



# Potato

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## Varieties

All Blue, Atlantic, Caribo, Kennebec, Norland, Purple Viking, Red LaSoda, Russian Banana, White Cobler, Yukon Gold

## Soil Preferences

Well drained, sandy loam, loamy sand, or sandy clay loam with pH 6.0 - 7.8.

## Optimum Growing Conditions

Cool season crop: warm days (75-85°F), long days (16-18 hours), cool nights (50-60°F). Optimum mean temperature of 60-65°F.

## Establishment Methods

<b>Planting Method</b>	Vegetatively with 2 oz tuber seed pieces
<b>Optimum Time</b>	2 weeks after last freeze date (soil temp > 50°F)
<b>Planting rate</b>	1,600 - 2,200 lbs seed
<b>Seeding depth</b>	2-3"
<b>Seeding spacing</b>	7-10" in-row on 34-40" 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: 175 - 80 - 80 lb/acre	
<b>N* **</b>	80 lbs preplant Sidedress at bloom
<b>P</b>	80-200 lbs applied pre-plant in split bands 2" deep and 2" to side of seed pieces
<b>K</b>	80-200 lbs applied pre-plant with initial N application

\* On light soils, fertigate based on periodic petiole tissue analysis. Fertilization requirements, especially N vary with varieties. Use soil and/or tissue analysis to monitor plant nutrition during season. \*\* Ammonium nitrate is very stable and least likely to evaporate. Urea and ammonium sulfate evaporate if not incorporated.

### Water/Irrigation

20-40"; critical demand periods are: after establishment, vining, bloom, tuber initiation, and tuber growth.

### Pest Management

#### Potato Diseases and Common Name of Fungicidal Controls

DISEASE	FUNGICIDE*	OMRI LISTED FUNGICIDE**
<b>Blackleg (bacteria)</b>	Maneb, Streptomycin	
<b>Early blight</b>	Azoxystrobin, Boscalid, Chlorothalonil, Copper Sulfate, Fluoxastrobin, Iprodione, Mancozeb, Maneb, Mefenoxam, Polyoxin D Zinc Salt, Propamocarb Hydrochloride, Fenamidone, Pyraclostrobin, Pyrimethanil, Trifloxystrobin, Triphenyltin Hydroxide	<i>Bacillus pumilus</i> , <i>Bacillus subtilis</i> , Clove, Rosemary and Thyme Oil, Copper Hydroxide, Cuprous Oxide, Extract of <i>Reynoutria Sachalinensis</i> , Hydrogen Dioxide, Neem Oil, Potassium Bicarbonate
<b>Late blight</b>	Chlorothalonil, Copper Sulfate Pentahydrate, Copper Sulfate Pentahydrate, Copper Sulfate, Cyazofamid, Cymoxanil, Dimethomorph, Fenamidone, Fluazinam, Fluoxastrobin, Mancozeb, Mandpropamid, Maneb, Mefenoxam, Potassium Phosphite, Azoxystrobin, Propamocarb Hydrochloride, Pyraclostrobin, Sodium Tetraborohydrate Decahydrate, Trifloxystrobin, Triphenyltin Hydroxide	<i>Bacillus subtilis</i> , Clove, Rosemary and Thyme Oil, Copper Hydroxide, Cuprous Oxide, Extract of <i>Reynoutria Sachalinensis</i> , Hydrogen Dioxide
<b>Nematode</b>	1,3-Dichloropropene, Chloropicrin, Ethoprop, Metam-Potassium, Metam-Sodium, Sesame Oil	Azadirachtin
<b>Tuber rot</b>	Mefenoxam, Thiamethoxam	

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

INSECT	INSECTICIDE*	OMRI LISTED INSECTICIDE**
<b>Beetle</b>		Azadirachtin, Garlic Juice Extracts, Pyrethrins
<b>Cutworm</b>	Bacillus Thuringiensis, Beta-Cyfluthrin, Carbaryl,	Azadirachtin

	Cyfluthrin, Deltamethrin, Diazinon, Esfenvalerate, Lambdacyhalothrin, Methamidophos, Methyl Parathion, Permethrin, Zeta-Cypermethrin	
<b>Leafhopper</b>	Acetamiprid, Carbaryl, Clothianidin, Deltamethrin, Dimethoate, Esfenvalerate, Imidacloprid, Lambdacyhalothrin, Malathion, Methomyl, Methyl Parathion, Paraffinic Oil, Petroleum Oil, Phorate, Potassium Salts of Fatty Acids, Sodium Tetraborohydrate Decahydrate, Soybean Oil, Thiamethoxam, Zeta-Cypermethrin	Azadirachtin, Garlic Juice Extracts, Kaolin , Pyrethrins
<b>Wireworm</b>	1,3-Dichloropropene, Bifenthrin, Chloropicrin, Clothianidin, Diazinon, Ethoprop, Fipronil, Imidacloprid, Phorate, Thiamethoxam	

### Weeds and Common Name of Herbicidal Controls

<b>WEED</b>	<b>HERBICIDE*</b>	<b>OMRI LISTED HERBICIDE**</b>
<b>Preplant incorporated</b>	DCPA, S-Metolachlor, EPTC, S-Dimethenamid, Pendimethalin, Trifluralin	Corn Gluten Meal
<b>Preemergence</b>	DCPA, S-Metolachlor, Linuron, Rimsulfuron, S-Dimethenamid, Pendimethalin, Metribuzin	
<b>Postemergence</b>	2,4-D, Carfentrazone, Endothall, Oxyfluorfen, Paraquat, Linuron, Rimsulfuron, Halosulfuron, Diquat, Glufosinate, Glyphosate, Pelargonic Acid, Clethodim, Metribuzin	D-Limonene, Clove Oil, Cinnamon and 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>	100-120
<b>Normal method</b>	Mechanical
<b>Containers</b>	Bulk, hopper bottom trucks for haul to shed

<b>Grades</b>	Graded (based on external appearance): <ul style="list-style-type: none"> <li>• U.S. Extra #1</li> <li>• U.S. #1</li> <li>• U.S. Commercial</li> <li>• U.S. #2</li> </ul>
<b>Packaging/Handling</b>	Washed and graded to size Burlap bags (100 lbs) or box-waxed paper cartons (50 lbs)
<b>Anticipated yield/acre</b>	250 - 350 cwt

**Transit Conditions**

60 - 65°F at 90-95% RH

**Comments/Production Keys**

- Temperature > 85°F reduces yield and tuber specific gravity (high specific gravity is essential for quality chipping and baking potatoes)
- Yield is decreased 4% by each degree above 65°F mean air temperature during the growing season
- Tuberization decreases at soil temperature > 68°F; no tuberization occurs above 85°F
- Harvest and handle with care to avoid skinning (feathering), bruising, and post harvest decay
- Vine killing (chemically or mechanically) 10-14 days prior to harvest helps set skin and reduces feathering
- Discontinue irrigation 7-10 days on clay loams, 4-7 days on sandy loams, and 2-3 days on loamy sands prior to anticipated harvest
- Two to three hillings required to build bed and provide optimum soil environment for maximum tuber yield
- Root pruning by deep cultivation or narrow hilling reduces tuber yield
- Tuber enlargement continues until vines are killed; maximum enlargement is during last 10 days prior to vine kill
- Over-irrigating reduces quality (causes enlarged lenticels), slows skin set and increases tuber rots
- Red varieties usually have higher sugar levels and do not chip well because of sugar caramelization during frying
- Russet varieties are desired as quality baking potatoes. These varieties are more sensitive to environmental conditions and are not suited for production in South Texas.
- Three year crop rotation is suggested to reduce disease (nematode) and insect problems