

# GROWING BEANS



## BEAN VITAL STATISTICS

**Family:** Leguminosae

**Species:** Phaseolus vulgaris = snap & dry beans

Phaseolus lunatus = lima beans

**Soil:** deep, well-drained sandy loam      **pH:** 5.5-7.0

**Light:** full sun, tolerates partial shade

**Soil temperature for germination:** 60-85F, 80-85F optimum

**Soil temperature for growing on:** 60-85F

**Air temperature for best growth:** 50-80F

**Seed germination:** 8-16 days

**Seed planting depth:** 1 inch

**Seed viability:** 3 years

**Seeds per ounce:** varies

**Seed Spacing:** 2-3 inches apart

**Row spacing:** 18-36 inches apart

## WHY BEANS?

Beans are one of the most rewarding crops you can grow. The plants are easy to grow, vigorous, thrive over a wide temperature range and provide an abundant harvest of tender, tasty pods or colorful, rich-tasting seeds in a relatively short time. There are a myriad of varieties to try and perhaps that's the reason why two-thirds of all gardeners raise them.

Beans have been the most important vegetable crop through the ages. They are the best vegetable source of protein and today in many societies beans are still the staple of life. Dry, lima and green beans originated in South America. Dry beans have been cultivated for more than 7,500 years. Lima and green beans have been grown for around 4,500 years.

## HOW TO GROW BEANS

### *DAYS TO MATURITY*

Maturity time varies with location and growing season and is influenced by soil and weather conditions. The days to maturity cited here gives the approximate number of days from transplanting until the first peas are ready to pick.

Keep in mind that the maturity date is an estimate of when the first peas will be ready to harvest. Variations in your garden can be due to differences in growing season, soil fertility and other conditions where they were tested.

**NOTE:** to determine the length of your growing season, count the number of days between your average date of the last frost in spring and the average date of the first frost in fall. The length of the growing season can range from less than 100 days in northern climates to 365 days in southern climates.

## WHICH BEAN TYPE FOR YOU?

Green, lima and dry beans all come in bush and pole varieties. Bush varieties produce a short, bushy plant (some types do form tendrils and are called half runners). In general, bush-types yield an earlier crop that is harvested over a shorter period. Pole varieties produce a single vine with stems that must be supported. Pole-types take a little longer to produce pods and are best if you want a sustained harvest.

### ***GREEN, SNAP or STRING BEANS***

All refer to the popular green bean that's grown for its tasty pods. The 'string' has been bred out of most varieties.

### ***FRENCH BEANS***

Another type of green bean that's really delicious, but just a bit more finicky to grow - they don't do well in cool, wet weather. Harvest when the pods are very slender, about 1/8 inch in diameter for the sweetest, most tender flavor. At peak harvest time this will mean picking the beans about every other day.

### ***WAX BEANS***

These are the yellow version of green beans. They generally have a milder flavor.

### ***DRY BEANS***

These varieties are grown for their dry mature seeds. When used fresh, they are referred to as shell beans. You can eat their pods fresh, but they are very fibrous.

### ***LIMA BEANS***

There is nothing like the flavor of freshly shelled and cooked lima beans. Sweet, delectable and tasty, nothing like the starchy, mealy beans you buy at the store.

### **SOUTHERN PEAS, COWPEAS or BLACK-EYED PEAS**

## WHEN TO PLANT SEEDS

For a good bean crop plant when both the soil and air have warmed up. Planting early during cold weather won't give you an early harvest. Beans will germinate when the soil temperature is between 60F and 85F. At 68F germination will take about 11 days, while at warmer temperatures your beans may germinate in just 6 days. Beans planted when the soil is 50F or cooler may not germinate at all, because at these lower temperatures the seed is very susceptible to fungal attack and is likely to rot.

Like other legumes, beans take nitrogen from the air with the aid of soil bacteria, so before planting, we recommend coating the seeds with a powdered legume inoculant to aid this process.

If you plant bush varieties you can plant in single rows or wide rows. If you plant in single rows, space them 18 inches apart and plant the seed 2-3 inches apart. Wide row planting is very easy. Basically, you'll create a bed at least 16-18 inches wide (we usually make our beds 24 inches wide), then plant the beans 2-3 inches apart. Tamp them down and

cover with soil. When planted in wide row bands, beans require little, if any, weeding as the plants quickly shade out any weed competition, plus the soil stays moist.

If you plant pole varieties they will require support. Plant the seeds about 2-3 inches apart on both sides of the trellis or fence. Plants do not require thinning. Keep the rows 36-48 inches apart.

Lima beans are heat lovers and you'll need to wait until your soil has warmed up to at least 70F before plant them (approximately 2 weeks after your average last frost date). If you live in a cool season area you can use row covers to speed early growth.

## SUPPORT

Pole beans require support. It keeps them from rotting on the ground and lets the pods hang straight down, making them less misshapen and easier to pick. Also, when supported, the vines have air circulating freely around them thus they can't be as easily infected by disease.

Many types of wire fencing or nylon netting can be used to trellis beans. Start training the tendrils on the supports when the plants are about 6 inches tall.

You can also make a teepee to grow your bean up. Start with 4 poles (6-7 feet long and 1-2 inches thick), lash the tops of them together with rope or wire, then stand up, space the legs evenly apart and push into the ground about 6-8 inches deep. Plant 5-6 seeds around each pole 6 inches from the pole and thin to 2-3 of the healthiest plants around each pole.

Whatever type of support you choose, make sure it's a bit taller than the height your variety will reach and set it up before planting to avoid stepping on small plants later on.

## SOIL PREPARATION

Beans thrive in deep, rich, well-drained soil in a sunny location. The plants do best in soil with a pH ranging from 5.5-7.0. We recommend testing your soil in the fall and adjusting the pH range, if needed, at that time. Fall is also a good time for deep spading or double digging (to a depth of 8-12 inches) and for incorporating organic matter into your soil. The addition of compost, leaf mold or peat moss provides organic matter lightens and aerates heavy soils as well as increasing the moisture holding capacity of sandy soils.

In the spring, rake to break up clods and remove stones. Fertilize as recommended by your soil test results.

## FERTILIZING

Beans don't require much fertilizer, especially nitrogen, but to help them along, when the seedlings are 2-4 inches tall you can fertilize them with a complete organic fertilizer. Alternatively you can work a 2-3 inch layer of compost into your pea bed. You can also broadcast 1-2 pounds of 5-10-10 fertilizer over each 100 square feet of garden space and work it into the top 2-3 inches of soil (do this a day or two before planting).

**CAUTION: When fertilizing, please keep this in mind – MORE IS NOT BETTER – boosting the amount of fertilizer can damage your plants. An overdose of fertilizer causes plants to grow too rapidly and damage new roots thereby stunting plant growth and significantly setting back your harvest.**

## WATER

Beans need an evenly moist soil. Too little or too much slows the growth and makes the plants more susceptible to diseases and pests. Water plants lightly (about 1/4 inch) regularly from germination to flowering. A 2-4 inch layer of grass clippings or other organic mulch around the base of the plants as soon as they germinate will help keep the soil evenly moist.

## WEEDING

Beans have shallow roots so care must be taken when weeding around the plants. It's best to hand-pull any weeds within a 1-foot radius of the plants. Keep the rows thoroughly weeded until the plants are half-grown, from then on they can out compete the weeds.

## HOW TO EXTEND YOUR GROWING SEASON

### *SHORT GROWING SEASON AREAS*

Green beans are quick to mature, so to ensure a continuous harvest all season, we recommend succession planting. Plant small plantings through midsummer, 10 days apart, or use your plants as a cue. Plant your next crop when the second level of leaves forms on the plants in your last-planted bean row. In most climates you will be able to plant 7-8 crops, if you so desire.

### *WARM GROWING SEASON AREAS*

Generally plants can be grown in the spring and again in the fall. We've found that in places like Georgia, spring planting can be done from the beginning of April to the beginning of June and fall planting from the beginning of July to the beginning of August. If you live in Phoenix, Arizona, spring planting can be done from March to mid-April and fall planting from mid-August to September. Contact your local extension agent if you have questions about when to plant in your area.

## BEAN TROUBLES

Bean diseases don't generally ruin a backyard harvest, but it's worth taking some precautions. When it's wet, stay out of your bean plants, as this is the optimum time diseases can be spread from plant to plant. Remove all bean debris from your garden when the crop is finished as this reduces future threat from disease and pests. Practice crop rotation of at least 3 years. Select disease resistant varieties. Following are several diseases you run across. Anthracnose – bean pods develop sunken, dark brown spots. Rust – beans have yellow or orange spots on the leaves and the plants may yellow and die. White Mold (botrytis) – pods develop a gray, velvety mold in wet weather or during spells of high humidity.

**Insects are usually less of a potential problem than disease in bean plants. The one most often experienced is the Mexican Bean Beetle – a 16-spotted, yellow ladybug-type beetle. To control these pests, crush any egg masses that you see and spray adult beetles with Neem oil or pyrethrin. In addition, cleaning up old bean plant debris where they overwinter can help control any future outbreaks. If your bean leaves turn white and curl up and produce few if any blooms you're likely experiencing the Potato Leafhopper – a wedge-shaped, spotted green insect. Fortunately it's rarely seen outside the East or Southeast and not very often a big problem. They can be sprayed with Neem oil or pyrethrin.**

## HARVESTING

Green beans are ready for harvest about 2 weeks after bloom. Pick pods that are nearly full size, when they are firm enough to snap when bent, but before the seeds inside have become visibly enlarged. At this stage the pods have a low fiber content and the flesh will be firm and crispy. Keep plants well picked to extend harvest and increase yield.

Dry beans let the pods stay on the plants until the beans are large and hard and the pods are dry and papery. If you have wet weather after the beans have filled the pods, but are not yet dry, pull the plants and set them in a protected place such as a garage or shed. Place them in single layers in cardboard boxes so that no beans are lost if the pods shatter. Don't let these drying beans freeze. Once the pods are dry and crackly, you can shell them. The easiest way to this is to place the pods in any old pillowcase and tie it shut. Put the pillowcase in the dryer, turn it on low, and dry the beans for about half an hour. The dry heat and bouncing action open the pods and release the beans. Pour the contents of the pillowcase out into a box or pail. We recommend doing this outdoors on a windy day as the papery debris will blow away and the heavy beans will fall into your container. If Mother Nature isn't cooperative you can supply the wind with a fan. Using the dryer method ensures that the beans are thoroughly and evenly dry, so they can be stored immediately. If you use another method, your beans may not be dry enough to store when they're shelled. Leave them in a single layer in a warm, airy place until they're hard enough so that you can't dent them with your fingernail. Once the beans are dried you can store them in airtight containers in a cool, dry place.

NOTE: Don't use the dryer method if you're saving the seeds for planting, as the heat can kill them.

## COOKING

Their versatility is limitless and there are as many ways to cook beans as there are varieties.

NOTE: We highly recommend the following cookbooks for bean recipes:

The Victory Garden Cookbook by Marian Morash

Too Many Tomatoes, Squash, Beans and Other Good Things by Lois M. Landau & Laura G. Myers

Ball Blue Book – Guide to Home Canning, Freezing and Dehydration

Stocking Up III by Carol Huppig

Joy of Gardening Cookbook by Janet Ballantyne

Putting Food By by Greene, Hertzberg & Vaughan

Lima beans are traditionally harvested when they are green mature. The seeds at this stage are green to pale white. If you prefer, you can treat them as dried beans and let the pods mature. The resulting beans may be different colors depending on the variety and they can be used just as you would any other dry bean.

Southern peas can be grown to the dried stage but they are a tasty garden treat when harvested earlier at the fresh shell stage. Watch the color of the pods, when it changes (from green to yellow, red or brown) it's time to harvest. The seeds inside should still be soft.

## STORAGE

Fresh snap and shell beans can be stored, unwashed, in a plastic bag in the refrigerator 5-7 days. Leave shell beans in their pods and shell just before cooking.

## HINTS FOR USING GARDEN FRESH BEANS

*Following are some of our favorite hints, tips and recipe books for using bumper crops of garden fresh beans.*

### YIELDS

1 pound of fresh green beans = approximately 4 cups = 4 servings

1 pound fresh shell beans (in the pod) = 1 ½ cups shelled beans = 2 servings

1 pound dried beans (shelled) = 2 cups uncooked = 4 cups cooked

### FREEZING

Green beans freeze beautifully. Wash and trim young pods, then blanch in boiling water for 2-3 minutes. Drain and place in ice water for 2-3 minutes; drain again. Loosely pack in freezer bags, label and freeze.

Shell beans can also be frozen. Shell, then blanch in boiling water for 2-3 minutes. Drain and place in ice water for 2-3 minutes; drain again. Loosely pack in freezer bags, label and freeze.