



Department of Horticulture

Purdue University Cooperative Extension Service • West Lafayette, IN

Growing Beans in the Home Vegetable Garden

*B. Rosie Lerner**

Beans are warm season crops grown for their immature pods (snap beans), immature seeds (shell beans), or mature seeds (dry beans). Beans are easy to grow and provide excellent nutritional value.

Site Selection

Beans grow best in full sun and well-drained, fertile, and friable (crumbly) soil so seedling emergence is not inhibited. Crop rotation is an important cultural practice for beans to avoid disease problems. Rotate crops by alternating the location of bean plantings with a different crop each year.

Fertilization

A moderate application of 5-10-10 or similar analysis fertilizer at the rate of 1 cup/50 feet of row should be sufficient in the absence of a soil test report. Incorporate the fertilizer to a depth of 6 inches prior to planting. Heavy applications of nitrogen fertilizers should be avoided as excess nitrogen causes lush foliar growth and few pods.

In light or sandy soils, a side-dressing of fertilizer may be needed after heavy rainfalls. The fertilizer should be applied alongside the growing row once flowering and pod set begin. Side-dress with 1 cup of ammonium nitrate (33-0-0) or equivalent nitrogen source per 50 feet of row, being careful to avoid spilling fertilizer on the foliage directly. Lightly water the fertilizer into the soil.

Planting

Beans should be planted after all danger of frost has passed and the soil has warmed. Poor germination and rot are likely if the soil temperature is below

50°F. Many commercially-packaged bean seeds are treated with a fungicide to protect the emerging seedlings from disease. If you prefer to use untreated seed, it is even more critical to wait to plant until the soil is thoroughly warmed. The exact timing varies with the weather each year, but generally the frost-free date for Central Indiana is about May 10, about a week earlier for Southern Indiana and a week later for Northern Indiana. For continuous harvest throughout the summer, plant seed every 2-3 weeks until mid-summer.

Plant all types of bean seed (except cowpea, yardlong, and lima) 1 inch deep in heavy, compacted soils or 1 1/2 inches deep in light, sandy soils. Cowpea, yardlong, and lima beans should be planted 1/2 inch deep in heavy soils and 1 inch deep in light soils. To prevent soil crusting in heavy soil, cover seed with sand, peat, vermiculite, or finished compost rather than garden soil.

Plant seeds of wax, soy, cowpea, horticultural, dry, and bush snap beans 2-4 inches apart in rows 2-3 feet apart.

Pole beans may be planted in rows or hills. In the row, plant seed 6-10 inches apart, in rows 3-4 feet apart.

Stakes for pole beans should be 6-7 feet tall and have a rough surface to allow the plant to climb. Form a tripod from 3 or 4 poles, and train vines to climb each pole. Another method is to stretch a wire between posts at each end of the row and train vines to climb up coarse ropes suspended from the wire and fastened to short stakes at the base of each plant. The terminal vines should be clipped off when they reach the top of the support to induce branching.

Watering

Adequate moisture is especially important from flower bud formation to pod set. Too much or too little water, or excessive heat, causes blossom and pod drop. Provide bean plants with 1 inch of water per week. Extremes in soil moisture can also lead to malformed pods in which only the first few seeds develop, leaving the rest of the bean pod shriveled. Water early in the morning to allow plants to dry quickly and reduce opportunity for disease infection.

Weed Control

Because beans are shallowly rooted, use a shallow, shaving stroke with the hoe to remove weed tops. Although some weeds may resprout from the roots, repeating shallow hoeing will starve them out eventually. Surface cultivation also leaves other weed seeds deep in the soil where they cannot germinate. To avoid spreading diseases, do not cultivate after a rain or early in the morning when foliage is wet from dew.

Applying mulch will prevent many weeds as well as help retain soil moisture. Use organic mulches such as weathered straw, untreated lawn clippings, or shredded bark. Apply mulch 2-3 inches deep after soil has warmed. Black plastic provides excellent weed control as well as warming the soil, which may allow earlier planting. Lay the plastic over the planting area and cut slits for planting seed.

Bean Types

Green Snap Beans (*Phaseolus vulgaris*)

Edible-pod beans used to be referred to as "string" beans, due to the development of stringy fiber along the seam of the pod. Today's cultivars have been bred to be free of these tough fibers allowing the pod to be snapped easily, thus the name "snap" bean. Green snap beans are harvested just as pods begin to fill with seed, but before they begin to bulge. Both bush and pole type plants are widely available. There are a few cultivars of snap bean with purple-colored pods. Usually, the purple color washes out during cooking, revealing a green pod.

Wax Beans (*Phaseolus vulgaris*)

Wax beans are a variation of snap beans with a yellow, waxy pod.

Lima Beans (*Phaseolus lunatus*)

Lima beans (sometimes called butter beans) are grown for immature seeds shelled out of the pod. Limas are particularly sensitive to frost and cold soil and also more demanding of well-drained soil than other beans. Limas should be planted a week or two later than other garden beans. Many standard lima cultivars require 3-4 months to mature for harvest, but baby-limas (small-seeded types) and bush-type limas mature much earlier. Bush limas require a bit more space than baby limas—about 3-4 inches apart for baby limas, 6 inches apart for bush limas, and 10 inches apart for pole limas. Harvest lima beans when the pods are plump, well-filled, and firm, but still bright green in appearance.

Horticultural Beans (*Phaseolus vulgaris*)

Horticultural beans are large-seeded beans used in the green-shell stage. A young horticultural bean cannot be used as a snap bean because the pod fiber is too tough. Harvest when the pods start changing from green to yellow. Both bush and pole type plants are available in a wide range of cultivars. Many of the heirloom varieties are horticultural beans. The seeds can be quite decorative with swirls of color.

Southern Cowpeas (*Vigna unguiculata*)

Cowpeas are also called southern peas, crowder peas, and blackeye peas or beans. They are a bean rather than a pea. They are usually grown as a dry or green shell bean, though the pods are edible when young and tender. Cowpeas are available in vining, semi-vining, and bush types and grow best in warm, humid weather. Bush types mature earlier and are more suitable for Midwest gardens. Plant cowpeas as you would lima beans.

Dry Beans

Kidney, navy, soldier, and pinto beans are used as dry seeds and are harvested when the pod and seed are completely mature and dry. They often require a long growing season and a dry fall for good quality and so may not be the best-adapted for Indiana gardens.

Yardlong Beans (*Vigna unguiculata* subsp. *sesquipedalis*)

Yardlong beans or asparagus beans are really a type of cowpea but are eaten as immature pods like snap beans. They are a tall, vining vegetable that requires support. Plant seeds 12 inches apart at a depth of 1/2 to 1 inch. Allow 2-3 feet between rows. Support plants with poles and sturdy twine.

Yardlong beans should be harvested 65-80 days after planting, when the pods are 10-12 inches long and about 3/8 inch in diameter. Plants will continue to produce for several weeks. If allowed to mature, the beans may grow up to 3 feet long. When they reach this length, they are past the best stage for cooking. Such mature beans may be shelled out and used in the same manner as cowpeas.

Edible Soybeans (*Glycine max*)

Edible soybeans are often not listed by their varietal name, however 'Fiskeby V' is recommended. The garden variety of soybeans is usually larger than field varieties and is preferred for that reason. Field soybeans, harvested immature, may also be used as edible soybean, but be aware of harvest restrictions from chemical pesticide applications.

Plant edible soybeans at the same time as the lima bean, May 15 to June 15. They require 80-90 days to harvest. Soybeans are ready to harvest when the seeds are fully enlarged, but before they become hardened. At this time, the pods are plump, green, rough, and hairy. Nearly all the beans will be the same size, so you can pull the entire plant and pick off the beans indoors or in the shade.

Fava Beans (*Vicia faba*)

Fava beans are also called broad beans, horse beans, English beans, European beans, and Windsor beans, although they are more closely related to vetch than to garden beans. Fava beans require a long, cool growing season and do not tolerate our typically hot summer weather. Favas can be used as a substitute for the lima bean in the north where the growing season is short.

Sow fava beans in early spring about the same time as peas. Sow seed 1-2 inches deep, 3-6 inches apart with about 24 inches between the rows. Harvest when the pods are thick and well-filled with seeds, but while the pods are still green.

Garbanzo Beans (*Cicer arietinum*)

Also known as chickpeas, chestnut beans, Egyptian beans, and grams, garbanzo beans are neither a pea nor a bean but more like a vetch. They require a long, warm growing season (about 100 days to harvest) and are not particularly well-adapted to Indiana's climate. The pods are picked when the beans are in the green, ripe stage or allowed to ripen for dry beans.

Related publications

E-21 Vegetable Insect Control in Home Garden

** This publication was previously authored by Juliann Chamberlain, Extension Horticulturist/Consumer Horticulturist, Rick Latin, Extension Plant Pathologist, and Alan York, Extension Entomologist.*

For more information on the subject discussed in this publication, consult your local office of the Purdue University Cooperative Extension Service.
