

23 Sweetpotato storage

Background

After harvest, sweetpotato roots can only be kept for a limited amount of time if not stored properly. Farmers sometimes like to store sweetpotato to wait for a better market price, but damage due to sweetpotato weevil and root rot in stored roots may make storage counterproductive, resulting in a lost opportunity to take advantage of the better price a few months later. Storing roots using a simple but adequate technique may provide a solution to the problems implied by traditional storage, although it requires additional input of materials and labor.

Objectives

After completing this activity the participants:

- Have identified the advantages and disadvantages of sweetpotato storage.
- Gained knowledge and skills on simple sweetpotato storage techniques.

Materials

- Newsprint paper.
- Felt-tip markers.

If the storage technique is practiced:

- 100 kg dry soil powder or dry sand.
- 30 kg newly harvested sweetpotato roots with and without sweetpotato weevil infestation.
- 50 bricks or 5 m² fence of bamboo.
- String or sticks to make the fence.
- Sheets of dry paper (e.g. old newspapers).
- Baskets.
- Scale.
- Appropriate and sufficiently large storage place in a participant's home.

Activity steps

A. *Why or why not store sweetpotato roots?*

- A.1 The facilitator explains the purpose of this activity, i.e. to identify the advantages and disadvantages of sweetpotato storage under the local conditions.
- A.2 The participants are divided into small groups and asked to discuss their experiences with storing sweetpotato roots. Each group should analyze and make a list of advantages and disadvantages of the different storage techniques ever practiced by the group members. The result of the discussion is written on a sheet of newsprint paper.
- A.3 Each small group presents the results to the other groups. The facilitator draws some overall conclusions.
- A.4 After the discussion, the group decides whether or not they have an interest in testing an (improved) storage technique. This will depend on whether the farmers have the facilities for storage, whether it would benefit them considering the prevailing market and utilization conditions, and how effective their current storage practices are. If there is an interest, the following activity could be scheduled for another session, since it requires preparation of materials. The date for the session and responsibilities for preparing the materials should be agreed upon by the group. The plans should consider that the experiment will last for about two months, and that the evaluation of results should preferably take place during one of the last FFS meetings at the end of the season.

B. *A simple storage technique*

- B.1 Materials and location for setting up the store are prepared in advance. Two areas of 1-2 m² should be available, one for storing a mixture of infested and clean roots in a traditional manner (the control), and the other for the improved storage technique. Materials needed should have the desired condition at the time of the session, i.e. soil or sand should be really dry and sweetpotato roots newly harvested. The weather should be dry.
- B.2 The participants meet at the place where the store will be set up. The objective and design of the experiment is explained, and tasks

are divided among the group members. The sweetpotato roots are sorted, and at least 15 kg of clean roots is used for the treatment consisting of the improved storage technique. The other treatment, which consists of a mixture of clean and infested roots is the control.

- B.3 The roots for the control treatment are piled in a corner of the house or under the bed, according to local practice.
- B.4 The improved storage technique treatment is prepared as described in section 6.7.3 in Part III of this manual.
- B.5 One participant is assigned to keep records of the store, including:
- Date of store preparation.
 - Weight of roots stored in each treatment at date of store preparation.
 - Market price of sweetpotato at date of store preparation.
 - Any observations during period of storage (e.g. occurrence of rats).
 - Date of taking roots out of the store (approximately two months later).
 - Weight of roots stored in each treatment at the end of the storage period, distinguishing between healthy roots, sweetpotato weevil infested roots and roots infected by rot.
 - Market price of sweetpotato at 1, 3, 5 and 7 weeks of storage and at the end of the storage period.
 - Any other remarkable observations.
- B.6 During the evaluation session, the recorded data are analyzed and discussed. An economic analysis is made to compare the different treatments:
- *No storage*: income obtained when directly sold = weight of marketable roots x market price at the date of store preparation.
 - *Traditional storage*: income obtained from the control treatment = weight of marketable roots x market price at the end of the storage period.
 - *Improved storage technique*: income obtained from treated roots deducted by cost of storage = (weight of marketable roots x market price at the end of the storage period) – costs for materials and labor.

B.7 The following questions can be used to stimulate the discussion:

- What are the advantages and disadvantages of the three methods compared (immediate marketing, traditional storage, improved storage technique)?
- Which method was the most profitable?
- Would farmers apply this method in the future? If yes, why? If no, why not?

For more information see:

- Storage of sweetpotato (Part III, Section 6.7.3)

Notes