**Sweetpotato for Profit and Health Initiative (SPHI)**
**Sweetpotato Seed System and crop management Community of Practice (SSS-CoP)**
**Summary of online Discussion**

## TOPIC 14: How can customers distinguish seed classes when purchasing planting material?

**Lead discussant: Kennedy Masamba, DARS, Malawi**

### Part A: How to distinguish sweetpotato seed classes

There has been great effort towards establishing sustainable sweetpotato seed systems that ensure farmer access to sufficient quantities of vigorous and disease-free planting material at the right time. The process of institutionalizing and commercializing seed systems is already at advanced stages in many sub-Saharan Africa countries. Regulatory frameworks, seed acts and policies have been drafted, and even gazetted in some countries. Similarly, quality assurance mechanisms to support production of clean planting material have been put in place in form of inspection and certification protocols. On commercialization aspect, farmers' willingness to pay for quality planting material as well as the cost attached to specific seed class should be reflected by high root yield performance. Reports show that seed classes have a significant effect on potential root yield. However, the nature of sweetpotato planting material makes it difficult to distinguish different seed classes through visual observation when purchasing planting material. Stakeholders along the seed value chain need to identify measures /actions that can be put in place to assist customers distinguish seed classes when purchasing quality planting material from decentralized/commercial vine multipliers. The Sweet Potato Seed Systems and Crop Management Community of Practice held a discussion on this from August 30 - September 27, 2017 to share ideas and experiences on how to address this issue. The discussion was led by Kennedy Masamba, DARS, Malawi and attracted 24 contributions from 18 participants (Table 1):

**Table 1:** Summary of the respondents of the 14th SSS-CoP online discussion

| Duration | No. of contributions | No. of unique respondents | No. and type of institutions | Number of countries |
|---|---|---|---|---|
| 30/8/2017 – 27/9/2017 | 24 | 18 (16 male and 2 female) | NARIs: 7<br>CIP: 10<br>University: 1 | 10 (Burkina Faso, Ethiopia, Ghana, Kenya, Mozambique, Nigeria, Rwanda, Tanzania, Uganda and UK.) |

Four things were clear from the discussion:

i) Understanding the customers of sweetpotato seed
ii) Effective implementation of quality seed production practices with an emphasis on labeling
iii) Efficiency of inspection schemes

iv) Moral values of the multipliers

It is very difficult for the customer to distinguish seed classes when purchasing planting material. Those selling planting material must commit to being sincere to buyers to supply the correct class of seed. Critical about the seed is the disease status and if inspectors have certified the plot. If buyers are well informed, they can request for certification documents before they buy the seed. Setting up demonstration fields to illustrate to farmers the outcome of using the various classes of planting material can help them appreciate the need to verify seed classes prior to purchase and sellers will also ensure they engage the right authorities for certification. In addition, establishing a reliable information system on sweetpotato seed would make it possible for farmers to understand the different seed classes. This includes identification of the seed producers of the different classes based on compliance with production standards for each category. Registration of multipliers can help farmers identify producers of different seed classes. Unannounced inspector visits to production sites are also necessary.

Ratification of seed standards and inspection procedures in all countries is important towards ensuring that farmers get value for their money. Several countries in sub-Saharan Africa have made good progress towards this. For instance, in Nigeria minimum standards for certification and quality control have been drafted and submitted to the National Seed Council (NASC) for approval. Compliance with the set rules and regulations at every seed class production will ensure that customers have access to quality seed. Some of the effective ways to distinguish quality vines during purchase will include ensuring that the seed producer has registration certificate from the regulating body and evidence of the required number of field inspection before and during the production of such seed class as stated in the minimum standard. Also, inclusion of tag colour with a well labelled description of the source of seed will be required by the customer. The tags apart from having different colours should have key information such as the variety, origin, name and address of the producer, number of cuttings and most importantly **the seed class**. This information will enable the customer to know where the seed is coming from and the level of quality to be expected. Nigeria has four distinct seed classes (Breeder, Foundation, Certified seed 1 and 2) identified with tag colours as recommended. White colour is used for both breeder and foundation seeds while blue and green are used for certified seed 1 and 2. However, there is the need to sensitize customers on these requirements for seed classes.

Labels of different colours can be used to distinguish different seed classes in a trustworthy seed system. Like Nigeria, the COMESA countries have different label colours for various seed classes in the harmonized seed regulations:

(a) pre-basic seed - violet band on white;
(b) basic seed - white;
(c) first generation certified seed - blue; and
(d) second generation certified seed - red.

However, this is easily enforced for cereals where inspectors can pay impromptu visits to packaging facilities to ascertain that the right colour is being assigned to the correct seed class. This might be difficult for sweetpotato whose seed should be dispatched to customers immediately after harvesting. It is more difficult when the farmer is in a far place and the

material must be sent to him/her. This can be avoided though on-farm buying since the customer can see the material he/she is paying for. However, labeling still plays a major role otherwise customers might not know the seed class. Therefore, field labels should be mandatory and seed inspectors should visit multiplication plots regularly to ensure that plots meet the standards for the seed class whose label they bear. Labeling plays a major role but honesty on the part of the multipliers is also important. But then how do you ensure that someone is honest? Experience in Nigeria has shown that farmers prefer buying planting material from research institutes because they believe it is true to type and of high quality.

In Ethiopia, different seed classes are targeted at different customers (Table 1). Buyers of a given seed class cross check the quality certificate given by the inspection authority during purchase. However, root producers do not buy directly from large scale commercial multipliers at the moment. The assumption is that root producers' decision will be based on field performance of the plant at the multiplication field.

**Table 2:** Producers and buyers of different sweetpotato seed classes in Ethiopia

| **Seed class** | **Producer** | **Customer** | **Description of the customer** | **How customers identify the seed class** | **Standards** |
|---|---|---|---|---|---|
| Pre-basic | Research institute | Research institute | Breeder institution which multiplied the breeder seed | Pre-basic starts from Tissue culture and certified based on the formal standard | Formal |
| Basic | Research institute | Private multiplier | Large scale multipliers who want to multiply QDS | Plant quarantine authority certifies the class based on approved formal standard for basic seed | Formal |
| QDS | Legal private multiplier | Institutional buyers | GO and NGOs are the main buyers | Plant quarantine certificate should be provided during the biding process | QDS standard |

The Ethiopian case is a good example but it excludes decentralized vine multipliers (DVMs) that have been promoted for a very long time and are at proximity to farmers. It will be important for stakeholders to engage the Ethiopian Bureau of Agriculture (Input and Quarantine authorities) so that DVMs are organized into cooperatives and recognized as private multipliers. There is also need to think of market outlets for the roots if they fail to sell the vines due to some reasons.

Despite the emphasis on labeling it should be noted that too much labeling and branding of planting material is an artificial cushioning and it increases transaction costs. The main buyers are resource poor small holder women who are used to sharing seed for free and or at low cost (i.e. traditional farmer to farmer seed sharing). The table of seed classes (first column) from Ethiopia is the commonest in the SSA region. In Tanzania for instance; a formal seed supply chain is very clear; DVMs source planting material (pre- basic or basic seed) from research stations and root producers access vines from them. The main sale is on farm and like any other business, a vine multiplier is judged by returning customers. It might be important to strengthen this by training DVMs on basic business skills and seed quality issues.

In conclusion, it should be noted that till the actors in the various levels of the seed chain are clearly profiled, it will still be difficult to certainly know the class of seed being marketed. For instance, it will be easier for the buyer to trust the class of seed being sold to him/her with certainty if they confirm the source of the seed from upper class along the chain i.e. the buyer

knowing the material being sold to him/her by seed producer X (certified 2) was bought by X from seed producer U (certified 1 merchant). Presently, the source of seed along the seed chain cannot be clearly distinguished. With time, as the sector evolves, it will be possible to group and profile the business actors in the various seed classes. The next way for the buyer to identify the class of seed is to create awareness among the root producers about the distinct characteristics of the seed in the various seed classes. This seems to be a hard one to do though. There is need to show them what level of virus symptoms to expect in the various classes for example. This is not an easy call even for the technocrat and inspection agency. The greatest thing to be put in the multipliers is the values of honesty and integrity in their business undertakings as this will cushion root producers from the risk of getting a raw deal that eventually can lead to a collapse of the sector. It is also important to understand that there is a difference in yielding capacity between cuttings taken from different parts of a vine and from old, mature or young crops. The seed classes identified by researchers are largely to do with viruses and other pathogens. These influence yield but it is crucial to take other aspects into consideration. Researchers should start by asking farmers how they value different batches of seed.

**Part B: Should DVMs focus on vine production only or vine and root enterprises?**

Although the topic of the 14th SSS-CoP online discussion was on distinguishing seed classes it spilled over into another topic on whether DVMs should focus on seed production only or combine seed and root production. Rwanda has been having issues when DVMs mix vine and root production. After using a plot for vine multiplication, the quality of roots from the same sweetpotato plants is very low. Therefore, DVMs are discouraged from selling roots harvested from vine multiplication sites. Otherwise consumers will complain about the quality of roots and orange-fleshed sweetpotato (OFSP) in general. However, experience from other countries e.g. Ghana has shown that it is quite difficult to find DVMs who do not think of selling roots –since these can provide an income stream. If the market for vines is still at its infancy, DVMs would always want to maximise their income through sales of roots. It might therefore be good to sensitize them that, just as they should not sell bad seed, they should not sell bad roots. Furthermore, the repeated cutting of vines probably affects quality of all types of sweetpotato, not just OFSP.

The experience from Kenya is that DVMs that seem to exist beyond projects are those combining vine multiplication and root production. While the ideal situation is specializing in vine multiplication and leaving root production to root producers, this does not seem to happen. What you find is that a DVM engages in root production when he/she has excess planting material beyond what root producers can purchase. As such rather than losing all that, he/she engages in root production using his/her own generated material to earn something from roots later at the same time renewing his/her multiplication field for more planting material. Therefore, on the same farm you will find a root production portion and a planting material multiplication portion. The problem is that when there is demand for planting material beyond what the DVM can supply from multiplication plots there is a temptation to harvest from the root production section regardless of the quality.

It is crucial to appreciate that some farmer-multipliers choose to produce both vines and roots to spread the risks. It is therefore important to raise awareness and train them on the pros and cons of the two seed multiplication approaches:

a) Rapid multiplication and
b) Conventional multiplication

If a multiplier chooses to use rapid multiplication then he/she should only focus on vine production. However, if someone wants to do both vine and root production then he/she should use conventional multiplication (100cmx30cm spacing) but also be keen on the number of times the vines are harvested to avoid compromising the quality of roots. At the farm level, different strategies may be combined depending on the availability of space, labour and water: land for root production from where vines (with the appropriate quality) may be sold to add value to the roots; conventional multiplication fields from where roots may be sold to add value to the vines; and plots for rapid multiplication which are dedicated exclusively to vine production. A farmer will try to maximize revenues per acreage, time and labour unit and minimize risks. It is however important to provide the information that helps her/him to make the best decision as well as provide the institutional support to quality insurance of the products. Given the on-farm variations of the conventional multiplication fields (soil, water and climatic conditions), variations in the resource outlay of the multiplier and the other farm activities or commodities there is need for a system wide approach that can be supported by decision support tools to guide the multipliers investment. It should be noted that sometimes all the returns from the vine /root sales are invested in another component of vine multipliers 'production' or 'socio-economic' system.

**Contributors:**

1. Anthony Brouwer
2. Bernard Yada
3. Eliah Munda
4. Emmanuel Anedo
5. Erna Abidin
6. Fekadu Gurmu
7. Jude Njoku
8. Kirimi Sindi
9. Kwame ogero
10. Laizer Lembris
11. Marian Quain
12. Mihiretu Cherinet
13. Moses Wamalwa
14. Reuben Ssali
15. Richard Gibson
16. Sibila Ouedraogo
17. Ted Carey
18. Rogers Kakuhenzire

**Compiled by:** Kwame Ogero