

Lesson Number 6

Title: Protective Clothing: what, when, why, and how

Purposes / Objectives

- To evaluate articles of protective clothing.
- To discuss methods to reduce or eliminate pesticide exposure.
- To decide what to wear when mixing pesticides.
- To decide what to wear when applying pesticides.

Materials

- Samples of basic protective clothing:
 - Chemical-resistant gloves
 - Chemical-resistant apron
 - Chemical-resistant boots
- Paper
- Pencil

Methods

1. Lead a short review session by asking these questions:

How can you prevent or reduce the chance of pesticide exposure?

If you handle pesticides, here are the ways to reduce or eliminate exposure:

- #1. Work carefully!
- #2. Use good equipment!
- #3. Wear protective clothing. Be sure it is clean and in good condition.

When do you think a farmer is most likely to be exposed to pesticides when treating crops?

Possible answers are:

- Mixing and loading. Farmers must handle concentrated pesticides to measure the amount they need. Then they must dilute it and pour it into the application equipment.
- Using hand-held application equipment. Farmers must walk near spray mists and dusts. If they are treating a large area, they might walk through or very near an area they just treated. If they touch treated plant parts, some of the pesticide might transfer onto them or their clothing.

- Using equipment not designed for the job. Farmers who do not have sprayers might be exposed to pesticides when using the wrong kind of devices to apply pesticides to plants.
- Cleaning equipment.

2. Ask growers to describe what clothing they normally wear when handling pesticides. Ask them what parts of the body these clothes protect.

Most will say they wear long-sleeved shirts, long pants (or long skirts.) Some will wear sandals.

These items protect the arms, legs, and the trunk.

They do not protect the hands, the face, or the feet.

3. Ask growers to examine the gloves, the apron, and the boots. Ask them what each item is designed for, and when it should be worn.

Gloves: protect the hands. Wear when handling concentrates -- mixing. Wear when filling the applicator. Wear when applying pesticides, and when cleaning up after an application.

Apron: extra protection for the front of the body. Wear when mixing and loading.

Boots: protect the feet. Wear when mixing and filling the applicator. Wear when applying pesticides using hand-held equipment. Wear when cleaning up.

4. Tell the growers that wearing gloves can greatly reduce pesticide exposure. Ask them if they can explain why.

People use their hands to open containers, measure, and pour. Farmers use hand-held equipment to apply pesticides. Farmers work with their hands.

Experiments show that using gloves correctly can reduce up to 96% of all pesticide exposure.

Wearing gloves is the most important thing a pesticide handler can do for personal protection.

5. Show how to use gloves correctly:

Put on a pair of gloves.

Question: Ask the growers if they think the gloves should be worn inside a long-sleeved shirt or outside the shirt.

Answer: In normal circumstances, the shirt goes outside. This will prevent liquid from running down the arm and into the glove. (However, when spraying overhead, as when spraying the foliage of a tree, the applicator should put the gloves outside the shirt.)

Problem: Ask growers to imagine that there is pesticide on the gloves. Ask growers how you can take off the gloves without exposing yourself to pesticides.

Answer/Demonstration: Take one glove off...and then show by trying to remove the other that there is no way to take the second glove off without contaminating something. Pretend to use your clean hand...or your mouth...or put the glove between your arm and your body. In each case, you will transfer some pesticide from the glove.

Applicators should wash their gloves BEFORE taking them off. This will prevent transferring pesticides from the gloves.

6. Discuss what kind of glove to use, and how to care for gloves:

Selection:

Use gloves that are waterproof and chemical resistant (ex. nitrile.)

Use gloves that are long enough to protect the forearms as well as the hands.

Do not use cloth or leather gloves. These materials absorb pesticides.

Do not use cloth-lined gloves. The lining will absorb pesticides.

Care:

Gloves should be put away clean. It is no more trouble to wash gloves before removing them than after.

Check your gloves for signs of wear. Do not use gloves that are dry or cracked.

7. Ask the growers to list the advantages and disadvantages of each item:

	Advantages	Disadvantages
gloves	safety	cost, hot, must fit properly
apron	safety	cost, must clean after use
boots	safety	cost, must fit properly, must clean after use

8. Are unlined, waterproof, chemical-resistant gloves available to Malian growers?

If so, how much do they cost?

If not, we will attempt to make them available so farmers can use them.

Discussion

Why should pesticide handlers wear protective clothing?

- Pesticide handlers can reduce their exposure by working carefully and using good equipment. However, protective clothing will shield you in case of an accident.

Will wearing gloves protect farmers from pesticide exposure?

- Yes. Most pesticide exposure involves the hands. Wearing gloves properly can reduce exposure.

Will wearing gloves protect a farmer's family?

- Yes. If a farmer wears gloves properly, the farmer will not transfer pesticides to people or things he or she touches.

Would you be willing wear gloves when handling pesticides? Why or why not?

- Answers will vary.

Conclusion(s)

Summarize and review the growers' responses. Be sure all the points they want to make and any questions they ask are recorded.

End the lesson by thanking them for their time and participation.

Notes

Pesticide Risk = Toxicity x Exposure

You can limit toxicity by choosing pesticides that are not highly toxic to humans, and using pesticides only when necessary.

You can reduce or eliminate exposure by working carefully, using good equipment, and wearing protective clothing.

If you have time, discuss the importance of washing the clothes worn while handling or applying pesticides.

