

Growing potatoes in Minnesota home gardens

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Photo by C. Rosen

Potatoes originated in the Andes, and come in a variety of types, colors, and shapes. Generally, there are russet types that are starchy with brown skins and that are good for baking; red potatoes that can have white, yellow, or red and starchy or waxy flesh; white potatoes with white or yellow flesh; purple colored potatoes; and fingerling types. They can be categorized as early, middle, or late maturing. Potatoes require sunny locations for optimal growth.

Planting

Potatoes are started from seed tubers, not from true seed. Obtain disease-free seed tubers from a certified grower or seed distributor. Planting potatoes (tubers) purchased at the grocery store is not recommended, as these may be sprayed with chemicals to keep tubers dormant or may be infected with diseases that can remain in soil for a long time.

Seed pieces can be planted as soon as soil warms, generally in early April in the Twin Cities area. Plant seed pieces with at least one eye or bud per piece, no smaller than about 2 ounces in size. Larger seed pieces will generally emerge faster than smaller ones. Cut seed pieces at least one day before planting to allow cut surfaces to dry. Drying allows the pieces to form a wound- and disease-protective surface. Small potatoes may be planted whole. Plant seed pieces cut side down, 10-12 inches apart and about 3-5 inches deep, in rows 30-36 inches apart. Space pieces closer for smaller tubers and farther apart for fewer but larger tubers. Cover pieces with 4 inches of soil or compost.

Hill soil up along plants as they grow. Tubers will form on thin stems (stolons) that emerge from the main stem, and these stolons should be kept covered with soil to avoid exposing growing tubers to sunlight. Sunlight can turn tubers green and cause the formation of potentially toxic and bitter-tasting chemicals in tuber skin and flesh. Start hilling plants when stems are about a foot tall, and once or twice more during the growing season. At the end of the season, you will have hilled 6-8 inches of soil in total along the plants.

Soil pH and fertility

Potatoes grow best in well-drained soil with pH 6 to 6.5, but will tolerate soil with pH of 5.0. Have your soil tested (see [Understanding Your Soil Test Report](#)) to determine your soil's pH and whether it should be amended. Before planting, incorporate well-rotted manure or compost, or 1.5 lbs. of 5-10-10 fertilizer per 100 sq. ft. Addition of manure or compost can add micronutrients and organic matter to soil (see [Composting and Mulching](#)). Sidedress with fertilizer once or twice after tubers begin forming using 1 lb. of a garden fertilizer per 25-foot row.

Continuous use of high phosphorus fertilizer such as 10-10-10 or 15-30-15, or high rates of manure or manure compost results in phosphorus buildup in the soil. Although phosphate fertilizer applied to soil is bound tightly and resistant to movement in the soil, some runoff may occur. It can then become a major pollution concern in our lakes, rivers and streams. High levels of phosphorus support over-production of algae, which causes significant reduction in water quality (see [Preventing Pollution Problems from Lawn and Garden Fertilizers](#)). If your soil tests high in phosphorus, use a low phosphorus (such as 32-3-10, 27-3-3, or 25-3-12) or no phosphorus (such as 30-0-10 or 24-0-15) fertilizer.

Watering

Proper watering will enhance good production. Soak the soil thoroughly when watering, to a depth of at least one inch each week during the growing season. There is little or no value in light watering that only wets the soil surface. Sandy soils may require more frequent watering. Mulching 3-4 inch deep with pesticide-free grass clippings, weed-free straw, or other organic material can help keep soil evenly moist and prevent weed growth, decreasing the need for frequent cultivation.

Controlling weeds

Frequent, shallow cultivation with a garden hoe or trowel will kill weeds before they become a problem. The roots of potatoes are very close to the surface of the soil, so it is important not to cultivate too deeply. Cultivate just deeply enough to cut the weeds off below the surface of the soil. Be careful not to damage the potato plants when cultivating.

Harvesting

"New" small potatoes can be harvested about 7-8 weeks after planting. Mature tubers can be harvested after leaves have dried or when tubers have reached full size. Dig the hills using a spading fork, being careful not to pierce tubers with fork tines. Tuber skins should be difficult to rub off with your thumb. If not, place harvested potatoes in a warm, dry, well-ventilated area to allow skin to set and wounds to heal before storing in a cool (40-50° F), dark, moist (90% relative humidity) area. Do not wash tubers before long-term storage to avoid injuring the skin. At storage temperatures of 40° F, starch in tubers can be converted to sugars, especially in russet-type potatoes. This can cause tubers to turn brown when fried or to have an unusually

sweet flavor. Some varieties can reconvert sugar to starch if tubers are held at room temperature for a day or two. Cut off any green areas before cooking potatoes.

Common problems

For assistance in diagnosing unknown problems visit ['What's wrong with my plant?'](#).

Insects

[Colorado potato beetles](#) are a common pest on potatoes. They overwinter in soil and appear in the spring. Regularly check for orange egg masses on the undersides of leaves.

Diseases

[Early blight](#) and [late blight](#) are fungal diseases that can cause potentially serious problems. Both cause leaf spots and lesions on potato tubers. [Verticillium wilt](#) can cause yellowing and wilt in potatoes. [Scab](#) is a bacterial disease that causes dark, rough, corky spots on the skin of the potato tubers but does not rot them.

Reviewed by Vincent Fritz and David Zlesak 2009