

Potato

By Joyce Gemmell

Planting Dates:

Coastal: February-March, mid-August-September

Inland: mid-February-April, mid-August-September

White Potato motifs on pre-Incan pottery indicate cultivation in Peru as early as 500 B.C. The Andean highlands are generally considered to be the center of origin of the cultivated potato. The wild potato is still found there but hardly resembles the potato we know today. Plant breeders have developed a compact vine, very productive, early, white potato. The colors of the Andean potato have been left out of our hybrids. However, in recent years, blue, purple and yellow-fleshed potatoes have become available to the home gardener.

Depending on variety, potatoes need 3 to 4 months, of frost-free, cool weather to fully develop. They are grown from pieces of tuber, although true seed is occasionally used. The potato does not set seed regularly. Recently breeders have developed some seed varieties. Diseases are not transmitted to the next generation through the seed and the ease of storage for seed versus tubers would be a great advantage to growers.

Potatoes need a loose, well-drained soil that is acidic . Potatoes are one of the few crops that are tolerant of soil acidity. They grow best at pH 5.0 to 6.8 and their susceptibility to scab disease increases at pH 6.5 or above. Plant in full sun. Potatoes need space. Making aisles too close together invites compaction of soil where tubers are spreading out and expanding.

It's best to plant certified "seed" pieces since they are free of diseases. If large whole seed potatoes are bought, they need to be cut into pieces (about 1.5-2 ounce), each with 1 or 2 eyes. Store the freshly cut pieces at room temperature for 1 to 3 days before planting. This allows the cut surfaces to dry and form a callus, which decreases rotting. Plant the pieces after the cut surfaces are dry and callused over within 5 days after cutting. The pieces can be dusted with a fungicide by shaking a dozen pieces in a bag with a teaspoon of fungicide such as soil sulfur.

Prepare soil in wide rows (2-3 feet) where soil can be pulled up in mounds (hilled up) as plants grow. Mix in chemical or organic fertilizer before planting. For every 100 square feet of soil area, apply 3 pounds of 5-10-5 or 10-10-5 or 2 pounds of 15-15-15 or equivalent fertilizer. Scatter the fertilizer evenly over the surface and mix it in about 8 inches deep. If an organic fertilizer is used, apply it according to label directions. If you use manure, buy a commercially composted product and do not use fresh manure since it can contain harmful bacteria. Mix organic fertilizer into the soil 2-4 weeks before planting and irrigate weekly to leach excess salts below the surface.

Thoroughly water prepared soil and allow it to drain a few days before planting. No additional irrigation should be needed before sprouts emerge if soil moisture is adequate before planting. Dig a planting furrow 3-4 inches deep. Plant the "seed" pieces 6-12

inches apart with the eyes facing up. If more than one row is planted, space rows 2½ to 3 ft apart. Cover the potato seed pieces with 3 inches of moist soil and do not irrigate.

Potatoes can be irrigated with drip tubing or a soaker hose run down the middle of the mound. Regular watering is needed in fall until rains start and during dry periods for good tuber formation. Keep the soil evenly moist with light irrigation. Avoid saturated soil.

After potato sprouts emerge and grow 5-6 inches tall, pull soil from row aisles to form a low mound around the plant stems (potato tubers grow from the stem, not the roots). Pull up enough soil around the stems so the pieces that were planted are covered with at least 6 inches of soil. Soil must completely cover developing tubers to exclude light. If they are exposed to sunlight, their skins will turn green and form a toxin which is harmful if eaten.

Potatoes need nitrogen as they grow to produce the best crop. If an organic fertilizer was mixed into the soil before planting, it will supply nitrogen and other nutrients as it decomposes. This may provide enough nitrogen for the crop. If a soluble chemical fertilizer was mixed in before planting, some additional fertilizer containing nitrogen can be applied as plants grow. Make the first application about 4 weeks after sprouts emerge. Scatter a small amount of chemical fertilizer containing nitrogen like ammonium sulfate (21% N) along the row a few inches from the plant. Irrigate well to dissolve the fertilizer and carry it into the root zone. About a month later make a second application. Potato plants begin to yellow as they reach maturity, which is normal, so don't apply more fertilizer when this occurs.

Potato plants are damaged by frost. If you live in a frost free area, planting can be done in early fall or early spring whenever the soil can be worked. In areas that might have frost during December to February, you might try using row covers over plants to trap heat. As soon as plants bloom, tubers begin to form; stop cultivation.

PESTS AND DISEASE: Potatoes are attacked by flea beetles, leaf hoppers, aphids, underground borers and root-knot nematodes. Diseases include early blight, late blight, bacterial rot and several viral diseases. The most common disease problem is early blight, a fungus disease favored by warm weather and moisture. Overhead watering will also cause the symptoms of dark brown spots on leaves; lower leaves are affected first and leaves turn yellow and fall off. This foliage disease will lower yields.

Some harvesting can be done 2 weeks after blooms appear. The potatoes at this time are thin-skinned and are commonly called "new potatoes." By carefully feeling under the center of the plant with your hands for the larger tubers, a few can be taken and the plants will continue to grow and mature the remaining crop. When the plants yellow and wither, the mature potatoes can be dug. Use a spading fork to loosen the soil and carefully remove the tubers from the ground.

Leave the potatoes to dry for an hour or so before storage. Use bruised or damaged potatoes first. Storage temperatures are critical if you plan to keep tubers for several months. Ideally they should be stored at 50°- 70°F with high humidity for 10 to 14 days after harvest, then at 35°-40° in a dark, well ventilated place with moderate humidity. They will begin to sprout in 2 to 3 months at 40° or above.

NOTES FROM LECTURE BY WAYNE SCHRADER, Farm Advisor

Potato Y virus and Tobacco Mosaic virus will decimate a potato crop. Black spots just under the skin and black runny insides are from potassium deficiency. Growth cracks are from high temperatures or uneven watering. Hollow heart and cracked insides are a cultural problem. Space plants closer together in the row to slow their growth. Overwatering will enlarge the lenticels (pores) on the potatoes. Dark, tarry spots on the skin of potatoes are a symptom of Scab Disease. Do not use these potatoes for seed. The White Rose potato has lots of flowers. Two weeks after bloom starts you can carefully harvest "new potatoes".

HOW TO CUT SEED POTATOES: cut in quarters if small and in 6 pieces if large. Potato eyes are in a whorl and scattered around the potato with more on the distal end than the apical end (eyes from the distal end sprout sooner).

Store cut pieces 2 days so the cuts will form a callus tissue. Plant in raised mounds with a 3-inch deep furrow in the center. Plant seed pieces 7 to 8 inches apart and cover with 3 inches of soil. When plant is 6 to 8 inches high add 3 more inches of soil to cover tubers 6 inches deep. Do not over water, only 2 to 3 irrigations on heavy soil. It takes 5 to 8 pounds of potatoes to plant 100 feet of row.

Some gardeners have difficulty obtaining seed potatoes early enough to plant before warm weather begins in the spring. Inquiring about shipping dates is strongly advised. Try west coast catalogs such as Peaceful Valley Farm and Garden Supply in Grass Valley California (www.GrowOrganic.com). Some local nurseries carry "eyes", a small piece of the potato cut with one or two buds in the winter months. However, these buds or eyes have very little reserved food in the tissue to push out a vigorous sprout or two. You might have spotty sprouting

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