

Assuring availability of sweetpotato planting material: scaling out “Triple S” in northern Uganda

Triple S scaling out activities in 2014-2015 have been in Gulu, Oyam, Kole, Lira and Kamwenge districts with 18 community resource people trained to train others and 634 farmers reached with technology uptake of 20 % (127 farmers) in the five districts. A seasonal calendar in the Acholi and Langi languages has been developed and distributed as a training aid to mark the monthly timing for Triple S technology activities.

AUGUST 2015



STORING SWEETPOTATO SEED ROOTS IN SAND
AND SPROUTING (TRIPLE S) FOR VINE CONSERVATION AND MULTIPLICATION

2015 JANUARY

MON TUE WED THU FRI SAT SUN

				1	2	3	4
5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28
29	30	31					

1. New Year's Day



Sprouted roots for planting

Fig. 1 Section of Triple S 2015 Calendar



What is the problem?

Seasonal food insecurity is a chronic problem in northern Uganda. At the start of the rains, local availability of adequate quantities of quality planting material is limited. However, farmers using the Triple S (Storage of roots in Sand then Sprouting) technology can plant earlier and take full advantage of the rains to obtain higher yields. Thus, they benefit from an early food crop, before cereals can be harvested. Ensuring that households have control over their own seed source, by retaining healthy roots and sprouting them, reduces the need to transport perishable and bulky planting material over long distances, at high cost and often with high wastage. However, we need to continue to adapt the “Triple S” technology for local conditions and develop appropriate strategies for scaling out to reach more farmers.



What do we want to achieve?

We would like to see 30% of the target 1,500 agricultural households in drought-prone project areas of Uganda using this technology by the end of 2016. Under the five year HarvestPlus led project

ect ‘Developing and Delivering Biofortified Crops in Uganda’, CIP scientists are leading the component to adapt and refine the technology to local conditions and test a strategy to promote the use of the Triple S at scale.



Where are we working?

Activities are focused on Gulu, Oyam, Kole and Lira districts in northern Uganda, and in Kamwenge district in mid-western Uganda.



How are we making it happen?

We are identifying, sensitizing and training community resource persons and extension workers in the Triple S technique in five districts. Participatory Triple S demonstrations are being conducted so farmers can experience and validate the performance of the Triple S method and compare it to their normal practices, which include sourcing planting material from previous fields. Brochures describing the Triple S process are also distributed to all participating farmers. The community resource persons subsequently train farmer groups, promote the technology, and document its uptake. At the beginning of the long dry season, farmers select disease and pest-free, mature and medium-sized sweetpotato roots from their harvest to be used for seed storage in sand (Fig. 2). If carefully selected and stored in sand, these roots can be kept free from weevils for a period of about three months, from mid-November to mid-February. Then, six to eight weeks before rains are due, sprouted roots are planted in small fenced root beds at the spacing of 60 cm x 60 cm (Fig. 3). One 10 litre watering-can is sufficient to water 10 planted seed roots twice

Key Partners

- HarvestPlus, IFPRI, Uganda
- World Vision Northern Uganda programme
- Samaritan Perse in Kamwenge, Uganda



Fig2 Pre-storage selection seed roots at Minakulu in Gulu district (credit S. Namanda)



Fig. 3 Sorting of healthy sprouted roots for planting at Ngai in Oyam district (credit: S. Namanda)

a week for two weeks after planting. The frequency can be reduced to once every week for 6 weeks until cuttings are harvested for planting material.

What are we learning?

The factors affecting the storage and sprouting efficiency in the Triple S system include the physiological characteristics of the roots, storage medium, storage container and environment.

The size and age of the roots harvested for storage, variety and growth characteristics (erect or spreading), and dry matter content, all affect performance. We recommend the use of mature roots, preferably of small “unmarketable” size but avoiding the use of premature roots. Careful selection of healthy roots both before the storage stage and at pre-planting is important. The effects of practices around curing and de-stalking or leaving the stalk on prior

to storage are still being tested. Each variety has different physiological characteristics and each new variety needs to be tested for Triple S suitability. The sand storage medium should be cool and dry with relatively coarse texture. Various locally available containers can be used: plastic basins, sacks, boxes, broken pots and these are being tested. The storage environment should not be too hot; so thatched roof homes are cooler than homes with iron sheet roofs.

The three month period of storage in sand means that the method is cheaper than that of maintaining a living vine conservation plot, in terms of both the water needed, land needed for the seed bed, and number of seed roots required.



What have we achieved so far?

- In 2015, we developed and distributed a calendar showing the timing of different Triple S practices based on the local Acholi and Langi languages and terminology for the seasons.
- In 2014 – 2015, we trained an additional 18 community based facilitators in the Triple S technology in Gulu, Oyam, Kole, Lira and Kamwenge districts.
- In 2014-2015, we conducted 12 demonstrations using Ejumula, Kabode, Kakamega and Naspot 12 varieties and disseminated more than 500 copies of the Triple S leaflet in different communities in each of the four districts.
- Articles to highlight and popularize the method have been published in the press and live testimonies on Triple S recorded and widely shared.



What's next?

We will revise and publish the Triple S reference leaflet. We will also present a paper discussing the promotion of sweet-potato Triple S method in northern Uganda at the ISTRC conference in China in January 2016. There will be a detailed follow-up on those trained to use the method, to see if they continue to utilize it in the following year. We plan to expand our activities into two new districts, Isingiro and Rakai. We will continue to test emerging issues, especially the effect of different storage containers, on sprouting efficiency and evaluate further studies including physiological effect on seed-root sprouting and farmer practices such as using soil clods to minimize evaporation.

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 clean sweetpotato planting material at the on-set of the rains.