Storage

Store sweet potatoes between 55° and 60°F. Do not allow temperature to fall below 55°F or chilling injury will result. Relative humidity should be maintained between 75 to 80% to prevent excessive water loss from the roots. Some ventilation should be provided to prevent carbon dioxide buildup.

Nutrient Content

Besides simple starches, raw sweet potatoes are rich in complex carbohydrates, dietary fiber and beta-carotene (a provitamin A carotenoid), while having moderate contents of other micronutrients, including vitamin B5, vitamin B6, manganese and potassium. When cooked by baking, small variable changes in micronutrient content occur to include a higher content of vitamin C at 24% of the Daily Value per 100 g serving, as well as an increase in polyphenol levels.

The Center for Science in the Public Interest has compared the nutritional value of sweet potatoes to other foods. Considering fiber content, complex carbohydrates, protein, vitamin A and potassium, the sweet potato ranked highest in nutritional value.

Sweet potato varieties with dark orange flesh have more beta carotene than those with light-colored flesh, and their increased cultivation is being encouraged in Africa, where vitamin A deficiency is a serious health problem. A 2012 study of 10,000 households in Uganda found that 50% of children who ate normal sweet potatoes suffered from vitamin A deficiency compared with only 10% of those on the high beta carotene variety.

Grading and Marketing

Guidelines for grading sweet potato are set by the United Stated Department of Agriculture. Grading is based on sizes, firmness, color, shape, damage and disease-free. Using these criteria the crop is grouped into US #1, Jumbo, Canners, and a non-marketable group called "culls". Graded sweet potatoes are packed into 40-pound boxes for marketing. Most sweet potatoes are sold fresh but some are processed.

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Alcorn State University Extension Program

The Sweet Potato

A Quick Reference Source

The sweet potato (*Ipomoea batatas*) is a

dicotyledonous plant that belongs to the family Convolvulaceae. Its large, starchy, sweet-tasting, tuberous roots are a root vegetable. The young leaves and shoots are sometimes eaten as greens. *Ipomoea batatas* is native to the tropical regions of America. Of the approximately 50 genera and more than 1,000 species of Convolvulaceae, *I. batatas* is the only crop plant of major importance—some others are used locally, but many are poisonous. The sweet potato is only distantly related to the potato (*Solanum tuberosum*) and does not belong to the nightshade family.

The plant is a herbaceous perennial vine, bearing alternate heart-shaped or palmately lobed leaves and medium-sized sympetalous flowers. The edible tuberous root is long and tapered, with a smooth skin whose color ranges between yellow, orange, red, brown, purple, and beige. Its flesh ranges from beige through white, red, pink, violet, yellow, orange, and purple. Sweet potato varieties with white or pale yellow flesh are less sweet and moist than those with red, pink or orange flesh.

Sites and Soil

Sweet potatoes yield more and better quality roots on a well-drained, light, sandy loam, or silt loam soil. Rich, heavy soils produce high yields of low quality roots; and extremely poor, light sandy soils generally produce low yields of high quality roots.

Both surface and internal drainage are important in selecting a field. Poor surface drainage may cause wet spots that reduce yields and poor internal drainage will also reduce yields. Soils with poor internal drainage are characterized by a high moisture content and poor aeration. These conditions cause sweet potato roots to be large, misshapen, cracked, and rough skinned. A three-to-five year rotation program will reduce the chance of soil-borne disease problems.

Varieties

Consider market preference when selecting varieties. Where markets have been developed for certain characteristics, new varieties should incorporate the expected features.

Beauregard was released by the Louisiana Agricultural Experiment Station in 1987, and by 1992 was produced on a major portion of the commercial acreage in Mississippi. It consistently produces a higher yield of marketable roots than other varieties, and storage root growth is faster so that harvest is sooner.

Beauregard has a light-rose skin. It has moderately deep-orange flesh, and is consistent in shape. It is suitable for fresh market and canning. It is resistant to some of the important sweet potato diseases. The moderate level of resistance to soil rot is of special importance. It is susceptible to southern root knot nematodes and is more susceptible than Jewel and Centennial to bacterial soft rot. Beauregard is an excellent sprout producer; however, length of time until the first plants are ready in field beds is longer than other varieties because of slower growth in cool temperatures.

Centennial has a light-copper-colored skin and deep-orange flesh. It produces high yields of smooth, attractive roots suitable for both fresh market and processing. It is tolerant of fusarium wilt and internal cork diseases, but is susceptible to most other diseases and insects. Centennial is a poor sprout producer.

Covington has rose-color skin, orange flesh and blocky shape. It's a little sweeter than Beauregard variety that was released by North Carolina State University. It resists fusarium wilt, soil rot and nematodes and matures in about 105 days.

Evangeline lives up to its reputation as the sweetest of the sweet potatoes. This classic orange root is tastier than Beauregard and twice as sweet. An uncommonly hardy variety that's resistant to southern root knot nematode.

O'Henry was released by C.C. Farms, Vardaman, Mississippi, to fill the need for a tan-skinned cultivar with cream-colored flesh. It originated as a single-root selection for off-type skin and flesh color out of Beauregard as a result of somatic mutation. It is similar to Beauregard for most characteristics except root color and produces high yields, comparable to Beauregard.

Porto Rican has copper colored skin with a reddish-orange flesh. This sweet potato is moist with a very sweet delicious flavor which is excellent for baking. It is susceptible to wire worm, fusarium wilt, internal cork and southern root-knot nematodes.

Soil pH and Fertilizer

Sweet potatoes are fairly tolerant of variations in soil pH between 5.2 and 6.7. However, the optimum soil pH for high yields of quality sweet potatoes is 5.8 to 6.0. Apply lime if the soil pH is too low. On a pounds per acre basis sweet potato plants absorb about 110 nitrogen, 15 phosphorus, and 150 potassium from the soil.

Nitrogen- Apply 30 to 40 pounds per acre along with phosphorus and potassium, using a complete fertilizer. On very sandy soils where leaching of nitrogen may occur, it is best to use a split application of nitrogen. In this case, 20 pounds would be applied pre-plant and incorporated into the soil with the second application coming four to five weeks after transplanting into the field.

When transplanting, a starter solution high in phosphorus should be applied at a rate of one-half pint of solution per plant. Three pounds of soluble 15-30-15 in 50 gallons of water can be used in making starter solution.

Plant Spacing

A common spacing is 12" between plants and 36 to 42" between rows (12,500 to 14,500 slips per acre). Plant spacing depends on soil fertility and availability of irrigation water. Wide spacing on fertile soils results in excessive jumbo roots and rougher potatoes. Close spacing on very sandy soils may result in undersized roots.

Water Requirements

Although sweet potatoes are drought tolerant, they need adequate moisture throughout the growing season. During dry years, supplemental irrigation significantly increases sweet potato yield and quality. Dry periods retard growth and reduce root yield by causing deformed, smaller roots. Uneven and excess moisture cause excessive vine growth and elongated roots. Throughout the growing season, provide 1 inch of water per week from stored soil moisture, rainfall, or supplemental water.

Insects

If the ground has been in sod the preceding season, soil insects such as wireworms and grubs can be a problem. Insecticides are generally applied either pre-plant or at planting for soil insect control. Otherwise, leaf feeding insects such as the tortoise beetle and salt-marsh caterpillar are the predominant pests. Flea beetles, yellow-striped and beet armyworms may be occasional pests.

Disease

The most common sweet potato diseases are scurf, stem rot (wilt), nematodes, black rot, and soft rots. These diseases and others can cause heavy losses in the field and in storage. They can be prevented or controlled by following the recommended practices in selecting resistant varieties, selecting seed stock, producing transplants, selecting fields, and growing practices. Scurf, black rot, and stem rot usually come from disease infested seed stock and can be controlled by a fungicide dip before bedding seed roots. Nematodes can come from infested plant growing beds or infested soil. Fields known to be infested with nematodes or other sweet potato diseases should be avoided. A three to five year rotation should be practiced. Soft rots and other storage disease problems can be reduced by sanitation and disinfection of the storage house, proper curing, and careful handling of the sweet potatoes during harvesting, curing, and storage.

Cultivation

Feeder roots soon occupy the entire bed. To prevent damage to roots, cultivate weeds with equipment that does not scrape or remove soil from the bed. Disc hillers or other implements which throw soil to the bed avoid root damage and increase the height of the bed. A final bed height of 10 inches is desired by the last cultivation when vine production interferes with cultivation. Less damage to vines occurs if rows are cultivated in the same direction each time. Weeds not controlled by chemicals and cultivation will require hand hoeing.

Harvesting

Regular field inspection is needed to determine when to harvest. Sweet potatoes can be harvested any time after a sufficient number of roots have reached marketable size. The price for uncured potatoes in late August and September may be high enough to justify sacrificing some yield to begin digging and marketing early. If the crop is to be stored, harvest before frost for maximum yields. If soil temperature falls below 55°F some damage to the quality, storability, and slip production of the roots will result. Chilling injury can occur even though a frost has not occurred. In cool weather, remove all dug potatoes from the field before nightfall. Prevent sunscald by removing or protecting harvested potatoes from the sun. A 30-minute exposure to the sun can cause sunscald, which reduces potato quality. Most harvesters require vines to be cut with a rotary mower so they do not interfere with digging. Smaller acreages can be dug with a turning plow or a middle buster. For larger planting a three-point hitch chain type digger is best. Complex harvesters are now available for large acreages, which require little labor and deliver potatoes directly into containers. Regardless of equipment used, it should be adjusted and operated to minimize skinning and bruising. Field grading is important. Use cotton gloves to prevent skinning. Place No. 1's and No. 2's in crates together and cuts, cracks, jumbos, and culls in separate containers. Only No. 1's and No. 2's should be placed in storage.