

5 Observing the crop and its environment

Background

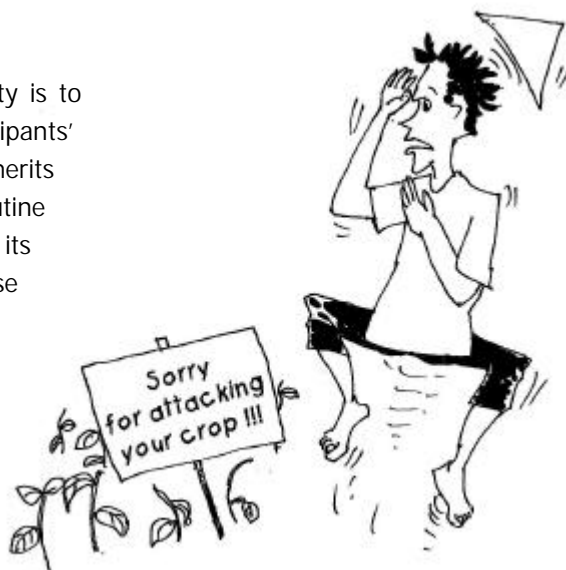
Farmers are often surprised when they suddenly discover a pest attacking their crop. But is it possible that a high population of a pest appears all of a sudden and destroys a crop over night? Some pests, such as certain kinds of grasshoppers and rats, can indeed rapidly enter an area in large numbers, but more commonly a pest population develops over time in a certain, limited area. This development can be observed if we know what to look for. Population growth of a pest or disease depends on various factors, such as weather conditions, food supply, natural enemies, etc. If farmers understand the development patterns of the crop and the pest, and routinely observe these developments, they will not be easily surprised by a sudden pest, because they know exactly what is happening in their field. Moreover, with this information in hand, they can make decisions more easily and more adequately about what practices are needed in the field.

Objectives

The objective of this activity is to enhance the participants' understanding about the merits and method of routine observation of the crop and its environment, and to increase their field observation skills.

Materials

- Newsprint paper.
- Felt-tip markers.
- Analysis board.



Activity steps

A Observation habits

- A.1 Lead a discussion about the participants' habits of observing their crops by asking the following questions:
- At what intervals do you normally observe the sweetpotato crop?
 - How do you observe the crop?
 - Why is it (not) necessary to observe the crop?

B Observation of the ICM FFS field

- B.1 Explain that field observation is one of several routine activities in the ICM farmer field school. The objective of routinely observing the field is to increase farmers' skills in analyzing crop and environment conditions, and in making informed crop management decisions. During every FFS session, this activity includes:
- Field observation in small groups.
 - Discussion and analysis of results (agroecosystem analysis) in the small groups.
 - Presentation of results and discussion in the large group.
- B.2 Explain that the observation activities in the FFS will gradually develop, as follows:
- During the FFS session 3: observation of the field conditions and the field environment.
 - During FFS session 4: observation of the field conditions, the field environment and crop health.
 - During FFS session 5: observation of the field conditions, the field environment, crop health and occurrence of natural enemies.
 - From FFS session 6 onwards: a complete observation, including the field conditions, the field environment, crop health, occurrence of natural enemies and pests and diseases.
- B.3 The participants are divided into small groups and invited to the FFS field. During each session when a new element is added to the observation practice, the facilitator explains the appropriate way to observe (see Section 3.3 in Part III):

- During FFS session 3, explain how to observe the field conditions (soil, water condition) and environment.
 - During FFS session 4: explain how to observe crop development and health.
 - During FFS session 5 and 6: explain how to observe pest and natural enemy populations, respectively.
- B.4 The participants observe the FFS field. Each small group should sample 10 observation points (see Section 3.2 in Part I).
- B.5 Provide small plastic bags for the participants to collect leaves, insects, soil samples, etc. Encourage them to collect both healthy and unhealthy elements that they can find in the sweetpotato agroecosystem.
- C *Ecosystem analysis and presentation of results*
- C.1 In the small groups, the observation data collected at the 10 sample points are aggregated, discussed and analyzed.
- C.2 From the fifth FFS session onwards, after an introduction to the agroecosystem has been made, the participants are encouraged to use the analysis boards for processing and presenting their observation data. All healthy ecosystem elements collected are pasted, pinned and/or written on the left side of the board, while the unhealthy elements on the right side.
- C.3 The participants should draw a sweetpotato plant in the center of a sheet of newsprint paper conform to the development stage they observed in the field, and attach the paper sheet in the middle of the analysis board. Let them pay special attention to the development stages of the root system. The elements they could not collect in the field should be drawn or written on the newsprint paper. Each small group draws conclusions about:
- The conditions of the field and the environment by weighing healthy and unhealthy elements.
 - Crop management practices that need to be implemented during the upcoming week.
- C.4 The groups present the results of their agroecosystem analysis and discuss them. The role of the facilitator in these discussions is to

always relate the findings of this week with those of the previous weeks to keep track of changing conditions with regard to the development of vines and roots (nutrient deficiencies, number and size of storage roots), and of pest, disease and natural enemy populations (types and numbers).

- C.5 Draw a final conclusion about the condition of the field and the environment, and about crop management practices needed during the upcoming week.

For more information see:

- Farmer Field School activities (Part I, Section 3.2)
- Introduction to the agroecosystem (Part III, Section 3.1)
- Observing the crop and its environment (Part III, Section 3.3)

Notes