

Assuring Planting Material through Triple “S” in northern Uganda

The Triple S technology developed from 2007-2011 to help farmers assure their own supply of planting material in drought prone areas using roots as the “seed” source is being promoted in four districts in Northern Uganda. To date, a total of 10 implementing partner extensionists and 247 farmers (126 women and 121 men) have been trained and uptake is promising.

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Triple S demonstration field day at Opaya farmer group, Gulu district, northern Uganda, (credit A. Omara)

What is the problem?

Seasonal food insecurity is a major challenge in northern Uganda where on average over 53% of households experience food insecurity, especially during the months of April to June. Normally, the region experiences a four month dry season between mid-November and mid-March, during which period the above ground portions of sweetpotato plants (vines), common for sourcing planting material, become desiccated. Consequently, at the beginning of the planting season, there is pronounced lack of planting material to the extent that some farmers fail to plant and others plant less than desired. Maintaining a growing crop in the swamp during the dry season is limited to a few farmers, time consuming, often requires

irrigating, and in many cases has to be protected from animal invasion. Most poor farmers in drought-prone areas resort to waiting for sprouts emerging from the roots not harvested in the most recent sweetpotato field when the new rains start. Typically, these sprouts are few and small and farmers spend 2 months multiplying them further before planting. This means they miss the good initial rains and the possibility of maximizing their yield. They also miss better prices found when an early crop of sweetpotato is harvested prior to the main grain harvests when food is short.

Community-based organisations intervene in the foreseen food insecurity by sourcing sweetpotato planting material from distant areas, some more than 300 kms away in Northern Uganda. Besides vine quality deterioration during transit, operational costs are inflated and limited numbers of households access the planting material.

To address this issue, CIP and NRI researchers developed the so-called Triple “S” method—Storage in Sand and Sprouting in close collaboration with Ugandan farmers facing dry seasons longer than 3 months. Instead of struggling to keep vines alive during the prolonged dry season, small or medium but healthy (no weevil damage, not cut) roots are layered with dry, cool sand in a container, with a thick layer of sand on top. This container is kept in the households until 6-8 weeks prior to the expected on-set of the rains. Then the roots are planted out in a protected garden and watered twice a week. On average 40 cuttings (3-4 nodes each) are produced by each root in the garden. A brochure detailing the steps on how to use the Triple S method was produced in 2011. The challenge now is to get widespread adoption of the method, paying attention to whether it needs any improvement.



Key Partners

- HarvestPlus
- World Vision, Northern Uganda programme.





What do we want to achieve?

Under the five year HarvestPlus led project Developing and Delivering Biofortified Crops in Uganda, CIP scientists are leading the component to promote the use of the Triple S technology at scale and build a cadre of trained extension personnel to promote and monitor its adoption. Storing sweetpotato roots in sand and sprouting (Triple S) is a simple, less intensive and less labour costly on-farm method of conserving and multiplying sweetpotato clean planting material at the on-set of rains. By the end of 2016, we would like to see 30% of the target households in drought-prone project areas using this technology.



Where are we working?

Demonstrations are being conducted in Gulu, Oyam, Kole and Lira districts in northern Uganda.



How are we making it happen?

The approach adopted in the project entailed identification, sensitization and training of community resource persons and extension workers in four districts. Triple S participatory demonstrations are being conducted to validate the application of Triple S method in contrast to the conventional approach of sourcing planting material from previous fields. The demonstration package included training on root selection for storage, how to store, timely establishment of watered beds, protection of the plots planted with the sweetpotato vines and inspection of vines prior to harvesting. Brochures were distributed to all attending farmers.

CIP trained key implementing partners' extension personnel (World Vision, Local government, staff of interested schools) on the technique and provided written material. The oriented cadres are community resource persons who subsequently train farmer groups, promote the technology, and document its uptake. Participants help improve the Triple S leaflet protocol and developed an annual Triple S activity calendar for the specific area.

At the beginning of long dry season, farmers select disease and pest infested-free, mature and medium sized roots from part of the harvest for seed storage in sand for period of about two months. Normally, roots stored in sand are kept free from weevils, and the period of storage equals the duration by which the need for watering is shortened. Sprouted roots are then planted in small fenced root beds at the spacing of 60 cm x 60 cm. Since the mother roots are watery, six rounds of spot watering are normally adequate for the vines to reach maturity within two months after planting. The method is cheaper compared to option of maintaining a growing crop in terms of water needed and uses limited bed space to irrigate



Participatory review of the Triple S leaflet, at Aboke village, Kole district, northern Uganda (credit S. Namanda)

and few seed roots. In general, only fifty seed roots produce enough vines to plant about 0.3 ha for production of roots, but the output does vary by variety. Given that on average farmer's in Northern Uganda plan 0.15 ha for sweetpotato, this method more than meets their needs and may facilitate area expansion.



What have we achieved so far?

In 2013, an experiment showed that the OFSP variety Kakamega produced on average 22 times more 30 cm cuttings per root using the Triple S method (44 per root), then the traditional left-to-resprout-in the ground method (2 per root). There are differences in varietal performance under Triple S, so each new variety needs to be tested.

Ten (including 3 women) implementing partner extension staff, and 247 farmers (126 women and 121 men) have been trained in the Triple S technology in Gulu, Oyam, Kole and Lira districts. Three OFSP varieties are used: Ejumula, Kabode, and Kakamega. At least three demonstrations have been conducted and more than 200 copies of the Triple S leaflet have been disseminated in different communities in each of the four districts.

Exemplary community-based farmer trainers for Triple S method, supervised by World Vision, are scheduled as guest speakers on local Radio WA FM station in Lira district to popularise the approach and promote extended application. The current Triple S reference leaflet has been reviewed with farmers and improved. A Triple S calendar 2015 specific for the seasons of Northern Uganda has been developed as tool to help farmers remember key times for major activities.



What's next?

The revised reference leaflet and calendar will be published. There will be a detailed follow-up on those trained to use the method, to see if they continue to employ it in the subsequent year on their own. The target areas will be expanded to two new districts, Kamwenge and Rakai in the coming year. A strategy for how to accelerate farmer-to-farmer dissemination of the technology will be developed and tested in 2015.