salads, sauces, and vinegar; oil of tarragon is distilled from the foliage. The harvested leaves (bitter, aromatic) are generally dried, finely powdered, and stored in an airtight container.

Sources: California; France
Types:
French—more aromatic and flavorful than Russian or Siberian (A. redowskii)—very vigorous; resembles tarragon but has a less-aromatic fragrance and color; can be propagated by seed.
Composition (dried): moisture 7-8%; protein 22-24% [4% (fresh)]; fat 7-8%; carbohydrate 50-51%; fiber 7-8%; ash 11.5-13%
Storage (dried leaves): in a colored, airtight container.

tarragona A sweet, Spanish wine, often fortified, produced in Catalonia (northeastern Spain)
tarragon butter Soften one-half stick of unsalted, sweet butter and add one tablespoon finely minced fresh tarragon or one-half teaspoon dried tarragon; cream together, adding a few drops lemon juice.
tarragon oil A volatile oil obtained by steam distillation of Artemisia dracunculus plant; used as a spicy-flavoring agent in food; sp. gr. 0.914-0.955
Storage: full, tight, glass container in a cool, dark place.
tarragon vinegar Vinegar flavored with tarragon and used on salads
Procedure:
1. Rinse and pat dry tarragon.
2. Fill jar lightly with tarragon.
3. Heat, do not boil, good cider or wine vinegar.
4. Pour vinegar over tarragon and cover.
5. Let stand at room temperature for two or three weeks then strain through cheesecloth or filter.
6. Store in a corked bottle.
tarry Having the odor of tar.
tarsal bones Hind foot bones located above the metatarsal bones.
See Part 2: Bone.
tarshiki (Cheilodactylus macropterus) A food fish used in Japan.
tart 1) Descriptive of a biting, sour taste. 2) A fruit pie with pastry top and bottom; a pastry filled with fruit, jam, etc.
See Part 2: Salad Dressing and Mayonnaise Variations.
tartar An acid deposit produced during grape fermentation; used to make tartaric acid and cream of tartar.
tartaric acid

\[
\begin{align*}
\text{COOH} \\
\text{H} & - \text{C} - \text{OH} \\
\text{HO} & - \text{C} - \text{H} \\
\text{COOH}
\end{align*}
\]

An organic acid derived from fruits (e.g., grapes); a plant derivative often used as a substitute for lemon juice; 80-85% as sour as anhydrous citric acid; used as a food acid and as a sequestrant; used in baking powder and to adjust acidity.

Storage: tight container.
See Part 2: Acidulants; Normal Solutions; Organic Acids in Fruits and Vegetables; Reagents, Normal Solutions.
tartar (tatare) sauce A sauce (emulsion of oil in water and acid) used with seafood; made from mayonnaise mixed with either capers, chives, gherkins, parsley, shallots, and tarragon or dill pickles, green onions, horseradish, and parsley.
Sodium content: 182 mg/tbsp (14 g)
See Part 2: Fat and Oils, Composition.
tasi The edible fruit of a tree; roasted before consuming.
TA spoilage (flipper; leaker; swell) A spoilage of canned foods that causes a can to bulge at one or both ends, (may explode); caused by Clostridium thermosaccharolyticum, which produces large amounts of gas.
tassel The flowering portion of the corn plant (Zea mays)
See Part 2: Corn.
taste A sensation produced by sensory receptors located on the tongue.
Taste categories [with organoleptic threshold values (g/100 ml)]:
- Bitter—0.00005 quinine
- Saline—0.25 NaCl
- Sour—0.007 HCl; 0.0002 vanilla (coumarin)
- Sweet—0.5 sugar (sucrose)
See Part 2: Flavor Ingredients, Taste and Flavor Type.
taste bud (taste-beaker; taste-onion) A receptor end-organ for taste perception; about 9000 are located on the tongue and other areas of the oral cavity.
taste panel A selected group of people who perform organoleptic (sensory) tests on food products.
taster One who tastes; a device for sampling food or drink.
tasty Describes a savory or pleasant flavor.
tatate A fermented plantain flour mixed with maize, flavored with ginger, and shallow-fried.
tau (T, τ) Greek letter with an English equivalent of t
Taulouse-brand sausage A fresh sausage made of fatty pork.
taurasi A red wine.
tautog A finfish with light meat and a very light delicate flavor. See blackfish.
tavel A strong, dry rosé wine.
tawny 1) Having the color and character of port. 2) Describes wine matured in wood. 3) A rich brown color characteristic of some wines, e.g., port.
tax exemption certificate Certification given by the buyer to the seller with the purchase order to indicate that the sale is not subject to sales tax.
t-axis A suffix used to indicate order, arrangement, or influence.
tax-loss farming A farming operation conducted with the main objective being to produce a loss for tax-reporting purposes.
taxonomy The science of arranging and classifying plants and animals.
TB The symbol for the element terbium.
TB cattle Cattle that react to the tuberculin test.
TBHQ See tertiary butylated hydroquinone.
T-bone steak A steak that has a T-shaped bone and is cut from the short loin; located between porterhouse and club steaks.
TCA cycle See citric acid; Krebs cycle; tricarboxylic acid cycle.
tchanakh A white, brined cheese made from cow's or sheep's milk.
tchukutu A millet beer.
TD A symbol used on volumetric apparatus, meaning "to contain".
TDE A toxic, chlorinated organic insecticide (tetrachlorodiphenylethane).
t distribution A sampling distribution used for samples less than 30 (at 30 it approaches the normal distribution); it has a higher peak and tails than the normal distribution; \( t = 1.96 \) \((n = \infty)\) means that if a large sample was drawn from a normal population, 2.5% would have a \( t \) value greater than 1.96 and 2.5% would have a \( t \) value less than -1.96.

\[ t = \frac{\bar{x} - \mu}{s/\sqrt{n}} \]

\( \bar{x} \) = estimation of the mean
\( \mu \) = population mean or a hypothetical mean to be tested (e.g., the difference in mean value \( H_0: \mu = 0 \))
\( s \) = estimation of the standard deviation
\( n \) = sample number (or number of pairs)
\( df = n - 1 \)

The one-tailed test can be used when, by knowledge of the problem, values on one side of \( \mu \) do not exist or have no meaning; to use a two-tailed table, use one-half of the probability indicated in the table; all the factors are the same.

Randomized groups:

\[ t = \frac{(\bar{x}_1 - \bar{x}_2) - (\mu_1 - \mu_2)}{s(\bar{x}_1 - \bar{x}_2)} \]

\( H_0: \mu_1 - \mu_2 = 0 \)

\[ s(\bar{x}_1 - \bar{x}_2) = \sqrt{2s^2/n} \]

poled \( s^2 = \frac{\text{poled } \sum x^2}{2(n - 1)} \)

\( n \) = number in one group
\( df = 2(n - 1) \)

TDN Total digestible nutrients

1 g TDN = 4.41 kilocalories digestible energy (kcal DE)

1 lb TDN = 2000 kilocalories digestible energy (kcal DE)

See total digestible nutrients.

TDT See thermal death time.

TDT can A specially designed metal container used to determine thermal death time.

TDT tube A specially designed tube used to determine thermal death time.

Te The symbol for the element tellurium.
tea 1) A low evergreen bush [Camellia sinensis (originally Thea sinensis)] whose leaves and buds are used to produce the beverage; over 20 varieties are grown; the leaves and shoots may be processed (including withering, rolling, fermentation, drying, sifting, and grading) before being used to make tea (the beverage). High-grown—the higher the elevation of the growing area, the finer the quality of the tea; superior-quality tea is often grown above 10,000 feet. Black tea—leaves are rolled (which accelerates natural fermentation and releases oxidizing enzymes) before drying. Leaf size—the smaller the leaf, the better the quality.

Black tea rating [numbers (1, 2, 3, ...) also used]:

High-quality

Choice—new crop

Choiceest

Choice

Finest

Fine

Superior

Good

Fair

Low-grade—Common

Grades according to leaf size:

Flowering pekoe—smallest leaf, highest quality; top leaf buds

Orange pekoe—next-highest quality; first-opened leaves

Pekoe—next-highest quality; third leaves

Souchong—largest leaf, lower quality; next leaves
Grades according to sifting:
High-quality
  Fifth sifting—broken orange pekoe
  Fourth sifting—flowery orange pekoe
  Third sifting—pekoe or orange pekoe
  Second sifting—pekoe souchong
Low-quality
  Dust

Types of tea:
Brick tea—any kind of tea pressed into bricks for long-distance shipment
Broken orange pekoe—pieces broken from orange pekoe during processing
Broken pekoe—pieces broken from pekoe during processing
Butter tea—tea mixed with butter and salt, and churned until thickened
Darjeeling tea—the finest black tea of India; mostly grown above 10,000 ft
English breakfast tea (Congou tea)—black tea produced in China (sometimes mixed with black tea of India)
Green tea—unoxidized (unfermented) leaves; made by heating the leaf early in processing to prevent fermentation; light in color; graded according to quality of the leaf; has more tannin than black tea
Basket-fired—fried slowly at low temperature; hand-stirred, long leaves; little breakage; better flavor
Gunpowder—small leaves (youngest and smallest) from near the top of the plant; rolled tightly in balls
Imperial—large leaves that are rolled tightly in balls
Pan-fired—mechanically stirred; a lot of breakage
Young Hyson—larger leaves that are rolled in long rolls
Iced tea—brewed stronger than normal tea to allow dilution by ice
Jasmine tea—high-quality black or oolong tea scented with the fragrant white flowers of jasmine
Milk tea—tea with milk and salt added
Oolong—semifermented; a cross between green and black teas; graded according to quality
Pekoe and orange pekoe—often mixed to give the strength of pekoe and the flavor of orange pekoe
Scented tea—green tea with fragrant flowers added

Tea sifting—brews good quality tea; inexpensive because of poor appearance

To brew: use ¾–1 tsp per 6 oz water (nearly but not actively boiling water); steep at least 5 minutes, but never more than 8–10 minutes.

The following are often added to tea: cream and sugar (to black tea), lemon (to light black tea and green oolong tea), and honey (to green tea)

To remove stain from cloth: If tea contains cream, spray with cleaning fluid, soak fresh stain in cool water, soak in warm water with enzyme product, and then wash.

Composition: Caffeine content:
1-min brew = 9–33 mg/5-oz cup
3-min brew = 20–46 mg/5-oz cup
5-min brew = 20–50 mg/5-oz cup
Instant tea = 12–28 mg/5-oz cup
Iced tea = 22–36 mg/12-oz can
Leaf tea = 41 mg/6-oz cup

Equivalents:
1 lb, leaves = 6 ⅔ cups = 300 cups, brewed
1 lb, instant = 13 cups = 65 cups, prepared
1 cup, leaves = 70 g (2.5 oz)
1 cup, instant = 35 g (1.2 oz)

See also black tea; green tea; oolong tea

See Part 2: Essential Oils; Minerals, Food; Minerals (Trace), Limits; Nicotinic Acid, Food; Portion Size; Riboflavin, Food; Wastes, Agricultural and Industrial

2) A meal of small sandwiches or tea cakes and tea, usually taken at 4 or 5 PM (high tea is usually 6–7 PM), and sometimes a more substantial meal
Served at 4 PM:
  Simple tea—biscuits (called cookies) and a pot of tea
  Lavish tea—fancy cakes, hot toast, melted butter, sandwiches (filled with tomatoes or cucumbers and garnished with cress), and strawberry jam, as well as a pot of tea with hot water and hot milk

tea, afternoon A smaller meal than high tea
tea bag A porous cloth or fiber bag containing one serving of tea leaves
tea, blended A mixture of teas intended to balance the taste of the brew
tea bread A rice bread, usually made with milk, eggs, currants, sultanas, and chopped nuts; often served with tea
tea, broken Black tea that has been broken or cut during processing; has a stronger flavor than unbroken tea
tea cake A bun that contains citrus-fruit peel and currants
tea, cream Scones (baking-powder biscuits), a pot of whipped or clotted cream, and strawberry jam served with a pot of tea
teach cup A measure of volume, usually less than 8 oz
  1 tea cup = approximately 120 milliliters (ml)
tea, flavored Black tea with artificial or natural flavoring added
tea fungus Teekvass
tea, herb(al) Generally contains no caffeine See herb tea
tea, high Supper or a light supper, served at about 6 PM; may include french fries, fried eggs, ham, oat cakes, and scones served with a pot of tea
tea, instant Store at room temperature (below 70°F shelf life 1 yr)
tear strip A strip with a projection that when pulled will open the container
tea, scented Some common types are as follows:
- Cinnamon—Ceylon tea flavored with cinnamon
- Earl Gray—black tea with oil of bergamot
- Jasmine—oolong tea with jasmine blossoms
- Lemon—lemon-flavored
- Mint—black tea with peppermint leaves
- Orange spiced—black tea with cloves and orange
- Star anise—star-anise-flavored

tease 1) To disentangle fibers; card (wool). 2) To tear a tissue into small units for microscopic examination

toeseed See Part 2: Fatty Acids, Fats and Oils; Iodine and Saponification values; Oil or Fat, Characteristics; Refractive Indices, Fats and Oils; Titer, Fats and Oils; Unsaponifiable Matter

teeesed oil An edible oil extracted from a teallike plant

teaspoon (tsp) A measure of volume
1 tsp = 120 drops of water
= 60 drops of thick fluid
= approximately 3.5—4 milliliters (ml)
= approximately 1—1 1/2 fluid drams
= 1/8 cup
2 tsp = 1 dessertspoon
3 tsp = 1 tbsp
6 tsp = 1 fluid ounce

See Part 2: Volume

teeawurst A moist, cooked, unsmoked Australian sausage made from finely chopped, mildly seasoned (with garlic) beef, not stuffed into casings See teawurst
tech. See technical or commercial
tenchnetium (Te) An element; at. no. 43; Group VIIIB of the Periodic Table; mass number of most stable isotope 99; oxidation states +4, +6, +7; electron configuration 2—8—18—18—6


technical or commercial (tech.) Designation of a grade of chemical purity; it is the lowest chemical grade and is not refined for laboratory use. See also grade
teeekvass A beverage made by fermenting extracts of tea
teeschwamm Teekvass

Teeswater A large, fertile breed of English sheep used in crossing
tooth A number of bony structures in the mouth that are embedded in the jawbone and designed for chewing food; ruminants have teeth in only one jaw.

Data for cattle at various ages:
- 12 months—all calf teeth in
- 15 months—center incisors in
- 18 months—center incisors wearing
- 24 months—first intermediates through the gum
- 30 months—six incisors in
- 36 months—six incisors wearing
- 39 months—corners through the gum
- 42 months—eight incisors wearing

See Part 2: Teeth Eruption

tepewurst, teawurst 1) A sausage, similar to mettwurst, made from coarsely ground pork, beef, pork feet, pork bellies, and bacon. 2) A soft-textured (spread), smoked (not cooked), semidry sausage made from finely chopped, medium-seasoned meat. 3) A semidry, uncooked, smoked western German sausage made from medium-seasoned beef and pork stuffed into beef or artificial casings. 4) A moist, semidry, uncooked, smoked Swiss sausage made from finely chopped, medium-seasoned beef and pork stuffed into artificial casings. 5) A sausage made from ground pork tenderloin

teeewurst, fein A moist, uncooked, smoked eastern German sausage made from finely chopped, medium-seasoned beef and pork stuffed into artificial casings
teeewurst, grob A moist, uncooked, smoked eastern German sausage made from finely or coarsely chopped, medium-seasoned beef and pork stuffed into artificial casings
teff (Eragrostis tef) A cereal grain similar to millet

Teflon The proprietary name for polytetrafluoroethylene, a chemically inert plastic used as nonstick coating on kitchen utensils

E-CTFE—welds high temperature
ETFE—flexible; high mechanical strength and impact resistance
FEP—See fluorinated ethylene propylene
PFAs—high mechanical strength at high temperature

TFE—See tetrafluoroethylene
See nonstick coating
teg A wether or ewe before the first shearing
tegulle A shallow-fried cake made from millet or sorghum flour
telbih bread A crispy, crusty, baked bread (20-cm diam., 1 cm thick), covered with sesame seed
tej A sweet, fermented, alcoholic beverage made from honey and often flavored with fruit juice and spices
tejino See tesquino
tekthe Chicha made from maize and guinoa

Telautograph The proprietary name for a device for transcribing information over short distances, for example, from a restaurant counter to the kitchen: The order is written by the counter attendant with a stylus on a special tablet. This activates an electromagnetically controlled slave stylus at the other end, which duplicates the inscription.
teleme A white, brined, feta-type cheese made from cow’s, goat’s, or sheep’s milk
telcorman A provolone-type cheese made from cow’s and sheep’s milk
teliani A red wine aged in oak casks
tella A sorghum beer
tellicherry Black pepper
tellurite glycine agar See Part 2: Microorganism, Media
tellurium (Te) A nonmetallic element; at. no. 52; at. wt. 127.61; Group VIA of the Periodic Table; oxidation states +4, +6, −2; electron configuration 2—8—18—18—6

orbit K L M N O
telophase The last phase of meiosis, characterized by the formation of two haploid nuclei and a division of the cytoplasm; in telophase II, the nuclear membrane forms and the cytoplasm divides.

telpanier (leaf cheese; tschil; zwirn) A cheese made from skimmed cow's or sheep's milk See leaf cheese; tschil

tembang A dried fish (Sardinella spp.)

temband A legume tempe

tempe A dish made from beans (usually soybeans), covered with mold mycelium, that are placed in soy sauce or fish sauce or in a batter of maize or rice flour and coconut milk, or tamarind pulp; often fried

tempe bengkok A legume tempe

tempe bongkrek Coconut press cake with soybeans, containing mold mycelium; fried in oil

tempe gembus Tempe made from the solid residue (tahu) of soy milk

tempeh The same as tempe; a fermented (Rhizopus oligosporus and Streptococcus spp.) soybean product that can also be made from coconuts and peanuts See Part 2: Fungi Food Products

tempe kedele Soybean tempe

tempe lamtoro Lamtoro-seed tempe

tempe mata kedele A lower-quality tempe made from soybean hulls

temper Hardness; T-1 through T-6 indicate increasing hardness; T-U (Universal) indicates that a material exhibits properties of T-3 through T-6

temperature 1) A measure of hotness or coldness; temperature manipulation is used to preserve foods:
   - Canning
   - Cooking
   - Freezing
   - Refrigeration—used to store dairy products, fruits, meat, poultry, and vegetables
   2) The thermal state of a solid, liquid, or gas considered in terms of its ability to communicate heat to other substances.
   3) Body heat as measured by a thermometer:

<table>
<thead>
<tr>
<th>Animal</th>
<th>Avg. (°F)</th>
<th>Range (°F)</th>
<th>Avg. (°C)</th>
<th>Range (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bird</td>
<td>—</td>
<td>105–107</td>
<td>—</td>
<td>40.6–41.7</td>
</tr>
<tr>
<td>Cat</td>
<td>—</td>
<td>98.9–102.2</td>
<td>—</td>
<td>37.2–39</td>
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<tr>
<td>Cattle</td>
<td>101.5</td>
<td>100–102.4</td>
<td>38.6</td>
<td>38–39</td>
</tr>
<tr>
<td>Chicken</td>
<td>—</td>
<td>104–107.6</td>
<td>—</td>
<td>40–42</td>
</tr>
<tr>
<td>Dog</td>
<td>101.5</td>
<td>101–102.5</td>
<td>39</td>
<td>38–39.1</td>
</tr>
<tr>
<td>Goat</td>
<td>103</td>
<td>—</td>
<td>39.4</td>
<td>—</td>
</tr>
<tr>
<td>Guinea pig</td>
<td>—</td>
<td>101.3–103.8</td>
<td>—</td>
<td>38.5–39.9</td>
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<td>Horse</td>
<td>100.5</td>
<td>—</td>
<td>38</td>
<td>—</td>
</tr>
<tr>
<td>Man</td>
<td>98.6</td>
<td>37</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Pig</td>
<td>102.6</td>
<td>—</td>
<td>39.2</td>
<td>—</td>
</tr>
<tr>
<td>Sheep</td>
<td>103</td>
<td>102–104</td>
<td>39.4</td>
<td>38.9–40.0</td>
</tr>
</tbody>
</table>

See also candy

See Part 2: Altitude Adjustments for Baking; Altitude Corrections for Boiling Water; Bacteria on Chickens at Various Holding Temperatures; Beef, Degrees of

tenderloin (fillet of pork or beef) The muscle located below the backbone; lower muscle in the short loin; it is a boneless cut of meat and the most tender
muscle; in beef it weighs 6–8 lb and is cut crosswise and flattened. See also psoas major
See Part 2: Beef, Boneless Cuts; Beef Cuts; Braising Time; Broiling Meat; Meat Identification; Pork Chart; Pork, Cooking; Pork, Cooking Methods; Pork Cuts; Pork Cuts and Uses; Pork Loin Cooking; Roasting, Time and Temperature
tenderness The state of being soft and readily chewed and digested
See Part 2: Tenderness of Poultry
tendon 1) The connective tissue that attaches muscle to bone. 2) Shrimp and rice
tenjan See denjang
Tennessee red-rind cheese A light yellow to dark blue, veined cheese
Tennessee whiskey A sour-mash whiskey
Tenox II The proprietary name for an antioxidant that contains 70 parts propylene glycol, 6 parts propyl gallate, 4 parts citric acid, and 20 parts butylated hydroxyanisole
See Part 2: Antioxidant Activity
tensor fascia lata A muscle of the thigh that runs from the ilium to the patella; in cross section of the round, it is the most cranial muscle.
tent caterpillar (webworm) The larval form of a white to brown moth; the moths are active near lights at night in June and July; the larva is a hairy caterpillar (1–2 in. long) that constructs tents of webbing on branches; the larvae feed on leaves, sometimes defoliating trees.
Control: Burn the webs.
tentiform leaf miner (Lithocolletis spp.) An insect that feeds on the leaves of pear trees
tenuazonic A mycotoxin produced by strains of organisms of the genus Alternaria, e.g., A. solani produces C_{10}H_{15}NO_{8}
tenure The control that a farmer has on the land that he or she farms
teosinte An annual grass similar to Indian corn; used for fodder
teou-fu See tofu
teou-fu-ru A sufu soybean curd
tepache Wine fermented from pineapple (Ananas sativus) with apple or other fruit
tepary bean (Phaseolus acutifolius) A semiarid legume used as a pulse and for hay	
tepid Lukewarm
TEPP Tetraethylpyrophosphate; a toxic organic phosphorus insecticide
\[
(C_2H_5O)_2-P-O-P-(OC_2H_5)_2
\]
tepylsa A semidry, uncooked, smoked, spreadable Icelandic sausage made from finely chopped, medium-seasoned beef and pork, with pork fat added, sold in short, artificial casings
tequila Distilled pulque (maguey juice), an alcoholic beverage made from fermented agave juice (obtained from the heads of a desert cactus); usually consumed with a pinch of salt; 90–160 proof
tequila sunrise An alcoholic beverage made by adding 2–3 dashes of grenadine to an 8-oz glass filled with ice cubes, adding 1½ oz (1 jigger) tequila, and filling with orange juice; do not stir
tera- A prefix for quantities one trillion (10^{12}) times larger than the base unit
terabelesca A pocketed flatbread
teranatto A strong, black, soybean paste used as flavoring
teratogen An agent or disease that causes birth defects or the malformation of a fetus or developing embryo
teratogenesis Abnormal development in utero
terbium (Tb) A rare-earth element of the lanthanide series; at. no. 65; at. wt. 158.93; Group IIIB of the Periodic Table; oxidation state +3; electron configuration 2–8–18–26–9–2
orbit KLMNOP
teres major A muscle of the chuck, filling the angle between the scapula and the humerus; it lies medial to the triceps and is attached to the upper part of the humerus.
teritol agar See Part 2: Microorganism, Media
teriyaki sauce A flavored soy sauce available in ready-to-use form and as a dehydrated mix

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dry</th>
<th>Prepared with water</th>
<th>Ready-to-serve</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>1.0</td>
<td>83.9</td>
<td>67.9</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>9.0</td>
<td>1.5</td>
<td>5.9</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>2.0</td>
<td>0.3</td>
<td>0.0</td>
</tr>
<tr>
<td>Carbohydrate</td>
<td>60.0</td>
<td>9.8</td>
<td>15.9</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>28.0</td>
<td>4.6</td>
<td>10.4</td>
</tr>
</tbody>
</table>

Sodium content: 690 mg/tbsp (18 g)
terminal market A place where animals are gathered and sold for an owner, for a commission
termite A white ant that burrows into wood; its stomach contains an enzyme that enables it to digest cellulose.
Termitomyces A genus of mushrooms associated with termite mounds
terne (85% lead, 15% tin) Used to make cans
Teroldego 1) A variety of grape. 2) A red, full-flavored, Italian wine
terpenes [(C_5H_8)_n] One of a series of unsaturated hydrocarbons found in the essential oils of citrus fruits; they are usually removed to reduce oxidative spoilage. Terpenes are also obtained from coal or are made synthetically and are used as a masticatory substance in chewing gum.
Storage: tight container
terpenes oil An essential oil from which the hydrocarbon portion has been removed by fractional distillation; an essential oil with most of the terpenes removed, which makes the oil more soluble and less likely to oxidize and which also increases flavor
terpineol

Used as a lilac-like flavoring agent in food; sp. gr. 0.930–0.935
Storage: full, tight, glass container in a cool, dark place

terpinyl acetate

Used as a lavender-like flavoring agent in food; sp. gr. 0.952–0.962
Storage: full, tight, glass container in a cool, dark place

terpinyl propionate

Used as a floral-like flavoring agent in food; sp. gr. 0.944–0.950
Storage: full, tight, glass container in a cool, dark place

terpy

Having the odor of terpene or linalyl cinnamate

Terramycin

The proprietary name for the antibiotic oxytetracycline

terrapin (Malaclemys spp.)

A name used for several varieties (e.g., diamondback, yellow-bellied, red-bellied) of freshwater, edible turtles; an American edible turtle

terrinen

A moist or semidy, cooked, unsmoked Swiss sausage made from medium- or coarse-chopped, medium-seasoned beef, pork, and veal not stuffed into casings

tertiary

A carbon atom that is united by three valences to a chain or ring, e.g., $[\text{CH}_3]_n [\text{CH}_2]_n [\text{C} —$

tertiary butylated hydroquinone (TBHQ)

An antioxidant and preservative permitted in food; maximum of 0.02% of the fat or oil in a product
See Part 2: Antioxidant Mixtures

tertiary butylhydroquinone

An antioxidant food additive used in fats, oils, and snack foods

tertuňka

Wine

tesguino

A thick chicha made from maize

testa

The protective covering of the seed embryo
See Part 2: Rice Kernel; Wheat, Parts of Grain; Wheat, Parts of Grain, Vitamins

testicle (male gonad)

A male reproductive gland located in the scrotum

testis

A male reproductive organ; plural, testes
See Part 2: Gland Weights; Organ Weights

testosterone

A steroid androgen, produced by the testis; responsible for libido and secondary sexual characteristics

testouri

A panir-type cheese made from sheep's or goat's milk

teta (perilla)

A pear-shaped cheese made from cow's milk

tetanus (lockjaw)

A disease caused by a toxin produced by Clostridium tetani

tetany

Localized, spasmodic, muscular contractions

tète de moine

A tilsit-type cheese

tether

To tie an animal in such a way as to permit grazing

tetra-

A prefix used to indicate "four"

tetracosanoic acid (lignoceric acid)

$\text{CH}_3(\text{CH}_2)_{22}\text{COOH}$

A saturated fatty acid found in peanut oil
See Part 2: Saturated Fatty Acids

tetracosanoic acid

See Part 2: Fatty Acids and Their Properties

tetracycline

$\text{C}_{22}\text{H}_{24}\text{N}_2\text{O}_8$ An antibiotic added to food in some countries
See Part 2: Antibiotic Standards

tetradecanoic acid (myristic acid)

$\text{CH}_3(\text{CH}_2)_{12}\text{COOH}$

A saturated fatty acid found in coconut oil
See Part 2: Saturated Fatty Acids

tetradecenoic acid (myristoleic acid)

$\text{CH}_3(\text{CH}_2)_{11}\text{CH} = \text{CH(}\text{CH}_2)_{7}\text{COOH}$

An unsaturated fatty acid found in certain plant seeds
See Part 2: Milk, Fatty Acids, Seasonal; Unsaturated Fatty Acids

tetrad A group of four coccus cells arranged as a square

tetrafluoroethylene (TFE)

An opaque, white Teflon with a low friction coefficient; used for stopcock plugs

tetra pack A four-sided carton used for milk and beverages

tetraphosphate

A cleaning compound that has good calcium-sequestering power; it is readily soluble in warm water but unstable at high temperature or in highly alkaline solutions. See also phosphate
tetrasodium pyrophosphate (sodium pyrophosphate; sodium polyphosphate) See Part 2: Detergent Properties
tetrathionate broth See Part 2: Microorganism, Media; Microorganism, Selective and Differential Broths and Media, Water Filtration Plant
tettemelk See taette
Texas hide A hide that is branded on the rump or side and that is plump and close-grained
Texas root rot See root rot
texel A green cheese made from sheep's milk
texture A property of the composition or structure of a food; the visual and tactile perception of such things as roughness or smoothness and graininess, e.g., form and structure as perceived by the senses of sight and of touch (in the mouth); the properties of food evaluated visually (color, form, size, and arrangement) or by pressure on receptors of the skin or muscles (smoothness, coarseness, moistness, composition, tenderness, hardness); the texture of food is often characterized by grain (size of cells), the character of the crumb, the distribution of cells, and the thickness of cell walls; texture in food also often involves fineness of particles, smoothness, and lightness or porosity.
textured vegetable protein (TVP) Isolated plant protein processed to simulate the texture and flavor of an animal product (e.g., meat)
texturizer A substance used to impart body, to improve consistency or texture of a food, or to stabilize an emulsion
Th The symbol for the element thorium
thai-Ian A fish sauce
thallium (Tl) A metallic element; at. no. 81; at. wt. 204.39; Group IIIA of the Periodic Table; oxidation states +1, +3; electron configuration 2-8-18-32-18-3
thallus A plant not differentiated into root, stem, and leaf, e.g., seaweed, algae
thaw To change from frozen to liquid state; defrost; melt
To thaw 1 lb of syrup-packed fruit:
6–8 h—in the refrigerator
2–4 h—at room temperature
0.5–1 h—in cool water
Thayer Martin medium See Part 2: Microorganism, Media
thé Tea
theave A ewe between the first and second shearingsthewepest A moist, pork teewurst; a moist, uncooked, smoked Dutch sausage made from finely chopped, medium-seasoned pork, fermented and stuffed into artificial casings
theine See caffeine
thenay A soft, camembert-type cheese made from whole milk with rennet added
theobromine An alkaloid in the cacao bean (1.5–3%), cola nut, and tea; not quite as stimulating as caffeine

![Theobromine structure](image)
theoretical plate (n) In gas chromatography; defined as
\[ n = 16 \left( \frac{\text{retention volume}}{\text{peak width}} \right)^2 \]
theory An imaginative explanation of facts
therapeutic Of or relating to the art of healing or the treatment of disease
therm- A prefix meaning "relating to heat"
thermal Of or pertaining to heat
thermal arrest See Part 2: Thermal-Arrest Time
thermal capacity The amount of heat required to raise the temperature one degree Celsius
thermal death point The temperature required to kill bacteria in 10 min
thermal death time (TDT) The time required to destroy a specific microorganism at any given temperature See decimal reduction time; F unit
See Part 2: Thermal-Death-Time Curve
thermal processing Subjecting sealed containers of food to heat long enough to insure continuing sterility and preservation of the contents
thermal resistance A measure of the amount of heat required to kill a microorganism
thermo- A prefix used to indicate heat
thermoacidurans agar See Part 2: Microorganism, Culture Media, Dairy and Food Products
thermocooling Rapid heating and cooling of sealed containers of food, accomplished by sprays or baths, usually at progressively decreasing temperatures
thermocouple A thermoelectric instrument (pyrometer) used to measure interior temperatures by electromotive force; constructed of two wires of different electrically conductive metals joined at one end, e.g., copper and constantan (25.54 mV)
thermoduric A non-spore-forming microorganism that is resistant to heat
See Part 2: Sanitizing Chemicals
thermogenesis The production of heat within an organism because of low environmental temperature
thermograph An instrument that automatically records temperature
thermolabile Sensitive to heat
thermometer An instrument used for measuring temperature, usually by the expansion of mercury or alcohol or the differential expansion of two strips of different kinds of metal
Thermometer reading up to:
108°F—used for yogurt
212°F—used for bottling
400°F—used for sugar
500°F—used for frying
500°F—used in the oven

thermophile (thermophil) A heat-loving organism, e.g., one with an optimum growth temperature above body temperature (45°C and above, often 55–65°F); spores able to survive heating

See Part 2: Microbiological Media; Microorganism, Culture Media, Dairy and Food Products; Microorganism, Media; Thermophiles

thermophilic bacteria Bacteria that can grow at a high temperature and produce highly resistant spores; minimum growth temperature 35–40°C; optimum growth temperature 55–60°C; maximum growth temperature 65–75°C

thermoplastic An organic material that can be repeatedly softened by heating and hardened by cooling

Thermos The proprietary name for a vacuum bottle used for maintaining the desired temperature of a food or drink

thermostat An instrument that automatically regulates temperature by means of a feedback mechanism

theta (θ, θ) The Greek letter with an English equivalent of th; the symbol usually used for an angle in mathematics

thiabendazole A drug used as a wormer

thiamin (aneurin; thiamine; vitamin B₁)

\[
\text{thiamine hydrochloride}
\]

A water-soluble vitamin often known as vitamin B or B₁; it functions in carbohydrate metabolism ( decarboxylation of carbon dioxide from pyruvic acid) and if deficient in the diet, the visible symptoms of beriberi or polyneuritis develop.

Sources: bran (of grains); brewer’s yeast; chard; egg yolk; fortified foods; heart; kidneys; lima beans; liver; nuts; peanuts; peas; pork muscle; rice polishings; spinach; wheat germ; whole-grain products

Used as a food additive to maintain or improve nutritional value

3 μg pure vitamin = 1 IU

Functions: promotes appetite, growth, and reproduction.

Usually sold as the hydrochloride; made synthetically

See Part 2: Beans, Peas, and Nuts; Beef, Percentages of Daily Recommended Allowances; Cereal Enrichment; Cereal Fortification; Cereal, Nutrient Content; Cereals, Vitamin and Mineral Content; Cheese Composition; Cheese, Vitamin Content; Composition of Food; Dairy Products, Composition; Egg Composition; Egg Products, Nutritive Value; Fats and Oils, Composition; Fish and Shellfish, Composition; Flour, Extraction Rates; Food, Composition; Fruit and Vegetables Composition; Grain Composition; Grain Analysis; Grain Products, Composition; Lamb Percentages of Daily Recommended Allowances; Lemon Juice, Composition; Lime Juice, Composition; Macaroni and Noodles, Composition; Meat Composition; Meat, Nutritive Value; Milk and Milk Products, Vitamin Content; Milk Composition; Olives and Pickles, Composition; Plant Foods, Composition; Pork, Percentages of Daily Recommended Allowances; Poultry Composition; Recommended Daily Dietary Allowance; Sausage Composition; Sausage Nutritive Value; Seed, Chemical Composition; Soups, Composition; Sugars and Sweets, Composition; Sweet Potato, Nutritive Value; Thiamin; Thiamin, Daily Recommendations; Thiamin, Food; Tomato and Tomato Products, Composition; Variety Meat Percentage of Daily Recommended Allowances; Vegetable Composition; Vitamin Retention, Meat; Vitamins; Vitamin Sources, Functions, and Stability; Wheat, Parts of Grain, Vitamins; Wheat Products, Composition; Wheat, Vitamins

thiamine See thiamin

thiamine hydrochloride

\[
\text{thiamine (thiamin) mononitrate}
\]

Used as a nutrient or dietary supplement

Storage: tight container in the dark

thiamin hydrochloride See thiamin

thiamin pyrophosphate A coenzyme that usually functions in a reaction where CO₂ is split out of the substrate

\[
\text{thibarine A dark liqueur made from dates (Phoenix dactylifera)}
\]

thick 1) High in viscosity; low in fluidity; less-concentrated. 2) Of tea, a measure of strength and color

thickback [Solea (Microchirus) variegata] A food fish
thicken  To decrease the viscosity of a liquid by adding such ingredients as cornstarch, eggs, or flour

thickener  A substance used to impart body, improve the consistency or texture of a food, or to stabilize an emulsion; works by absorbing water; a hydrophilic colloid that increases the viscosity and smoothness of such foods as custards, gravies, ice cream, etc. (e.g., gelatin)

See Part 2: Stabilizers, Thickeners

thick filament  One of two types of protein filament in muscle tissue (10–1500 nm diam.); myosin is the major protein

See Part 2: Myofibrillar Proteins of Muscle

thickness  1) The vertical dimension of a solid; sometimes called gauge. 2) The viscosity of a liquid, e.g., oil

See Part 2: Film Gauge

thielaviopsis stalk rot  A rot caused by a wound parasite (Thielaviopsis paradoxa); called black rot in pineapples and main-stalk and finger-stalk rot (neck rot, black neck rot) in bananas: In main-stalk rot the affected area becomes black, soft, and water-soaked; in finger-stalk rot the peel acquires an uneven black color and the pulp becomes dark brown and soft.

thimbleberry  (Rubus occidentalis)  A wild, light red raspberry

thin  1) Of tea, a measure of strength and color. 2) To make a liquid less viscous by adding liquid. 3) Describes flavor or texture lacking in substance, density, richness, or strength. 4) Having low viscosity; high fluidity; more-converted

thin filament  One of two types of protein filament in muscle tissue (6–1000 nm diam.); contains the proteins actin (forms the beaded backbone), tropomyosin (regulatory function), and tropinin (regulatory function)

See Part 2: Myofibrillar Proteins of Muscle

thinning  See diluting

thio-  A prefix that indicates the presence of divalent sulfur in an organic compound:

\[
\begin{align*}
\text{R—C—S—H} & \\
\text{R—C—O—H} & \\
\text{R—C—S—H} & \\
\text{O} & \\
\text{S} & \\
\text{S} & 
\end{align*}
\]

thiocyanate ion  CNS–

thiodipropionic acid  [(CH₂CH₂COOH)₂S]  A food preservative and antioxidant

See Part 2: Antioxidant Structure

thioether  (R—S—R)  A group of compounds similar to ethers but with the oxygen atom replaced by sulfur

See also alkylthioalkane

thioglycollate  A medium used to grow Clostridium perfringens

See Part 2: Microbiological Media; Microorganism, Media

thiol (mercaptan)  A group of organic compounds similar to alcohols but having a sulfhydryl group (—SH) instead of a hydroxyl group (—OH); formerly called mercaptan

\[
\begin{align*}
\text{CH₃—CH—CH—C—O} & \\
\text{H} & \\
\text{O} & \\
\text{NH₂} & 
\end{align*}
\]

thiol medium  See Part 2: Microorganism, Media

thirst  The sensation of dryness of the mouth and throat when the body's water supply becomes limited

thixotropic gel  A colloidal gel that will liquefy when slight pressure is applied and will return to its original form after release of pressure

Thompson  A late variety of Florida grapefruit

Thompson Seedless  A variety of grape

thoracic  Pertaining to the thorax, or the part of the body between the neck and the abdomen

thoracic vertebrae  The area of the backbone to which the ribs are attached

Number of thoracic vertebrae for meat animals: beef 13; chicken 7; hog 14–15; lamb 12–14; rabbit 12

See Part 2: Bone

thorium (Th)  A radioactive metallic element of the actinide series; at. no. 90; at. wt. 232.15; Group IIIB of the Periodic Table; oxidation state + 4; electron configuration 2–8–18–32–19–9–2

orbit K L M N O P Q

thoroughly cooked  See smoked meat

thousand island dressing  A salad dressing made from celery, chili sauce, chopped eggs, green peppers, mayonnaise (eggs, salt, vegetable oil, and vinegar), onions or chives, pimento, spices, sugar, sweet pickles, tomatoes, and water

Recipe might be, e.g.:

\[
\begin{align*}
\frac{1}{4} & \text{ cup mayonnaise} \\
\frac{1}{2} & \text{ cup chili sauce} \\
2 & \text{ tbsp chopped pimento-stuffed olives} \\
2 & \text{ tsp chopped parsley} \\
2 & \text{ tsp chopped pimento} \\
\frac{1}{2} & \text{ tsp lemon juice} \\
\frac{1}{8} & \text{ tsp onion powder} \\
8 & \text{ capers} \\
\end{align*}
\]

Sodium content: 109 mg/tbsp (16 g, regular), 153 mg/tbsp (14 g, low-calorie)

See Part 2: Fats and Oils, Composition; Salad Dressing and Mayonnaise Variations

thousand-year-old egg  See hundred-year-old egg

thrust (thresh)  To separate grain or seed from straw by beating

thread  A spiral depression

thread herring  (Opistonema oglinum)  A food fish

threadworm  See pinworm

three-necked flask  Used, among other things, to determine thermal death time

three-piece can  A can with top, bottom, and body

threonine  An essential monoamino, monocarboxylic, monohydroxy amino acid:

\[
\begin{align*}
\text{CH₃—CH—CH—C—O} & \\
\text{H} & \\
\text{O} & \\
\text{NH₂} & 
\end{align*}
\]

Used as a nutrient or dietary supplement

Storage: tight container in the dark
threose  See Part 2: Sugar, D-Aldehdydo

thresher  (Alopias vulpinus)  A food fish

threshold (limen)  1) Absolute threshold, the threshold of sensation or detection; stimulus threshold (RL), the level below which there is no response to a stimulus.  2) Difference threshold (DL), the least amount of change necessary to produce a change in sensation; the unit used is jnd (just-noticeable difference).  3) Recognition threshold or identification threshold, the minimum concentration that can be identified correctly.  4) Terminal threshold, the concentration above which there is no increase in perceived intensity

thrip  Any of several winged, slender-bodied insects (less than 1/2 in. long); may be California—Scirtothrips citri; causes a corky ring around the stem end  Florida  Frankliniella bispinosa; causes a corky ring around the stem end  Chaetanaphthops orchidii; causes damage similar to rust-mite russetting

Thrips suck sap from leaves and buds and cause leaves to curl upward; they sometimes produce scars on young fruit (which enlarge as the fruit grows) and can damage citrus fruit by feeding on the surface; they sometimes produce scars around the stem end.  See bean thrip; western flower thrip; pear thrip  See Part 2: Insect Control

throatlatch  The point at which the throat joins the jaw

thrombosis  The occurrence of coagulated blood, causing obstruction of a blood vessel

thrush  A disease affecting the feet of certain animals

thuss-nao  Strongly flavored, dark brown soybeans, sometimes with wheat, in a dark brown paste

thulium (Tm)  A rare-earth element of the lanthanide group; at. no. 69; at. wt. 168.94; Group III B of the Periodic Table; oxidation state + 3; electron configuration 2–8–18–31–8–2; orbit K L M N O P

thumba  A millet beer

thuong hang  A fish sauce

thüringer  A finely chopped, tangy-flavored German summer (semidy) sausage containing mostly beef and some pork (some types contain principally pork) with heavy smoke; originated in Thüringen (Thürringen) in Germany; the American version is generally made from pork, though it may also include veal and beef; the beef is never warmed above 95–110°F and retains most of the nutritive properties of the raw product; contains lactobacilli bacteria. It is generally a sharp (sometimes not fermented), semidy (moisture-to-protein ratio of 3.7:1 or less), cooked (sometimes not cooked), smoked or unsmoked sausage. The American version is a semidy, uncooked or cooked, smoked cervelat-type (may be fresh) sausage made from medium-chopped, mildly seasoned beef and pork (with pork variety meats and by-products), is fermented and stuffed into pork or artificial casings.  Types:  AC—artificial casing  Cervelat—a tangy summer sausage seasoned with pepper and ginger  Ebony—black artificial casing; heavily smoked  HC—natural hog casing  Jumbo—13–16 lb  Old smokehouse—heavily smoked; black  Slicer—3.25-in. diam.; 13 lb

Composition: moisture 48%; protein 16%; fat 30%; carbohydrate 2.3%; ash 3.7%; sodium 320 mg/slice (22 g)

See Part 2: Sausage Identification; Sausage Nutritive Value; Sausage, Types

thüringer cervelat  A tangy-flavored, mild, semidy sausage made from beef and ham or pork fat

thüringer, fresh  A sausage made from pork with some beef and veal and seasoned with salt and pepper; a moist, uncooked, unsmoked American sausage made from medium-chopped, mildly seasoned beef, pork, and veal stuffed into pork or artificial casings; if American, the product must be labeled “Thüringer Brand made in USA”

thüringer rotwurst  A moist, cooked, smoked western German sausage made from finely and coarsely chopped, medium-seasoned pork, with blood and ground skin, stuffed into artificial casings; a moist, cooked, unsmoked eastern German blood sausage made from fine- or medium-chopped, medium-seasoned pork stuffed into pork or artificial casings

thyme (Thymus vulgaris L.; T. zygis L.)  The gray-green dried leaves (1/2 in. long) and purple flowering tips of a perennial (85 days) shrub of the mint family; used as an herb and as a tea; the pungent, piney, aromatic leaves are sold (green or dried) in bunches and are a source of the volatile oil thymol. There are more than 60 known types of thyme. The harvested clippings are dried and either left whole or ground (medium to medium-fine grind) and stored in airtight containers. The aroma may be described as aromatic, herbaceous, and sweet, having the odor of thymol. The flavor may be described as bitter, herbaceous, medicinal, spicy, and warm.

Types:  Broad-leaved—most common  Lemon thyme (T. serphyllum)—also called mother of thyme and creeping thyme  Narrow-leaved

Varieties:  Caraway (T. herb barona)  Garden, or commerce (T. vulgaris)  Golden lemon (T. vulgaris aureus)  Lemon (T. vulgaris citriodorus)  Orange  Silver lemon (T. vulgaris argenteus)  Wild or creeping (T. serphyllum)  Wooly (T. serphyllum lanuginosus)
thymine (Thymus vulgaris L.; T. zygis L.)

Best types: English; French
Used in: meat loaf; sauces; soups; stews; stuffing
Sources: France; Spain
Composition (dried): moisture 7–8% (10% max.); protein 9–10% (fresh 2%); fat 7–8%; carbohydrate 63–64%; fiber 18–19%; ash 11.5–12%; volatile oil avg. 1% volume/weight (min. 0.9% volume/weight); total ash not more than 14%; acid-insoluble ash not more than 4%
See Part 2: Essential Oils; Flavoring Agents, Natural; Spices, Microbial Content

thyme butter Soften one-half stick, unsalted, sweet butter; add 1 tbsp finely minced, fresh thyme or ½ tsp dried thyme; cream together, adding a few drops lemon juice.

thyme honey A popular Greek honey

thyme jelly A flavored jelly made using the following procedure:
1. Make an infusion by pouring 2½ cups boiling water over 1 cup fresh thyme.
2. Let it cool, and strain.
3. To 2 cups thyme infusion add ¼ cup vinegar or apple cider and 4½ cups sugar.
4. Boil the mixture until the sugar is dissolved and add ½ bottle liquid pectin. Use a rolling boil for 1½ minutes.
5. Remove from heat and add one or two drops of food coloring if desired.
6. Fill sterilized glasses and seal with melted paraffin.

thyme oil A volatile oil obtained by steam distillation of the flowering parts of the Thymus vulgaris or T. zygis plant; reddish brown or yellow (rectification produces a colorless product); used as a thymelike flavoring agent in food; optical rotation –3° to 0°; refractive index 1.495–1.505 at 20°C; sp. gr. 0.915–0.935 g/ml
Storage: full, tight container in a cool place

thyme syrup Native honey mixed with strong thyme tea

thymine A constituent (pyrimidine base) of nucleic acid

thymol A naturally occurring substance that is used as a flavoring

thymol blue (C_{27}H_{30}O_{5}S) A pH indicator that is pink at pH 1.5, yellow between 2.8 and 8, and blue at 9.6 and above

thymol phthalein (C_{28}H_{30}O_{4}) A pH indicator that is colorless below pH 9.8 and blue at higher values

thymol red A pH indicator with pH range 1.2–1.8; red in acid and yellow in the base direction

thymus A cream-colored lobed and ductless gland located in the neck, near the chest; it inhibits the activity of the sex glands in the young and atrophies after puberty; produces various hormones and aids maturation of T lymphocytes See also sweetbreads
See Part 2: Gland Weights; Organ Weights

thymus A dark-colored ductless gland located on both sides of the windpipe and below the larynx; a deficiency of dietary iodine will cause enlargement of the gland (goiter).
See Part 2: Gland Weights

thyroxine (thyroxin) An iodine-containing amino acid hormone secreted from the thyroid gland; controls the rate of metabolism

Ti The symbol for the element titanium

tia maria A rum liqueur flavored with coffee and Jamaican spices

tian-dian Dessert

tiaourti Yogurt

Tibet Dried, hard spheres of fermented goat’s milk or milk curds; a hard (grating) cheese made from sheep’s milk

Tibetan dwarf goat A breed of small goat (may be red and white, brown and white, black and white, brown, or white) raised for its pelt and found in the mountains of Tibet and the Himalayas

Tibetan sheep A hardy breed of thin-tailed sheep (white with colored spots and black or brown head and legs) raised for pelts, wool (carpet grade), and mutton and used as a draft animal

Tibetan cattle A breed of small cattle, of variable color, with no hump and medium-sized horns

tibi A type of ginger beer made from figs and raisins

tibia The large hind shank bone that articulates with the femur; larger than its sometimes parallel partner the fibula
See Part 2: Bone

tibicos A starter culture used to inoculate colonche

thibts Pickled fish, usually herring

tic (tick) See broad bean

t.i.d. Ter in die (Latin for three times a day)
tidere A sorghum beer
tie A depression in the back of cattle caused by the attachment of the hide to the backbone

tieflanderkäse A Swiss cheese made from cow’s milk

tien chiu niang See chiu niang

tien mien chang A flavorful paste made from soybeans and wheat (steamed bread)
tierce A measure of volume equal to 42 wine gallons; a cask or container holding this amount

tiering Directing benefits of federal price support programs toward smaller or medium-sized farms

tiffin A light lunch or afternoon tea (British)
tiger lily (gum jum) The dried flower buds (called golden needles) are used in oriental cooking

tiger lily buds Sweet-flavored dried blossom; used in oriental cooking
tiger nut (earth almond) Corms that may be consumed raw or roasted. See chufa.
tiger shark (Caleocerdo cuvieri) A food fish.
tiges Dried meat.
tightened inspection Inspection under a sampling plan by which the same number of samples are selected but with lower acceptance and rejection numbers; very few unacceptable lots will be accepted.
tightness The degree of compression to which a can's double seam is rolled by the sealer's second operation.
tignard A hard blue cheese made from goat's or ewe's milk with rennet added.
tikitiki Rice polishings; also an alcoholic extract of rice polishings that is used as a thiamine supplement.
til Sesame seed.
tilapia An African food fish.
tile fish (Lopholatilus chamaeleonticeps) A large (4-30 lb), saltwater food fish of the Atlantic and Gulf Coast; chewy, firm, gray flesh with good flavor.
tillage Plowing and cultivating soil for growing crops and keeping it free of weeds.
tillamook A mild to sharp, cheddar-type cheese made from raw milk.
tiller A shoot originating at the basal node in grass; extra or secondary stems or culms that arise from the base of the plant.
tilsit A mild, semihard, Danish or central European cheese that is firm-textured, with many small holes; made in a large wheel or loaf shape (3-6 kg); made from whole cow's milk with rennet added and sometimes flavored with caraway seeds.
Composition: moisture 42-43%; protein 24-25%; fat 25-26%; carbohydrate 1-2%; fiber 0%; ash 4-5%.
tilsiter A yellow, semihard cheese that is made from whole or skimmed cow's milk; its flavor ranges from mild to medium and it is sometimes flavored with caraway seed.
See Part 2: Cheese, Vitamin Content; Vitamin A, Milk and Milk Products.
timbale A round pastry that may be filled with a variety of materials; a custard.
timbleberry A light red raspberry.
timber The value of the premium less its intrinsic value; the longer the duration of the option contract, the higher the time value and the higher the premium.
timing purchases A buyer's evaluation of when and how much to buy.
timing switch A mechanically clock-driven electrical interrupter.
timothy (Phleum pratense) A grass with long, cylindrical spikes used for hay; 45 lb timothy seed/bu; plant 5 lb/acre; approximate amount of nutrients used for 1 ton hay: N 20 lb; P2O5 6 lb; K2O 27 lb.
See Part 2: Nutrients in Crops; Seed, Germination.
tin (Sn) A metallic element; at. no. 50; at. wt. 118.70; Group IVA of the Periodic Table; oxidation states +2, +4; electron configuration 2 - 8 - 18 - 18 - 4; orbit K L M N O.
See also tin can.
See Part 2: Minerals (Trace), Limits.
tinapa Bangus or milk fish that are smoked (65-64% moisture).
tin coating A layer of tin applied to both surfaces of sheet steel.
tin crystals Appear as a frostlike pattern on etched tinplate.
Grade: a lower number means larger tin crystals and better corrosion resistance.
tincture Plant material in a solution of alcohol or hydroalcoholic menstrum.
tin foil A thin sheet of tin-lead alloy used for packaging.
tin-free steel Tin-free steel plate is used in beer and carbonated beverage containers.
tin-free steel, chromium-type Tin-free steel that has chromium and chrome oxide added to improve appearance and aid in resistance to rust and corrosion.
Ting A black pig found in Hopeh (Hebei) Province of northeastern China, obtained by crossing Poland China with a local breed.
ting A sour porridge made from millet or sorghum.
tin plate Steel or other metal coated with tin, either by dipping or electroplating:
Hot-dipped—black plate is pickled, passed through flux, through molten tin, and through palm oil.
Electrolytic—black plate is coated by electroposition of tin, which is then melted to improve appearance and properties; coating thickness can be lower than hot-dipped.
See Part 2: Cans, Construction.
Tinsdale base See Part 2: Microorganism, Media.
tintilla de rota A dark red, Spanish wine.
tintometer An instrument for measuring color by comparison with colored glass or standard solutions.
tip 1) To seal a small opening in a container with solder. 2) A cut of meat. See knuckle; top sirloin.
See Part 2: Beef Cuts; Beef Round Cuts; Meat Identification; Roasting, Time and Temperature.
tip burn  A physiological condition or disease of lettuce, causing dark brown spots along the margins of the outer leaves of the head

tip cap  See Part 2: Corn Kernel Composition

tip deterioration  See endoxerosis

Tip Top melon  An oval, pink-fleshed melon with a gray rind

tiquira  A local gin distilled from cassava

tirolitunga  A dry, uncooked, heavily smoked Norwegian sausage (salami) made from medium-chopped, mildly seasoned beef, lamb, goat, and horsemeat, fermented and stuffed into artificial casings

tiroler  A moist, cooked, smoked Austrian sausage made from coarsely chopped, medium-seasoned (with nitrite) beef and pork stuffed into beef or artificial casings with a diameter of greater than 40 mm

tiroler graukäse  A tangy-flavored blue cheese that is made from cow’s milk and washed with Penicillium during maturation

tisane  1) A tea brewed from chamomile leaves. 2) Herb tea

tissue  A group of similar cells that perform a particular function, e.g., blood, muscle

See Part 2: Gland Weights

tissue culture  A technique of keeping parts of animal or plant tissue alive after removal from the organism

titanium (Ti)  A metallic element; at. no. 22; at. wt. 47.90; Group IVB of the Periodic Table; oxidation states +2, +3, +4; electron configuration 2-8-10-2; orbit K L M N

titanium dioxide (TiO₂)  A white pigment (found in minerals) used in paints, paper, and plastics and used to color candy, confectionery ink, and gums; max. 1% of the weight of the food

titer (titre)  1) The amount of substance A that will correspond to a given amount of substance B. 2) The solidification point of a saponified fatty acid: Fat is saponified and the fatty acids are separated from the glycerol as soap; the soap is treated with sulfuric acid to liberate the fatty acids, which are cooled until they freeze; this freezing point is known as the titer (a measure of hardness)

Mutton fat—titer over 40°C
Pork or beef fat—titer under 40°C

See Part 2: Titer, Fats and Oils

titration  The operation of determining the concentration of a given volume of solution by reacting it with a measured volume of a solution of known concentration in the presence of an indicator

titre  See titer

Tl  The symbol for the element thallium

TLC  Thin-layer chromatography

Tm  The symbol for the element thulium

TMM broth  See Part 2: Microorganism, Media

to  A thick porridge gruel made from sorghum or millet

toast  1) To brown by direct heat, e.g., bread; to subject bread to dry heat, which converts starch to dextrin. 2) A slice of bread browned on both sides; if placed in a rack, it becomes crisp due to the evaporation of moisture; if buttered, it becomes soft. 3) A proposed honor offered prior to drinking

See Part 2: Portion Size

toasted  Browned, dried, or parched by heat

toasted partially defatted cooked cottonseed flour  A food additive used to color (brown) food

toaster pastries  See Part 2: Grain Products, Composition

tobacco (Nicotiana tabacum)  The leaves of a semitropical plant used for smoking (pipe, cigar, and cigarette), chewing, and inhalation (snuff)

Types: aromatic; burley; flue-cured

Air-curing (burley)—barn is closed at night and ventilated during the day
Fire-curing—fire built in the floor during the later stages of curing
Flue-curing (bright tobacco)—heat is used in the curing process

A hoghead of burley weighs approximately 950 lb.

See Part 2: Nutrients in Crops; Wastes, Agricultural and Industrial

tobacco aphid  See green peach aphid

tobacco beds  Planting: 1 oz (3 level tbsp) seed per 200 yd²; enough for 3-6 acres

Weed control methods:

Methyl bromide—9 lb/100 yd²; use gas-tight cover; keep on for 24-48 h; soil should be dry and temperature above 50°F
Granular calcium cyanamid—1 lb/yd²; 60-90 days before seeding
Fertilizer urea and cyanamid—urea 1 lb/yd², cyanamid ⅓ lb/yd²; 60-90 days before seeding
Allyl alcohol—6 qt (in 100 gal water)/100 yd²; at least 14 days before seeding; 50°F or above

Burning

Steaming

tobacco (tomato) mosaic  A highly infectious disease of tobacco and tomato plants that causes yellow-green mottling on the leaves (occasionally on the fruit of tomato plants); infected leaves are curly and slightly malformed; plants are stunted and fruit yields reduced.

Control: no control except sanitation; do not smoke while working with tomato plants

tobacco mosaic virus  Transmitted by direct contact with tomatoes; therefore, wash hands and tools before touching plants

tobacco stems  A fertilizer equivalent; 2-0.6-6.8

See Part 2: Fertilizer Materials

tobo  See straw mushrooms

Tocai  1) A variety of Italian wine grape. 2) A dry, white, Italian wine

tocol  A precursor of vitamin E

tocopherol (vitamin E)  An antioxidant (alpha form is better than gamma) found naturally in vegetable
tomatillo 765

oil; retards the development of rancidity; added at the rate of 0.03% to fat.

1 IU = 1 mg dl-alpha-tocopheryl acetate
1.1 IU = 1 mg dl-alpha-tocopherol
1.21 IU = 1 mg d-alpha-tocopheryl acid succinate
1.36 IU = 1 mg d-alpha-tocopheryl acetate
1.49 IU = 1 mg d-alpha-tocopherol

See also alpha-tocopherol

See Part 2: Antioxidant Activity; Antioxidant Structure; Grain Analysis; Tocopherols; Vitamins; Wheat Products, Composition
tocos Bread made from fermented maize
tod A measure of weight
1 tod = 28 lb

Todd Hewitt broth See Part 2: Microorganism, Media
toddler The age period immediately following infancy
toddy 1) General term for palm wine. 2) Palm sap. 3) The fermented or unfermented sap of a palm tree. 4) An alcoholic drink to which hot water, sugar, and lemon have been added. 5) A fermented drink made from palm sugar (concentrated sap from palm tree); toddy can be distilled to produce arrack. 6) Hot tea containing liquor. 7) An intoxicating drink made from brandy, gin, rum, or whiskey
toddy palm See palm
toe-fu-ru Sufu soybean curd
toffee (taffy; toffy) A chewy candy made of butter, sugar, and milk; similar to caramels but cooked at higher temperatures See candy

See Part 2: Water Activity, Organisms and Food
tofu (bean curd; soybean curd; soy cheese; sufu; teou-fu) A mild-flavored (almost tasteless), cream-colored or white, custard-like fermented soybean product resembling cottage cheese; made by a process resembling cheese making: Soybeans are ground with water to form a puree, which is then cooked under pressure and pressed to remove the soymilk; nigari is added to form the curd, which is then cut and rinsed. Tofu is used as a main dish, in soups, spreads, sauces, dips, and dressings, and also in desserts.

Types:
1 cup fresh tofu, diced = 6 oz
Kori todu or koya dofu—frozen and dried tofu
Aburage—french-fried tofu
Namage—surface-dried tofu
Sufu or to-sufu—tofu on which a special mucor mold is grown

 Composition: moisture 85%; protein 8%; fat 4%; carbohydrate 2%; ash 1%
See soybean curd

See Part 2: Fungi Food Products; Pulses, Nuts, and Seeds, Composition
tofu, frozen Often made from tofu (bean curd), soy milk, and natural sweeteners (e.g., honey)
tofukasu A food made from beans
togai Under regular grades
togbei A doughnut made from wheat flour
Toggenburg See Part 2: Goats, Milk Breeds
toggenburger (blöder) A white, granular cheese that is made from sour milk and cured 6–9 months
toggenburger-plöderkäse See blöderkäse
togue See lake trout
toheroa An oysterlike shellfish; min. size 3 in.
tojo Sufu soybean curd
Tokay 1) A variety of white grapes. 2) A golden dessert wine made from Tokay grapes; delicate, rich, strong, pale, sweet wine, made from a blue ferment; an overripe grape; improves with age. 3) A blend of sweet wines
tökay aszu A golden, fragrant, Hungarian dessert wine
tökay edes furmint A semidry, Hungarian wine that matures well
tökay szamorodni A rich, medium-sweet, Hungarian dessert wine
toke Dry bread
tokua Sufu soybean curd
tokusen Special selection or super grade
tolerance 1) In a specification, the permitted margin of error or degree of latitude. 2) The maximum amount of a substance that can be present prior to injurious effects
tolerance level The legal limit for a particular residue in meat and poultry products
tolingo A type of dawadawa
tollenser A tilsit-type cheese
tolmin A Swiss cheese made from sheep's milk
toluava (Erisceion macdonaldi) A variety of weakfish
tolu balsam A plant extract; used as a flavoring in food
toluene A liquid aromatic hydrocarbon of the benzene series:

\[
\text{CH}_3
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\[
\text{OOCCH—CH}_3
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\[
\text{CH}_3
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Used as a food flavoring agent; sp. gr. 0.990–0.997

Storage: full, tight, glass, container in a cool, dark place
tom A young male turkey before it becomes “staggy;” usually less than 1 year old See also turkey
toma (tuma) A panir-type cheese made from cow's milk and coated with olive oil
Tom and Jerry A heated mixture or egg batter in hot milk or water and liqueur (rum)
tomar A small, smoky cheese
tomatillo Small, green tomatoes with thin, paperlike covering and a slight fruitlike (tart lemon) taste See gooseberry
tomato (golden apple; love apple; Peruvian apple; Lycopersicum esculentum) Origin Central and South America. 7,000–9,000 seeds/oz; seed 2 oz/acre; 7–10 day germination period; space plants 2–4 ft in rows 4 ft apart; 75–90 days to maturity; yield 4 bushels/100 ft rows. A vegetable whose fruit is used as food; a weak-stemmed, herbaceous plant that produces a fruit (fleshy juicy berry) widely different in size (some up to 1 pound), shape (subglobose, egg-shaped, pear-shaped, or irregularly globose with bulges and ridges), and color (red, yellow, white, pink, and, in a few cases, purple). The tomato contains sugar, vitamins A and C, and acid, which influences flavor and desirability for canning. It is eaten fresh, fried (ripe or green), baked, stuffed, and in soups, sauces, and ketchup; also canned (whole, puree, or juice)

Types:
- Cherry tomato—small size
- Pear tomato—pear-shaped
- Tree tomato—egg-shaped fruit on short-lived tree

To peel: dip into boiling water for 15–30 seconds, then into cold water

Preparing: baked, fried, raw, stewed

Freezing point 31.0°F

Canned: usually whole or pieces peeled and packed in their own juice but may have added pulp or semisolid paste

<table>
<thead>
<tr>
<th>Tomato types</th>
<th>Color</th>
<th>Size</th>
<th>Shape</th>
<th>Days to maturity</th>
<th>Growing region</th>
<th>Use</th>
</tr>
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<tbody>
<tr>
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</tr>
<tr>
<td>Big Early Hybrid</td>
<td>Red</td>
<td>Large, 1/2 lb</td>
<td>Oblong to globe</td>
<td>62</td>
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<tr>
<td>Bonny Best</td>
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<td>Campbell 28</td>
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<th>Growing region</th>
<th>Use</th>
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<td>Ramapo</td>
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<td>5–8 oz</td>
<td>Globular, slightly flattened</td>
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<td>Good juice</td>
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<td>Spring Giant</td>
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<td>Walter</td>
<td>Scarlet</td>
<td>Large, 1 lb</td>
<td>Round to flat globe</td>
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<td>Wonder Boy</td>
<td>Scarlet</td>
<td>Large, 1 lb</td>
<td>Round to flat globe</td>
<td>80</td>
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<td>Golden Boy</td>
<td>Yellow</td>
<td>Big</td>
<td>Globe</td>
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<tr>
<td>Golden Jubilee</td>
<td>Yellow, orange-flesh</td>
<td>2.5 x 3 in.</td>
<td>Deep globe</td>
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<td>Subacid</td>
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<td>Tangerine</td>
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<td></td>
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Forcing variety

| Comet                | Pink   | Medium |                |                  |                |              |
| Marhio               | Red    | Large  |                |                  |                |              |
| Michigan State       | Red    | Large  | Globe          | 74               |                |              |
| Ohio–Indiana         | Pink   | Large  | Smooth         | 74               |                |              |
| Ohio Pink Forcing    | Pink   | Large  | Smooth         | 74               |                |              |
| Vendor               | Bright red | 7 oz  | Deep globe     | 74               |                |              |
| Waltham              | Red    | Medium |                |                  |                |              |

(Continued)
<table>
<thead>
<tr>
<th>Tomato types</th>
<th>Color</th>
<th>Size</th>
<th>Shape</th>
<th>Days to maturity</th>
<th>Growing region</th>
<th>Use</th>
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<td>Heinz</td>
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<td>Napoli</td>
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<tr>
<td>Roma</td>
<td>Red</td>
<td>Small to medium</td>
<td>Pear</td>
<td>76</td>
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<tr>
<td>San Marzano</td>
<td>Red</td>
<td>3.5 x 1.5 in.</td>
<td>Rectangular</td>
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<td>Small Fry</td>
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<td>1 in.</td>
<td>Plum</td>
<td>52 - 65</td>
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<td>Large, 8 oz</td>
<td>Plum</td>
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<td>Tiny Tim</td>
<td>Red</td>
<td>Miniature, 7/16 in.</td>
<td>Globe</td>
<td>55</td>
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<td>Novelty</td>
<td>Red or yellow</td>
<td>Sweet cherry</td>
<td>Egg</td>
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<td>Red or pink</td>
<td>Large plum</td>
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<td>Pear</td>
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<td>Small plum, 1 x 2 in.</td>
<td>Pear, little neck</td>
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<td>Small egg, 2 x 1.5 in.</td>
<td>Oblong</td>
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<td>(San Marzano)</td>
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<td>White Beauty</td>
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<td>Diced</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pear- or plum-shaped</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stewed with onions, peppers, and other ingredients</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tomatoes and hot pepper</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tomatoes and okra</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wedges</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canned defect action level: 10 Drosophila (fruit fly)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>eggs per 500 grams or 5 Drosophila fly eggs and 1 larva per 500 grams</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refuse: 2% skins</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equivalents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100 pounds (lb), fresh = 6-9 lb, dry</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.027 ton, fresh = 1 case (24), No. 2 cans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 lug box (5.75 x 13.5 x 16.1 inches) = 32 lb</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1 serving = 0.25–0.5 lb
1 cherry tomato, fresh = 0.6 oz

### Composition

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Dried flakes</th>
<th>Green</th>
<th>Ripe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>3</td>
<td>93</td>
<td>93</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>11</td>
<td>1.2</td>
<td>1.1</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>1</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>77</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>6</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>pH</td>
<td></td>
<td></td>
<td>4.0–4.9</td>
</tr>
</tbody>
</table>

Vitamins A (1100 IU/100 g) and C (23 mg ascorbic acid/100 g)

Ripen: room temp (55–70°F; relative humidity 85–90%), away from sunlight

Storage (mature green): 55–70°F; moderately dry; will keep 4–6 weeks

Storage (ripe): Uncovered (85–90% relative humidity); refrigerate (32°F); use within 1 week

---

**tomato bisque, canned soup**

<table>
<thead>
<tr>
<th>Composition</th>
<th>Condensed</th>
<th>Condensed, prepared with milk</th>
<th>Condensed, prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>75.3</td>
<td>81.5</td>
<td>87.2</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>1.8</td>
<td>2.5</td>
<td>0.9</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>1.9</td>
<td>2.6</td>
<td>1.0</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>18.5</td>
<td>11.7</td>
<td>9.6</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.5</td>
<td>1.6</td>
<td>1.3</td>
</tr>
</tbody>
</table>

**tomato blight** A disease of tomatoes in which the leaves have a moist, black blotch and the fruit is occasionally affected. See potato blight

**tomato, canned** Whole peeled or cut fruit is canned; Italian style contains basil

**tomato, canned soup**

<table>
<thead>
<tr>
<th>Composition</th>
<th>Condensed</th>
<th>Condensed, prepared with milk</th>
<th>Condensed, prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>81.2</td>
<td>84.6</td>
<td>90.4</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>1.6</td>
<td>2.5</td>
<td>0.8</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>1.5</td>
<td>2.4</td>
<td>0.8</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>13.2</td>
<td>9.0</td>
<td>6.8</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0.4</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.4</td>
<td>1.5</td>
<td>1.2</td>
</tr>
</tbody>
</table>

**tomato catsup** See tomato ketchup

**tomato chutney** A relish made from tomatoes, apples, brown sugar, chopped green peppers, chopped onions, ground ginger, salt, spices, white seedless raisins, and white vinegar

**tomato cocktail** Tomato juice with seasonings and flavorings added

**tomato fruitworm** An insect that damages tomato plants

Control: carbaryl

**tomato gall** See Lasioptera vitis

**tomato juice** The juice and pulp (skin and seed removed) obtained from fresh ripe tomatoes; usually canned. Only skin, core, and seed removed; often salt added. Cut tomatoes, heat for 4–5 hour, strain, and season

1 bushel fresh = 50 pounds
= 30 pints, canned
1 cup = 8.6 ounces

Composition (canned): moisture 94%; protein 1%; fat 0.1%; carbohydrate 4%; ash 1%; pH 4.1–4.2

See Part 2: Tomato and Tomato Products, Composition; Vegetable Composition

**tomato juice agar** See Part 2: Microorganism, Culture Media, Dairy and Food Products; Microorganism, Media

**tomato juice cocktail** Tomato juice seasoned with spices and hot sauces

**tomato juice, concentrated** Minimum of 20% natural tomato solids; maximum of 24% natural tomato solids. Dilute with three equal volumes of water to yield regular tomato juice
**tomato ketchup (catsup)** Tomato concentrate, sugar, water, vinegar, onion, salt, tragacanth gum, and spices (i.e., cardamom, cinnamon, cloves, coriander, and nutmeg)

Defect action level: average microscopic mold count of 30%

**tomato paste** Concentrating tomato sauce until tomato solid content is about 22%; concentrated tomato paste is about 33% tomato solids See tomato puree

**tomato–pear chutney** Relish made from tomatoes, pears, sugar, white seedless raisins, chopped green peppers, chopped onions, white vinegar, chopped pimiento, ground ginger, dry mustard, and cayenne pepper

**tomato pomace** Composition (dehydrated): dry matter 92%; protein 21.6%; fiber 24%; fat 9.5%; ash 7%

**tomato puree (tomato paste)** Concentrated canned tomatoes in which most of the water is removed; canned (with or without salt) pulp of tomatoes from which skin, core, and seeds have been removed and cooked until it contains 8% tomato solids

**tomato rice, canned soup**

<table>
<thead>
<tr>
<th>Composition</th>
<th>Condensed</th>
<th>Prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>77.1</td>
<td>88.1</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>1.6</td>
<td>0.8</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>2.1</td>
<td>1.1</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>17.1</td>
<td>8.9</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0.5</td>
<td>0.3</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**tomato sauce** A sauce made from tomatoes

Types: strained, unstrained

Like tomato puree except heavier consistency; solid content is about 16%; often flavored with basil or bay leaves

**tomato, solid pack** Canned tomatoes with a 65–70% drained weight

**tomato soup** A soup made from juice and tomatoes pulp, corn and wheat flour, salt, butter, sugar, and spices; usually condensed to ⅓ original volume; also may be dehydrated

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dehydrated</th>
<th>Prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>3.9</td>
<td>99.7</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>8.6</td>
<td>0.9</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>8.3</td>
<td>0.9</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>68.3</td>
<td>7.3</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>1.5</td>
<td>0.2</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>10.8</td>
<td>1.2</td>
</tr>
</tbody>
</table>

**tomato, tree (Cyhomandra betacea)** Not a tomato, but a red, egg-shaped (3 in.) fruit that grows on a 7 foot tree

Use: chutney, fresh, jam, stewed

**tomato–vegetable soup**

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dehydrated</th>
<th>Prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>3.7</td>
<td>93.5</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>11.7</td>
<td>0.8</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>5.1</td>
<td>0.3</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>59.9</td>
<td>4.0</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>3.1</td>
<td>0.2</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>19.5</td>
<td>1.3</td>
</tr>
</tbody>
</table>

**tomato, whole packed** Canned, whole, peeled tomatoes

**tomcod** (Microgadus tomcod) A small, saltwater, codlike fish

**Tom Collins** An alcoholic beverage made by stirring 1 tsp sugar in ⅔ oz (½ jigger) lemon juice, adding ice, 1½ oz (1 jigger) gin, filling with sparkling (carbonated) water, and stirring

**tomme** A number of small, cow’s milk cheeses; several made in France

**tomme d’abondance** See abondance

**tomme d’aligot** See aligot

**tomme d’annot** A valençay-type cheese made from goat’s or sheep’s milk and matured for 2 months

**tomme de belleville** A tomme de savoie-type cheese made from partially skimmed milk

**tomme de combovin** A valençay-type cheese with a blue-gray rind made from goat’s milk

**tomme de crest** A valençay-type cheese made from goat’s milk

**tomme de payenne** A muenster-type cheese

**tomme de Saint Marcelle** See Saint Marcellin

**tomme des allues** A valençay-type cheese made from goat’s milk and cured for 2 months

**tomme de savoie** A pressed (1–15 kg), uncooked, semihard, French cheese made from whole or skimmed, cow’s milk that contains very little water. It has a dry, hard, gray–white to pink–brown, powdery rind sometimes covered with grape seed

**tomme des romans** A muenster-type cheese made from cow’s milk

**tomme de valdeblore** An esbareich-type cheese

**tomtate** (grunt; Bathystoma rimator) A small, saltwater fish

**tomu** See ablongo

**ton** [gross-long; deadweight; 2,240 pounds (lb)]

A measure of weight

1 ton (2,240 lb) = 15,680,000 grains (gr) = 1.016 × 10^6 grams (g) = 35,840 ounces (oz avdp.) = 32,666.7 troy ounces (oz troy; apothecary) = 2,722.22 troy pounds (lb troy; apothecary) = 2,240 avdp. pounds (lb avdp) = 1,016.05 kilograms (kg) = 1.12 net-short tons (2,000 lb) = 1.01605 metric tons (1,000 kg)
ton (metric, 1,000 kg; t) A measure of weight
1 ton (1,000 kg)
= 15,432,356 grains (gr)
= 1,000,000 grams (g)
= 35.274.0 avdp. ounces (oz avdp.)
= 32,150.7 troy ounces (oz troy)
= 2,679.23 troy pounds (lb troy)
= 2,004.62 avdp. pounds (lb avdp.)
= 1,000 kilograms (kg)
= 266.67 kwan (Japan, Republic of Korea)
= 66.667 metric arrobas (Brazil)
= 26.792 maunds (India, Pakistan)
= 22.258 kantars (Egypt, Sudan)
= 22.046 cwt (100 lb; Canada, Honduras, United States)
= 21.739 Spanish quintals (Chile, Costa Rica, El Salvador, Guatemala, Philippines, Spain, Venezuela)
= 21.735 Spanish quintals (Cuba, Peru)
= 20 metric kantars (Egypt)
= 19.684 cwt (112 lb; United Kingdom and British territories)
= 16.667 metric arrobas (Brazil)
= 16.534 piculs (pikuls; Brunei, Hong Kong, Macau, Malaysia)
= 1.10231 net-short tons (2,000 lb)
= 1 cubic meter water at 4°C
= 0.98421 gross-long tons (2,240 lb)

ton (net short, 2,000 lb; tn) A measure of weight
1 ton (2,000 lb)
= 14,000,000 grains (gr)
= 9.072 x 10^5 grams
= 32,000 avdp. ounces (oz avdp.)
= 29,166.7 troy ounces (oz troy; apothecary)
= 2,430.56 troy pounds (lb troy; avdp.)
= 2,000 avdp. pounds (lb avdp.)
= 907.185 kilograms (kg)
= 20 hundredweight (cwt; avdp.)
= 0.89286 metric ton (1,000 kg)
= 0.89286 gross-long ton (2,240 lb)
= 1 long ton per acre = 2510.175 kilograms per hour
= 13.89 pounds per square inch

See Part 2: Beef Cuts and Uses; Calories, Daily Recommendations; Lamb Cuts and Uses; Meat Composition; Meat, Servings Per Pound; Nicotinic Acid, Food; Pork Cuts and Uses; Riboflavin, Daily Recommendations; Sausage, Types; Storage Times; Variety Meat, Cooking; Variety Meat Percentage of Daily Recommended Allowances; Variety Meat Preparation; Veal Cuts and Uses

tongue, cooked Pork, lamb, or veal tongue; may be cured; sometimes smoked; canned or packaged in plastic. Beef tongue is available whole, jellied, or sliced

tongue, jellied Cooked tongue, shredded and molded with gelatin and cooked in a loaf or roll

tongueworst A moist, cooked, smoked Dutch sausage made from fine or coarsely chopped, medium seasoned beef and pork made with coarsely chopped tongue and stuffed into artificial casings

tonguewurst A moist, cooked, Australian sausage

See 1) A medical preparation believed to restore normal tone to tissue. 2) A material designed to stimulate the appetite. 3) A substance used to strengthen a system

tonka See bean, tonka

tonka bean A tree-borne, hard coated, fruit that contains a soft pulpy flesh and a single seed; an essential oil, coumarin, is extracted from the seed and used in butters and as a substitute for vanilla

tonkatsu Fried, pork cutlet

ton (metric)-kilometer
1 metric ton kilometer = 0.684945 short ton-mile
= 0.611558 long ton-mile

ton (long)-mile
1 long ton-mile = 1.635169 ton-kilometer

ton (short)-mile
1 short ton-mile = 1.459972 ton-kilometer

tonne Metric ton See ton (metric)

tonneau A measure of wine volume;
1 tonneau = approx. 200 gallon

tonno Heavily salted, canned, tuna packed in oil

ton of water per 24 hours Measure of a rate of flow
1 ton of water per 24 hours
= 83.33 pounds per hour
= 1.3349 cubic feet per hour
= 0.16643 gallons per minute

ton per acre Weight per unit of area
1 long ton per acre = 2510.175 kilograms per hour

ton (short) per square foot Weight per unit of area
1 ton (short) per square foot
= 9765 kilograms per square meter
= 13.89 pounds per square inch

ton (short) per square inch Weight per unit of area
1 ton (short) per square inch
= 1,406,000 kilograms per square meter
= 2,000 pounds per square inch

tonqua See bean, tonka

ton, refrigeration The heat required to melt 2,000 pounds of ice at 32°F = 288,000 Btu
ton, register (for ships)

1 register ton = 2.83 cubic meter
= 110 cubic feet

1) The extreme high price of the market. 2) Part of the beef round or chuck. 3) Glass jar closure. 4) See cover
See Part 2: Beef Round Cuts; Glass Jar Tops; Meat Identification

top

The outside area of a beef chuck when it is divided along the blade bone See also outside chuck
top dressing

Fertilizer applied after the crop is established
tope (Atlantic, Galeorhinus galeus; Oceania, Notogaleus rhinophares) A food fish
topepo

A tomato-red, pepper hybrid used in salads
topfen

A panir-type cheese made from cow’s milk See Part 2: Milk and Cheese Composition
top loin

A club steak or strip steak; same large muscle as the porterhouse or T-bone, but has no tenderloin muscle
toppen

1) A dry, uncooked, smoked Norwegian sausage (pepperoni) made from medium chopped, heavily seasoned, beef, pork, and horse with plucks added and fermented and stuffed into artificial casings. 2) A sour, skimmed milk cheese
topping

A material applied or sprinkled or garnished or poured over food See Part 2: Stabilizers, Thickeners
top round

The inside (upper or medial) muscle of the round; a more tender cut than the eye or bottom round muscles. Semimembranosus and adductor muscles See also inside round See Part 2: Beef, Boneless Cuts
top seal

Horizontal top-sealing surface on a glass container
top seam

Top, or packer’s end, seam of a can
top sirloin (sirloin tip)

Ventral muscles of the sirloin; includes tensor fasciae latae, vastus medialis, rectus femoris, and vastus lateralis
top soil

Top layer or surface of soil that contains organic matter (humus)
top syrup

Syrup obtained by concentrating the entire juice of sugar cane. Because no sugar is removed, it is sweeter than molasses; caramelized flavor; reddish color
tor See torr
torani

A rice beer, also used as a starter for kanji
torbato

A full, white, Sardinian wine made from a Sardinian grape
torf

A food prepared from soybeans
torgiano

An Italian wine
Types:
Red—full and pleasant scent; needs to be aged
White—very dry; can be aged
tori

Chicken
tori seed oil

Oil extracted from mustard seed
tornado

A pineapple (Ananas sativus) liqueur
torpedo (electric ray)

A food fish
torr (torr)

International pressure unit approximating one millimeter of mercury
1 torr = 1/760 standard atmosphere
= 1,013.250/760 dyne per square centimeter
= 1333.22 microbars
torre giulia

A dry, full-bodied, white, table wine
torre quarto

A red wine produced in southeastern Italy
torshi

Pickled fruit or vegetables
torshi arnabeet wo koromy

Pickled red cabbage and cauliflower
torshi basal

Pickled onions
torshi betingen

Pickled aubergine
torshi felfel

Pickled sweet pepper
torshi khiar

Pickled cucumber
torshi left

Pickled turnip
torsk

A food fish See tusk
torte

A round cake made with eggs, sugar, and usually nuts; sometimes covered with frosting
tortilla

A food prepared from soybeans
tortoni or biscuit tortoni

A frozen dessert containing whipped egg white, whipped cream, sugar, milk, macaroon crumbs, vanilla, and almond liqueur
toscana

A dry, uncooked, Australian sausage

toss

To gently mix by turning ingredients over and over, e.g., salad
tostada

Flat, fried tortilla topped with beans, meat, cheese, and vegetables
tosu

Sufu soybean curd See tofu
total

A trade name ready-to-eat cereal; 8.3% sugar
total count

The total number of microorganisms per gram or square centimeter
total digestible nutrients (TDN)

Sum of protein, fiber, nitrogen-free extract (NFE), and fat (2 1/2); represents approximate heat or energy value.

energy value = digestible crude protein
+ digestible NFE (which includes primarily the soluble carbohydrates)
+ digestible crude fiber
+ (digestible fat x 2.25)
total nitrogen

See Kjeldahl determination
total pack

Prepackaged, premeasured, unitized, seasoning blends for one batch of product
**total plate count** The real number of bacterial colonies grown on nutrient agar that are visible

**total residual chlorine** Free residual plus combined residual chlorine determined by the 5 minute orthotolidine test

**totkal kimchi** Acidic, carbonated vegetables

**touareg** A rennet, skimmed milk, cheese

**touch 'n go end** An aluminum lift-tab end attached by an integral rivet

**tou-fu-ju** Sufu soybean curd

**tou-fu-ru** Sufu soybean curd

**tough** Flexible without brittleness; tenacious; opposite of tender

**toughness** Resistance to breaking; lack of tenderness

**touloumisio** A white, brined cheese made from cow's milk

**touloumotyri** A variety of feta cheese

**toupin** A muenster-type cheese made from cow's milk and matured for up to 8 months

**touraine** A sparkling wine

**touristenwurst** A dry to semidry (MPR of 3.7:1 or less), uncooked, smoked, Swiss sausage made from medium chopped, heavily seasoned beef and pork and stuffed into beef, pork, or artificial casings

**tournedos** Small (4 oz, 1.5 in. thick), lean, round cuts of filet or steaks from the tip of the tenderloin

**tournon Saint Pierre** A Valen$ay-type cheese made from goat's milk

**tourshi** Pickled food

**tou-shih** A strong, black, firm (low moisture), soybean paste used as flavoring

**tox-** A prefix meaning poison

**toxaphene** A poisonous insecticide; approx. formula $\text{C}_{10}\text{H}_{10}\text{Cl}_{8}$

**toxemia** Poisoning due to absorption of bacterial toxins; a condition or illness caused by the absorption of toxin from a local infection or that has been ingested; poison in the blood caused by poisons or microorganisms

**toxic** Poisonous

**toxicity** A property of causing any type of harmful effect on life

**toxicology** The science of poisons and their antidotes

**toxigenicity** The ability of a microorganism to produce toxic substances

**toxin** A poisonous albumin produced by certain microorganisms; a poison produced by plants

*See Part 2: Microbial Toxins; Plant and Animal Poisoning

**toxoid** A toxin that has been rendered harmless but which retains antigenicity

**toyo** A soy sauce

**TPN** See triphosphopyridine nucleotide

**trace** A small and barely detectable quantity; less than $5 \times 10^{-6}$ grams per gram

**TQC** Total quality control

**trace element** An element or its salts needed by the body in very small amounts; an element required in minute amounts for an organism physiology

*See also mineral; trace

*See Part 2: Minerals (Trace), Limits

**trace mineral** A mineral required in only minute amounts (milligrams per pound or less)

**trachea** Windpipe (air passage to lungs); tube from larynx to bronchi or lungs

**trade discount** A discount to buyers of a certain trade or other classification

**trademark** A work or distinguishing mark that identifies a proprietary product; if registered, it is protected by law

**trading activity** The pace at which sales are being made compared with normal for a given market

- Active—sales are being made at a more rapid pace than usual
- Moderately active—sales are being made at a normal pace
- Slow—sales are being made at a slower than normal pace

**traffic** A department or division responsible for obtaining the most economic commodity classification and method of transporting materials and products

**tragacanth (gum dragon)** See gum tragacanth

**trahana** See kapestoes

**trail** The intestines of some birds and fish used as food

**training table** Meals planned to aid athletes in their conditioning program

**train oil (tran oil)** Oil obtained by allowing aquatic animals to decompose. 1) Oil produced from sea animals (e.g., whale). 2) Unclean fish fat. 3) Fish oil

**trakya** A white or red wine

**traminac** A white wine

**trans** A prefix meaning through or across

*See cis-trans isomers

**transaminase** The enzyme responsible for transamination

**transamination** Transfer of an amino group ($-\text{NH}_2$) from one compound to another, catalyzed by the enzyme transaminase.

Example:

\[
\begin{align*}
R_1-\text{CH-} & \text{C-OH} + R_2-\text{C\text{-}} & \text{O}_2H \rightarrow \\
\text{NH}_2 & \text{O} & \text{O} \\
\end{align*}
\]

\[
\begin{align*}
R_1-\text{C\text{-}} & \text{C-OH} + R_2-\text{CH-C-OH} \\
\text{O} & \text{O} & \text{NH}_2 \\
\end{align*}
\]
transduction  Transfer of genetic fragments from one cell to another by a virus
transferase  An enzyme that catalyzes group transfers, e.g., kinase, transaminase
transfer bead  A continuous horizontal ridge of glass near the bottom of the finish used as an aid in the transfer of the container during manufacturing
transferrin  An iron-binding glycoprotein
transfer valve  Valve containers move through when transferred from one pressure shell to another in a continuous agitating retort
transformer  An electrical device used to change the voltage of ac power; it contains two coils; when current is applied to the primary coil it generates a magnetic field that produces a current in the secondary coil
transfusion  1) Intravenous feeding. 2) Introduction of blood
transgrew medium  See Part 2: Microorganism, Media
transit  Movement of goods from one location to another
transitional compensatory amount  An EEC marketing term used between old and new EEC members; this is a charge on exports into EEC countries with higher market prices and payment on intercommunity exports to countries with lower prices
transit time  A standard arbitrary allowance given on any order for the physical movement of items from one operation to the next
translocation  Movement of material from one location to another
transparent  Permitting the passage of light See also Yellow Transparent
transplant  To remove a seedling from the ground and plant it in another place
transplantable tumor  Malignant cell that can be transferred from one animal to another
transverse plane  Crosswise; right angles to long axis; divide ribbed carcase into fore and hind quarters
transverse process  Lateral projection on vertebra
trapezius muscle  A muscle that is attached to the lateral surface of the scapula and to the thoracic spinous processes
trappist  A soft, pale yellow, cheese See oka
See Part 2: Cheese, Vitamin Content; Vitamin A, Milk and Milk Products
trappiste  A tilsit-type cheese
trayf  Not kosher
treacle  British term for molasses. An almost black, sharp-flavored, syrup used as a sweetener
Trebibiano d'Abruzzo  A sharp, white, wine made from grapes grown in east central Italy
Trebibiano di Romagna  A dry, well-balanced, Italian, white wine produced from trebbiano grapes
trebeche  See sableau
trebern  Apple brandy
trebolgiano  A hard, large wheel, black-rind cheese made from cow's milk
treccia  A plaited, mozzarella-type cheese made from cow's milk
treecia  A plaited, mozzarella-type cheese made from cow's milk
treecricket  Host: apple, blackberry, cherry, loganberry, peach, plum, raspberry, and others
Damage: holes in canes
Control: destroy canes; insecticide
treehopper  A wedge-shaped insect that has sharp corners; the adults are as long as \( \frac{3}{4} \) inch; eggs cause roughened bark and stunt growth of branches
Control: fruit-tree oil spray
treeton  A shallow-rooted perennial grass

tree tomato  See arbuay
tree sugar  See maple sugar
tree strawberry  See arbuay
tree travel  Moving from one place to another

treassi  A fermented paste of prawns or shrimp
treassi ikan  A fermented, salty, fish paste condiment
trestor  Brandy distilled from fermented grapes

treyf  See t’refah

tributyrin

```
\[ \begin{align*}
  & H \\
  & H - C - OOCCH_3 \\
  & H - C - OOCCH_3 \\
  & H - C - OOCCH_3 \\
  & H
\end{align*} \]
```

Used as a bitter flavoring agent in food; sp. gr. 1.034–1.038 at 20°C
Storage: tight, glass container

**tricalcium phosphate**  \([\text{Ca}_3(\text{PO}_4)_2]\)  A white powder
used as an anticaking agent, clarifying agent, mineral supplement, and bleaching agent

**tricarboxylic acid cycle**  See citric acid; Krebs cycle

**triceps**  Three-headed; small muscle that extends the fore limb  See also triceps brachii

**triceps brachii**  A large muscle of the chuck filling the angle between the scapula and the humerus; it is attached to the head of the ulna

**trich-**  An affix that means hair

**trichina**  Trichinella; a parasite found in pork and other animal tissue  See also Trichinella spiralis; trichina destruction

**trichina destruction**  A technique recommended for destroying trichina

Heating: 137°F
Refrigerating:

<table>
<thead>
<tr>
<th>Meat samples (separated &amp; not over 6 in. thick)</th>
<th>Meat samples (6–27 in. thick &amp; separated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. temp (°F)</td>
<td>(days)</td>
</tr>
<tr>
<td>Min. temp. (°F)</td>
<td>(days)</td>
</tr>
<tr>
<td>Min. temp. (°F)</td>
<td>(days)</td>
</tr>
<tr>
<td>Min. total days in cure</td>
<td>Min. temp. (°F)</td>
</tr>
<tr>
<td>Drying room</td>
<td>Smoking</td>
</tr>
<tr>
<td>Max. diam. (in.)</td>
<td>Min. diam. (in.)</td>
</tr>
<tr>
<td>Min. salt/100 lb fresh (lb)</td>
<td>Min. time (days)</td>
</tr>
<tr>
<td>Min. time (°F)</td>
<td>Min. time (°F)</td>
</tr>
<tr>
<td>Min. total days in cure</td>
<td>Min. temp. (°F)</td>
</tr>
</tbody>
</table>

| 1     | 1/4  | 3 1/2 | 3 1/2 | 20  | 45 | 50° | 44 | 3 1/2-4 | 25 |
| 2     | 1/4  | 3 1/2 | 3 1/2 | 15  | 45 | 15  | 90 | 3 1/2-4 | 18 |
| 3     | 1/4  | 3 1/2 | 1 1/2 | 34  | 25 | 12  | 90 | 3 1/2-4 | 33 |
| 4     | 1/4  | 2 1/2 | 6 in. in depth | 31/2 | 10 | 36 |
| 5     | 3/4  | 3 1/2 | 65  | 45 | Coat with paraffin |

(Continued)
### Trichina Destruction

<table>
<thead>
<tr>
<th>Trichina-destruction, curing method</th>
<th>Max diam. meat (in.)</th>
<th>Min salt/100 lb fresh</th>
<th>Min time (days)</th>
<th>Min. temp. °F</th>
<th>Max. diam. (in.)</th>
<th>Min. time (days)</th>
<th>Min. temp. °F</th>
<th>Drying room</th>
<th>Min. total room time</th>
<th>Min. holding time</th>
<th>Smoking</th>
<th>Min. total days in cure</th>
<th>Min. temp. °F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capocollo (Boneless Boston Butts)</td>
<td>— 4½</td>
<td>25</td>
<td>36</td>
<td></td>
<td></td>
<td>20</td>
<td>45</td>
<td>30</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coppa (Boneless Boston Butts)</td>
<td>— 4½</td>
<td>18</td>
<td>36</td>
<td></td>
<td></td>
<td>35</td>
<td>45</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Hams</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>— 4 + overhaul</td>
<td>40</td>
<td>36</td>
<td></td>
<td></td>
<td>10</td>
<td>95</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2</td>
<td>— 4 + 8 oz/100° pickle + overhaul</td>
<td>3 per lb green wt</td>
<td>36</td>
<td></td>
<td></td>
<td>20</td>
<td>45</td>
<td>48</td>
<td>80</td>
<td></td>
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<tr>
<td>Boneless loins</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>— 5</td>
<td>25</td>
<td>36</td>
<td></td>
<td></td>
<td>12</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>— 80° pickle, 60 lb pickle/100 lb</td>
<td>25</td>
<td>36</td>
<td></td>
<td></td>
<td>12</td>
<td>125</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>3</td>
<td>— #1 + #2</td>
<td>25</td>
<td>36</td>
<td></td>
<td></td>
<td>12</td>
<td>45</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Trichinella

**Trichinella spiralis** A parasite (roundworm) found in the skeletal muscle fibers of bear, cat, dog, swine, the rodent family, walrus, and man; heating to 137°F will kill this parasite.

**Trichinosis** An infection caused by the parasite *Trichinella spiralis*. Human infestation may cause severe pain, prolonged illness, and even death. See Part 2: Diseases, Food-Borne; Illness from Food; Infectious Diseases, Food-Borne; Trichinosis.

**Trichloroacetic acid** (CC1₃COOH) An organic acid used to precipitate protein.

**Trichloroacrynic acid** See Part 2: Chlorine Compounds.

**Trichloroethylene** (CHCl=CC1₂) A toxic solvent and refrigerant. Used as a food extraction solvent; sp. gr. 1.455–1.458.

**Storage:** tight container

**Trichloroisoacrynic acid** (C₃N₃Cl₃O₃) An organic acid used as a cleaner and sanitizer.

**Trichloroisocyanuric acid** See Part 2: Chlorine Availability; Sanitizer.

**Trichloromonofluoromethane** (CCl₃F) A chlorofluorcarbon refrigerant.

**Trichlorotrifluoroethylene** (CCl₂FCCIF₂) A chlorofluorcarbon refrigerant.

**Tricho-** Resembling a hair (of bacteria).

**Trichoderma** See Part 2: Molds, Mycotoxins.

**Trichoderma rot** A citrus fruit rot caused by *Trichoderma viride*, which enters the fruit through injuries usually at the stem end and can also spread by contact; the fruit becomes brown with a pliable texture; retarded by refrigeration.

**Trichomonas** A type of bacteria.

**Trichomoniasis** A protozoan infection that causes irregular estrous cycles or abortion.

**Trichophyton agar** See Part 2: Microorganism, Media.

**Trichothecene** A group (currently 40 identified) of closely related sesquiterpinoipid mycotoxins; produced by a number of genera but particularly important are *Fusarium* spp. and *Stachybotrys atra*.

**Tricuspid valve** A heart valve that allows one-way flow of blood from the right auricle to the right ventricle.

**Trier** A long flat stainless steel instrument used to inspect the internal area of meat for off-odors.

**Triethyamine** [N(C₂H₅)₃] A wetting agent that has an odor of decaying fish.

**Triethyl citrate**

\[\text{H} \quad \text{H} \quad \text{C} \quad \text{COOC₂H₅} \]

**Storage:** tight container.
trifesi  A white, dessert wine
trifle  A dessert or sweet pudding usually containing fruit over cookies or cake and often alcoholic (e.g., sherry) ingredients, egg custards, and whipped cream
triggerfish  (pigfish; *Balistes capriscus*)  A saltwater fish
trigger price  The point at which the market price reaches or exceeds the release price
triglyceride  Glycerol esterified with three molecules of an acid

\[
\begin{align*}
H_2C\text{–}_O\text{–}_C\text{–}_R \\
H_2\text{–}_C\text{–}_O\text{–}_C\text{–}_R' \\
H_2\text{–}_C\text{–}_O\text{–}_C\text{–}_R''
\end{align*}
\]

Chief chemical constituent of fats and oils
See also fatty acid
See Part 2: Lard, Triglyceride Mole Percent Composition; Oil, Triglyceride Mole Percent Composition; Rapessed Oil, Triglyceride Mole Percent Composition; Tallow, Beef, Triglyceride Mole Percent Composition
trihydric  An alcohol containing three hydroxyl groups, e.g., glycerol

\[\text{2,4,5-trihydroxy butyrophenone} = \{C_6H_5(OH)_3COC_2H_5\}\]

A food additive with antioxidant properties
See Part 2: Antioxidant Structure
Trikala loucanica  A moist, uncooked, sometimes smoked Greek sausage made from coarsely chopped, heavily seasoned (garlic, herbs, leek, pepper) beef and pork and stuffed into sheep casings
trillion  American and French 10\(^{12}\); English and German 10\(^{18}\)
trim  To cut or remove unwanted material
trimmable fat  Fat that can be removed by thorough practicable trimming and sorting; not the same as chemically analyzed fat
trimmed lamb  A lamb whose tail has been cut; also, an unsexed male lamb
trimmings  Pieces of edible lean meat removed from the major cuts in the trimming process and used for sausage meat
Trinidad rum  A light and dry rum
trinitrobenzene  An indicator that is colorless below a pH of 12, orange from 12 to 13, and red–orange above 13
triose  \((C_3H_6O_3)\) A three-carbon sugar
tripe  Cleaned, scalded, and cooked first (smooth) and second (honeycombed) stomach (with the inside wall removed) from healthy cattle
Kinds (depends on part of stomach used): blanket; book; honeycomb (from reticulum); monk's hood; reed.
1.5 pounds of honeycomb tripe per 1000-pound steer
6.5 pounds of plain tripe per 1000-pound steer

It is precooked but requires further cooking in water until tender; often canned in milk or brine
Composition: moisture 79%; protein 19%; fat 2%; ash 0.5%; sodium 13 mg per ounce (28 grams)
See Part 2: Beef Cuts and Uses; Variety Meat, Cooking; Variety Meat Percentage of Daily Recommended Allowances, Variety Meat Preparation
tripeptide  A compound made up of three amino acids joined by two peptide bonds
tripreflectionidine nucleotide (TPN)  A coenzyme that differs from coenzyme 1 (DPN) only in having one more phosphoric radical in the molecule; used by the cell in many oxidation reactions
triple bond  An unsaturated carbon linkage characteristic of acetylene and its derivatives, e.g., HC\(=\)CH
triple crème  A soft-textured, creamy-flavored cheese; a soft, ripened, delicate flavored cheese with a white or golden powdery crust; may run at room temperature; often flavored with chives, fennel, garlic, rosemary, etc. Minimum of 75% fat
triple sec  Refined curacao  See curacao
triple-sugar iron agar  See Part 2: Intestinal Microorganisms in Triple-Sugar Agar
triple superphosphate  A fertilizer ingredient made by addition of phosphoric acid to phosphate rock; contains 50% available phosphate (P\(_2\)O\(_5\))
See Part 2: Fertilizer
tripletail  (*Lobotes surinamensis*)  A large, saltwater fish
Tripolis loucanica  A moist, uncooked, sometimes smoked Greek sausage made from coarsely chopped, heavily seasoned beef and pork and stuffed into sheep casings
triplyphosphate  A cleaning compound (sodium tripolyphosphate) that has good calcium sequestering power; it is readily soluble in warm water but unstable at high temperature or in solutions high in alkali
See also phosphate
See Part 2: Phosphate
trisodium orthophosphate  See trisodium phosphate
trisodium phosphate (sodium phosphate, tribasic; trisodium orthophosphate; TSP) \((Na_3PO_4 \cdot 12H_2O)\) An alkaline cleaner that has good solubility, deflocculating and emulsifying properties; it is a fair water softener and quite corrosive. A food emulsifier used in some cheeses
See Part 2: Detergent Properties
tri sugar agar  See Part 2: Microorganism, Media
triticale  (*Triticale heraploide*)  A hybrid cereal obtained from wheat and rye
Composition: dry matter 90%; protein 15.8%; fiber 4%; fat 1.5%; ash 1.8%
Like rye, it can also contain ergot
triticale flour  Made by grinding triticale kernels; low in gluten; usually mixed with all-purpose flour to make bread
trittenheim  A light, white wine
Triumph 1) A variety of potato (white) that is best used in salads. 2) A dry, mealy variety of sweet potato
Trockenbeerenauslese  A rare wine made from individual grapes shriveled almost to raisins; made from over-ripe, half-dried grapes affected by the edelfaule or “noble rot”
trois cornes  See sableau

trojniack  A sweet, honey-fermented, alcoholic beverage, often flavored with fruit juice and spices

trondemorr  A pepperoni made from beef, lamb, pork, and sometimes horsemeat

trondernorr  A dry, uncooked, smoked Norwegian sausage made from medium chopped, heavily seasoned, beef, lamb, pork, and horsemeat and fermented and stuffed in beef casings

tropaeolum  See Part 2: Essential Oils

-troph  A suffix meaning nourishment

tropical fruit  A fruit grown in the tropics, e.g., avocado, banana, date, fig, guava, mango, papaya, pineapple, pomegranate

tropical fruit salad  A canned fruit mixture. Most common mixture includes mango, melon, papaya, passion fruit, pieces of banana, and pineapple; packed in sweetened juice from passion fruit or other tropical fruit. Some mixtures contain mandarin orange sections, maraschino cherries, and grapes

tropical fruit salad plant  See monstera deliciosa

tropics  The area between 23°27' north and south of the equator

tropocollagen  See Part 2: Connective Tissue Proteins

tropomyosin  A long thin protein found in the actin filament of muscle  See Part 2: Myofibrillar Proteins of Muscle

troponin  A muscle protein found in the actin filament at every seventh G-actin molecule  See Part 2: Myofibrillar Proteins of Muscle

trotter  A lamb (calves and pigs also) shank. Can also apply to pig feet

trotter (Salmonidae)  A freshwater or saltwater fish related to the salmon

Types:
- Brook trout—small; white flesh
- Brown trout—large; freshwater
- Lake trout—small to medium
- Rainbow trout—often smoked
- Sea trout (weakfish)—large; resembles salmon

Names:
- Australia (Galaxiids)
- Brook, Speckled (Salvelinus fontinalis)—North America
- Brown (true) (Salmo trutta (fario))
- Char (Salvelinus fontinalis)
- Cutthroat (Salmo clarki)—Pacific; freshwater; North America
- Gila (Salmo gilae)—freshwater; North America
- Golden (Salmo aguabonita)—freshwater; North America
- Japanese Marine—See cherry salmon
- Lake (Salvelinus namaycush (Cristivomer))—North America
- Rainbow, Steelhead (Salmo gairdnerii, Salmo irideus)—Atlantic; Pacific; freshwater
- Sea, Brown (Salmo trutta)—Atlantic; freshwater; North America; Europe
- Sea (Cynoscion regalis)—North America
- Spotted Sea (Eriscion nebulosus)—North America
- Steelhead (Salmo gairdneri)

Common name  Other names  Fat (%)
Saltwater  Gray  Weakfish  3.8
Spotted  Speckled  3.8
White  Sand  3.8
Freshwater  Brook
Brown
Lake  Togue  11.1
Rainbow

1 whole dressed = 1.5–2 pounds
Pan dressed = 6–8 ounces
Composition: protein 21.5%; fat 11.4%
See Part 2: Fish, Storage; Frozen Food Storage; Minerals, Food; Salmon and Trout

trouville  A soft, fresh, cheese made from whole milk with rennet added

troy  U.S. and English weight used for gold and silver; based on a pound that contains 12 ounces

Troyarska loukanka  A beef and pork pepperoni, sometimes not smoked

troyen cendre  A rocroi-type cheese matured in wood ashes

troyes  Cheese

Types:
- Barbery—similar to camembert
- Ervy—washed with yellow rind

truck farm  Land used for raising garden produce

tucklies  Cheese

Type:
- Blue cheese
- Full cream cheddar

truck space, cattle

<table>
<thead>
<tr>
<th>Weight (pounds)</th>
<th>Number of cattle per running foot</th>
<th>Number of long-horn cattle per running foot</th>
</tr>
</thead>
<tbody>
<tr>
<td>600</td>
<td>0.9</td>
<td>0.85</td>
</tr>
<tr>
<td>800</td>
<td>0.7</td>
<td>0.65</td>
</tr>
<tr>
<td>1000</td>
<td>0.6</td>
<td>0.57</td>
</tr>
<tr>
<td>1200</td>
<td>0.5</td>
<td>0.47</td>
</tr>
<tr>
<td>1400</td>
<td>0.4</td>
<td>0.38</td>
</tr>
</tbody>
</table>

true stomach  See abomasum

truffle  An underground (1–2 feet) edible tuber of an edible fungus; Tuber melanosporum wild mushroom.

Type:
- Black or perigord (Tuber melanosporum)
- Dark brown (T. aestivum)
- English (T. aestivum)
- French (T. melanosporum)
- Italian (T. magnatum)
- White (T. album or T. niveum)

It lives in mutually beneficial symbiosis with the root system of its host tree (30 types of trees; oak is best known; also hazelnut, linden)

Size: walnut to lemon; 1–4 inches in diameter
Shape: round; warty, with no roots or stalks
Surface: rough; wasty
Flavor: aromatic and piquant
trypsin A proteolytic enzyme that hydrolyzes native proteins to amino acids; it is found in the pancreatic juice in the small intestine; it is secreted in the inactive form called trypsinogen. Used to peptonize milk. See Part 2: pH Values of Biological Materials

trypsin digest agar See Part 2: Microorganism, Culture Media, Dairy and Food Products; Microorganism, Media

trypsinogen The inactive form of trypsin in which trypsin is secreted; it is initially activated by enterokinase after which time activation proceeds through the action of trypsin. See also trypsin

trypsin digest agar See Part 2: Microorganism, Media

trypsin soy agar A medium used to grow Staphylococcus aureus. See Part 2: Microbiological Media; Microorganism, Media

trypsin tellurite agar base See Part 2: Microorganism, Media

tryptone See Part 2: Microorganism, Media

tryptone glucose extract agar See Part 2: Microorganism, Culture Media, Dairy and Food Products; Microorganism, Culture Media, Water and Sewage, Standard Methods; Microorganism, Media

tryptophan (tryptophane)

\[
\begin{align*}
&\text{CH}_2\text{C} \equiv \text{C} - \text{CH}_2 - \text{CH} - \text{C} = \text{OH} \\
&\text{CH}_2\text{C} \equiv \text{C} - \text{CH} - \text{NH} \quad \text{NH}_2
\end{align*}
\]

A heterocyclic essential amino acid obtained by hydrolysis of proteins or made synthetically. Used as a food nutrient or dietary supplement. 

Storage: tight container in the dark

See Part 2: Amino Acids; Amino Acids, Solubilities; Corn, Amino Acids; Egg Products, Nutritive Value; Manure Analysis; Milk, Amino Acids; Seed, Chemical Composition; Wheat, Amino Acids; Wheat Products, Amino Acid Compositions

tryptose agar See Part 2: Microorganism, Culture Media, Dairy and Food Products; Microorganism, Media

tryptose blood agar base See Part 2: Microorganism, Media
tuberose oil An essential oil used as a flavoring agent
See Part 2: Essential Oils

macaroni See tubetti

An essential oil used as a flavoring agent
See Part 2: Essential Oils
tubetti See macaroni

tubetti See macaroni

tuchowska A moist, smoked Polish sausage made from medium or coarsely chopped, medium seasoned beef and pork and stuffed into pork casings
tuck To eat heartily, especially of sweets (British)
tucket A steak; a small green ear of corn
tudela A golden, hard, pressed cheese made from sheep's milk
tuica Plum brandy
tue A maize-based aliha
Tukey test See means test
tuk-trey Fish sauce
tularemia An infectious disease of wild rabbits that is communicable to man
See Part 2: Diseases, Food-Borne; Illness from Food; Infectious Diseases, Food-Borne
tullibee See lake herring
tulum A semihard, roquefort-type cheese made from ewe's milk
tulum peyniri A strong-flavored, acid curd cheese made from goat's or sheep's milk and mixed with olive oil or yogurt and matured in a goatskin bag
tuma See muenster cheese; toma
tumble mustard (Sisymbrium altissimum L.) An annual weed
tumbler A container used in drinking liquids
1 tumbler = 8 ounces
tumeric See turmeric
tumorigenesis Multiplication of cells by uncontrolled and progressive production of new tissue growth
tun A wine measure; an old measure of volume
1 tun = 953.9 liters
= 252 wine gallon (U.S.)
= 210 gallons (Imperial)
= 2 pipe
tuna (tunny; Gymosarda unicola) A fat, large fish caught in warm water. Red sea, mackerel-like fish
Canned style: skin and bones removed; flesh salted; natural oil removed and cottonseed oil added
Type:
Chunk style—bite size pieces
Fancy pack—solid chunks
Flakes, grated, shredded—shreds or small pieces
In oil—solid and liquid

<table>
<thead>
<tr>
<th>Tuna type</th>
<th>Other names</th>
<th>Scientific name</th>
<th>Label</th>
<th>Meat color</th>
<th>Where caught</th>
<th>Composition (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albacore</td>
<td>Longfin, White, Pacific</td>
<td>Thunnus alalunga</td>
<td>White tuna</td>
<td>White</td>
<td>Cosmopolitan, Pacific coast</td>
<td>66 25 8 1.3</td>
</tr>
</tbody>
</table>
| Bigeye             | Patudo, False Albacore | Thunnus obesus, Germo Alalunga | Canned style: skin and bones removed; flesh salted; natural oil removed and cottonseed oil added Type: Chunk style—bite size pieces Fancy pack—solid chunks Flakes, grated, shredded—shreds or small pieces In oil—solid and liquid
| Bluefin            | Thunnus thynnus     | Light meat tuna       | White to pinkish tuna | Cosmopolitan, Atlantic and Pacific coast | 70 25 4 1.3     |
| Little             | Euthynnus alletteratus | Atlantic, Mediterranean | 66 25 8 1.3     |
| Longtailed         | Euthynnus affinis  | Indian, Pacific       | 66 25 8 1.3     |
| Skipjack           | Euthynnus pelamis, Katsuwonus pelamis | Pacific | 66 25 8 1.3     |
| Southern           | Thunnus maccayi     | Australia             | 66 25 8 1.3     |
| Yellowfin          | Thunnus zacalles     | Pacific               | 66 25 8 1.3     |
Canned style (continued)
Type (continued)
In water—solid and liquid
Italian style (tonno)—heavier salting, olive oil pack
Light meat pack—albacore, bluefin, skipjack, yellowfin
Standard pack—max. 25% flakes

Tuna Composition

<table>
<thead>
<tr>
<th>Tuna in oil</th>
<th>Tuna in water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>53</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>24</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>20</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.4</td>
</tr>
</tbody>
</table>

Equivalents:
3 ounces (oz) per serving
1 cup, canned in oil, drained solids = 5.6–6 oz
1 cup, canned in oil, solid and liquid = 4.7 oz

Sodium composition (canned):
Light meat chunk
Oil pack 303 mg/3 oz (85 grams (g))
Water pack 286 mg/3 oz (85 g)
White meat (albacore)
Chunk (low sodium) 34 mg/3 oz (85 g)
Solid oil pack 384 mg/3 oz (85 g)
Solid water pack 309 mg/3 oz (85 g)

pH 5.2–6.1; cholesterol 55 mg/3 oz, canned

See Part 2: Cholesterol Control; Fish and Shellfish Composition; Frozen Food Storage; Minerals, Food; Niacin, Daily Recommendations; Vitamin A, Fish; Vitamin D, Fish

Tuna cheese A chocolate-colored confection (not cheese) made from the fruit of *Tuna cardona* or *Tuna pachona*

Tuna pig See prickly pear

Tuna salad See Part 2: Fish and Shellfish Composition I

Tuna spread Composition: sodium 92 mg per ounce (28 grams)

Tung-cheng A black and white pig that has pendulous ears and a large belly; native to Hopeh province, China

Tung oil (China wood oil) A pale yellow drying oil from nuts of *Aleurites cordata* and *A. fordii*; used in paints. Iodine number 168; saponification number 194; sp. gr. 0.94

See Part 2: Fat or Oils, Physical and Chemical Properties; Fatty Acids, Fats and Oils; Fruit and Nut Rootstock; Iodine and Saponification Values; Oils, Seed and Fruit; Refractive Indices, Fats and Oils; Unsaponifiable Matter; Unsaturated Fatty Acids

Tungupyla A moist, cooked, unsmoked Icelandic sausage made from finely or medium chopped, medium seasoned pork with pork fat, beef tongues, and blood added and stuffed into artificial casings

Tung-yang A white fleeced (crossbred wool), polled, fat-tailed sheep raised for wool and mutton; found in Shensi (Shanxi) province, northeast, China

Tunicate Composed of layers or scales, e.g., onion

Tunis A fat-tailed breed of sheep originating in northern Africa

See Part 2: Sheep Breeds

Tunny (bluefin tuna) A food fish

Tunol Cod liver oil

Tuozaafi A thick porridge gruel made from sorghum or millet

Tup Ram

Tup hog See hogget

Tur See pigeon pea

Turban squash A turban-shaped (flattened round base and a knobby topknot) winter squash that is orange with streaks of cream, green, or white See squash, winter

Turbary Land where sod or peat is obtained

Turbid Unclear; cloudy; muddy

Turbidimetric analysis An optical analysis in which concentration is determined by the intensity of light transmitted through a turbid suspension as compared with that of a standard suspension

Turbot (breet; britt; butt) A flat, saltwater (Greenland) food fish that has a square-shaped body, weighs 40–50 pounds, and has white flesh; sometimes called halibut; available fresh or frozen

Chicken turbot—small turbot

Turbot, Indo-Pacific, Australia (*Psetodes erumei*)

Turbot, North Atlantic 

Turbot, North Pacific—See arrow-toothed flounder

Turbidity Land where sod or peat is obtained

Tureen A deep dish for serving soup

Turkey (*Meleagris gallo-pavo*) A large American bird that has been domesticated.

Fryer or roaster—under 16 weeks

Young turkey (young hen or tom)—a turkey (usually under 8 months of age) that is tender-meated with soft, pliable, smooth-textured skin and breast; sex designation is optional

Yearling turkey—a fully matured turkey (usually under 15 months of age) that is reasonably tender-meated and with reasonably smooth-textured skin; sex designation is optional

Mature turkey (old turkey; hen or tom)—an old turkey of either sex (usually in excess of 15 months of age) with coarse skin and toughened flesh

USDA grades: US Grade A poultry, Grade B, Grade C

Once they start to lay eggs they will continue for approximately 20 weeks and will produce approximately 85 eggs per laying period

Market weight:

Hens—18 pounds, 17 weeks old

Toms—28 pounds, 24 weeks old
782  turkey (*Meleagris gallo-pavo*)

80% dressing percentage; ratio of meat to bone higher than in chicken. Edible meat on oven-ready carcass 74–80%.

Roasting times:

<table>
<thead>
<tr>
<th>Type of turkey</th>
<th>Ready-to-cook (lb)</th>
<th>Oven temperature (°F)</th>
<th>Roasting time (hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stuffed whole</td>
<td>6–8</td>
<td>325</td>
<td>3–3 1/2</td>
</tr>
<tr>
<td></td>
<td>8–12</td>
<td>325</td>
<td>3 1/2–4 1/2</td>
</tr>
<tr>
<td></td>
<td>12–16</td>
<td>325</td>
<td>4–5 1/2</td>
</tr>
<tr>
<td></td>
<td>16–20</td>
<td>325</td>
<td>5 1/2–6</td>
</tr>
<tr>
<td></td>
<td>20–24</td>
<td>325</td>
<td>6–7</td>
</tr>
<tr>
<td>Foil-wrapped</td>
<td>8–10</td>
<td>450</td>
<td>1 1/2–1 1/2</td>
</tr>
<tr>
<td>(unstuffed)</td>
<td>10–12</td>
<td>450</td>
<td>1 1/2–2 1/2</td>
</tr>
<tr>
<td></td>
<td>12–16</td>
<td>450</td>
<td>2 1/2–3</td>
</tr>
</tbody>
</table>

1 cup, cooked = 5 ounces, cubed

1/3 lb, ready-to-cook bird = 1 serving

Thawing time for frozen turkey

<table>
<thead>
<tr>
<th>Refrigerated thawing</th>
<th>In warm water (hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size (lb)</td>
<td>time (days)</td>
</tr>
<tr>
<td>4–12</td>
<td>1–2</td>
</tr>
<tr>
<td>12–20</td>
<td>2–3</td>
</tr>
<tr>
<td>20–24</td>
<td>3–4</td>
</tr>
</tbody>
</table>

Cholesterol: 65 mg (white meat) or 86 mg (dark meat) per 3 ounce turkey (no skin) See poultry entries

See Part 2: Animal Foods, Composition; Calories, Daily Recommendations; Cholesterol Control; Egg Incubation Periods; Frozen Food Storage; Meat and Meat Products Composition; Minerals, Food; Portion Size.

### Composition

<table>
<thead>
<tr>
<th>Turkey (all classes)</th>
<th>Moisture (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Ash (%)</th>
<th>Total carbohydrate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dark meat without skin, cooked, roasted</td>
<td>63.09</td>
<td>28.57</td>
<td>7.22</td>
<td>1.02</td>
<td>0.0</td>
</tr>
<tr>
<td>Dark meat without skin, raw</td>
<td>74.48</td>
<td>20.07</td>
<td>4.38</td>
<td>0.93</td>
<td>0.0</td>
</tr>
<tr>
<td>Dark meat with skin, cooked, roasted</td>
<td>60.23</td>
<td>27.49</td>
<td>11.54</td>
<td>0.97</td>
<td>0.0</td>
</tr>
<tr>
<td>Dark meat with skin, raw</td>
<td>71.13</td>
<td>18.92</td>
<td>8.80</td>
<td>0.86</td>
<td>0.0</td>
</tr>
<tr>
<td>Flesh and skin, cooked, roasted</td>
<td>61.70</td>
<td>28.10</td>
<td>9.73</td>
<td>1.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Flesh and skin, raw</td>
<td>70.40</td>
<td>20.42</td>
<td>8.02</td>
<td>0.88</td>
<td>0.0</td>
</tr>
<tr>
<td>Flesh only, cooked, roasted</td>
<td>64.88</td>
<td>29.32</td>
<td>4.97</td>
<td>1.05</td>
<td>0.0</td>
</tr>
<tr>
<td>Flesh only, raw</td>
<td>74.16</td>
<td>21.77</td>
<td>2.86</td>
<td>0.97</td>
<td>0.0</td>
</tr>
<tr>
<td>Light meat without skin, cooked, roasted</td>
<td>66.27</td>
<td>20.90</td>
<td>3.22</td>
<td>1.08</td>
<td>0.0</td>
</tr>
<tr>
<td>Light meat without skin, raw</td>
<td>73.82</td>
<td>23.56</td>
<td>1.56</td>
<td>1.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Light meat with skin, cooked, roasted</td>
<td>62.83</td>
<td>28.57</td>
<td>8.33</td>
<td>1.02</td>
<td>0.0</td>
</tr>
<tr>
<td>Light meat with skin, raw</td>
<td>69.83</td>
<td>21.64</td>
<td>7.36</td>
<td>0.90</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Processed food products

| Gravity and turkey, frozen | 85.07 | 5.88 | 2.63 | 1.81 | 4.61 |
| Turkey, canned, boned with broth | 66.07 | 23.68 | 6.86 | 1.92 | 0.0 |
| Turkey frankfurter | 62.99 | 14.28 | 17.70 | 3.55 | 1.49 |
| Turkey ham, cured thigh meat | 71.38 | 18.93 | 5.08 | 4.23 | 0.37 |
| Turkey loaf, breast meat | 71.85 | 22.50 | 1.58 | 4.18 | 0.0 |
| Turkey roll, light | 71.55 | 18.70 | 7.22 | 2.00 | 0.53 |
| Turkey roll, light and dark | 70.15 | 18.14 | 6.99 | 2.60 | 2.13 |
Potassium-Rich Foods; Poultry Class; Poultry Composition; Poultry Cooking, Frozen; Poultry Dressing Percentage; Poultry Roasting; Poultry Yield; Spoilage, Protein Foods; Turkey Composition; Turkey Varieties

turkey breast 3–5.5 pounds

turkey breast meat
Composition (cured): moisture 71.8%; protein 22.5%; fat 1.6%; ash 4.2%

turkey, chunky, canned soup
Composition: moisture 86.4%; protein 4.3%; fat 1.9%; carbohydrate 6.0%; fiber 0.4%; ash 1.5%

turkey cock A male turkey

turkey grade See poultry grades

turkey gravy

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dehydrated</th>
<th>Prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>4.1</td>
<td>90.9</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>11.8</td>
<td>1.1</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>7.5</td>
<td>0.7</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>60.7</td>
<td>5.7</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0.4</td>
<td>0.04</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>15.8</td>
<td>1.5</td>
</tr>
</tbody>
</table>

turkey gravy, canned
Composition: moisture 88.6%; protein 2.6%; fat 2.1%; carbohydrate 5.1%; ash 1.6%

turkey ham Cured turkey thigh meat
Composition (edible portion): moisture 71.4%; protein 19%; fat 5%; carbohydrate 0.4%; ash 4.2%

turkey hen A female turkey
Young hen—less than one year old; soft-meat; flexible breastbone
Old hen—more than one year old; toughened flesh; hardened breastbone

Turkey noodle, canned soup

<table>
<thead>
<tr>
<th>Composition</th>
<th>Condensed</th>
<th>Condensed, prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>86.4</td>
<td>93.0</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>3.1</td>
<td>1.6</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>1.6</td>
<td>0.8</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>6.9</td>
<td>3.5</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.1</td>
<td>1.1</td>
</tr>
</tbody>
</table>

turkey roll Restructured turkey tissue

<table>
<thead>
<tr>
<th>Composition</th>
<th>Light</th>
<th>Light and dark meat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>71.6</td>
<td>70.1</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>18.7</td>
<td>18.1</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>7.2</td>
<td>7.0</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>0.5</td>
<td>2.1</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>2.0</td>
<td>2.6</td>
</tr>
</tbody>
</table>

Sodium: 166 mg per ounce (28 grams)

Old tom—older than one year; toughened flesh; harden breastbone

Turkey-vegetable, canned soup

<table>
<thead>
<tr>
<th>Composition</th>
<th>Condensed, prepared with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>86.0</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>2.5</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>2.5</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>7.0</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>1.9</td>
</tr>
</tbody>
</table>

Turkish
Food habits:
Animal products—eggs, lamb
Beverage—black coffee, tea
Dairy—butter, cheese, fermented milk, sour cream
Grain—rice, wheat
Seasoning—honey, onion, pepper
Vegetable—broccoli, cucumber, dandelion, eggplant, leek, okra, tomato

Turkish coffee A sweetened drink made from pulverized coffee. Finely ground coffee of a dark Vienna or French roast is brought to a boil in a small pot and removed from the heat until the froth subsides. This is repeated twice more with the brewed coffee being poured frothing (usually with sugar) into demitasse cups for serving.

Ingredient proportions: 3 tbsp coffee beans or 3 tbsp finely ground coffee, 2 tbsp of sugar, 1.25 cups of water

Turkish delight (Turkish paste) A chewy confection dusted with sugar. Made from gelatin and fruit juice.

Turkish paste See Turkish delight

turmeric (Curcuma domestica; C. longa; C. rotunda) The rhizome of a perennial plant (ginger family) used as food, in flavoring food, and as a yellow dye; used in curry powder and mustard; yellow pigment is curcumin; rhizomes are washed, peeled, and dried and contain 30–40% starch. Sometimes substituted for saffron

Aroma: fragrant; weedy
Flavor: nutlike; bitter; weedy; tenacious
Spice used as a flavor and color additive; should be purchased on basis of color value
Terms:
Alleppey—deep yellow; curcumin 6.5%
Bulb—central rhizome
Fingers—lateral branches or secondary rhizomes (5 × 1 cm)
Madras—mustard color; curcumin 3.5%
Splits—½ or ¼ bulbs
West Indian—yellow–brown

Source: Haiti, India, Peru
Composition: moisture 9–12% (max. 9%); protein 7–8%; fat 9–11%; carbohydrate 64–65%; fiber 6–7%; ash 5.5–7% (max. 8.3%); acid insoluble ash max. 0.5%; crude fiber max. 9.5%; curcumin (pigment) 0.5–6.6%; starch 30–50%; volatile oil 1.3–6%
turmeric oleoresin

A food additive used to flavor and/or color (yellow) food. Solvent (ethanol, acetone, ethylene dichloride) extracted

Types:
- 8.5% curcumin = 6 x spice
- 12.5-14.5% curcumin = 20 x spice
- 38-42% curcumin = 66 x spice

turn-around time The time between completion of production and starting of new production

turmeric essential oil (turmeric oil) An orange-yellow liquid obtained by steam distillation

Refuse: 30%

100 pounds (lb), fresh topped = 7-8 lb, dry
1 bushel topped = 54 lb
1 lb, fresh = 3 medium sized turnips
= 2 cups cooked
= 4 serving
1 pound, turnip top greens = 2 servings
1 medium turnip, peeled, diced = 0.75-0.8 cups
1 cup, raw = 100 grams (g)
1 cup, canned, solids and liquids
= 7.8-8.2 ounces (oz)
1 cup, boiled and drained = 5 oz
1 cup, cooked = 195 g (6.9 oz)
1 serving = 0.25-0.6 lb, root
= 0.4 lb, greens

<table>
<thead>
<tr>
<th>Turnip variety</th>
<th>Season</th>
<th>Root shape</th>
<th>Root Color</th>
<th>Leaves</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early White,</td>
<td></td>
<td>Small</td>
<td>White</td>
<td></td>
</tr>
<tr>
<td>Flat Dutch</td>
<td></td>
<td>globular</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Golden Ball (Orange Jelly)</td>
<td></td>
<td>Large, elongated</td>
<td>Yellow, strong flavor</td>
<td></td>
</tr>
<tr>
<td>Just Right</td>
<td>27 (foliage)</td>
<td>5 x 3 in., flattened globe</td>
<td>White, white flesh</td>
<td>Heavy, upright, cut-leaved foliage</td>
</tr>
<tr>
<td></td>
<td>50-60 (root)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large White Globe</td>
<td></td>
<td>Globular</td>
<td>White</td>
<td></td>
</tr>
<tr>
<td>Large Yellow Globe</td>
<td></td>
<td>Large, elongated</td>
<td>Yellow, strong flavor</td>
<td></td>
</tr>
<tr>
<td>Purple-Top White Globe</td>
<td>50-57</td>
<td>4-6 in., almost round</td>
<td>Purple top, white body, white flesh</td>
<td></td>
</tr>
<tr>
<td>Seven Top</td>
<td>45</td>
<td>No edible root</td>
<td>Edible, dark green</td>
<td></td>
</tr>
<tr>
<td>Shogoin (foliage)</td>
<td>30 (foliage)</td>
<td>3-4 in., flattened globe</td>
<td>White</td>
<td>Used as greens (20 in.)</td>
</tr>
<tr>
<td>Snowball (foliage)</td>
<td>70 (roots)</td>
<td></td>
<td>White</td>
<td></td>
</tr>
<tr>
<td>Tokyo Cross</td>
<td>35</td>
<td>Small, globular</td>
<td>White</td>
<td></td>
</tr>
<tr>
<td>Tokyo Market White Egg</td>
<td>50-60</td>
<td>Small, globular</td>
<td>White</td>
<td></td>
</tr>
<tr>
<td>Yellow Aberdeen</td>
<td></td>
<td>Large, elongated</td>
<td>Yellow, strong flavor</td>
<td></td>
</tr>
</tbody>
</table>
in 1–4 weeks; gives off odor during storage; can be stored in pits or cold cellars.

Storage (greens): Remove root, wash, and drain; store in refrigerator crisper or plastic bags; use within 1–2 days. See turnip greens.

See Part 2: Microwave Cooking, Fresh Vegetables; Minerals, Food; Minerals, Plant or Animal Tissue; Nitrate, Vegetables; Plant Foods, Composition; Planting Density; Root Crop Characteristics; Storage; Sugar, Vegetables; Vegetable Boiling; Vegetable Composition; Vegetable Cooking, Frozen; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Plants; Vegetables, Classification; Vegetables, Cooking Frozen; Vegetable Storage; Vegetable Yields.

turnip aphid (false cabbage aphid; Hyadaphis pseudobrassicae) A pale green insect similar to the cabbage aphid but without a waxy body; feeds on mustard, radish, and turnip.

turnip cabbage See kohlrabi.

turnip greens Turnip grown for roots; also planted for greens.

Variety:

Seven Top—no edible root

Shogoin

See turnip.

turnip-rooted celery See celeriac.

turnip-rooted parsley An edible root with a dry, white, flesh and a flavor similar to celeriac. Can be left in ground until after hard frost. See parsley, hamburg.

turnip, swede A rutabaga.

turnip top See raab.

turnover 1) The rate at which fat is consumed during frying. Will be affected by: amount of fat absorbed per unit of food; number of units fried during heating period; ratio of food in kettle at one time; temperature of frying. 2) A baked semicircle of pastry folded over a sweet or savory filling; e.g., apple.

See Part 2: Frying Time.

turp Ram lamb often after first shearing.

turpentine An oleoresinous liquid extracted from the Pinus species of trees; used as a solvent; boiling point 155–165°C; 1 barrel = 432 pounds; 1 gallon = 7.2 pounds.

See Part 2: Essential Oils.

turpentine weed A plant having a toxic principle.

See Part 2: Poisonous Plants.

turret machine (capper, labeler) A pivoted and revolving machine attachment carrying tools of different dimensions or functions, so that various size containers can be capped or labeled.

turu 1) Mixed pickles. 2) Pickled fruit.

turtle (Testudines) An aquatic reptile; a saucer-shaped reptile used for food.

Diamond-back terrapin (Malaclemmys centrata)

Green (Chelonia mydas; Chelone midas)—average 400 pounds.

Hawkbill (Eretmochelys imbricata)

Leatherback (Dermochelys coriacea)

Loggerhead (Careta caretta)

Slider (Pseudemys spp.)

turtle oil Oil obtained from giant sea turtles; often used in skin lotions.

turunmaa A smooth, cheddar cheese.

Tuscarora rice See rice.

tuschinsk (ossetin) A sheep’s or cow’s milk cheese.

tusk (Brosmus brosme) A food fish.

tu-su Strong, black, soybean paste used as flavoring.

tuttifrutti Ice cream, dessert, or chewing gum containing fruit; mixed soft fruit and sugar in brandy; sauce containing many fruits; a combination of fruits.

tuwak See tuak.

Tuwon kativara Balls of cooked millet or sorghum flour.

twaite shad (Clupea finta) A food fish.

twarog An ricotta-type cheese made from cow’s milk; usually consumed fresh.

Twdr sir An esbareich-type cheese made from skimmed, sheep’s milk.

tweed kettle Salmon hash.

Tween A proprietary name for a series of emulsifiers, detergents, and surface active agents.

twig Small shoot or branch.

twig girdler An insect that girdles around twigs, which kills the twigs. The adult is a brown beetle, about ½ inch long; the larvae are white, legless grubs.

twist 1) Yellow skin of lemon cut into 1 x ½ inch size and twisted; used as garnish. 2) Pastry twisted before baking.

two-four-D See Part 2: Corn Herbicides.

two percent A milk designation equivalent to the percentage of fat.

See Part 2: Dairy Terms.

two-price plan Supporting that part of production used in the domestic market at one price and selling the remainder for export at market price.

tworog (notruschki) A sour milk cheese.

See notruschki.

two-spotted spider mite (Tetranychus urticae) A pest of pear. The adult is yellow or orange in the winter; when feeding (sucking), it is yellow to green with two dark spots; it spins a web of silken threads on the underside of leaves; damaged foliage is bronze in appearance and normal fruit development is affected (fruit stunted).

Host: 150 agricultural crops and ornamental plants.

Control: miticide.

two-tailed test (two-sided test) A test based on both sides (tails) of a distribution.

two-toned Meat tissue where neighboring muscles or areas of one muscle are of different shades of color.

two-year-old An ovine animal (sheep) from 2–3 years of age.

tybo A loaf-shaped, gold, gouda-type cheese with a red rind; sometimes flavored with caraway.

tylosin A macrolide antibiotic that is added to food in some countries. A drug used to promote growth, increase efficiency, control disease, and reduce liver abscesses.
tylzycki  A tilsit-type cheese

Tyndall effect  Light scattering or reflection by colloidal particles; does not occur with true solutions

type  Refers to intended use of animal; e.g., meat-type, wool-type

type I error  Rejection of a true hypothesis

type II error  Acceptance of a false hypothesis

typhoid fever  A contagious disease caused by impure water supply or food (coconut, egg products, shellfish, unpasteurized milk); caused by *Salmonella typhi* (paratyphoid; *S. paratyphi*). Organism destroyed by pasteurization

See Part 2: Diseases, Food-Borne; Illness from Food; Infectious Agents; Infectious Diseases, Food-Borne

typhosa  See Part 2: Microorganism, Media

tyro  Cheese

tyrolean  A moist, cooked unsmoked Australian sausage made from medium chopped, mildly seasoned, beef and veal

tyrol sour cheese  A sharp, sour, milk cheese

**tyrosinase**  An oxidase enzyme that is widely distributed; it is responsible for the darkening of the cut surface of a potato that has been exposed to air; oxidizes tyrosine to homogentisic acid and melanin pigments

**tyrosine**

![Chemical structure of tyrosine](https://example.com/tyrosine.png)

A nonessential, aromatic amino acid. Used as a food nutrient and dietary supplement

Storage: tight container

See Part 2: Amino Acids; Amino Acid, Solubilities; Corn, Amino Acids; Egg Products, Nutritive Value; Grain Analysis; Manure Analysis; Milk, Amino Acids; Seed, Chemical Composition; Wheat, Amino Acids; Wheat Products, Amino Acid Compositions

tzuica  Plum brandy
U The symbol for the element uranium. 2) On the label of a food product, indicates that the product complies with Jewish dietary law and is authorized by the Union of Orthodox Jewish Congregations
u A wine made from glutinous rice
UBARI Union of Burma Applied Research Institute
ubwali A sourdough, fermented, cassava (with or without cereal) dumpling
ubwalwa A sorghum beer
UCL Upper control limit
ucuru A sour porridge made from maize, millet, or sorghum
ucuu A sour porridge made from maize, millet, or sorghum
udder (bag) The mammary gland (milk-secreting organ) of, e.g., a cow or goat
udo 1) Aralia cordata, a perennial vegetable that produces blanched (protected from light) stalks (6 in.) that must be cooked for 10 min (to remove turpentine flavor) in salt water prior to eating; 2) A salad of crisp, blanched stems eaten with salt
udon Thick noodles made from wheat flour
ugali A sourdough, fermented, barley dumpling
ugba (ukpaka) Dark brown, fermented balls, of the African oil bean (a legume); used in soups and stews
ugli (tangelo) A citrus fruit that is a hybrid between grapefruit and orange or tangerine that looks and is used like a small grapefruit; the peel is rough and disfigured; the fruit is sweet, with an orangelike flavor. See also tangelo
UHT sterilization Ultra-high-temperature sterilization (96–153°C for 3 s or less)
uki A sour porridge made from maize or sorghum
ukanya A wine fermented from fruit of the marab or cider tree (Sclerocarya caffra)
ukpaka See ugba
ullage The amount of unfilled space in a container
ullaged Describes a container that has lost part of its original contents
ulna The caudal of the two bones in foreshank; in ruminants it is smaller than the radius and often fused to it; in swine it is often larger than the radius and not fused to it. See Part 2: Bone
uloa A tilsit-type cheese
Ulrich milk See Part 2: Microorganism, Media
ultra-high-temperature pasteurization (UHT pasteurization) Pasteurization at a high temperature for a short time, which improves flavor
ultramarine blue A synthetic food additive used to color food
ultramicroscope An optical microscope equipped with a device for admitting a beam of light at right angles to the sample being studied, which is usually a colloidal solution. The suspended solid particles in the liquid reflect the light as they turn end-over-end, thus indicating their presence, even if the particles themselves are below the resolution range of the microscope.
ultrasonic High-frequency sound waves from 200,000 cycles per second to several thousand MHz
ultraviolet Electromagnetic radiation with a wavelength of approximately 1850–4000 angstroms (Å), which is shorter than visible violet light and longer than X-rays; the most effective germicidal wavelength is 2600 Å. Ultraviolet light is used for sterilization, microorganism control during meat aging, and vitamin D activation in milk. See Part 2: Waves, Energy-Producing
ultraviolet curing Polymerization of material by using short-wave ultraviolet light
-um A Latin suffix that indicates the singular
μm See micro-
Umbelliferae The parsley family See Part 2: Vegetables, Classification
umble Edible mammal entrails
umbugug A sorghum beer
umcuku A sour gruel made from yogurt and maize
umeboshi Sour plums that have been pickled
umeshi Wine fermented from plums (Prunus spp.)
uminkowa (cummin) A moist, cooked, double-smoked Polish sausage made from medium-chopped, medium-seasoned beef and pork stuffed into artificial casings
umm balbal A millet beer
UN United Nations
unabsorbed Not absorbed; unavailable
uncooked, smoked sausage A sausage made from cured or uncured meat that has been comminuted, seasoned, stuffed into casings, and smoked but not cooked (must be cooked before consuming), e.g., kielbasa, mettwurst, and smoked country-style pork sausage
UNCTAD United Nations Conference on Trade and Development
undecalactone

\[
\text{CH}_3\text{(CH}_2)_6\text{CHCH}_2\text{CH}_2\text{CH}_2\text{O} \quad \text{O} \quad \text{C}=\text{O}
\]
8decanal \[\text{CH}_3(\text{CH}_2)_7\text{CHO}\] An artificial flavoring; used as a sweet, fatlike flavoring agent in food; sp. gr. 0.824–0.832
Storage: Full, tight, glass, container in a cool, dark place

8decanal \[\text{CH}_2 = \text{CH}(\text{CH}_2)_8\text{CHO}\] Used as a fatty, roselike flavoring agent in food; sp. gr. 0.840–0.850
Storage: Full, tight, glass, container in a cool, dark place

 undercut Fillet of beef
underfeeding Not providing sufficient dietary energy
underfilm corrosion Metal breakdown caused by foreign material reacting with the metal of a can under what appears to be a satisfactory coating
underground onion See onion, potato
underliner A plate under a soup dish or cocktail glass
undernutrition Pathological state of the body arising from an inadequate intake of food or a caloric deficiency resulting in reduced body weight
UNDP United Nations Development Program
undrawn poultry Dressed poultry that has been picked but has not had the entrails removed
undulant fever Human brucellosis; contracted from animals or animal products
See Part 2: Illness from Food
unequal to Not equal to; indicated by symbol ≠
UNESCO United Nations Educational, Scientific, and Cultural Organization
ungar salami A coarse sausage made from pork
uni- A prefix used to indicate one or single.
unicorn plant See martynia
UNIDO United Nations Industrial Development Organization
unilaterally cryptorchid The failure of one testicle to descend at birth; this will reduce the sperm count but the animal will remain fertile.
unimelt cement A substance used on cans with a cemented side seam
unipub A source of publications of the United Nations and other international information, with offices at 345 Park Avenue South, New York, NY 10010
unit cell The smallest group of atoms having the same composition and arrangement in space that can be selected in a crystal
unit cleaning Using (during fabrication or processing) units that are capable of special applications, e.g., steam, high-pressure, or foam units

United Nations International Children’s Emergency Fund (UNICEF) The original name of a branch of the United Nations that aids underprivileged and underfed children; it is now called the United Nations Children’s Fund. Its interest is in child welfare and nutrition, and its headquarters are in New York City.

unit of account A monetary unit of the European Economic Community (EEC)
unit of measure The unit used to specify the amount of an item purchased
unit pack The total seasoning needs for a production unit assembled by a supplier
unit portion packaging A production scheme by which the product is packaged in premeasured quantities of anticipated use
unit prefix Used with units of measure
Pico- \((p)\) \(10^{-12}\) times the base unit
Nano- \((n)\) \(10^{-9}\) times the base unit
Micro- \((\mu)\) \(10^{-6}\) times the base unit
Milli- \((m)\) \(10^{-3}\) times the base unit
Kilo- \((k)\) \(10^3\) times the base unit
Mega- \((M)\) \(10^6\) times the base unit

univalent Having a valence of 1
univalve A mollusk with a one-piece shell
Types: abalone; cockle; conch; sea snail; snail
universal indicator A mixture of pH indicators that will change color several times over a wide pH range
See Part 2: pH, Universal Indicators
universal product code (UPC) A number that is assigned to a product and encoded as a bar code that can be read by a scanner; it is part of a standard number system that provides a unique identification of each item. This number is on file in the store’s computer, with current price, item description, tax status, and inventory information.
universal product code (UPC) symbol The encoded, machine-readable, printed form of a UPC number
universal product code (UPC) symbol verifier A scanning device for decoding the machine-readable part of the UPC symbol
unleavened bread Bread made without yeast or other rising or leavening agent, e.g., matzoh
unofficial Describes a method that requires additional product analysis before regulatory action may be taken; such methods are used to determine the need for the use of official methods in product testing and as a preliminary phase of official methods development.
unpolished rice Whole rice grain with only the husk removed
unripe Immature; green
UNROD United Nations Relief Operation, Dacca
unsanitary Not hygienic; not sanitary; unclean; sep­tic; polluted
unsaponifiable Describes that portion of a mixture that will not react with an alkali to form a soap;
composed of fat-soluble, complex organic chemicals, e.g., cholesterol

**unsaponifiable matter analysis** Determined by saponifying the fat with alcoholic potassium hydroxide and then extracting the unsaponifiable matter with ether and evaporating the ether; the residue is unsaponifiable matter. See Part 2: Unsaponifiable Matter

**unsaturated** Describes an organic compound in which one or more double or triple bonds is present between carbon atoms. See Part 2: Fuel, Heating Value; Poultry Composition; Rapeseed Oil, Triglyceride Mole Percent Composition; Sausage Composition; Soups, Composition; Sugars and Sweets, Composition

**unsaturated fatty acid** A fatty acid containing one or more carbon-to-carbon double or triple bonds, e.g.,

\[
\begin{align*}
R - & C = C - C - \\
& \text{OH} \\
& \text{H H H}
\end{align*}
\]

Such acids have a lower melting point and are softer than saturated acids of the same chain length; they exhibit greater reactivity with oxygen, greater development of rancidity, and more of a tendency to polymerize. See unsaturation

See Part 2: Beans, Peas, and Nuts; Dairy Products, Composition; Egg Composition; Egg Products, Nutritive Value; Fats and Oils, Characteristics; Fats and Oils, Composition; Fish and Shellfish, Composition; Fruit Composition; Grain Products, Composition; Meat Composition; Tallow, Beef, Triglyceride Mole Percent Composition; Unsaturated Fatty Acids; Vegetable Composition

**unsaturation** A operation that increases the proportion of unsaturated fats, which develop rancidity quicker, polymerize more easily and have a lower melting point than saturated fats. See unsaturated; unsaturated fatty acid

See Part 2: Lard, Triglyceride Mole Percent Composition

**unscrambler** A device for placing containers in single file before they enter a filling or labeling machine

**unseated** Describes a broken hermetic seal on a glass container

**unslaked lime** See calcium oxide

**unsoundness** A defect; the improper or abnormal functioning of a body or body part(s)

**unsweetened chocolate** Chocolate sold in bar-shaped package containing 1-oz squares or in liquid form; the flavor is deep, rich, and bitter

1 square = 1 envelope of liquid

= ½ cup dry cocoa powder

**unsweetened pack** Food packed dry or in water with no sweetener added prior to freezing

**unwholesome** Unsafe to consumer; not wholesome; unhealthy

**uova** Egg

**UPC** See universal product code

**upi** The top liquid layer of chicha

**upland cress** (*Barbarea verna*) Slightly more bitter than garden cress. See cress, American; garden cress

**upper control limit (UCL)** The level that the number of defectives (or the value of variables) must be below if a procedure is in control

**upside-down cake** A cake baked with batter above fruit and turned over for serving

**upsilon (\(\upsilon, \upsilon\))** The Greek letter with an English equivalent of u

**uracil** A biochemical compound used in research and obtained by hydrolysis of nucleic acids

\[
\begin{align*}
\text{H} & \quad \text{N} & \quad \text{C}=\text{O} \\
\text{O} & \quad \text{= C} & \quad \text{C} - \text{H} \\
\text{H} & \quad \text{N} & \quad \text{C} = \text{H}
\end{align*}
\]

**uranium** (U) A radioactive metal of the actinide series; element; at. no. 92; at. wt. 238.07; Group III B of the Periodic Table; oxidation states +3, +4, +5, +6; electron configuration 2–8–18–32–18–2

See Part 2: Lard, Triglyceride Mole Percent Composition

**urase** See urease

**urbasa** See aralar

**urbia** See aralar

**urd** See urdbean

**urd** A ricotta-type cheese with herbs, made from cow’s milk and usually consumed fresh

**urdbean** (black gram; mash; urd; urid; *Vigna mungo*) Similar to the mung bean except the seeds are smaller, usually black with a raised white concave hilum, and shorter, and in more hairy pods

**urea**

\[
\begin{align*}
\text{NH}_2 \quad & \quad \text{C} \quad \text{NH}_2
\end{align*}
\]

The chief excretory nitrogenous product of mammals, amphibians, and fish; it is odorless and has weak basic properties; a white, crystalline, water-soluble compound that is used as a source of nonprotein nitrogen in ruminant diets (max. 3 lb per 100 lb grain); 1 lb urea + 6 lb ground corn is equivalent in feeding value to 7 lb oil meal. Urea is also used in wine making, as yeast food, and to brown bakery products.

Composition: nitrogen 46%; protein equivalent 281%

It can also be used as fertilizer; 45-0-0; hydrolyzes to ammonium in soil; it is acid in nature and would require 0.75 lb dolomitic limestone to neutralize each pound of urea applied.

See Part 2: Fertilizer Materials; Microorganism, Media; Microorganism Reactions on Differential Tube Media

**urease** (urase) An enzyme that converts urea to ammonia and carbon dioxide

Source: soybeans

**urgotnic** Yogurt

**urgwawa** A beer made from roasted sorghum with banana
uri 1) A type of dawadawa. 2) A sweet-potato-based arrack beverage. 3) A hard cheese made from cow’s milk with rennet added

uric acid The chief excretory nitrogenous product of birds and reptiles

\[
\begin{align*}
\text{H—N—C=O} \\
\text{O= C—NH} \\
\text{C=O} \\
\text{H—N—C—NH}
\end{align*}
\]

A normal constituent of human urine (0.5–0.6 g/day); high blood levels of uric acid and salts of uric acid or urates cause gout, kidney stones, and bladder stones

urid See urdbean

uridylic acid An RNA nucleotide

\[
\begin{align*}
\text{H—N)—C} & \text{—NH} \\
\text{O} & \text{O—C—CH} \\
\text{H—N') & \text{——CH} \\
\text{O} & \text{——C—OH} \\
\text{H} & \text{H}
\end{align*}
\]

phosphoric acid

urine The waste fluid of the body, excreted via kidneys and bladder; avg. secretion 1000–1500 cc/day; avg. total solids 60 g/day; avg. urea 30 g/day; sp. gr. 1.020

See Part 2: pH Values of Biological Materials

urkatziteli A light brown wine

urner A Swiss cheese made from partly skimmed cow’s milk

urwaga beer made from green bananas, maize, millet, or sorghum

-us A Latin suffix that indicates the singular

US Agency for International Development (USAID) Maintains offices in Washington, DC 20523

USAID See US Agency for International Development

US Army Natick Laboratories Center of food and materials research for the Department of Defense, located in Natick, Massachusetts

USBA United States Brewers’ Association

US certified color Appellation given to batches of color that have been passed by Food and Drug Administration (FDA) inspectors because they contain no more than the acceptable amount of impurities

USDA See US Department of Agriculture

US Department of Agriculture (USDA) The government department (established in 1862) that is responsible for all matters relating to agriculture and food quality; it establishes grades and standards for food products, meat inspection, plant sanitation, toxicity, etc. It maintains four regional research laboratories for food-related research; these are located at Philadelphia, Peoria, Albany, California, and New Orleans.

US Department of Agriculture, Handbook No. 8 A manual containing tables on the nutritive value of food

USDI US Department of the Interior

use test A test based on consumer reactions after using a product

US Insp’d and P’S’D A round stamp placed on meat to indicate it has passed USDA inspection

USP United States Pharmacopoeia See U.S. Pharmacopeia

U.S. Pharmacopeia (USP) The standard compendium of drugs and medicines; the 22nd revision was published in 1990. The USP grade is a standard of chemical purity that meets USP specifications. For most practical purposes the USP and international units (IU) are identical. See also grade

US Recommended Daily Allowances (US RDA) A standard of specified vitamins, minerals, and proteins essential for humans as listed by the US Food and Drug Administration; used for nutritional labeling and replaces the minimum daily requirement (MDR); the US RDAs are higher than the MDRs and include additional vitamins and minerals; they are based on the 1968 recommended dietary allowances (RDA) and on the RDA for each nutrient in each life cycle category, but with fewer age groups. US RDAs are a good index of the nutritional values of foods. See Part 2: Nutritional Labeling

USSR Union of Soviet Socialist Republics

usukuchi shoyu A light colored soy sauce made with wheat

uterus A female reproductive organ

u-t-iat A starter culture used to inoculate sake

utility See Part 2: Grades, Meat; Lamb Quality Guide

utschwala A sorghum beer

utto kolbasz A salami made from beef and pork

utu A citrus liqueur

utywala A sorghum beer

UV An abbreviation for ultraviolet; e.g., UV technique, an ultraviolet spectroscopic technique for detection and quantification

uva Grape

UV absorber A substance that prevents the ultraviolet radiation in sunlight from attacking the skin; used in suntan lotions, ointments, and cosmetic preparations

uva-ursi (bearberry; mountain box; rockberry) An astringent evergreen shrub used as a herb

uwo shoyu A fish sauce made from sardines (Clupea sp.), malted rice, and koji
V See vanadium; volt

vaccenic See Part 2: Unsaturated Fatty Acids

vaccino An Italian cow’s milk cheese

vaccination Artificial immunization

vachard A muenster-type cheese made from cow’s milk

vacheloo A medium flavored, semisoft cheese

vachardino An Italian cow’s milk cheese

vacherin A small, round, camembert or muenster-like cheese made from cow's milk and that has a firm crust and very soft interior

Types:
- Vacherin à la—a firm rind, rennet cheese with a liquid interior
- Vacherin fondu—similar to emmenthaler

vacuole A cavity or fluid-filled space in a cell; in animals it is very small; in plants it becomes larger as the cell ages

vacuum A space from which virtually all the air has been removed; a state of pressure below atmospheric See Part 2: Temperature of Vaporization, Latent Heat of Vaporization, Boiling Point

vacuum closure Suitable closure for processing; designed to maintain a vacuum

vacuum drying Drying a product in a vacuum to assist dehydration

vacuum-packaged food Food that is sealed under vacuum in a container

vacuum-packing (vacuumize) Removing air from a container before hermetically sealing. Retards oxidation; can contain only very small amounts of brine or water

vacuum-pan A closed kettle from which air is exhausted, thereby permitting a cooking temperature lower than at atmospheric pressure

vada Deep-fried cakes or balls of spiced legume flour

valdeblore See tomme de valdeblore

valdepenas A high alcohol, light, red wine

valencay A soft to semisoft, French cheese made from goat's milk and that has a smooth consistency, close white curd, medium delicate (sometimes strong) flavor, and is shaped like a flattened disk or pyramid (100-300 grams)

valencia A variety of California orange that is oblong in shape; in season from May to November; a variety of late Florida orange that is often used in frozen concentrate. The skin color ranges from medium orange through yellow or green to russet; medium flavor; a lot of juice; a light juice and pulp color

valerian (all heal; Valeriana officinalis) An essential oil containing binene, borneol, and camphene; from dried root

See Part 2: Essential Oils

valeric acid (pentanoic acid) [CH₃(CH₂)₄COOH]

Used as a rancidlike, flavoring agent in food; sp. gr. 0.934-0.940

Storage: tight container

valide

valinized method A method that is subjected to an interlaboratory study in three laboratories. The resulting data are reviewed by a peer group of government scientists. The data that result from the study are made available for review upon request.

validation study A study, involving three laboratories, conducted before the distribution or publication of an official analytical method. It determines if a specific analysis will work and sets the acceptable statistical requirements for analytical results (reported values) for future use of the specific method

valine

\[
\text{CH}_3 - \text{CH} - \text{CH} - \text{C} = \text{O} \\
\text{CH}_3 \text{NH}_2
\]

Monoamino-monocarboxylic, essential, amino acid obtained by hydrolysis of proteins, or made synthetically. Used as a food nutrient or dietary supplement

Storage: tight container

See Part 2: Amino Acids; Amino Acid, Solubilities; Corn, Amino Acids; Egg Products, Nutritive Value; Grain Analysis; Manure Analysis; Milk, Amino Acids; Seed, Chemical Composition; Wheat, Amino Acids; Wheat Products, Amino Acid Compositions

valpolicella A full-bodied, light, cherry-red, Italian wine

valsic An esbareich-type cheese made from sheep’s milk

value Lightness or darkness of a color

value analysis The systematic use of certain techniques that identify, establish a value for, and provide a required function at the lowest overall cost

vanadium (V) A metallic element; at. no. 23; at. wt. 50.96; Group VB of the Periodic Table; oxidation states +2, +3, +4, +5

electron configuration 2–8–11–2

orbit K L M N
vanaspati  A hydrogenated vegetable oil; a 100% fat-type margarine. Clarified butter made from vegetable (often palm oil) oil

van der hum  A liqueur made from brandy and flavored with fruit (e.g., bitter orange, tangerine) and herbs

vandermint  A liqueur flavored with mint and chocolate

vanilla (Epidendrum vanilla; Myrobroma fragrans; Vanilla aromatica; V. fragrans planifolia; V. f. variegata; V. planifolia; V. pompona; V. tahitensis)  A bean seed pod (6-10 inches long and ¼-½ inch thick) or its alcoholic extract used in flavoring food. Bean (capsule) is triangulated, 10-25 cm × 5-15 cm and contains minute (0.3 mm) globose seed.

Pod curing: dip in boiling water and slow dry (black in color) and pack in foil-lined boxes

Extract (alcohol) of fermented vanilla bean used for flavoring.

Physical forms:
- Cuts—short lengths or very small, whole beans
- Splits—partially split longitudinally
- Whole bean
- Bundles of beans: 70-130 beans, 350-500 grams; box 40 bunches

Vanillin (2-3%): main flavoring component;

2 tbsp of extract = 1 ounce

Vanilla types:
- Bourbon (V. fragrans)—deep body; less aroma
- Indonesian (V. fragrans)—full body
- Mexican (V. fragrans)—superior flavor and aroma

Grades:
- Extra—35-40% moisture
- Superior
- Good-superior
- Good
- Medium—good
- Medium
- Ordinary—10% moisture

South American (V. fragrans)—deep body; less aroma

Tahiti (V. tahitensis)—lower vanillin content; floral—sweet aroma

West Indian (V. fragrans)—deep body; less aroma

See also vanilla

See Part 2: Flavor Ingredients, Taste and Flavor Type

vanilla absolute  Semisolid absolute is obtained by alcohol extraction of vanilla bean and removal of the solvent or by alcohol washing of an oleoresin.

1 gram vanilla absolute = 7-13 grams of vanilla bean

vanilla bean  Cured and dried fruit of Vanilla planifolia and Van. tahitensis. Moisture max. 25%

vanilla extract  A product made by chopping cured vanilla beans in 50% alcohol and subsequent percolation; in 100 cc must be the soluble matter from at least 10 grams of vanilla bean; vanillin 0.10-0.35%; ash 0.20-0.43%. Flavor of extract improves with age; intensifies flavor of food to which it is added; sometimes contains sugar. Quality depends on grade of alcohol, grade of beans, length of aging extract, and method of curing. Minimum 35% ethyl alcohol. Other permitted ingredients: corn syrup, dextrose, propylene glycol, sugar (including invert sugar), water, and glycerin

Singlefold (approximately 0.2% vanillin)—100 cc alcohol + 10 g beans
Doublefold—100 cc alcohol + 20 g beans
Fourfold—100 cc alcohol + 40 g beans

Types of extract

<table>
<thead>
<tr>
<th>Types of extract</th>
<th>100 cc must contain soluble matter form</th>
<th>Volume of ethyl alcohol (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vanilla, concentrated</td>
<td>100 g of beans</td>
<td>30</td>
</tr>
<tr>
<td>Vanilla 4x strength</td>
<td>40 g of beans</td>
<td>35</td>
</tr>
<tr>
<td>Imitation vanilla</td>
<td>5% true vanilla extract mixed with vanillin and coumarin</td>
<td></td>
</tr>
</tbody>
</table>

vanilla extract, artificial (vanillin and coumarin)  Chemically similar to natural vanilla except it lacks the natural resin and gums. It evaporates slower on cooking and freezing.

vanilla extract, concentrated  Concentrated vanilla extract prepared by removing part of the solvent. Same alcohol content as vanilla extract (not less than 35%)

vanilla flavoring  Similar to vanilla extract except it contains less than 35% alcohol by volume

vanilla flavoring, concentrated  Concentrated vanilla flavoring prepared by removing part of the solvent. Same alcohol content as vanilla flavoring (less than 35%)

vanilla, imitation  Has a sharper and less subtle flavor than the natural product

vanilla oleoresin  A semisolid concentrate prepared by complete removal of the solvent (ethanol or isopropanol is often used) from vanilla extract. Inferior in flavor and aroma to vanilla extract. For use as flavoring the oleoresin is diluted 1-, 2-, or 10-fold as required

vanilla powder  1) Pure powdered vanilla (bean). 2) Usually a mixture of vanilla powder and/or vanilla oleoresin with sugar (usually a minimum of 30%) or dextrose or lactose or food starch or dried corn syrup or gum acacia and sometimes an anticaking agent such as 2% aluminum calcium silicate

vanilla sugar  Sugar flavored with vanilla bean by packing both in a closed container; vanilla powder (minimum 25%) and sucrose; sugar flavored with vanilla used in cooking and for sweetening fruit

vanilla tincture  Similar to vanilla extract except it may contain sugar, is prepared with perfume alcohol, and has an alcohol content of at least 38% (usually 90%)

vanilla tincture, perfumery  Prepared by maceration of bean with perfume alcohol; alcohol content approximately 90%

vanilla unit  Total rapid and odorous principle extractable from one unit weight of vanilla bean by an aqueous alcohol solution in which the content of ethyl alcohol by volume amounts to not less than 35%
vanilla-vanillin extract Dilution of vanilla oleo-resin with synthetic vanillin
vanilla-vanillin flavoring Dilution of vanilla oleo-resin with synthetic vanillin; alcoholic content less than 35%
vanilla-vanillin powder Vanilla-powder fortified with synthetic vanillin
vanilla wafer A cookie
   1 cup, finely crushed = 22–30 cookies
   1 cup, coarsely crumbled = 20 cookies
   1 ½ inch cookie = 20 calories
See Part 2: Grain Products Composition
vanillin

\[ \begin{align*}
  \text{C} & \quad \text{O} \\
  \text{H} & \quad \text{OCH}_3 \\
  \text{OH} &
\end{align*} \]

The primary flavoring ingredient in vanilla; obtained by extraction from vanilla beans or from lignin in sulfite waste liquor
   1 part = 400 parts vanilla pods
   2–3 parts = 500 parts tincture vanilla
Storage: tight container in a dark place
See also vanilla
vapid Loss of flavor and quality; absence of character; insipid; flat
vapor drift Movement of vapors from area of application
vaporization Conversion of a liquid to a vapor by heat; for water latent heat of vaporization is 540 calories per gram
See heat of vaporization
See Part 2: Temperature of Vaporization, Latent Heat of Vaporization, Boiling Point
vaporization point The temperature at which a liquid turns to a vapor
See also boiling point
vapor pressure Pressure exerted by the evaporation of molecules from a liquid at a given temperature; when the vapor pressure reaches the atmospheric pressure the liquid boils
See Part 2: Ice, Vapor Pressure
varec (kelp) Ash obtained from a seaweed from which iodine is extracted
varenetz Yogurt
varenukha Yogurt
varhia Yellow, dried cereal or legume balls that are deep-fat fried
variable In inspection, it is a quality characteristic of an item or sample that is measured
variable levy An import charge that varies depending on prices within and outside the EEC
variance \((\sigma^2)\) Variation of observations; it is the square of the standard deviation estimation; estimated by mean square
variant Minor difference from the species

variety Plant that is bred or selected, generally uniform, and breeds true from seed. A variety from a crossing program is called a cultivar. Prior to release a variety is called a genetic line
variety meat (offal; organ meat, side meat) An edible organ or gland; edible offal
Types:
   Brain
   Hearts
   Hog intestines (chitterlings)
   Kidney
   Livers
   Oxtail
   Pancreas (sweetbread)
   Pig’s Feet
   Pig’s tails
   Spleen (melt)
   Stomach wall (tripe)
   Testicles (fries)
   Thymus (veal sweetbread)
   Tongue

Walls of stomach
"With variety meats" label—sausage consisting of not less than 15% of one or more kinds of raw skeletal muscle meat
Storage: Coldest part of refrigerator; use within 1–2 days.
See Part 2: Animal Foods, Composition; Meat Storage; Pork Storage; Storage Times; Variety Meat, Cooking; Variety Meat Percentage of Daily Recommended Allowances; Variety Meat Preparation; Vitamin A, Food
varkensvlees Pork
varmkorv A moist, cooked, smoked Swedish sausage made from finely chopped, mildly seasoned (potato starch, skimmed milk powder) beef and pork and stuffed into peelable sheep casings
varnish Oleoresinous (oil base) or synthetic resin used on the exterior of food containers
varumi Wine fermented from dates \((Phoenix dactylifera)\) See khar-jura
varzi A salami made from coarsely chopped pork or pork and beef
vascular Blood vessels
vascularization A system or degree of arrangement or a pattern of blood vessels
vas deferens The single tube that transports sperm from the epididymis to the urethra during ejaculation
Vaseline (petroleum jelly) A proprietary name for a purified mixture of hydrocarbons distilled from petroleum
See petroleum
vaslerbottensost (West Bothian) A hard, pungent, bitter, aged cheese; strong, sometimes spiced cheddar cheese; a hard, pungent, cow’s milk cheese that is cured 8–12 months
vaso- Prefix for structures such as a vessel or a duct
vasoconstrictor A chemical or mixture that reduces the diameter of certain blood vessels, thus restricting proper circulation
vasoconstrictor The reverse of vasoconstrictor
vastgotaost (West Gothland) A semihard, pressed, Swiss cheese made from cow’s milk and cured 4–6 months
**veals intermedius**

*See quadriceps*

**veals lateralis**

*See quadriceps*

**veals medialis**

*See quadriceps*

**VAT** Value added tax

**vatika** Deep-fried cakes or balls of spiced lablab bean (*Dolichos lablab*)

**vatrushki** Open-topped; cheese-, fish-, meat-, and sometimes fruit-filled, fried, open-topped, wheat flour, dough pie

**vatayappam** A steamed rice bread that contains coconut and cumin

**VDT** Video display terminal

**veal** Young bovine flesh from 3–14 weeks old at slaughter; carcass weight up to 150 kg; no permanent incisors; steak or large chop, either with or without bone; flesh is light in color and contains little marbling; high in moisture

Cooking temperature:
- Medium—160°F
- Well done—170°F

Composition (cooked, lean): sodium 69 mg/3 ounces (85 grams); cholesterol 84 mg per 3 ounces

See Part 2: Animal Foods, Composition; Braising Time; Bone; Calories, Daily Recommendations; Cattle; Cholesterol Control; Cooking in Liquid, Time; Food, Composition; Frozen Food Storage; Grades, Meat; Iron, Daily Recommendations; Liver; Meat and Meat Products Composition; Meat Composition; Meat, Frozen Storage; Meat Identification; Meat Label; Meat, Nutritive Value; Meat Storage; Minerals, Food; Nicacin, Daily Recommendations; Riboflavin, Daily Recommendations; Roasting Meat; Roasting, Time and Temperature; Sausage Identification; Simmering Meat; Thiamin, Daily Recommendations; Thiamin, Food; Veal Chart; Veal Cuts; Veal Cuts and Uses; Veal Roasting; Veal Wholesale Cuts; Vitamin A, Food

**veal back** A wholesale cut of veal from the fourth rib to the hip bone

**veal chuck** A wholesale cut of veal consisting of all in front of the fourth rib; sides may be split or unsplit

**veal cutlet** A veal round steak

See Part 2: Braising Meat

**veal German sausage** A moist, cooked, unsmoked Australian sausage made from finely chopped, mildly seasoned (with or without garlic) veal and stuffed into artificial casings

**veal infusion medium** See Part 2: Microorganism, Media

**veal leg** A wholesale cut of veal consisting of the area to the rear of the hip; sides may be split or unsplit

**veal loaf** A cooked meat specialty made primarily with veal and some pork

**veal loaf, jellied** Cooked veal, shredded and molded with gelatin and cooked in loaf or roll shape

**veal rib back** A wholesale cut of veal consisting of the unsplit ribs (fourth through twelfth rib)

**veal shoulder** See veal chuck

**veal steak** See Part 2: Braising Meat

**vegans (pure vegetarians)** A strict vegetarian diet; vegans will consume only plants (no animal source foods); purists will eat only raw plants

**vegetable** A botanical organism or species of any type, including trees, shrubs, grasses, etc. In common usage, any plant used for food by humans or animals. Average 25 calories per serving

USDA grades for canned, frozen, or dried:
- US Grade A
- US Grade B
- US Grade C

USDA grades for fresh:
- US Fancy
- US No. 1
- US No. 2

16 ounce can (most vegetables) = 3–4 servings

See Part 2: Ascorbic Acid; Calcium; Calcium, Daily Recommendations; Calories, Daily Recommendations; Food, Composition; Food Guide; Frozen Food Storage; Fruit and Vegetables Composition; Fruit and Vegetable, Diseases; Frying Time; Glutamate; Iron, Daily Recommendations; Microwave Cooking, Fresh Vegetables; Microwave Cooking, Frozen Vegetables; Microwave Processing Time; Minerals, Plant or Animal Tissue; Minerals (Trace), Limits; Moisture in Biological Materials; Mold, Food; Nicotinic Acid, Food; Nitrate, Vegetables; Nutrients in Crops; Organic Acids in Fruit and Vegetables; Portion Size; Potassium-Rich Foods; Riboflavin, Food; Rot Spoilage; Soups, Composition; Standards, Processed Fruit and Vegetable Products; Storage Times; Thiamin, Daily Recommendations; Thiamin, Food; Vegetable Boiling; Vegetable Composition; Vegetable Cooking, Frozen; Vegetable Frozen Yield; Vegetable Plants; Vegetables, Boiling Time, Frozen; Vegetables, Canning Dates; Vegetables, Canned Grade; Vegetables, Classification; Vegetables, Cooking Frozen; Vegetable Servings; Vegetables, Panned; Vegetable Storage; Vegetable Yield, Canned and Frozen; Vegetable Yield, Frozen, Canned and Fresh; Vegetable Yields; Vitamin A, Daily Recommendations; Vitamin A, Food

**vegetable beef, soup**

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<tr>
<th>Composition</th>
<th>Dehydrated</th>
<th>Prepared with water</th>
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<tr>
<td>Moisture (%)</td>
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<tr>
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<td>Fat (%)</td>
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<td>Ash (%)</td>
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</table>

**vegetable black** Vegetable charcoal

**vegetable, chunky, canned soup**

Composition (ready-to-serve): moisture 87.6%; protein 1.5%; fat 1.5%; carbohydrate 7.9%; fiber 0.5%; ash 1.5%

**vegetable coloring** Coloring obtained from natural vegetables; commercially available in both liquid and paste forms; e.g., green—spinach; red or pink—beet
**vegetable, cream of, soup**

<table>
<thead>
<tr>
<th>Composition</th>
<th>Dehydrated</th>
<th>Prepared with water</th>
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<tbody>
<tr>
<td>Moisture (%)</td>
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<tr>
<td>Protein (%)</td>
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<td>Fat (%)</td>
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<td>Carbohydrate (%)</td>
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<td>Fiber (%)</td>
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<tr>
<td>Ash (%)</td>
<td>12.9</td>
<td>1.2</td>
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</tbody>
</table>

**vegetable crisper**  See hydrator  
**vegetable, dehydrated** Maximum moisture level 14–20%

**vegetable fat** Naturally occurring or refined and processed fat from any vegetable or plant source; may be edible or inedible. Cooking, 1 tbsp = 110 calories  
See Part 2: Fats and Oils, Composition; Oils and Fats  
Composition; Saturated Fatty Acids

**vegetable flakes, dehydrated** A blend of celery, green sweet pepper, onion, parsley, and red sweet pepper

**vegetable, frozen** Common package sizes (ounces): 8, 9, 10, 12, 16, 24, and 32 (large plastic bags)

**vegetable gelatin**  See agar-agar

**vegetable gold**  See saffron

**vegetable grade**  See saffron

**vegetable juice**  1) Juice extracted from various vegetables in a water solution. Can be used as a natural food additive to color food; in contrast to vegetables, is low in fiber content. 2) Freshly squeezed juice from uncooked vegetables used as a beverage  
Types available: 
- Unmixed (pure)  
- Blends—two or more vegetable juices  
- Mixtures—vegetable juice and fruit juice  
Vegetables often used include beets, cabbage, carrots, celery, lettuce, parsley, spinach, tomato, and sauerkraut

**vegetable juice cocktail** Juices of tomato, carrots, celery, and parsley, seasoned with salt

**vegetable marrow (Cucurbita pepo)** A summer variety of squash.  
Types: 
- Avocadella  
- Cocozele  
- Courgettes  
- Vegetable spaghetti  
- Zucchini  
See marrow; salsify

**vegetables, mixed**  See Part 2: Vegetable Composition, Part I

**vegetable oil** An oil obtained from plants containing one or more fatty acids; many types are edible and are used as food and for cooking; 440–460°F smoke point for hydrogenated oil; e.g., coconut, corn, cottonseed, peanut, safflower, soybean, sunflower.  
½ cup, vegetable oil = 1 cup, butter for shortening  
Composition: sodium 0 mg  
See salad oil  
See Part 2: Tocopherols

**vegetable oyster**  See salsify

**vegetable peach**  See mango melon

**vegetable pear (chayote; christophine)** A 6-inch, green, spiny, ribbed, pear-shaped vegetable with firm white flesh that grows on a vine  See chayote

**vegetable seed** Kernel of plant that can be sowed to reproduce the plant; storage: 32–40°F, 50–65% relative humidity

**vegetable shortening** A fat from plants; used for cooking; 420–440°F smoke point. Storage: hydrogenated type—covered at room temperature; unopened—room temperature; opened—refrigerate

**vegetable spaghetti** A summer squash grown (110 days) like a marrow squash; 25–45 cm fruit borne on a trailing growth. When the whole squash is boiled 30 minutes, the inside can be removed as long strands that look and taste somewhat like spaghetti but are low in calories. 180 seeds per ounce

**vegetable tanning** Converting hides and skins into leather by treatment with tannins derived from plants, e.g., quebracho, wattle, etc. See also tanning

**vegetable, vegetarian, canned soup**

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<td>Protein (%)</td>
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<tr>
<td>Fat (%)</td>
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<td>Carbohydrate (%)</td>
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**vegetable with beef broth, canned soup**

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<tbody>
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<tr>
<td>Protein (%)</td>
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<td>Fat (%)</td>
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<td>Carbohydrate (%)</td>
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<tr>
<td>Fiber (%)</td>
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<td>0.3</td>
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<tr>
<td>Ash (%)</td>
<td>2.1</td>
<td>1.0</td>
</tr>
</tbody>
</table>
vegetable with beef, canned soup

vegetable yield  See Part 2: Vegetable Yields

vegetarian  A person who does not eat any animal food and consumes only products of the vegetable kingdom; some will eat butter, eggs, and milk, because these involve no slaughter; others will eat fish; some will also exclude underground roots and tubers; a few will not eat cooked foods

vegetarian, lacto  Eat dairy products as well as plant foods. Many Seventh-Day Adventists practice this type of vegetarianism

vegetarian, lacto-ovo  Consume eggs, dairy products, and plant foods

vegetative cell  See Part 2: Thermal-Death-Time Curve

vein  Vessel that conveys blood to the heart

veloipysla  A moist, cooked, smoked Icelandic sausage made from finely chopped, medium seasoned beef and pork made with pork fat added and stuffed into artificial casings

velitchberry  A hybrid of blackberry and raspberry. A fruit similar to loganberry

velometer  An instrument used to measure air flow or draft and suction

veloute  A rich, white sauce

terolade  An Italian wine produced in the area between Lake Garda and Lake Verona (northern Italy)

velva fruit  An ice cream with a very smooth texture

velvet bean  (Mucuna pruriens)  A perennial legume used for animal feed and green manure; 1.8 pounds per quart; 60 pounds per bushel. Dry seeds are used as a pulse. Varieties: bunch, osceola, speckle

velvet bean caterpillar  A worm that eats the top leaves of soybean plants. A peanut pest

velvet bent  (Agrostis canina)  A grass sometimes used on putting greens

velvetgrass  See Part 2: Seed, Germination

velvet spirit  See silent spirit

venaco  A salty, square-shaped, blue cheese made from sheep's or goat's milk

venae cavae  The three large main veins taking blood to the right auricle of the heart

venalainsa meetwurst  A salami made from coarsely chopped beef and pork and sometimes horse meat

vendace  (Coregonus albus)  A food fish

vendome  A soft, thick, cylinder-shaped cheese made from cow's milk with rennet added

vendor  A company or individual that supplies goods or services

vendor lead time  The time that elapses between the time an order is received by a supplier and production of the material

vendor scheduling  A purchasing approach that provides vendors with schedules rather than individual purchase orders

veneto  A hard, dry, sharp, bitter-flavored, grating cheese made from cow's milk

veneto salami  A dry, uncooked, unsmoked Australian sausage (chorizo) made from medium chopped, heavily seasoned (red wine, crushed peppercorns), beef and fermented and stuffed into artificial casings

Venezuelan tachiras  Rich and flavorful smooth coffee with a fine aroma

venezza  See veneto

venison  The flesh of deer  See Part 2: Animal Foods, Composition; Minerals, Food

vent  Opening in a retort used to eliminate air during the venting period

ventral  Belly; stomach; opposite of dorsal

ventricle  Lower chambers of the heart, called right and left ventricles

verana  A fruit liqueur

verbena  (Verbena officinalis)  A plant whose pale green leaves contain aromatic lemon-flavored oils  See Part 2: Essential Oils

verdicchio  A straw-colored, dry wine, made from Verdicchio grapes and placed in an amphora-shaped bottle; grapes grown in east central Italy

verduzzo  A white, Italian wine

verjuice  An acid juice from crab apples or unripe grapes used as a drink or for culinary purposes

vermicelli (angel hair; extra thin spaghetti)  A macaroni product, cord-shaped, not tubular and not more than 0.06 in. in diameter. Fine spaghetti and cheese; egg yolks and saffron are often added in the manufacture; sometimes up to 20 strands are twisted together  See also spaghetti

vermiculite  A hydrated metallic silicate that expands on strong heating. Used as feed additive, insulation, soil conditioner, and to improve drainage. Can hold 2-3 times its weight in water  See Part 2: Insulation

vermifuge  A substance used to destroy or expel worms

vermillion snapper  A light meat, light to moderate flavor, finfish

Vermont cheese  A smooth, off-white, sharp, aged, cheddar cheese that has a black waxed rind; sometimes flavored with caraway or sage

vermouth  (vermouth)  A fortified spice- and herb-flavored wine. An alcoholic beverage; wine base; sweetened with sugar syrup (3-20% sugar); fortified with brandy; flavored with aromatic herbs; 14-20% alcohol by volume.

Types:

French—light, dry
Italian—dark, sweet

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<td>Carbohydrate (%)</td>
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<tr>
<td>Ash (%)</td>
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### Vernaccia di San Gimignano
A dry, white wine produced in west central Italy.

### Vernaccia
A dry, appetizingly bitter, Sardinian aperitif wine made from Vernaccia grapes.

### Vernier (caliper)
An auxiliary scale used to obtain fine adjustment or measurement.

### Veronique
A meat or seafood dish with white grapes.

### Verseworst
"Fresh sausage" made from medium or coarsely chopped beef and pork and stuffed into pork casings.

### Verterbrae
The bones of the spinal column.

<table>
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<tr>
<th>Cervical</th>
<th>Thoracic</th>
<th>Lumbar</th>
<th>Sacral</th>
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<td>Sheep</td>
<td>7</td>
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<td>4–5</td>
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</table>

### Vertical integration
A situation where two or more firms at different stages of production and processing-marketing combine under a single management.

### Vertical neck ring seam
The vertical mark on the glass neck surface of a container caused by joining two parts of the neck ring when the container was made.

### Verticillium wilt
1) A fungus (*Verticillium albo-atrum*) disease that affects the roots of apricot, blackberry, cherry, nectarine, peach, plum, raspberry, strawberry, tomato, and many common plants and weeds. Causes branches to wilt starting at base. Fumigation of the soil is a possible method of prevention. 2) Soil-borne fungus affecting raspberries in northern U.S. and Pacific coast areas. Leaves turn yellow and wither; symptoms develop first on lower leaves and continue up the cane until the entire cane turns blue and dies.

### Vertisol
Dark gray and black heavy clay soils of the subtropics and tropics.

### Vervain (herb of good omen)
An herb used for medical purposes.

### Vesicular
Glands on either side of the ampullae that secrete a fluid that supplies energy for sperm cells.

### Vesiga
A fish gelatin obtained from the spinal marrow of the sturgeon.

### Vetch (tare; *Vicia* spp.)
An annual leguminous grass; in some areas seeds are used as food.

**Species:**
- Common—*V. sativa*
- Hairy—*V. villosa*
- Hungarian—*V. pannonica*
- Monanthis—*V. articulata*
- Narrow leaf—*V. angustifolia*

### Vichy
1) A mineral water from France. 2) An effervescent, carbonic acid water. 3) A carrot and cream garnish.

### Vichysoise
A potato soup containing chicken broth and onions (leek); served cold.

### Victoria cheese
A cream cheese.

### Victoria hog
A breed of small hogs of combined blood of Berkshire, Chester White, Poland China, and Suffolk.

### Victual
Food for human consumption.

### Vicius
Diet, food.

### Vicugna (vicuna)
A ruminant animal similar to the llama that measures about 2 1/2 feet to the shoulder; native to South America.

### Vidalia onion
A yellow, hybrid granex grown in a specific area of Georgia.

### Vidonia
A dry, tart, fruity, Madeira wine.

### Vienesa
A moist, cooked, unsmoked Mexican sausage made from finely chopped, mildly seasoned beef and pork and stuffed into artificial casings.

### Vienna bread
An oval-shaped, crusty loaf of French bread made by adding milk when the bread is kneaded.

### Vienna roast (New Orleans roast)
See coffee.

### Vienna sausage
Lightly smoked frankfurters often canned in a weak brine. A moist, cooked, smoked or unsmoked American sausage made from finely chopped, mildly seasoned beef, pork, and veal and stuffed into pork, sheep, or artificial casings and canned in vinegar, water, or various sauces. Available in medium to large diameter links or large diameter casings for slicing or cocktail type, 2 inch sausages packed in cans in water or brine.

**Composition:**
- Moisture 60%; protein 10.3%; fat 25.2%; carbohydrate 2%; ash 2.5%; sodium 152 mg per link (16 ounces)

See frankfurter.

See Part 2: Meat Composition; Sausage Identification; Sausage, Types.
Viennese frankfurters. A moist, cooked, smoked or unsmoked Australian sausage made from finely chopped, mildly seasoned, beef, lamb, and pork and stuffed into pork or sheep casings.

vieux thibar. A white or red wine.

vignals gaufrettes. A cracker.

viili. A thick,ropy,fermented,low-medium acid,cow's milk; usually consumed fresh.

villany. A red wine.

villebaron. A soft cheese made from cow's milk.

villedieu. A cow's milk cheese.

villefroi (villeroy). Food mixed with mushrooms or truffles and bread crumbs and deep-fried.

villi. Projections in the inside of the small intestine; small fingerlike protrusions that increase surface area and absorption ability.

vimba (Vimba vimba). A food fish found in the Baltic, Mediterranean, and Caspian Seas.

vinaigrette. Sauce or dressing made from oil, pepper, salt, and vinegar. Many variations of additional seasoning or herbs.

vinaigrous. Sour.

vinarpylsur. A moist, cooked, smoked Icelandic sausage made from finely chopped, medium seasoned, beef and lamb with pork fat added and stuffed into sheep or artificial casings.

vinasse. Residue of beet sugar or wine manufacturing.

vine. The stem of a plant that requires support to stay off the ground, e.g., grape vine (Vitis vinifera).

vinegar. A sour solution produced by exposing an alcoholic liquid to air; a surface film appears, and the alcohol is oxidized to acetic acid by Acetobacter organisms. Film is a viscous gelatinous Zooglea containing a large number of organisms. Dilute acetic acid solution (3.24-9.96 grams per 100 milliliters); made from fruit or grain (in the United States from cider only); min. 4% by weight of absolute acetic acid; acetic acid (4-12%) solution; sp. gr. 1.013-1.024. Made by double fermentation.

\[ C_6H_{12}O_6 \xrightarrow{\text{yeast (type depends on sugar)}} C_2H_3CH_2OH + 2CO_2 \]

\[ 2CH_3CH_2OH + 2CO_2 \xrightarrow{\text{Acetobacter}} 2CH_3COOH + 2H_2O \]

Min. 4 grams acetic acid in 100 milliliter solution

100 grains = 10% acetic acid
125 grains = 12.5% acetic acid

Class name for:

Apple vinegar
Cider vinegar
Glucose vinegar
Malt vinegar
Spirit vinegar
Sugar vinegar
Wine vinegar (grape vinegar; from distilled grain alcohol)

Herb flavored

Fine herb (chive, oregano, parsley, peppercorn, rosemary, shallots, thyme)
Garlic–basil
Lemon–mint
Oregano–lemon
Tarragon–dill

To make 50 grain vinegar from 500 gallon (gal) of 120 grain vinegar:

\[
\frac{500 \text{ gal} \times 120 \text{ grain}}{50 \text{ grain}} = 60,000 \\
1,200 \text{ gal} - 500 \text{ gal} = 700 \text{ gal water to add} \\
700 \text{ gal water} + 500 \text{ gal} 120 \text{ grain vinegar} = 1,200 \text{ gal} 50 \text{ grain vinegar}
\]

pH range 2.3–3.4; white distilled vinegar pH 2.3–2.6; cider vinegar pH 3.0–3.3

Use: seasoning; used to lower pH of salad dressings. Wine vinegars are milder than white vinegars.

1 cup = 8.4 ounces

Composition: moisture 94–95%; trace protein; fat 0%; carbohydrate 5–6%; ash 0.3%; pH 2–3.4; sodium 1 mg per 0.5 cup (120 grams)

Cider vinegar

<table>
<thead>
<tr>
<th>Kilocalories</th>
<th>1 lb</th>
<th>1 gal</th>
<th>1 lb</th>
<th>1 gal</th>
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<tbody>
<tr>
<td>Moisture (%)</td>
<td>94</td>
<td>94</td>
<td>93</td>
<td>93</td>
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<tr>
<td>Protein (g)</td>
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<tr>
<td>Fat (g)</td>
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<td>0</td>
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<tr>
<td>Carbohydrate (g)</td>
<td>26.8</td>
<td>225</td>
<td>22.7</td>
<td>192</td>
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<td>Fiber (g)</td>
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<tr>
<td>Minerals (mg)</td>
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<tr>
<td>Na</td>
<td>55</td>
<td>462</td>
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<td></td>
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<td>—</td>
<td>—</td>
<td>trace</td>
<td>trace</td>
</tr>
<tr>
<td>Fe</td>
<td>2.7</td>
<td>22.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Up to 75 grain—8.40 pounds per gallon
76–125 grain—8.45 pounds per gallon
126–175 grain—8.50 pounds per gallon
176–225 grain—8.55 pounds per gallon
226–275 grain—8.60 pounds per gallon
276–325 grain—8.65 pounds per gallon
326–375 grain—8.70 pounds per gallon
376–425 grain—8.75 pounds per gallon

See acetic acid; apple vinegar; corn sugar vinegar; distilled vinegar; fermented vinegar; grain (vinegar); grape vinegar; malt vinegar; mother; sugar vinegar; tarragon vinegar

See Part 2: Herb Vinegars; Minerals, Food; Spoilage, Carbohydrate Foods; Vinegar, Spiced
vartin cured fish  See  acid cured fish
vartin, powdered  Vinegar added to dextrin or modified food starch
vine leaves  See  grape leaves
viner  A machine used to separate peas from pea plants
vine vegetables  Examples are cucumber, gourd, muskmelon, pumpkin, squash, watermelon
vineyard  A field of grape vines
vineyard dressing  A dressing made with claret, garlic, olive oil, paprika, salt, tabasco sauce, and yogurt
vinho verde  Red or white carbonated wine made from the juice of just ripe grapes
viniculture  The science of the production of grapes for wine
vinjak  Brandy distilled from fermented grapes
vinometer (oenometer)  An instrument used to measure alcohol in wine
vino nobile di Montepulciano  A dry, red wine produced in west central Italy
vino santo  A dessert wine
viscosity  Fruit or wine of any given season
vinyl  The CH$_2$=CH$-$ group
vinyl can coating  A coating that is tough and free from off-flavors. Good for low-temperature pasteurized foods that are sensitive to metals
vinylidene chloride  (CH$_2$=CCl$_2$) The monomer from which polyvinylidene chloride is made. The latter is used as a plastic film in heat-shrinkable bags and as an oxygen barrier in food packaging
vinyl resins  Resins made from vinyl acetate

(\text{CH}_3\text{COOCH} = \text{CH}_2)

and vinyl chloride (\text{CH}_2=\text{CHCl}) or other modified vinyls
violet  A flower that is candied for food or garnish
Violet No. 1  An FD & C dye formerly used for meat inspection stamps; FDA prohibited its use in 1973
violet-red bile agar  A solid medium for coliform testing
See Part 2: Microbiological Examination of Dairy Products; Microorganism, Culture Media, Dairy and Food Products; Microorganism, Selective and Differential Broths and Media, Water Filtration Plant
Virginia date plum  See  persimmon
Virginia ham  A country ham coated with pepper See  Smithfield ham
virginiamycin  A drug to promote growth, improve feed efficiency, and treat dysentery
virgin olive oil (sublime olive oil)  Edible olive oil made from hand-picked ripe olives and extracted by using moderate pressure
virgin wool  Wool that has never been used in fabrics

\text{vitamin A (retinol)} 799

virulence  The capacity of a given strain or pure culture of a species to produce a disease
\text{virus}  A parasitic type of infectious agent composed of proteins and nucleic acids. They are not actual organisms, because they do not metabolize nutrients or utilize oxygen. Replicates or reproduces only within a living host cell and diverts the metabolism of the host cell to reproduction of viral particles. Only visible by electron microscope. DNA or RNA in a protein capsid (covering); usually spread by minute traces of contaminated material; usually highly contagious
\text{viscera}  The internal organs of slaughtered animals. All the organs of the great body cavity excluding the contents of the intestinal tract; intestines; bowels
\text{visceral muscle}  Involuntary, nonstriated muscle of the intestinal tract type
\text{viscogen}  A mixture of lime (CaO), sugar, and water used as a thickening agent for whipping cream
\text{viscometer (viscosimeter)}  An instrument for measuring viscosity
\text{viscose}  Regenerated cellulose
\text{viscosimeter}  A gravity device for measuring viscosity by measuring the length of time for a liquid to pass through an orifice See  viscometer
\text{viscosity}  A measure of the tendency for relative motion of the molecules within a fluid, or its internal resistance to flow. Degree of fluidity or ability to flow; property of a fluid to resist flow; fluidity. Increased viscosity in fats is caused by breakdown, polymerization, oxidation, gumming, and foaming
\text{viscous}  Sticky; gummy; resistant to deformation or flow; thick
vishnevaia  A cherry brandy made from vodka
vishnyovka  A cherry-flavored vodka
\text{visible light}  That portion of the electromagnetic spectrum that is perceived as light See  Part 2: Waves, Energy-Producing
\text{vital wheat gluten}  Wheat gluten processed to retain its viscoelastic properties. Used in bakery and breakfast foods
\text{vitamin}  An organic compound that is necessary in the diet but is required only in minute amounts for normal functioning of the body. Dietary constituents essential in small quantities to maintain life; they are governors and regulators of life-sustaining processes. They are produced by plants and animals in nature; most have been synthesized
See  Part 2: Cereal Enrichment; Cereal Fortification; Cereals, Vitamin and Mineral Content; Cheese, Vitamin Content; Egg Products, Nutritive Value; Vitamin Retention, Meat; Vitamins; Vitamin Sources, Functions, and Stability; Wheat, Parts of Grain, Vitamins; Wheat Products Composition; Wheat, Vitamins
\text{vitamin A (retinol)} (\text{C}_{20}\text{H}_{30}\text{OH}) A fat-soluble vitamin; a high molecular weight alcohol; physiological function: growth-promoting, prevents drying of mucous membranes, essential to reproduction, plays a role in night vision; young mammals are born with
limited amounts of vitamin A

\[
\text{CH}_3\text{CH}_3\text{H} = \text{CH}\cdot\text{C}=\text{C} - \text{CH} = \text{CH} = \text{C} = \text{CH} \cdot \text{C} = \text{C} = \text{C} = \text{C} = \text{CH} = \text{CH}_3
\]

\text{vitamin A}_1

\[
\text{CH}_3\text{CH}_3\text{H} = \text{CH}\cdot\text{C}=\text{C} - \text{CH} = \text{CH} = \text{C} = \text{C} = \text{C} = \text{C} = \text{CH} = \text{CH}_3
\]

\[\beta\text{ carotene}\]

Good sources: apricots, fish liver oil, milk and milk products, egg yolks, liver, green and yellow vegetables, oranges, peaches, sweet potatoes, tomatoes

Poor sources: cereal grain (except yellow corn)

Vitamin A usually occurs in nature as a provitamin in the form of \(\alpha\)-, \(\beta\)-, \(\gamma\)-carotene or cryptoxanthin, which is converted in the animal body (liver) to vitamin A. 1 mg of carotene = 400 I.U. of vitamin A.

Necessary for: function of sweat glands, nerve tissue, and receptor cells of sense organs; used as a nutrient or dietary supplement, food additive for milk, margarine, and cereals, and used to maintain or improve nutritional value.

Vitamin A occurs only in foods of animal origin; however, plants contain a substance called carotene that the body can convert to vitamin A.

1 I.U. (or USP) vitamin A
- 0.3 mg vitamin A alcohol (retinol)
- 0.344 mg vitamin A acetate
- 0.55 mg vitamin A palmitate
- 0.6 mg beta carotene

Toxic if taken in doses over 100,000 units per day for several months

Storage: tight container in the dark

See Part 2: Beans, Peas and Nuts; Cereal Fortification; Cereals, Vitamin and Mineral Content; Cheese Composition; Composition of Food; Dairy Products, Composition; Egg Composition; Egg Products, Nutritive Value; Fats and Oils, Composition; Fish and Shellfish Composition; Food, Composition; Food Guide; Fruit and Vegetables Composition; Fruit Composition; Grain Products Composition; Lemon Juice Composition; Macaroni and Noodles Composition; Meat Composition; Meat, Nutritive Value; Milk Composition; Olive Oil Composition; Olives and Pickles, Composition; Plant Foods, Composition; Poultry Composition; Recommended Daily Dietary Allowance; Sausage Composition; Soups, Composition; Sugars and Sweets Composition; Sweet Potato Nutritive Value; Tomato and Tomato Products, Composition; Variety Meat Percentage of Daily Recommended Allowances; Vegetables Composition; Vitamin A; Vitamin A, Daily Recommendations; Vitamin A, Fish; Vitamin A, Food; Vitamin A, Milk and Milk Products; Vitamins; Vitamin Sources, Functions, and Stability

\text{vitamin A acid} A compound in which an acid group replaces the alcohol group on the common vitamin A formula:

\[
\text{CH}_3\text{CH}_3\begin{array}{c} \text{CH} \cdot \text{C}=\text{C} - \text{CH} = \text{CH} = \text{C} = \text{C} = \text{C} = \text{C} = \text{CH} = \text{CH}_3 \end{array}
\]

\text{vitamin A aldehyde} A compound in which an aldehyde group replaces the alcohol group on the common vitamin A formula:

\[
\text{CH}_3\text{CH}_3\begin{array}{c} \text{CH} \cdot \text{C}=\text{C} - \text{CH} = \text{CH} = \text{C} = \text{C} = \text{C} = \text{C} = \text{CH} = \text{CH}_3 \end{array}
\]

\[
\text{OH}
\]

\text{vitamin B}_1 \text{ See thiamin}

\text{vitamin B}_2 \text{ See riboflavin}

\text{vitamin B}_3 \text{ See niacin; niacinamide; thiamin(e)}

\text{vitamin B}_5 \text{ See pantothenic acid}

\text{vitamin B}_6 \text{ See pyridoxine}

\text{vitamin B}_12 \text{ (animal protein factor; cobalamin; cyanocobalamin) } (C_{63}H_{90}CoN_{14}O_{14}P) \text{ A cobalt-containing member of the B complex; it is involved in anemia and growth; used in treatment of nerve disorders, e.g., tic douloureux}

Sources: variety and muscle meats

See Part 2: Beef Percentages of Daily Recommended Allowances; Cereal Fortification; Cereals, Vitamin and Mineral Content; Cheese, Vitamin Content; Eggs, Percentages of Daily Recommended Allowances; Meat, Nutritive Value; Milk and Milk Products, Vitamin Content; Milk Composition; Pork, Percentages of Daily Recommended Allowances; Recommended Daily Dietary Allowance; Variety Meat Percentage of Daily Recommended Allowances; Vitamins
vitamin B complex A large and closely interrelated group of water-soluble vitamins, each of which is different from the others; no one member of the group can replace any other. Among them are: B₁₂, nicotinic acid, pyridoxine, riboflavin, and thiamin

vitamin C (ascorbic acid; cevitamic acid) A food nutrient, antioxidant and preservative. Essential for blood vessels, bones, and teeth; deficiency causes scurvy; cannot be synthesized by the body. Available in citrus fruit. See ascorbic acid.

vitamin D (activated ergosterol; sunshine vitamin) A fat-soluble vitamin; it regulates calcium and phosphorus metabolism and therefore protects against a disease of the bones called rickets. Essential in bone and teeth building (proper absorption of calcium from intestinal tract). Vitamins D₁, D₂, and D₃ are food additives added to milk or cereals to maintain or improve nutritional value.

\[
\text{ultraviolet light} \quad \text{ergosterol} \quad \xrightarrow{\text{ultraviolet light}} \quad \text{calciferol} \quad \xrightarrow{\text{ultraviolet light}} \quad \text{(vitamin D₃)}
\]

Added to cereals, milk, and flour; used as a nutrient or dietary supplement.

Storage: tight container in a cool, dark place.

Food sources: butter, fish liver oils, egg yolk, irradiated + vitamin D-fortified foods, vitamin D-fortified foods, sunshine.

0.025 mg calciferol = 1 I.U.
1 I.U. of vitamin D = 0.025 mg cholecalciferol (D₃)
= 0.025 mg ergocalciferol (D₂)

See Part 2: Cereals, Vitamin and Mineral Content; Dairy Terms; Egg Products, Nutritive Value; Milk Composition; Recommended Daily Dietary Allowance; Vitamin D, Fish; Vitamin D, Food; Vitamins; Vitamin Sources, Functions, and Stability

vitamin E (X) Tocopherol; a fat-soluble vitamin that functions in promoting reproduction and growth; vitamin E activity in food is in the form of α-, β-, and γ-tocopherol. Acts as an antioxidant for fats and retards rancidity.

1 mg dl-α-tocopheryl acetate = 2 I.U.
1 mg dl-α-tocopheryl (alcohol) = 1.1 I.U.
1 mg d-α-tocopheryl acetate = 1.36 I.U.
1 mg d-α-tocopheryl (alcohol) = 1.49 I.U.

Sources: egg yolk; embryos of most seeds; lettuce; meat; milk; spinach; vegetable oils; wheat germ oils.

See Part 2: Cereal Fortification; Cereals, Vitamin and Mineral Content; Egg Products, Nutritive Value; Milk and Milk Products, Vitamin Content; Recommended Daily Dietary Allowance; Vitamins; Vitamin Sources, Functions, and Stability

vitamin E acetate Added to food as a source of vitamin E.

vitamin F Name once applied to essential unsaturated fatty acids (linoleic, linolenic, arachidonic); also applied to vitamin B₃.

vitamin G See riboflavin.

vitamin H See biotin.

vitamin K A fat-soluble vitamin that functions in the clotting of blood.

Sources: green plant tissues, soybeans, vegetable oils.
vitamin K₁ (C₃₁H₄₆O₂)

\[
\begin{align*}
\text{Menadione} & \quad \text{position 3} \\
-CH₂CH=CH(CH₂)₃CH(CH₂)₃CHCH₃ & \quad \text{K₁ to position 3} \\
-CH₂(CH=CHCH₂)₆CH=CHCH₃ & \quad \text{K₂ to position 3}
\end{align*}
\]

1 mg vitamin K₁
= 0.3 mg menadione
= 0.5 mg menadione sodium bisulfite

See Part 2: Vitamins; Vitamin Sources, Functions, and Stability

vitamin L See folic acid

vitamin M See folic acid

vitamin PP See niacin; nicotinamide

vitamin supplement A vitamin or combination of vitamins (and/or minerals) consumed to protect against inadequate intake or for special dietary needs

vitamin U See folic acid

vitellin A phosphoprotein found in egg yolk

vitelline membrane See Part 2: Egg Structure

viticulture Vine culture; the science of growing grapes

vitmogelost A camembert-type cheese made from cow’s milk

vittoria A creamy, semisoft, mild-flavored cheese ripened by surface bacteria

vives cendre A soft cheese made from cow’s milk and matured in wood ashes

vize A cow’s milk cheese

VJ agar See Part 2: Microorganism, Media

vobla (Caspian roach) A Russian food fish

vodka A distilled alcoholic beverage made from rye (or grain) or potatoes; it has no aroma or taste and therefore can be mixed with any flavor. Clear, high alcoholic (normal proofs 80, 86, 90, 105, 107, and 110), clean, sometimes flavored, distilled spirit beverage

1 fluid ounce = 28 grams
1 fluid ounce, 80 proof = 63 calories
86 proof = 70 calories
90 proof = 73 calories

Vogel and Johnson agar See Part 2: Microbiological Media

Vogelbeer A brand of beer made from rowan berries

void 1) To cast out. 2) A soft to semisoft, strongly flavored, cheese made from cow’s milk and ripened by surface bacteria

Volaille Poultry

volatile A substance that will evaporate when exposed to normal temperature and pressure; vaporizable; readily evaporated

volatile fatty acid A fatty acid that can be removed from solution by steam distillation; these include acids with chain length through capric; most prevalent are acetic, butyric, and propionic

volatile oil A substance that will evaporate rapidly; the part that codistills with water in steam distillation; responsible for the aroma, odor, and flavor found in the aqueous distillation of organic compounds of pure spices or flavorings. Constituents of a product (and changes that occur during distillation) that are volatile in steam and after distillation provide the essential oil. Content of volatile oil is measured by mixing the material with water and heating until it vaporizes (simple distillation) and then condensing the oil and measuring

Volatile oil steam distilled (VOSD) See Volatile oil

vol-au-vent A pastry shell filled with a stew of meat and eggs and often other ingredients

volnay A red wine

volt (V; E; emf) Measurement of electrical potential (E; pressure); a potential of 1 volt will cause a current of 1 amp in a resistance of 1 ohm. Voltage between two points = R ⋅ I (R = total resistance, I = amperes).

1 volt = 1 x 10⁸ abvolts, absolute
1 volt = 3.336 x 10⁻³ statvolts

volt, international
1 volt, international = 1.0003 volt, absolute, US

voltmeter An instrument for measuring voltage; should be connected in parallel

volt per inch
1 volt per inch
= 3.937 x 10⁻⁷ abvolts per centimeter
= 3.937 x 10⁻¹ volts per centimeter

volume The space occupied by a body

Volume of a sphere = \( \frac{4}{3} \pi r^3 \)
= \( D^3(0.5236) \)

Volume of right cylinder = \( \pi r^2h \)

Volume of right cone = \( \frac{1}{3} \pi r^2h \)

Gram molecular volume
= 22,412 cc at 0°C and 760 mm

See Part 2: Volume; Volumetric Solutions, Temperature Corrections

volumetric analysis An analysis in which results are based upon volume (usually the volume of a solution of known strength that reacts with the substance being analyzed)

voluntary muscle See striated muscle

vomiting Forcible expulsion of stomach contents through the mouth

vone A sorghum beer

voros A medium-bodied, pleasantly dry, red, Hungarian wine
vorosaru (red sausage) A moist, cooked, smoked Hungarian sausage made from medium seasoned beef and pork and stuffed into artificial casings

VOSD Volatile oil steam distilled See volatile oil

vosne romanee A red wine

vossakorv A moist, cooked, smoked Norwegian sausage made from coarsely chopped, heavily seasoned beef, lamb, pork, and goat and stuffed into beef casings

Votator A proprietary name for a heat-exchanger; in fat processing, a chilling machine that solidifies fat that is subsequently removed by scraper blades. Equipment or process that adds air or gas and gives desired plasticity

vouvrely A sweet or dry, sparkling, white wine

vranac A red wine

vrsac A white wine

vugara A white wine

vulnerable group A portion of the population prone to develop nutritional disorders

Vycor glass A proprietary name for a heat-resistant glass made of pure silica See also hard glass
W

W  The symbol for the element tungsten

waadtlander bratwurst  A moist, cooked or uncooked, unsmoked Swiss sausage made from medium-chopped, medium-seasoned beef and pork stuffed into pork casings.

Wabash  A variety of soybean

wacholder  A gin; a schnapps-type spirit, similar to steinhager

wada  A deep-fried cake or ball of spiced black gram (Phaseolus mungo)

wafer  A thin cake, cracker, or pastry made from batter and baked (between hot plates); a crisp bread; diameter or cross section measurement greater than the length

19 chocolate wafers = 1 cup crumbs
22 vanilla wafers = 1 cup crumbs, finely crushed

waffle  A thin cake made with pancake batter and cooked in a heated mold; made from flour (low gluten content and weak gluten quality) mixed with a liquid, a leavening agent, salt, eggs, and fat; more crisp than griddle cakes; sticking caused by the iron being too hot or cold or incorrect shortening content in the batter.

See Part 2: Grain Products, Composition

waffle mix  See pancake mix

wagashie  See fulani cheese

wagon wheel  Pasta shaped like a wagon wheel (1-in. diam) See rotelle

Wagyu  A traditional Japanese bread of black beef cattle, often used to produce Kobe beef; represents approximately 30% of Japanese beef animals

wahe  A sorghum beer

wahoo (peto)  A food fish

waiwai  A coarse porridge made from yam flour

wake  A tart containing fruit, vegetables, or cheese

waldmeister  An aromatic herb often used for flavoring beverages

waldo  A soft, fresh cheese

Waldorf salad  A salad made with diced apples, celery, lemon juice, lettuce, mayonnaise, and walnuts See Part 2: Portion Size

Wallbanger, Harvey  A mixed drink made from 1 oz vodka, ½ oz liquor galliano, ice cubes to fill glass, and orange juice to fill glass (stirred)

walleye, blue  A freshwater North American food fish of the perch family; a finfish with light meat and very light, delicate flavor

Blue (Stizostedion vitreum glaucum)

Pike (S. vitreum vitreum)

walleyed pike (Stizostedion vitreum)  A freshwater, perch-like fish

walleyed pollack (Theragra chalcogramma)  A black, saltwater fish See Alaska pollack

wallflower  See Part 2: Essential Oils

walliser  A semihard cheese that is made from cow's milk and has a full fruity flavor

walliskäse  See saanen

walnut  A tall tree raised for timber and nuts; walnut oil is extracted from the nuts and the nuts are used for desserts, baking, and confectionery.

Types:
  - Black walnut (Juglans nigra)
    Variety—Thomas; early bearing and long-lived; grows to 50–75 ft; produces large nuts
  - English walnut, European walnut (J. regia)
    Varieties—see table for old and new varieties and their characteristics
  - White walnut, butternut, (J. cinerea)—An American tree

Pickled walnuts are made from the green fruit before the formation of the inner shell.

Walnut sizes: large; medium or fancy; baby

Shelled walnut grades:
  - By size
    Halves
    Halves and pieces
    Pieces
  - By color
    Light halves—unbroken; uniform in size
    Light ambers—50% halves, 50% pieces
    Standard ambers—dark amber; mixed halves and pieces

English walnut varieties (for midwestern and eastern United States): Colby; Hansen; Lake; Metcalfe

Black walnut (refuse 74%):
1 lb, pound unshelled
= 3.5 oz nutmeats, shelled, chopped
= 0.75 cup
1 cup, chopped = 4.2 oz

English walnut (refuse 58%):
1 lb shelled = 2.6 lb unshelled
1 lb shelled, halves = 3½ cups
1 lb unshelled = 7.5 oz, shelled
= 1.2–2 cups
1 lb shelled, chopped = 3.5 cups
1 cup, shelled, halves = 100 g (3.5 oz)
### English (Persian) Walnut Variety

<table>
<thead>
<tr>
<th>Variety</th>
<th>Danger of Spring Frost Damage</th>
<th>Relative Productivity</th>
<th>Kernel Quality</th>
<th>Best Adapted To</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carpathian—fast-growing tree (30–40 ft); hardy; produces large, paper-shelled nuts&lt;br&gt;Old&lt;br&gt;Eureka</td>
<td>Moderate</td>
<td>Good</td>
<td>Excellent</td>
<td>Cool</td>
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<tr>
<td></td>
<td>None</td>
<td>Poor</td>
<td>Good</td>
<td>Cool</td>
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<tr>
<td></td>
<td>Slight</td>
<td>Good</td>
<td>Good</td>
<td>Hot</td>
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<tr>
<td></td>
<td>Great</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Cool</td>
</tr>
<tr>
<td>New&lt;br&gt;Amigo*</td>
<td>Slight</td>
<td>Good</td>
<td>Fair</td>
<td>Cool</td>
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<tr>
<td>Chico*</td>
<td>Moderate</td>
<td>Good</td>
<td>Good</td>
<td>Hot</td>
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<tr>
<td>Gustine</td>
<td>Moderate</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Hot</td>
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<tr>
<td>Lompoc</td>
<td>Moderate</td>
<td>Good</td>
<td>Good</td>
<td>Cool</td>
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<tr>
<td>Midland</td>
<td>Slight</td>
<td>Good</td>
<td>Good</td>
<td>Cool</td>
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<tr>
<td>Pioneer</td>
<td>Slight</td>
<td>Good</td>
<td>Fair</td>
<td>Hot</td>
</tr>
<tr>
<td>Pedro*</td>
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<td>Cool</td>
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<tr>
<td>Serr</td>
<td>Moderate</td>
<td>Good</td>
<td>Excellent</td>
<td>Hot</td>
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<td>Tehema</td>
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<td>Good</td>
<td>Hot</td>
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<tr>
<td>Viva</td>
<td>Moderate</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Hot</td>
</tr>
</tbody>
</table>

*Good pollen producers for cross-pollination with other varieties

---

**English Walnut (continued)**

| Composition (English walnut): moisture 3–4%; protein 15–21%; fat 59–64%; carbohydrate 15–16%; ash 2–3%; sodium 3 mg/cup (120 g) | Caloric content: | walton A cheese made by mixing cheddar cheese with blue cheese, caraway, sage, and walnuts |
| Black walnut | English walnut 6–7 halves = 80 calories 2 tbsp, chopped = 105 calories | wampi A small, yellow citrus fruit used in jam and drinks |
| 2 tbsp, chopped = 100 calories | The wood is a good firewood [23 × 10^6 Btu/cord (20% moisture)], is medium-easy to start, is easy to split, and produces light smoke, good coals, and few sparks. See also black walnut | waneelska A dry, uncooked, hot-smoked Polish sausage made from medium- or coarse-chopped, medium-seasoned beef and pork stuffed into beef casings |
| walnuts A local gin distilled from sorghum beer | Warburg apparatus A small container and a manometer used to measure gas exchange during a reaction | warden A pear that keeps well and is used in cooking |
| warfarin (C\(_{19}\)H\(_{16}\)O\(_{4}\)) used as an anticoagulant and rodent poison | warfarin A pear that keeps well and is used in cooking | wari Yellow, dried balls (made from a cereal or legume) that are deep-fat fried |
| warfed-up Describes cattle on feed just long enough to begin to show effects of feed | warm-water A rich substance deposited on land by flood water | warranty A specific assurance made by the seller concerning the nature, quality, and character of the goods |
| warshawska A moist, cooked, unsmoked Polish sausage made from medium- or coarse-chopped, medium-seasoned beef and pork stuffed into artificial casings | warszawski A provolone-type cheese made from cow's or sheep's milk | warwickshire A cheddar-type cheese

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**Walnut Caterpillar** The larva of a brown moth (approximately 2-in. wingspan); a black caterpillar (with white hairs) that raises both ends of its body when disturbed; up to 2 in. long; feeds in groups on the leaves and causes defoliation

**Walnut Husk Maggot** A white or pale beige maggot (up to \(\frac{3}{4}\) in. long) that is the larval form of a pale yellow fly with brown eyes, stiff brown hairs on its abdomen, and transparent wings with dark stripes; the maggot feeds in the husk of maturing nuts

**Walnut Lace Bug** A fragile insect that resembles a fly, with lacy wings (\(\frac{1}{2}\) in. long), and sucks plant juices

**Walnut Oil** A highly unsaturated oil obtained by hot-pressing dried walnut kernels; \(d_{20^\circ} = 0.923\) See also walnut
wasabi A pungent Japanese horseradish
wasabi-zuki Pickled horseradish
wash Liquid obtained by fermenting wort with yeast
washed-curd cheese A type of cheddar cheese that is soft and moist
washing soda Hydrated sodium carbonate
wasty Having too much fat; describes a paunchy animal
water (H₂O or HOH) An inorganic liquid that is essential to life and growth and is contained in all living cells; it is colorless, tasteless, and odorless. In the body it is a medium of body fluids and a solvent for all products of digestion, carries body wastes, regulates body temperature by evaporation, and sustains the health of all cells.

<table>
<thead>
<tr>
<th>Purification by</th>
<th>Amount of water</th>
<th>Water condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bleach solution*</td>
<td>1 qt 2 drops</td>
<td>Clear 4 drops</td>
</tr>
<tr>
<td>1 gal 8 drops</td>
<td>Cloudy 16 drops</td>
<td></td>
</tr>
<tr>
<td>5 gal ½ tsp</td>
<td>1 tsp</td>
<td></td>
</tr>
<tr>
<td>2% tincture of iodine</td>
<td>1 qt 3 drops</td>
<td>Clear 6 drops</td>
</tr>
<tr>
<td>1 gal 12 drops</td>
<td>Cloudy 24 drops</td>
<td></td>
</tr>
</tbody>
</table>

*Containing 5.25% sodium hypochlorite

wasp An insect that varies widely in size, color, and general body structure; some are parasites, others predators

Benefits: Tiny parasitic wasps lay eggs in the (living) bodies of insects. Large predaceous wasps prey on caterpillars, paralyzing them (by stinging) and feeding them to the young wasps.

waste Unwanted or useless residue materials
See Part 2: Wastes, Agricultural and Industrial

wasting Depletion of essential cellular constituents resulting from prolonged food deprivation

water activity (a_w) A function defined by the ratio of the vapor pressure of a solution to the vapor pressure of the pure solvent; it is inversely proportional to the number of solute molecules and is the relative number of water molecules to the total number of molecules present, expressed as a decimal from 0 to 1. If you multiply the a_w by 1000, you will obtain the number of water molecules in every thousand molecules of the solution. If a food is in equilibrium (neither gaining or losing water) with air that

Cold water:
1 ft³ = 62 ¹/³ lb
= 7.48 gal
= 1728 in³
1 gal = 231 in³
1 cup = 240 g (8.4 oz)
1 acre-inch = 27,154 gal
= 226,193 lb

Warm water (120–130°F):
1 gal = 8.34 lb
= 231 in³
= 0.13368 ft³
1 ft³ = 62.43 lb
= 7.48 gal
= 0.028 tons

Average requirement for livestock:
Beef cattle—8–12 gal/day
Dairy cattle
dry—8–12 gal/day
In milk—35–40 gal/day
Horse—10–12 gal/day
Sheep—1–2 gal/day
Swine—1–2 gal/day

Human water use (in liters)

<table>
<thead>
<tr>
<th>Average intake</th>
<th>Average loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>1–1.5 (drinking)</td>
<td>0.4–0.6 (lungs)</td>
</tr>
<tr>
<td>0.4–0.5 (in food)</td>
<td>0.4–0.7 (skin)</td>
</tr>
<tr>
<td>0.3–0.5 (oxidation of food)</td>
<td>0.08–0.1 (feces)</td>
</tr>
<tr>
<td>0.3–1.8 (urine)</td>
<td>1.7–2.5 total</td>
</tr>
<tr>
<td>1.13–3.2 total</td>
<td></td>
</tr>
</tbody>
</table>

water (in sausage) Added to sausage in the following amounts:
Uncooked—not over 3% of total ingredients
water (%) = 4 × protein + 3
Cooked—not over 10% of total product in finished product
water (%) = 4 × protein + 10

Canned hams—not over 8% above green weight; bone, fat, and skin that were removed must be included in the weight so that the total does not exceed 108%.

water activity (a_w) A function defined by the ratio of the vapor pressure of a solution to the vapor pressure of the pure solvent; it is inversely proportional to the number of solute molecules and is the relative number of water molecules to the total number of molecules present, expressed as a decimal from 0 to 1. If you multiply the a_w by 1000, you will obtain the number of water molecules in every thousand molecules of the solution. If a food is in equilibrium (neither gaining or losing water) with air that
has a relative humidity of 91%, the food would have \( a_w = 0.91 \); \( a_w \) of blood = 0.995

Water activity of various organisms:
- *Clostridium botulinum*—0.95 min. \( a_w \)
- Most spoilage bacteria—0.91 min. \( a_w \)
- Yeast—0.88 min. \( a_w \)
- Molds—0.80 min. \( a_w \)

Most foods in a cool climate for a few months—0.75 min. \( a_w \)
Most foods in tropical climate—0.70 min. \( a_w \)

Inhibition of all microorganisms—0.60 min. \( a_w \)

Knowledge of water activity is used in food preservation; water activity may be lowered in food by adding salt, sugar, or alcohol and by freezing, e.g., as in the following:
- Alcoholic beverages
- Candies, cookies, cake
- Cream candies
- Freezing
- Fruitcakes
- Jams and jellies
- Preserves
- Salt-curing of meat and fish
- Sugared fruit
- Syrup
- Wines, liqueurs

A measure of free water in a product:

\[
\frac{a_w}{a_w} = \frac{\text{water-vapor pressure of substance}}{\text{vapor pressure of pure water at same temperature}}
\]

See Part 2: Water Activity, Organisms and Food

water-added Describes cured and smoked pork that weighs up to 10% more than the fresh meat due to added water from the curing solution See ham, cured; water (in sausage)

water-binding properties A term used in sausage manufacturing to indicate the ability of a product to retain moisture under elevated temperatures

water biscuit A thin, crisp cracker made of flour, water, and sometimes fat

water blister See black rot

water buffalo (*Bubalus bubalis*) An Asiatic buffalo often used for draft purposes; water buffalo’s milk has higher butterfat (10–15%) content than cow’s (Bos) milk; used to make mozzarella cheese

Types:
- River—coiled or drooping horns
- Swamp—backswept horns

Characteristics:
- Begin work—18 months
- Dressing percentage—30% poor condition; 50% good condition
- Females come into heat—12–18 months of age
- Gestation period—287–340 days
- Life span—18–25 yr
- Pulling speed—1.75 mi/h
- Usually breed—24 months of age
- Will not cross with cows (Bos spp.)

See Kiangsu; Kwangtung; Tangyang; Wuchu

Water chestnut (caltrop; *Trapa natans*) A water plant of which the edible seeds (bulb-shaped, 1–2-in. diam., 3–4 angled sides) are used as food (canned, boiled, raw, roasted), has a floury texture (like a raw potato) and an agreeable flavor (sweet), and is often used like cornstarch; a golf-ball-sized, crisp vegetable with a brown skin covering a white nutlike center; available canned (cleaned and peeled)

Types:
- Chinese (*T. bicornis*)—also called ling; seed used for food and as flour
- Horse’s hooves—used fresh; reddish brown
- Jesuit’s nut (*T. natans*)
- Singhara nut (*T. bispinosa*)—seed used for food

Used as a vegetable in Chinese cooking; often used for chop suey and oriental dishes; can be ground into meal and is often added to soups

Storage: refrigerator, for up to 1 week

See also Chinese water chestnut

water coconut See palm

water core A physiological disease of apple and pear fruit that causes the core area to become yellow and soft; affected fruit does not store well.

Control: harvest fruit early

water cress (peppercress; *Rorippa Nasturtium aquaticum*; *R. Nasturtium officinale*) A solid, dark green, lacy sprig (4–6 in.) with small ovoid leaves; grown in water, has a mildly pungent flavor, and is used as garnish or as a salad; a cool-season salad vegetable (season 50 days) seed 150,000/oz (*Cardamine rotundifolia* is also called water cress but it is more bitter.)

Groups: summer (green); winter (brown)

1 cup, trimmed = 1.2 oz

Composition: moisture 91–93%; protein 2–3%; fat 0.3%, carbohydrate 1–3%; ash 1%

Storage: Rise in cold water to moisten; wrap and refrigerate or place stems in water and wrap container and water cress; keep in water or plastic wrapping in refrigerator for limited periods

See cress

See Part 2: Minerals, Food

water, demineralized Water from which the minerals have been removed by passing the water through an ion-exchange medium

water-distillation A distillation method in which steam is generated at the base of the still and the product being distilled is immersed in boiling water

water, distilled Water from which minerals have been removed by distillation

water, drinking Water that contains no pathogenic organisms and little organic matter; pH 6.5–8.0

Max. 1000 ppm total solids

250 ppm Cl

250 ppm SO_4^-2

100 ppm Mg

0.5 ppm Zn

0.3 ppm Fe

0.2 ppm Cu

0.1 ppm Pb

See also water

water, endogenous Water provided to the body by metabolism of food

water, exogenous Free water plus all volatile substances ingested as food
water gas  Prepared by passing superheated steam over glowing coal; contains carbon monoxide and hydrogen, often with petroleum vapor added; can be used for lighting and heating

water glass  1) Sodium silicate; eggs are sometimes stored in a solution (9 parts cooled boiled water to 1 part water glass) of this compound which seals the pores preventing evaporation, contamination, and absorption of odors; unless shells on air-cell end are pricked prior to cooking ("in the shell") eggs will crack; storage life 6–9 months. 2) A container for holding drinking water

water-ground cornmeal  See corn meal (old process)

water hardness  Water containing minerals, e.g., calcium carbonate or calcium sulfate
Classes:
- Soft—0–60 ppm
- Moderately hard—60–120 ppm
- Hard—120–180 ppm
- Very hard—180 ppm and up
See Part 2: Water Hardness

water hemlock (Cicula spp.) A poisonous plant
See Part 2: Poisonous Plants

water-holding capacity  The proportion of its own or added water that can be retained by a substance

water hyacinths  Used for hog feed in some areas of the world

water ice  A flavored dessert made by mixing the following while freezing: water, fruit or fruit juice, sweeteners, and stabilizers; similar to sherbet but has no milk solids See sherbet
See Part 2: Minerals (Trace), Limits

water-insoluble combined lactic acid (WICLA)  Analytical constant of the percentage of esterified lactic acid in an emulsifier

water-level control  An automatic device that controls the water level in a retort

water lily (Nymphaea stellata)  A tropical water plant with the following uses:
Root—consumed raw or cooked
Seeds—roasted and ground and added to pastries
Stems—added to curries

waterlogging  See pineapple physiological breakdown

watermelon (Citrullus vulgaris)  An annual climbing plant that produces a large (10–50 lb) fruit; seeds 2–7 lb/acre, 1 oz/100-ft row; plant from 4 ft (icebox types) to 6 ft (large vine types) apart in rows 4–6 ft apart. Different varieties produce different shapes (large, oblong to round) and rind coloring

<table>
<thead>
<tr>
<th>Watermelon variety</th>
<th>Size</th>
<th>Shape</th>
<th>Rind color</th>
<th>Flesh</th>
<th>Seed color</th>
<th>Days to maturity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black Diamond (Yellow Belly)</td>
<td>Big</td>
<td>Oval</td>
<td>Dark green</td>
<td>Red</td>
<td></td>
<td>92</td>
</tr>
<tr>
<td>Burpee’s Fordhook Hybrid</td>
<td>13 lb</td>
<td>Round</td>
<td>Glossy green</td>
<td>Red</td>
<td>Small</td>
<td>74</td>
</tr>
<tr>
<td>Charleston Gray</td>
<td>Large; 25 x 10 in.; 30 lb</td>
<td>Long</td>
<td>Gray-green; netted</td>
<td>Red</td>
<td>Late; 85–95</td>
<td></td>
</tr>
<tr>
<td>Dixie Queen</td>
<td>Med. to large; 30 lb</td>
<td>Oval</td>
<td>Light green; dark green longitudinal stripes</td>
<td>Deep red; sweet</td>
<td>Small; white</td>
<td>90</td>
</tr>
<tr>
<td>Early Kansas Sweet</td>
<td>Med. to large</td>
<td>Round</td>
<td>Dark green</td>
<td>Pink</td>
<td>Reddish</td>
<td>85</td>
</tr>
<tr>
<td>Early Northern Sweet</td>
<td>Small</td>
<td>Round</td>
<td>Dark green</td>
<td>Pink</td>
<td></td>
<td>78</td>
</tr>
<tr>
<td>Halbert Honey</td>
<td>Med.</td>
<td>Round</td>
<td>Dark green; light green stripes</td>
<td>Pink</td>
<td>84</td>
<td></td>
</tr>
<tr>
<td>Harris’ Earliest (Coles Early)</td>
<td>Med.</td>
<td>Round</td>
<td>Dark green; light green stripes</td>
<td>Pink</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>Kleckley’s Sweets</td>
<td>Med.</td>
<td>Long; oval</td>
<td>Bluish green</td>
<td>Dark red; sweet</td>
<td>White</td>
<td>85</td>
</tr>
<tr>
<td>Klondikes (several varieties)</td>
<td>Variable</td>
<td>Clear or striped</td>
<td>Light green; brown</td>
<td>black or brown</td>
<td>Early; 70</td>
<td></td>
</tr>
<tr>
<td>Lollipop</td>
<td>3 lb</td>
<td></td>
<td></td>
<td>Red or yellow</td>
<td>Golden</td>
<td>83</td>
</tr>
<tr>
<td>Luscious Golden Sweet</td>
<td>Med.</td>
<td>Longer than broad</td>
<td>Dark green</td>
<td>Gold</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Continued)
<table>
<thead>
<tr>
<th>Watermelon variety</th>
<th>Size</th>
<th>Shape</th>
<th>Rind color</th>
<th>Flesh</th>
<th>Seed color</th>
<th>Days to maturity</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Hampshire Midget</td>
<td>6 lb; small;</td>
<td>Oval; 5 in.</td>
<td>Light green; dark green</td>
<td>Crisp; red</td>
<td>Dark</td>
<td>Extra-early; 70</td>
</tr>
<tr>
<td></td>
<td>5 x 7 in.</td>
<td></td>
<td>stripes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rhode Island Red Stone</td>
<td>Med.</td>
<td>Oval</td>
<td>Striped; firm</td>
<td>Pink-red</td>
<td>White</td>
<td>Early 88</td>
</tr>
<tr>
<td>Mountain Sugar Baby</td>
<td>Large</td>
<td>Oval</td>
<td>Gray-green</td>
<td>Deep red</td>
<td>White</td>
<td></td>
</tr>
<tr>
<td>(icebox)</td>
<td>Small</td>
<td>Oval; 5 in.</td>
<td>Greenish black; faint</td>
<td>Crisp; red</td>
<td>Dark brown</td>
<td>Extra-early; 73</td>
</tr>
<tr>
<td></td>
<td></td>
<td>diam. 8~10 lb</td>
<td>strips</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweet Favorite</td>
<td>20 lb</td>
<td>Oblong</td>
<td>Light green; dark</td>
<td>Red</td>
<td>Small; dark</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>stripes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tom Watson Yellow Baby</td>
<td>Large</td>
<td>Oblong</td>
<td>Dark green</td>
<td>Dark red</td>
<td>Brown</td>
<td>95</td>
</tr>
<tr>
<td>Hybrid</td>
<td>7 in.</td>
<td>Oval to round</td>
<td>Light green; striped</td>
<td>Yellow</td>
<td>Small</td>
<td>70</td>
</tr>
</tbody>
</table>

Citron*  

* A preserving type that is not edible when raw

(green and often green and white striped or variegated). The sweet watery flesh may be white, yellow, pink, or red; seeds are also various colors and may also be eaten.

To judge ripeness:
- Green — soft skin; thuds when snapped with finger
- Ripe — very hard skin; rings when snapped with finger

White seeds indicate immaturity; belly (underside) has creamy color

Refuse: 55–60%
- 3 qt (6 lb) watermelon rind unpared = 4–5 pt watermelon pickle
- 1 cup, fresh, diced = 11.2 oz

Composition: moisture 91%; protein 0.5%; fat 0.2%; carbohydrate 7%

Storage: 70°F to ripen; refrigerate (36–40°F, 85–90% relative humidity) before eating; storage life 2–3 weeks

See pickle

See Part 2: Cucurbit Crops, Spacing and Depth of Planting; Fruit, Availability; Fruit Classification; Fruit Composition; Iron; Minerals, Food; Niacin; Organic Acids in Fruits and Vegetables; Phosphorus; Plant Foods, Composition; Potassium; Potassium-Rich Foods; Pulses, Nuts and Seeds Composition; Storage; Sugar, Vegetables; Thiamin; Vegetable Planting and Maturity Chart; Vegetable Planting Chart; Vegetable Plants; Vegetable Storage; Vegetable Yields

Watermelon rind May be pickled or candied

Water, mineral Water (normally from springs) that contains a variety of dissolved minerals

Water, natural lithia Spring water containing lithium or sometimes with added lithium salts

Water oats See wild rice

Water of hydration Water that is associated in definite proportions with compounds

Water ox Water buffalo

Water-packed Fruit packed in water, without sugar

Water parsnip (Sium aquaticum) An aquatic plant with edible leaves

Water, potable Water that is suitable to drink

Water rice (Indian rice) See wild rice

Water rot See black rot

Water, sea Water in the oceans; 3.6% dissolved solids, including 2.6% sodium chloride

Water-slaked lime A liming material composed of 65% CaO; each pound has the neutralizing equivalent of 1.2–1.35 lb of CaCO₃ (or approximately this quantity of dolomitic limestone). See also lime

Water softening The removal or inactivation of minerals from water

Water-soluble oil An oil that can be mixed with water and held in an emulsified state

Water-soluble vitamins Ascorbic acid (vitamin C), B₁₂, biotin (vitamin H), choline, folic acid, inositol, nicotinic acid, pantothenic acid, pyridoxine (vitamin B₆), riboflavin, and thiamin (vitamin B₁)

Water spot A wet-weather disease of oranges that is caused by cracking of the cuticle near the navel or near bruises or skin breaks due to swelling of underlying tissues that have absorbed water; if wet weather continues, the areas enlarge and are usually invaded by decay organisms.

Watersprout A vigorously growing, upright shoot

Water-steam distillation A process that uses steam generated in a separate boiler under atmospheric pressure (wet steam) and passed into the still under the material being distilled; water condensing in the still is controlled by a closed steam coil.

Water, warm Water at a temperature from 105 to 115°F

Watery diluted; flat; lacking intensity
watery breakdown A low-temperature disease of citrus fruit that causes the fruit to have a soft, spongy, soaked appearance (similar to frozen fruit); often occurs when fruit is stored below 40°F; however, at 32°F storage, it does not develop until after several weeks of storage.

watery soft rot See soft rot

watt (W) A measure of power, rate of energy, and heat (10⁹ erg/s); an electrical measurement:

\[ x \text{ (in volts)} \times [y \text{ (in amperes)}] = xy \text{ (in watts)} \]

1 W = 1 x 10⁹ ergs per second (erg/s) = 668 lumens = 44.254 foot-pounds per minute (ft-lb/min) = 3.41304 British thermal units per hour (Btu/h) = 1 joule per second (J/s) = 0.73761 foot-pounds per second (ft-lb/s) = 0.10198 kilogram-meter per second (kg-m/s) = 0.056884 British thermal units per minute (Btu/min) = 0.01433 kilogram-calorie per minute (kg-cal/min) = 0.001360 metric horsepower [hp; 1 hp (metric) = 75 kg-m/s] = 0.001341 US horsepower [hp; 1 hp (US) = 550 ft-lb/s] = 0.001 kilowatt (kW) = 0.009480 British thermal unit per second (Btu/s) = 0.0002389 kilogram-calorie (thermal units) per second (kg-cal/s)

1 W (absolute) = 1 joule per second (J/s) 1 W (international) = 1.000165 watt (W; absolute) 746 W = 1 horsepower (hp)

watt-hour (W-h) A rate of power, energy, or heat; the work done by one watt acting for one hour

1 W-h = 3.6 x 10¹⁰ ergs = 2655 foot-pounds (ft-lb) = 860.5 gram-calories (g-cal) = 367.1 kilogram-meters (kg-m) = 3.413 British thermal units (Btu) = 1.341 x 10⁻³ horsepower (US-hour) (hp-h) = 0.0010 kilowatt-hour (kW-h) = 0.860 kilogram-calorie (kg-cal)

wattle The bark of an Australian tree containing tannin; used in the vegetable tanning of leather

wax

\[
\text{R} - \text{C} - \text{O} - \text{R}' \\
\parallel \\
\text{O}
\]

An ester of a long-chain fatty acid and a monohydric or dihydric alcohol; material of plant or animal origin that is harder than fat; a substance secreted by bees and used to construct honeycomb; paraffin wax is composed of higher hydrocarbons of petroleum origin; water repellent; paraffin wax and waxed paper are used in food packaging.

See Part 2: Saturated Fatty Acids; Wax

wax bean A kidney bean with yellow pods
web fat  The fat covering the paunch and intestines
webworm  1) Any of several caterpillars that spin webs to live in. 2) A caterpillar that attacks sugar beets around midseason; newly hatched, they are cream-colored, about \( \frac{1}{8} \) in. long; they turn dark green in a few days and feed mostly on the underside of leaves; when disturbed, they drop and hang on fine threads. Fully grown webworms are olive green, with light and dark longitudinal stripes, and eat only the foliage, leaving the leaf veins. Insecticide: methyl parathion
See: tent caterpillar
wedder  Wether
wedge bone sirloin  A sirloin steak found in the loin end wholesale cut; it is located between the butt end sirloin (first sirloin from rump end) and the round bone sirloin.
See Part 2: Bone in Retail Cuts
weed  Any plant growing where it is not wanted; any plant that interferes with growth of a more valuable plant
See Part 2: Corn Herbicides
weed killer  Herbicide
weedy  Describes a flavor of milk that is due to weeds (e.g., dog fennel, French weed, garlic, or onion) consumed by the cow
weenie  Wienerwurst
weeping  Exuding drops of liquid, indicating that something lacks moisture-holding properties, e.g., buttermilk, meat
weevil  See pecan weevil
wehlten  A white wine
Weigh-A-Day-Month (WADAM)  A program by which a producer records monthly milk weights on each cow and mails in the information
weighing bottle  A glass vessel with a glass stoppered top; used in weighing samples that should not be exposed to air
weight  The property of heaviness; the force of the attraction of a mass by gravity, often measured by a balance or scale
See Part 2: Body Weight; Weight; Weight, Human
weight of plate  The weight of 112 sheets (14 x 20 in. each, or a total of 31,360 in.\(^2\)) of a material
weihnachtstollen  A tea bread with fruit
wein  Wine
weisse  A strong, sour, alcoholic beer made from wheat
weisslacker  See beer cheese
weisslackerkäs  A soft, white, ripened cheese made from cow's milk
weisswurst (white sausage)  A fresh sausage made from pork or veal; similar to bratwurst
weisswurst, American  A moist, cooked or uncooked, unsmoked American sausage made from medium- to coarse-chopped, mildly seasoned (with mace, sage, and thyme), pork and veal, stuffed into large-diameter links or rings (pork or artificial casings); similar to bratwurst
weisswurst, German  A white, fresh, mildly spiced German sausage made from pork and veal (principal ingredient) with max. 10% skin, 25% water, and 90% fat
welchii, Clostridium  See Part 2: Illness from Food; Microbial Toxins
weld  To join together while in a plastic or semifused form
well-done  Of beef, cooked to an internal temperature of 170°F (77°C); in general, meat cooked until no red color remains
See Part 2: Beef Degrees of Doneness; Beef Roasting
Welsh (Old Glamorgan)  A long-bodied, hardy, white, bacon-type pig that originated in Wales; similar to German Landrace
Welsh Black  A black breed of cattle from Wales
Types:
North Wales (Anglesey)—dual-purpose
South Wales (Pembroke, Castle Martin)—dairy type
Welsh Lop-Ear  A British breed of white swine
Welsh Mountain  A short, small, hardy, white-faced breed of mountain sheep with fine thick wool; rams have horns, ewes do not.
Welsh onion (Allium cepa Perutile)  A species of bunching onion with interleaved bulb and tubular leaves
Welsh rabbit (Welsh rarebit)  A cooked mixture of cheddar cheese, milk, and ale or beer; served on toast or crackers
wensleydale cheese  A pale, delicate, semihard, mild, crumbly cheese made from whole pasteurized cow's milk that is coagulated with a lactic-acid starter culture and rennet; salted, pressed, and matured 4–6 weeks; it has a subtle honeyed aftertaste and is eaten both fresh (soft, white, and creamy) and ripened (rich, soft, and double-creamed, with blue veins)
wensleydale cheese, English  A mild, subtly flavored English (Yorkshire) cheese with a honeyed aftertaste and a flaky texture; pale parchment color
Wensleydale sheep  A British breed of long-wool sheep
werder  A tilsit-type cheese
Wessex Saddleback  See Part 2: Swine Breeds
West Bothian  See vaselerbottensost
West Country Down Sheep  An early name (1840) for the Hampshire breed of sheep
western flower thrip (Frankliniella occidentalis)  An insect that may also affect pears
western steak  Steak cut from the chuck
Western style  See Chicago style
western wallflower (Erysimum asperum)  An annual weed
westfalisch  A dry, uncooked, smoked Belgian sausage made from medium-chopped, medium-seasoned beef and pork, fermented and stuffed into pork casings
westfalischen mettwurst  A coarse salami made from pork
**West Highland (Kyloes)** A hardy, slow-maturing Scottish breed of beef cattle with a black, red, or yellow, shaggy coat.

**West Indian cherry** [Barbados cherry; Puerto Rican cherry; Surinam cherry (not Eugenia uniflora); Malpighia glabra; M. punicifolia] A yellow-orange to red, soft, juicy, tart fruit containing three small seeds and consumed fresh and in jellies, sherbets, syrups, and wine; high in vitamin C.

**Westminster blue** A blue cheese that is made from cow's milk and has white surface mold.

**Weston Stoned** A thin wheat cracker made without sugar.

**Westphalian ham** A country-cured-style ham produced in Germany; a country ham smoked with juniper twigs and berries on a beechwood fire.

**Wet bulb (wet-bulb temperature)** The temperature of air as measured when a wet sock is placed over the bulb of a thermometer (air velocity should be approximately 2 m/s for a correct reading); wet-bulb and dry-bulb temperature readings taken together are used to calculate relative humidity. See Part 2: Relative Humidity.

**Wet-dog odor** Describes a burnt, proteinlike odor.

**Wether (teg; wedder)** A male ovine animal (sheep) that was castrated before attaining sexual maturity. See Part 2: Sheep Market Classes and Grades.

**Wether hog** A castrated hoggett.

**Wet-ink varnish** A varnish that is applied over wet print so that both can dry at one time.

**Wet-rendered** Describes a material that has been cooked with steam under pressure.

**Wet steam** Steam generated under atmospheric pressure.

**Wetting** Describes the action of a cleaning solution in contacting the entire surface of soil or equipment.

**Wetting agent** A surface-active agent; an average concentration of 0.15% will normally reduce surface tension by half; increased concentrations do not lower this value appreciably; used when mixing solids with liquids and spreading liquids on a surface. See surface-active agent.

**Whale** Any of many aquatic mammals of the order Cetacea; used for oil, flesh (red, sour, and tangy), and whalebone.

**Whale oil** Oil obtained from whale blubber.

<table>
<thead>
<tr>
<th>Fatty acid</th>
<th>Number of carbons</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturated</td>
<td>14</td>
<td>8–9</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>12–16</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>2–3</td>
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<tr>
<td>Unsaturated</td>
<td>14</td>
<td>2</td>
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<tr>
<td></td>
<td>16</td>
<td>15</td>
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<tr>
<td></td>
<td>18</td>
<td>33–35</td>
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<tr>
<td>Polyunsaturated</td>
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<td>9</td>
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<tr>
<td></td>
<td>20</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>11</td>
</tr>
</tbody>
</table>

**Whalebone** Composition (meat): Moisture 71–78%; protein 20–21%; fat 2–8%; carbohydrate 0%; ash 1%. Use of such materials has been restricted in the United States and many other countries for animal conservation reasons. See Part 2: Meat and Meat Products, Composition; Vitamin D, Fish.

**Wheat** (*Triticum* spp.) The most important cereal grain of the temperate climate, originally from the Mediterranean and Middle East; it is usually made

<table>
<thead>
<tr>
<th>Wheat type</th>
<th>Subtypes and characteristics</th>
<th>Color</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bread</td>
<td>Spring-sown in spring; harvested in late summer</td>
<td>Whitish; amber; reddish; purple; bluish</td>
<td>Bread flour</td>
</tr>
<tr>
<td></td>
<td>Winter—sown in autumn; harvested in early summer</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hard—high in protein</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Soft—mealy in texture, high in starch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durum</td>
<td>High in gluten</td>
<td>White; amber; red; purple</td>
<td>Semolina; pasta; macaroni</td>
</tr>
<tr>
<td>Emmer</td>
<td>Important in early historic times</td>
<td></td>
<td>Fodder</td>
</tr>
<tr>
<td>Rivet, cone English</td>
<td>Important in early historic England</td>
<td></td>
<td>Livestock feed</td>
</tr>
</tbody>
</table>
Wheat stores and ships well and has a high content of gluten protein, which is necessary for the leavening process. Seed 1-3 bu/acre; time from planting to harvest ranges from 2 to 5 months; yield (grown as an annual grain) is 60 lb/bu (1.9 lb/qt).

### Wheat Grades

<table>
<thead>
<tr>
<th>Wheat Grading</th>
<th>Percentage of flour from milling</th>
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<tbody>
<tr>
<td>Straight</td>
<td>97-98</td>
</tr>
<tr>
<td>Patent</td>
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<tr>
<td>Short</td>
<td>60-80</td>
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<tr>
<td>Medium</td>
<td>80-90</td>
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<tr>
<td>Long</td>
<td>90-95</td>
</tr>
<tr>
<td>Clear*</td>
<td>5-40</td>
</tr>
</tbody>
</table>

*Withheld from making patent flour

Types:
- **Hard**—Dry and granular in texture; tends to powder; more gluten than starch
- **Soft**—Smooth and soft in texture; tends to lump; more starch than gluten

The yield of flour from wheat is 69-72%; 1.7 lb/qt; pH 6.0

### Composition

<table>
<thead>
<tr>
<th>Wheat</th>
<th>Dry matter (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Fiber (%)</th>
<th>Ash (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>T. aestivum</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hard red spring</td>
<td>88</td>
<td>15</td>
<td>1.8</td>
<td>2.5</td>
<td>1.6</td>
</tr>
<tr>
<td>Hard red winter</td>
<td>88</td>
<td>13</td>
<td>1.6</td>
<td>2.5</td>
<td>1.7</td>
</tr>
<tr>
<td>Soft red winter</td>
<td>88</td>
<td>11.5</td>
<td>1.6</td>
<td>2.7</td>
<td>1.8</td>
</tr>
<tr>
<td>Soft white winter</td>
<td>89</td>
<td>10.1</td>
<td>1.7</td>
<td>2.3</td>
<td>1.6</td>
</tr>
<tr>
<td><em>T. durum</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durum</td>
<td>88</td>
<td>13.9</td>
<td>1.8</td>
<td>2.2</td>
<td>1.6</td>
</tr>
</tbody>
</table>

1 bu whole = 60 lb (55–65 lb/bu)

Whole-grain wheat is 13% bran, 85% endosperm and 2% germ.

### Nutrient Composition

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Value (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N (lb)</td>
<td>34</td>
</tr>
<tr>
<td>P₂O₅ (lb)</td>
<td>15</td>
</tr>
<tr>
<td>K₂O (lb)</td>
<td>9</td>
</tr>
</tbody>
</table>

### Storage

Storage: moisture content of grain should be 12–14%; foods made from wheat should be kept in a tightly closed container in a cool place; freeze for longer storage.

### Wheat브ん

Wheat berry Requires presoaking and cooking to make soft enough to eat; cracked wheat is made from crushed wheat berry; flour is made from ground wheat berry

Wheat bran The husk of grain, with some attached endosperm; removed during milling; 0.5 lb/qt; 16 lb/bu

Composition: moisture 11%; protein 15–16%; fat 3–5%; carbohydrate 60–70%; crude fiber 10%; ash 6%

See Part 2: Cereal By-Products, Composition

Wheat, bulgur A form of crushed wheat

Storage: in tightly, closed container in a cool place; freeze for longer storage.

Wheat cereal A breakfast cereal

Composition (dry): moisture 10%; protein 15%; fat 5%; carbohydrate 67%

Wheat, cracked (bulgur wheat) A product made by cutting or cracking cleaned wheat into small pieces; durum is not used for cracking wheat.

Available forms: coarse; medium; fine

Cooks faster than whole wheat; 150 g/dry cup
wheat, cracked (bulgur wheat)

Fiber content (dry): 10%
Storage: tightly closed container in a cool place or freeze for longer storage

wheat, crushed
Cleaned wheat that has been cut into angular fragments

wheat, emmer (Triticum dicoccum)
An early type of wheat that was grown originally in Europe

Wheatena
A breakfast food made from wheat endosperm with most of the bran and embryo

Wheat Flakes
A ready-to-eat breakfast cereal made from precooked or toasted mixtures of bran (15%), wheat flour, barley malt, sugar, and salt; hulled wheat berries are passed through heated rollers to produce the toasted flavor.
Composition: moisture 3%; protein 7-10%; fat 1-2%; carbohydrate 78-85%

wheat flour
See flour entries

wheat, flour by-product

<table>
<thead>
<tr>
<th>Composition</th>
<th>Middlings (&lt; 9.5% fiber)</th>
<th>Shorts (&lt; 4% fiber)</th>
<th>(&lt; 7% fiber)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry matter (%)</td>
<td>89</td>
<td>88</td>
<td>88</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>16.4</td>
<td>15</td>
<td>15.6</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>4</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>7</td>
<td>2.6</td>
<td>7</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>5</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

wheat germ
The part of the kernel necessary for new plant life (embryo); it is the oil-containing portion of the kernel and is flattened and sifted out as a yellow oil flake (has a nutty flavor)
Composition: moisture 8-11%; protein 27-32%; fat 8-11%; carbohydrate 38-47%; ash 4%
Storage: store in refrigerator after opening
See also wheat-germ oil
See Part 2: Grain Products, Composition

wheat germ crisp
A cracker containing no salt or sugar

wheat germ oil
A bland yellow oil obtained from wheat germ. Used as a source of vitamin E and in skin creams
Composition: linoleic acid 44-52%; linolenic acid 4-11%; oleic acid 29-30%; saturated fatty acids 15-16%
Properties: acid value 6-20; d25 0.925-0.933; iodine value 115-125; I.U. of vitamin E per gram 2; saponification value 180-190; unsaponifiable 5%
See Part 2: Fats and Oils, Physical and Chemical Properties; Tocopherols

wheat gluten
A yellow-gray material obtained by washing the starch out of dough; its two main proteins are gliadin and glutelin

wheatgrass
Approximately 150 species of Agropyron
Crested wheatgrass (A. cristatum)
Intermediate wheatgrass (A. intermedium)
Quackgrass (A. repens)—often a serious weed
Slender wheatgrass (A. pauciflorum)
Tall wheatgrass (A. elongatum)
Western wheatgrass (A. smithii)
See Part 2: Seed, Germination
Sweet whey—pH 6.2 from cheddar and swiss and other cheeses; 100 lb whole milk = 10 lb cheddar cheese + 90 lb whey
Casein whey—contains precipitating acid; 100 lb skimmed milk = 2.8 lb casein + 91 lb whey
See also cottage cheese
See Part 2: Dairy Products, Composition; Milk, Amino Acids; Milk and Milk Products, Vitamin Content; Milk, Concentrated Products; Milk, Dry Products; Vitamin A, Milk and Milk Products

whey agar See Part 2: Microorganism, Media
whey butter Butter made from fat left in whey during the cheese-making process
whey cheese A mysoist or ricotta-type cheese
wheying off Separation of whey; e.g., buttermilk
whey powder Spray-dried whey
whey protein Lactalbumin and lactoglobulin
whey powder Whey protein isolated from whey
whey vinegar Vinegar made from milk whey
whip To beat rapidly; to incorporate air and increase volume; to beat or mix until stiff, e.g., eggs. A raw or cooked (350°F oven) food made by whipping (15-20 minutes) cream or egg whites; fruit is often added to the egg-based whips See candy
whipped cream topping A pressurized cream
Composition: moisture 61.3%; protein 3.2%; fat 22.2%; carbohydrate 12.5%; ash 0.8%
whipped topping A pressurized creamlike topping
1 tbsp = 10 calories
Whipperwill A variety of cowpeas
whipping Rapid beating, usually to incorporate air, e.g., whipping egg whites
whipping cream A cream capable of being beaten to a froth; min. 30% milkfat
1/2 pint whipping cream = 2 cups whipped cream
Easiest to whip when chilled between 35-40°F. Sweetened with 2-4 tbsp sugar per cup of unwhipped cream, added after whipping is complete; sweetened is less stiff and less stable than unsweetened

Age for best whipping (hr)

<table>
<thead>
<tr>
<th>Type</th>
<th>Age</th>
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<tbody>
<tr>
<td>Freshly separated cream</td>
<td>24</td>
</tr>
<tr>
<td>Pasteurized whipping cream</td>
<td>60</td>
</tr>
<tr>
<td>Raw whipping cream</td>
<td>48</td>
</tr>
</tbody>
</table>

Heavy, 1 tbsp = 50 calories
Light, 1 tbsp = 45 calories

whipworm A food-borne parasite (Trichuris trichuria) found in human feces

whiskey [American; Canadian; Irish; Scotch (spelled whisky)] Same as whisky. A liquor made by the distillation of fermented grain (barley, corn, rye, wheat), mash of malt, or of cereal grains saccharified by diastase of malt and stored in wood for at least 4 years; not less than 80 proof; 37-53% alcohol by volume; sp. gr. 0.923-0.935 at 25°C; bourbon is from barley or wheat malt and corn; rye is from rye or barley malt and unmalted rye.

Types:
- Corn whiskey—distilled from fermented mash that is 80% corn
- Heads—first run in the distilling process
- Irish whiskey—malted and unmalted grains
- Neutral spirits—middle run in the distilling process
- Rectified spirits—mixtures of whiskeys
- Scotch whisky—pure barley malt; smoky taste
- Straight whiskey—whisky as it left the still (aged or raw) with the possible addition of distilled water

Tails—last run in the distilling process
See Bourbon whiskey; Canadian whiskey; Scotch Whisky; whisky entries
See Part 2: Minerals (Trace), Limits

whiskey, blended Combined straight whiskeys or straight whisky and neutral spirits
whisky The spelling used for Scotch whisky; Scotland whisky. High alcohol spirit distilled from fermented barley, maize, rye, or other cereal grain; some or all may be malted; usually blended
Types:
- Blended—mixture of straight malt whiskey with natural grain whiskey
- Malt—malted barley
- 1 fluid ounce (oz) = 28 grams
- 1 fluid oz, 80 proof = 63 calories
- 86 proof = 70 calories
- 90 proof = 73 calories

See whisky
whisky liqueur A spirit-based, alcoholic beverage; based on whisky
white The albuminous portion of an egg (cytoplasm)
See Part 2: Egg Structure; Egg Volume
white amur A food fish See grass carp
whitebait (blanchaille; fry; nonnats; sand eel; whitebait; whitebait; whitebait) A food fish See white amur
white blood cell (leukocyte) A blood cell that contains no hemoglobin; 5,000 per cubic millimeter of blood; 1/3000 of blood volume

white bass (Lepidema chrysops) A freshwater food fish
whitebeam See service berry
white beet See chard
white-bellied skate (skate, owl) A food fish
white blood cell (leukocyte) A blood cell that contains no hemoglobin; 5,000 per cubic millimeter of blood; 1/3000 of blood volume
white Bordeaux See Bordeaux, white
white bread A bread made from 70-75% extraction wheat flour
white Burgundy See Burgundy, white
white cheese A fresh, skimmed-milk cheese with rennet added
white clover (Trifolium repens) A perennial legume used for pasture; pH 5.5 or higher
white cockle (Lychnis alba) An annual weed
white crappie A light meat, very light delicate flavor
finfish
white distilled vinegar (white vinegar; distilled vinegar) The product made by the acetous fermentation of dilute distilled alcohol, producing a very clean, clear taste

white-eyed pea See cowpea

white fiber (fibre) A white-colored muscle fiber that stains (lipid) Sudan black B negative

whitefish (chub; cisco; lake herring; lake whitefish; menominee whitefish; mountain herring; pilot fish; roundfish; sault whitefish; shad; shad; Coregonus spf.) A fat freshwater fish caught in northern lakes of Canada and United States. Chewy, snowy white, fresh, sea fish. Average weight 3 1/2 pounds
Composition: protein 19%; fat 5.2–8.2%
See also demersal fish
See Part 2: Minerals; Food; Nicotinic Acid, Food; Unsaturated Fatty Acids

whitefish, common (Coregonus clupeaformis) A food fish

white flour The starch and gluten of the endosperm of a kernel of wheat See also flour

white fluke (flounder) A European food fish

whitefly Several species of garden pest

white goods See Part 2: Insulation

white grub The larvae of the June beetle; soft, robust, dirty white to grayish, U-shaped grubs that have six legs, shiny brown heads, and enlarged blackish abdomens; 1/2–1 1/2 inches long. Live 1–4 years in soil depending upon species
Host: Grass and some cultivated crop roots
Damage: Roots of strawberry plants
Control: Do not plant strawberries in newly plowed grassland; insecticide

white hake (Urophycis tenuis) A food fish
See hake

White Holland See Part 2: Turkey Varieties

white hots (white sausage) A moist, cooked, smoked or unsmoked American sausage made from fine, medium, or coarsely chopped, uncured, mildly seasoned beef, pork, and veal and stuffed into large diameter links or rings, pork, sheep, or artificial casings

white king salmon A white meat, light to moderate flavor, finfish

white label rum A light rum

white miso A flavorful (1 week fermentation), light-colored, low-salt paste made from soybean and rice

white mullet See mullet

white mustard (Brassica hirta or Sinapis alba) A plant grown for mustard and mustard oil

white peking ducks See peking ducks

white pepper Mature peppercorn with outer black skin removed from dried fruit See also pepper

white perch (Roccus chrysops) A small migratory bass-type food fish
Freshwater—drum
Marine—sea perch
See sheepshead

white pickled cheese See white brined cheese

white pine lumber See Part 2: Insulation

white port An aged aperitif wine made by fortifying the partially fermented juice of white grapes

white pudding A moist, cooked, unsmoked British sausage made from fine, medium, or coarsely chopped, mild or medium seasoned beef and stuffed into beef, pork, or artificial casings

white pudding rings A moist, cooked, unsmoked Irish sausage made from finely chopped, medium seasoned, beef, lamb, and pork and stuffed into beef, pork, or artificial casings

white rice See rice

white rot Threadlike shadows in the thin white of an egg

white rust (leaf mold; Albugo ipomoeaeplantarum) A sweet potato disease that produces brown spots on the undersides of leaves, which are covered with whitish, viscid growth that later becomes powdery

white sapote (Casimiroa edulis) A round, pulpy, edible, tropical American, tree fruit

white sauce A sauce made from thickened milk, flour, thickener, fat, salt, and seasoning (usually pepper)

<table>
<thead>
<tr>
<th></th>
<th>Thin</th>
<th>Medium</th>
<th>Thick</th>
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<tbody>
<tr>
<td>Butter</td>
<td>1 tbsp</td>
<td>2 tbsp</td>
<td>3 tbsp</td>
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<tr>
<td>- margarine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flour</td>
<td>1 tbsp</td>
<td>2 tbsp</td>
<td>3 tbsp</td>
</tr>
<tr>
<td>Milk or cream</td>
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<td>1 cup</td>
<td>1 cup</td>
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<tr>
<td>Pepper</td>
<td>1/2 tsp</td>
<td>1/2 tsp</td>
<td>1/2 tsp</td>
</tr>
<tr>
<td>Salt</td>
<td>1/2 tsp</td>
<td>1/2 tsp</td>
<td>1/2 tsp</td>
</tr>
</tbody>
</table>

Composition Dehydrated Prepared with milk

| Moisture (%) | 1.5 | 81.5 |
| Protein (%)  | 10.9 | 3.9 |
| Fat (%)      | 26.7 | 5.1 |
| Carbohydrate (%) | 50.6 | 8.1 |
| Fiber (%)   | 0.2 | 0.02 |
| Ash (%)     | 10.3 | 1.4 |

See Part 2: White Sauce

white sausage A sausage containing oatmeal, fat, and seasoning See bratwurst; weisswurst; white hots

white scours A microbial infection in newborn calves that is often fatal

white sea bass (Cynoscion nobilis) A light meat, very light delicate flavor, California finfish used for food

white sea trout A white meat, light to moderate flavor finfish used for food

white shad See shad

white shark (man-eater) A food fish

white snakeroot A plant having a toxic principle See Part 2: Poisonous Plants

white soda Sweetened carbonated water that contains fruit juices, acids, oils, and real or imitation lemon extract
white sole (witch flounder) A European food fish
white steenbras (Lithognathus lithognatus) A food fish
white stilton A semihard, crumbly cheese made from whole cow's milk; some types have blue veining
white sturgeon (Acipenser transmontanus) A South African food fish
white stumpnose A mixture with no identifiable taste (Aphelenchoides besseyi)
white tip A rice disease (Aphelenchoides besseyi) caused by a nematode or eelworm. It may be controlled by planting resistant varieties, using disease-free seed, water seeding, and continuous flooding
white trout See sea trout
white wine An alcoholic beverage made by fermenting of grape (Vitis vinifera) juice
white walnut See butternut
whitewash A liquid for whitening and disinfecting a surface; made using the following procedure:
1. Combine 38 lb quicklime or 50 lb hydrated lime (protected from air) with 7 gal water.
2. Strain paste through fly screen.
3. Add 4 gal water and allow to cool.
4. Dissolve 3 lb borax or trisodium phosphate (preferred) in 3 gal of skimmed milk; or better method is to dissolve the borax or trisodium phosphate in 1 gal of water and then add the following solution: 1 lb casein softened for 2 hr in 2 gal hot water
5. Dissolve 3 pt formaldehyde in 3 gal of water.
6. When the lime paste in Step No. 3 and milk or casein solution in Step No. 4 are cool, slowly mix by stirring.
7. Just before using, slowly add formaldehyde solution with stirring (adding it too fast will cause casein to gel)
Note: Mix only as much as can be used in one day
white wine An alcoholic beverage made by fermentation of grape (Vitis vinifera) juice
whitening (frostfish; hake; silver hake) A lean cod-like fish caught in New England and England.
Australia (Sillago spp.)
Big-eye, Pacific—See Alaska pollock
Europe [Gadus (Odontogadus) merlangus]
Northwest Atlantic (Merluccius bilinearis)
A number of species; common name for many of the hake species of saltwater fish
Common species
American Whiting
Carolina Whiting
North Atlantic Whiting
Pacific Whiting
Silver hake
White hake
A lean, white flesh, light to moderate flavor, saltwater, food, finfish from the cod family; average weight is 2 pounds; average length is 16 inches

Composition: protein 18.3%; fat 1.3–3% See demersal fish; hake
See Part 2: Fish, Smoke-Cured; Frozen Food Storage
WHO World Health Organization See World Health Organization
whole dry milk (dry milk solids) A product made by removing water from fluid whole milk; max. 4–5% moisture; at least 26–28% milkfat; 1 pound = 3 3/4 cups; 1 cup = 120 grams (4.3 ounces). U.S. Grades: Premium, Extra, Standard. Reconstituted by adding 4 1/2 ounces dry milk to 1 quart water
Dry storage: Below 70°F in a metal container; storage life up to 1 year
whole fish Fish as it comes from the water
See Part 2: Fish Yields
whole grain Containing all parts of the kernel. Contains germ and outer layers of grain where the B vitamins and minerals are concentrated.
To cook: 2 parts water to 1 part grain
Storage: tightly covered in cool, dry place for up to 5 months; for longer storage, place in moisture-vapour-proof material and refrigerate
whole-herd buyout See Milk Production Termination Program
whole hog sausage Sausage made from fresh or frozen pork in proportions that are normal to a single animal; must have all parts of a hog in natural proportions; hog hearts and tongues are permitted ingredients. Maximum 50% trimmable fat; maximum 3% (total ingredients) added water
wholemeal A flour that contains some bran
wholemeal bread A bread made from 100% extraction whole wheat flour
wholesale cut Primal cut; large cut of meat for wholesale use
See Part 2: Lamb, Wholesale Cuts; Meat Label
wholesome 1) Does not contain insects, filth, or decay. 2) Free of blemishes. 3) Positive impression as to wholesomeness. 4) Positive impression of quality. 5) Safe or healthful. 6) Sometimes, without treatment or additive. 7) Suitable to consume. 8) Vaguely good nutritionally; good in a nutritional sense
wholesomeness Freedom from pathogenic or other harmful bacteria
whole wheat crackers Composition: sodium 30 mg per cracker (4 grams)
whole wheat flour Flour made from the entire kernel of wheat; flavor deteriorates with storage and maximum shelf life is approx 1 month See also Graham flour
whole wheat mini lasagna Whole wheat pasta
whole wheat spaghetti Whole wheat pasta
whortleberry See bilberry
whortleberry, true (whortleberry, red) A small, red, acid, berry similar to cranberry
winkowa A semidry, cooked, double smoked Polish sausage made from medium or coarsely chopped, medium seasoned beef and pork and stuffed into pork or artificial casings
WIC See Special Supplemental Food Program for Women, Infants and Children
wild marjoram

wild lemon

WICLA

wild garlic (Allium vineale L.) A perennial weed that can contaminate wheat grain; flour may be tainted with garlic odor

wild lemon

wild marjoram (see oregano)

wild mustard (charlock; Brassica kaber) An annual weed

wild oats (Avena fatua L.) An annual weed See wild rice

wild onion (Allium canadense L.) Bulbs and leaves are edible and may be used like the domestic herb except they are stronger in flavor. If eaten by cattle they will give an undesirable flavor to both milk and meat. A perennial weed that can contaminate wheat grain and may taint flour with onion odor

wild plum See Australian native plum

wild radish (Raphanus raphanistrum L.) An annual weed

wild rice

wild rice (blackbird oats; duck rice; fool oats; Indian oats; Indian rice; water oats; water rice; wild oats; Zizania aquatica) The seed of a reed-like water plant and not true rice; it has a dark-colored kernel that is narrow and cylindrical in shape; it is hulled but not milled. An aquatic grass, cooked and eaten like rice. It is hard and takes longer cooking time than brown or white rice; ½ inch long; like all whole-grain cereals, it does not keep well in warm weather; nutlike flavor

1 pound = 15–20 servings
1 cup, raw = 4 cups, cooked
   = 5.8–6 ounces = 8 cooked servings

wild rice; Indian rice; water oats; water rice; wild oats; Zizania aquatica

wild spinach See mercury

wild vetch (Vicia angustifolia L.) An annual weed

Wiley melting point The temperature at which a solid disk of fat placed in a water-alcohol mixture becomes a sphere as the temperature of the mixture is slowly increased

willow A tree that produces fair firewood; 15 million Btus per cord (20% moisture); medium ease to start; difficult to split; medium smoke; poor coals and few sparks

Wilson–Blair base See Part 2: Microorganism, Media

wilstermarsch A semihard, full cream, tilsit-type cheese

wilde meikaas A panir-type, large (2.5–5 kg) cheese made from cow's milk

wiltinger A white wine

Wiltshire

1) A large, slow-maturing, horned breed of sheep. 2) A derby-type cheese

Wiltshire bacon Cured pork

Wiltshire curing (tank curing) Sides of pork are immersed in a brine containing the curing ingredients
Wiltshire side  Half a hog carcass with the head, feet, aitch bone, back bone, tenderloin, and skirt removed; it is cured and smoked before retailing.

wind  1) Natural movement of the air due to variations in barometric pressure from one area to another.

<table>
<thead>
<tr>
<th>Miles per hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calm</td>
</tr>
<tr>
<td>Light air</td>
</tr>
<tr>
<td>Light breeze</td>
</tr>
<tr>
<td>Gentle breeze</td>
</tr>
<tr>
<td>Moderate breeze</td>
</tr>
<tr>
<td>Fresh breeze</td>
</tr>
<tr>
<td>Strong breeze</td>
</tr>
<tr>
<td>Near gale</td>
</tr>
<tr>
<td>Gale</td>
</tr>
<tr>
<td>Strong gale</td>
</tr>
<tr>
<td>Storm</td>
</tr>
<tr>
<td>Violent storm</td>
</tr>
<tr>
<td>Hurricane</td>
</tr>
</tbody>
</table>

2) Breathing capacity of a horse or other large animal

wind chill index  A measure of net chilling effect of both temperature and wind

<table>
<thead>
<tr>
<th>Wind speed (mi/hr)</th>
<th>Temperature (°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>-10</td>
</tr>
<tr>
<td>20</td>
<td>-27</td>
</tr>
<tr>
<td>30</td>
<td>-43</td>
</tr>
<tr>
<td>40</td>
<td>-50</td>
</tr>
</tbody>
</table>

winding  Placing one front or hind foot directly in front of the opposite one in action

windpipe  Trachea; passage tube from mouth to lungs

wind scarring  Citrus fruit surface injured when fruit is rubbed against the tree; resulting scars reduce the grade of fruit

windsor  See broad bean

windsor red  A cheddar-type cheese that contains red wine

wine  An alcoholic drink produced by fermentation of subacid fruit juice by yeast (Saccharomyces ellipsoides) under anaerobic conditions; 30°C and 25% sugar will yield 7–16% alcohol (by volume); alcohol by volume ranges from 7–22%.

sugar → alcohol + carbon dioxide

The carbon dioxide is usually allowed to escape, but in sparkling wines it is retained. Flavor is affected by: type of grape; climate; soil; winemaker. Alcohol beverage fermented from grape juice (Vitis vinifera) or other fruit

Types:

- Appetizer—light, highly flavored, 15–20% alcohol; served chilled before dinner or with appetizers and soup, e.g., dubonnet, madeira (dry), sherry (dry), vermouth
- Crackling (petillant)—slightly effervescent
- Dessert wine—heavy, sweet, 20% alcohol, served with desserts, fruit, nuts, e.g., angetica, bordeaux (sweet), madeira (sweet or medium), muscatel, port, sauterne (sweet), sherry (sweet or medium), tokay
- Dry—low sugar
- Fortified—alcohol added; aperitifs before a meal or dessert wine, e.g., madeira, marsala, port, sherry
- Medicated—medicament added
- Red—fermented with grape skins
- Red table wine—dry, slightly tart, astringent, 10–14% alcohol, red wines served at room temperature with heavier entries (meat, pastry) e.g., burgundy, chianti, claret
- Rosé—juice remains in contact with skins a few hours; wine should be consumed when it is young
- Sour—ferment to acetic acid
- Sparkling—sugar is added to wine causing fermentation to begin again and more alcohol and bubbles are produced; 10–14% alcohol, served chilled anytime, with or without food; e.g., burgundy, champagne
- Spritzig—still but tastes as if effervescent
- Sweet—high sugar
- White—juice is separated from grape skins prior to fermentation; pleasant to drink at an earlier stage than red
- White table wine—delicate flavor, 10–14% alcohol
- White wine served chilled with lighter entries (fish, fowl); e.g., Rhine wine, sauterne

Types of wines for various foods:

- Aperitif—champagne, dry madeira, or dry sherry
- Cheese—burgundy, hock, port, or rich sherry
- Dessert—madeira, port, or rich sherry
- Fish—alsatian, champagne, Graves, hock, moselle, or white burgundy
- Game and meat—claret, red burgundy, red Rhone wines, or firm-bodied hock
- Hors d’oeuvre—dry white wine or sherry
- Oysters—champagne, Graves, hock, moselle, or white burgundy
- Soup—dry madeira or dry sherry
- Sparkling—red or white, bubbles (carbonic acid gas); e.g., champagne
- Sweets—barsac, champagne, a rich hock, or sauterne
- Table—wines that normally accompany a meal; may be red, rosé, or white
- Throughout the meal—champagne, rosé wine

Serving temperature (change temperature slowly):

- Cellar temperature (cooler than room temperature)
- Champagne
- Sherry
- White wine
- Chilled—approximately 45°F
- Room—stand in serving room for a few hours prior to serving
- Warm room
- Red wine

Serving temperature:

- Champagne—42–46°F
- Semisweet white—42–46°F
- Sparkling wine—42–46°F
- Sweet—42–46°F
- Rosé—46–54°F
- White—46–54°F
- Red (light and fruity) wine—50–54°F
- Red (full-bodied) wine—57–62°F
1.5 liter bottle = 10 (5 ounce) servings

\[ \frac{1}{4} \text{ bottle} = 8 \text{ (3 ounce) servings} \]
\[ \frac{1}{2} \text{ gallon} = 21 \text{ (3 ounce) servings} \]

Content per 100 cc (20°C): not more than 0.1 g NaCl; not more than 0.2 g potassium sulfate; not more than 0.14 g volatile acids (calculated as acetic) in red wine; not more than 0.12 g volatile acids (calculated as acetic) in white wine; max. 14.5 g alcohol in unfortified wine; 0.11–0.44 g ash; 0.5–0.9 g total acidity (calculated as tartaric acid); 0.007–0.009 g nitrogen; pH 2.3–3.8

Storage: 55–58°F; well ventilated; free from drafts; dark; no vibrations; no odors; on side to keep cork damp except spirit bottles should be stored upright; containers should be full to minimize air content

See pink wine; red wine; rosé wine; white wine

See Part 2: Flavor Ingredients, Taste and Flavor Type; Minerals (Trace), Limits; Spoilage, Carbohydrate Foods; Wine, Sugar Addition; Wine, Sweet

wine, appetizer  Sherry; dry vermouth

wineberry (checkerberry; *Rubus phoenicolasius*)
A berry that is similar to the common raspberry except it is a clump-forming plant and the canes are covered with red hair rather than prickles; the fruit is golden, orange, shiny, and translucent.

wine bottle size  Capacity of wine containers

<table>
<thead>
<tr>
<th>Size</th>
<th>Fl. oz</th>
<th>Cups</th>
<th>Dinner and sparkling wines (4 oz)</th>
<th>Dessert wines (3 oz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fifth, (\frac{1}{4}) qt, most popular</td>
<td>25.6</td>
<td>3(\frac{1}{2})</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Tenth, (\frac{4}{5}) pt, bottle</td>
<td>12.8</td>
<td>1(\frac{1}{2})</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Half-gallon bottle or jug</td>
<td>64</td>
<td>8</td>
<td>16</td>
<td>21</td>
</tr>
<tr>
<td>Gallon bottle or jug</td>
<td>128</td>
<td>16</td>
<td>32</td>
<td>42</td>
</tr>
</tbody>
</table>

Large bottles

<table>
<thead>
<tr>
<th></th>
<th>Capacity compared to 25.6 oz bottle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnum</td>
<td>2</td>
</tr>
<tr>
<td>Double magnum (jerobaom)</td>
<td>4</td>
</tr>
<tr>
<td>Rehoboam</td>
<td>6</td>
</tr>
<tr>
<td>Methuselah</td>
<td>8</td>
</tr>
<tr>
<td>Salmanazar</td>
<td>12</td>
</tr>
<tr>
<td>Balthazar</td>
<td>16</td>
</tr>
<tr>
<td>Nebuchadnezzar</td>
<td>20</td>
</tr>
</tbody>
</table>

A tappit hen is 3 imperial quarts

Wine Cellar of the Holy Roman Empire  See rheinpfalz

wine, dessert  Examples are champagne, cream sherry, madeira, muscatel, port, and tokay

wine glass  A measure of volume

  1 wine glass = 4 tbsp
  = 2 fluid ounce
  = 100 grams of wine
  = 60 milliliters

2 wine glasses = 1 gill

wine palm  See palm

wine, red table  Examples are bordeaux, burgundy, cabernet sauvignon, chianti, and claret

winery name  A listing on a wine label that indicates the winery where the wine was produced

Winesap  A variety of apple in season from January to June; it is a good cooking and eating apple. See also Stayman Winesap

wine spirits  Distillation product of fermented grape juice

wine vinegar  Grape vinegar  See wine (grape) vinegar

wine vinegar (grape vinegar)  The product made by the alcoholic and subsequent acetous fermentations of the juice of grapes

wine, white table  Examples are chablis, chardonnay, sauterne, and zinfandel

wing drummette  Consists of the humerus of a poultry wing with adhering skin and meat attached

winged bean (*Psophocarpus tetragonolobus*)  A twining, perennial plant whose green pods, leaves, and tubers are used as vegetables and whose dry seeds are used as a pulse; also grown for green manure and forage

winged pea  See asparagus, pea

wings  Includes the entire wing with all muscle and skin tissue intact, except that the wing tip may be removed

winkle (periwinkle; *Littorina littorea*)  A shellfish; 20% edible (avg. 20% protein)  See periwinkle

Winnipeg smoke process  A cook smoke used for fish

winter apple  An apple that keeps well or ripens late

Winter Banana  A variety of apple that is good for eating, sauce, and pies

winter barley  Barley sown in autumn

winter carp (bigmouth)  A food fish

winter cherry  See gooseberry

winter cress (rocket; *Barbarea vulgaris*)  An herb of the water cress family; a mustard-type plant used as a salad

winter flounder (*Pseudopleuronectes americanus*)  A white meat, light to moderate flavor, food fish

wintergreen (checkberry extract; methyl salicylate; *Gaultheria procumbens*)  A flavoring material (fresh leaves, extract, and oil) used in confectionery (e.g., candies, chewing gums)

See Part 2: Essential Oils; Flavor Ingredients, Taste and Flavor Type

winter greens  Kale and turnip tops  See Kale
winterization (wintering; winterizing) A method of treating fats and oils in which the higher-melting fractions are removed by cooling, crystallization, and filtering; the resulting oil remains clear at low temperatures. A salad oil should be clear after 5.5 hours at 32°F
winter melon See melon
winter pear A pear that keeps well or ripens late
winter sweet See oregano
winter wheat Wheat sown in autumn and harvested in the summer
wipe To remove excess solder
wire See Part 2: Mesh Sizes
wire grass See Bermuda grass
wireworm (click beetles; snapping beetles; numerous species) 1) Hard, wirelike worms; slender, hard-shelled, tan to dark beetles; \( \frac{1}{2} - \frac{1}{2} \) inch long
2) The larvae of the click beetle, which will eat the seed, crown, roots, and stems of wheat. 3) An insect that may be found feeding on sugar beet roots. 4) A light brown, wavy looking insect that bores into seed or stem of corn and causes failure to germinate; older plants may wilt and die
witloof Favoured head of witloof chicory (French endive); solid head formed from the leaves of forced chicory roots
witloof chicory See chicory; French endive
WL differential agar See Part 2: Microbiological Media
wool fat  Wool grease See lanolin; yolk 2)
wool grease  See lanolin; yolk 2)
woolly pear aphid (Eriosoma pyricola)  An aphid found on pears
wool yield

\[
\text{yield} = \frac{\text{clean (scoured) wool wt}}{\text{grease wool wt}} \times 100
\]

\[
\text{yield} = 100 - \% \text{ shrink}
\]

\[
\text{scoured value} = \frac{\text{grease wool price}}{\text{yield}}
\]

\[
\text{grease wool value} = \text{scoured value} \times \text{yield}
\]

wor  Cooked in a pot, e.g., soup
worcester berry  A hybrid of gooseberry and black currant
worcestrianshire sauce  A pungent, dark-colored meat sauce with suspended particles; a fermented (4–6 months), strained, pasteurized product containing anchovies, chili peppers, eschalots, flavorings, garlic, lime juice, molasses, onions, salt, soy or soybeans, spices, sugar, tamarinds, and vinegar
Composition: sodium 206 mg per tablespoon (17 grams)
See Part 2: Sauce, Worcester
word processing system  A text editing typewriter and printer with magnetic disc storage
Wortel–Ferguson agar  See Part 2: Microorganism, Media
World Bank  Made up of International Development Association (IDA) and International Bank for Reconstruction and Development (IBRD); offices at 1818 H Street N.W., Washington, DC 20433

wormwood (mugwort; old woman; Artemisia absinthium)  A perennial, bitter, astringent herb of the daisy family that is used in flavoring liqueurs, vermouth wine, and tea; it has a bitter taste

wormwood oil  An oil sometimes referred to as absinth oil
worn  A wine that has been aged too long
worsted cloth  A high quality, woolen fabric
wort  1) In beer manufacture, the clear liquid left after straining the mashed grain and malt; infusion of plant to be fermented; contains maltose. Extract of malt, made from mash and used in brewing beer; liquid portion (malt sugar and soluble extracts from malted mash) of malted grain. 2) A plant of the cabbage family. 3) An aromatic herb
See beer
wort agar  See Part 2: Microorganism, Media
worts huckleberry  See bilberry
WP  Weather permitting
wrapping material  Material (e.g., fabric, paper, film) to cover, enclose, or enshroud food
See Part 2: Plastic Permeability
wrasse (various species of Labridae)  A European food fish; a bony, tropical food fish
wreckfish (stone bass)  A food fish
wrinkle  A waviness in the cover hook from which the tightness of the double seam is determined
Wuchu  A large, slate gray, draft and milk-producing water buffalo originated in Hupeh (Hubei, central China) province, China
wunderpilz  Teekvass
world wheat  Wheat in which the bran is chemically (sodium hydroxide and steam) peeled, scoured, acid-neutralized, and dried; it is lighter in color, higher in cost, and less nutritious than bulgur
wurst  Sausage
wurstchen  A fine to medium chopped, cooked, smoked or unsmoked, American sausage available in medium to large diameter links or large diameter casings for slicing
würstchen nach debrecziner art  A moist, cooked, smoked eastern German sausage made from medium chopped, heavily seasoned beef and pork and stuffed into pork casings or not stuffed into a casing
Württemberg  A region in east central Germany that produces pleasant red and white wine
wurz  Spice or seasoning
wusih  See hu-yang
Wyandotte  An American class of chickens that lays a light-brown egg and has a rose comb.

<table>
<thead>
<tr>
<th>Wyandotte varieties</th>
<th>Plumage color</th>
<th>Shank</th>
<th>Beak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black*</td>
<td>Greenish black to slate</td>
<td>Male, yellow; yellow</td>
<td>Yellow</td>
</tr>
<tr>
<td>Buffe*</td>
<td>Even buff color</td>
<td>Yellow</td>
<td>Yellow</td>
</tr>
<tr>
<td>Columbian*</td>
<td>Mostly white; neck and tail feathers black with white lacing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Golden-laced</td>
<td>Same as Silver with white replaced by golden</td>
<td>Yellow</td>
<td>Yellow</td>
</tr>
</tbody>
</table>

(Continued)
<table>
<thead>
<tr>
<th>Wyandotte varieties</th>
<th>Plumage color</th>
<th>Shank</th>
<th>Beak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partridge*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>Neck and back feathers black with red lacing; rest of body slate</td>
<td>Light yellow</td>
<td>Yellow</td>
</tr>
<tr>
<td>Male</td>
<td>Neck and back feathers green-black with red edging; rest of body slate</td>
<td>Yellow</td>
<td>Yellow</td>
</tr>
<tr>
<td>Silver-laced*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>Black and white lacing over most of body; tail and undercoat is darker</td>
<td>Yellow</td>
<td>Yellow</td>
</tr>
<tr>
<td>Male</td>
<td>Back white; neck is black with white lacing; body white edged in black; tail feathers black and undercolor slate</td>
<td>Yellow</td>
<td>Yellow</td>
</tr>
<tr>
<td>Silver-penciled*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>Gray with black penciling, gives lacy appearance</td>
<td>Light yellow</td>
<td>Yellow</td>
</tr>
<tr>
<td>Male</td>
<td>Neck and back white with black edging of feathers; rest of body black with some white</td>
<td>Yellow</td>
<td>Yellow</td>
</tr>
<tr>
<td>White*</td>
<td>White</td>
<td>Deep yellow</td>
<td>Yellow</td>
</tr>
</tbody>
</table>

*Have bantam varieties

See Part 2: Poultry Breeds and Varieties
\( x^2 \) (chi-square) A skewed distribution that shows the lack of agreement between data and hypothesis; sum of (deviation squared/expected number)

**xanthan gum** A high-molecular-weight, polysaccharide, hydrocolloid gum produced by a submerged, aerobic fermentation; obtained from microbial *Xanthomonas campestris* and used in many foods as a thickening agent, emulsifier, stabilizer, suspending agent, or thickener. This gum is very resistant to enzymes, very pseudoplastic, and shows little change in viscosity with salt, pH, and temperature.

Storage: tight container

**xanthia cocktail** A brandy, wine, and gin cocktail

**xanthine oxidase (Schardinger's enzyme)** An oxidative enzyme found in milk and liver

**xanthophyll (lutein, luteol)** \( \text{C}_{40}\text{H}_{56}\text{O}_{2} \) A yellow pigment found in plants, egg yolk, and butter; an hydroxy carotene derivative

**xanthoproteic test** A general but not very sensitive test or protein; a yellow color is formed when concentrated nitric acid comes in contact with tyrosine and tryptophan; all common proteins if present in large quantities give a positive test.

*See Part 2: Protein and Amino Acid, Color Reactions*

**xarque** *See jerked beef*

**x axis** *See abscissa*

**X chromosome** A sex chromosome that carries the female characteristics

**X disease** 1) A disease found in birds that are fed moldy peanuts; caused by aflatoxins. 2) A cherry tree disease that causes sparse, light green, foliage and a failure of the fruit to ripen

**Xe** Symbol for the element xenon

**xenon (Xe)** A relatively inert gaseous element; at. no. 54; at. wt. 131.30; noble gas group of Period Table; electron configuration \( 2-8-18-18-8 \); orbit K L M N O

**xeres cocktail** A sherry and bitters appetizer

**xerophagia** Consuming dry food

**xerophthalmia** A total ocular syndrome associated with vitamin A deficiency, including keratomalacia

**xi** (\( \Xi, \xi \)) Greek letter with an English equivalent of x

**ximenia (mountain plum; wild lime)** The edible, fruit of a small, tropical plant

**xiphoid cartilage** Tip of breastbone

**XL agar** *See Part 2: Microorganism, Media*

**XLD agar** *See Part 2: Microbiological Media; Microorganism, Media; Microorganism, Selective and Differential Broths and Media; Water Filtration Plant*

**X-ray** High-frequency electromagnetic radiation produced when high-energy-charged particles (e.g., electrons) strike a suitable target. Electromagnetic radiation with a wavelength of \( 5 \times 10^{-7} \) to \( 6 \times 10^{-10} \) cm

**xylan** \( \text{C}_{5}\text{H}_{10}\text{O}_{5} \) A hemicellulose found in many plants (corn cobs, oat hulls, woody parts of plant); it will hydrolyze to xylose

**xylem** Cells from which wood is developed *See also* wood

**xylitol** A sugar alcohol that is made from a part of the birch tree and is about as sweet as sucrose; has received some negative research reports. Used to artificially, sweeten chewing gum

**xylose (wood sugar)** \( \text{C}_{5}\text{H}_{10}\text{O}_{5} \) A five-carbon monosaccharide (pentose) found in fibrous materials; a sugar 40% as sweet as sucrose; used as a diabetic food

*See Part 2: Sugar, d-aldehydro*
Y Symbol for the element yttrium
yabra A sweet, cloudy white wine made from wild, data palm sap
yachtwurst See jagdwurst
yagioo A rice wine
yahourt Yoghurt
yak Large (500–800 pounds), black, black and white, brown, and brown and white animals related to the American bison found in the mountainous regions of central Asia. Used as a pack animal (can carry up to 300 pounds) in snow and in swamps; also for fiber, hides, meat, and milk; meat is coarse-grained and dark in color; milk contains 6% fat. Fiber yield: 2.25 pounds of hair and 1.25 pounds of finer fibers per year
yakeyake A steamed, cassava bread
yaki Fry
yakiniku Barbecue-style beef
yakitori Skewered, grilled chicken
yakult A rice wine
yam (Indian potato; true yam—Dioscorea spp.)—A term sometimes used to describe any tropical root crop; in the United States, same (mistakenly) as sweet potato (Ipomoea batatas); the true yams, however, are actually unrelated to sweet potatoes, taros, and tanniers; resembles a sweet potato but is longer and is a tuberous root of a different plant; in southern U.S. sweet potatoes are often called yams, particularly the moistfleshed varieties.
D. alata (greater yam)—Asia
D. rotundata (white; Guinea yam)—Africa
D. trifida—America
280 days average growth period.
Type:
Air Potato (D. bulbifera)—small tuber in axils of leaves
Birch Kind (D. aculeata)—large tuber; good flavor
Chinese or Cinnamon Vine (D. divaricata)—very deep tuber
Small (D. fasciculata)—small tuber
Tivolo (D. nummularia)—large tuber; good flavor
Very Small (D. triflora)—very small tuber; good flavor
White (D. alata)—very good flavor
The Dioscorea produces a tuber with a white or yellow flesh; white to reddish skin color; the tuber is cooked and usually mashed but it can be roasted, baked, boiled, steamed, fried, or dried into flour; it is high in starch and low in protein
Composition: moisture 74%; protein 2%; fat 0.2%; carbohydrate 15–25%; ash 1%
Edible energy value 4.4 MJ kg⁻¹
See also sweet potato
See Part 2: Minerals, Food; Starches and Starchy Roots Composition; Vegetable Storage
yam bean (Pachyrhizus tuberosus) A plant that produces both edible tubers and seeds or pods
yam bean, African (Sphenostylis stenocarpa) A twining, perennial whose tubers are eaten (fresh and cooked) and dry seeds are used as a pulse
yam bean, Mexican (potato bean; manioc; Pachyrhizus erosus) A leguminous plant that produces both edible tubers (eaten raw or cooked) and green pods (used as vegetable); ripe seeds are reputedly toxic
yam, Chinese A large, thick-rooted tuber similar to the sweet potato
yaourt, yourt A fermented milk See also yogurt
yapon (South Sea Island tea) A type of holly used as tea
ybars An ancient term for herbs
yard (yd) A measure of length
1 yd = 914.4 millimeters (mm)
= 91.440183 centimeters (cm)
= 36 inches (in.)
= 3 feet (ft)
= 0.91440183 meter (m)
= 0.18182 rod (rd)
= 0.0009144 kilometers (km)
= 0.0005682 statute mile
= 0.0004934 U.S. nautical mile
5½ yards = 1 rod
yardlong bean See asparagus, pea
yaro See Part 2: Starches and Starchy Roots Composition
yarobu kunya A millet or sorghum beer
yarrow (milfoil; nosebleed; thousand leaf) An herb used in medicine; aromatic herb whose leaves are used in flavoring; fresh scented herb used as a substitute for chervil
yashi zake A sweet, cloudy, white wine made from yautia palm sap
yatay palm See calulu
yautia (New Coco Yam) Edible tubers of a tarolike plant See tannia
See Part 2: Starches and Starchy Roots Composition
yava See ava; kava
y axis See ordinate
yayin  Wine
Yb  Symbol for the element ytterbium
Y chromosome  A sex chromosome that carries the male characteristics
yean  To lamb
yearling  An ovine animal (sheep) from 1–2 years of age that has two permanent incisor teeth; an animal in its second year  See break joint
See Part 2: Bone Age; Sheep Market Classes and Grades
yearling hen  Female turkey between 7 and 15 months old
yearling tom  Male turkey between 7 and 15 months old
yeast (Saccharomycetaceae fam.)  A single-celled microscopic plant that divides or reproduces by budding. A microscopic plant that can convert sugar to carbon dioxide and alcohol; types of fungi, some of which are pathogenic

\[
\text{yeast} \\
\text{Sugar } \rightarrow \text{CO}_2 + \text{alcohol}
\]

-used as a leavening agent in foods and to induce alcoholic fermentation (alcohol may be further converted into acid) and vitamin B production. Optimum temperature for reaction (not storage) 82°F. Produces the enzymes invertase and symase. Starter inoculum is available fresh pressed, active dried, or fresh frozen form; Saccharomyces cerevisiae is used in bread.

Baker's yeast—used to make bread and as a dietary supplement (50% protein)

Brewer's yeast—used to convert sugars to alcohol and as a dietary supplement for B vitamins

<table>
<thead>
<tr>
<th>Composition</th>
<th>Irradiated, dehydrated</th>
<th>Torula, dehydrated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry matter (%)</td>
<td>94</td>
<td>93</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>48</td>
<td>49</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>6</td>
<td>7.7</td>
</tr>
</tbody>
</table>

Yeast and molds are counted with potato dextrose agar or potato glucose agar, acidified  See brewer's yeast; compressed yeast; dry yeast

See Part 2: Bacteria, Molds and Yeasts; Canned Spoilage Manifestations; Canned Spoilage Related to pH; Culture Media; Egg Specifications; Microbiological Media; Microbiological Standards; Dairy; Microorganism; Culture Media, Dairy and Food Products; Microorganism, Media; Minerals, Plant or Animal Tissue; Minerals (Trace), Limits; Nicotinic Acid, Food; Pantothenic Acid Content; Riboflavin, Food; Rot Spoilage; Thiamin, Food; Water Activity, Organisms and Food

yeast and mold  Types of fungi usually in the soil that can contribute to food spoilage

yeast, baker's (Saccharomyces cerevisiae)  Composition (Baker's dry): sodium 1 mg per package (7 grams)

yeast, dried brewe'r's  An inactivated (dead) form of yeast used as a food supplement for iron and B vitamins

yeast extract  Made from brewer's yeast and spread on bread or used in a beverage

yeast, malt sprout extract  A food additive used as a flavor enhancer

yellow berry  See cloudberry

yellow blight  See stem rot

yellow bullhead (Ictalurus natalis)  A food fish

yellow cake  See Part 2: Baked Products, Frozen Storage Life

yellow cure  See amarelo cure

yellow dhal  See pigeon pea

yellow dwarf  A virus that causes stunting of both plants and roots of the sweet potato

yellowfin (tuna; Thunnus albacora; syn. Neothunnus macropterus)  A food fish  See grouper; tuna

yellowfin sole (Limanda aspera)  A food fish

Yellowhammer  Small, mixed-breed of yellow cattle

Yellow Jersey  A dry, mealy variety of sweet potato

yellow mombin  See ambarella

yellow-necked caterpillar  An insect that has yellow and black stripes on its body, is up to 2 inches long, and has a collar of bright yellow just behind the head. The young larvae skeletonize leaves; older larvae eat the entire leaf

yellow No. 5  A FD & C food color additive

yellow perch  See lake perch

yellow pike  A food fish  See walleye

yellow pine  See Part 2: Poisonous Plants

yellow prussiate of soda  Sodium ferrocyanide [Na₄Fe(CN)₆ • 10 H₂O]. A food additive used as an anticaking agent

yellow rocket (Barbarea vulgaris)  An annual weed

yellows  1) A virus disease of strawberries that dwarfs the plant and affects the leaves; the plants produce few runners. May be controlled by planting virus-free stock and using insecticides. 2) A disease of sour cherry trees that causes yellow mottling of older leaves and small crops of large fruit. No cure

yellow spider mite (Eotetranychus carpini borealis)  A pest of pear; the adult in winter is yellow or orange and when feeding, yellow to green with 2 dark spots; they spin webs that damage foliage and interferes with normal fruit development; damaged foliage is bronze in appearance

yellow star thistle  See Part 2: Poisonous Plants

yellowtail (amberfish; white meat fish)  A food fish of the mackerel family that resembles a tuna and is canned in the same manner

Atlantic—Seriola lalandi

Australia—Trachurus declivis

See flounder

See Part 2: Vitamin D, Fish

yellowtail flounder (Limanda ferruginea)  A northwest Atlantic, white meat, very light delicate flavor, food, finfish
yellowtail snapper  A white meat, very light delicate flavor, finfish
yellow tip  See endoxerosis
Yellow Transparent A variety of apple that is in season in July and August that makes excellent sauce and good pies but is only fair for eating due to acid content
yelt  See gilt
yen-tsai Pickled vegetables
yeolmu-kimchi (yulmoo kimchi) Acidic, carbonated, young, oriental radish
yerba de maté  See maté
yerba-de-pasmo  See Part 2: Poisonous Plants
yerba santa (bear’s weed; gum bush; mountain balm) An evergreen shrub used as an herb
yerewansky A white, brined cheese made from sheep’s milk
yiaourti Yogurt
yield The amount of useful product obtained from a planting or growing operation or quantity remaining after treatment  See also wool yield
See Part 2: Beef Retail Yield; Fish Yields; Fruit, Dried, Simmering; Fruit Frozen Yield; Fruit Sauces; Fruit, Simmering; Lamb Yield; Nutrients in Crops; Pork Carcass, Retail Yield; Pork Cooking Yield; Pork Yield; Poultry Yield; Sugar Beet Yield; Vegetable Frozen Yield; Vegetable Yield, Canned and Frozen; Vegetable Yield, Frozen, Canned and Fresh; Vegetable Yields; Yield Grade Meat
yield grade Grade to identify carcasses with different amounts of boneless or closely trimmed retail cuts; shield-shaped stamp on beef carcass used to indicate yield of trimmed retail cuts
See Part 2: Beef Carcasses, Yield Grade
yilt  See gilt
yin wo Bird’s nest
ylang-ylang oil (cananga oil) An essential, yellow oil with a floral odor obtained from a plant grown in the Philippines
See Part 2: Essential Oils; Flavoring Agents, Natural
YM agar  See Part 2: Microorganism, Media
ymer Thick, ropy, fermented, low-medium acid, cow’s milk
yoghourt Same as yoghurt or yogurt
yoghurt, drinking Sour, diluted milk
yogurt (yoghoot; yoghout; yoghurt; yogourt; yogurt) Same as yoghurt, yoghout, curds. A custardlike product made by fermenting (Lactobacillus acidophilus, Lactobacillus bulgaricus, and Streptococcus thermophilus), homogenized, pasteurized, low-fat milk or concentrated whole or skimmed milk; may be enriched with nonfat dry milk solids. Fruits or flavors are often added. Semithick, fermented, sour (pH 4-4.5), buffalo’s, camel’s, cow’s, goat’s, sheep’s, or water buffalo’s milk
Style: Frozen form
Sweetened and fruit flavored
Sundae—fruit at bottom
Swiss—fruit distributed throughout

Yorkshire (large white)  827

1 pint = 2 cups
1 cup = 250 grams (8.7 ounces)

<table>
<thead>
<tr>
<th>Composition</th>
<th>Fruit varieties</th>
<th>Skimmed milk</th>
<th>Whole milk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>74–75.3</td>
<td>75.3</td>
<td>89</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>4.0–4.4</td>
<td>4–4.9</td>
<td>3</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>1.1–1.4</td>
<td>1.4</td>
<td>2</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>18.5–19</td>
<td>18.5–19</td>
<td>5</td>
</tr>
<tr>
<td>Fiber (%)</td>
<td>0.1</td>
<td>0.1</td>
<td>0</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Calories (per cup)</td>
<td>125</td>
<td>140</td>
<td>125</td>
</tr>
</tbody>
</table>

Composition (per cup): sodium 105–174 mg; calcium 272 mg; cholesterol (low-fat yogurt) 17 mg
Storage: refrigerate; if separation occurs, stir liquid back into yogurt. Store frozen (if unopened) for up to 6 weeks; defrost at room temperature 3 hours
See Part 2: Calcium Equivalence for Milk; Cultured Dairy Products, Composition; Diary Terms; Fluid and Fermented Milks, Composition; Milk and Milk Products, Vitamin Content; Vitamin A, Milk and Milk Products

yogurt, frozen Made from yogurt, skimmed milk, and fruit or flavoring and sweeteners; low in milk fat and has less sugar and less calories than ice milk

yogurt, plain

<table>
<thead>
<tr>
<th>Composition</th>
<th>Low fat</th>
<th>Plain</th>
<th>Skimmed milk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture (%)</td>
<td>85.1</td>
<td>87.9</td>
<td>85.2</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>5.2</td>
<td>3.5</td>
<td>5.7</td>
</tr>
<tr>
<td>Fat (%)</td>
<td>1.5</td>
<td>3.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Carbohydrate (%)</td>
<td>7.0</td>
<td>4.7</td>
<td>7.7</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>1.1</td>
<td>0.7</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Protein per 8 ounce serving: low-fat 12 grams; plain 8 grams; skimmed milk 13 grams.
yolk 1) The yellow mass of stored food found in the inner portion of an egg of a bird; the cellular nucleus of an egg. 2) Wool grease (yolk). A natural oil or grease found on sheep fleece that helps to preserve it; source of lanolin
See Part 2: Egg Structure; Egg Volume
yolo A nonalcoholic, sour drink made from maize
Yom Kippur A solemn Jewish holiday; the day of atonement; no food or drink is consumed for 24 hours
yonezu Rice vinegar
York A creamy, full-fat, soft, unsalted cheese made from cow’s milk
York ham A smoked, country-cured style of ham produced in England
York Imperial A variety of apple that is in season from November to March; is a good sauce apple; a fair to good cooking and eating apple
Yorkshire (large white) A bacon-type hog originating in northern England by crossing the Large Yorkshire with Leicester and later crossing with Middle
Yorkshire (large white)

and Small Yorkshire; its color is solid white and it has erect ears and a long body. See Part 2: Swine Breeds

Yorkshire pudding A batter, pancakelike, mixture of eggs (2), flour (1 cup), and milk (1 cup), baked in meat fat

Yorkshire stilton See cotherstone

yosenabe A meat, vegetable, and egg soup

young American A shape of cheese: diameter, 6–7 inches; height, 7–8 inches; weight, 9–11 pounds

youngberry A large dull red (black when ripe) berry that is a hybrid between blackberry and dewberry. Low growing trailing vines produce large, sweet, wine-red, colored fruit. Used for desserts, freezing, and jams

Frozen style—whole, with or without sugar or syrup
Canned style—with syrup or with water (for pies)
1 crate (24 quart), fresh = 32–36 pints, frozen
1 pint, frozen = 1½–1¾ pints, fresh
See Part 2: Fruit Frozen Yield

youngberry, canned In addition to youngberries, may also contain natural and artificial flavors
Sucrose in syrup (%)
Extra light—< 14
Light—14–19
Heavy—19–24
Extra heavy—24–35

young hen Female turkey that is 5–7 months old

young sheep Have 1–4 permanent incisors

young tom Male turkey that is 5–7 months old

youthful Young; immature

you-you An orange-juice-flavored, syrup-coated, wheat flour doughnut

YPC broth See Part 2: Microorganism, Media

ytterbium (Yb) A rare earth element of the lanthanide series; at. no. 70; at. wt. 173.04; Group IIIB of Periodic Table; oxidation states +2, +3
Electron configuration 2−8−18−32−8−2−2−6−2
Orbit K L M N O P

yttrium (Y) A metallic element; at. no. 39; at. wt. 88.91; Group IIIB of Periodic Table; oxidation state +3
Electron configuration 2−8−18−9−2−2−6−2
Orbit K L M N O

yu Fish

yubileynaya osobaya A brandy- and honey-flavored vodka

yuca See cassava

yukiwari-natto Strong flavored, long (12–15 days) fermentation, dark brown soybeans in dark brown paste

yule log A log-shaped cake covered with chocolate

yulmoo kimchi See yeolmu-kimchi

yunnan ham Red, country ham

yu tiao A wheat flour doughnut

yuzu Japanese grapefruit
zabadi Yogurt
zabaglione A thick, light drink made from eggs, sugar, and wine or fruit juice
zabaglione (zabaione) A rich custard, containing egg yolk, sugar, and marsala
zagaro A dry or slightly sweet white wine
zakoussot A camembert-type cheese made from cow's milk
zakroczymska A moist, uncooked, smoked Polish sausage made from coarsely chopped, medium-seasoned pork stuffed into artificial casings
zambaricos See kapestoes
zanzibar cocktail An appetizer made with gin, vermouth, lemon juice, sugar, and bitters
zaadan A pickled egg; the shell is cracked and the egg preserved for 4–5 months.
zapallito A mahogany-colored gourd with yellow flesh
zapota See sapodilla
zarf A metal holder for coffee cup
zaw-fan Breakfast
zedenka A processed cheese
zearedenone A sex hormone produced by several species of the Fusarium (e.g., F. roseum and F. graminearum); it is a mycotoxin.
zeaxanthin A carotenoid pigment used in food coloring
zebu (Bos indicus) An Asiatic ox with one or two humps of fat on the shoulder See also Brahman See Part 2: Beef and Dual-Purpose Cattle
Zebu, South China A breed of light brown, thoracic-humped, draft cattle of southern China
zein An alcohol-soluble protein obtained (2.5–10%) from corn (Zea mais); contains little lysine or tryptophan
zell A white wine
ZENDOREN National Federation of Dowa Meat Retailers Association
Zenker's fixing fluid A fixative that may be prepared as follows:
1. Mix together
   2.5 g bichromate of potassium
   5.0 g bicloride of mercury (a corrosive sublimate; handle with glass)
   1.0 g sodium sulfate
2. Dissolve in 100 ml water with aid of heat.
3. Add 5 ml glacial acetic acid when ready to use.
Used in the following manner:
1. Use 90 times as much fluid as tissue.
2. Fixing time 30 min to 36 hr depending on density of tissue
3. Wash in running water 12 to 24 hr
4. In alcohol:
   35%—20 minutes
   50%—20 minutes
   70%—20 minutes
5. Remove mercuric crystals (may be done now or after cutting tissue) by treating with dilute iodized alcohol for 30 min and then washing in 70% alcohol.
   Add iodine to alcohol (to port wine color).
   Renew iodine when color disappears (usually 12–36 h).
   Wash in 70% alcohol until no more I2 is extracted.
ZENNIKUREN All-Japan Meat Industry Co-Operative Association
ZENYUREN Pan-Japan Imported Meat Industries Co-Operative Association
zeolite An ion-exchange medium
\[ \text{Na}_2\text{O} \cdot 2\text{Al}_2\text{O}_3 \cdot 5\text{SiO}_2 \text{ or CaO} \cdot 2\text{Al}_2\text{O}_3 \cdot 5\text{SiO}_2 \]
zephiran (benzalkonium chloride) An ammonium detergent that is effective as a disinfectant; a cationic surface-active agent; the concentrations 1:1000 to 1:5000 are often used.
zero milk Milk produced on protein-free feed using urea and ammonium salts as the nitrogen sources
zervelatwurst A semidry, uncooked, smoked eastern German sausage made from medium-chopped, medium-seasoned beef and pork, fermented and stuffed into beef or artificial casings
zest The outer peel, which is the aromatic, colored portion, of citrus fruit; contains the essential oils
zeta (Z, ζ) The Greek letter with an English equivalent of z
zhum A dried mixture of fermented milk and wheat flour, seasoned with garlic and pepper
zibdeh bellidieh A butter made by churning yogurt
ziega The curd made by adding rennet and acetic acid to milk
ziegel A cheese made from whole cow's milk
ziegenkäse (gaiskasli) A soft cheese made from goat's milk
ziger A ricotta-type cheese made from cow's milk See Part 2: Milk and Cheese, Composition
zigzag clover (Trifolium medium) A perennial legume used for forage
zilavka  A dry, fruity, white wine  
zinc (Zn)  A metallic element; at. no. 30; at. wt. 65.38; 
Group IIb of the Periodic Table; oxidation state +2; 
electron configuration 2-8-18-2 
orbit K L M N 
Containers galvanized with zinc should not be used 
for cooking acidic foods (such as tomatoes, apple 
sauce, and most fruits): The zinc in contact with 
acidic foods may form toxic concentrations of zinc 
salts; also, zinc may contain cadmium, lead, and ar-
senic, which are potentially dangerous. Zinc can be 
dissolved by both acids and alkalis and is soluble in 
many foods; it should not be used in food equipment 
which comes in contact with food. 
Body function: a part of some enzyme systems; re-
quired for various vital enzymes to function; in plants, 
deficiency causes stem and leaf growth to be retarded. 
Sources: egg yolks; fish; meat; milk
See Part 2: Chemical Poisoning; Egg Products, Nutri-
tive Value; Grain Analysis; Meat, Nutritive Value; 
Minerals, Food; Minerals, Plant or Animal Tissue; 
Minerals (Trace), Limits; Normal Solutions; Nutri-
ents in Crops; pH and Availability of Plant Nutrients; 
Recommended Daily Dietary Allowance; Water Drinking 
Standards; Wheat, Minerals; Wheat Products, 
Composition  
zincica  A ricotta-type cheese
zinc oxide (flowers of zinc; philosopher’s wool; 
zinc white)  (ZnO) Used as a food nutrient and as a 
fertilizer  
See Part 2: Fertilizer Materials 
zinc oxide can coating (C-enamel can coating; 
corn can coating)  A coating material made using 
15% lead-free zinc oxide added to enamel to prevent 
the formation of black iron sulfate  
zinc sulfate  (ZnSO4) Used in food as a nutrient or 
dietary supplement 
Storage: tight container  
See Part 2: Fertilizer Materials; Normal Solutions  
zinfandel  A dry, rich, aged, red wine  
zingerone  An artificial flavoring  
Zingiberaceae  See Part 2: Vegetables, Classification  
zirconium (Zr)  A metallic element; at. no. 40; at. wt. 
91.22; Group IVa of the Periodic Table; oxidation 
state +4; 
electron configuration 2-8-18-10-2 
orbit K L M N O  
zitoni  See macaroni  
zitoni rigati  See macaroni  
zlato  A medium-flavored, semisoft cheese made from 
great’s or ewe’s milk 
Z-line  A dark line that bisects the I-band in muscle fibers 
zmitek  A ricotta-type cheese  
Zn  The symbol for the element zinc  
zoo-  A prefix used to indicate animal  
zoi-  A prefix used to indicate animal  
zombie  A potent drink that is made using several 
types of rum  
zottenham  See Part 2: Sorghum Diseases  
zoo-  A prefix used to indicate animal  
zoum  A clear, mildly alcoholic, sorghum beer  
Zr  The symbol for the element zirconium  
zsirpi  A panir-type cheese  
zu  A rice beer  
Zubda  Butter  
Zubrovka  A green, buffalo-grass-flavored vodka  
Zubrowka  A drink made by flavoring vodka with 
zubrowka grass  
Zucchini  A mild-flavored summer vari-
ty of dark green, cucumber-like (4–18 in. long) sum-
mer squash 
To cook: boil and mash; cut into pieces and French fry; 
sauté  
1 med. zucchini = 2 cups, cut in julienne strips 
= 0.67–1.3 cups, shredded 
= 1–2 cups, thinly sliced 
= 0.33 lb  
1 small zucchini = 7 in. long 
= 1 cup, shredded 
= 1 cup, sliced, ½ in. thick 
1 cup, thinly sliced = 0.25-lb zucchini  
1 serving = ½ lb  
See also marrow  
Zulotaya osen  A Caucasian damson, apple, and 
quince liqueur  
Zulu nut  See chufa  
Zungenblutwurst  A moist or semidry, cooked, 
smoked or unsmoked Swiss sausage made from 
medium- or coarse-chopped, medium-seasoned beef 
and pork stuffed into beef, pork, or artificial casings, 
or not stuffed into casings  
Zungenwurst  1) A moist, cooked, unsmoked eastern 
German sausage made from fine- or coarse-chopped, 
medium-seasoned pork stuffed into beef, pork, or 
artificial casings. 2) A moist, cooked, unsmoked Irish 
sausage made from coarsely chopped, medium-sea-
soned pork stuffed into artificial casings. 3) A moist, 
cooked or uncooked, smoked Swiss sausage made 
from coarsely chopped, medium-seasoned pork stuffed 
into beef or artificial casings  
Zuppa  Soup  
Zuppa inglese  A sponge cake made with custard and 
flavored with rum or liquor  
Zure Zult Hoofdkas  A moist, cooked, unsmoked Dutch 
sausage made from coarsely chopped, medium-seasoned beef and pork, with head meat, 
stuffed into beef or artificial casings  
Z value  The slope of the curve when the logarithm of 
decimal reduction time is plotted against temperature 
in degrees Fahrenheit See also decimal reduction 
time  
See Part 2: Thermal-Death-Time Curve  
Zweeworst  Salami  
Zwetschenwasser  A clear plum brandy
zwieback (rusk)  1) A wheat-flour rusk
   3 oz = 1 cup, finely crushed
   2) A loaf, made from milk, butter, and eggs (often
       sweetened (with sugar) and flavored (with lemon and
       cinnamon)), that is baked, sliced, and toasted
       1 cup = 4 slices, coarsely crumbled
           = 9 slices, finely crumbled
       See rusk
zwiebelleberwurst  A moist, cooked, smoked eastern
   German liver sausage made from fine- or medium-
   chopped, heavily seasoned pork stuffed into pork or
   artificial casings
zwirn  See leaf cheese; telpanier; tschil
zwuczajna  A moist, cooked, smoked Polish sausage
   made from medium chopped, medium seasoned beef
   and pork with textured vegetable protein added and
   stuffed into beef, pork, or artificial casings
zwyczajna  A semidry, cooked, double-smoked Pol-
   ish sausage made from medium chopped, medium
   seasoned beef and lamb and stuffed into a pork casing
zygo-  A prefix meaning yoke or connection
zygote  A fertilized ovum
zym-  A prefix meaning ferment
zymase  A yeast enzyme that converts sugar (glucose
   and fructose) into alcohol and CO₂
zymogen  A precursor of active enzymes
zymurgy  Fermentation chemistry