

Publications

of the

**Ohio Agricultural
Experiment Station**

Wooster, Ohio



The Ohio Agricultural Experiment Station publishes (1) **Farm and Home Research**, (formerly known as the **Bimonthly Bulletin**) (2) **Bulletins**, (3) **Technical Bulletins**, and (4) **Special Circulars**. This booklet has been prepared to explain the purposes of each and to list those which are available to the public. Single copies of the publications listed herein are mailed free to residents of Ohio.

When ordering **Bulletins**, **Technical Bulletins**, and **Special Circulars**, please do the following four things:

- 1) **Order no more than 10 at one time as postal rules allow us to frank (mail free) only 4 pounds of publications to one address.**
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Farm and Home Research

This is a periodical which is published six times a year (January-February, March-April, May-June, July-August, September-October, and November-December). Each issue contains several articles on subjects of interest to farm families. Each article is a report of progress on some phase of research conducted by the Experiment Station.

All new publications, as soon as they are printed, are announced in **Farm and Home Research**. Notices of Special Days to be held (such as Dairy Day, Orchard Day, Poultry Day, and others) are printed in this periodical. If you would like to receive it regularly, address a penny postal card to the Mailing Room, Ohio Agricultural Experiment Station, Wooster, Ohio, and request that your name be added to the **Farm and Home Research** mailing list. Give the name of your county and be sure to write your mailing address plainly.

Special Circulars

Special Circulars are written simply and are well illustrated. Each circular gives a discussion of some timely farm topic based on the research man's general knowledge.

Special
Circular
No.

- ✓49 The mineral needs of farm animals (1937)
- 51 Time and labor-saving equipment for the laying house (1942)
- 55 Thorne wheat (1940)
- ✓65 Budding and grafting on hardy apple stocks (1942)
- 66 Ohio corn performance tests and recommendations 1942 (1943)
- 67 Insure legumes with inoculation (1943)
- 68 Removal of apple trees (1943)
- 70 The use of wheat in dairy grain mixtures (1944)
- ✓72 Farm and home underground storage made of steel (1946)
- 73 The use of unproved sires (1946)
- ✓74 Small fruit culture (1947)

Technical Bulletins

This series consists of reports on basic research written to aid other research workers. The material is technical in nature and of little interest to the average reader.

Technical
Bulletin
No.

- 6 The metabolism of organic and inorganic compounds of phosphorus (1915)
- 7 Preliminary observations on nitrification (1915)
- 8 Studies on the estimation of inorganic phosphorus on plant and animal substances (1915)
- 9 Environmental factors in relation to plant disease and injury: a bibliography (1932)
- 10 A phenol coefficient study involving bacterial plant pathogens (1932)
- 11 The bacteriophage reaction for the identification of bacteria (1947)

Bulletins

Each **Bulletin** is a fairly complete report on a problem which has been studied by Station research workers over a period of years. A story of the work, methods used, discussion of the problem, references to similar research work, results and data obtained from the research, and a summary are included in most **Bulletins**.

To make it easier for the reader to find what he wants, **Bulletins** are grouped as follows:

General topic	Page listed
Administration	4
Agricultural Engineering	4
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Dairying	5
Farm Income and Living	5
Forestry	7
General Livestock	7
Home Economics	8
Horticulture	8
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Plant Diseases and Their Control	10

On the page listed for each general topic, will be found a more complete description of the **Bulletin** subjects in that group. By reading over each of the descriptions under the general topics, the reader will be able to locate any **Bulletin** in which he may be interested. Each **Bulletin** is listed only once and will be found only under one general topic. The number in parenthesis, which follows each publication title, indicates the year of publication.

ADMINISTRATION

Annual Reports, Weather, History

Bulletin
No.

- 326 Agriculture of Ohio—history, development, crop production (1918)
- 445 The climate of Ohio (1929)
- 501 Fifty-year index to personnel and publications (1932)
- 544 Some observations on 46 years of Ohio weather (1934)
- 592 Annual Report 1936-1937 (1938)
- 600 Annual Report 1937-1938 (1939)
- 608 Some observations on 50 years of Ohio weather (1939)
- 617 Annual Report 1938-1939 (1940)
- 658 Annual Report 1939-1943 (1945)
- 659 Farm science and practice—Annual Report 1943-1944 (1945)

AGRICULTURAL ENGINEERING

Farm Machinery, Farm Structures, Drainage

- 490 Feed grinder investigations (1931)
- 556 Rubber-tired equipment for farm machinery (1935)
- 643 Combine harvester investigations (1943)

AGRONOMY

Field Crops, Pastures, Soils, Soil and Water Conservation, Fertilizers, Liming Materials, Lawns, Weed Control

- 381 The maintenance of soil fertility (1924)
- 405 An experimental study of sweetclover (1927)
- 421 Mixtures of spring cereals and flax in Ohio (1928)
- 441 Organic food reserves in relation to eradication of Canada thistles (1929)
- 471 Lodging in oats and wheat (1931)
- 494 Life history and composition of the soybean plant (1931)
- 507 The trend for wheat production in Ohio (1932)
- 540 Alfalfa in Ohio (1934)
- 553 The efficiency of soil and fertilizer phosphorus as affected by soil reaction (1935)
- 563 The influence of climate, soil, and fertilizers upon quality of soft winter wheat (1936)
- 568 Tensile strength, extensibility, and other characteristics of wheat roots in relation to winter injury (1936)

Agronomy (continued)

- 588 Better methods of seeding meadows (1937)
See section on *Farm Income and Living* for bulletin on erosion, No. 585.
- 589 Soil erosion in Ohio (1937)
- 590 Tobacco cultural and fertility tests (1938)
- 603 Timothy culture (1939)
See section on *Farm Income and Living* for the economics of soil maintenance, No. 604
- 605 Farm manure (1939)
- 613 Lawn experiments (1940)
- 619 Control of lawn weeds and the renovation of lawns (1941)
See section on *Dairying* for bulletins on hay crops for the dairy farm, Bulletins 538 and 662

DAIRYING

Dairy Cattle. Feeding, Nutrition, Breeding, Artificial Breeding, Disease Control, Forage Utilization, Dairy Products

- 455 Dicalcium phosphate as a mineral supplement for dairy cows (1930)
- 477 Studies on the nutritive value of milk I. The deficiencies of an exclusive milk diet and how to overcome them (1931)
- 502 Preparation of feeds for dairy cows (1932)
- 515 The chemical composition and nutritive properties of milk as affected by the level of protein feeding (1933)
- 518 Studies on the nutritive value of milk. II. The effect of pasteurization on some of the nutritive properties of milk (1933)
- 538 Alfalfa-timothy hay for the dairy farm (1934)
- 545 Nerve degeneration associated with avitaminosis A in the white rat (1934)
- 610 Anatomical and physical changes in the pituitary glands of vitamin A deficient rats (1939)
- 631 A comparison of legume hays for milk production (1942)
- 641 Artificial insemination of dairy cattle (1943)
- 644 Relationship between fat content of dairy grain mixtures and milk and butterfat production (1943)
- 656 Hay-crop silage (1945)
- 662 Dairy farming based on the liberal use of meadow crops (1946)

FARM INCOME AND LIVING

Production Costs, Marketing, Income, Living Costs, Living Conditions, Taxation, Population, Statistics, Farm Management

- 418 The apple industry of Ohio (1928)
- 419 Livestock production costs in Greene County, Ohio (1928)
- 424 Dairy and other livestock production costs in Medina County, Ohio (1928)
- 427 A business study of the Ohio Poultry Producers' Cooperative Association (1928)
- 438 Losses in shipping livestock (1929)
- 440 The truck and its relationship to livestock marketing in Ohio (1929)

Farm Income and Living (continued)

- 442 Ohio agricultural statistics for 1928 (1929)
- 443 Farmers produce markets in Ohio (1929)
- 450 Estimated income from the Ohio agricultural industry (1930)
- 453 Variations in crop production costs in Medina County, Ohio (1930)
- 458 Some factors affecting the movement of Ohio wheat (1930)
- 460 Ohio agricultural statistics for 1929 (1930)
- 467 Movement of open country population in Ohio (1930)
- 469 The development of market milk areas in northeast Ohio (1930)
- 485 Land utilization in a southeastern Ohio county (1931)
- 495 Variations in livestock production costs and returns in Putnam County (1931)
- 498 A market analysis of farm sales of milk to dealers in four Ohio cities (1932)
- 503 Ohio agricultural statistics for 1929-1930-1931 (1932)
- 505 Factors influencing the dressing percentage of hogs (1932)
- 509 The farm mortgage situation in Putnam, Union, and Green Counties, Ohio (1932)
- 514 Land utilization in Lawrence County, Ohio (1932)
- 521 Roadside marketing of agricultural products by Ohio farmers (1933)
- 523 Sources of market milk and butterfat in Ohio (1933)
- 526 Twenty years of Ohio agriculture 1910-1930 (1933)
- 529 Some rural social agencies in Ohio (1933)
- 530 Ohio agricultural statistics 1932 (1933)
- 531 Motor transportation of livestock in Ohio (1933)
- 533 Recent trends in the rural population of Ohio (1934)
- 536 Market movements of Ohio eggs (1934)
- 542 Ohio agricultural statistics 1933 (1934)
- 546 Cream marketing in southwestern Ohio (1935)
- 547 Rural homes for non-agricultural workers—a survey of their agricultural activities (1935)
- 554 Ohio agricultural statistics 1934 (1935)
- 560 Public revenue in Ohio with especial reference to rural taxation (1936)
- 574 A study of cooperative milk marketing associations in four Ohio markets (1936)
- 582 Population mobility in selected areas of rural Ohio (1937)
- 585 The effect of land use and management on erosion (1937)
- 587 The farm business from 1929 to 1935 on 141 Ohio farms (1937)
- 593 Ohio agricultural statistics 1936 (1938)
- 597 Local government in two rural Ohio counties (1938)
- 602 Ohio agricultural statistics 1937 (1939)
- 604 The relationship between soil maintenance and profitable farming (1939)
- 606 Attitude of farmers toward cooperative marketing (1939)
- 609 Ten years of farm sales of milk in four Ohio markets (1939)
- 612 Ohio agricultural statistics 1938 (1940)
- 614 The Ohio farmer and his milk market (1940)
- 624 Level of living, social participation, and adjustment of Ohio farm people (1941)
- 625 Motor transportation of livestock (1941)
- 628 Labor, power, and machinery on small farms in Ohio (1942)
- 635 Rural youth of Ross County, Ohio (1942)

Farm Income and Living (continued)

- 636 A study of the newer hay harvesting methods on Ohio farms (1942)
- 637 Size of farm units as affected by the farming of additional land (1942)
- 638 Public revenue in Ohio with especial reference to rural taxation (1942)
- 639 Levels of living and population movements in rural areas of Ohio, 1930-1940 (1943)
- 642 Ohio agricultural statistics 1940 and 1941 (1943)
- 650 Farmers' elevators of Ohio (1944)
- 652 Factors affecting milk supply (1944)
- 660 Relationships between cooperatives serving farmers in five Ohio counties (1946)
- 666 Timber marketing in eastern Ohio (1946)
- 668 Cold storage locker plants in Ohio (1946)
- 669 Change in size of farms in Ohio—1900-1940 (1947)

FORESTRY

Lumber, Reforestation, Woodland Management

- 478 Lumber production in Ohio (includes damage by insects) (1931)
- 598 Forest fires in Ohio 1923 to 1935 (1938)
- 647 Ohio forest plantings (1944)
See section on Farm Income and Living for timber marketing bulletin, No. 666

GENERAL LIVESTOCK

Beef Cattle, Hogs, Sheep, Poultry. Animal Nutrition, Feeding, Breeding, Disease Control, Forage Utilization

- 355 Self-feeding swine (1922)
- 398 Hogging down corn (1926)
- 401 Stomach worms and nodular worms in lambs (1926)
- 415 The influence of fertilizers on the vitamin B content of wheat (1926)
- 436 The nutritive value of blood-meal protein for growth (1929)
- 452 Soybeans and soybean oil meal for pigs (1930)
- 488 Improving corn and tankage for pigs not on pasture (1931)
- 534 Cottonseed meal for pigs (1934)
- 552 Feeding pigs on forage (1935)
- 558 Fluorine in animal nutrition (1935)
- 571 The influence of various factors upon the growth and quality of fine wool as obtained from Merino sheep (1936)
- 576 The influence of the stage of maturity on the chemical composition and the vitamin B₁ and G content of hays and pasture grasses (1936)
- 607 Substitutes for corn for growing and fattening pigs (1939)
- 664 The influence of the rate of fat deposition on the firmness of the fat of hogs (1946)
- 667 The comparative efficacy of vitamin D from irradiated yeast and cod-liver oil for growing pigs, with observations on their vitamin D requirements (1946)

HOME ECONOMICS

Foods, Nutrition, Textiles, Clothing and Home Furnishings, Laundering

- 433 Food consumption of farm families (1929)
- 465 Basal metabolism of young women (1930)
- 474 A study of certain cash expenditures of Ohio farm families (1931)
- 482 Seasonal variation in the rate of growth of preschool children (1931)
- 492 Foods used by rural families in Ohio during a 3-year period (1931)
- 506 The influence of laundering and exposure to light upon some wash silks used for outer garments (1932)
- 549 A study of the food habits and physical development of preschool children (1935)
- 565 The influence of position isomerism in azo dyes upon their fastness to light and washing (1936)
- 575 Basal metabolism of older women (1936)
- 645 A comparative study of cotton and rayon glass curtain fabrics (1943)
- 646 Food consumption of college men (1943)
- 649 Factors relating to the selection of sewing thread (1944)

HORTICULTURE

Fruits, Vegetables, Flowers, Ornamental Plants, Greenhouse Crops, Soilless Plant Culture

- 447 Paper mulch for the vegetable garden (1930)
- 454 Raspberries and blackberries in Ohio (includes insect and disease control) (1930)
- 456 The cost of developing an apple orchard (1930)
- 466 Relation of nitrogen fertilizer to the firmness and composition of strawberries (1930)
- 472 Bloom period and yield of apples (1931)
- 479 Nitrate fertilization and keeping quality of apple fruits (1931)
- 493 Celery fertilizer experiments in Ohio (1931)
- 499 Growing of greenhouse tomatoes (1932)
- 508 Apple thinning (1932)
- 510 Grafting and budding fruit trees (1932)
- 517 A survey of Ohio orchard soils relative to phosphorus distribution and acidity (1933)
- 519 A study of the ash constituents of apple fruits during the growing season (1933)
- 525 Flower growing (1933)

Horticulture (continued)

- 541 Experiments on thinning peaches (1934)
- 550 Sugar, acidity, and juice color determinations in grapes (1935)
- 555 Some physiological studies with calcium cyanamide and certain of its decomposition products (1935)
- ✓ 559 Light and reduction of the daylight period for flowering plants in the greenhouse (1936)
- ' 566 Factors affecting the yield of kraut cabbage in Ohio as determined by a survey and cooperative field tests (1936)
- 570 Experiments with potatoes on muck soil (1936)
- 572 Stationary equipment for orchard spraying (1936)
- 573 The common storage—its construction and management (1936)
- 580 Cultural systems for the apple in Ohio (1937)
- 581 Peach production in Ohio (1937)
- 584 Removal of spray residues from apples (1937)
- 594 Cloth houses (1938)
- 611 Deficiency symptoms of greenhouse flowering crops (1940)
- 616 Growing ornamental greenhouse crops in gravel culture (1940)
- 618 Bloom period and yield of apples (1941)
- 620 Fertilization of ornamental trees, shrubs, and evergreens (1941)
- 622 Fertilizers for early cabbage, tomatoes, cucumbers, and sweet corn (1941)
- 626 Strawberry production in Ohio (1942)
- 627 Fruit varieties for Ohio (1942)
- 629 Purity, germination, and yield of some vegetable seeds offered for retail sale in Ohio in 1941 (1942)
- 632 Refrigerated farm apple storages (1942)
- 640 Aggregation of an orchard and a vegetable soil under different cultural treatments (1943)
- ✓ 654 Culture of greenhouse roses (1944)
- 657 Experiments in growing tomatoes for canning (1945)
- 661 Record of a 50-year-old apple orchard (1946)
- 663 Physical and chemical studies of soils in north central Ohio vineyards (1946)

See section on *Insects and Their Control* for the latest Spraying Program, Bulletin 670

INSECTS AND THEIR CONTROL

The Biology and Control of Insect Pests of Ohio Farms, Orchards, Gardens, Home Grounds, and Homes

- 356 Some pests of Ohio sheep (1922)
- 388 The striped cucumber beetle (1925)
- 428 The ox warble flies (1928)
- 429 The European corn borer and its environment (1928)
- 457 Oriental fruit moth investigations in Ohio. I (1930)
- 464 Apple aphids in Ohio (1930)
- 473 The sources of American corn insects (1931)
- 486 The garden symphyliid (1931)
- 524 The potato scab-gnat (1933)
- 537 The gladiolus thrips (1934)
- 569 Oriental fruit moth investigations in Ohio. II (1936)
- 583 Codling moth biology and control investigations (1937)
- 595 Potato flea beetles and their control (1938)
- 648 The ring-legged earwig (1944)
- 651 Insect pests of strawberries in Ohio (1944)
- 670 Spraying program and pest control for fruit crops (1947)

PLANT DISEASES AND THEIR CONTROL

Disease Control of Fruits, Vegetables, Ornamental Plants, Forest and Shade Trees, and Field Crops. Study of Plant Habits, Weeds, and Environment

- 414 Canada thistle, field thistle, creeping thistle (1927)
- 448 Water soluble arsenic in spray material (1930)
- 451 Control of root-knot nematode in greenhouses (1930)
- 461 The control of celery blights (1930)
- 475 Manual of Ohio weeds (1931)
- 496 The causes and control of damping-off of tomato seedlings (1931)
- 511 Diseases of ornamental plants (1932)
- 520 The use of formaldehyde dust in growing seedlings (1933)
- 522 Control of alternaria blight of ginseng (1933)
- 539 Leaf mold resistance in the tomato (1934)
- 564 An evaporation survey of Ohio (1936)
- 567 The relation of temperature to the effect of hydrogen- and hydroxyl-ion concentration on spore germination and growth (1936)
- 615 Ohio potato diseases (1940)
- 630 *Verticillium* wilt of chrysanthemums and its control (1942)
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