

Lesson Number 9

Title: Pesticide Poisoning

-Overview

- Acute Signs and Symptoms

- First Aid

Purposes / Objectives

To list the ways pesticides can enter the body.

To describe the three main types of harmful effects pesticides can have.

To describe how to avoid harmful effects.

To describe some of the signs and symptoms of pesticide poisoning, irritation, or allergy.

To explain what first aid to give for pesticide exposures.

Overview

In this activity, the farmers will discuss how pesticides can enter the body, and how pesticides cause harm. They will also learn what to do if they spill pesticides on themselves, and how to tell when pesticides are causing bodily harm. Finally, they will learn the best ways to help someone who is sick from or hurt by pesticides until the person can get medical help.

Advance Planning

Gather the materials you will need.

Materials

Paper or plastic bag (small) + Flour

Plastic bottle (small) + Water

Several bottles or jars of clean water

Empty watering can, bucket, or sprayer (clean)

Measuring containers (volume)

Funnel

Soap

Several clean shirts (change of clothing)

Spoon

Blanket

Gloves (rubber/chemical-resistant)

Methods

Part 1. Discussion. 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.

Part 2. Discussion. Ask growers to tell you some ways pesticides can enter the body. If they cannot, you explain.

How can pesticides get into your body?

Here are the main routes of exposure:

- #1. Mouth (oral exposure)
- #2. Skin (dermal exposure)
- #3. Lungs (inhalation exposure)

Some people also consider getting pesticides in your eyes (ocular exposure) a fourth way. Your eyes are very sensitive to any irritation. Pesticides can also be absorbed into your body through the moist eye membranes.

Part 3. Discussion / Instruction. See if growers know the three main types of harmful effects. If not, explain them.

What are the three main ways pesticides can harm you?

Here are the ways pesticides cause harm:

#1. Immediate (acute) effects: These are illnesses or injuries that happen right away after an exposure – usually within hours or a day. Acute effects are obvious and easy to diagnose. Unless the exposure is very large, acute effects are usually reversible if medical care is given right away.

#2. Delayed (chronic) effects: These are usually caused by repeated exposures, often over a long period of time. The signs and symptoms are not easy to recognize, and it is not easy to link cause and effect. The delayed effects of pesticides are like the delayed effects of smoking cigarettes...people do not get sick right away, but the body is damaged a little at a time.

#3. Allergic effects: Some people may react to a substance that does not affect others. Many allergic effects show as skin irritation. Other times, people who are allergic to something, including a pesticide, will have itchy, watery eyes and nose. However, some allergic effects can be deadly. Just because all people do not have a reaction to something does not mean that the problem is not real or serious for those who are affected.

It makes good sense to reduce your exposure to all pesticides as much as possible.

Part 4. Discussion / Instruction. First Aid:

What should you do if you suspect pesticides have hurt someone?

Here are some things to do until you can get medical help:

Pesticide on skin:

Dry: Brush dry pesticides off your skin and clothes. Wash your skin right away. Change your clothes. Handle the contaminated clothes with clean gloves. Wash the contaminated clothes separately from other clothes, and also wash the gloves you used to handle them.

Liquid: Drench skin and contaminated clothes with lots of water. If possible, immerse yourself in a creek or pond. Remove contaminated clothing. Handle the contaminated clothes with clean gloves. Wash the contaminated clothes separately from other clothes, and also wash the gloves you used to handle them.

Both: Wash skin and hair thoroughly. Dry off and put on clean clothes. Do not become chilled or overheated. If skin is irritated or burned, cover it with a loose, clean, dry, soft cloth. Do not apply ointments, greases, or powders.

Pesticide in eye:

Wash the eye quickly but gently. Use clean water. Hold your eyelid open and wash it with a gentle drip or stream of water from a faucet or bottle. (If you have a clean funnel, you can pour water into it to make a small stream.) Position your head so the water flows across your eye, not directly into it. Rinse your eye for 15 minutes or more. Do not use chemicals, drugs, or soap in the rinse water. Use the cleanest water you have.

Inhaled pesticide:

Get the victim to fresh air right away. If other people are nearby, warn them of the danger. If someone is applying pesticides and they are blowing near others, tell them to stop. Loosen tight clothing that might make it hard for the person to breath. (Apply artificial respiration only if the person's lips turn blue. If pesticide or vomit is on the person's mouth or face, avoid direct contact by wiping it clean and covering the person's mouth with a cloth before giving mouth to mouth resuscitation.)

Pesticide in mouth or swallowed:

Rinse mouth with plenty of water. Give the victim a large amount of milk or water to drink (up to 1 liter). Induce vomiting **ONLY** if the pesticide product label tells you to. If you're not sure, **DON'T DO IT**.

Procedure for making the person vomit: Position the person face down or kneeling forward. Do not allow the person to lie on his or her back, because they might choke or get vomit in their lungs, which can cause further damage. Put your finger or the blunt end of a spoon at the back of a victim's throat.

Never:

- use salt solutions to make someone vomit.
- induce vomiting if the person is unconscious or having convulsions.
- induce vomiting if the person swallowed something corrosive like a strong acid or alkali, or an oil-based or emulsifiable concentrate pesticide.

Part 5. Activity. Emergency response.

Select fifteen volunteers. Split them into five groups of three. Five of them -- one in each group -- will pretend to be exposed to pesticides. (These people should be wearing a long-sleeved shirt.) The others, working in pairs, will help the injured or ill persons. Have all the materials for the demonstration / activity on hand. Use no more than five minutes for each example. (Do not wash the clothes...but discuss how they should be handled and what should be done with them.) If the volunteers do not respond correctly, ask the other people in the class to tell them what to do, or do so yourself.

Skin Exposure:

Have one of the volunteers spill some flour on his or her forearm. Ask the other volunteers to help the exposed person clean up.

Brush dry pesticides off your skin and shirt. Be careful not to brush the powder onto another part of your body or uncontaminated clothes. Take off your shirt and wash your skin right away. Dry off, and put on a clean shirt. Handle the contaminated shirt with clean gloves. Wash it separately from other clothes, and also wash the gloves you used to handle it. If skin is irritated or burned, cover it with a loose, clean, dry, soft cloth. Do not apply ointments, greases, or powders.

Ask one of the volunteers to spill some water (or colored water) on his or her forearm. Ask the other volunteers to help the exposed person clean up.

Drench skin and contaminated shirtsleeve with lots of water. If possible, immerse your arm in a bucket of clean water, or put it in a creek or pond. Wash well. Remove the contaminated shirt. Dry off your skin, and put on a clean shirt. Handle the contaminated shirt with clean gloves. Wash it separately from other clothes, and also wash the gloves you used to handle it. If skin is irritated or burned, cover it with a loose, clean, dry, soft cloth. Do not apply ointments, greases, or powders.

Oral Exposure:

Ask one of the volunteers to pretend he/she swallowed some pesticide. (The victim could pretend he or she is a child, telling his or her parents they just drank something from the container and it tasted bad!) Ask the other volunteers to help the exposed person.

Rinse mouth with plenty of water. Give the victim a large amount of milk or water to drink (up to 1 liter).

Eye Exposure:

Ask one of the volunteers to pretend he/she got pesticide in one of their eyes. Ask the other volunteers to help the exposed person.

Wash the eye quickly but gently with clean water. Use the cleanest water you have, but work quickly. Hold the person's eyelid open and wash it with a gentle drip or stream of water from a faucet or bottle. (If you have a clean funnel, you can pour water into it to make a small stream.) Position the victim's head so the water flows across your eye, not directly into it. Rinse for 15 minutes or more. Do not add chemicals, drugs, or soap to the rinse water.

Inhalation Exposure:

Ask one of the volunteers to pretend he/she breathed some pesticide. Ask the other volunteers to help the exposed person.

Get the victim to fresh air right away. If other people are nearby, warn them of the danger. If someone is applying pesticides and they are blowing near others, tell them to stop. Loosen tight clothing if the person is wearing clothes that might make it hard for him or her to breath. (Apply artificial respiration ONLY if the person's lips turn blue. If pesticide or vomit is on the person's mouth or face, avoid direct contact by wiping it clean and covering the person's mouth with a cloth before giving mouth to mouth resuscitation.)

Part 6. Discussion / Instruction. Symptoms of pesticide illness or injury (acute):

How can you tell if pesticides are making someone sick or hurting him or her in some other way?

Here are the signs and symptoms of immediate (acute) effects:

Irritation may cause:

- redness, blisters, rashes, or burns on the skin.
- swelling or stinging in the eyes, nose, mouth, or throat.

Pesticide poisoning may cause:

- nausea, stomach cramps, vomiting, and diarrhea.
- headache, dizziness, weakness, or confusion.
- excessive sweating, chills, or thirst.
- chest pains.
- difficult breathing.
- muscle cramps or body aches.

Some pesticides cause the pupils of a person's eyes to become very small (pinpoint.)

The problem is: many illnesses (ex. flu) cause the same signs and symptoms! However, if someone develops these symptoms when or soon after handling pesticides, give them first aid and get medical attention right away. Be sure to take the pesticide container label with you...it will help the doctor or nurse know how to treat the person. However, be sure it is clean or wrap it up so you and others won't be exposed!

Discussion Questions

Ask growers to answer these questions:

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 and washes them after handling pesticides but before taking them off, the farmer will not transfer pesticides to people or things he or she touches.

How can you prevent pesticide exposures and poisonings?

The main ways are:

Be careful.

Be clean.

Wear protective clothing – waterproof or chemical-resistant gloves, long-sleeved shirt, long pants, shoes, and sox – when handling pesticides.

Keep pesticides locked up in a safe place, away from animals and children.

Never transfer pesticides into an unlabeled container, especially not one that is or was used for food or drink.

Never reuse a pesticide container.

Here are some specific recommendations:

- Skin:

Be careful.

Use protective clothing.

Plan your application so the pesticides you're applying do not blow onto you.

Wash your gloves and remove them when you're finished handling pesticides -- before doing anything else!

- Lungs:

Be careful.

Don't use pesticides when the wind is blowing hard.

Plan your application so the pesticides you're applying do not blow into the air you're breathing.

Don't walk near someone who is applying pesticides.

Remember: A dust mask will not protect you against most pesticides because the vapors can pass through cloth.

- Mouth:

Be careful.

Don't eat, drink, or smoke while handling pesticides.

Never put pesticides into an unlabeled container – especially not into one that is used for food or drink. (A child or someone who cannot read may be fooled – and eat or drink it by mistake!)

- Eyes:

Be careful, especially when mixing and pouring liquids.

Use protective clothing.

Don't rub your eyes.

Wash your gloves and remove them when you're finished handling pesticides -- before doing anything else!

Conclusion

Summarize and review the main points, and the growers' responses. End the lesson by thanking them for their time and participation.

Notes