

Recognizing weeds

Weed infestation is one of the major constraints to rice productivity and profitability in inland-valley lowland rice production in West Africa. A good knowledge of weeds is therefore important in order to determine the causes of the infestation and have a good understanding of possible control measures (Reference 18).

- ❶ Discuss what farmers know about weeds.
- ❷ Observe and sample weeds in the field.
- ❸ Synthesize the observations in plenary session.



Learning objectives

At the end of this module, farmers will:

- Have exchanged knowledge about weeds.
- Be aware of the importance of weed control.
- Be able to identify the most important weed families and the most frequent species found in their fields.



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.
3. The facilitator initiates the debate about weeds. The farmers exchange what they know about weeds and make an inventory of their practices in weed control. The following topics may be addressed:
 - What is a weed?
 - What are the different types of weeds?
 - Where do weeds come from?
 - What is their effect on rice?
 - At which stage of plant growth is their effect most harmful?
 - What are the most effective times for weeding?
 - What are the preventive and curative methods of weed management?
4. The facilitator presents the *procedure* for the field visit:
 - The farmers are divided into four sub-groups of four or five farmers.
 - A farmer-facilitator and a farmer-rapporteur are designated for each sub-group.
 - Each sub-group will visit four sites.

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5. In the field, the farmers collect any types of weeds they find or those they think are predominant. This visit aims at building a herbarium of the weeds present in the inland valley. For each weed they collect, the farmers indicate:

- The indigenous or local name.
- The location where the weed was found (upland, hydromorphic zone, valley bottom).
- Its prevalence.
- The relative importance of the damage cause by the weed species on rice growth and yield.



6. Back at the PLAR-IRM Center, the farmers report and make comments on their results:

- The facilitator asks the farmers if they can differentiate between the major families of weeds. She/he makes sure that the three most important families can be differentiated and gives the identification keys: grasses (Gramineae) and sedges (Cyperaceae) usually have narrow leaves (Reference 18). The broad-leaved weeds have, as their name suggests, leaves that are usually wider than those of grasses and sedges.
- The facilitator invites the farmers to cut the stems of a few weeds to show the differences in the shape of the stems. She/he helps the farmers to determine the differences between the broad-leaved weeds that have round stems and the sedges that have angular stems.

7. The farmers classify the weeds collected in the field using the table below.

- Each farmer sub-group shows the weeds they collected.
- The farmer-rapporteur in each sub-group presents their weeds. Each weed is given an entry in the table. The prevalence in the field and the importance of the damage on the rice crop is assessed by the farmers giving a score using a decimal scale, ranging from 1 (negligible) to 10 (very important). Farmers list any methods they currently use to combat particular weeds.
- This leads the farmers to mark out the most prevalent and most harmful weeds.

Name in local language	Family ¹ and scientific name	Environment ²	Time of appearance	Cycle	Prevalence ³	Importance ³ of damage on rice	Control methods
1.							
2.							

1: grasses, sedges or broad-leaved weeds;
2: valley bottom, hydromorphic zone, upland;
3: scores from 1 (negligible) to 10 (very important).

8. The weeds are spread out, labeled and placed between newspapers in order to build a weed herbarium.
9. 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. The facilitator specifically asks which new ideas this module has generated and how farmers intend to put these into practise on their IRM fields.
10. The facilitator asks volunteer farmers to draw conclusions from the session, and then invites farmers to the next session.

**Time required**

- Three hours

**Materials required**

- Strong packing paper and markers.
- Newspaper.
- Knife.

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During the session in Bamoro, farmers said the following about weeds:

- Weeds are plants, which prevent the rice from growing by colonizing their territories.
- Weeds destroy the rice seedlings.
- Weeds provide shelter to insects and rats, which can in turn cause diseases in or damage to rice.
- Weeds compete with rice roots for nutrients from the soil.
- Weeds compete for light and reduce yields.

We visited the fields in three sub-groups. During the visit, each sub-group collected as many weeds as possible that they considered harmful. These weeds had to be collected in the valley bottom, on the bunds, in the hydromorphic zone or in the uplands. The results from the three sub-groups are summarized in the table below.

No.	Baoulé name(s)	Scientific name	Location found	Time of appearance	Cycle	Damage	Control means
1	Hidjerè kekléklé	<i>Leptochloa caerulea</i>	Valley bottom	Early rainy season	Annual	10+++	Systematic uprooting
2	N'Gbé Avié	<i>Leersia hexandra</i>	Valley bottom and bunds	Early rainy season	Perennial	10++	Uprooting
3	N'Zuébonou N'Gattè	<i>Marsilea minuta</i>	Valley bottom	Any time	Perennial	9++	Uprooting
4	Sasa N'Gbo	<i>Cyperus sphaacelatus</i>	Valley bottom	Early rainy season	Annual	8++	Cutting and flooding
5	Tanou Aya	<i>Nymphaea lotus</i>	Irrigated valley bottom	Early rainy season	Perennial	3++	Cutting with machete
6	N'Drandran Waka	<i>Panicum laxum</i>	Valley bottom	Any time	Perennial	9+	Uprooting
7	N'Gbomi	<i>Rhynchospora corymbosa</i>	Valley bottom and upland	Any time	Perennial	4+	Cutting and flooding
8	Sida n°1	<i>Echinochloa colona</i>	Valley bottom and upland	Early rainy season	Annual	10+	Uprooting
9	Nani Kpa N'Gôh	<i>Brachiana lata</i>	Valley bottom	Any time	Perennial	8+	Cutting and flooding
10	Avié Akoa	<i>Fimbristylis littoralis</i>	Valley bottom	Early rainy season	Annual	6+	Cutting and flooding
11	N'Zuébonou Gnamien Houmanhou	<i>Commelina</i> spp.	Valley bottom and upland	Any time	Perennial	3+	Uprooting
12	Tanou Aya Bla	<i>Heteranthera callifolia</i>	Valley bottom	Early rainy season	Annual	5++	Uprooting
13	N'Zuébonou Kokomandjo Opio	<i>Ludwigia abyssinica</i>	Valley bottom	Early rainy season	Annual or perennial	2+	Cutting and flooding
14	Sida n°2	<i>Echinochloa</i> sp.	Valley bottom	Early rainy season		n.d.	Uprooting
17	Labou Salan	<i>Calopogonium mucunoides</i>	Valley bottom	Early rainy season	Perennial	n.d.	Cutting and flooding
18	Couverture	<i>Sorghum arundinaceum</i>	Valley bottom	Early rainy season	Perennial	1+	Cutting and flooding
19	Abokalo	??	Valley bottom	Early rainy season		-1	Cutting and flooding
20	N'Zuébonou Tanga	<i>Hibiscus asper</i>	Valley bottom	Early rainy season	Annual	-1	Cutting and flooding

Note: n.d. = no damage.

During the evaluation, the farmers said that they had found the field visits interesting, and that they appreciated their new acquaintance with some weeds they had not known before. They enjoyed the classification of weeds according to their level of damage and the discussion on control methods.