Potatoes for the home garden

Ken W. Knutson

Quick Facts

Few vegetables yield more food per unit of growing space than the potato.

Skin color does not necessarily determine whether a potato is adapted for boiling, baking or frying. Certified seed potatoes should be used for planting; potatoes from the grocery store may be treated with sprout inhibitors and may not grow. Potatoes prefer a light sandy soil with abundant soil aeration for the roots. Each potato plant should be allowed at least 2 1/2 to 3 square feet (2.3 to 3.2 square meters) of garden area. Proper watering is one of the most important factors contributing to good yield and quality. Potatoes should be stored in a dark, humid room at a temperature of about 38° to 45°F (3.3° to 7.2°C).

Potato growing can be an exciting challenge for the home gardener and an efficient use of limited space, since few vegetables yield more food per unit area. Observing a few simple guidelines will greatly increase the chance of success in growing this very popular vegetable.

Varieties and Seed Source

A large number of potato varieties are grown in the United States and many are available and adaptable for the home garden. Table 1 gives characteristics of some of the more popular varieties. Check with your county extension office for local varieties.

Usually, home gardeners prefer an early-maturing variety in order to get fresh potatoes as soon as possible, as well as having the additional yield to store for winter use. However, growing location and personal preference may result in choosing a medium or late-maturing type.

The skin color does not necessarily determine whether a variety is adapted for boiling, baking or frying. In other words, not "all reds" are for boiling only or "all russets" or "whites" for baking only. Potato varieties differ in adaptability for culinary use, but growing conditions and tuber maturity can be of great influence, also. Experience with potatoes from the home garden will be the best basis to determine type of table use.

Source of seed potatoes is often a problem for home gardeners, since potatoes are quite perishable and garden supply stores hesitate to stock large amounts. Certified seed potato growers are becoming more aware of the home gardener's needs and many garden and patio shops are beginning to have improved selection of varieties and supplies.

If at all possible, certified seed should be purchased since it is the best assurance of productive stock. Potatoes from the grocery store produce department should be avoided since many of them are treated with chemical sprout inhibitors and will not grow. Also, they may have become contaminated with potato disease organisms during the handling and marketing procedures.

Soil and Fertilizer

Potatoes prefer a sandy or sandy loam soil that will not easily become water logged. Potatoes need abundant soil oxygen and do not thrive in tightly packed soils. If the garden has a "heavy soil" sand and/or sphagnum peat moss can be added to provide a more mellow condition.

Home garden soils vary widely in fertility and unless a good soil building program that assures adequate plant nutrition has been followed, it would be well to add a "complete" fertilizer containing nitrogen, phosphorus and potash. There are no strict rules regarding how much fertilizer to add. A mix of about 1 to 1 1/4 tablespoons (15 to 26.5 milliliters) of a 12-12-12 formulation (or its equivalent) in the soil for each potato seedpiece planted will provide a "reasonable" amount of plant nutrients. (Caution—fertilizer can "burn" the seed-piece; mix fertilizer with soil before planting.) Manure and compost also will add fertility and aid soil tilth. However, it should be fairly well decomposed, since large amounts of raw organic matter can actually compete with the potato for nitrogen and may aggravate a soil-borne disease called common scab. (For more information on fertilizers for vegetable gardens, see Service in Action sheet 7.611.)

Planting Methods

The tubers should be kept at room temperature at least one week prior to planting. The presence of sprouts 1/4 to 1/2 inch (3.2 to 6.4 millimeters) at planting will result in more rapid emergence.

Potato "seed" actually consists of small tubers or pieces of tubers that are cut from larger tubers. Seedpieces about two ounces (56.7 grams) in size are ideal. This usually means a small tuber about the size of a medium egg or a cut seedpiece of

Table 1: Some popular potato varieties.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Approx. maturity range</th>
<th>Tuber shape</th>
<th>Tuber color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norgold Russet</td>
<td>early</td>
<td>oblong</td>
<td>russet-brown</td>
</tr>
<tr>
<td>Superior</td>
<td>early</td>
<td>round</td>
<td>white</td>
</tr>
<tr>
<td>Irish cobbyler</td>
<td>early</td>
<td>round</td>
<td>white</td>
</tr>
<tr>
<td>Norland</td>
<td>early</td>
<td>round-oblong</td>
<td>red</td>
</tr>
<tr>
<td>Chieftan</td>
<td>early-medium</td>
<td>round</td>
<td>red</td>
</tr>
<tr>
<td>LaSoda</td>
<td>early-medium</td>
<td>round-oblong</td>
<td>red</td>
</tr>
<tr>
<td>Red Pontiac</td>
<td>early-medium</td>
<td>round</td>
<td>red</td>
</tr>
<tr>
<td>Kennebec</td>
<td>medium</td>
<td>round</td>
<td>white</td>
</tr>
<tr>
<td>Russet Burbank</td>
<td>late</td>
<td>oblong</td>
<td>russet-brown</td>
</tr>
</tbody>
</table>

1/ Ken W. Knutson, CSU extension associate professor, horticulture (revised 2/15/82)
Before planting if it is planted into moist soil (having a water content of 20 to 40 percent) most varieties will deteriorate in less than three months after harvest. Extremely low temperatures (30°F to 37°F or -1.1°F to 2.8°C) will cause a chemical conversion of starch to sugars and will result in potatoes less desirable for eating. (For more information on storage of vegetables, see Service in Action sheet 7.601.)

**Additional Reminders**

Most varieties of potatoes produce blossoms. However, the flowers on some potatoes, such as Russet Burbank, may fall off almost immediately after being formed. Blossom formation is not necessary before tuber development begins. The size of tubers can be checked easily by carefully digging away the soil from the side of the hill. The soil must be replaced if the tubers are not harvested immediately. Potatoes can be harvested when 1 1/2 to 2 inches (4 to 5 cm) in diameter. It is wise to keep in mind, however, that the yield at this time will be about one-fourth or less of what eventually will develop.

Potatoes that have green skin should not be eaten. Such tubers may cause illness due to a substance called solanine created by exposure of tubers to light.

Floral diseases on home garden potatoes usually are not a serious problem. Several types of leaf blight caused by various fungi are present in Colorado. Both can be controlled easily by two or three applications of fungicides, such as maneb or zineb.

Insect problems, on the other hand, are very troublesome and can completely destroy the crop. Colorado potato beetles, flea beetles, psyllids and aphids are among the common pests that attack potato vines. The most important key to control is frequent inspection of the plants to detect early infestations. A general purpose garden insecticide applied as soon as insects are discovered and at recommended intervals thereafter should avoid most serious problems.

**Disease and Insect Control**

**General Care**

Proper watering is one of the most important factors contributing to good yield and quality. From planting until tuber development is completed, reasonably uniform soil moisture should be maintained. Potatoes should not be allowed to wilt; as water stress approaches, the potato foliage will turn dark green and appear to "droop" during the warmest part of the day. Water usage is greatest during the period of maximum vine growth. As tuber development nears completion, water needs will decrease even though the plant may appear green and active. Overwatering at this time could result in tuber decay.

Weed control should be done early in the season. Hoeing or pulling the weeds is best since usually it is not practical to use chemical weed killers on small garden plots.

Extensive hoeing or cultivating should be avoided within 6 inches (15 cm) of the plants after they reach 8 to 10 inches (20 to 25 cm) in height because considerable damage to feeder roots can occur and reduce yield.

**When to Plant**

Because potatoes are very sensitive to frost, it is important to schedule planting no more than two to three weeks prior to the last spring frost unless the plants are to be protected. Plants frozen back usually will recover and produce a crop, but the yield will be reduced and development delayed.

When to Plant

It is not necessary to chemically treat the cut seed before planting if it is planted into moist soil (having a temperature of 50°F to 65°F or 10°C to 18°C) within several hours after cutting.

The soil environment will promote "healing" of the cut surfaces and avoid decay in most situations. Chemical seed treatments are commonly used by commercial potato growers as an "insurance" against variable weather and soil conditions usually encountered in large scale production. Captan, maneb, zineb or polyram dust formulations (5% to 10%) may be used to dust the seedpieces prior to planting.

The seedpieces should be planted 3 to 4 inches (8 to 10 centimeters) deep. 12 to 15 inches (30 to 38 cm) apart within the row and the rows should be 2 to 3 feet (6 to 9 meters) apart. Once again, there are not any strict rules, but at least 2/3 to three square feet (.2 to .3 sq m) should be allowed for each plant.

It is not necessary at planting time to "hill up." This can be started about two weeks after emergence and completed by the time plants are blooming.

**Figure 1:** Diagrammatic drawing of a potato plant showing parts above and below ground.