

**CULTURE AND  
VARIETIES FOR THE  
HOME GARDENER**



# Growing Garden Beans

## SUGGESTED VARIETIES AND DESIRABLE CHARACTERISTICS

<i>Variety</i>	<i>Days to maturity</i>	<i>Disease resistance</i>	<i>Suggested use</i>	<i>Comments</i>
<b>Climbing (pole)</b>				
<b><i>Snap beans</i></b>				
Goldmarie	54		C,F	Yellow, flat, 8" pods
Emerite	55	BCMV	F,S,Z	Pencil-slim, 7 1/2" long, medium green, filet bean
Northeast	56		F,Z, S	Flat, sweet, buttery, 8" pods
Kentucky Blue	58	BCMV, R	F, S	Smooth, straight pods
Fortex	60		F,S,Z	Dark green, round, 11" pods
Blue Lake	62	BCMV	F,S,Z	Vigorous growing, stringless pods
Kentucky Wonder	65	BCMV, R	F, D	Vigorous growing
Red Knight Runner	70		F,D	Scarlet flowers, 9' vine, stringless 11" pods, dry shell
<b><i>Lima beans</i></b>				
Prizetaker	90		C, D, F, Z	Large seeds
King of the Garden	92		C, D, F, Z	Large seeds
<b>Nonclimbing (bush)*</b>				
<b><i>Green snap beans</i></b>				
Rapids	46	BCMV,R	C,F,Z	Earlier, more cold tolerant than Provider; white seed
Provider	48	BCMV,B15, PM	F	Very early, high yields, round and stringless pods; brown seed
Slenderette	53	BCMV	C, D, F, Z	Juicy, sweet tasting
Tendercrop	53	BCMV,B15, PM	F, Z	Vigorous, high eating quality, stringless pods
Tenderette	55	BCMV, B15	C,F,Z	White-seeded, improved Tendercrop
Maxibel	55		F,Z	First, long, thin, stringless filet type
Jumbo	55		F	Pick at 8" length, rich flavor
Labrador	56	BCMV, A	F	Excellent for early and late planting
Matador	56		F	Warm season Labrador type
Vilbel	56	BCMV, A	F	Excellent flavor, stringless filet, 7" thin pods
Blue Lake 274	57	BCMV	C,F,Z	Dwarf, high yields, best eating and processing quality
Derby	57	BCMV	F, S	Thin, 7" long pods, easy pick
Bush Ky Wonder 125	58	BCMV, B15	C,F,Z	Flat, medium green, 7" pods; white seed
Roma II	58	BCMV	F, Z	Fleshier than Romano, broad pods
Topcrop	68	BCMV	C,F, Z	Dwarf, round, stringless pods
<b><i>Yellow or wax snap beans</i></b>				
Cherokee Wax	43	BCMV, R	C, F, Z	Oval, wax pods
Gold Crop	51	BCMV, B15	C, F, Z	White seeds, hot weather tolerant
Sunrae	55	BCMV,B15	C,F,Z	Shiny, bright yellow
Slenderwax	56	BCMV,B15	C,F,Z	Deep yellow pods, exceptional quality

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(table continues next page)

## CULTURAL PRACTICES

Beans need a greater amount of potash and phosphorus than nitrogen. A recommended fertilizer formula is 5-10-10 or an equivalent ratio. For your home garden, you may also use compost to provide nitrogen, phosphorus, and potassium, as well as secondary and trace elements. Composting is a good way to improve the physical properties of garden soil (drainage, aeration, ability to retain nutrients and water).

Ingredients you can add to compost include:

- feathers, hair, tea leaves, wool, manure, and green plants, as sources of nitrogen
- banana peels, oak and fruit tree leaves, and wood ash as sources of potassium
- rock phosphate, fish wastes, and bone meal as sources of phosphorus

For more information, call your county extension office.

### Soil

Garden soils should have a moderate amount of humus (organic matter) and moderate levels of plant food. A wide range of well-drained soils are suitable for growing beans. Soil testing prior to first planting is recommended. Soil sample test kits can be purchased at your county extension office. Bean plants will tolerate a soil pH between 5.5 and 7.0, but best yields will be achieved when the pH is between 6.0 and 6.8.

### Planting

Planting depth varies with the character of the soil. Planting should be deeper in light loams and shallower in heavy soils. Snap beans are easily killed or injured by frosts. In general, plant after all danger of frost has passed, and when the soil has adequate moisture. Plant fava types as early as the garden can be worked in the spring. First planting can be done when soil is moist and warm—day temperatures are 65°F and night temperatures are 60° to 65°F, although 75°F is preferable. Generally, seeds are placed between 1 and 1 1/2 inches deep. With optimal conditions the planting depth can be calculated by multiplying the length of the bean seed (inches) by 1.5 inches (depth).

Home gardeners often soak seeds in water overnight to accelerate germina-

## SUGGESTED VARIETIES AND DESIRABLE CHARACTERISTICS, CONTINUED

<i>Variety</i>	<i>Days to maturity</i>	<i>Disease resistance</i>	<i>Suggested use</i>	<i>Comments</i>
Rocdor (Roc d'or)	57	BCMV,Ar	F,Z	Long slender, buttery filet type
Rocdor (Roc d'or)	57	BCMV,Ar	F,Z	Long slender, buttery filet type
Goldkist	58	BCMV,B15,R	F, S, Z	Improved Slenderwax type
Wax Romano 264	59		F,Z	Yellow Roma II type
<b>Lima beans</b>				
Henderson Bush	65		C, F	Early maturing, popular at roadside stands
Eastland	68	DM (race a,b,c,d)	C, D, F	Small seeds
Baby Fordhook	70		D,F	Small seeds
Fordhook 242	72	HD	C, D, F, Z	High quality, uniform, tolerates hot and dry weather
<b>Novelty, fava, kidney, pinto, navy, and horticultural beans (snap)</b>				
Royal Burgundy	51		F,Z	Turns bright green after 2 min. of boiling
Royalty Purple Pod	55		F,Z	Turns bright green after 2 min. of boiling
Sequoia	55	BCMV	F,Z	Purple Roma type; turns green when cooked
Broad Windsor Long Pod	65		D,F,Z	8" long pods; 6 greenish-white seeds; fava type
Aquadulce	65		D,F,Z	12" long pods; 8 greenish seeds; fava type
Jacob's Cattle	88		C,D,F	Brownish-red speckles on white background; for soups, baking, and fresh shell beans
Montcalm Dk. Red Kidney	100		C,D	Big, shiny red, for soup, salad, chili

### CODES

*Disease resistance:* **A** = Alternaria resistant; **BCMV** = Bean Common Mosaic Virus; **B15** = NY Strain 15 Mosaic Virus resistant; **DM** = Downy Mildew resistant; **HD** = tolerates hot and dry weather;

**N** = Anthracnose resistant; **PM** = Powdery Mildew; **R** = Bean Rust tolerant

*Suggested use:* **C** = canning; **D** = drying and winter storage; **F** = fresh with pods; **M** = suitable for mechanical harvesting; **S** = tender and succulent pods; **Z** = freezing

\* Most home gardeners prefer the bush variety in order to avoid the trouble and expense of using poles, but it is the obvious way to increase production in a small gardening area.

tion. Do not do this if seeds are pre-treated with fungicides and insecticides. Many varieties of bush beans mature in six to eight weeks; successional sowing can be made at two-week intervals.

### Spacing

Bush bean plants vary considerably in size, so the plant and row spacing should vary in proportion. Seeds such as bush snap, bush limas, green shell, and edible soybeans should be sown at least 2 inches apart, and preferably 4 to 6 inches between rows in a bed. Plants can be thinned to one every 4 inches after they have become established.

### Weed Control

Dense weeds in the garden not only rob crop plants of moisture, light, and food but also can harbor insects and create an ideal microclimate for the development of many diseases. A general rule is to avoid using herbicides for weed control in the home garden—because there is no one available herbicide that can be used safely on all kinds of vegetables growing in the garden, and herbicides are difficult to apply at proper rates in small areas.

Mulching is one of the more effective measures for weed control. Few weeds can push through a heavy mulch, and if they do they are straggly and easily pulled. Mulching also helps to conserve soil moisture and to maintain a more

uniform soil temperature. Examples of good and economical mulches are scrap boards, building paper, straw, chopped leaves, grass clippings, black plastic, and even heavy layers of newspaper.

### Harvesting

*Bush snap beans and pole snap beans* should be harvested anytime before the pods begin to toughen and before the bean seeds begin to mature. Picking every two or three days, and only when the vines are dry, helps prevent bean rust. Store beans in a cool place after harvesting to help prevent deterioration by loss of moisture.

*Bush lima beans and pole lima beans* should be harvested while the pods still have their attractive green color and are plump; they should not be allowed to turn yellow. Their quality is best if they are eaten as soon as possible after being picked because their sugars quickly turn to starch.

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## DISEASE IDENTIFICATION AND CONTROL

Color photos of disease symptoms can be found in the publication *Identifying Diseases of Vegetables*, for sale from the College of Agricultural Sciences Mailroom or from your county extension office.

### Anthracnose (fungal disease)

Black, oval, sunken cankers develop on pods, stems, and cotyledons. Dark, discolored areas may develop on veins.

### Bacterial Blight

Dead spots and blotches, sometimes with a yellow halo, develop on the leaves. On pods, water-soaked areas appear during wet periods and later become brownish as they dry.

### Mosaic Virus

On most mosaic-affected plants, young leaves may be stunted, curled, and mottled; yellowing may be distinct within mottled leaves. Pods can be distorted, blotchy with dark and light green, and in severe cases, have bronze blotchy areas.

### Root Rots

Dark rotted areas, usually dry, can appear anywhere on roots and also on the stem near the soil surface. Some of the rots can kill young plants, but usually affected plants are stunted with yellow-

ish leaf margins. Sometimes the root rot fungi attack seeds before or during germination, especially when germination is slowed by unfavorable conditions.

### Downy Mildew of Lima Beans

A white downy mold develops on pods during moist conditions below 85°F. Affected areas on the pods are killed, and young shoots can be distorted.

### General Control Measures

1. When possible, use varieties with resistance to mosaic viruses.
2. Start with pathogen-free seed from well-known seed companies. Bacterial blights, anthracnose, and some mosaic virus diseases can be introduced with seed.
3. Rotate beans within the garden.
4. Avoid planting beans near gladiolus if mosaic virus has been a problem in past years. Gladiolus is a source of one mosaic virus that can be carried to beans by aphids.
5. Plant seed in well-drained soil after soil has warmed sufficiently to promote rapid germination and plant growth. Seed rots and root rots become severe when seed germinates slowly and plants grow slowly in cool soil.
6. Do not provide excessive nutrients in fertilizer or manure. Excessive nutrients can result in rank growth and slow drying of plants, which can promote pod rots during extended wet periods.
7. Try to prevent aphid problems near and in the garden. Aphids pick up and carry viruses; when feeding, they can put a virus in a plant within one minute.
8. Do not work in bean plantings when leaves are wet. If bacteria that cause blights are present on any of the plants, the bacteria become sticky when wet and can be spread on hands, tools, and clothing.
9. As soon as harvest is complete, for any planting, pull and discard or compost the plants. When old plants are left in the garden, pathogens continue to multiply on them and become an important source of inoculum that can result in more disease later during the current season; or pathogens can survive in the soil and initiate disease in future seasons.

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## INSECT IDENTIFICATION AND CONTROL

Mexican bean beetles, leafhoppers, mites, aphids, and seed corn maggots are

the most common insects to attack beans (see illustrations, back page). Adequate plant populations can usually be achieved by doubling the seeding rate, then thinning the plants to the desired population.

### Aphids

Direct damage by aphids is assumed to be minimal until populations build to high levels, but they transmit the bean common mosaic virus. Aphids are often controlled by natural parasites and predators.

*Control:* Diazinon (7 days to harvest), Sevin, Safer Soap, Pyrenone

### Leafhoppers

Plant damage by leafhoppers appears as leaf curling and chlorosis, stunted growth, and reduced yield.

*Control:* Orthene (14 days to harvest), Sevin, Safer Soap

### Mexican Bean Beetle

Treat if defoliation exceeds 20 percent during prebloom, or 10 percent during podding and there is a potential for further defoliation. These levels of defoliation may result in earlier maturity of the crop. Wait to apply a pesticide until eggs hatch and pupae are present.

*Control:* Diazinon (7 days to harvest), Sevin, Neem-based insecticide, Rotenone

### Mites

Leaves are stippled, yellowing, and dirty. Leaves may dry and drop. There may be webbing between leaves or on the lower surfaces of the leaves. Spot-treat areas along edges of fields when white stippling along veins on underside of leaves is first noticed and 20 mites per leaflet are present.

*Control:* Kelthane MF (7 days to harvest), Diazinon (7 days to harvest), Safer Soap

### Seed Corn Maggot

Larvae feed on bean seeds or seedlings, and pupate in the soil. An attack by larvae eventually causes abnormal growth and the wilting of seedlings.

*Control:* Coat seeds with Sevin dust prior to planting.

### Thrips

Thrips population must be very high to cause economic damage.

*Control:* Orthene (14 days to harvest), Sevin, Safer Soap, Neem-based insecticide

### Whiteflies

Whitefly feeding does not damage beanplant development directly but does so when virus is transmitted.

*Control:* M-Pede, Orthene (14 days to harvest), Thiodan, Safer Soap, Neem-based insecticide.

### NOTES

Please read and follow label directions carefully regarding dilution, application, and disposal of all organic and chemical pesticides.

Commercial plant covers such as Agrofabric Pro 17 can be used as a physical barrier to exclude insects, to promote earlier yields, and to provide protection from wind and light frost. Agrofabric Pro 10 is a lightweight, more economical grade available strictly as an insect barrier. Plant covers increase the

temperature by 5°C and humidity by 25 percent inside the cover. They may remain on the plants until first harvest because beans are self-pollinated (don't need insects for pollination).

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APHID  
(3x size of pen tip)



SEED CORN MAGGOT  
(3/8 inch long)



SEED CORN MAGGOT ADULT  
(3/4 inch wide)



LEAFHOPPER  
(1/2 inch long)



MITE  
(size of pen tip)



MEXICAN BEAN BEETLE  
(1/2 inch long)

Penn State College of Agricultural Sciences research, extension, and resident education programs are funded in part by Pennsylvania counties, the Commonwealth of Pennsylvania, and the U.S. Department of Agriculture.

This publication is available from the Publications Distribution Center, The Pennsylvania State University, 112 Agricultural Administration Building, University Park, PA 16802. For information telephone (814) 865-6713.

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Issued in furtherance of Cooperative Extension Work, Acts of Congress May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture and the Pennsylvania Legislature. T. R. Alter, Interim Director of Cooperative Extension, The Pennsylvania State University.

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