



The importance of selecting high quality seeds and varieties

What are high quality seeds?

High quality seeds will, in general, produce quality vegetables fit for a high-end market when the crop is managed appropriately. The four main factors determining the qualities of the seeds are: 1) the nature of seed production, 2) the source of the seeds, 3) seed and packaging specifications and 4) storage conditions.

Nature of seed production

Seeds that are available on the market are either produced as open pollinated varieties (OPVs) or as hybrid (F1) varieties. OPVs are produced under conditions



In vegetable production planning farmers make choices on the vegetable they will grow based on their market needs. This is followed by selecting seeds and varieties. High quality seeds give farmers better income.

of uncontrolled (random) pollination, resulting in variability in the characteristics of the seeds. Hybrid varieties are produced under strictly controlled conditions. Pollination is done between two distinct parental lines with a specific target of getting improved characteristics, which are desired by the farmer. Since the production process is controlled the level of purity is higher than that of OPVs.

Source of seeds

The source usually guarantees the quality of the seeds. SEVIA advises to always select seeds from the most reliable sources. Reliable sources, such as professional seed production companies, provide more information on the seeds and also give support to the farmers if they need this. Also get seeds from reputable agro-dealers with no history of selling fake or bad quality seeds.

Storage conditions

Seeds should be stored under cool and dry conditions to maintain quality.

Specifications

High quality seeds are defined by both seed and packaging specifications. The specifications should include good germination and vigour, high purity and freedom from diseases. The packing specifications are an assurance of quality and also allow for reference purposes. These include the production company (source), variety name, the lot and/or batch number and the date of manufacture.

Steps in selection of high quality seeds

Knowing the name of the variety helps in selection as this will affect the seed specifications. **Knowing only the company name is not enough!** The variety selected has a big impact on the market and crop management needs.

It is important for the farmer to consider the following when selecting the variety depending on their needs:

- Tolerance to diseases and pests
- Timing of sowing and planting
- Agronomic conditions like water, temperature, soil, pests and diseases
- Planting densities
- Availability of inputs such as the fertilizers, fungicides and pesticides

An example of different management practices for supporting tomatoes. Different varieties will have different needs.



The picture above shows two different eggplants from the same seed production company, let's say company X. Depending on the market needs one can select the appropriate variety. Requesting for eggplants from company X, without specifying the variety, might result in purchasing a totally different product not required by the market.



Conclusion

It is important to use high quality seeds in order to reduce input costs. High quality seeds will have higher yields of high quality uniform vegetables which can generate better income ●

In the next issue of the newsletter we look at nursery management.

Who is...? Mathé Bastiaansen

Mathé Bastiaansen is general manager of East-West Seed in Tanzania. Upon his arrival the company only had forty employees. Now he is heading 450 co-workers; East-West added a sales organization to the production plant. SEVIA, Rijk Zwaan and East-West should benefit more from their mutual strengths, says Mathé.



Mathé: During my career I have seen almost every corner of horticulture. In 2010 East-West knocked on my door. They were looking for a general manager for their Tanzanian operation. My wife and I visited Moshi. Being swept off our feet by the beauty of the country we instantly decided to move to Tanzania, a decision we both do not regret.



After two years of building the production East-West took over Mkulima Seed, which is a well known brand in Tanzania. So suddenly I – throughout a farmer – had to manage a sales organization, which I actually now have come to like, thanks to the great team by my side.

The philosophy of East-West suits me: to supply quality seeds to smallholder farmers, in order to give them the opportunity to acquire more income and pursue a better life. A company normally has the intention to become successful in a region or country and obviously is there to stay. This also

applies for SEVIA. Because we, SEVIA, Rijk Zwaan and East-West, are present, the Tanzanian horticulture sector is developing itself.

In the near future I would like to work more closely with SEVIA. We both have extension officers, ours are called promoters, and skills and knowledge are complementary. Our promoters could get training about

innovations and the SEVIA extension officers can learn how to treat East-West seeds. SEVIA should focus on telling farmers how to improve their general practice. In demonstrations we have to treat daily problems. If farmers can not afford plastic trays, we have to figure out improvement steps in-between, like showing them that seedlings do better when transplanted in rows or, for instance, that seeds have to be sown at a proper distance.

SEVIA is ideally placed to provide information about new developments in farming. An example could be to launch a campaign about the advantages of seeds with a coating, which East-West intends to introduce. Coated seeds are more expensive, but can be sown more easily, which results in more and stronger plants. In addition the coating contains a fungicide with a positive effect on crop establishment and rooting. The plants then benefit better from the fertilizers ●

SOME FACTS about SEVIA

A friend of the farmer, sector professional and student

SEVIA:

- Believes that there is potential for improvement of vegetable production and productivity in Tanzania
- Has a test farm centre in Lambo Mferejini, Hai District
- Carries out evidence based extension under the theme 'Seeing is believing'
- Has extension officers in Kilimanjaro, Arusha, Tanga, Morogoro, Iringa, Mbeya, Dodoma and Bagamoyo
- Trains farmers and sector professionals in vegetable production and access to markets by improved practices and planning



- Provides information on improved vegetable production to farmers
- Researches on relevant varieties and technologies for vegetable production
- Accommodates agriculture/horticulture students for internship
- Collaborates with other organisations so as to best serve the vegetable farmer. Pamoja tunaweza! (Together we are able!).



SEVIA is a non-profit project, in a private-public partnership conceived by East-West Seed, Rijk Zwaan, Wageningen University Research and the Dutch government ●

Tips and tricks

What you need to know about nutrients and fertilizer

Do you know that for a good yield the right amount of nutrients is indispensable and that nutrients are required throughout every phase of crop development, so from the early (transplanting) stage till harvesting?

Do you know that every nutrient has a particular function, and in different phases?

For example, nitrogen and phosphorus are important in an early stage of root development and leaf growth. Therefore, during basal application you need fertilizers rich in nitrogen and phosphorus. Nitrogen is required throughout plant growth.

In the phase of flowering and fruiting, fertilizers rich in potassium should be applied, in addition to nitrogen. The micro nutrients zinc and boron are important during the forming of flowers.



Do you know that nitrogen comes in different forms?

Roughly there are three forms:

The first one is nitrate. Nitrate is mobile, flows with water to the plant and is taken up with the water flow. For this reason, nitrate uptake is quick. A second type is ammonium. Ammonium is not mobile and an active uptake by the roots of the plants is required. That is why ammonium should be applied close to the roots of the plant. Finally, nitrogen is available as urea. It can be applied dry to the soil, or dissolved and applied by drip irrigation. The impact of urea on plant development is slower, compared to other nitrogen fertilizers. However, urea is the cheapest nitrogen fertilizer available.

So, if you need a nitrogen fertilizer that is quickly absorbed by your plants, use nitrate.

Do you know that the plant quality is significantly influenced by the supply of nutrients?

A vegetable crop requires sufficient nutrients. Without sufficient nutrition, the yield will be low



Nutrients are required throughout every phase of crop development. SEVIA shows farmers how to apply them.

and the fruit size and the quality will be disappointing. So, if the soil does not contain enough nutrients one must supplement these with either manure or chemical fertilizer. The crops take up nutrients from the soil. When the yield is harvested from the field, these nutrients are removed from the soil. For this reason the nutrient level of the soil must be compensated with new manure or fertilizer before starting a new crop. Of course, for an optimal uptake of nutrients it is essential to water the plant frequently. If the plant suffers from drought stress the uptake of nutrients is limited.

Do you know that nutrients from fertilizers can be lost after applying them?

Timing is important too. Make sure that the nutrients are available at the right time, but with the lowest risk of losing them. Nitrates and potassium can be lost after heavy rainfall, because they flow to deeper soil layers where the roots cannot reach these nutrients anymore. Ammonium and urea can be wasted due to formation of gasses from the granules. The nitrogen escapes into the air. To prevent this it is important that urea and ammonium are incorporated in the soil. On sandy soils there is also a risk of losing urea and ammonium due to leaching, so do not irrigate too much after applying urea.

Do you know that fertilizers can have a negative impact on soil quality?

When applying too much fertilizer salt damage can occur in salt-sensitive crops. Also most nitrogen fertilizers have an acid effect on the soil. Adding lime to the soil will reduce the acidifying effect of fertilizers.

Do you know that there are many types and qualities of fertilizer in both solid and liquid forms? Before deciding which to buy, you need to consider:

- The total concentration and ratio of nutrients in the fertilizer - the concentration will affect the amount you apply and the ratio should be close to your planned nutrient needs;
- The chemical form of each nutrient - different chemical forms of a nutrient may be taken up by crops more or less effectively;
- The physical quality of a solid fertilizer and whether you will be able to spread it accurately;
- The storing facility - in case you do not use all the fertilizer at once, you have to store it in a cool, dry, and well-ventilated place.

Do you want to know more about applying nutrients? Please consult one of the SEVIA extension officers or the SEVIA staff ●

Stories from the field

Ansila Gerald now uses a small plot to produce more crops

Mrs Ansila Gerald is a 60 year old widow who has been a vegetable farmer for over five years. She was one of our host farmers In the March – July 2015 vegetable farming season. After four months of learning and field practice with our extension officer, she has now set out to practice what she learnt.

We recently visited her to talk about her experience as a host farmer.

*Place: Kikwe, Meru, Arusha
Crops: Sweet pepper and cucumber*



"I convinced my friend to use better seeds as well."

"I have learnt that some of our local farming practices bring loss", she said. "It is because we cultivate a big piece of land and we do not get much yield. "SEVIA being the first project to work with, I didn't know what to expect, but I knew I wanted to be a better farmer, and to make more profit with the resources I have."

"My expectations were met. Bonaventura Lusaulwa, extension worker of SEVIA, showed me that by using quality seeds and modern technology, such as trellising of my cucumbers, I could improve my farming. Because of trellising, my cucumbers didn't rot. He also taught me that

the removal of the king fruit in sweet pepper helps the plant to grow bigger and to support more fruit. During the upcoming planting season I can use the trellising I put up last year again. I also know now that it is possible to cultivate a small piece of land, which is easier to manage, and at the same time get more crops and eventually more profit. I talked to a friend – she is a farmer too – and I convinced her to use better seeds as well."

"I advise other farmers to work closely with professional organizations and institutions, so as to get the knowledge they need. They should also be willing to change and adopt when necessary."



"I advise SEVIA to continue to train and educate farmers till they understand. They should follow up with all the farmers as they are doing with me. After all we all want a prosperous Tanzania with good food for everybody ●"

People @ Sevia



Name
Falestina Sanga

Year of birth
1977

Function
Cook

From
Iringa

What I like about my job
To cook nice and make people enjoy the food

Favorite vegetable
Cabbage



Name
Theophilo Nyigaga

Year of birth
1965

Function
Research assistant

From
Njombe

What I like about my job
Vegetable growing

Favourite vegetable
Cabbage

Agenda

FEBRUARY

- Field days in the 1st and 2nd week of February
- New extension officers will be deployed to Mbeya, Iringa, Bagamoyo and Dodoma

MARCH

- Planting for the long rain season (March –April)
- Trainings



APRIL

- 1 training of sector professionals/ lead farmers

MAY

- Trainings conducted at the test farm in Lambo Mferejini and in the fields
- Annual planning meeting

Mahanjumati **how to prepare Coconut Pumpkin**

Ingredients

1 pumpkin (cut into cubes)
2 cups of coconut milk
1 cup of sugar
½ teaspoon of cardamom



Preparation

Peel the pumpkin and cut it into small cubes. Boil until they are soft, but do not throw away the water and the pot should not be shaken. When the water is about to dry up add sugar and cardamom. Then add the coconut milk and let it boil. When the coconut milk is cooked, remove from the stove and serve.

Colophon

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