

Managing experiments, making observations and recording information at maturity phase

This module is the continuation of Module 19 and refers to the experiments established by the farmers who volunteered to conduct experiments. Like Module 19, it should be stressed that the observations and recording do *not* concern the IRM field, but concern only specific aspects of management, observations and recording to be carried out on the experimental plots.



Learning objectives

At the end of this module, farmers will be able to:

- Review the different treatments of the experiments they implemented.
- Decide on the management practices to carry out on the experimental fields.
- Make observations on the different on-going experiments.
- Record the information on pre-established recording forms.

- 1 Recall the experimental design.
- 2 Summarize progress in the implementation of the experiments.
- 3 Make field observations.
- 4 Synthesize the observations in plenary session.
- 5 Recall the pair-wise comparison of experimental treatments.
- 6 Recap the recording of information and the recording forms for the experiments.



Procedure

1. Farmers and the PLAR-IRM team meet at the PLAR-IRM Center. The facilitator briefly reviews the previous module and invites farmers' feedback. The facilitator asks if the farmers have put in place any new practice on their IRM fields.
2. One of the PLAR-IRM team members explains the learning objectives and procedures for the current module. The facilitator clearly indicates that this module does not concern the IRM fields, but deals with experimentation and is therefore specifically designed for the group of farmers who volunteered to conduct experiments.
3. The farmers recall the experimental design for each experiment: objectives, hypotheses and experimental treatments.
4. The facilitator and the farmers discuss the progress made in setting up the experiments. The summary table in Module 19 (Section 4) is reviewed, completed and changed where necessary. The farmers discuss the activities to be implemented during the following weeks.
5. Some farmers present their recording form with the observations they have made from their experiments (Module 19). The farmers discuss which data to record and make propositions on possible changes to be made.

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6. The facilitator presents the *procedure* for making observations on the experiments:
 - A farmer-facilitator and a farmer-rapporteur are chosen.
 - The group will visit four experimental sites; if there are two types of experiments, two fields each for each type of experiment will be visited.
 - Field observations will be made by the group:
 - Farmers will observe and judge the general performance of field and crop;
 - Farmers will compare treatments, review the ‘indicators’ for the comparison as decided during Module 19 (recording form), and decide on complementary indicators;
 - Farmers will discuss the reasons for these differences: is there a relationship between the treatments and what is observed, or are the differences due to other factors, such as management practices or environmental conditions? Are these differences consistent across different farmers’ fields?
 - Results will be presented by the farmer-rapporteur, then summarized and discussed in plenary session.

7. The farmers who volunteered to conduct experiments and the facilitator depart to the field to visit the four experimental sites.

- If necessary, the facilitator helps the farmer-facilitator to stimulate debate in the field.
- The farmer-rapporteur takes notes.



8. Back at the PLAR Center, farmers report, comment on and summarize their results.

- The farmer-rapporteur presents the results for the first site: (i) overall performance of the field, environment and crop; (ii) ‘indicators’ used for comparing treatments; (iii) causes of differences between treatments.
- The facilitator synthesizes the results in a four-column table on a flipchart.

Example: Experiment 1: ...

	Overall performance	Indicators used for comparison	Causes of difference between treatments
Field 1			
Field 2			

- After summarizing the information of the first experiment (Fields 1 and 2), the second experiment is discussed.

9. The farmers compare the treatments using the pair-wise comparison method, the matrix table is laid out and the farmers are asked to give their opinions and choices.

Matrix for pair-wise comparison of treatments (to do for each type of test)

	Treatment 1	Treatment 2	Treatment 3	Treatment 4
Treatment 1				
Treatment 2				
Treatment 3				
Treatment 4				

For each white cell, the farmers' preference from the pair of treatments compared is recorded.

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- Farmers identify the best treatment for each pair, and this choice is recorded in the corresponding cell. In each case, the number of farmers making that choice is noted.
 - The farmers discuss the reasons for their choices.
 - The facilitator displays the matrix table of comparisons made during the session on Module 19 and the farmers discuss the differences.
10. The facilitator takes the recording form of each experiment and leads a discussion of the complementary information to be recorded concerning farmer management practices and the observations made to compare the treatments. The facilitator invites the farmers to complete the left column of the recording form with the complementary information.
 - Remember that in most cases this information is specific to the reproductive or maturity phase, such as:
 - Number of fertile tillers;
 - Panicle filling;
 - Plant density or soil cover;
 - Absence of diseases and insect damage;
 - Absence of bird damage;
 - Yield level.
 - Complementary management practices such as harvesting dates are noted.
 - A column or row should be reserved for yield estimation or yield sampling.
 11. The facilitator motivates the farmers to fill in their recording forms; they can help each other and ask for assistance from the PLAR-IRM team as they wish.
 12. The facilitator discusses the *procedure* for taking yield samples from the experiments. The results of this sampling will be treated in Module 26. The facilitator makes an appointment with the farmers.
 13. Evaluation: the facilitator asks what the farmers appreciated (or did not appreciate), what they learnt, and what they intend to do with their newly obtained knowledge.
 14. The facilitator asks a volunteer farmer to draw conclusions and close the session. The facilitator then invites farmers to the next session.



Time required

- Three hours



Materials required

- Strong packing paper, markers; Summary table elaborated during the session for Module 19.
- Synthesis table (Section 7) and comparison matrix (Section 8) can be prepared on strong packing paper.
- Copies of the draft model of the recording form can be prepared on A4; at the end of this session it should be possible to develop a final version of the recording form.

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Box 24

The discussion with the farmers of Lokakpli began with the importance of the experiments and observations. The farmers recalled the different treatments of fertilizer application. The farmers defined new observation indicators. Although we had agreed that all farmers would visit all the experimental sites to make observations during the preceding week, only five farmers had actually done so. Most of the farmers had, therefore, not yet made their personal observations.

- The indicators defined by the farmers and the sites visited are shown in the table below.
- We asked the farmers to specify the most important indicators at the reproductive or maturity stage.

Results of field observations at the reproductive or maturity stage at Lokakpli

	Treatments				
	T1 N ●●●● P ○○ K +++	T2 N ●●●●●● P ○ K +	T3 N ●●●●●● P ○	T4 N ●●●●●●	T5 N ●●●●●●●●
Field 1 <u>Kouamé Affoué Jacqueline</u> Stage: Maturity Presence of N'déni Kouamé Color: test > control	Panicles – Color – Yellow Cycle shorter Tillering average	Panicles – Color – Yellow Cycle shorter Tillering average		Panicles + Presence of areas with poor growth Color +	Panicles + Color + Cover + Height + Tillering +
Field 2 <u>Kouassi Fulgence</u> Stage: Heading Height/tillering: test < control Iron toxicity	Cover + Height average Tillering – Color homogeneous	Cover + Height + Tillering average Color –	Average height Tillering Color homogeneous	Cover + Average height Tillering – Color homogeneous	Cover + Height + Tillering + Color –
Field 3 <u>Kouassi Koffi Firmin</u> Stage: Maturity Emergence/height: test = control Grains: test > control	Height + Color + Cover +	Height + Color – Tillering –	Height + Color + Cover + No. grains +	Height – Mouse damage	Height – Mouse damage
Field 4 <u>N'guessan Raymond</u> Stage: Heading Good field cover			Tillering + Cover +	Color green + Cover + Height +	Color green + Cover + Height + Panicles +

– : negative appreciation by farmers; + : positive appreciation by farmers.