



Sweet Potato

COMMERCIAL VEGETABLE PRODUCTION

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Varieties

Available sweet potato varieties change as new ones are released. Each of these sweet potato varieties has certain advantages and disadvantages. Before selecting a variety, find out how it performs in your area and its acceptance by potential buyers.

Louisiana State University released Beauregard in 1987. It has rose-colored skin and orange flesh. Under good growing conditions, Beauregard is a good yielder and produces a high percentage of No. 1 roots that store well. Roots of this variety may be misshapen when grown under flood conditions.

Jewel is a variety released from North Carolina. It has tan or copper-colored skin, good internal color, good baking quality and a low fiber content. It matures in 129 to 149 days, is a good sprout producer and is the current leading storage variety in Georgia.

Red Jewel is a red skinned mutation of Jewel and was selected at the Georgia Coastal Plain Experiment Station. The other qualities and characteristics are the same as those of Jewel.

Plant Production

Seed Stock

High yields of good quality sweet potatoes do not just happen. They are usually the result of good practices throughout the production operation. As in other crops, the quality of the seed stock is a primary factor influencing quantity and quality of yield. Only disease-free, certified roots should be planted. Roots 1.5 to 3 inches in diameter produce the largest number of vigorous plants.

Varietal characteristics tend to mutate or run out rapidly. Growers should purchase registered or certified

seed stock each year or maintain a seed production program using procedures comparable to those required for production of registered or certified seed.

Breeder's seed is produced each year from stock carefully selected by the plant breeder to maintain each variety's productivity, root conformation and freedom from disease. This stock produces foundation seed.

Foundation seed is produced from breeder's seed stock to supply needs of registered and certified seed growers. It is carefully rogued to ensure freedom from diseases, maintain high yields and eliminate mutations.

Registered seed is from the first crop produced from foundation seed stock. Registered seed and foundation seed are produced from cut plants.

Certified seed stock is from the second crop produced from foundation seed. Certified seed stock cannot be re-certified.

The amount of seed stock required to produce enough plants for a given acreage is determined by the variety, the size of the roots, whether the roots are pre-sprouted, and conditions at the time of harvesting, curing, storing and bedding.

| Row width (inches) | Plant spacing (inches) | Plants needed per acre | Seed stock/acre (bu) | |
|--------------------|------------------------|------------------------|------------------------------|------------------------------|
| | | | About 1-2 inches in diameter | About 2-3 inches in diameter |
| 40 | 8 | 19,600 | 19.6 | 32.7 |
| 40 | 10 | 15,700 | 15.7 | 26.2 |
| 40 | 12 | 13,100 | 13.1 | 21.8 |
| 42 | 8 | 18,700 | 18.7 | 31.2 |
| 42 | 10 | 14,900 | 14.9 | 24.8 |
| 42 | 12 | 12,500 | 12.5 | 20.8 |
| 44 | 8 | 17,900 | 17.9 | 29.8 |
| 44 | 10 | 14,300 | 14.3 | 23.8 |
| 44 | 12 | 11,900 | 11.9 | 19.8 |

Note: This table is based on Jewel and Centennial, assuming that 1,000 plants are produced from a bushel of small presprouted seed stock and 600 plants from a bushel of large presprouted seed stock from five pullings of plants. Plant production of other varieties may differ.

For maximum early plant production, growers may presprout sweet potato seed roots. Warming for two to four weeks at temperatures from 75 degrees F to 85 degrees F, with a relative humidity of 90 percent and adequate ventilation, is optimal. The exact presprouting conditions used will depend on varietal characteristics, individual operations, preferences and experiences. Presprout until most of the seed stock has sprouts approximately ¼ inch long. Sprout development can be delayed, if necessary, by lowering the temperature in the presprouting room.

Types of Beds

Plastic-covered beds (used for early production) produce plants in seven to eight weeks. Pull plastic tight and fasten it when covering the bed, but be sure the plastic can be easily rolled up for ventilation. Use clear plastic film for the cover.

Open field beds produce plants in 9 to 10 weeks after bedding. This is an economical method of plant production for the grower who does not plan to set early. One disadvantage of open field beds is that they generally produce fewer pullings than plastic-covered beds. Georgia Jet is very sensitive to cold, wet soil and often fails to produce plants in open field beds where these conditions exist. All bed types should be constructed to allow adequate drainage.

Fertilization of Beds

Fertilize beds with 1 pound of complete fertilizer (10-10-10 or 6-12-12) per square yard. Apply an additional ½ pound of 10-10-10 after each pulling.

Bedding

Ideally, treated roots should be placed in the bed so they are not in contact with each other. Bulk bedding, a method used by most commercial growers, has been successful when recommended disease control practices are followed. Cover roots with 2 inches of soil. Separate and bed roots according to size to help achieve proper covering and uniform sprouting.

Watering and Ventilation

Water the beds enough to keep the soil around the potatoes slightly moist, but not wet.

Keep covers in place until plants begin to emerge. To produce hardy plants and to prevent scorching, ventilate on warm days after the plants are up. Air temperature in beds should exceed 90 degrees F.

Certification of Plants

For regulations and requirements for growing and selling certified plants, contact:

The State Department of Agriculture
Division of Entomology and Plant Industry
Capitol Square
Atlanta, GA 30334

Precautions in Weevil Areas

The State Department of Agriculture prohibits the production of sweet potatoes in quarantined areas. If you are unsure about weevils in your area, contact your county Extension agent or the State Department of Agriculture.

Field or Site Selection

Soil Characteristics

One of the most important steps in sweet potato production is selecting the right soil based on the following characteristics.

Soil Texture

Soils intermediate in texture are best. Production in south Georgia has been quite successful on sandy loams and fine sandy loams. Sandy loams in middle Georgia and silt loams and lighter clay loams in north Georgia are preferred. Light-textured soils generally produce sweet potato roots with smoother skins than do heavy-textured soils. The lighter soils may produce longer roots, however.

Native Fertility

Soils with high native fertility are desirable. Soils with lower native fertility can have excellent production if a well-planned fertilizer program is implemented.

Soil Drainage

Surface and internal drainage are important when selecting a field. Poor surface drainage can cause wet spots, and improper drainage can cause excessive erosion, both of which reduce yields. Poor internal drainage will also reduce yields; this is generally not a problem in the light-textured soils of the Piedmont and the Coastal Plain. Soils with poor internal drainage are characterized by high moisture content and poor aeration. These conditions cause sweet potato roots to be

large, misshapen, cracked and rough-skinned. Soils high in organic matter will usually produce rough sweet potatoes that are damaged by scurf.

Soil pH

The optimal pH range for maximum yields of high-quality sweet potatoes is 5.8 to 6.0. If using lime to raise pH, apply dolomitic lime because it also contains magnesium.

Crop Rotation

A three- to five-year rotation program will reduce the potential for disease development. Do not follow legumes because the resulting excessive nitrogen causes cracks, reduces yields of No. 1 sweet potatoes, and can result in greater disease problems.

Land Preparation

Prepare land well in advance of planting time. Have the topsoil loose, well worked and friable. Turn the soil several weeks before setting out sweet potato slips or plants.

To allow beds to settle and become firm, make final bed preparation several days before setting.

Beds should be at least 8 inches high and as broad as row widths will permit. Narrow beds dry out quickly and restrict root development.

Soil infested with root-knot nematodes should be treated with a nematicide before transplanting. Contact your county Extension agent for further information on nematode control.

Fertilization

The native fertility of most Georgia soils is low. Consequently, liberal applications of a complete fertilizer are necessary to produce top yields of most crops. Sweet potatoes are heavy feeders, so they require heavy application of complete fertilizers. Base fertilizer recommendations on soil tests. Requirements commonly range from 400 to 1,000 pounds in north Georgia and from 600 to 1,500 pounds in the Lower Coastal Plain. **There is no satisfactory substitute for a soil test.**

Phosphorus and Potassium Recommendations

The following chart indicates the pounds of fertilizer nutrients recommended for varying soil fertility levels according to the University of Georgia soil test ratings of residual phosphorus (P_2O_5) and potassium (K_2O).

Fertilizer Recommendations for Sweet Potatoes

| Ratings | Low | Medium | High | Very High |
|----------------------------|-----|--------|------|-----------|
| Recommended P ¹ | 180 | 120 | 60 | 30 |
| Recommended K ² | 180 | 120 | 60 | 30 |

¹ pounds of P_2O recommended per acre

² pounds of K_2O recommended per acre

If soil testing was done by a lab other than the University of Georgia Soils Testing Laboratory, the levels recommended above may not apply.

Apply all the recommended phosphorus during or near transplanting. Apply approximately ½ pint of a starter solution consisting of 3 pounds of 10-34-0 (or a similar material) mixed in 50 gallons of water to each transplant. One hundred to 150 pounds per acre of pop-up fertilizer promotes earlier growth, particularly in cool or cold soils. A good pop-up fertilizer is similar to or equal to 10-34-0 and should be relatively high in phosphorus and low in potassium. For early growth stimulation, band pop-up fertilizer 2 to 3 inches to the side of the plants and 2 to 3 inches below the roots.

One-half to two-thirds of the potassium either should be applied in two bands, each 2 to 3 inches to the side and 2 to 3 inches below the level of the plant roots, or should be incorporated into the bed before transplanting. Research shows that broadcasting over the entire field is usually less effective than banding.

An acceptable alternative to field broadcasting is the modified broadcast method, in which the preplant fertilizer containing nitrogen, potassium, and any recommended micronutrients is broadcast in the bed area only. For example, on a bed 72 inches wide, a swath 60 to 72 inches wide of fertilizer is uniformly applied over the center of the bed. Incorporation by tilling will help reduce water and wind movement of the fertilizer and will place some fertilizer in the root zone. Apply the remainder of the recommended potassium when the vines are about 12 inches long by banding it in an area on both sides of the row just ahead of the developing root tips. Usually, no additional potassium side dressing is needed unless heavy leaching rains occur. If they do occur on sandy soils, an additional application of 30 to 40 pounds of potassium per acre may be required.

Nitrogen Recommendations

Typical Coastal Plain soils require 60 to 90 pounds of nitrogen (N) per acre. Extremely sandy soils may need additional nitrogen or an increased number of applications. Piedmont, Mountain and Limestone Valley soils usually require 50 to 80 pounds of nitrogen per acre for sweet potato production.

Seasonal nitrogen requirements will vary depending on rainfall, soil type, soil temperature, irrigation, plant population, and method and times of applications.

For typical Coastal Plain soils, one-half to two-thirds of the recommended nitrogen either should be applied in two bands, each 2 to 3 inches to the side and 2 to 3 inches below the root level of the plants, or should be incorporated in the bed before transplanting. Research shows that broadcasting over an entire field is usually less effective than banding.

An acceptable alternative to field broadcasting is the modified broadcasting method described in the “Phosphorus and Potassium Recommendations” section. Incorporation by tilling will help reduce water and wind movement of the fertilizer and will place some fertilizer in the root zone. Apply the remaining recommended nitrogen when the vines are about 12 inches long by banding in an area on both sides of the row just ahead of the developing root tips. Usually, no additional nitrogen side dressing is needed unless heavy leaching rains occur. If they do occur in sandy soils, an additional nitrogen application of 30 to 40 pounds per acre may be needed.

Magnesium, Sulfur, Zinc, Manganese and Boron Recommendations

If the soil test indicates magnesium is low and if lime is recommended, apply dolomitic limestone. If magnesium is low and lime is not recommended, apply 25 pounds of elemental magnesium per acre. Apply a minimum of 10 pounds of sulfur per acre, 1 pound of actual boron per acre and, if the soil test indicates zinc is low, apply 5 pounds of actual zinc per acre. If soil pH is greater than 5.6, apply 8 pounds of actual manganese per acre.

Transplant and Transplanting

Planting Dates

Plant after the danger of frost has passed. Where irrigation is available, good yields may be obtained in plantings made as late as the last of June.

Transplanting Quality

Weak and spindly transplants may decrease yields significantly. Use only fresh, relatively large, vigorous slips or vine cuttings. “String” potatoes do not yield a satisfactory percentage of vigorous slips.

Maintain as many healthy leaves as possible on the transplants. Healthy leaves are required for food synthesis, which hastens root development and early

establishment of the plant. Removing the lower leaves during transplanting reduces yields as much as 20 percent.

Transplants should be set deep, with at least three nodes (joints where leaves are attached to transplants) below ground level. Increasing planting depths up to five nodes has been shown to increase yields.

Vine Cuttings

Save seed stock from vine cuttings only. This will contribute more toward reducing disease problems than any other single practice. Plant bed cuttings must be cut above ground — never pulled and then cut. Sanitize the cutting instruments by washing them in a fresh solution of one part laundry bleach and 99 parts water, then cut upward, never letting the knife touch the soil. Vine cuttings produce smoother, more uniform roots, and potatoes keep better in storage if they are grown from vine cuttings.

Spacing

Space plants properly because spacing has a drastic effect on the ultimate size of the roots. Set plants 8 to 12 inches apart in rows 3 to 4 feet apart. Use 8-inch spacing for plants set early in the season and 12-inch spacing for mid-season or later plantings.

Starter Solutions

Water the plants with a starter solution such as 10-34-0 at transplanting (see previous section on phosphorus fertilization). The high phosphorus content of the solution enhances early root development and growth, and the liquid settles the soil and eliminates air pockets. During the first week after transplanting, replant where transplants have died or were skipped. A good stand not only increases yield but also decreases the number of off-grade sweet potatoes.

Cultivation

Properly prepared beds are about 8 inches high at the time of transplanting and feeder roots soon occupy the entire bed. To prevent damage to these roots, cultivate with equipment that does not scrape or remove the soil from the bed. Disk hillers, or similar implements that throw soil to the bed, reduce root damage and raise bed height with each cultivation. Final bed height should be about 10 inches. There is slightly less damage to the ridge and vines if the rows are cultivated in the same direction each time.

Weeds

Yield losses to weeds are often less obvious than losses from insects and diseases because weeds do not have the definite symptoms that diseases and insects do.

Weed competition for moisture and nutrients reduces plant vigor, food manufacturing surface and yield, so make every effort to control all weeds throughout the growing season. Cultivation has been the customary method of weed control, but in recent years herbicides have played a larger role. When used correctly, herbicides are effective in controlling weeds and reducing the number of cultivations. Frequent, shallow cultivations control weeds when herbicides are not used.

Consult the *Georgia Pest Management Handbook* for herbicide recommendations. Never apply a herbicide until you understand how to use it and are prepared to follow the directions on the label.

Diseases

Sweet potatoes are subject to a number of diseases that cause heavy losses in the field and in storage. These diseases can be prevented or controlled by following recommended practices throughout the season.

The most common sweet potato diseases in Georgia are scurf, black rot, wilt (stem rot), nematodes, soft rot, bed blight and internal cork. Scurf, black rot and wilt are controlled by the same practices.

Scurf produces a grayish-brown to black surface discoloration on the roots. These discolored areas can occur in all shapes and sizes with no definite outline. They can be uniform over the surface but are usually worse on the stem end. Generally, the sweet potato skin is not broken and the brown discoloration is only skin deep, so it can easily be scraped from the surface.

Black rot causes a black lesion to develop on the base of young potato stems before the plants are removed from the bed. The foliage of affected transplants appears yellow and stunted. A dark to nearly black spot appears on the potato in the field or in storage. These spots begin as small, round areas, but they enlarge until they cover the entire potato. The surface of the diseased spots has a metallic luster, and the tissue just beneath the surface is greenish.

Wilt-infected vines have a slight off-color of a yellowish tinge, followed by puckering of the foliage and wilting of the plant. The older leaves drop off first, leaving yellow leaves near the vine tip. On affected young vines, many short stems grow at the center of the hill, giving the vine a rosette appearance. If the skin is peeled away from the diseased stem, the exposed tissue shows a dark discoloration. The discolored tissue extends down the stem into the roots. Wilt does not

cause the stem to rot unless saprophytic organisms enter the diseased vines.

Nematodes cause above-ground parts of the plant to appear stunted, sickly and greenish-yellow. Feeder roots may be either galled or completely absent. Sweet potatoes produced by infected plants are pitted and cracked. Contact your county Extension agent for more information on nematode control.

Bed blight (Southern blight) is caused by a soil-borne fungus that attacks the stems of young plants at the soil line, causing a white mold to develop. Infected plants turn yellow and die, creating dead areas in the plant bed.

Soft rot is produced by the same fungus that causes bread mold. It enters the sweet potato through breaks in the skin caused by careless handling. Decay usually begins at one end of the potato and progresses rapidly to the other end.

Initial symptoms are soft, watery, stringy conditions, followed by a mass of grayish-black mold covering the rotten area. After decay, moisture escapes and potatoes gradually become firm, hard and mummified.

Bacterial soft rot can occur in the seed bed, field, or even after harvest. Infected plants usually have long black stem lesions, although potatoes on diseased vines can show various degrees of soft rot development. Good sanitation practice is the best method of preventing bacterial soft rot.

Internal cork forms dark brown to nearly black areas that become hard and gritty when the potato is cooked. Cork symptoms, which are sometimes difficult to see at harvest, are much more visible after two or three months in storage.

Insects

Even when the best available control measures are used, few sweet potato crops entirely escape insect damage. This damage decreases the quality of sweet potatoes by marring appearance, providing entry points for decay organisms, causing waste when cooked, and sometimes causing objectionable tastes. Roots containing insects or their excrement are usually unfit for human consumption.

At least 18 species of insects feed on sweet potato roots. Among those causing the greatest damage are the sweet potato weevil, whitefringed beetle, wireworm larvae and flea beetles. Other beetles and caterpillars can cause damage in some years.

Sweet potato weevils are the most destructive insect pest of sweet potatoes; fortunately, they occur in only a few counties in the southern part of the state. Adult sweet potato weevils are antlike beetles about ¼ inch long. The head and wing covers are dark metallic blue

and the thorax and legs are bright orange-red. The adult weevil feeds on all parts of the sweet potato plant but prefers the roots. Feeding scars on tubers consist of tiny shallow holes that usually occur in patches.

The eggs, laid in vines and roots, hatch in about one week. The legless white grubs with brown heads begin to tunnel through potatoes, causing the potatoes to be too bitter for human consumption.

Notify your county Extension agent or the Georgia Department of Agriculture immediately if you see adult weevils or potatoes infected with the legless grubs. Prompt action by a grower who suspects the presence of weevils can prevent the spread of this destructive pest from areas already infested and quarantined.

Buy seeds and plants only from certified growers to obtain weevil-free stock. In weevil-infested areas, store seed away from other potatoes.

Plant in fields that did not grow sweet potatoes the previous season, and use plant cuttings instead of rooted plants wherever possible.

Whitefringed beetles are widely distributed throughout the major sweet potato growing areas of Georgia. The adult is a robust, gray beetle about ½ inch long with one faint stripe on each side. The adults do not damage sweet potato roots.

The grubs are white, legless and about ½ inch long when mature. The grubs feed on the underground parts of about 250 different plant hosts.

Whitefringed beetle grubs in the soil must be detected before planting if control measures are to be applied. The grubs cannot be effectively controlled after a crop is planted.

Wireworm adults, dark brown and about ¼ inch long, live near the soil's surface under trash and leaves. The adults do not feed on sweet potatoes.

The larvae, which hatch from eggs laid in the soil during the summer and early fall, injure sweet potatoes. The larvae are white, cream or yellowish gray with reddish brown heads and tails. They are smooth, shiny and relatively hard-bodied. When full grown, they are ½ to 1 inch long.

Larval feeding causes small, irregularly shaped holes in roots. The feeding sites are concentrated in growth cracks or randomly scattered over the root surfaces. A one- to two-year lapse between plantings in fields that have been planted to a cover crop, corn or pasture grass effectively lowers the wireworm population.

Sweet potato flea beetle adults are pests of sweet potato foliage, but larval injury to roots causes greater concern.

Adult flea beetles are black, about 1/16 inch long and characteristically hop when disturbed. They eat narrow channels in the upper surface of sweet potato leaves,

creating a characteristic and easily recognized injury.

Laid in the soil, eggs hatch into slender, white larvae. When fully grown, the larvae are about 3/16 inch long. The larvae make small, winding tunnels just beneath the skin of sweet potato roots. The tunnels are nearly invisible at first, but soon darken. As the potato grows, the skin over the tunnels splits away, leaving shallow scars on the surface.

Although large populations of sweet potato flea beetles are often found in sweet potato plantings, they usually cause little damage to the harvested roots. Apparently, the larvae feed mostly on the fibrous root system of the plants or attack the edible roots only under certain conditions.

Other insects, such as beetles and caterpillars that chew on the leaves or stems and leafhoppers that withdraw juice from plants also cause damage to sweet potatoes. Contact your county Extension agent for more information on controlling these pests.

Harvesting

Harvest for the early fresh market as soon as a sufficient number of roots have reached market size. Harvest for storage when the maximum number of No. 1 roots has been produced. Inspect the field regularly to determine when to harvest, making sure to harvest before frost to prevent damage.

Prevent chilling injury during cool weather by removing all harvested sweet potatoes from the field before nightfall.

Prevent sunscald by removing roots from the sun immediately after harvest. Sunscald can occur during as little as 30 minutes in the sun.

Some harvesters require vines to be cut with a rotary mower so the vines will not interfere with the digging operation.

The grower with only a few acres can use a turning plow (with a tip of a wing removed) or a three-point hitch-chain digger. Larger growers might use more complex harvesters, which require very little labor, do not require vines to be cut previously and deliver potatoes directly into containers. Adjust and operate harvesters to obtain the least amount of skinning and bruising. When possible, remove cuts, cracks and other culls from sweet potatoes to be stored. Use care in future handling, transporting and grading to keep damage to a minimum.

Containers

Container selection is important in the handling and the proper curing and storage of sweet potatoes.

Research shows that larger containers cause less damage than smaller containers when they are used to store roots.

Several types of storage containers are on the market, and each is designed for a specific purpose. Appropriate containers can help maintain the quality of roots throughout curing and storage and ensure fast, efficient and safe handling from harvest to final disposition.

Pallets and pallet boxes increase efficiency in handling large volumes of roots. Crates can be stacked on pallets in truck beds in the field and moved with a forklift.

Pallet boxes that contain 800 to 1,000 pounds of freshly dug roots can be used for processing and fresh market sweet potatoes. Roots for processing can be run into the boxes as field run.

Rectangular crates stack better and allow more efficient use of space in a storage house than do round or tub bottom bushel baskets. When properly stacked, rectangular or square crates distribute the weight to the strong points on the crate — the corners and ends — and prevent excessive weight on the roots.

Stacking height should not exceed 10 crates (or 11 feet, 3 inches, including the pallet). Stacking higher than this can result in buckling or breaking of the lower containers. High humidity adds to the possibility of damage to the lower crates because the wood absorbs moisture and becomes soft.

Curing and Storing

Successful storage of sweet potatoes begins in the field with good production practices. If poor quality roots are placed in storage, only poor quality roots will be taken out of storage.

Proper environmental conditions in the storage house will permit storage up to 12 months. Maintaining proper temperature, ventilation and relative humidity prevents extensive sprouting, shriveling and excessive weight reduction.

Proper storage depends on:

- maintaining a clean and sanitary storage house.
- harvesting in time to avoid low temperature injury to the roots.
- storing only sound and healthy roots.
- arranging and stacking crates properly.
- curing properly.
- maintaining the proper storage conditions after curing.

Either electric or gas heat is satisfactory for sweet potato storage houses if the systems are properly designed and installed. If you heat with forced air gas heaters, be sure you have uniform air circulation throughout the house. If proper circulation is not provided, hot spots can develop in front of the heaters and cause severe losses.

Release heat from the bottom of the house rather than from suspended heaters. Good heat distribution is much easier when the heat is released at or near the floor. **Never let hot air blow directly on the potatoes.**

Stack the crates in the storage room so that good air circulation can be maintained. When potatoes are stored in rectangular crates, leave an air space between every fourth or fifth layer.

Sanitation

Thoroughly clean and disinfect the storage house before placing sweet potatoes in it. Remove all old or decayed potatoes and other debris and clean the floor and old crates before storing potatoes. Clean and make any necessary repairs to the false floor so that crates will stack properly.

Fumigate houses that are located in areas where sweet potato weevils are a problem before placing potatoes in storage.

Curing

Sweet potatoes are stored successfully only if they are cured properly at the beginning of the storage period. Even with extreme care in harvesting and handling, a wound often occurs at each end of the root as a natural result of digging. These wounds and other breaks in the skin create areas where disease-producing organisms can enter the root. Therefore, these wounds must be allowed to heal over as soon as possible. Wound healing occurs as a result of cork formation over the cut or bruised surfaces.

Begin curing as soon after harvest as possible, preferably on the day the roots are harvested. Curing involves three things: temperature, relative humidity and ventilation. Curing is a wound-healing process that proceeds best at a temperature of 80 degrees F to 90 degrees F and a relative humidity of 85 to 90 percent. The process takes five to seven days. Ventilation is also necessary to supply fresh air.

In addition to promoting the healing of wounds and bruises acquired during harvesting and handling, these environmental conditions are necessary for development of a protective cork layer over the entire root surface. As the cork layer develops, suberin, a waxy material produced by the root's outer cells, is deposited.

This cork layer and suberin act as a barrier to decay-causing microorganisms and to excessive moisture loss during storage.

Proper ventilation provides fresh air and helps maintain the proper temperature and relative humidity. Fresh air allows potato roots to function normally during curing and storage. Because the sweet potato root is alive, chemical changes continually take place during curing and storage. These changes cause a buildup of carbon dioxide in the storage house, resulting in stale air, which is harmful to the roots and **must be removed**.

Storing

Store sweet potatoes at temperatures of 55 degrees F to 60 degrees F. Maintain the relative humidity at 75 to 80 percent throughout the storage period so the roots will not lose excessive moisture. Ventilate the house during storage. Some wound cork formation and a slow change of some starch to sugar may continue for a short time.

Sweet potatoes can be stored in the same room in which they were cured; however, it is very important that the curing room be cooled uniformly — but fairly

rapidly — from the curing temperature (85° to 90°F) to the storage temperature (55° to 60°F). Allow no more than 10 days for this temperature change. Potatoes allowed to remain at the high curing temperature too long lose considerable dry weight and moisture.

Grading and Marketing

Wash and carefully grade sweet potatoes for fresh market to meet size and grade requirements. Remove all cut, cracked, diseased and unattractive roots to make the pack as attractive as possible. Buyers often pay a premium on the same U.S. grade because of better grading and attractiveness of the product. Also, repeat sales and profits depend on quality and appearance.

Markets for processing sweet potatoes are limited in Georgia, but some are sold for this purpose. Field-run sweet potatoes with culls removed are bought in some instances. In other cases, size restrictions are placed by the buyer, who usually prefers the smaller grade roots. Before growing sweet potatoes for processing, be sure to contact the potential buyer to determine specific requirements.

Trade and brand names are used for information only. Cooperative Extension, the University of Georgia College of Agricultural and Environmental Sciences, does not guarantee nor warrant the standard of any product mentioned; neither does it imply approval of any product to the exclusion of others that may also be suitable.

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