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## How to Grow Sweet Potatoes in Connecticut

Sweet potatoes, *Ipomoea batatas*, are perennial dicots in the morning glory family (Convolvulaceae) that are grown as an annual. They are native to Central and South America, but are now grown in many tropical, subtropical, and temperate regions. They are unrelated to potatoes; potatoes produce tubers, while sweet potatoes produce primary fibrous roots, pencil roots, and storage roots. Storage roots are the only part eaten in the United States, but in parts of Asia the leaves are cooked and eaten as a green vegetable like spinach. Skin color of the storage roots ranges from white to brown to red-orange. Flesh color of the storage roots can be red-orange, orange, yellow, or white. Sweet potatoes contain an enzyme that converts most of its starch to sugar as the potato matures. Sugars continue to increase during storage and when they are cooked. Sweet potatoes are a good source of calcium, iron, and vitamins, A and C.

Sweet potatoes are often confused with yams which are monocots in the family Dioscoreaceae. Yams are grown as a food staple in many tropical countries, but seldom in the continental United States. Compared to sweet potatoes, yam flesh is starchier and drier. Sweet potato varieties are classified as either “firm” or “soft” when cooked. “Soft” varieties are often labeled as yams in the

United States. When soft varieties were first grown commercially, there was a need to differentiate between the two. African slaves called the “soft” sweet potatoes “yams” because they resembled the yams grown in Africa. The nutritional content of sweet potatoes greatly exceeds the nutritional content of yams.

**Cultivars.** Sweet potatoes are grown from young plants called “slips”. If buying through mail-order firms, order early to get the cultivars you desire. Sweet potatoes produce a trailing vine of considerable length up to 20 feet. These vigorous vines make the sweet potato an impractical crop in gardens with limited space. Some cultivars, however, have a different growth form, called a “bush” or “bunch” type. These varieties are more practical for small gardens because they utilize a smaller space.

Here are the characteristics of some the cultivars which we have tested:

*Beauregard* – developed in Louisiana, is among the commercial sweet potato industry’s best producing variety. Large, elongated, rose colored skin with orange flesh. Resistant to storage diseases. Extremely high yielder with a fairly short growing season (80-90 days).

*Centennial* – an older cultivar with smaller yield than others. Stores well.

Tapered to cylindrical, medium to large, with golden skin and deep-orange flesh. (100 days).

*O'Henry* – a sweet potato with white skin and white, moist flesh that turns greenish after cooking. Creamy texture with good flavor. Similar to Beauregard in length of growing season (95 days)

*Carolina Ruby* – a high-yielding variety with dark red skin and moist, good tasting dark orange flesh. Pretty morning glory-like blooms appear in the latter half of the growing season. (100 days).

*Hernandez* – light orange skin with deep orange flesh even after cooking. On the sweet end of the sweet potato spectrum. Good flavor and texture. (120 days).

*Vardaman* – an older cultivar. Golden yellow skin with medium orange flesh color. Very good keeper. Distinctive purple tinted stem. (100 days).

*Covington* – recently developed in North Carolina. Rose color with orange flesh. It has a blocky shape which produces many baking-size storage roots clustered beneath the planting site. (110 days).

*Georgia Jet* – a high yielder, can be susceptible to cracking if subjected to sudden changes in water availability. It has a purplish red skin with medium orange, moist flesh. Somewhat cold tolerant. (80-90 days).

*Bush or Bunch Porto Rico* – short vines (2 feet), suitable for gardens with limited space. Light yellow skin with orange flesh. Plants have purple stems. (110 days).

**Soil Preparation.** A fertile, well-drained sandy soil is preferred. Poorly-drained soils holding excessive moisture may promote root rot. Hilling or ridging the soil is not necessary in most Connecticut soils. Soils with high levels of organic matter is less desirable as it can promote root disease.

**Fertilization.** A soil test should be used to determine the best rates of fertilizer<sup>1</sup>. In the absence of a soil test, a fertilizer containing moderate amounts of nitrogen and relatively high proportions of phosphorus and potassium, such as 5-10-10 or 10-10-10, can be used at the rate of about 3 lbs per 100 square feet. Half the fertilizer should be applied before planting and half applied as a side-dressing after plants have become established and growth occurs. Excessive amounts of nitrogen may encourage excessive vine growth and result in cracked and misshapen roots and poor storage quality of harvested roots.

**Planting.** Sweet potato plants are very sensitive to cool soils as well as frost. Soil temperatures below 55°F will result in chilling injury. Transplant slips at least 2 weeks after the frost-free date or after June 1<sup>st</sup>. If receiving slips in the mail, soak the roots in water overnight in a cool area, but keep the foliage dry. If days are sunny and hot, set plants in evening hours to reduce excessive wilting. Slips should be planted 12 inches apart in rows 3-4 feet apart. Gently firm the soil around each plant and water immediately.

**Maintenance.** After an early cultivation about 2 weeks after planting or about June 15, sweet potatoes need minimal care to discourage weeds. The vines quickly spread to cover the ground and shade out most weeds. Sweet potatoes thrive under drier than normal conditions and require only about ½” of water/week, either through irrigation or rainfall. Irrigation should be avoided during the last 3 to 4 weeks before harvest. Heavy rains or too much irrigation during this time may cause the roots to split, especially if conditions have been dry before

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<sup>1</sup> Information on soil testing can be found at our website <http://www.ct.gov/CAES/site/default.asp>.

this period. Do not cut back the vines during the growing season. Any kind of damage to the vines before roots are mature can cause the roots to sprout.

**Harvesting.** Sweet potatoes should be harvested before, or soon after, frost kills the vines. Roots continue to grow until frost kills the vines. An extremely hard frost can damage roots near the surface. Chilling injury of roots results when soil temperatures drop below 50°F, and results in internal decay of stored roots. If frost occurs, cut the vines from the roots immediately to prevent decay spreading from the vines to the roots. Dig the sweet potatoes as soon as possible. Cold soil temperatures quickly lessen the storage time of roots. Use a spading fork or shovel while being careful not to bruise or cut the roots. Sweet potatoes do not have a thick protective outer layer of cells such as that on white potato tubers. A small wound can easily become infected with decay organisms. Put healthy roots directly in clean storage containers after harvest. Although large amounts of soil may cling to roots, freshly-dug sweet potatoes are easily damaged if washed. Allow roots to dry and cure before removing excess soil.

**Curing.** Sweet potatoes should be cured before storage to heal wounds and improve flavor. During the curing process starch is converted to sugar. Ideally, the roots should be allowed to dry on the ground for 2 to 3 hours. Do not allow roots, drying in the garden, to be frosted because their quality will be rapidly diminished. Cure sweet potatoes by holding them for about 10 days at 80-85°F and high relative humidity (85-90%). In the absence of a curing chamber, they can be cured near a furnace. If the curing area's temperature is only between 65-75°F, the curing period should last 2-3 weeks. To maintain the required

high humidity, stack storage crates or boxes and cover them with paper or heavy cloth. Packing in perforated plastic bags will also maintain high humidity.

**Storing.** Once the sweet potatoes have cured, move them to a dark location where a temperature of 55-60°F can be maintained. Select only sound, whole roots that are free from disease and insect damage for long-term storage. Consume cut pieces and damaged roots soon after digging. Sweet potatoes that are fully-matured, carefully handled, and properly cured should store well until April or May.

**Common problems.** Occasionally, mice and voles can become a problem by burrowing into the soil and eating the tasty, nutritious roots before harvest. Roots that protrude from the soil as they enlarge are most prone to damage. Check for evidence of rodent damage regularly and apply appropriate control measures as needed.

Sometimes sweet potato roots can become covered with black lesions on the skin. This superficial condition is caused by a fungal disease known as "scurf". The sweet potatoes are still edible, although they may not keep as well in storage. Infected roots lose water faster than healthy roots. High soil organic matter content can encourage the disease. As scurf is a soil-borne disease, do not use an infected field for 2-3 years if possible. It can also be controlled in growing the plants in slightly acid soil (pH 5.8-6.0).

Excess rain, irrigation, or poor drainage prevent proper root formation and can create roots that grow long and stringy instead of short and plump. Sweet potatoes prefer hot, dry weather once the vines cover the ground. Long and stringy roots can also be caused by high fertility. The edible portion of the sweet potato plant is a storage root. Luxurious growing conditions caused

by excessive watering or nitrogen can lead to vigorous vine growth and result in poorly developed stringy roots.

In Connecticut, deer and woodchucks may feed voraciously on sweet potato vines. This damage can be controlled by fencing. In addition, deer may be controlled by surrounding the crop with a single strand of clothesline set about two feet above the soil surface and soaked with a repellent. Deer Stopper has proven to be effective in our trials.

### **Summary**

Sweet potato is a tender, warm-weather loving vegetable that produces a root rich in vitamins and minerals, low in fat and calories, and cholesterol-free. They can be grown and can thrive in Connecticut with minimal care. They are incredibly heat tolerant and have few insect and disease pests in the northeastern United States. Deer and mice seem to be the main pests. Connecticut growers will find sweet potatoes a welcome addition to their farm stands in the fall, winter, and spring months. For backyard gardeners, everyone can enjoy sweet potatoes that were grown in the garden throughout the winter months.