

Overview: Sweet Potatoes at the Kerr Center Heirloom Varieties and Small-Scale Technology

George Kuepper
Kerr Center for Sustainable Agriculture
Poteau, Oklahoma
October 2014

In 2010, Kerr Center received a federal Specialty Crops grant through the State of Oklahoma to look at heirloom sweet potatoes and at small-scale technology for gardeners and small market growers.

Heirloom Variety Trials

The results of three seasons of heirloom cultivar trials have been published and will not be detailed here. You can access this information electronically at the Kerr Center website, or request print copies by contacting: The Kerr Center for Sustainable Agriculture, P.O. Box 588, Poteau, OK 74953, tel: 918.647.9123.

Heirloom Sweet Potato Varieties: A Preliminary Look in 2010

http://www.kerrcenter.com/publications/sweet_potato_2010.pdf

Kerr Center's 2011 Sweet Potato Variety Trial

<http://www.kerrcenter.com/publications/Sweet%20Potato-Variety-Report-2012.pdf>

Kerr Center's 2012 Sweet Potato Variety Trial

<http://www.kerrcenter.com/publications/sweet-potato-report-2013.pdf>

Small-Scale Production Technology

For three years we evaluated several tools and techniques we considered applicable to small-scale production on gardens and market gardens. As with any such efforts we found some things that did *not* work, as well as some that did. For complete findings, see

Small-Scale Technology and Practices for Sweet Potato Growing in Southeast Oklahoma

<http://dev.kerrcenter.com/publication/small-scale-technology-practices-sweet-potato-growing-southeast-oklahoma/>

Growing planting slips: As an alternative to buying new planting stock each year, growers have the option to grow their own slips from healthy roots that were held over the winter. While growers in some southern states can start slips out-of-doors in the

soil, Oklahoma and Arkansas growers have too short a growing season and need to grow slips using supplemental heat. For details on temperature and options for starting slips, we recommend OSU's *Sweet Potato Production* publication HLA-6022. In our case we used 20-gallon totes purchased at a big box store, drilled drain holes in the bottoms, and filled them less than half-way with potting soil. Healthy roots were crowded onto the soil, but spaced so that they did not touch each. More soil was added to just cover the roots. Hardware cloth or chicken wire was spread across the covered roots, and one-to-two more inches of potting soil were added.

The loaded totes were then stored in our green house for additional warmth, and the soil kept moist. Emerging slips were plucked as they emerged. The hardware cloth prevented pulling the roots out of the soil during plucking. Two, three, or more generous harvests were made.

Planting ridges: We discovered several advantages to growing sweet potatoes on planting ridges as opposed to flat-planting. We observed that yields might be increased and root rot reduced in wet years when ridges were used. They also made harvesting easier. Small-scale growers lacking access to tractors with middle-busters can make robust planting ridges using hiller/furrower attachments on their rototillers or walk-behind tractors. If the equipment is not suited to that adaptation, we found we could build modest planting ridges using a wheelhoe with a hiller/furrower attachment.

Irrigation: While sweet potatoes are drought-tolerant, good yields are often dependent on supplemental irrigation. It should come as no surprise that drip irrigation is far more efficient than sprinklers.

Harvest: Our attempts at small-scale *mechanized* harvest were disappointing. Some failed completely. Others, such as using a single-bottom plow on a tractor, damaged many roots and still required much hand digging. Our best success was achieved using well-made digging forks and elbow grease. Our field experience taught us where to place the tines to avoid damage and ease the majority of the roots free of the soil. We *did* learn there is a distinct advantage to better-made, long-handled digging forks for reducing fatigue.

Curing: Curing is a process intended to cure root wounds incurred during harvest. Every root will have at least two wounds: small ones on each end where it was separated from the rest of the root and/or stem. The ideal conditions for curing are temperatures between 80°F and 90°F, and a relative humidity between 85% and 90%, with adequate ventilation, for seven to ten days. This can be done indoors, under controlled conditions. However, we also learned of a field-curing technique that worked quite well and was much less expensive.

We began by selecting a mowed grassy area and watered it deeply. We arranged our harvest containers and baskets close together on this spot. We then covered all the containers with a plastic tarp and weighted down the edges to prevent its blowing away, but leaving gaps for some ventilation. Curing time generally required seven to ten days. We allowed more time when the weather was cool, overcast, or rainy.