



Rwanda Agronomy: Safe Use of Pesticides Lesson Plan

TOTAL TIME: 1 hours 30 minutes
AUDIENCE: Lead farmers, Field officers and cooperative staff
FACILITATOR: Cooperative manager
LOCATION: Coffee Washing Station and training plots

OBJECTIVES:

- **OBJECTIVE 1: Define “Safe Use of Pesticides”**
- **OBJECTIVE 2: Understand the pesticide label and pesticide toxicity**
- **OBJECTIVE 3: Identify the hazards of using pesticides and how to protect yourself.**
- **OBJECTIVE 4: Identify pictogram meanings.**
- **OBJECTIVE 5: Identify precautions to be taken when and after using pesticides.**
- **OBJECTIVE 6: Identify the safety procedures for purchase, transport, storage, and disposal of pesticides and containers.**

MATERIALS:

- Protective clothing (spray suit, gloves, goggles, mask, boots, hat)
- Full and empty Sprite bottle
- Knapsack Sprayer
- Clean water for filling sprayer

TIME	CONTENT OUTLINE
15 Min	<p>OPENING:</p> <ul style="list-style-type: none"> ▪ Introductions <ul style="list-style-type: none"> ○ Instructor ○ Participants ○ Guests ○ Set ground rules for training <p>REVIEW: Objectives</p> <ul style="list-style-type: none"> ▪ In this training, we will learn about Safe Use of Pesticides. ▪ Specifically, we will learn what safe use of pesticides means, how to read the pesticide labels, how to protect yourself during pesticide use and how to dispose used pesticide containers <p>EXPLAIN:</p>



	<ul style="list-style-type: none"> ▪ As you may be aware, you should use a combination of methods to control pests and diseases in your coffee farms; called Integrated Pest Management (IPM), and only use pesticides as a last resort and never apply insecticides routinely. ▪ When pesticides are required they should be used correctly, safely and sparingly. <div style="border: 1px solid black; background-color: #e0e0e0; padding: 5px; margin-top: 10px;"> <p>ACTIVITY: Icebreaker Choose an icebreaker which is appropriate for your audience.</p> </div>
<p>5 Min</p>	<p>OBJECTIVE 1: Define “Safe Use of Pesticides”</p> <p><i>Note to Trainer: Brain storm questions with the participants, then review the answers.</i></p> <p>ASK: What do we mean by <i>Safe Use of Pesticides</i>?</p> <p>ANSWERS: Using pesticides in such a way so as:</p> <ul style="list-style-type: none"> ▪ NOT to poison oneself or others ▪ NOT to poison the environment ▪ NOT to injure others by contaminating the environment (i.e. water, air, etc.) ▪ NOT to injure the crops we are trying to protect ▪ TO achieve effective control of the pests when a pesticide is necessary <p>EXPLAIN:</p> <ul style="list-style-type: none"> ▪ Safe Use of Pesticides therefore ensures that we protect ourselves, others, the environment and the crops by following the right procedures when we purchase, transport, store and use the pesticides, and later dispose of empty pesticide containers.
<p>10 Min</p>	<p>OBJECTIVE 2: Understand the Pesticide Label and pesticide toxicity</p> <p>EXPLAIN:</p> <ul style="list-style-type: none"> ▪ The Pesticide Label has been designed in the same way for ALL pesticides. ▪ It contains all the information that you need to use the pesticide safely.

- Once you know where each piece of information is found on the label, it will be very easy for you to understand other pesticide labels.

SHOW: The Alphacypermethrin label and explain where each of the following pieces of information can be found:

- Trade name and formulation
- Name of active ingredients
- Product uses
- Contents
- Manufacture Date
- The colour and pictogram bar at the bottom of the label
- *label and various pictograms*



SHOW: the toxicity colour code sheet

Do all the Pesticides Have Equal Strength (Toxicity)?

Class	Description	Label Signal Words	Pesticide Color Code
Ia	Extremely Hazardous	DANGER, POISON, PLUS SKULL & CROSSBONES SYMBOL	Red
Ib	Highly Hazardous		
II	Moderately Hazardous	WARNING/ HARMFUL	Yellow
III	Slightly Hazardous	USE WITH CARE	Blue
IV	Unlikely to present acute hazard in normal use	CAUTION	Green

ASK: Which label colour do you think shows the most toxic product?

ANSWER: Red

EXPLAIN: The label is colour-coded and tells you how toxic a pesticide is:

- Red – extremely or highly hazardous – *you should avoid these pesticides*
- Yellow – moderately hazardous – *you should be extremely careful with these pesticides if you do use them.*
- Blue – slightly hazardous – *there is less risk*
- Green – unlikely to present acute hazard in normal use – *much less risk*

ASK: Are there any questions about the pesticide label? **DISCUSS**

EXPLAIN:

- Remember that insecticides should be used sparingly and as a last resort after trying when all other integrated pest management techniques.

15 Min

OBJECTIVE 3: Identify the hazards of using pesticides and how to protect yourself.

Note to Trainer: Brainstorm questions with the participants, then review the answers.

ASK: How do pesticides enter our bodies?

ANSWERS:

- Breathing, through the nose
- Contact with the skin
- Through the mouth (i.e. smoking or eating)



	<p>EXPLAIN: All Pesticides are poisonous to some level; it is important you minimize risk of poisoning by handling pesticides properly.</p> <p>ASK: How do you protect yourself from pesticide exposure?</p> <p>ANSWER: By using the right protective clothing, including:</p> <ul style="list-style-type: none">▪ Boots▪ Gloves▪ Respiratory mask▪ Goggles / Face shield▪ Hat▪ Overalls / Spray suit <p>ASK: What is the correct sequence for putting on and removing protective clothing?</p> <p><i>Note to Trainer: Brainstorm with the participants then review the answers.</i></p> <p>ANSWER:</p> <ul style="list-style-type: none">▪ Putting on – Overall, boots, respirator, goggles, hat and gloves.▪ Removing out – Gloves, goggles, overall, boots, hat, and respirator▪ Wash hands between steps if contaminated and after removing PPE. <div style="border: 1px solid black; padding: 5px;"><p>ACTIVITY: Protective Equipment</p><p>a) ASK for a volunteer to dress up in the clothing</p><p>b) DISCUSS each item and check they are worn correctly:</p><ul style="list-style-type: none">○ Mask the right way up.○ Overalls are <i>outside</i> the boots – so pesticides cannot run into the boots○ Gloves <i>outside</i> overalls – so pesticides cannot run up your arm.○ Follow correct sequence for putting on and removing PPE<p>c) THANK the volunteer.</p></div> <p>ASK: Can farmers pool resources and buy the protective equipment to share among them if they are unable to get the full set individually? DISCUSS</p>
<p>15 Min</p>	<p>OBJECTIVE 4: Identify Pictogram meanings.</p> <p><i>Note to Trainer: Brainstorm questions with the participants, then review answers.</i></p> <p>ASK: How do you know what to wear when spraying pesticides?</p> <p>ANSWER: Look at label and the pictograms on the colour bar.</p> <p>EXPLAIN: These tell you exactly what equipment to wear in pictures. For example:</p> <ul style="list-style-type: none">▪ Mask

- Gloves
- Boots
- Overalls or spray suit

EXPLAIN: Other information to help use pesticides safely is also conveyed using pictures on the label:

For example:

- Very toxic
- Harmful or Irritant
- Flammable
- Dangerous to livestock
- Dangerous to fish and aquatic life
- Keep locked up out of the reach of children

ACTIVITY: Pictograms

- a) DIVIDE participants into groups.
- b) GIVE each group a sheet that has 2 pictograms, one on each side.
- c) ASK groups to look at the pictograms and decide what they think each means.
- d) ASK each group to present their pictograms, holding up the pictogram so the other farmers see it.
- e) GIVE guidance as required



15 Min

OBJECTIVE 5: Identify precautions to be taken when and after using pesticides.



Note to Trainer: Brain storm questions with the participants, then review the answers.

ASK: What precautions do you think should be taken when mixing and spraying pesticides, so that you remain safe?

ANSWERS:

- DO Use the right protective clothing. Check the label for recommended clothing.
- DO spray early or late in the day so that it is not too hot. Spraying during a hot time of the day can damage the plants and feel uncomfortable for the person spraying. ASK the person who dressed up how hot they felt.
- DON'T wear damaged protective clothing; this will expose your body to direct contact with the pesticides.
- DON'T use bare hands for mixing pesticides!
- DON'T eat, drink, or smoke when handling pesticides.
- DON'T blow out the nozzle with your mouth. If blocked, use a brush to clean.
- DON'T spray into the wind; you will get covered in drifting pesticide.

ASK: What do you think you should do after spraying?

ANSWERS:

- DO wash hands and face with soap and water immediately after spraying.
- DO wash protective clothes separately from other laundry.
- DO clean all protective clothing with soap and water.
- DO clean all spraying equipment with soap and water and store safely.
- DON'T wash or discard washing water into water bodies such as streams and lakes.

ASK: Do you think it is safe to harvest coffee straight after pesticide application?

ANSWER:

- NO!

EXPLAIN:

- All pesticides have a pre-harvest interval (PHI) – this is the *minimum* number of days from spraying to harvesting.
- This information will be written on the label. Always check the PHI before you spray and make sure you follow the harvest interval to prevent pesticide residues in your coffee.



	<ul style="list-style-type: none">▪ For example, if you apply Alphacypermethrin as a spray (not banding the trunk) the Pre-Harvest Interval is 14 days.
15 Min	<p>OBJECTIVE 6: Identify the safety procedures for purchase, transport, storage, and disposal of pesticides and containers.</p> <p><i>Note to Trainer: Brainstorm questions with the participants, then review the answers.</i></p> <p>ASK: How do you know which pesticides to purchase? ANSWER:</p> <ul style="list-style-type: none">▪ DO read the label, which should tell if the product is suitable for the crop and pest or disease that you are treating.▪ DON'T buy damaged packets.▪ DON'T buy re-packaged pesticides <p>ASK: How should pesticides be transported? ANSWER:</p> <ul style="list-style-type: none">▪ Separately, kept away from food, passengers, and livestock. <p>ASK: Where should pesticides be stored? ANSWER:</p> <ul style="list-style-type: none">▪ DO consult the label for storage advice.▪ DO store in a secure place that is locked and away from the reach of children, food, animals, and water.▪ DO always keep pesticides in the original containers. Don't put pesticides in soda or water bottles. Someone might drink them by accident! <div style="border: 1px solid black; background-color: #e0e0e0; padding: 5px;"><p>ACTIVITY: Storage</p><p>a) SHOW Sprite bottle filled with water and actual bottle of Sprite. b) ASK participants: Which holds real Sprite? c) DISCUSS. The difficulty of telling which is a pesticide and the associated dangers of putting pesticides in unlabelled or food containers.</p></div> <p>ASK: How should you dispose of pesticide containers? ANSWER:</p> <ul style="list-style-type: none">▪ DO triple rinse (3 times) empty containers into the spray tank. Then, in an area away from people and houses, puncture and bury for plastic containers and burn or bury for papers.



	<ul style="list-style-type: none">▪ DO encourage your Coffee Washing Station to collect empty containers at a central store for collection by the pesticide manufacturers, as this is the best way.▪ DON'T re-use pesticide containers. They are not safe for carrying water and could make people really unwell!▪ DON'T discard as rubbish; anyone could pick them up especially the children! <p>ENCOURAGE the farmers to take ALL their empty containers to the collection points if NAEB or the Local governments asks them to return the empty containers. This is the most ideal way to manage the empty containers.</p>
10 Min	<p>CLOSING:</p> <ul style="list-style-type: none">▪ Review key learnings <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"><p>ACTIVITY: Knowledge Check ASK participants the following questions:</p><ul style="list-style-type: none">▪ Which pieces of protective equipment prevent pesticides from entering your body through the skin?▪ What should you do before you mix pesticides in a knapsack?▪ How should you store and dispose of pesticides containers?▪ When should you use pesticides?</div> <p>QUESTIONS AND ANSWERS:</p> <p>NEXT STEPS:</p> <ul style="list-style-type: none">▪ THANK the farmers for coming to training.