



MODULE 5

Morphology and Growth Stages of the Rice Plant

TRAINING OF
TRAINERS

Manual for Better Rice Production and Marketing



DEPARTMENT OF AGRICULTURE
PHILRICE
PHILIPPINE RICE RESEARCH INSTITUTE



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Module 5: MORPHOLOGY AND GROWTH STAGES OF THE RICE PLANT

Course Brief

Intended participants

This module is designed for farmers and agricultural extension workers engaged in disseminating agricultural technologies.

Context of the module

The design of this course is based on the assumptions that the farmer and agricultural extension worker participants:

- Are not well versed with the morphology of the rice plant,
- May not always be highly familiar with the growth stages and phases of the rice plant

Learning outcomes

After attending this module, participants should be able to:

1. Identify the different parts of the rice plant; and
2. Distinguish the growth phases and stages of the rice plant.

Course duration

This is a 2.5-hour course.

Content and time allocation

The following divisions of time are only suggestions. Trainers may modify the program to suit their and the participants' needs.

LESSON	TOPICS	TIME (mins)	CONTENTS/ SOURCES
Introduction		10	
Lesson 1	The Different Parts of a Rice Plant	60	
Lesson 2	The Three Growth Phases of Rice and the Corresponding Duration Of Each	10	
Lesson 3	The Growth Stages of the Rice	60	
Conclusion		10	
Total		2 hrs., 30 mins.	

Learning methods

The following methods will be used during the course:

- Group activity
- Lecture/discussion

Evaluation methods

Participants' learning outcomes can be assessed as follows:

VENUE	CONTENT	METHOD
In class	Knowledge	Observation/Interaction
	Skills	Exercise

Resource checklist

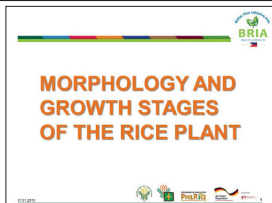
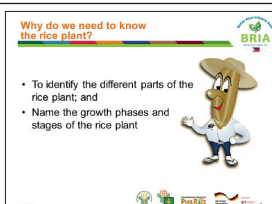
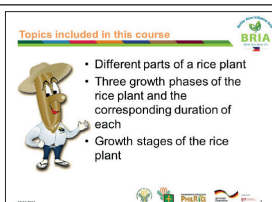
- PowerPoint presentation
- LCD Projector
- Flip chart
- Hand-outs
- Materials for activities (ball, flashcard, manila paper, cartolina, pentel pen, crayon)
- Plant samples/specimen
- Drawings
- Prizes for winners

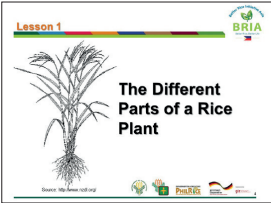

Note to trainers on delivery methods

- The following suggestions are being forwarded as to the delivery methods.
- Involve the participants in the learning process by asking questions.
- Present the objectives clearly at the start of each session.
- Make the sessions lively.
- Make the PowerPoint presentation brief and concise, then elaborate.
- Cite many examples as explanations to the topic being discussed.
- Talk slowly and clearly.

Session Plan

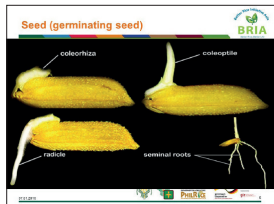
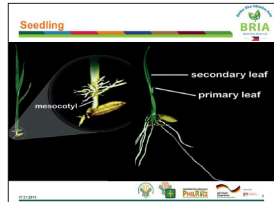
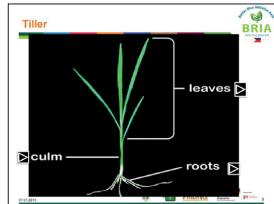
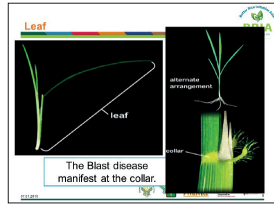
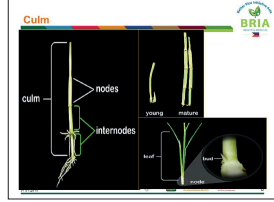
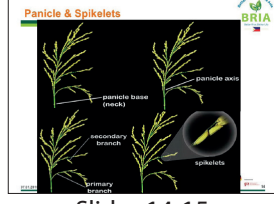
You may modify the program to suit your and your participants' needs.

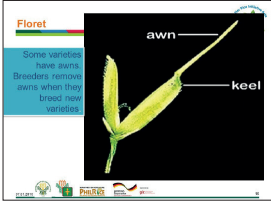
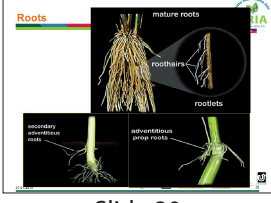

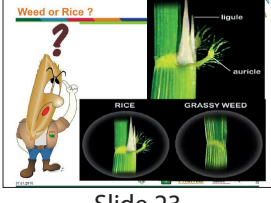
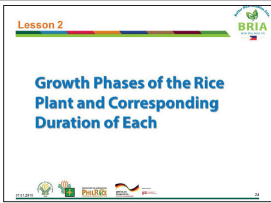
LESSONS/ TIME	ACTIVITIES	RESOURCES
Welcome and Overview		
10 minutes	<p>GREET the audience and welcome them to the training.</p> <p>INTRODUCE yourself.</p> <p>Let the participants introduce themselves.</p>	 <p>Slide 1</p>
	<p>GET ATTENTION by asking the participants how many parts of the rice plant can the group enumerate in 30 seconds? Say, "Let's start!"</p> <p>Write participants' answers on the board or chart paper.</p> <p>Their answers will be used as a jump off point for an activity in Lesson 1</p>	
	<p>LINK by explaining the importance of knowing the rice plant.</p>	 <p>Slide 2</p>
	<p>EXPLAIN OUTCOMES: By participating in this training you will be able to:</p> <ul style="list-style-type: none"> Identify the different parts of the rice plant Name the growth phases and stages of the rice plant. 	
	<p>EXPLAIN STRUCTURE:</p> <ol style="list-style-type: none"> The different parts of a rice plant; The three growth phases of the rice plant (vegetative, reproductive, and ripening) and the corresponding duration of each; and The growth stages of rice plant. 	 <p>Slide 3</p>
	<p>STIMULATE INTEREST. Now that you've heard a bit about what we will cover, you may already be thinking about some things you would like to learn from the session.</p> <p>ASK participants to think about what they expect to learn in this course or what questions they would like to be answered.</p> <p>WRITE their answers on a manila paper.</p>	

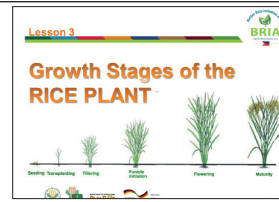
LESSONS/ TIME	ACTIVITIES	RESOURCES
Lesson 1: The Different Parts of a Rice Plant		
60 minutes	GET ATTENTION by asking why is it important to know the different parts of the rice plant.	 <p>Slide 4</p>
	<p>LINK by stating that by knowing the different parts of the rice plant, we will better understand its needs and how it interacts with the environment.</p> <p>OUTCOMES: After the lesson, the participants should be able to identify the different parts of a rice plant.</p> <p>STRUCTURE: Parts of the rice plant</p> <p>STIMULATE INTEREST: Ask the participants if they are GAME NA?!</p>	 <p>Slide 5</p>
	ACTIVITY 1: Oryza Sativa 101	

Activity 1. Oryza Sativa 101

Goal	<p>To see if farmers and agricultural extension workers can identify the different parts of a rice plant.</p> <p>This activity takes off from the group's previous exercise of identifying the parts of the rice plant during the Overview.</p>
Duration	5 minutes
Number of participants	5 people
Materials/ Methodology	List of parts of a rice plant previously enumerated by participants, illustration of a mature rice plant (with all parts labeled) or an actual rice specimen
Process	<p>Alongside the list of parts of a rice plant the participants previously enumerated, post an illustration of a mature rice plant, all parts labeled. An actual specimen, if available, would be even better.</p> <p>Let them see how they fared in the earlier task by comparing their list with what is in the illustration or specimen.</p>
Debriefing	<p>Ask the participants what they feel about the activity? What have they learned?</p> <p>Summarize the discussion and build your conclusion on the ideas shared.</p>

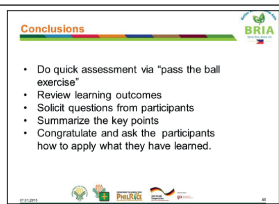
LESSONS/ TIME	ACTIVITIES	RESOURCES
	<p>Explain each part of the rice plant:</p> <ul style="list-style-type: none"> Seed Seedling Tiller Leaf Culm Panicle and Spikelet 	 <p>Slide 6</p>  <p>Slide 7</p>  <p>Slide 8</p>  <p>Slides 9-11</p>  <p>Slides 12-13</p>  <p>Slides 14-15</p>

LESSONS/ TIME	ACTIVITIES	RESOURCES
	<ul style="list-style-type: none"> Floret/ Flower Root Rice Grain <p>Explain that the ligule and auricle present in the rice plant differentiates it from the grass weeds.</p> <p>OUTCOMES: Summarize and confirm the outcome of this lesson with the participants.</p> <p>FEEDBACK: Solicit feedback and observations from participants regarding the content and process so far.</p> <p>FUTURE: Preview the next topic</p>	 <p>Slides 16-19</p>  <p>Slide 20</p>  <p>Slides 21-22</p>  <p>Slide 23</p>
Lesson 2: Growth Phases of the Rice Plant and Corresponding Duration of Each		
10 minutes	<p>GET ATTENTION by stating that human beings undergo different phases in life: childhood, adolescence, adulthood, middle age and senescence and that each of these phases has a certain duration.</p> <p>LINK to the lesson by adding that similarly, rice plants also undergo several phases – and each phase has its corresponding duration.</p>	 <p>Slides 24-31</p>

LESSONS/ TIME	ACTIVITIES	RESOURCES
	<p>EXPLAIN that there are three growth phases of the rice plant and each has corresponding duration.</p> <p>ASK the participants to name (without prior instruction) the three growth phases of the rice plant.</p>	
Lesson 3: Growth Stages of the Rice Plant		
60 minutes	<p>GET ATTENTION by asking the participants what happens to the humans when they grow.</p> <p>LINK by explaining that again, just like humans, rice plant undergo changes at each stage of their growth.</p> <p>OUTCOMES: At the end of the lesson, participants should be able to name the growth stages of the rice plant and their durations.</p> <p>STRUCTURE: Growth stages of the rice plant and their duration</p> <p>STIMULATE INTEREST by telling the participants that they will play a game (Activity 2) to test if they are quite familiar with these stages.</p>	 <p>Slides 32-47</p>
	ACTIVITY 2: Jumble Rumble	

Activity 2. Jumble Rumble

Goal	To see if participants can identify growth stages of rice plant.
Duration	5 minutes
Number of participants	10 volunteers
Materials/ Methodology	Meta cards where the growth stages of the rice plant are written (prepare 10 metacards)
Process	<p>Inform the group that each participant is holding a cartolina (metacard); on the card is written a certain growth stage of a rice plant.</p> <p>The members should arrange themselves correctly, from the first to the ninth stage.</p>
Debriefing	<p>Confirm the nine growth stages of the rice plant. Ask the participants if they have counterpart terms for these in the local language/dialect.</p> <p>Stage 0 - Germination to emergence</p> <p>Stage 1 - Seedling</p> <p>Stage 2 - Tillering</p> <p>Stage 3 - Stem elongation</p> <p>Stage 4 –Panicle initiation to booting</p> <p>Stage 5 –Heading</p> <p>Stage 6-Flowering</p> <p>Stage 7-Milk grain</p> <p>Stage 8-Dough grain</p> <p>Stage 9-Mature grain</p> <p>Explain the changes that happen to the rice plant at each stage.</p> <p>Ask the participants regarding the significant changes in every growth stage of the rice plant.</p> <p>Outcomes: Summarize and confirm the outcome of this lesson with the participants.</p> <p>Feedback: Solicit feedback and observations from participants on what they found significant about learning the growth stages of the rice plant.</p> <p>Future: Preview the next topic</p>

LESSONS/ TIME	ACTIVITIES	RESOURCES
Conclusion		
10 minutes	<p>GET ATTENTION by mentioning that the group has covered a range of topics under the module which include the morphology, growth phases and stages along with cultural management practices for rice.</p> <p>EXPLAIN that the group needs to do a QUICK REVIEW to assess how much they can remember of what they learned by doing a simple exercise.</p>	 <p>Slides 48-49</p>
	<p>SET UP a “Pass the Ball” activity: TELL participants to stand and form a circle.</p> <p>SHOW participants the ball and explain that whoever has the ball will answer the question.</p> <p>EXPLAIN that you will pass the ball to the first person. That person will answer one question, then pass the ball to anyone else in the circle. Continue until everyone has had the chance to answer.</p> <p><i>Note: The facilitator should prepare about 10 to 15 review questions and ask them, making sure to representatively cover the topics discussed under the module.</i></p>	
	<p>OUTCOMES: REVIEW the learning objectives from the beginning of the module (post or show overall module objectives).</p> <p>FEEDBACK: REVIEW participants’ questions and expectations for the training from the beginning and confirm that all questions have been addressed.</p> <p>ASK: Does anyone have any remaining questions or expectations that we have not covered throughout our time together?</p> <p>FUTURE: Congratulate participants on what they would like to accomplish.</p>	
	<p>THANK participants for their time. Welcome any individual questions or support after the module.</p>	

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