

Sweetpotato Breeding in Nigeria: An Update

- Sweetpotato is becoming much more important food crop in Nigeria than what is thought.
- It's production has moved from the paltry 530,000 tons in 1990 (Presidential Task Force in Alternate Formulations of Livestock Feeds (AFLF,1990) to 3.3 million tons by 2009 (FAO, 2009) cultivated over 1.106 million hectares of land.
- Much of the increase in production has been due to increase in **land under cultivation**.
- Yield in farmers' fields have actually declined from ~ 6 tons/ha in 2000 (Tewe, 2003) to 4.87 tons/ha in 2005 (FAO, 2005), and 3.0 tons/ha in 2009 (FAO, 2009).

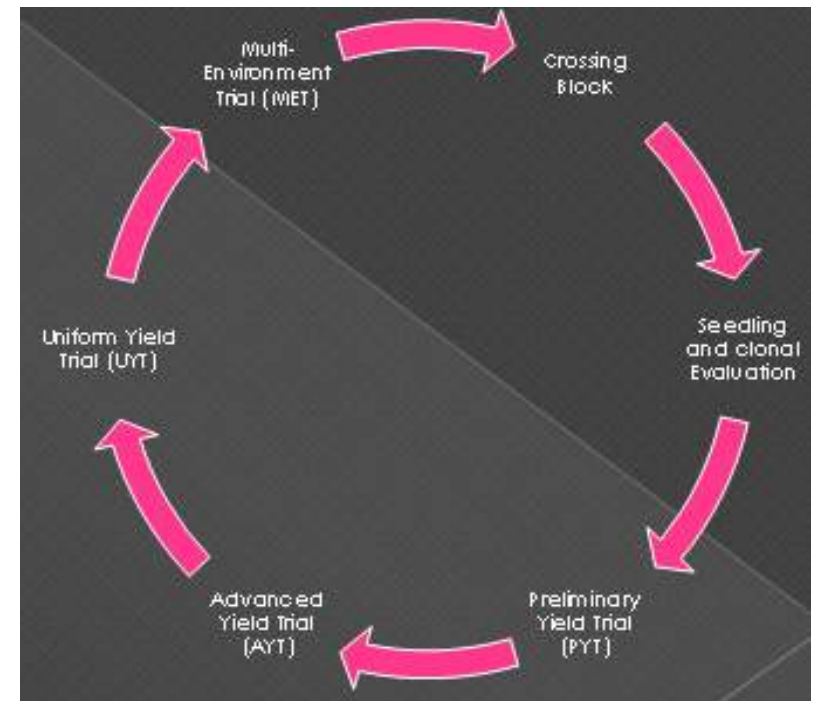
Sweetpotato Breeding Scheme at the NRCRI, Umudike, Nigeria.

Breeding Objectives

Major objectives:

1. High yield
2. Resistance to diseases (SPVD) and pest (*Cylas* spp)
3. High dry matter and flour contents
4. High starch content and quality
5. Increased beta-carotene (OFSP)
6. Root conformation

The Breeding cycle:



WORK DONE SO FAR (AGRA support):

Breeding: Development of improved breeding lines at various stages of development:

- i. Multi-environment trials prior to nomination for release as new varieties

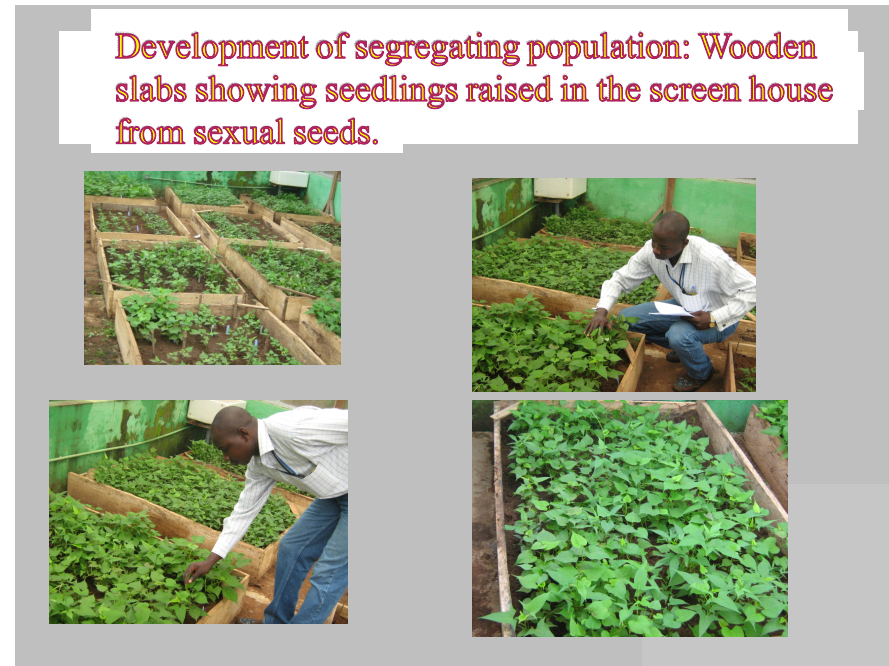


8 OFSP and 2 WFSP
planted in 6 locations in
2010.

ii. Development of new segregating population



- Local adapted genotypes were planted in the open-pollination crossing blocks for half-sib seeds development.



- Small polythene bags are used to raise each seed now.
- Thousands of these seeds are raised yearly.

iii. Evaluation of clones of selected seedlings for promising lines



- Over 200 clones are planted for evaluation on a 2mX3m plot size.
- Some of them are from OFSP parents.

iv. Preliminary evaluation of promising clones for yield and other root qualities



- About 60 lines are being evaluated at the PYT stage

v. Advanced breeding materials



- Advanced clones are being evaluated in three different locations for 2 years.
- Selected genotypes will go for METs.
- OFAR with selected farmers will also be carried out.

Utilization

Research to enhance OFSP consumption

Substitution of highly seasonal and ecologically limiting carrot with cheap and readily available OFSP in fried rice.



OFSP



OFSP juice compares favorably with commercial juice



Staff panelists sampling OFSP and commercial juice

Sweetpotato Starch Production



Evaluation of
OFSP and
WFSP
cultivars for
their starch
content.

Constraints to effective breeding and utilization of sweetpotato.

- Lack of funding
- Lack of adequate sensitization of the populace about the health and economic benefits of sweetpotato - through multiple channels like radio and television programmes, churches, schools
- Lack of market

AGRA

- Breeding
- Awareness
- Utilization

ACKNOWLEDGENT

- AGRA – Alliance for Green Revolution in Africa