Sweetpotato Speedbreeders

From release to uptake: Emerging Stars among the Mozambican Releases

INTRODUCTION

Poverty and food insecurity are widespread and major causes of chronic undernutrition in Mozambique. Almost 70 % of the population live in abject poverty and ¾ of these people reside in rural areas. Agriculture is the predominant economic activity in rural Mozambique. Sweetpotato, particularly orange-fleshed (OFSP) types has the potential to reduce malnutrition in the form of vitamin A deficiency and food insecurity. Currently, about 23% of the sweetpotato produced in Mozambique is OFSP. Nineteen drought tolerant OFSP varieties were released since 2011. Ten OFSP varieties are winning the race of wide acceptance, production and utilization among smallholder farmers. Dominant varieties from 2011 releases include Irene, Sumaia, Delvia, Namanga, Bela and Gloria, while Alisha, Victoria and Ivone lead the race from the 2016 releases. An emerging group of purple-fleshed is coming up, with Bita and Caelan providing the sweetness one can get from sweetpotato. The general attribute among all the varieties is their ability to give high storage root yields under both drought and good rainfall seasons. They are also 'dry' OFSP due to their high dry matter content, a trait driving adoption in Mozambique.

METHODS

Projects within the International Potato Center working in different projects across Mozambique working on seed dissemination together with their partners have taken all the released varieties to the farmers door steps. The Irish Aid project working on 7 districts in Naissa Province for 4 years and 3 districts in Inhambane from 2017; SUSTAIN project worked for 3 years in the provinces of Manica (7 districts), Sofala (3 districts) and Maputo (5 districts); VISTA project in Nampula and Zambezia Provinces for 3 years and the OFDA emergency project in Maputo, Gaza and Inhambane Provinces for 2 years have provided an insight on high ranking varieties across Mozambique. Their initial work involved variety evaluation in all districts to assess the yield, culinary tests for leaves and storage roots as well as easiness of vine production. Additionally, in Niassa and Maputo Provinces the use of OFSP puree combined with wheat floor was used to make bread and other bakery products. Meanwhile, in Manica Province, OFSP juice was extracted and packaged. All the OFSP processing work is done in conjunction with partners.

RESULTS

- Irene, Delvia, Sumaia and Gloria (2011 releases) most accepted and dominate production in Niassa, Manica, Sofala, Zambezia, Maputo and Gaza provinces
- Alisha, Victoria and Ivone (2016 releases) are breaking new ground in Maputo, Gaza and Inhambane Provinces
- Farmers have increased OFSP production, domestic consumption and trade
- Sumaia, Irene, Gloria and Tio Joe are suitable for processing – juice and bakery products
- Women consider cookability and palatability of leaves (Delvia and Irene most preferred by women).
- We have never imagined acceptance of OFSP by men, women and children at equal proportions. Generally, age does not matter.

KEY TABLE OF RESULTS

Variety	Attracting attributes
Irene	High yielding, good leaf and root taste, easy to process, wider adaptation
Sumaia	High yielding, good root taste, easy to market due to good uniform roots, easy to process, wider adaptation
Delvia	High yielding, good leaf taste, wider adaptation
Gloria	Good yield, good root taste
Bela	High yielding, very good root taste
Namanga	High yielding, good root taste
Tio Joe	Good yield, deep orange variety – the king of beta-carotene
Alisha	High yielding, good root taste, early bulking, wider adaptation
Victoria	High yielding, good root taste, early bulking, wider adaptation
Ivone	High yielding, good root taste, early bulking, wider adaptation
Bita	High yielding, very good root taste, purple fleshed, good vine survival
Caelan	High yielding, very good root taste, good vine survival

RELEVANCE FOR DIFFERENT FOOD SYSTEMS

- Early bulking in these varieties provide (i) piece-meal harvest (ii) escape from late season drought
- Provide leaf vegetable and storage roots for cooking
- Storage roots are amenable to processing – resulting in various delicious spreading, baking and cooking products and juice.
- Income generation: storage roots and vines are sold on open and closed markets

Fig 1: Puree from Sumaia, a key ingredient for processing OFSP products. Credit: Maria Andrade

CONCLUSIONS

The 22 released varieties had unequal opportunity to reach the farmers. The initial large multiplication site, Lozano Farm in Maputo was able to distributed seven varieties to different projects on a large scale. All the top ranking varieties are early bulking confirmed by research trials at Umbeluzi and Gurue Research Stations. This makes these varieties a perfect match for shortened growing seasons due to climate change. Yield stability is essential in improving livelihoods of resource poor smallholder farmers. More efforts should be directed to value addition and market creation of OFSP.

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