



# Potatoes

The potato (*Solanum tuberosum*) is one of the most important vegetable crops in the world. Potato cultivars are available in many shapes, sizes, and colors. The edible part of the potato plant is the underground swollen stem known as a tuber. The leaves, stems, flowers, and fruits of the potato plant contain poisonous compounds and should not be eaten.

## Cultivars

Numerous cultivars are available. Those listed below usually perform well in Iowa. Other more unusual cultivars that have successfully been grown in Iowa include 'All Blue', 'All Red', and 'Yellow Fingerling'.

## Planting

Potatoes prefer a well-cultivated, fertile, acidic (pH 5.0 to 5.5) soil. Do not amend the soil with large amounts of manure or other types of organic matter. The addition of organic matter may increase the occurrence of potato scab. This disease also may be a problem in alkaline soils.

If a soil test has not been conducted, an application of 1 to 2 pounds of an all-purpose garden fertilizer, such as 10-10-10, per 100 square feet should be adequate for most home gardens. Broadcast and incorporate the fertilizer into the soil shortly before planting.

Cultivar	Season	Description	Cooking quality	Comments
Irish Cobbler	Early	Round, white flesh, deep eyes, buff-colored skin	Excellent baked	Susceptible to scab
Kennebec	Late	Oval to oblong shape, white skin	All-purpose—bakes, boils, and fries satisfactorily	Widely adapted, moderately resistant to late blight but is susceptible to Verticillium wilt
Norland	Early	Rectangular tubers, smooth, red skin	Excellent boiled or mashed	Resistant to common scab disease
Red Pontiac	Mid-late	Round to oblong shape, red skin	All-purpose—baking and boiling	Widely adapted and drought tolerant
Russet Norkotah	Early-mid	Long, rounded with rough, brown skin	Excellent baked and fair for boiling	Resistant to common scab disease and second growth but is susceptible to most other major potato diseases
Superior	Early-mid	White skin; light, flaky white flesh; medium size, relatively uniform, round to oblong and slightly flattened	Good for baking, boiling, and mashing	Widely adapted, resistant to scab
Yukon Gold	Early	Oval shape; yellowish-buff skin; light yellow flesh	Excellent for baking, boiling, and mashing	Susceptible to common scab disease, stores well

Purchase and plant certified, disease-free potatoes. Potatoes sold in grocery stores to be eaten have usually been treated to prevent sprouting. Potatoes that remain from last year's crop may carry unseen diseases. Certified seed potatoes can be purchased at garden centers, nurseries, grocery stores, and mail-order catalogs.

Before planting, cut large potato tubers into sections ("seed pieces") with a sharp knife. Each seed piece should possess one or two eyes. Smaller potatoes may be planted whole.



Seed pieces are prone to decay in cool, wet soils. To prevent this problem, treat the cut seed pieces with a fungicide or store them at a temperature of 60° to 70°F and a high relative humidity for 1 or 2 days. These conditions allow the cut surfaces to heal or callus over before planting, resulting in fewer losses due to rotting.

Plant potatoes in early spring (early to mid-April in central Iowa; one week earlier in southern Iowa and one week later in northern Iowa). Place the seed pieces and small whole potatoes 1 foot apart in a furrow 3 to 4 inches deep. Rows should be spaced 2 to 3 feet apart.

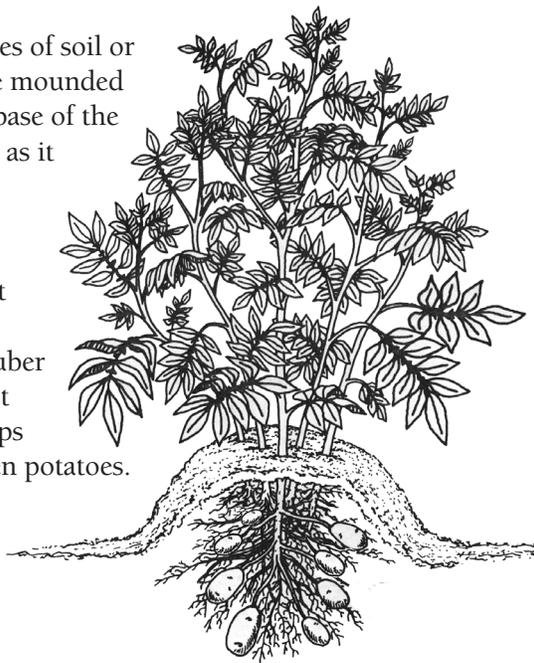
## Estimated yield

Average yield with good management practices should be 15 to 30 pounds per 10-foot row.

## Care during the growing season

Potatoes prefer moist but not wet soils. Water once a week during periods of dry weather. Overwatering can lead to disease problems.

Several inches of soil or straw can be mounded around the base of the potato plant as it grows. This produces "hills" or mounds that encourage additional tuber development and also helps prevent green potatoes.



## Potential problems

**Green skin**—Potato tubers will turn green when exposed to light. The affected tissue is bitter and inedible; it should be cut away and discarded. The unaffected portion can be eaten. To reduce incidence, hill soil around the potato plants so developing tubers are not exposed to light. After harvesting, store potatoes in a dark location.

**Knobby potatoes**—Fluctuations in soil moisture levels during tuber development may cause knobby potatoes. Regular irrigation during dry periods will help prevent this problem.

**Hollow heart**—Large tubers may develop discolored cavities as a result of rapid growth during the growing season. Remove the discolored tissue; the remainder of the potato is edible. To reduce incidence, avoid large applications of fertilizer.

**Tomato-like fruit**—Potato plants produce flowers and occasionally fruits that resemble very small tomatoes. They are not the result of cross-pollination with tomato plants and are not edible. Although they contain seed, growing plants from seed is not practical because they will not be true to cultivar.

**Sugary potatoes**—Potatoes stored at temperatures below 40°F may develop a sugary taste because the respiration rate is decreased more than the conversion rate of starch to sugar. Thus, sugar accumulates in the potato. The sugary potatoes may be reconditioned by placing the potatoes at room temperature for approximately 1 week. This procedure, however, is not successful for all cultivars.

## Harvest and storage

Potatoes can be harvested when the tubers are small and immature ("new" potatoes) or when the crop is fully mature. New potatoes are harvested when the vines are lush and green. The small, immature potatoes have thin skins and do not store well. Refrigerate new potatoes and use within 10 days.

Potatoes grown for fall and winter use should be carefully dug after the plants have died (turned brown) and the crop is fully mature. Most potato cultivars mature 90 to 120 days after planting. To check crop maturity, dig up one or two hills after the plants have died. If the skin is thin and rubs off easily, the potatoes are not fully mature and will not store well. Allow the crop to mature in the soil for several more days before harvesting the rest of the hills. When harvesting, avoid cutting or bruising the potatoes. Use damaged tubers as soon as possible.

Before placing the potatoes in storage, cure the tubers at a temperature of 45° to 60°F and relative humidity of 85 to 95 percent for 2 weeks. Curing promotes healing of minor cuts and bruises and thickening of the skin.

Once cured, sort through the potatoes and discard any soft or shriveled tubers. These potatoes may spoil in storage and cause other potatoes to spoil as well.

Potatoes should be stored in a dark location with a temperature of 38° to 40°F and a relative humidity of 90 to 95 percent. Potatoes will sprout if temperatures are too warm, while they will taste sweet if temperatures are too cool. Do not allow potatoes to freeze.

Do not store potatoes with apples or other fruits. Apples and many other fruits produce ethylene gas that promotes sprouting of potatoes.

### **For more information**

Additional information about vegetable gardening and other horticultural topics is available from local extension offices and from these Web sites:

#### **ISU Extension Distribution Center**

[www.extension.iastate.edu/store](http://www.extension.iastate.edu/store)

#### **ISU Extension Food Preservation Resources—**

[www.extension.iastate.edu/healthnutrition/food/preservation/resources.htm](http://www.extension.iastate.edu/healthnutrition/food/preservation/resources.htm)

#### **ISU Extension Horticulture—**

[www.yardandgarden.extension.iastate.edu](http://www.yardandgarden.extension.iastate.edu)

Questions also may be directed to ISU Extension Hortline by calling 515-294-3108 during business hours (10 a.m.–12 noon, 1 p.m.–4:30 p.m. Monday–Friday).

If you want to learn more about horticulture through training and volunteer work, ask your ISU Extension office for information about the ISU Extension Master Gardener program.

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