



PRESPROUTING SWEETPOTATOES

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Sweetpotato seed roots should be presprouted for maximum transplant production. Presprouting is the process by which sweetpotato seed stock is conditioned to produce sprouts (transplants) prior to bedding. Some refer to this as “waking up” the sweetpotatoes after they have been asleep in storage during the winter. This reinforces the often-overlooked fact that sweetpotatoes are still alive.

Presprouting can reduce overall production costs, because it encourages more prolific sprouting and thereby reduces the amount of seed stock required. Besides commonly producing two to three times more transplants, presprouted seed stock produces plants earlier. This may reduce one’s flexibility somewhat at bedding time, but it generally allows one to bed approximately a week later. All sweetpotato varieties benefit from presprouting.

Procedure

Because sweetpotatoes originated in the coastal mountain valleys of Peru and Ecuador, they are accustomed to tropical environments. Presprouting conditions are similar to those recommended for curing: 70 to 80°F, 90% relative humidity, and ample ventilation (1 to 2 air changes/day). However, the exact presprouting conditions

used will depend on individual operations, preferences and experiences. Whether using a special presprouting (curing) room or merely constructing a temporary oxygen room for the sweetpotatoes to live (they require considerably more oxygen at presprouting temperatures than at storage temperatures because they are respiring faster). A good rule of thumb is that if a match won’t stay lit, or if a gas heater fire goes out in the presprouting area, there probably is not enough oxygen for the sweetpotatoes (or there may be dangerously high levels of carbon dioxide). This is especially important in tight, well-insulated, new buildings and older structures with poor ventilation.

Roots presprouted at 85°F will produce sprouts faster than at 70°F. However, experience has shown that mother roots presprouted at lower temperatures generally last longer in the bed.

Sufficiently high relative humidities (85 to 95%) can generally be maintained in closed rooms at higher temperatures (70° to 85°F). However, spraying the walls and floors about twice daily will also help to keep the air as moist as possible. Mechanical humidification (automatic humidifiers, misters) helps to establish and maintain optimum humidity conditions.

Don’t maintain presprouting room humidity at 100% or keep the surface of the sweetpotatoes completely wet. Under such

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conditions, the seed stock begins producing white, fibrous roots and may rot more easily during handling and bedding.

After presprouting, follow the usual recommended practices of seed treatment and bedding. Place the sweetpotatoes in the bed carefully. Cover with no more than 2 inches of soil. Don't be concerned if a few of the longer sprouts are showing through the soil. Cover with clear plastic, as usual. Remove the plastic during the day when the plants start merging, but be sure to roll it up and leave it intact beside the bed for future use. It may be needed for protection against cold periods and late frost.

Don't bed too early. Consider bedding pre-sprouted sweetpotatoes a week later than usual. With plastic covers plants can be produced in 4 weeks after bedding if the weather is favorable.

What is the effect of breaking sprouts off in handling?

Research has shown that even though these sprouts are destroyed at the time of bedding, earlier sprouts and more total sprouts are produced than without presprouting. Be careful handling seed roots, but don't be concerned about the few sprouts that may break off. The importance of the advantages of presprouting cannot be overemphasized. If you have only a few bushels to presprout, consider hiring

someone to perform this operation properly in good presprouting facilities. Rotting associated with handling will not occur in the presprouting operation because of the high temperature and humidity conditions used. Sweetpotatoes can and may rot following presprouting if they are injured by rough handling. Therefore, place them in the bed carefully.

As a further demonstration of one's commitment to quality sweetpotato production, think in terms of building proper curing (and presprouting) facilities. However, using plastic sheeting to curtain-off an area for presprouting will allow one to presprout without having to move the seed stock until it is ready to be added.

Remember to check sweetpotatoes very carefully for rots, off-types, skin and flesh color mutations, etc. In other words, remember that profitability depends on establishing and maintaining a good, onfarm seed-management program. *You cannot harvest better quality than you use for seed.*

For further information and/or assistance contact your County Extension Agent or consult "Growing and Marketing Quality Sweetpotatoes," 1989, AG-09, by L. G. Wilson and C. W. Averre. This bulletin is available for \$2.00 from the Department of Agricultural Communications, Box 7603, NCSU, Raleigh, NC 27695-7603.