

# Bean: Green/Snap



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## Varieties

*Bush bean:* Black Turtle, Blue Lake, Contender, Derby, Dorabell, Dwarf French Tendergreen, Early Contender, Goldcrop Wax, Greencrop, Improved Golden Wax, Jade, Jumbo, Long Tendergreen, Maxibel, Provider, Roma II, Strike, Tendercrop, Topcrop.

*Fava:* Broad Windsor

*Lima:* Dixie Speckled, Florida Butter Pole, Florida Speckled Pole, Fordhook, Henderson Bush, Jackson Wonder Bush, King of the Garden Pole, Sieve or Carolina

*Pole:* Dade, Kentucky Wonder, Northeaster, Romano Gold

## Soil Preferences

Well-drained, silt loams with a pH 5.5-6.8. Avoid soils that crust badly and those with high salt content.

## Optimum Growing Conditions

Cool nights (55-60°F) and warm days (80-85°F). Temperatures >90°F will cause blossom drop.

## Establishment Methods

<b>Direct seeded</b>	Spring - soil 60-65°F Fall - soil below 85°F
<b>Seeding rate</b>	70-80 lbs/acre (6-10 seed/ft)
<b>Approx seed/oz</b>	100-120
<b>Seeding depth</b>	
<b>Seedling spacing</b>	2" in-row with 38-40" wide raised beds

## Fertility/Fertilization

Rates presented as actual lbs/acre N<sub>2</sub>, P<sub>2</sub>O<sub>5</sub>, and K<sub>2</sub>O (base actual rates applied on soil test results).

Generalized rate: 50 - 80 - 90 lb/acre	
<b>N*</b>	50-80 pre-plant
<b>P</b>	50-100 pre-plant
<b>K</b>	60-80, normally needed only in East Texas

\* Ammonium nitrate is very stable and least likely to evaporate. Urea and ammonium sulfate evaporate if not incorporated.

## Water/Irrigation

10 - 15"; critical growth stages for moisture are at bloom and pod set. Pre-plant irrigation suggested. Irrigating in cold, dry soils can reduce stand.

## Pest Management

### Bean Diseases and Common Name of Fungicidal Controls

DISEASE	FUNGICIDE*	OMRI LISTED FUNGICIDE**
<b>Anthraco</b> se	Chlorothalonil, Mancozeb, Potassium Phosphite	Neem Oil
<b>Botrytis blight</b>	Chlorothalonil, Hydrogen Dioxide, Mefenoxam, Metalaxyl, Phostrol (Phosphorous Acid, Mono and Dibasic Sodium, Potassium, and Ammonium Salts), Potassium Phosphite	
<b>Downy mildew</b>	Copper, Potassium Phosphite, Pyraclostrobin	<i>Bacillus pumilus</i> , <i>Streptomyces lydicus</i>
<b>Halo blight (bacterial)</b>	Fenhexamid	<i>Bacillus subtilis</i> , Neem Oil
<b>Powdery mildew</b>	Chlorothalonil, Mancozeb, Myclobutanil, Tebuconazole	<i>Bacillus pumilus</i> , <i>Streptomyces lydicus</i> , Sulfur
<b>Pythium Root Rot</b>	Azoxystrobin, Chlorothalonil, Trifloxystrobin	
<b>Rhizoctonia Root Rot</b>	Azoxystrobin, PCNB	

<b>Rust</b>	Azoxystrobin, Chlorothalonil, Extract of <i>Reynoutria sachalinensis</i> , Myclobutanil, Paraffinic Oil, Pyraclostrobin, Tebuconazole	<i>Bacillus pumilus</i> ; Clove, Rosemary and Thyme Oil; Copper Sulfate; Hydrogen Dioxide (Hydrogen Peroxide); Neem Oil; Sulfur
<b>White mold</b>	Telone, Chloropicrin, Metam-Potassium, Metam-Sodium, Sesame Oil	Azadirachtin
<b>Nematode</b>	Telone, Chloropicrin, Metam-Potassium, Metam-Sodium, Sesame Oil	Azadirachtin

### Bean Insect Pests and Common Name of Insecticidal Controls

<b>INSECT</b>	<b>INSECTICIDE*</b>	<b>OMRI LISTED INSECTICIDE**</b>
<b>Aphid</b>	Acephate, Acetamiprid, Bifenthrin, Carbaryl, Dimethoate, Disulfoton, Esfenvalerate, Imidacloprid, Lambdacyhalothrin, Malathion, Methomyl, Naled, Petroleum Oil, Phorate, Rotenone, Soybean Oil, Thiamethoxam	Azadirachtin, Garlic Juice Extract, Insecticidal Soap, Potassium Salts of Fatty Acids, Pyrethrins
<b>Beetles</b>	Carbaryl, Esfenvalerate, Petroleum Oil, Rotenone	Azadirachtin, Kaolin, Pyrethrins
<b>Cabbage Looper</b>	Bifenthrin, Esfenvalerate, Rotenone	Azadirachtin, <i>Bacillus thuringiensis</i> , Insecticidal Soap, Kaolin, Pyrethrins
<b>Corn earworm</b>	Bifenthrin, Carbaryl, Esfenvalerate, Permethrin	Azadirachtin, Kaolin, Pyrethrins, Spinosad
<b>Cowpea curculio</b>	Carbaryl	Azadirachtin, Kaolin
<b>Cucumber Beetles</b>	Bifenthrin, Carbaryl, Esfenvalerate, Malathion, Permethrin, Rotenone	Pyrethrins
<b>Cutworm</b>	Bifenthrin, Carbaryl, Esfenvalerate	Azadirachtin, Kaolin, Pyrethrins, Spinosad
<b>European Corn</b>	Acephate, Bifenthrin, Carbaryl,	<i>Bacillus</i>

<b>Borer</b>	Esfenvalerate, Rotenone	<i>thuringiensis</i> , Spinosad
<b>Leafhopper</b>	Bifenthrin, Carbaryl, Esfenvalerate, Malathion, Permethrin, Petroleum oil, Rotenone	Azadirachtin, Insecticidal soap, Kaolin, Pyrethrins
<b>Leafminer</b>	Esfenvalerate, Petroleum oil	Azadirachtin, Insecticidal soap, Spinosad
<b>Mexican Bean Beetle</b>	Bifenthrin, Carbaryl, Esfenvalerate, Malathion, Permethrin, Rotenone	Azadirachtin, Pyrethrins
<b>Mites</b>	Malathion, Petroleum oil, Rotenone	Azadirachtin, Kaolin, Pyrethrins
<b>Stinkbug</b>	Bifenthrin, Carbaryl, Esfenvalerate, Methomyl, Permethrin, Rotenone	Azadirachtin, <i>Bacillus thuringiensis</i> , Pyrethrins
<b>Thrips</b>	Acephate, Acetamiprid, Bifenthrin, Carbaryl, Dimethoate, Disulfoton, Esfenvalerate, Imidacloprid, Lambda-cyhalothrin, Malathion, Methomyl, Phorate, Rotenone, Thiamethoxam	Azadirachtin, Garlic Juice Extract, Insecticidal Soap, Kaolin, Potassium Salts of Fatty Acids, Pyrethrins, Spinosad, Sulfur
<b>Whiteflies</b>	Bifenthrin, Esfenvalerate, Petroleum oil, Rotenone	Azadirachtin, Insecticidal Soap, Pyrethrins

### Weeds and Common Name of Herbicidal Controls

<b>WEED</b>	<b>HERBICIDE*</b>	<b>OMRI LISTED HERBICIDE**</b>
<b>Preplant incorporated</b>	Clomazone, EPTC, Imazethapyr, Metam-potassium, Metam-sodium, Pendimethalin, S-Metolachlor, Trifluralin	
<b>Preemergence</b>	Clomazone, Imazethapyr, Pendimethalin, S-metolachlor	
<b>Postemergence</b>	Bentazon, Carfentrazone, Clethodim, Clomazone, Fomesafen, Glyphosate, Halosulfuron, Imazethapyr, Paraquat, Quizalofop, Sethoxydim	Cinnamon oil, Citric Acid, Clove oil

\* The above is a partial listing of controls intended as examples. Some labels may have been revoked since the publication of this guide. Refer to product labels for specifics and use accordingly. Ensure that products with one of the listed active ingredients are registered for the crop it is to be used on. Failure to do the above may result in crop injury, death and/or citation for law violation. Humans, animals and the environment may also be adversely affected by misuse.

\*\* As stated in §205.206 of the National Organic Standards, pest management decisions should follow a hierarchical approach, which should be defined in a farm's organic systems plan. Please ensure that you have followed the appropriate steps and any product to be used in certified organic production systems has been approved by your certifying agent.

### Harvest

<b>Days after planting</b>	40-60 days
<b>Normal method</b>	Hand /machine
<b>Containers</b>	Bushel baskets, bulk bins (machine harvest)
<b>Grades</b>	Fresh market - Fancy, No. 1, No. 2, No. 3
<b>Processing</b>	Based on sieve size (pod diameter) ranging from 1-6: 1 = 12/16 - 14/64" 6 = > 27/64"
<b>Packaging/Handling</b>	Bushel wire-bound crates <ul style="list-style-type: none"> <li>• Bushel or hampers (26-31 lbs)</li> <li>• Cartons (25-30 lbs)</li> <li>• Semi-telescope cartons (20-22 lbs)</li> </ul>
<b>Anticipated yield/acre</b>	Fresh market 200-300 bushels; Processing 3-6 tons

### Transit Conditions

40-45°F at 95-100% RH

### Comments/Production Keys

- Cold sensitive plant, experiences frost damage readily; also heat sensitive, temperatures >85°F induces bloom drop; therefore, has a narrow window of production in most areas of Texas.
- Stringiness can be induced in certain cultivars by excessive temperatures during pod development and maturity.
- Storage temperatures <38°F can cause pod pitting and/or russeting upon exposure to warm temperatures.
- Russeting can be aggravated by the presence of free moisture, especially a problem in centers of containers.
- Machine harvest should begin when 50% of pods are in the sieve size 4 category (21/64 - >24/64").
- Delayed harvest causes rapid loss of pod quality due to increasing fiber content and starchiness of seed.

- Sensitive to moisture stress, requires uniform moisture throughout growing season for maximum yield and quality.
- Early morning irrigation helps to alleviate stress caused by moisture fluctuations and helps reduce disease incidence.