Sweetpotato Collaborators Conference

This project has shared information and technology that improved sweetpotato yield, quality, and food safety, thus reducing grower costs and increasing consumer satisfaction.

Who cares and why?

Sweetpotatoes are a major crop in the U.S., especially southern states. Farmers harvested 116,900 acres with a production value of $478,308,000 in 2010, but they still face many production and post-harvest challenges. In order to maintain sweetpotato production, growers need to know which varieties grow best in the conditions on their farms as well as how to best manage insects, weeds, and diseases that can damage crops and raise costs. Coordinated, comprehensive research and outreach are needed to help sweetpotato producers navigate and resolve complex production challenges. After harvest, sweetpotatoes must be properly stored, packed, and marketed so that a supply of safe, nutritious produce is available for consumers.

Sweetpotatoes are grown across the U.S., but certain varieties are better adapted to environmental conditions in different regions. SERA-005 has been instrumental in providing the best varieties to farmers and helping them understand the importance of soil type, water availability, and storage temperature on yield and quality. Top photo by Craig Yencho, North Carolina State University. Bottom photo by advencap, Flickr.

What has the project done so far?

Since this project started in 1939, SERA-005 has provided vital support for the sweetpotato industry by exchanging information and technology related to sweetpotato production and post-harvest concerns. Diverse participation in the project has included scientists and Extension professionals from universities and organizations around the world, representatives from government and industry groups, and sweet potato growers. With over 1,000 peer-reviewed publications in addition to Extension materials and programs, the SERA-005 group has been a valuable resource for the global research community and sweetpotato growers and consumers. The group's main focus has been evaluating and releasing new sweetpotato varieties, many of which have been adopted worldwide. By taking into account the effects of soil type on sweetpotato shape and yield, the group has been able to make variety selection decisions that address regional needs. So far, 94 varieties have been released. Pathologists and breeders have worked together to identify the causes of many sweetpotato diseases and to develop varieties with resistance to these diseases. This work has helped launch virus-tested seed programs in many states. In addition, the group has designed successful management strategies for pests like the sweetpotato weevil and provided growers with effective registered pesticides. Scientists have also helped growers understand the importance of water availability and demonstrated proper temperature for storage root development and yield. Research on post-harvest diseases has made it possible to market sweetpotatoes year-round and could reduce use of fungicides on packing lines. The Collaborators group has also recently partnered with the industry to develop food safety programming.

Impact Statements

Advanced scientific research by fostering collaboration.

Released 94 new sweetpotato varieties, which have been adopted worldwide and have led to yields that are better than 20% of former standard varieties.

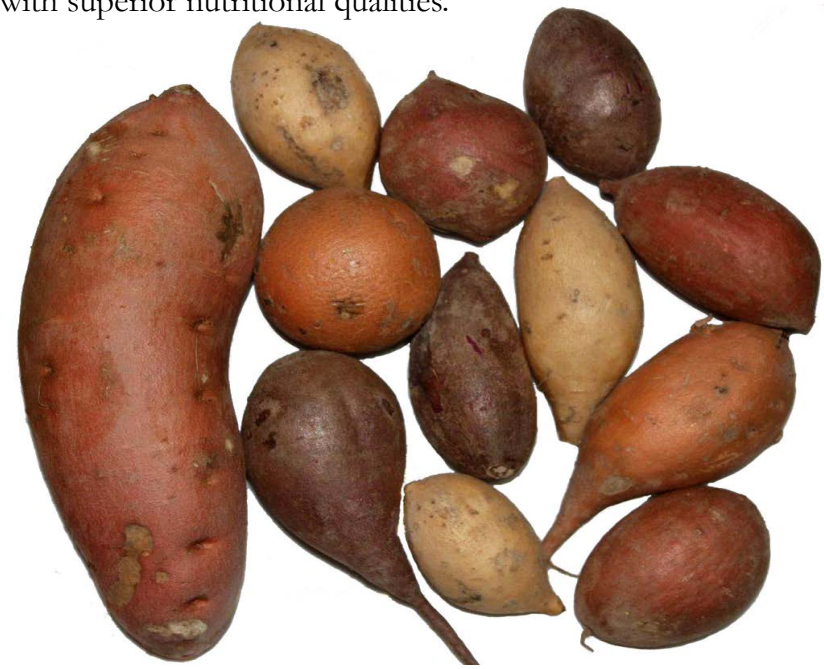
Cut growers' costs by breeding sweetpotatoes with valuable qualities like disease resistance and tougher skin.

Provided research-based information and training, which has led more sweetpotato growers to adopt technologies and practices that improve the yield, quality, and food safety of their produce.

SERA-005 members have served as technical leads for the Bill and Melinda Gates Foundation, which sponsors local agricultural programs across Africa. Participating in one of these programs, the Tanzanian women above learned about sweetpotatoes bred specifically to thrive in sub-Saharan Africa. The women also learned about soil irrigation, crop multiplication, and how to get crops to market. In this way, skills and knowledge that are rooted in SERA-005 research and outreach are helping communities around the world. Photo © Bill and Melinda Gates Foundation.

What research is needed?

In order for the sweetpotato industry to adapt to production and post-harvest challenges, continued sharing of research-based information among a diverse community of scientists, Extension specialists, and industry members is necessary. Researchers need to continue to address sweetpotato insects, weeds, and diseases, especially end rot, and explore effective ways to preserve the food quality and safety of sweetpotato products for consumers. Future research also needs to address the demand for better sweetpotato varieties specifically for processing industries and new products with superior nutritional qualities.



SERA-005 breeding research has led to a wide range of sweetpotato varieties that farmers can select to grow. Photo by Craig Yencho, North Carolina State University.

Want to know more?

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Compiled and designed by Sara Delheimer