



Potatoes, Peppers and Eggplant

*Diane Relf and Alan McDaniel**



Potatoes

Environmental Preferences

LIGHT: Sunny.

SOIL: Well-drained with moderate organic matter.

FERTILITY: Medium-rich.

pH: 4.8 to 6.5

TEMPERATURE: Cool (55 TO 65°F).

MOISTURE: Uniform moisture, especially while tubers are developing.

Culture

PLANTING: Plant 1 1/2 - to 2-ounce seed pieces with at least one good eye in early spring; will resist light frost.

SPACING: 10 to 12 inches by 24 to 36 inches.

FERTILIZER NEEDS: Medium-heavy feeder. Add high phosphorus fertilizer before planting, using 2 1/2 lbs. 5-10-10 per 50-foot row. Sidedress 1 or 2 times after tubers begin forming using 1 lb. 10-10-10 per 50-foot row.

Cultural Practices

Both white-skinned and red-skinned potatoes can be grown as an early crop for new potatoes and as a late crop

for storage. Choose an early maturing variety and a medium- to late-maturing variety. Plant potatoes early from March 15 to April 20, depending on your location. Hard frosts and freezes may set back growth. Potatoes prefer cool springs and moisture throughout the growing season.

Crops can be successfully planted as late as June for fall harvest and storage, but yield may be reduced.

Avoid a garden site in a turned-under lawn as grub worms may damage developing tubers unless soil insecticides are used.

A soil pH of 6.0 to 6.5 is most desirable; however, scab disease will be less when the pH is between 5.0 to 5.2. Work this into the furrow and mix with the soil before planting.

Purchase certified seed stock that has been inspected for diseases that lower yields. Saving your own seed potatoes is generally not worthwhile because viruses and diseases often show up the next year. Seed potatoes should be firm and unspouted. Wilted and sprouted potatoes usually have lost vigor from being too warm in storage.

Seed pieces for planting should be cut to about 1 1/2 to 2 ounces or into 1 1/2 -inch cubes. Potatoes about 6 ounces in size will cut into four pieces nicely. Each seed piece should have at least one good bud or eye. Allow to dry or cure before planting. Plant



* Extension Specialists, Horticulture, Virginia Tech

potatoes in furrows cut-side down, 3 to 5 inches deep. Later crops should be planted 5 to 6 inches deep.

Chitting, a controlled sprouting of the seed potato, is an old English technique for forcing potatoes. Early varieties respond best. Place potatoes in a cool room (55°F) with indirect light. Short, sturdy green sprouts about 1/2 inch long will develop in about one month, providing sprouted seed potatoes for planting. Use care not to break sprouts.

Pull a ridge of soil over each row when planting. Drag a board or hoe across the ridges just before the sprouts break through to eliminate weeds. Later cultivation should be shallow and far enough from the rows to make certain that no roots are damaged.

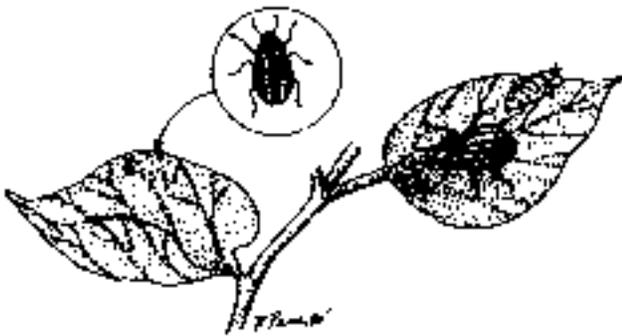
When the tops have grown too large to allow cultivation, a finishing cultivation, sometimes called laying-by or hilling-up, is given. Laying-by throws soil over the potatoes to prevent exposure of the potatoes to sun which can cause greening or scalding. Green portions on potatoes taste bitter and contain an alkaloid. Cut off and discard green areas before using.

An alternative of planting in areas with heavy clay soil is to grow plants in straw or leaf beds above ground. This requires 2-3 feet of organic matter and more frequent watering than in ground production but produces clean, easily dug tubers.

Common Problems

DISEASES: Early blight; scab; late blight; tuber rots; virus complex; and fusarium, verticillium, and bacterial wilts.

INSECTS: Colorado potato beetles, flea beetles, leafhoppers.



CULTURAL: Green skin from sun exposure; hollow heart from alternating wet and dry conditions; Black Walnut wilt from being too close to a Black Walnut tree.

Harvesting and Storage

DAYS TO MATURITY: 100 to 120 days.

HARVEST: Dig early potatoes when tubers are large enough to eat. Harvest potatoes for storage two weeks after the vines die down or just after the first light frost nips the vines, before heavy freezing. Avoid skinning tubers when digging and avoid long exposure to light.

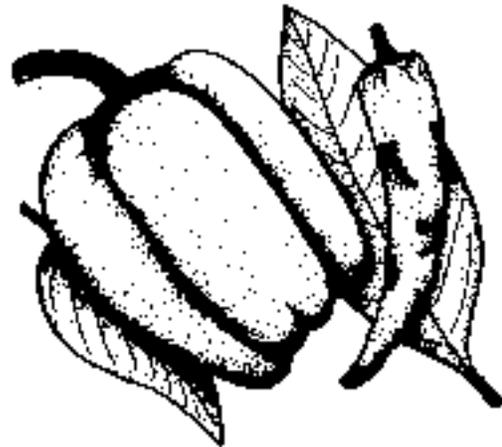
APPROXIMATE YIELDS: 6 to 15 pounds per 10-foot row.

AMOUNT TO RAISE: 75 to 100 pounds per person (about 15 pounds of seed potatoes).

STORAGE: Medium-cool (40 to 50°F), moist (90% relative humidity) conditions for six to eight months. Sprouting is a problem at higher temperatures.

PRESERVATION: Medium-cool, moist conditions.

Peppers



Environmental Preferences

LIGHT: Sunny.

SOIL: Well-drained, loose soil with moderate organic matter.

FERTILITY: Medium-rich.

pH: 5.5 to 6.5

TEMPERATURE: Warm (70 to 75°F).

MOISTURE: Average.

Culture

PLANTING: Set out transplants after soil has thoroughly warmed in the spring. Start seed indoors six to eight weeks prior to this date.

SPACING: 18 to 24 inches by 30 to 36 inches.

FERTILIZER NEEDS: Light to medium feeder. Use starter solution for transplants. Sidedress cautiously after first fruit sets with 3 tablespoons 33-0-0 per 10-foot row; too much fertilizer may cause excessive vegetative growth.

Cultural Practices

Most peppers are classified according to their degree of hot or mild flavor. The mild peppers include Bell, Banana, Pimiento, and Sweet Cherry, while the hot peppers include the Cayenne, Celestial, Large Cherry, and Tabasco.



Bell peppers, commonly measuring 3 inches wide by 4 inches long, usually have 3 to 4 lobes and a blocky appearance. Green bell peppers can be left to turn red or yellow when fully ripe. Some varieties now produce orange, purple, yellow or even chocolate colored fruit. About 200 varieties are available. Banana peppers are long and tapering and harvested when yellow, orange, or red. Another sweet pepper, Pimiento, has conical, 2 to 3 inches wide by 4 inches long, thick-walled fruit. Most Pimientos are used when red and fully ripe. Cherry peppers vary in size and flavor. Usually they are harvested when orange to deep red.

Slim, pointed, slightly twisted fruits characterize the hot Cayenne pepper group. These can be harvested either when green or red and include varieties such as Anaheim, Cayenne, Serrano, and Jalapeno. Large cherry peppers are very hot - more mild than Serrano, but hotter than Jalapeno. Celestial peppers are cone shaped, 3 /4 to 2 inches long, and very hot. They vary in color from yellow to red to purple, making them an attractive plant to grow. Slender, 1- to 3-inch, pointed Tabasco peppers taste extremely hot and include such varieties as Chili Piquin and Small Red Chili.

Peppers generally have a long growing season and suffer slow growth during cool periods. Therefore, after the soil

has thoroughly warmed in the spring, set out 6- to 8-week-old transplants to get a head start toward harvest. Practice good cultivation and provide adequate moisture. Mulching can help to conserve water and reduce weeds.

Hot peppers are usually allowed to fully ripen and change colors (except for Jalapenos) and have smaller, longer, thinner, and more tapering fruits than sweet peppers. Yields are smaller for hot peppers.

Common Problems

DISEASES: Tobacco mosaic virus, bacterial spot, anthracnose.

INSECTS: Aphids, flea beetles, cutworms, European corn borer.

CULTURAL: Blossom-end rot from moisture irregularities or calcium deficiency; blossom drop from night temperatures rising above 75°F or excessive fruit set on entire crop.

Harvesting And Storage

TO MATURITY: 100 to 120 days from seed; 70 to 85 days from transplants.

HARVEST: Harvest sweet peppers when they reach full size. For maximum yield harvest while still green. When allowed to mature on the plant, most varieties turn red, sweeten, and increase in vitamins A and C content. Cut instead of pulling to avoid breaking branches. Most hot peppers are allowed to ripen and change color on the plant. Entire plants may be pulled and hung just before full frosts.

APPROXIMATE YIELDS: 2 to 8 pounds per 10-foot row.

AMOUNT TO RAISE: 3 to 10 pounds per person.

STORAGE: Medium-cool (45 to 50°F), moist (95% relative humidity) conditions for two to three weeks.

PRESERVATION: Freeze; use in pickles and relishes or dried as spices.

Eggplant

Environmental Preferences

LIGHT: Sunny.

SOIL: Well-drained, high organic matter.

FERTILITY: Rich.

pH: 6.0 to 7.0

TEMPERATURE: Warm (70 to 85°F).

MOISTURE: Average.

Culture

PLANTING:

Transplant after danger of frost, when soil is thoroughly warm.

SPACING: 18 to 24 inches by 30 to 36 inches.

HARDINESS: Very tender annual.

FERTILIZER NEEDS:

Heavy feeder; use 3 tablespoons of ammonium nitrate 33-0-0 per 10-foot row. Before planting broadcast 3 lbs. 10-10-10 per 100 square feet. Use a starter solution on transplants. Sidedress 1 lb. 10-10-10 per 100 square feet 3 to 4 weeks after planting and repeat in one month if needed. When fruits are swelling, apply a high potash tomato fertilizer.

Cultural Practices

The standard eggplant produces egg-shaped, glossy, purple-black fruit, 6 to 9 inches long. The long, slender, Japanese eggplant has a thinner skin and more delicate flavor. Both perform well in containers.



Warm to hot weather throughout the season is necessary for good production. Seeds germinate quickly at 70 to 90°F; and plants should be grown for eight to ten weeks before setting them out. Cold temperatures will stop plant and root growth, reducing plant vigor and yields. Use hot caps, cloches, or Wall-O-Water™ to protect plants from cold conditions.

Though eggplants do well in hot weather; they must have well-drained soil and do not thrive in very humid areas. When plants are about 6 inches high, nip back the growing tip to encourage branching. Pick fruits when immature, about 2/3 maximum size. Mature fruit should not be left on the plant as this will reduce overall productivity.

Because of the eggplant's susceptibility to verticillium wilt, rotate plantings with other crops on the same garden soil.

Common Problems

DISEASES: Verticillium wilt.

INSECTS: Flea beetles, aphids, lace bugs, Colorado potato beetle, red spider mites, whitefly.

HARVESTING AND STORAGE

DAYS TO MATURITY: 100 to 150 days from seed; 70 to 85 days from transplants.

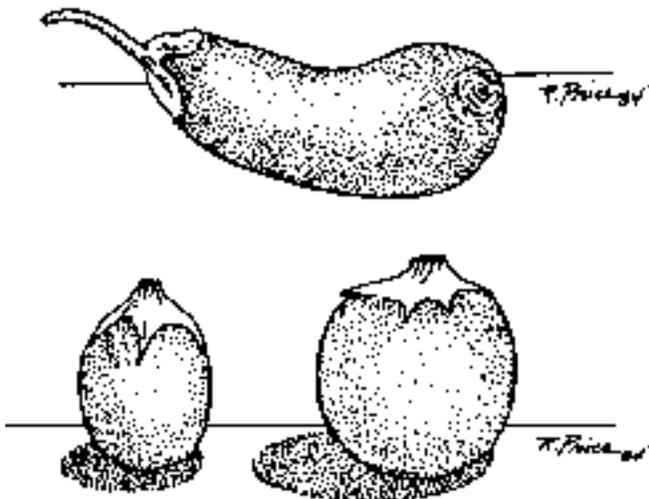
HARVEST: Fruit should be large, shiny, and uniformly deep purple in color. When the side of the fruit is pressed slightly with the thumbnail and an indentation remains, the fruit is ripe. Long, slender, Japanese eggplant may be ready to harvest from finger or hotdog size. When fruit is dull in color and has brown seeds, it is too ripe and should be discarded. Cut fruit from plant to avoid damage.

APPROXIMATE YIELDS: 20 pounds per 10-foot row.

AMOUNT TO RAISE: 12 pounds per person.

STORAGE: Cool (45 to 50°F), moist (90% relative humidity) conditions for one week.

PRESERVATION: Freeze, pickle.



Disclaimer:

Commercial products are named in this publication for informational purposes only. Virginia Cooperative Extension does not endorse these products and does not intend discrimination against other products which also may be suitable.