



Commercial Vegetable Recommendations

BEANS (Snap and Lima)

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Production: Snap beans: 2.5 tons per acre average yield; good yield is 3 to 3.5 tons per acre. Lima beans: 1 ton shelled beans per acre average yield; good yield is 2 tons per acre.

Recommended Varieties: SNAP BEANS (MARKET): Astro, Bush Blue Lake 274, Green Ruler, Provider, Spartan Arrow, Tendercrop. SNAP BEANS (PROCESSING — processors usually designate varieties): Astro, Bush Blue Lake 274, Gallatin 50, Tendercrop. WAX BEANS: Earliwax, Kinghorn wax. LIMA BEANS: Early Thorogreen, Fordhook 242.

Climatic Requirements

Beans do well in warm weather and do not tolerate frost. Bean seed will not germinate below 55°F. Optimum soil temperature for germination is 70° to 75°F. Temperatures above 80° and below 50°F slow growth.

Lima bean seed will not germinate below 60°F. Lima beans require a longer growing season than snap beans, primarily because seeds are harvested, rather than pods. Only bush varieties should be grown in Michigan because of the short growing season. Hot dry weather during flowering may result in flower drop and poor pod set.

Soil Requirements

Beans should be grown on fertile, light-to-medium texture, well drained soil. Heavy, poorly drained soils will result in losses from root rots. Uniform soil type and texture promotes uniform emergence, growth, and maturity, which is essential for machine harvest.

Fertilization

Beans grow best at pH 6.5 to 7.0. Optimum soil test levels are 150 pounds available P and

300 pounds available K per acre. P and K should be broadcast and plowed down prior to planting. Apply nitrogen at the rate of 40 pounds per acre in a band 2 inches to the side and 2 inches below the seed at planting. If a soil test is not available, apply in a band at planting 20 pounds N, 40 pounds P₂O₅ and 40 pounds K₂O per acre.

Planting and Spacing

Very dry bean seeds are subject to mechanical injury during handling and planting. When injured seeds are planted in cool soils, physiological diseases often occur. To avoid injury, expose bean seeds to the air for a few days to raise internal moisture levels.

Plant snap beans May 1 to July 30. Lima beans are usually sown May 10 to 15. Delay planting of lima beans until soil temperature is 70°F at 3 inches deep. Plant seeds ½ to 1½ inches deep, depending on soil moisture and temperature. Plant seeds as shallow as possible as long as sufficient moisture is available. Beans can be planted in 18 to 40 inch rows, depending on harvest method. Plant 6 to 8 seeds per foot in 30 to 40 inch rows (70 pounds seed per acre) and 5 to 7 seeds per foot of row in 18 to 30 inch rows (90 pounds seed per acre).

Plant lima beans in 24 to 40 inch rows, 3 to 4 plants per foot. Approximately 50 to 60 pounds of seed are needed per acre.

Harvest and Postharvest

All snap beans for processing and most for fresh market are harvested with mechanical harvesters; some beans for fresh and local markets are picked by hand.

Processors require beans at different stages of maturity and will advise when crops grown for them are ready for harvest. For fresh market, pick beans when a majority of pods have filled out. After harvest, keep beans cool (40° to 50°F) and at 90% or more relative humidity to avoid wilting. Beans do not store

well and should be moved to market as soon as possible.

Lima beans for fresh market are picked by hand when seeds are full grown and pods are filled out, but before pods turn yellow. Lima beans can be picked several times because the plants continue to set fruit over an extended period of time. Lima beans for processing are windrowed and combined with a pea harvester.

Pests

It is important to maintain good weed control in beans to reduce nutrient loss and facilitate harvest.

Beans are subject to many insect pests. Treat all bean seed with insecticide before planting to avoid damage from the bean maggot (seed corn maggot). Other common insect pests are Mexican bean beetle, leafhoppers, corn earworm,

European corn borer, cabbage looper, aphids, and mites.

Beans are very susceptible to root rots. Treat seeds with an approved fungicide before planting. Avoid poorly drained soils. Practice a 3-year rotation with crops other than legumes to avoid buildup of disease-causing organisms in the soil. Plow under crop residues as soon as possible after harvest to reduce spread of disease organisms.

Beans are susceptible to several bacterial blights, white and gray mold, powdery mildew, rust, and mosaic virus.

Since pesticide registrations and regulations are constantly changing, see Extension Bulletins E-433 "Weed Control Guide for Vegetable Crops" and E-312 "Control of Insects, Diseases and Nematodes on Commercial Vegetables" for up-to-date pest control recommendations.