

Breeding in Africa for Africa

JUNE
2011

The first batch of sweetpotato varieties produced using the new accelerated breeding method were released in February 2011 in Mozambique. This method will speed up the rate at which new improved preferred varieties reach farmers and consumers. Experiments have confirmed the existence of exploitable heterosis for use in sweetpotato breeding, which could substantially boost sweetpotato yields.



■ A controlled cross being made in Uganda (credit G. Ssemakula)

❖ What is the problem?

Currently national sweetpotato breeding programs in Africa take a long time, 7 to 8 years, to produce a new variety. Frequently those new varieties do not suit the various geographic areas and the preferences of diverse farmers and consumers within a country. Most countries have no real breeding program and rely on testing materials developed elsewhere, which in some cases works well, but not when agro-ecological conditions are quite distinct. Few countries have dedicated sweetpotato breeders.

❖ What do we want to achieve?

We want to revolutionize conventional sweetpotato breeding. We seek to redesign sweetpotato breeding protocols in Africa to produce varieties in fewer years (about 4). We are investing in developing diverse sweetpotato types that will provide national programs with a wide range of "parents" with the preferred combination of characteristics to use in their own breeding programs. Particular attention is

paid to preferences of women producers and consumers of all ages. We expect our national program partners to release at least 20 locally adapted sweetpotato varieties by 2015. We want to see a cadre of sweetpotato breeders, trained in the latest techniques, using common protocols, and capable of raising funds to support the development and dissemination of new, improved sweetpotato varieties within their countries.

❖ Where are we working?

Three *Sweetpotato Support Platforms* (SSPs) have been established, with CIP sweetpotato breeders based in national breeding programs in Uganda, Mozambique, and Ghana to provide technical backstopping at the sub-regional level for the 17 countries targeted under the Sweetpotato for Profit and Health Initiative: Uganda, Kenya, Tanzania, Ethiopia, Rwanda, Burundi, and DR Congo in East and Central Africa; Mozambique, Malawi, Zambia, Angola, South Africa, and Madagascar in Southern Africa, and Ghana, Nigeria, Benin, and Burkina Faso in West Africa.

❖ How are we making it happen?

We are developing a new way of breeding sweetpotato using a combination of methods: First, in "accelerated breeding", we rapidly multiply new breeding lines to evaluate them at more than one site, from the initial stage of selection, in contrast to the conventional approach of using one site for two or more initial evaluations. Second, we are creating very distinct sweetpotato populations for each sub-region, which, when crossed, should result in major improvements of characteristics such as yield and disease resistance, due to heterosis.



Key Partners

The major partners in the project to date are the national sweetpotato programs in the target countries. The Sweetpotato Support Platform (SSP) for Eastern and Central Africa is based at the National Crops Resources Research Institute (NaCRRI) in Uganda and the Kenyan Plant Health Inspection Service (KEPHIS). For Southern Africa, the SSP is based at the Agrarian Research Institute of Mozambique (IIAM) in Maputo. The West African platform is located at the Crops Research Institute (CRI) in Kumasi, Ghana.

