BEANS

Brief Suggestions on Growing Green Snap and Lima Beans in Ohio

Donald Comin

GREEN SNAP BEANS

Green Snap beans are now completely "stringless" and are one of the most valuable crops grown by home and market gardeners. Bealls are very susceptible to environment, and varieties differ in their power to withstand heat and cold, dry and wet, and frost. A marketable crop can be secured in 50 days. Yields are commonly 100 bushels per acre, and 200-bushel yields are not uncommon.

Soil Selection and Preparation

Soil requirements are not exacting, except that good drainage is essential. Moderate fertility is satisfactory. Early crops can be produced only on the lighter soils, but larger yields are produced more economically on heavier soils for the late crop. Easily crusted soils are unsatisfactory. Early plowing and several preplanting harrowings will destroy weeds and reduce losses from the seed maggot.

Fertilizing

Beans do not usually respond to liming unless the soil is fairly acid, and this crop is ranked low or medium in lime response. Hill applications of rotted manure, as well as fertilizers, are frequently made in planting pole beans. On soils in a high state of fertility, or in conjunction with manures and legumes, superphosphate alone at the rate of 300 to 500 pounds per acre is suggested. On other soils, from 500 to 1,000 pounds per acre of a 5-10-5, 4-12-4, or 4-16-4 should be broadcast and harrowed in. Row or band applications should be reduced by one-half.

Planting

Very early plantings are a risk because of failure in germination or frost damage, but may prove profitable for some markets. Extensive plantings should wait normal "corn planting" time for the locality, usually about 10 days before danger of frost is past. Succession plantings of early varieties may continue.
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until about 8 weeks before killing frosts are expected, or until about the last of July. Weekly or more frequent plantings are required to produce a continuous supply of beans in the best stage.

Beans are usually planted with corn drills equipped with bean plates or grain drills with part of the feeders blocked. Fifty, sixty and seventy-five pounds of seed to the acre are common rates of planting. Common spacings are 24 to 35 inches between rows. The plants should finally stand 2 to 4 inches apart in the row. Thicker plantings assure good stands in early spring and protect late plantings from fall frosts. Shallow covering aids the heavy cotyledons in emerging. Two-inch soil covering is ample, and in early, moist soils, 1 inch is sufficient. Seed inoculation is recommended where beans have not been grown before.

Beans can be worked into the system of cropping at almost any point and thus fit well into rotations and successions of quick-maturing early and late vegetables.

**Cultivation**

Both before the plants are up and after, crusts should be broken with a weeder or narrow used in the middle of the day when stems and leaves are not so rigid. Clean tillage is essential to large yields, since weeds rob the crop of fertility and moisture. Full circulation of air helps keep certain diseases in check. Beans are shallow rooted and should be cultivated shallow with narrow teeth or shovels and sweeps. Cultivating when the plants are wet will spread diseases and should never be practiced.

**Varieties of Snap Beans**

Varieties of snap beans are many to provide the many requirements of the market for early, medium, and late beans with flat, round, and fleshy pods. Round pods are gaining in favor.

**Bush Beans:**

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<thead>
<tr>
<th>Green pods</th>
<th>Early</th>
<th>Second early</th>
<th>Late</th>
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<tbody>
<tr>
<td>Flat</td>
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<td>Round</td>
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<td>Wax pods</td>
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**Wax pods:**

| Flat       |       |              |      |
| Round      |       |              |      |

Varieties of Snap Beans

- Flat
- Round
- Wax pods
- Sure Crop
- Pencil Pod
- Brittle Wax
- Round Pod Kidney
- Wax
- Refugee Wax
Pole Beans:

Green pod.— Kentucky Wonder and Scotia
Wax pod.— Kentucky Wonder Wax and Golden Cluster

Disease and Insect

The Mexican bean beetle is the most widespread and destructive insect affecting beans. Arsenical control is cheapest and if applied properly will reduce the beetle population to a very low level where no dusting will be needed as the pods develop, or at most, only a few dustings with the more costly rotenone will suffice. A good spray formula for an acre includes 3 pounds of magnesium arsenate per 100 gallons of water and 3 pounds of casein spreader or its equal. Three pounds of calcium arsenate and 9 pounds of hydrated lime can be substituted for the magnesium arsenate but this formula is less effective. Using 30 pounds per acre of a dust consisting of 20 pounds of magnesium arsenate and 80 pounds of hydrated lime gives good control. Fifteen pounds of calcium arsenate and 85 pounds of hydrated lime may be substituted at lower cost, but they may injure the foliage. After blossoming of beans, it is customary to use rotenone dusts containing three-fourths per cent of rotenone, or a spray made with 5 pounds of finely ground derris or cence powder containing 4 per cent of rotenone in 100 gallons of water.

The seed corn or bean maggot attacking germinating seeds and seedlings before emergence can be controlled by early seedbed preparation to provide a dry surface. Shallow planting allows quick development and the avoidance of much injury.

Preventive methods are the only practical means of controlling the diseases of beans. The use of clean seed grown only in the western states, resistant varieties, rotation, and sanitation, will aid in the control of diseases. Treatment for seedborne diseases and spraying are ineffective.

LIMA BEANS

Lima beans should receive much the same treatment as outlined for snap beans. They are more tender than snap beans and will germinate only in warm soils. They respond to more liberal fertilization and should be top-dressed with nitrogen, to which they respond readily. A poor set of beans may result from cultivation during the blossoming period.
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Varieties

The Henderson Bush Lima of the Sieva, or small-seeded, type is about 10 days earlier than the large-seeded kinds and is somewhat more hardy, but it is inferior in quality. It is productive and grown for canning. Fordhook of the thick-seeded, or Potato Lima, type is most popular and following it in demand are Burpee Bush Lima and Burpee Improved, maturing in about 75 days.

Two new crosses between the Sieva and Potato types are gaining favor because of their yielding ability in hot, dry weather. They are Baby Potato and Baby Fordhook. Baby Potato has larger seed and is more desirable for market and freezing. Baby Fordhook is preferred for canning.

Disease

Downy mildew is the only disease controlled by spray. A 4-4-50 Bordeaux mixture or a 20-80 copper-lime dust applied four or five times at 7- to 10-day intervals may be profitable as a routine practice in areas where this disease is inclined to be prevalent. Because this disease may destroy a crop within a few days, it is well to apply the fungicide before the disease appears. Wide plant and row spacings allowing free air circulation, and well-balanced fertilization to avoid excessively rank growth are important preventives.