

22 Harvesting and marketing

Background

Farmers will only know what exactly is the result of the care they have given to the crop throughout the whole season at harvest time, when they dig up the storage roots. Did the plants produce many or few, and big or small storage roots, and are they healthy or attacked by pests and diseases? Determining the right harvest time is very important in order to obtain a result of satisfactory quantity and quality.



In certain production systems, farmers contract the standing crop before harvest to a middleman. The price is normally determined in a bargaining session between the farmer and the middleman, but the middleman definitely already assessed what the crop would yield to make sure he or she will not lose on the deal. The middleman has normally good skills to assess the yield and by knowing the market situation, as opposed to the farmer, he or she is in a better position than the farmer to secure as high a profit as possible.

Farmers often only know the above ground condition of the crop, and lack the skills to assess the yield and calculate the actual value of the harvest. Therefore, they easily agree to a price offered by the middleman or trader. Consequently, the profit received by those who have cared for the crop the whole season is often not maximal. If only the farmers possessed the same knowledge and skills as the traders, would they still easily surrender in the bargaining process?

Objectives

After completing this activity the participants would:

- Gain knowledge about determining the right harvest time.
- Enhance their knowledge and skills to estimate the yield.
- Change their attitude about their role in the bargaining process with traders.

Materials

- Newsprint paper.
- Felt-tip markers.
- Scales with minimum capacity of 0.1 kg and maximum of 3 kg.
- Some plastic bags.
- Copy of the “Yield Assessment Contest” form (Appendix II-H)

Activity steps

A A good moment to harvest

- A.1 Involve the participants in a discussion about what factors they consider when determining the time to harvest their sweetpotato crop. List the factors they mention on a sheet of newsprint paper. Discuss to what extent each factor provides flexibility to postpone or move forward the time of harvest in order to optimize the output. If needed, add to the list.

A.2 Calculate together with the participants the income from a sweetpotato crop by comparing a crop of 4 and 6 months. Probe for details considering prevailing conditions with regard to:

- Root yield of a popular sweetpotato variety with flexible growth duration, when harvested at 4 versus 6 months (kg per area unit).
- Estimated market price per kg of roots when harvested during the peak season or two months later.

Calculate the income by multiplying the yield times the price at 4 months (during the peak season) and at 6 months.

A.3 Discussion:

- Which harvest provides the highest gross income?
- If calculated on a per month basis and considering the opportunity value of the land, does the conclusion change?
- What are the risks involved when postponing or moving forward the harvest time?

B *Price negotiation: whose right?*

B.1 Initiate a discussion about the problems that farmers normally face when negotiating about the price of their produce with the traders:

- Do they think they always get a fair deal?
- Did anyone ever experience to be cheated?
- What position and attitude do farmers have in the negotiation process?
- Are they satisfied and if not, what are the problems?
- How can farmers improve their bargaining power?

B.2 If appropriate, suggest the following ways for farmers to strengthen their position:

- Gain skills in yield assessment, particularly in cases where the produce is sold as a standing crop.
- Reinforce group cohesiveness and establish a network through which farmers inform each other about prevailing prices and conditions on the market.

C *Yield assessment contest*

- C.1 Invite the participants to take part in a yield assessment contest. Explain the objective of the activity, i.e. to enhance the participants' skills in estimating the sweetpotato root yield of a crop that is still in the field, in order for them to gain bargaining power in the negotiation process with middle men buying the standing crop.
- C.2 One plant is randomly selected in the ICM FFS field. The soil is partly removed to expose the storage roots. All participants estimate the weight of the storage roots. Write all of their estimates on the Yield Assessment Contest form (copied from Appendix II-H) or on a sheet of newsprint paper using the same format.
- C.3 If all participants have taken their turn in estimating the root weight, the roots are harvested and weighed. The actual weight is also written in a column of the table on the Yield Assessment Contest form. The participants are given ranks according to how close their estimates were to the actual yield, with rank 1 for the one who was closest.
- C.4 Select a second plant in the field and repeat the process.
- C.5 Repeat as many times as the group likes. It is recommended to estimate and weigh at least ten plants to provide sufficient opportunity for the participants to improve their skills.
- C.6 When finished, add the total of ranks per participant and determine who has won the contest (the one with the lowest total score). Discuss whether the participants feel that their skills increased throughout the contest, meaning that they got closer every time.
- C.7 The harvested roots for the contest should be returned to the field for later determination of the total yield of the ICM FFS field.

D *Assessment of the total root weight and value*

After having assessed the average weight per plant, farmers should be able to calculate the approximate weight of the whole crop in the field and its value in money.

- D.1 Ask the participants what they consider the easiest and most practical way to determine the total number of plants in a field, and reach a group decision. Let them then determine the number of plants in the ICM FFS field.
- D.2 Calculate the expected harvest on the field by multiplying the total number of the plants in the field times the average root weight per plant, as assessed in the contest.
- D.3 After that, calculate the value of the field by multiplying the expected harvest times the prevailing market price per kg of roots.
- D.4 The expected harvest and the expected value are noted down for later comparison with the actual harvest and price obtained from the field.

E *Harvesting of the ICM FFS field*

E.1 The ICM FFS field will be harvested by the group of participants. Explain the harvesting procedure, as follows:

- Determine who of the participants will take accurate notes of all data. For harvesting the resulting crop of the defoliation experiment, the form provided in Appendix II-F can be used. For other experiments a similar format can be written on a sheet of newsprint paper.
- Cut the vines and count the number of plants separately per plot of the various experiments. Note down how many of the stems per plot were infested by stemborer.
- Measure the area of each plot, if this has not been done at planting time.
- Harvest the roots and weigh them for each plot separately.
- Calculate the average harvest of the replications per treatment, and convert this into yield (tons/ha).
- From the part of the ICM FFS field without experimental treatments, six samples of, for instance, 10 plants or 5 m² are

- harvested, and the roots weighed. Calculate the average harvest of the six samples and convert this into the yield (tons/ha).
- E.2 When everyone is clear about the procedure, show the map of the ICM FFS field, or make one if needed. Divide tasks for harvesting the various plots and recording data.
 - E.3 The group should agree on how to deal with certain pest and disease problems, particularly sweetpotato weevil and root rot if these are important in the area. Do they need to be considered in the harvest? They could, for instance, weigh the marketable and unmarketable roots per plot separately.
 - E.4 When the task distribution is clear, everyone is invited to harvest the field.
 - E.5 After harvesting is finished, the facilitator collects the data sheets for further processing and analysis by the group during the ICM FFS evaluation meeting.
 - E.6 Ask the participants whether field sanitation is needed or not, i.e. are there weevil infested roots left in the field? If there is a need, agree on the method of field sanitation and implement it together.
 - E.7 Invite the participants to come to the ICM FFS evaluation meeting, explain the purpose and agree on a time and place to meet.

For more information see:

- Harvesting, marketing and storage (Part III, Section 6.7).