Project Clean Environment for Healthy Kids

PROTECTING FAMILIES AND FARMWORKERS FROM PESTICIDES

A training curriculum for lay health educators

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Activity	Methodology	Materials Needed	Time
Introduction *Complete pre-tests; review the workshop objectives*	Problem Tree Activity and Group discussion	• Pesticide Pre-test • Drawing of tree trunk; cut-out fruit shapes • Handout 1: Workshop Objectives • Flip chart and markers	1 hour
How Pesticides Affect Humans *Share experiences of pesticide poisoning, Learn to recognize acute and chronic health effects of pesticide poisoning*	Group Discussion and Brain Storm	• Handout 2: Acute Symptoms • Handout 3: Serious Symptoms • Handout 4: Chronic Health Problems • Flip chart and markers	30 mins
How Harmful Are Pesticides? *Discuss routes of exposure; Review the importance of pesticide labels*	Skit and Group Discussion	• Flip chart and markers • Spray bottle filled with water • small table set with paper plates, napkins, fruit • Paper cut-outs or plastic bugs • Stuffed animal or other toy • 2 bottles of water, pesticide label or can	30 mins
Pesticide Poisoning in the Home *Discuss what to do in case a pesticide exposure at home; discuss what to tell the doctor*	Role Play and Group Discussion	• Flip chart and markers • Spray can or bottle	20 mins
Avoiding the Use of Toxic Pesticides at Home *Learn how to reduce or eliminate the use of toxic pesticides at home*	Group Activity and Discussion	• Handout 5: Cockroaches • Handout 6: Ants and Fleas • Handout 7: Mosquito Control • Handout 8: Warnings about Home Use of Pesticides	50 mins
Reducing Pesticide Exposure in the Fields *Discuss how to reduce pesticide exposure on the job and the dangers of pesticide residues, Identify protections required by Worker Protection Standard*	Role Play and Group Discussion	• 1 yard each of red & yellow ribbon • Blank sheets of colored paper • Handout 9: Important Protections in the Worker Protection Standard • Handout 10: Reducing Pesticide Exposure on the Job • Handout 11: Work Clothes • Handout 12: How Farmworkers Can Protect their Families	75 mins
What To Do in Case of Pesticide Exposure in the Fields *Discuss what to do in case of a pesticide incident in the fields; discuss what to tell the doctor*	Skit and Group Discussion	• Flip Chart and Markers • baseball caps, XL t-shirts, cut-out fruit shapes, body powder	30 mins
Understanding your Rights at Work *Discuss how farmworkers can enforce their rights under the WPS; discuss workers' compensation*	Group Discussion	• Flip Chart and Markers	30 mins
Farmworkers and Field Sanitation *Discuss field sanitation standards; review ways to prevent heat stress*	Brain Storm and Group Discussion	• Handout 13: Field Sanitation • Handout 14: "Controlling Heat Stress" Cards	30 mins
Reviewing Important Pesticide Information *Review concepts discussed in the training*	Game Show	• Game pieces	30-45 mins
Promoting Pesticide Safety in the Community *Practice educating community members about pesticides*	Directed Role Play	• Pesticide Safety Booklet • Pesticide Safety Comic Book	45 mins
Conclusion and Evaluation *Complete the post-tests and evaluation forms*		• Pesticides Post-test • Workshop Evaluation Form	15 mins

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(Total time: about 8 hours)

Workshop Objectives

- Understand how pesticides affect humans
- Learn how you can protect children from pesticide exposure
- Discuss what to do in case of a pesticide exposure at home
- Learn about alternatives to the use of chemical pesticides at home
- Learn how farmworkers can protect themselves from pesticide exposure in the fields
- Know what to do in case of pesticide exposure on a farm
- Understand your rights to a safe workplace

PART ONE: PROTECTING CHILDREN AND FAMILIES

I. Introduction

Pre-test
Time: 15 minutes
Materials: Pesticide Pre-tests

Distribute the pre-test to the participants before starting the workshop. Explain that this is a questionnaire to help the facilitator make sure that she is presenting the information effectively and doing her job well. Ask participants to answer the questions without consulting with anyone else. If anyone has questions or needs help to answer the questions, ask the facilitator. When all have finished, collect the pre-tests and explain that you will go over the correct answers at the end of the workshop.

Workshop Objectives
Time: 5 minutes
Materials: Handout 1 (Pesticide Workshop Objectives)

Explain to the group that the main goals of today's workshop are: 1) to learn about pesticides and the health risks they pose; and 2) to

learn ways to reduce or minimize exposure at home or at an agricultural work place. Distribute Handout 1: Workshop Objectives. Read the objectives out loud to the group. Ask them if there are any questions or objectives that they would like to cover that are not included on the handout. Tell the group that throughout the workshop they should feel free to ask questions whenever there is anything they don't understand, and that by the end of the day, you will try to answer all their questions as best you can.

Problem Tree Exercise (optional)
Time: 30 minutes
Materials: Flip chart, markers, colored paper cut-outs in the form of fruit, tape

On a flip chart, draw a picture of a tree, including its roots, a trunk, and several branches. On the trunk of the tree, write the words "Pesticide exposure to farmworkers and their families." Ask the group to think about all the possible causes of the problem and ask for one or two responses. Write these responses inside the roots of the tree.

Divide the group into two smaller groups and give each group a flipchart page with a picture of a tree, strips of paper for roots and colored paper cut-out for fruit. Ask each group to write on the strips all the possible causes of high pesticide exposure rates in their community that they can think of. When they are done, ask the group members to tape their strip of paper onto a root of the tree. Give them five minutes to write down their ideas. Bring the groups back together and have a representative of each group review the "root causes" they discussed. Their responses might include the following:

- high volume of pesticide use at agricultural worksites
- high risk activities such as mixing, loading or applying pesticides
- drift
- exposure to pesticide residues on soil, leaves and crop in the field and to unwashed fruit eaten in the field
- use of pesticides inside the home, on the lawn or in the garden
- home use of pesticide containers from the fields
- washing pesticide-contaminated work clothes and family clothing together

Next, ask the group to think of things they can do, as individuals or as a community, to try to bring down these high levels of pesticide exposures. Ask for one or two responses and write these on the paper cut-out of a fruit such as lemon, lime or orange (or inside the

outline of a fruit on your tree). Have the participants return to their small groups again and give each group a different set of pre-cut fruit shapes (about 10 each). Give the groups 5 minutes to write their ideas on the fruits and tape them onto their trees. Reassemble all the participants and have a representative of each group review the "solutions" they discussed. Later, during a break, combine the "roots" and the "fruits" from both groups onto one tree.

Some of the solutions might include:

- stop using toxic pesticides inside the home
- shower every day as soon as possible after returning from work in pesticide-treated areas
- work for state or local laws that require notification of farmworkers or the community concerning pesticide applications

Who Wants to Be A Millionaire (optional)
Time: 5 minutes

Ask for one volunteer to be a game show contestant and the facilitator will play the role of the game show host. For $1 million, the contestant must correctly answer a question, using at most one lifeline. The lifelines are: 1) asking the group or 2) asking a friend (other than the facilitators). The $1 million question is:

A person can find out how poisonous a pesticide is from:
A. Its smell
B. Its color
C. Its taste
D. The pesticide label
E. All pesticides are equally harmful

The correct answer is D. Give the participant a prize (candy, etc.) if he/she answers correctly.

II. How Pesticides Affect the Human Body

The Environmental Protection Agency estimates that 10,000-20,0000 farmworkers are injured by exposure to pesticides on the job each year. The Bureau of Labor Statistics of the U.S. Department of Labor reports that farmworkers have the highest rate of chemical-related illness of any occupational group. But the exact number of worker poisonings is unknown. Nationally poison control centers received an average of 24,000 calls per year about pesticide exposure; 2/3 (16,000) of them involved children under age 6. Children are exposed to pesticides at home, at school, in day care centers and in outside spaces like fields, lawns, parks, and gardens.

Symptoms Activity
Time: 30 minutes
Materials: flip chart paper, markers, tape, Handouts 2, 3 and 4

Divide the group in half and give each half a flip chart and a marker. Direct each group to choose a person to record the group's answers on the flip chart. Ask one group to write as many immediate symptoms of pesticide exposure as they can. Ask the other group to make a list of long-term or chronic health effects of pesticides. Give each group five minutes to complete its task. When they have finished, ask each group to tape its list to the wall and select a representative to read the list aloud.

Acute Poisoning
Explain to the group that pesticide exposure can cause symptoms immediately or soon after exposure. These are called ACUTE symptoms and include the following:

- Nausea and vomiting
- Headache
- Dizziness
- Blurred vision or irritated eyes
- Skin rashes
- Sleeplessness
- Fatigue
- Stomach cramps
- Excessive sweating
- Weakness

Distribute Pesticide Handout 2: Acute Symptoms, which shows many of the common acute effects. Tell the group that these symptoms are common to a lot of illnesses, like a cold or flu. They or their health professional may be uncertain as to whether the symptoms are effects of pesticide exposure or other ailments. When these symptoms are caused by pesticide exposure they will normally begin 2-3 hours (and within 12 hours) after the exposure. Generally, a pesticide exposure will cause two or more of the symptoms. Explain to them that if they or a family member begin(s) to experience several of these symptoms within 12 hours of using or being around pesticides, this may be an incident of pesticide poisoning.

Serious Acute Symptoms
In their list of immediate symptoms, the group may have identified some of the more serious symptoms that could be caused by exposure to pesticides, including the following:

- Shortness of breath
- Loss of consciousness
- Drooling from the mouth and nose

Distribute Pesticide Handout 3: Serious Symptoms. Handout 3 lists some of the most serious acute symptoms. If a person has any of these symptoms and doesn't receive immediate medical attention, she or he could die. Tell the group that if anyone is experiencing any of these symptoms, emergency medical help must be obtained immediately either by calling 911 or by taking the person to a hospital.

Chronic Health Effects

Explain to the group that chronic health effects are health problems that may develop over a longer period of time from even low levels of exposure to pesticides. Some health effects begin weeks, months or even years after the exposure occurred. The following chronic effects should be included in the participants' list:

- Cancer
- Infertility
- Miscarriage
- Birth defects
- Nervousness or memory loss
- Weakness in the arms or legs

Distribute Pesticide Handout 4: Chronic Health Problems.

III. How Harmful Is this Pesticide? Will it Injure Me or My Family?

Routes of Exposure

Skit
Time: 15 minutes
Materials: 2 paper plates & cups, plastic utensils, fruit, small stuffed animal, plastic bugs or paper cut-outs of bugs, spray bottle filled with water

Begin this section by performing a skit with volunteers from the group. Ask for three volunteers. Ask one to play the mother and the others to play young children. Put in the center of the room a table set for lunch. Add a few plastic or paper cut-out bugs on the table and the floor. Have one of the children carry a stuffed animal. Fill a plastic spray bottle with water.

Explain the following scenario to the volunteers and perform the skit:

Mother: Children, it's time for lunch.

Child I: Look Mommy, there's a bug on the floor.

Mother: Oh no, I better get the bug spray. [Goes and sprays the bug on the floor]

ChildI I:(Drops her teddy bear on the floor where the mother had just sprayed. Child gets down and crawls on the wet floor, dragging teddy bear over the wet floor.) Hey mommy, my teddy bear fell down. [Touches toy and puts hand or toy in mouth.] Now my teddy bear is all better (child pats teddy bear).

When the role play is over, thank the volunteers and ask the group the following questions:

? Did the pesticide spray get into the children's bodies? If so, how?

- The younger child touched the pesticide and it entered her body through the skin. The younger child also touched the pesticides and then put her hand in her mouth and the pesticides got in her body through her mouth.
- The younger child touched the pesticide contaminated toy and then put her hand in her mouth; as such the pesticide entered through the skin on her hand and her mouth.

? How else can pesticides enter your body?

- When pesticides are applied as a gas (like a fogger), you can breathe them in.

? What is the most common way that pesticides get in the body?

- The most common route of entry is through the skin.

** Myth **

Some people think that our skin is an impermeable or water-tight barrier blocking pesticide entry. Explain that the skin is our body's largest organ and that it is very absorbent. Demonstrate by applying hand lotion – see how quickly it's absorbed.

Some of the most serious injuries for children occur when kids directly swallow pesticides. Summarize for the group that the three most common routes by which pesticides enter the body are: through the skin, through the mouth, and by breathing them in.

Pesticide Labels and the Product's Harmfulness (Toxicity)

Group Discussion
Time: 15 minutes
Materials: 2 bottles filled with water, an enlarged sample pesticide label or can of pesticide spray, flip chart and markers

Hold up two bottles of liquid that are the same color (e.g., water). Ask the group, if both bottles contain pesticides, how could you tell which one is more harmful than the other? Can we tell by the color? Or Smell?

** Myth **

Some people think that the most harmful pesticides have a bad smell. Explain that you can't tell how dangerous a pesticide is by its color or smell. Some products, like insect repellent, have a piney smell even though they may contain dangerous chemical ingredients.

Questions for discussion

? What kinds of information would you like to know to determine which pesticide is more dangerous?

- You would want to know which one was more poisonous (which could cause harm quickly). You would also want to know which one causes chronic or long-term health effects, such as cancer, birth defects, or infertility.

When a chemical causes harmful health effects, it is described as "toxic" or a poison. Most chemical pesticides are toxic or poisonous. For that reason it is better to solve pest problems without using them. Later on we will talk about alternative approaches to pest problems such as prevention (i.e., through cleaning or caulking) and low risk alternatives (i.e., boric acid or traps).

? When you buy a commercial pesticide how can you find out how hazardous it is to your health?

- There is some information about the acute or immediate effects of the pesticide's active ingredient on the pesticide label.
  - If the pesticide contains an active ingredient which is very poisonous, there will be a skull and cross bones on the pesticide label and the word "**Danger**."
  - On moderately poisonous products, the pesticide label will say "**Warning**."

- For less immediately harmful products, the label will say "**Caution**."
- For products that are less immediately harmful, the label will say "Caution."

Pesticide labels rarely provide information about the long-term effects that may occur from exposure to the product. In fact, many pesticides that cause severe long-term health effects like cancer, are the least immediately harmful. As such, the absence of a skull and cross bones does *not* mean that the product is safe. In addition, the likelihood of injury from a product also depends on how much of the product is comprised of the active ingredient, the amount of the pesticide that is absorbed by the body and the length of time a person is exposed to the pesticide.

Pesticide labels contain other very important information. For example, the label states the appropriate uses for the product, how much to use, use directions and what protective equipment to use. All of these label directions should be carefully followed. Failure to follow the label directions can lead to injury. In the mid-1990's, for example, hundreds of people used a very poisonous agricultural chemical (methyl parathion) to kill pests in homes, even though the product was designed for outdoor use only. The result was that some people were injured and hundreds of homes became unfit to live in due to chemical contamination. The harm occurred because the product breaks down (and becomes less toxic) in the presence of sun and rain, which can't take place indoors. This product is still available in Mexico and is often sold to people as a household pesticide known as "*polvo de avion.*"

To review, summarize the key information that is available on the pesticide label. You may want to bring in a can of pesticide spray to show the group.

IV. What To Do in Case of Pesticide Poisoning at Home

Reducing exposure

Group Discussion
Time: 5 minutes

Recall the skit from the previous section.

? What should the mother have done after spraying to reduce pesticide exposure to herself and her children?

- Bathe the children with water, soap & shampoo right away
- Put clean clothing on the children

- Wash the children's contaminated clothes and contaminated stuffed animal in hot water and detergent separate from other clothing
- Wash table, floor, plates, and utensils which may have been contaminated with hot water and detergent

? What's the purpose of washing and changing clothing?

- By washing and changing clothing, you limit your exposure to the pesticide. The sooner you eliminate exposure, the better. It is also important to wash contaminated clothing separately from the rest of the family's clothing to avoid spreading the pesticide contamination to the other clothing. Wash pesticide contaminated clothing in hot water with detergent. When washing contaminated clothing by hand, wear rubber gloves. If your clothing gets wet, while hand washing contaminated clothes, change immediately.

? What should you do if you get pesticides in your eyes?

- You should rinse them with water for at least 15 minutes.

Emergency Situations

Role play
Time: 15 minutes
Materials: 2 volunteers, spray can or spray bottle

Ask for two volunteers. Ask one to play the mother and the other to play her child. Ask the group to recall the skit from the previous section and to suppose that one of the children sprayed with household pesticides began to feel sick.

Explain the following scenario to the volunteers and perform the role play:

Child: Mommy, I feel really sick in my tummy. [Pretends to throw up.]

Mother then has to decide what to do. If she decides to call poison control, the Trainer should play the role of the poison control operator. Ask the mother for the following information:

- The child's age, weight & symptoms
- Name of the product used
- Time of poisoning and when symptoms began
- Amount ingested
- Was anyone else exposed and experiencing similar symptoms?

If the mother decides to take her child to an emergency room, the Trainer should play the role of the admitting nurse. Ask the mother the same questions as above, and ask if she has brought with her the product that the child was poisoned with.

The mother may decide to try to medicate the child herself.

After the role play, ask the group if they think the mother did the right thing. What should she have done differently? What else could or should she have done? What did she do correctly?

* Review *
Explain to the group that it is important to seek medical attention when is someone is poisoned by pesticides. They should explain to the health care provider that they suspect pesticide exposure and the how the exposure occurred. It is important to emphasize that when someone is experiencing one of the serious health effects discussed earlier (e.g., loss of consciousness, foaming at the mouth or nose) he or she should always get medical assistance immediately.

V. Avoiding the Use of Toxic Pesticides at Home

Exposure to Toxic Pesticides – Brain Storming Activity
Time: 20 minutes
Materials: flip chart, markers, tape

Divide the group into two teams. Give each team two sheets of flip chart paper and a marker. Remind the group that this story and the earlier skit (with the mother and her children) demonstrated one common way in which children are exposed to pesticides. Give both groups five minutes to list ways in which children could be exposed to pesticides. When they have finished, ask each group to tape the list onto a wall and to select a representative to read the list aloud. Add to their lists any of the following responses they might have missed:

- Spraying for bugs in the home (even if done by a commercial exterminator)
- Use of pesticides on lawns or in gardens
- Use of flea collars, flea shampoos or pesticides products on pets
- Accidental ingestion of pesticides improperly used or stored
- Playing in treated fields
- Playing outdoors while pesticides are applied nearby

- Drift onto outdoor play areas
- Swimming in irrigation ditches or canals that contain runoff from pesticide-treated fields
- Use of pesticides in schools or day care centers
- Use of pesticides in parks
- Lice shampoos
- Insect repellants
- Unwashed fruits and vegetables
- Pesticides on their parents' clothing, skin or hair

Next, give the groups three minutes to list things what a parent can do to reduce or eliminate these exposures. Try to draw out the following responses:

- Avoid using chemical pesticides in the home, or on the lawn or garden
- Store pesticide products away from children
- Don't use pesticides in areas where children are likely to be present or on surfaces which children are likely to touch
- Wash children's hands frequently after they play outside or play on the floor
- Keep children inside with doors and windows closed when pesticides are being sprayed nearby
- Use non-toxic products for lice (e.g., combs, Lice-B-gone)
- Use alternatives to toxic chemicals for flea protection
- Use alternatives to toxic chemicals for insect repellants
- Wash fruits and vegetables before serving them to children
- Wash pesticide-contaminated clothing separately from family clothing
- Ask to be notified if pesticides are used in your child's school or day care center
- Never take pesticides home from work and never transfer pesticides out of their original containers
- Never use empty pesticide containers around the home

Less toxic alternatives

Many people use chemical pesticides to get rid of insects, rodents or weeds in their home or garden. The EPA estimates that 75 percent of U.S. households use at least one pesticide product indoors each year. Products used most often are insecticides and disinfectants. Measurable levels of up to a dozen pesticides can be found in the air inside most U.S. homes. Pest problems can be avoided and eliminated without using toxic chemicals.

Group Discussion
Time: 30 minutes
Materials: flip chart, markers, tape, Handouts 5, 6, 7 & 8

Ask the group what they consider to be the most common insect, rodent or weed problems they experience at home. Divide the group into four. Give each team a sheet of flip chart paper and a marker. Assign a different pest (from the ones they just listed) to each group and ask them to discuss the following questions and write their responses on the flip chart paper:

1. What do you usually do about this pest?
2. How could you handle this problem without using toxic chemical pesticides?

Give the groups 5 minutes to discuss their "pest" and allow a spokesperson from each group 2 minutes to repeat the group's suggestions for non-toxic ways to handle the problem. Their ideas might include the following.

<u>Cockroaches</u>
You can control cockroaches by taking some simple steps.

1. Find them. Look for evidence of cockroaches, such as living or dead roaches, their egg cases, or their feces. Place sticky traps in areas where you suspect the cockroaches are living.
2. Deny them shelter, food and water. Focus your efforts on areas where you find the largest number of roaches. Prevent them from entering your home by repairing and sealing cracks and crevices and holes around pipes, telephone wires, TV cables, and vents. Remove any sources of food and water.
3. Kill them. If you still see roaches after taking the steps above, try using less toxic products like boric acid powder, sticky traps and bait to kill the remaining pests. Boric acid is toxic especially to children and pets and it is better to use in places where children and pets can't get at it. Sticky traps are best for areas where there are a lot of roaches.

By combining prevention with less toxic pesticides and sticky traps, most roaches will be removed within a month. Common household products designed to kill roaches (such as Black Flag or Raid contain chemicals that are harmful to the nervous system. The EPA has recently banned a chemical (e.g., diazinon and chlorpyrifos, also known as dursban or lorsban) that were used in Raid, Black Flag and other household products. If you have these products, you should get rid of them.

Distribute Handout 5: Cockroaches.

Ants

To get rid of ants in your home, you can do several things.

1. Find their point of entry and seal it. Follow their trail and temporarily seal the points of entry with petroleum jelly (Vaseline) until you can permanently seal them with silicone. In the areas where there are a lot of ants, spray or wipe the area with soap and water or with a fifty-fifty solution of vinegar and water.
2. Destroy the nest. If you know where the ant nest is, pour 1-2 gallons of boiling water onto individual ant hills. If you cannot find the nest, you can set boric acid baits near their point of entry.

Fleas

A home with a pet that spends time outdoors is a home with fleas and it is very hard to completely get rid of fleas in a safe way. Flea control is a matter of reducing their number so that it is tolerable to you, your family, and your pet. To completely get rid of fleas usually means using a lot of toxic chemicals, and that is something to avoid.

To find out where there are a lot of fleas in your house or if your house has fleas, put a white piece of paper on the floor. Because fleas are attracted to anything white, the fleas will jump onto the paper.

Here are some tips to control fleas:

- Groom your pet using a flea comb to inspect for and remove fleas
- Vacuum often and immediately dispose of the vacuum cleaner bag
- Wash pet bedding in hot water once a week
- Use soap and water to clean your pet's sleeping areas
- Shampoo your pet regularly with plain soap & water or grooming shampoo (without pesticides)
- Ask your veterinarian for pills to give your pet that will prevent fleas from laying eggs (called "pheromones")

Distribute Handout 6: Ants and Fleas.

Mosquitoes

Common insect repellants like OFF contain the chemical DEET, which can be harmful to infants and children. It can affect the child's nervous system. Instead of applying chemically-based insect repellents, one can use products which contain citronella

(this is a grass, so it shouldn't be used on children who are allergic to grasses), eucalyptus oil or other natural products.

The most effective way to reduce a local mosquito population is to remove their breeding areas in sources of standing water, such as old car tires, clogged gutters, planters, bird baths, or tree stump holes. Empty children's swimming pools when not in use. Other easy steps to consider include:

- Keep grass cut short and trim shrubs to minimize hiding places for adult mosquitoes
- Wear a hat and light-colored, loose-fitting clothing (avoid wearing bright colors or flowery prints)
- Avoid using scented soaps and shampoos, lotions, oils or perfumes, including tanning products
- Incandescent lights attract mosquitoes so use florescent lights instead since they neither attract nor repel them
- Burn citronella candles (outdoors only)

Distribute Handout 7: Mosquito Control.

<u>Lice</u>
Many common lice shampoos contain harmful pesticides like lindane (which may cause cancer or damage the nervous system). This is true of products made in the U.S. or Mexico (e.g., HERKLIN shampoo.) One alternative is to use combs or products that are not insecticides, but rather interfere with the surface of the lice, like Lice BGONE.

* Review*
Household insecticides may contain dangerous chemicals. It is always important to read the label to find out the ingredients. Sometimes products made in Mexico contain more harmful ingredients than similar products made in the United States.

Questions for discussion

? If you MUST use toxic pesticides in the home, how can you best protect yourself and your family?

- Store all pesticides in their original containers in areas where children and pets cannot get at them.
- Read the label and follow directions.
- Try to minimize your exposure to the pesticide.
- Wear protective clothing such as long-sleeved shirts and rubber gloves when necessary.

- Wash application equipment, hands, and clothing after using pesticides.
- Do not use pesticides designed for crops in the home.

Distribute Handout 8: Warnings about Home Use of Pesticides.

PART TWO: PESTICIDE SAFETY ON THE FARM

I. Reducing Pesticide Exposures in the Fields

Drawings and Discussion
Time: 1 hour
Materials: Red and yellow ribbon, tape, blank sheets of pink and yellow colored paper, markers, flip chart, Handouts 9, 10, 11 & 12

On one wall of the room, tape a yard of red ribbon horizontally, as high up as you can reach. To the right of this ribbon and continuing the same line, tape a yard of yellow ribbon. Explain to the group that these ribbons represent a timeline of pesticide exposure in the fields.

The RED ZONE represents the period of time during and immediately after application of pesticides to the field. This is when the pesticide is most harmful and poses the highest risks to workers and applicators. The YELLOW ZONE represents the period following a pesticide application when the Restricted Entry Interval (REI) has ended and work has resumed in the area. (*Definition*: the REI is the time period set by EPA, when no hand labor can be performed in an area which was recently treated with pesticides). During the Yellow Zone time period, the pesticide has had some time to degrade through exposure to the sun, wind, dew and rain, but it may still be hazardous to workers. Even though the pesticide is not visible, its residue is still present in the soil and on the plants.

Distribute blank sheets of pink colored paper and markers to half of the group. Distribute blank sheets of yellow colored paper and markers to the other half. Ask those with pink paper to think of a situation of high risk to workers that would come within the RED ZONE. Ask them to draw a picture of one such a high-risk situation. Ask those with yellow paper to think about how workers or their families can be exposed to pesticides during the YELLOW ZONE, i.e., after the REI has expired, and to draw a scene that shows such exposure. Explain that they don't have to be skilled

artists to do this exercise – stick figures will be fine! They will also have a chance to explain what they have drawn.

Give them about five minutes to draw. One at a time, ask those who drew on pink paper to briefly explain his or her picture. Tape the drawings to the wall underneath the red ribbon. Some of the situations they draw might include direct spraying of workers or exposure through drift, entering the field when it is posted with a warning sign and before the REI has expired, applying a pesticide without required protective equipment, etc.

Next, ask those who drew on yellow paper to briefly explain his or her picture. Tape the drawings underneath the yellow ribbon. Their drawings might represent one of the following situations: a worker not washing hands before eating or using the bathroom, a worker who isn't wearing adequate clothing to work, a worker who embraces her children after work, without first washing her hands or changing clothes, a worker who brings home an empty pesticide container, etc.

Next, ask the group to think of the protections growers are required to provide to pesticide handlers or field workers against the harmful effects of pesticides during the RED ZONE period. Write their answers on the flip chart. Their responses might include protections such as REIs, warning signs, gloves or other personal protective equipment (PPE), wash water, transportation to a clinic, etc.

? What could employers do to protect workers from the harmful situations that occurred during the yellow zone?

- Provide safety training
- Provide decontamination water
- Post a list of pesticides used in the previous 30 days
- Provide transportation to workers who believe they have become ill due to pesticide exposure

Employers' Responsibilities

Questions for discussion

? Are employers required to protect the farmworkers from pesticide exposures in any way?

- Yes. The Worker Protection Standard (WPS) is a federal law that has important protections that are designed to reduce farmworker exposure to pesticides.

Distribute Handout 9: Important Protections in the Worker Protection Standard. Explain the following key points of the WPS.

For field workers, the key provisions of the WPS are:

- Training: Right of all workers to receive basic pesticide safety training once every 5 years. Training must occur before the sixth day of work in an area that had been treated with pesticides (or covered by an REI) within the last 30 days. Training must be provided in a language, which the worker understands.
- Prohibition against direct spray or drift: Pesticides cannot be applied when unprotected people are in the field or would be exposed through drift.
- Restricted Entry Intervals: Workers have a right to be kept out of fields until the pesticide is not immediately harmful. This is called the Restricted Entry Interval (REI). Some exceptions apply (e.g., workers who would have minimum or no contact with treated surfaces, or they would work in the treated area for 1 hour or less). REIs are based on how immediately harmful the product is (also known as the ACUTE TOXICITY). The longer the REI, the more immediately harmful is the pesticide. Generally, for very poisonous pesticides, the REI is two days in the US east of Kansas (and three days West of Kansas). If the pesticide is moderately harmful, the REI is 24 hours, if the pesticide is not very immediately harmful, the REI will be 12 hours. For pesticides that are of low risk, the REI is 4 hours. Unprotected workers must always be kept out of a treated field for at least the first 4 hours after the pesticide was applied.
- Early Entry Worker Protections: When a worker is asked to work in a treated area before the REI has ended, a worker must be given the personal protective equipment (PPE) required for that pesticide which is stated on the pesticide label. The worker must also be allowed to read the pesticide label or be informed of the label information. Generally, early entry work cannot begin during the first 4 hours after the pesticide application (or until inhalation requirements specified on the pesticide label have been satisfied.)
- Warnings: Workers must be given oral or written warnings of when it is safe to reenter a field.
- Posting of Fields: When certain highly poisonous pesticides are applied, fields must be posted with Keep out/Danger/Pesticides signs. These signs must be posted no more than 24 hours before the application and taken down within 2 days after the expiration of the REI. The signs must be in English and Spanish

(or another language spoken by the majority of non-English speaking workers).

- Posting of a Pesticide List: In a central location accessible to workers, a grower must post a list of the pesticides, which were applied (or covered by an REI) during the last 30 days. The location of the treated fields, the time and date of the application, and the REI must also be stated.
- Posting of a Pesticide Safety Poster: Growers must post in a central location a pesticide safety poster which states basic safety tips and the name and address of a nearby medical facility where workers could seek treatment in case of exposure.
- Decontamination: Soap, water, and single-use towels must be readily available for washing or eye flushing within a quarter mile of where workers are working.
- Emergency Assistance: If a worker reasonably believes that he or she has become ill due to pesticide exposure on the job, the grower must transport the worker from the worksite or labor camp to a nearby health care facility. Upon request, the grower must provide the worker or a health care professional with the name of the pesticide, the pesticide label information and how the exposure occurred.
- Anti-retaliation Protection: Workers cannot be fired or punished for exercising their rights under the WPS.

For pesticide handlers (mixers, loaders and applicators):

- Pesticide handlers must be given training that includes information about how to read the pesticide label.
- Handlers must have an opportunity to read the label or have the label information explained to them in a manner they understand.
- Handlers must be informed of how to safely use pesticide equipment.
- Handlers must be given all the personal protective equipment (PPE) required for their tasks that are specified on the pesticide label. Equipment must be clean and fit properly. The employer is responsible for cleaning contaminated PPE after it is used.
- Soap, water, and single-use towels must be readily available for washing or eye flushing.
- Posting of a Pesticide Safety Poster: Growers must post in a central location a pesticide safety poster that states basic safety tips and the name and address of a nearby medical facility.
- Emergency Assistance: If a worker reasonably believes that he or she was exposed to pesticides on the job, the grower must transport the handler from the job site or labor camp to a nearby health care facility. Upon request, the grower must provide the

handler or a health care professional with the name of the pesticide, the pesticide label information, and the circumstances of the exposure.

- Anti-retaliation Protection: Workers cannot be fired or denied privileges of employment for exercising their rights under the WPS.

Worker's Responsibilities

Demonstration
Time: 5 minutes
Materials: fruit or vegetable, body powder, slice of dark bread

Take a piece of fruit or vegetable commonly harvested in the area (e.g., apple or tomato) and cover it with powder; also place a slice of dark bread on a table nearby. Ask a volunteer to "pick" the fruit or vegetable from your hand. Have the volunteer show the group the powder that has gotten onto his/her hands. Then, ask the volunteer to pick up the "sandwich." Have the volunteer show the group that the powder has gotten onto the sandwich as well.

Explain to the group that the talcum powder represents a pesticide which has been applied to the crop. After a pesticide is sprayed on a crop it leaves residues. You may not be able to see the residues, but they can be harmful. While picking, farmworkers get pesticide residues on their hands. When the farmworker's hands are contaminated, the worker often spreads the residues to other parts of the body when he wipes his face, eats, smokes or goes to the bathroom, without first washing his hands. Pesticide residues can enter the body through the skin. Pesticide residues on cigarette or sandwiches can enter the body by breathing the contaminated smoke or eating the contaminated food.

Next, ask the group to think about some ways that workers can protect themselves from exposure to pesticide residues. Write their answers on a flip chart. Responses might include: a worker showering and changing clothes immediately after work, a worker taking off her shoes before entering her home after work, a worker wearing long sleeved shirts and long pants to work, a worker sorting work clothes from family clothes to wash them separately, a worker reporting violations to a state agency, etc.

Review: Reducing Worker Exposure in the Fields

Distribute Handout 10: Reducing Pesticide Exposure on the Job. Review the ways in which workers can minimize their exposure to pesticides in the fields.

- Wear clean long sleeved shirts, long pants, socks, shoes, a hat, and gloves (if possible) to work each day.
- Change clothes and bathe as soon as you return home from work.
- While at work, wash hands before you eat, drink, or smoke. Wash hands before and after going to the bathroom.
- Eat lunch outside of the treated field.
- Keep out of recently treated fields. When you see posted warning signs, ask when the Restricted Entry Interval will end.
- If you are sprayed with pesticides directly or through drift or are exposed to pesticide residues on crops (before the REI has expired), wash the entire body (i.e. shower) as soon as possible. Leave the field quickly. Change clothes as soon as you can. If possible, find out the name of the pesticide. Seek medical attention.

** Myth **

Some people think that washing your hands with cold water while your body is hot will give you arthritis. This is not true. Washing with soap and water is the best way to remove pesticide residues from your skin.

Distribute Handout 11: Work Clothes.

Review the appropriate types of work clothes. Explain that even appropriate clothes cannot totally prevent exposure, but that clean clothes that cover the skin reduce exposure. Explain that cotton clothing is the most comfortable to wear because it allows sweat to evaporate and keeps the skin cooler.

Review: Protecting Farmworker Families

Distribute Handout 12: How Farmworkers Can Protect their Families from Pesticide Exposure. Review the ways in which farmworkers can expose their families to pesticide residues and what they can do to minimize these exposures.

- Never take pesticides home from work. Never transfer pesticides out of their original container. Never re-use empty pesticide containers.
- Wash work clothes separately from family clothes.
- Put a tarp or other covering over car seat when returning home from work in pesticide-contaminated clothes.
- Try to wash hands or bathe before touching children.

- Take off work shoes before entering the home.
- Bathe with water, soap and shampoo and change clothes as soon as you return home from work.

II. What To Do in Case of Pesticide Exposure in the Fields

Skit and Discussion
Time: 30 min.
Materials: Two baseball caps (one labeled APPLICATOR, the other labeled CREW LEADER), two oversized t-shirts, fruit (or fruit-shaped paper cut-outs), and body powder

Skit (Option 1)

Ask for four volunteers and ask them to act out the following scenario. Scene: Set up a mock field with fruit. Ask one of the volunteers to put on a baseball cap with the word APPLICATOR on the rim. As the pesticide applicator, the first volunteer will go in and apply a generous amount of powder to the fruit. After the application is completed, the three other volunteers will enter the field. One is wearing a baseball cap with the word CREW LEADER. The other two are field workers. The crew leader will constantly remind the workers to keep working as quickly as possible. The workers will pick up the fruit and get powder on their hands, clothing and bodies, after a while one of the workers will start complaining of feeling sick. What should the worker do?

(Option 2)

Ask the group to recall the skit from the previous section where a child got sick after she ingested some pesticide her mother sprayed. Ask the group to think about a similar situation in the field where a farmworker gets sick because of the pesticide residues on the crop.

Questions for discussion

? What should farmworkers do as soon as they begin to feel sick from pesticide exposure?
- While still in the field, wash the skin with soap and water.
- Leave the contaminated area as soon as possible
- Change clothes as soon as possible
- Bathe or shower with soap, water and shampoo

? What should a farmworker do if she gets pesticides in her eyes?
- She should rinse them with water for at least 15 minutes.

? Should the sick farmworker get medical attention?

- Yes. A farmworker should see a health professional whenever he or she has been exposed to pesticides on the job, whether he or she has immediate symptoms or not. By going to the doctor and documenting the exposure, he or she may be able to get workers compensation benefits if health problems related to pesticides later develop (for example, miscarriage, infertility, nervousness, memory loss).

? What information should a farmworker provide to the doctor or nurse?

- You suspect pesticide exposure and the circumstances in which the exposure occurred (e.g., direct spray, drift, pesticide residue on crop)
- The symptoms which occurred
- How soon after the exposure the symptoms began
- Whether anyone else on the crew was exposed and is experiencing similar symptoms
- The name of the pesticide (if you can find it out)

? When is it ALWAYS necessary to get medical assistance IMMEDIATELY?

- When someone is experiencing one of the serious health effects discussed earlier (e.g., loss of consciousness, foaming at the mouth or nose), he or she must always get immediate medical assistance.

III. Understanding Your Rights at Work

Group Discussion
Time: 30 min.
Materials: Flip chart and markers
Remind the group that we have just reviewed the most important protections available to farmworkers and pesticide handlers to protect them from pesticides.

Questions for discussion

? What can a worker do if his or her rights are violated?

? Where can she or he file a complaint for a violation of the WPS?

- Explain that complaints are filed with the state department of agriculture. (Provide specific referral information to participants). Complaints can be filed anonymously.

? Which agencies are available to help a worker if she believes that she was denied one or more of the protections available under the WPS?

- Workers can consult the nearest legal services agency, a union, a health care facility, a private attorney, other farmworker service providers, or the state department of agriculture.

Generally, workers who fear retaliation should seek assistance in filing a complaint. If a complaint is filed, the state agency will conduct an investigation. Generally, the investigator will speak to the grower, the complainant and other workers, the health care provider (if any), and other available witnesses. The worker and his witnesses can request an opportunity to speak to the investigator off the farm. When possible, it is important for the worker (or the worker's representative) to find out the name of the pesticide that was sprayed, the date of the application, and details about the violation. If a violation is found, the grower or applicator may be penalized. This could be a warning, a monetary fine, or in rare instances a criminal penalty.

? We have just discussed the protections available to workers under the WPS and how to enforce them. Do you think that these protections are enough?
? What other protections would you like to have?
? What's missing?
? How can you have input about the protections that are available under existing law?
? What other protections are needed?

Taking Collective Action

Ask the group why some workers are reluctant to complain to outside agencies when workers do not receive the protections to which they are entitled under the law. Try to elicit some the following responses: they don't know their rights; they are afraid of losing their jobs; they don't know how to file complaints; they don't trust the government agencies to keep their identities confidential; they don't trust the government agency to fairly investigate their complaints.

Ask the group what steps can be taken to address these concerns. Try to elicit some of the following responses:

- Educating workers about their right to file a confidential complaint
- Educating workers about how and where to file complaints

- Linking workers to unions, legal aid offices and farmworker groups which can help them file complaints and assist them if they suffer retaliation
- Workers forming or joining unions or farmworker groups to work together

Ask the participants what steps a farmworker group could take to help improve conditions at work. Try to elicit some of the following responses: the group could negotiate an agreement with the employer to reduce the use of harmful pesticides or improve safety practices; the group could ask government agencies to prohibit the use of extremely hazardous substances, etc.

Ask the group to identify some groups or agencies in their area that farmworkers could turn to for assistance in filing complaints or seeking to improve workplace safety conditions.

***Workers Compensation**:*

? How can workers file a workers compensation insurance claim to pay for medical treatment or recover lost wages when they are injured by pesticides on the job or suffer other pesticide related injury?

- In some states, farmworkers are covered by workers compensation. In others, a worker could get monetary reward through a lawsuit. It is important for the worker to consult legal services or a private attorney if she would like to receive compensation following a pesticide exposure.

Workers compensation coverage varies from state to state. (Consult FJF's Workers Compensation Manual for information about each state.) Generally, 13 states provide full coverage for farmworkers, 25 states provide partial coverage and 12 states provide no mandatory coverage. When available, workers compensation benefits will cover medical treatment and provide partial reimbursement for lost wages. Each state has its own process for recovering workers compensation benefits. At a minimum, a worker (or his representative) must notify the employer of the injury soon after it occurs. The worker (or treating physician) must file a claim for benefits within a specified time after the injury (usually 6 months to 2 years). The state law will also specify whether the worker or the employer chooses the treating physician and the extent to which monetary benefits are available.

IV. Farmworkers and Field Sanitation

Group Discussion
Time: 30 min.
Materials: Flip chart and markers, Handouts 13 and 14

We have seen the importance of having drinking water and hand washing facilities in the field in the event of a pesticide contamination incident. That is one reason why there is a federal regulation called the Field Sanitation Standard that establishes the minimum water and hygiene facilities that an employer must provide his/her workers. Some states have regulations as well, but the federal rule establishes the minimum standards for all states.

Questions for discussion

For those of you who are or have been farmworkers:

- **?** Were toilets available to you when you worked in the field?
- **?** How far away were the toilets from where you worked?
- **?** Were the toilets clean?
- **?** Were handwashing facilities, soap and towels available next to the toilets?
- **?** Were cool drinking water and individual cups available?

For everyone:

? What are the minimum requirements for water and sanitation in the field?

- At farms that employ 11 or more workers, employers must provide
  - a toilet and toilet paper within ¼ mile of their work area
  - handwashing facilities and disposable paper towels within ¼ mile of their work area
  - plenty of cool, clean drinking water and single use cups

- Some states have laws that are more protective. For example:
  - Arizona -- toilets, handwashing facilities, and drinking water must be provided by any employer with five or more workers
  - California – employers of even one worker must provide toilets, handwashing facilities, and drinking water

Distribute Handout 13: Field Sanitation.

Heat Stroke
Drinking lots of water is very important when working in the fields. It helps prevent very common and dangerous health effects called heat stress or heat stroke. Even young and healthy farmworkers can get heat stress when doing hard work in conditions of high heat and humidity. Almost every year, farmworkers die of heat stress. Symptoms of heat stress include:

- Headache
- Confusion
- Extreme thirst
- Nausea
- Heavy sweating
- General fatigue
- Stomach or leg cramps

When workers are exhibiting symptoms of heat stress it is essential to get them to a hospital immediately.

? What are other ways to prevent heat stroke?
- Drink plenty of water
- Take frequent rest breaks in the shade.
- Wear cotton clothing.
- Avoid sun exposure (when possible) at peak hours
- Wear a hat

Distribute Handout 14: “Controlling Heat Stress” Cards.

V. Reviewing Some Important Information About Pesticides

Pesticide Bingo (Option 1)
Time: 30 minutes
Materials: EPA Pesticide Safety Bingo, bingo markers (for example, beads, dried beans, cut-out dots, etc.)

Game Show (Option 2)
Time: 45 minutes
Materials: 20 pieces of paper, with game categories or dollar amounts written or printed on them, tape

Tape pieces of paper or cardboard on a bare wall, each with one of the following categories or dollar amounts printed on it, arranged in the following order:

Myths and Legends	Toys and Tools	Risky Business	Healthy Hints
$100	$100	$100	$100
$200	$200	$200	$200
$300	$300	$300	$300
$400	$400	$400	$400

Explain to the group that they are going to play a game to review what they've learned. Ask for eight volunteers to step forward and divide them into two teams of four. Taking turns, each team chooses a category and the amount of money they want to play for. The facilitator takes the chosen amount from the wall and reads the corresponding question. Team members can confer with each other on their response. Each team gets (fake) money for each correct question (questions are worth $100, $200, $300 and $400). The team with the most money at the end of the game wins a small prize. You can use the paper with the dollar amount written on it as the fake money.

Category 1: Myths and Legends

Q1. True or False: Pesticides are like medicine and are not harmful to people. (False)

Q2. True or False: Washing your hands with cold water while working in the fields will cause rheumatism. (False)

Q3. Is it okay to put DEET insect repellent on children under 6? What else could you do to keep mosquitoes from biting a baby? (False. Dress him in a hat and light-colored, loose-fitting clothing.)

Q4. True or false: A pesticide's smell will not tell you how dangerous the chemical is. (True. How can you know how toxic a chemical is? Look at the label for information on toxicity.)

Category 2: Toys and Tools

Q1. What does a posted warning sign tell you? (To stay out of a field.)

Q2. Name three types of information that are on a pesticide label? (The name of the pesticide. How poisonous or dangerous it is. How to apply it correctly. What kind of protective clothing or equipment you should use around it.)

Q3. Name 4 occasions when you should wash your hands in the field to minimize pesticide exposure. (BEFORE AND AFTER using the toilet, before eating, before drinking, before smoking.)

Q4. Name 4 things a farmworker can do to prevent his/her family from coming in contact with pesticides from the fields. (Wash work clothes separately from family laundry. Take off shoes before entering the home. Bathe before touching anyone in the family. Wash hands and change out of work clothes before touching anyone in the family. Don't bring home agricultural pesticides. Don't bring home empty pesticide containers.)

Category 3: Risky Business

Q1. What kinds of people are most at risk of harm from pesticide exposure? (Babies, young children and pregnant women.)

Q2. Name 2 products that can put your family at risk of pesticide exposure if used at home. (Agricultural pesticides, used pesticide containers or illegal pesticides.)

Q3. What is a restricted entry interval? (The time period when one should not go into a field that has been sprayed with pesticides.)

Q4. What are three ways to prevent heat stroke? (drink plenty of water; take rest breaks in the shade; wear cotton clothing; avoid sun exposure at peak hours; wear a hat)

Category 4: Healthy Hints

Q1. Name three immediate symptoms of pesticide exposure. (Nausea, vomiting, headache, dizziness, irritation in eyes, inability to sleep, skin rashes, blurred vision, drooling, and unconsciousness.)

Q2. Name three long-term effects of pesticide exposure. (Cancer, birth defects, miscarriage, and sterility.)

Q3. Name 2 products that will kill ants without putting people at great risk. (Water and vinegar, sticky traps, or boric acid.)

Q4. Name 5 types of clothing that will reduce pesticide exposure to farmworkers who work in the field. (Long pants, long-sleeved shirts, hat, gloves, shoes, and socks.)

VI. Promoting Pesticide Safety in the Community

Role Plays
Time: 45 minutes

Divide participants into groups of four. Give each group about 10 minutes to prepare one of the following role plays. Remind the participants that the most effective way to educate the community is to engage individuals in a dialogue. Encourage participants to ask many questions of the community member during their roles as *promotores* to facilitate this exchange of ideas. Note that simply lecturing to the community members is likely to turn them off. Tell them that they are welcome to use any of the materials and props that were used during the workshop. Visit each group as they are preparing to see if they have any questions. Have each group present their role play to the rest of the participants. After each group presents their role play, be sure to provide feed back. Ask the other participants to help you provide comments that are both positive and useful.

- *Promotores de salud* visit a farmworker couple and explain some of the health effects of exposure to pesticides. The male farmworker tells the *promotores* that he has worked in the fields for 15 years and has never gotten sick from pesticides.

- *Promotores de salud* visit farmworker parents and explain how they can protect their children from pesticides, including protecting them from dangers they might bring home from the fields.

- *Promotores de salud* visit a woman at home (or in the fields) and explain the importance of washing hands to avoid pesticide exposure. The woman tells the *promotores* that she avoids washing her hands when her body is "hot" to avoid developing rheumatism or arthritis.

- *Promotores de salud* visit a neighbor's home and explain some of the dangers of using pesticides inside the home. The neighbor tells them she has a cockroach problem and wants advice on how to get rid of the roaches without using harmful pesticides.

Distribute the EPA pesticide safety booklet “Protect Yourself from Pesticides.” Explain to the group that they should distribute these booklets when discussing pesticide information in the community. Tell them that there is not enough time to go over all of the contents

in the booklet during this workshop, but that it reviews many of the points made today.

Distribute the “Aunque Cerca….Sano” comic book about pesticide safety at home for farmworkers. Explain to the group that they should distribute these booklets when discussing pesticide safety with farmworkers.

VII. Conclusion and Evaluation

Time: 15 minutes
Materials: Pesticide Post-tests, Evaluation forms

Ask the group if there are any questions or comments. Distribute any materials that they will be giving to members of the community, including referral information to nearby health clinics, governmental agencies, legal services organizations and community-based organizations.

Distribute the post-test and workshop evaluation forms. Review the correct answers for the pre- and post-tests.

VIII. Sources

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