

Protect Yourself from Pesticides



A Guide for Forest Workers

Northwest Forest Worker Center



About this training guide

Introduction for the promotora

This guide is your training tool for teaching forest workers and their families about the hazards of working with pesticides. The information is tailored for workers in Oregon, but most of it is relevant for forest workers throughout the U.S. To teach this session, hold the guide so that the illustrations or photos face toward the workers you are training. On the other side are the instructions for what to say and do during the session.

Instructions for the promotoras will be in red.

Answers to questions will be in shaded boxes.

Wait for participants to give answers based on what they know, and then add any missing points or clarify any information needed.

Learning objectives for this session

By the end of this session, participants will know what they can do to lower their risk of exposure to pesticides at work as well as their rights under the Worker Protection Standard, implemented by the Oregon Occupational Safety and Health Administration. They will know:

- how to recognize risk factors for exposure to pesticides;
- the different levels of toxicity of pesticides;
- how to recognize symptoms of exposure to pesticides;
- best practices in avoiding the risk factors to prevent exposure to pesticides;
- workers' right to file a complaint without retaliation

Materials needed for this session

You will need blank paper and pens for writing (in case participants want to write down notes).

Time for this session

The total time for this session is approximately 2 hours. These are the main activities, with estimates for how much time each part will take.

Welcome, Pre-test and Introduction	15 minutes
Describing pesticides: what they are and how dangerous they can be	15 minutes
Explaining exposure: symptoms, where contact may happen, how enter the body	20 minutes
Preventing exposure and treatment if exposed	25 minutes
Protecting your family	10 minutes
Your right to file a complaint	10 minutes
Review	10 minutes
Wrap-up and Evaluation	15 minutes

Protect Yourself from Pesticides



Welcome the participants, including family members, and introduce yourself. Explain that while the training will focus on what forest workers can do to stay safe at work, we also know that families are an important resource and source of support, to help them stay safe.

Say: Today we're going to talk about how to prevent exposure to pesticides while working in the woods. I'll be giving you a lot of information, but also asking you questions about what we are talking about. Let's start with introductions.

Have participants introduce themselves, or do some kind of activity or "ice breaker" that helps people relax and get to know each other.

Say: Pesticides are applied as liquids or sprays, as powders or granules, and as gases. If you are not careful while working, pesticides may spill or fall directly onto your body. . Also, you may come into contact with pesticides without even realizing it because pesticides leave behind something called a residue. Pesticide residues can get on your clothes and body as you work, and you can take these residues home with you without even knowing it. Today we are going to talk about how pesticides can harm you and your family, and how you can avoid exposure to them.

Now explain that you know how dangerous working in the woods is because your husband (or other relative) is a forest worker. Then give an example of someone among your family or friends who has been exposed to pesticides.

Ask: How many of you have ever worked with pesticides?

Pick someone who raises their hand and ask them to share their experience. Ask them if they got chemicals on themselves and if so, what happened. Ask other questions if you need to get the story out. But keep the conversation short. When they are done talking, thank them for sharing.

Say: Before we begin, I'd like to ask you a few questions about working with pesticides . This is not a test. It just helps us know how good a job we are doing.

Ask the "pre-test" questions for this unit, following the script.

What are Pesticides?

1:



2:



3:



4:



Say: Now let's talk about pesticides.

Ask: What are pesticides?

Pick someone and ask them what pesticides are. Ask the participants to name different types of pesticides (for example, insecticides, herbicides, etc.) and what they are used for. Make sure that the following definition is given, and all the following types of pesticides are mentioned.

Definition: Pesticides are chemicals intended for preventing, destroying, repelling or mitigating any pest..

There are four broad categories of pesticide used in forestry at least sometimes:

- insecticides kill insects;
- herbicides kill plants; These are the most commonly used pesticides in forestry
- rodenticides kill rodents; and
- fungicides kill fungi.

Repellants – forest workers may also use repellants to repel mosquitoes and biting flies. These chemicals are also regulated as pesticides.

Signal words and Symbols

KEEP OUT OF REACH OF CHILDREN

DANGER-POISON

PELIGRO



DANGER-POISON  – Highly toxic

DANGER – Highly toxic

WARNING – Moderately toxic

CAUTION – Slightly toxic

Ask: Have you heard anything about these different types of pesticides and how dangerous they are for people?

Let the workers say what they have heard. Ask more questions to get them to think about the different levels of toxicity of the different types of pesticides.

Say: Generally, herbicides are less toxic to humans than the other classes of pesticides. Nevertheless, all pesticides can cause harm to humans, so it is best to avoid any direct contact with them.

KEY POINT: Even herbicides are dangerous and can make you sick.

Ask: How do you know how dangerous the pesticide you are working with is?

Read the Label

1. The signal words-CAUTION, WARNING, or DANGER tell you how likely the pesticide is to make you sick. Signal words are found on the first page of pesticide labels.
2. The word DANGER means that the pesticide is very poisonous or irritating. Even a small amount (often less than a teaspoon) can cause serious harm. Along with the signal word DANGER, some labels have a skull and crossbones and the word POISON printed in red ink. These pesticides are highly poisonous. They can make you very sick-or even kill you-if you are not careful.
3. The labels of the products that can severely burn your skin and eyes carry the signal word DANGER alone.
4. A pesticide with the word WARNING is more poisonous or irritating than those with a CAUTION label. It doesn't take much of this pesticide to make you sick or to irritate your skin or eyes.
5. The word CAUTION is used for pesticides that are the least poisonous. These pesticides can still harm you if you are not careful.
6. The labels of some lower-toxicity products may not have a signal word.

Boa®

HERBICIDE

FOR CONTROL OF GRASSES AND BROADLEAF WEEDS AND FOR
USE AS A HARVEST AID/DESICCANT/DEFOLIANT

RESTRICTED USE PESTICIDE

DUE TO ACUTE TOXICITY

For retail sale to and use only by certified applicators or persons under their
direct supervision and only for those uses covered by the certified applicator's
certification.

ACTIVE INGREDIENT

Paraquat dichloride (1,1'-dimethyl-4,4'-bipyridinium dichloride) 37%

INERT INGREDIENTS 63%

TOTAL 100%

Contains 2.5 Pounds Paraquat Cation Per Gallon

Contains Stench (Odor) and Emetic

EPA REG. NO. 1812-420

KEEP OUT OF REACH OF CHILDREN

DANGER – PELIGRO



POISON

Say: Here is an example of a pesticide label.

Ask: Do you see the signal word?

Have someone point out the signal word and say what it is.

Ask: Do you see the name of the pesticide and what kind of pesticide it is?

Give the participants time to view the label and say the name and type. Then point to the name and say it, and point to the word “herbicide” and say that that is the type of pesticide.

Point to the active ingredients and

Say: This part of the label, where it says “active ingredients” tells you the name of the chemical that kills the pest or pests you are targeting. In this case, the chemical is “paraquat.” Paraquat is an herbicide with a high level of toxicity.

The inert ingredients are other ingredients, like water or kerosene, that make applying the pesticide easier.

How Exposure Can Affect You



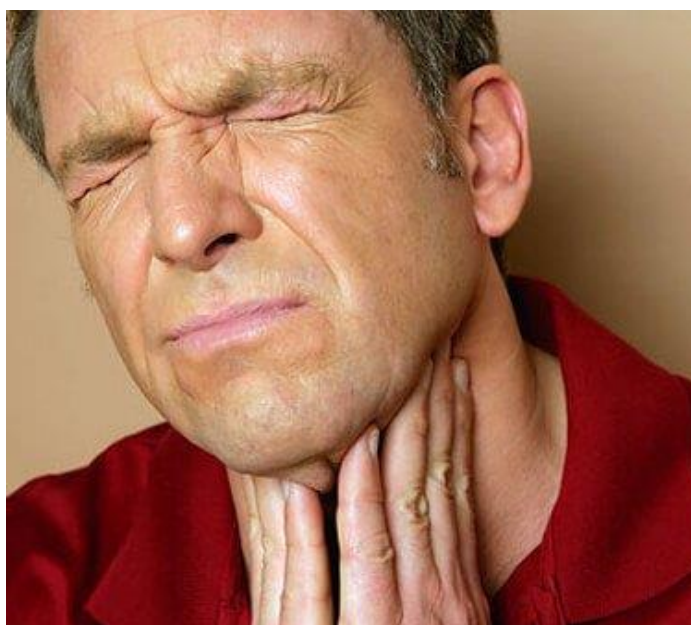
Mild
Symptoms

Burning eyes



Burning or itchy skin

Photo by Metere Pinker and Mark Morrison



Sore throat

Say: If you are exposed to pesticides you could get sick. Whether you get sick and how badly you get sick depends on the type of pesticide you were exposed to, how much you were exposed to, how long you were exposed, and your age, weight, gender and overall health. Children, pregnant women, elderly people and people with pre-existing conditions may be more vulnerable to the effects of pesticide exposure.

Chronic Health Effects

Some illnesses related to pesticide exposure, such as cancer, may develop months or years after exposure and persist for long periods of time. These are called **chronic health effects**. Chronic illnesses may result from a single exposure incident involving an extremely toxic or a large amount of pesticide or be caused by many repeated exposures at a level that is too low to produce noticeable immediate illnesses or injury. Chronic health effects caused by pesticide exposure include :

- Cancer
- Fertility problems
- Respiratory illness
- Nervous system disorders
- Birth defects
- Immune system disorders

Acute Health Effects

If you are exposed, you might experience symptoms right away. These are called **acute health effects**. Acute illnesses can be serious, and could cause days off work, require treatment by a doctor or even result in death. In most cases, acute effects are resolved relatively quickly and the exposed person fully recovers.

Symptoms of acute illnesses may be mild, moderate or severe depending on the toxicity of the pesticide, the amount of the pesticide to which you were exposed , how long you were exposed and other factors.

Point to the pictures and say:

Some examples of mild symptoms include burning eyes, burning or itchy skin and sore throat.

Moderate Symptoms



Excessive saliva
or drool

Blurry
vision



Shortness of
breath



Say: Here are some examples of moderate symptoms of pesticide poisoning.

Point to the pictures and name the symptoms.

Severe Symptoms



Pinpoint pupils



Trembling, lack of muscle control



Violent convulsions or seizures



Unconsciousness
or death

Say: Here are some examples of severe symptoms of pesticide poisoning.

Point to the pictures and name the symptoms.

Ask: What do these pictures of symptoms of pesticide illness tell you about working with pesticides?

Let the workers respond. Make sure that the following points are made.

Exposure to pesticides should be minimized as much as possible. Not only can exposure cause immediate acute illness, but exposure to small doses over time can lead to cancer, nervous system disorders and other illnesses later in life.

Some symptoms of pesticide illness are similar to other illnesses. For example, allergies can make your eyes itchy, and heat stress can give you a headache and cause nausea and other symptoms. But, if you are working with pesticides or working in an area that has been treated recently and you start to experience the symptoms we have talked about here, leave the area and seek treatment. We will talk more about what to do if you are exposed to pesticides later.

Where you may come into contact with pesticides



Spray mist/drift



Sprayed vegetation



Mixing pesticides



Pesticide containers



Your unwashed hands



Unwashed work clothes

Say: Let's talk about how you can get exposed to pesticides.

Ask: What are some ways you think that you can be exposed to pesticides?

Point to the pictures and ask the participants to describe the different ways they might be exposed.

- Pesticides can drift onto your body as you work. If you wear short-sleeved shirts you may get pesticides on your bare arms. If you take off your gloves to adjust equipment, you may get pesticides on your hands.
- Skin exposure can also occur when a pesticide drifts onto people who are working near an application.
- Pesticide residues can transfer from contaminated hands to other parts of the body if you do not wash your hands thoroughly before eating, drinking, smoking or using the restroom.
- You may accidentally splash a pesticide onto your skin when mixing a pesticide or loading a sprayer.
- You may get pesticide residues on yourself if you walk through vegetation that has recently been sprayed.
- If you use your cell phone while you are working with pesticides, you may get pesticide residues on your phone and later transfer them to your face and hands, even after you have left the work place.
- You and members of your family may get pesticide residues on themselves if you or they touch work clothes or boots that you wore while working with pesticides.
- Pesticide containers and used application equipment (sprayers, tractors and other equipment) may also expose you or family members to pesticides.
- Other sources of exposure include soil that has been treated and irrigation water that has been used to apply pesticides.

4 ways that pesticides can enter your body



Ingestion



Skin contact



Inhalation

Eye contact



Say: There are four routes of pesticide entry into the body (**point to the pictures**): mouth (oral), skin (dermal), nose (inhalation) and eyes (ocular).

- Pesticide illness can occur if pesticide residues are transferred to consumed food from unwashed hands, or from accidental ingestion (for example if pesticides are stored in drinking water bottles).
- Some pesticides when contacted can pass through the skin into the bloodstream.
- Once pesticides have been inhaled, they enter the lungs and bloodstream.
- Significant amounts of pesticide can penetrate the outer tissues of the eye and enter the bloodstream.

Preventing Exposure to Pesticides



Wear safety equipment

Stay out of
posted areas



Read the Label



Wash hands

Ask: What are some ways you can protect yourself from exposure to pesticides?

Let the participants provide their ideas. Ask more questions if necessary to get them talking. Make sure the following points are made.

- Read labels and follow instructions. You should always read the label before you start to mix or apply pesticides. If you cannot read, have a co-worker read the label to you, or ask your supervisor what type of pesticide it is, what PPE is required and if there are any other precautionary measures that need to be taken. **Point to the skull-and-cross-bones symbol and say:** Look for the skull-and-cross-bones symbol on the label, and if you see it, be especially sure to ask about safety precautions.
- Stay out of posted areas. Employers are required by law to notify you about treated areas with an oral warning and/or posted signs. They are also required to give you information on how long it will be before it is safe to reenter the area.
- Use protective clothing and PPE. The pesticide label will have information about what PPE is necessary.
- Wash your hands before eating, drinking, smoking, handling your cell phone or going to the bathroom.

Personal Protective Equipment



Say: The label on the pesticide container will tell you what personal protective equipment is necessary for the particular pesticide you are working with. In general you should wear long-sleeved shirts and long pants, good work boots, a hard hat and goggles. This may be all you need if you are working with pesticides with low toxicity (indicated by the signal word “caution”).

Personal protective equipment may be different for different types of pesticides and for different ways you are working with them. For example, an apron may be required when mixing pesticides. Chemical resistant suits may be required when applying pesticides with high toxicity (indicated by the signal words “danger – poison”). Wearing these suits increases the risk of heat illness so, it is only necessary to wear one if the label requires it.

Hats

If a label requires a hat or overhead protection, you must wear something made of a non-absorbent material that they are willing to wash with soap and water at the end of the handling task. Pesticide handlers should not wear hats such as baseball caps while handling pesticides.

Goggles

Protective eyewear options includes safety glasses with front, brow, and temple protection; chemical splash goggles; face shields; and full-face respirators. People who wear reading glasses might opt for a face shield, which will enable them to clearly see the label while mixing the product. If the label says, “protective eyewear” the handler can wear any of the protective eyewear listed here. If the label specifies a type of protective eyewear (e.g., faceshield), then that specific eyewear must be used.

Gloves

If the label requires handlers to wear gloves, they must be worn during all handling tasks, including when repairing application equipment and adjusting nozzles. The gloves must be the type listed on the label. Many labels will list the type of glove material (for example, nitrile gloves) or will state that the gloves can be of any chemical-resistant or waterproof material. Handlers must not wear cotton, suede or leather gloves when they are handling pesticides unless instructed to do so by the label. These materials absorb pesticides and won’t protect handlers from the pesticides.

Respirators

Respirators are important if there is the likelihood of the handler’s exposure to droplets or vapors. Again, the label will tell you the exact type of respirator needed. If a respirator is required by a pesticide label, the employer must provide the handler with a medical evaluation, fit test and respirator training.

Note:

It is your employer’s responsibility to provide you with PPE that is in good condition.

Protecting your Family from Pesticides



Remove
boots and
work
clothing
after work
shift



Wash or shower
before physical
contact with
children & family



Wash work clothes
separate from family
clothes

Photo by Ed Crow, Penn State Pesticide Education Program



Do not bring pesticide containers
or equipment into home

Keep children out of
treated areas



Say: We've talked about how pesticide residues can get on you without you even realizing it. When you work with pesticides, you may take these residues home with you on your work clothing, tools and equipment. To protect your family from exposure to pesticides, it is important to make sure your children and other family members do not come into contact with anything that might have pesticide residues on it. These photos show the precautions you should take.

Point to the photos as you make the following points.

- Remove work boots and clothes after your work shift before driving home This is to prevent your car from becoming contaminated..
- Bathe or take a shower after work shift and before physical contact with children and family members. Oregon employers are required to provide showers when workers' bodies may be exposed to materials that are highly corrosive or highly toxic by skin absorption.
- Wash your work clothes.
 - Wash work clothes before wearing them again
 - Tell whomever is washing your clothes that you were working with pesticides
 - Wash work clothes separately from other clothes
 - Wash work clothing separate from family laundry
 - Use hot water
 - Decontaminate washing machine by a cycle with only water and soap (no clothes)
- Never take pesticides, pesticide containers or equipment home – they may contain pesticide residues that may harm you and/or your family. Typically pesticides used in forestry and agriculture are not to be used at home.
- Never re-use pesticide containers for anything else.
- Keep children out of places where pesticides may be found.
 - Nonworking family members should not enter into pesticide treated areas.
 - At home – keep pesticide out of reach of children.

What to do in case of accidental exposure



Wash immediately



Rinse eyes



Report to supervisor



MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

PART I What is the material and what do I need to know in an emergency?

1. PRODUCT IDENTIFICATION

TRADE NAME (AS LABELED): MultiTherm WB®
PRODUCT USE: Heat Transfer Fluid
SYNONYMS: Mixture; None applicable.
DISTRIBUTOR'S NAME: MultiTherm LLC
ADDRESS: 3223 Phoenixville Pike
Malvern, PA 19435
EMERGENCY PHONE: 800/225-7440
BUSINESS PHONE: 610/408-8361
EFFECTIVE DATE: October 1, 2003

2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	% w/w	EXPOSURE LIMITS IN AIR					
			ACGIH			OSHA		
TLV	STEL	PEL	STEL	IDLH	OTHER	TLV	STEL	OTHER
mg/m³	mg/m³	mg/m³	mg/m³	mg/m³	mg/m³	mg/m³	mg/m³	mg/m³
Disinfectant (see MSDS)		Approx. 50/50	NE	NE	NE	NE	NE	NE

Other components each present in less than 2 percent concentration in this product.

None of the other components contributes any significant, additional hazard to this product. All pertinent hazard information has been provided in this Material Safety Data Sheet, per the requirements of the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200) and State equivalent standards.

NE = Not Established C = Ceiling Limit See Section 16 for Definitions of Terms Used.
NOTE (1): ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-1993 format.
NOTE (2): Information on this product is being claimed as proprietary. All pertinent hazard information has been provided, per the Trade Secret requirements of U.S. Federal Occupational Safety and Health Administration Standards (29 CFR 1910.1200) and Canadian WHMIS (CPL 12 and 10). Information on this mixture will be released where the conditions specified in these Standards are met.

MultiTherm WB® MSDS (Public Distribution)
PAGE 1 OF 9

Take MSDS to doctor

Ask: Have any of you ever accidentally gotten pesticides on yourselves at work?

If any participant has accidentally gotten pesticides on himself at work, ask him to describe what happened and what he and his co-workers did about it. Make sure that the following points are brought out in the discussion.

- Remove any PPE as quickly as possible or remove contaminated clothing as quickly as possible. Keep contaminated clothing in a plastic sealed bag for potential analysis.
- Rinse the pesticide from the skin or eyes immediately with clean water.
- Wash with soap and water and shampoo hair as soon as possible.
- Put on clean, uncontaminated clothes.
- Report to supervisor or person in charge.
- Get medical care immediately if symptoms of pesticide poisoning develop or are suspected.
- Take a copy of the Material Safety Data Sheet to the doctor. This will tell the doctor what type of pesticide you were exposed.
- Share with the medical provider the circumstances of exposure.

Your employer's responsibilities



MATERIAL SAFETY DATA SHEET

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BUSINESS PHONE: 610/408-8361
EFFECTIVE DATE: October 1, 2003

2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	% w/w	EXPOSURE LIMITS IN AIR					
			ACGIH			CSHA		
			TLV	STEL	PEL	STEL	IDLH	OTHER
			mg/m ³	mg/m ³	mg/m ³	mg/m ³	mg/m ³	mg/m ³
Observed Ionic Solid/Water		Approx. 90/90	NE	NE	NE	NE	NE	NE
Other components each present in less than 2 percent concentration in this product.			None of the other components contributes any significant, additional hazard to this product. All pertinent hazard information has been provided in this Material Safety Data Sheet, per the requirements of the Federal CSHA Hazard Communication Standard (29 CFR 1910.1200) and State equivalent standards.					

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MultiTherm WB® MSDS (Public Distribution)
 PAGE 1 OF 9

Provide you with information about the pesticide you are using

Provide decontamination supplies



Provide you with PPE

Say: Your employer must:

- Make information available to you about the pesticide you are using, where treated areas are and when you may and may not enter them, and the safety data sheets for each pesticide you are using.
- Allow you unrestricted access to the above information.
- Train you in the safe handling of pesticides before you handle them in any way or work in areas where they have recently been applied..
- Have the following supplies located together within ¼ mile of all workers
 - 3 gallons of water per handler at the beginning of each work period for routine and emergency decontamination (this water should be separate from water used for mixing pesticides)
 - Plenty of soap and single-use towels (Note: hand sanitizers and wet towelettes are insufficient)
 - 1 pint of water per handler in portable containers immediately available to handlers for eye washing (if applying a pesticide that requires protective eyewear).
 - A clean coverall (or other clean change of clothes) for handlers
- Provide you with the personal protective equipment (PPE) necessary for the pesticide you are working with.

Your right to file a complaint



Say: You have the right to complain to your employer, OSHA or other government agencies about unsafe or unhealthful working conditions in the workplace or environmental problems.

You cannot be transferred, denied a raise, have your hours reduced, be fired, or punished in any other way for filing a complaint.

If you have been punished or discriminated against for using your rights, you must file a complaint with OSHA within 30 days.

You may file a complaint by telephone, mail or online.

OSHA's telephone number is 1-800-321-OSHA (6742)

The Medford OSHA office's telephone number is 1-541-776-6030

In your complaint you must provide information on how your employer retaliated against you because you reported unsafe or unhealthful working conditions.

Call the National Pesticide Information Center at **1.800.858.7378** with any pesticide questions. Hablan español.

REVIEW



Say: We started this training talking about what pesticides are and the different levels of toxicity.

Ask: Can you name two types of pesticides and what they kill?

Herbicides (kill weeds); Insecticides (kill insects); rodenticides (kill rodents); fungicides (kill fungi)

Ask: What are signal words? Can you name two?

Signal words tell you how likely the pesticide is to make you sick.
Danger-Poison; Danger; Warning; Caution

Ask: How do you know how dangerous the pesticide you are working with is?

Read the Label

Ask: What are some symptoms of pesticide poisoning?

Mild symptoms: Burning eyes, burning of itchy skin, sore throat.
Moderate symptoms: Excessive saliva/drool, blurry vision, shortness of breath
Severe symptoms: Pinpoint pupils, Trembling/lack of muscle control, violent convulsions or seizures, unconsciousness or death.

Ask: Name three ways you can be exposed to pesticides.

Spray mist/drift; walking through sprayed vegetation; splashing yourself when mixing pesticides; handling pesticide containers; touching other parts of your body without washing your hands; handling unwashed work clothes.

Ask: What are the 4 ways pesticides can enter your?

Ingestion; skin contact; inhalation; eye contact

Ask: What can you do to prevent exposure to pesticides?

Follow the instructions on the label; wear PPE; wash your hands before eating, drinking, smoking or going to the bathroom; stay out of posted areas.

Ask: How can you protect your family from exposure to pesticides?

Remove boots and work clothing before entering your home; wash or shower before physical contact with children or other family members; wash work clothes; do not bring pesticide containers or equipment into home; keep children out of posted areas.

Ask: What should you do if you are exposed to pesticides?

Remove PPE and contaminated clothing and rinse the pesticide from your skin or eyes immediately; wash/shampoo with soap and water as soon as possible; put on clean uncontaminated clothes; report to supervisor; get medical care immediately if you develop symptoms of pesticide poisoning; take a copy of the Material Data Safety Sheet to the doctor.

Ask: How many days do you have to file a complaint with OSHA if your employer retaliates against you for complaining about unsafe or unhealthy working conditions?