

11 Sweetpotato diseases

Background

Just like any other living organism, sweetpotato plants can become sick. The organisms causing most diseases cannot be seen with the bare eye, because they are too small and live inside the plant tissue. We can only see symptoms of a disease that may emerge on the leaves, stems or roots. There are even diseases that do not show any visible symptoms, except a low yield at the time of harvest.

When they see symptoms on the leaves, the first thing farmers usually think of is insect pests, although the symptoms may very well have been caused by a disease unknown to the farmers. Management practices for diseases are definitely very different from those for insect pests. Therefore, farmers should be able to differentiate between the different causes of symptoms occurring on the plants.



Objectives

The objectives of this activity are to:

- Enhance the participants' awareness and knowledge about the existence and importance of various sweetpotato diseases.
- Improve their competence to identify, prevent, and manage diseases in the sweetpotato crop.

Materials

- Newsprint paper.
- Felt-tip markers.
- Sweetpotato storage root with symptoms of black rot.
- Healthy sweetpotato roots.
- Sack.

Activity steps

A Various diseases and their management

- A.1 The participants are asked to mention diseases of sweetpotato they know. List their answers on a sheet of newsprint paper.
- A.2 Make small groups and invite the groups to look for the following categories of samples with disease symptoms in neighboring fields:
 - Vines and leaves from older crops (they will likely find virus and scab symptoms).
 - Storage roots in just harvested crops (they will likely find root rot, black rot and nematode symptoms).
- A.3 The samples are taken to the FFS meeting place and discussed one by one in the whole group. Determine together the local name and the cause of the disease symptoms. The facilitator could add samples with other diseases that have not been collected by the participants to cover all categories of diseases (fungi, bacteria, viruses and nematodes).
- A.4 Ask the participants what management practice would be adequate to prevent and/or control each disease. Emphasize the importance of

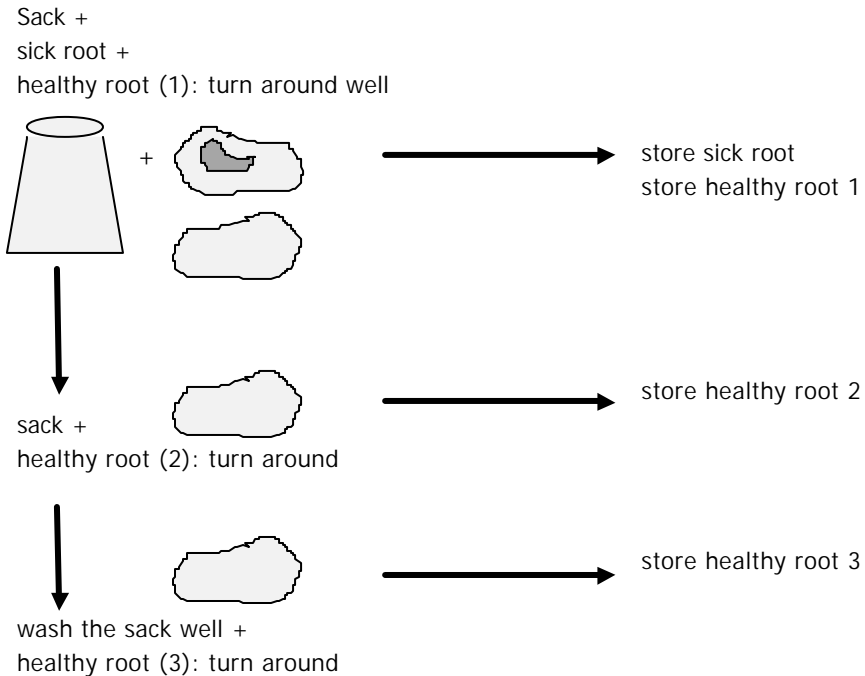
prevention of disease infection by sanitation and the use of clean seed.

- A.5 If varietal resistance emerges as one of the possible ways to manage diseases, a variety ranking activity could be suggested to determine together which of the commonly used varieties is most resistant against commonly occurring diseases, such as the example below. For each disease, the varieties listed are given a score for resistance.

<i>Disease</i>	Scab	Black rot	Virus
<i>Variety</i>			
A			
B			
C			
etc.			

B *Sources of disease infection*

- B.1 Ask the participants to list any source of disease infestation they can think of. With a simple experiment we will demonstrate that the major source of infection is a sick plant.
- B.2 Put a storage root with black rot symptoms together with a healthy root in a clean sack (see flowchart below). Close the sack and turn the sweetpotato roots around for about one minute. Then take the roots out and keep each of them separately in a plastic bag with a label ("sick" versus "healthy 1").
- B.3 Put a healthy sweetpotato root in the same sack. Turn it around in the sack several times, take it out and put it in a clean plastic bag with a label "healthy 2".
- B.4 Wash the sack carefully with water until it is totally clean. Put a healthy sweetpotato root in the clean sack, turn it around several times, take it out and put it in a clean plastic bag with a label "healthy 3, clean sack".



- B.5 Ask for a volunteer to take the plastic bags with the sweetpotato roots home and observe daily what happens with the roots. The volunteer should record when the different roots start to show black rot symptoms and how the disease develops on the roots.
- B.6 During the next FFS sessions, the observation results are presented and discussed by the whole group. The following questions could be used to lead the discussion:
- What is the difference in development of black rot among the four sweetpotato roots?
 - What is the best way to prevent infection of the disease?
 - If the root which was put in the clean, washed sack still showed black rot symptoms, what would be a better way than washing with water to prevent the transmission of the disease through tools and materials? (For example, sun drying, washing with soap.)

B.7 If the participants are still interested to test these methods, a new experiment could be conducted.

For more information see:

- Diseases (Part III, Section 5.6).

Notes

