

The Sweet Potato

Vegetables • HO-136-W Revised 11/01

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The sweet potato (*Ipomoea batatas*) is best suited for southern gardens due to the need for a long, frost free growing season. However, Indiana gardeners can produce enough for home use. Sweet potatoes belong to Convolvulaceae, the morning glory family. The sweet potato flower is very similar to ornamental morning glories—funnel-shaped and about the same color and size. Blooms are rare but are sometimes seen in southern Indiana gardens. Sweet potatoes are perennial in growth habit but are grown as an annual vegetable in Indiana. The sweet potato evolved in tropical America and ranked second only to the Irish potato as an important vegetable until World War II. The nutritive value of the sweet potato is high. It is a good source of sugars, carbohydrates, calcium, iron, and other minerals and vitamins, particularly A and C.

Types

The edible part of the sweet potato is a swollen storage root. It contrasts with the Irish potato, which produces a fleshy underground stem known as a tuber. The color of both the skin and flesh of sweet potato roots range from white to orange to red, depending on the cultivar. There are two types of sweet potatoes, often described as “dry-fleshed” or “moist-fleshed.” This refers to the mouth feel, not the actual moisture present in the root. Actually, soft versus firm fleshed types would be a more accurate description. “Moist-fleshed” types tend to convert more of their starch to sugars and dextrines during cooking, becoming softer and sweeter than the “dry-fleshed” types. The “moist-fleshed” types are often called “yams.” However, the true yam is an entirely different plant species, grown only in tropical climates.

Growing Your Own Slips

For gardeners wishing to produce their own slips, roots can be saved from the previous year’s harvest. Starter roots should be about 1 1/2 inches in diameter, selected from high-yielding hills, and be smooth, well-shaped, and free from disease and insect injury. Each root produces several slips, so only a few starter roots are needed for the home grower. An electrically-heated hotbed is preferred for producing sweet potato slips (see HO-53: Hotbeds and Cold Frames). Cold frames are seldom satisfactory for starting sweet potato vines in Indiana, as slips often grow too slowly to accommodate the short growing season. Temperatures should be maintained between 75 and 80°F. Place roots about 1 inch apart and 2 inches deep in clean sand or good quality potting soil and water to settle the media around the roots. Ventilate the beds on warm, sunny days. Water regularly to prevent roots from drying out, but do not overwater. Mulch can be used to conserve moisture—remove it when sprouts appear. Plants should be ready for transplanting in about 6 weeks or when 6-10 well-developed leaves are present. Gently pull each sprout along with its newly developed root system away from the starter root.

Soils

A fertile, well-drained, sandy soil is preferred. Heavy, clay soils can result in the formation of long, stringy, or misshapen roots. Poorly-drained soils hold excessive moisture which may promote root rot. A moderate to slightly acid soil with a pH of 5.6 to 6.5 is recommended for sweet potatoes. As soil pH approaches neutral (pH 7.0), diseases are more common. Such diseases can be controlled by lowering soil pH with sulfur. However, do not attempt to alter the soil pH without first having the soil tested. Information on how to sample and have your soil tested is available through

your local county Extension office and HO-71: Collecting Soil Samples for Testing. Also remember that other vegetables in the crop rotation may not require the same pH as sweet potatoes.

Planting

Sweet potato plants are sensitive to cool soils as well as frost. Transplant to the garden 3-4 weeks after the frost free date (see Figure 1 for range of planting dates in your area). Try to purchase or harvest plants the same day you plan to set them. Be sure to keep roots moist. In sunny, hot weather, set plants in evening hours to reduce excessive wilting. Set plants 12-18 inches apart in the row and gently firm the soil around each plant. Water immediately to establish good soil-to-root contact. A starter-solution (1-2 tablespoons of low-analysis fertilizer, such as 12-12-12, per gallon of water) can be used to water the plants.

Harvesting

Sweet potatoes should be harvested by the time frost kills the vines or soon thereafter. Usually 130-170 days from planting are needed to give highest yields, although “baby bakers” or smaller roots can be harvested up to a month earlier. Roots continue to grow until frost kills the vines. However, an extremely hard frost can cause damage to roots near the surface. Chilling injury also results to roots when soil temperatures drop to 50°F or lower, and this can result in internal decay in storage. Direct sunlight for over an hour can sunburn the roots, so dig only those that can be picked up immediately. The greatest danger from delayed digging is in the effect wet soil has on the roots. Excessive moisture can prevent digging injuries from healing properly allowing decay of the roots. Keep in mind that disease control continues through harvesting and storing.

Care should be taken during digging and handling to avoid skinning and bruising the roots. Even a small wound can easily become infected with decay organisms. If possible, line containers with rags or other soft material to avoid scratching the roots. Put healthy roots directly into clean storage containers at harvest. Although large amounts of soil clinging to roots during storage is not desirable, freshly-dug sweet potatoes are easily damaged during the washing process. Allow roots to dry and cure before removing excess soil.

Curing

Sweet potatoes should be cured before storing to heal wounds and improve flavor. It is during the curing process that starch is converted to sugar. Cure sweet potatoes by holding them for about 10 days at 80-85°F and high relative humidity (85-90%). In the absence of better facilities, they can be cured near your furnace. If the curing area's temperature is between 65-75°F, the curing period should last 2-3 weeks. To maintain the required high humidity (85-90% R.H.), stack storage crates or boxes and cover them with paper or heavy cloth. Packing in perforated plastic bags will also keep humidity high.

Storing

Once the sweet potatoes are cured, move them to a dark location where a temperature of about 55-60°F can be maintained. Select only sound, whole roots that are free from disease and insect damage for long-term storage. Use cut pieces and damaged roots soon after digging. Sweet potatoes are subject to chilling injury at or below 50°F. Good results can be obtained by merely wrapping cured sweet potatoes in newspaper and storing them in a closet in which the temperature is 55-60°F. Outdoor pits are not recommended for storage because the dampness encourages decay. Sweet potatoes that are well-matured, carefully handled, and properly cured should store well until April or May.