

14 Pesticides Are Poison

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Pesticides Are Poison



Pesticides are chemicals used to kill insects, rodents, and weeds that might harm our crops and health. But pesticides also poison and kill other living things, including helpful plants and insects, and animals and people. Pesticides can drift far from where they are used and pollute the soil, water, and air.

In this chapter we use the word **pesticides** to describe all chemicals used to control pests. They include:

- **Insecticides** used to kill insects.
- **Herbicides** used to kill weeds and unwanted plants.
- **Fungicides** used to control plant molds.
- **Rodenticides** used to kill rats, mice, and other rodents.

Farmers did not always use pesticides, and many farmers have great success farming without them. If you have a choice, it is safer for your health and the health of the land not to use pesticides. **Pesticides are never safe.** But for farm workers, plantation workers, and anyone who feels they must use pesticides, there are ways to reduce harm and to be as safe as possible.

Why are pesticides used?

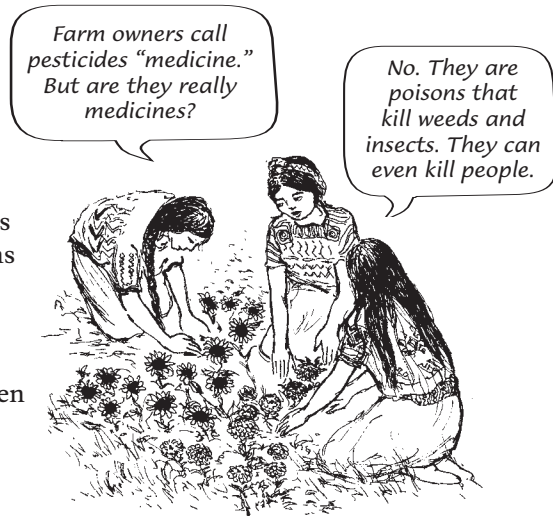
Pesticides are not healthy for the food, the farm, the farmer, the farm worker, or the environment. So why do people use them?

Pesticides are often used together with farm machines, giant irrigation systems, low-paid workers, and government **subsidies** to produce crops that can be sold cheaply. Pesticides can kill everything that might reduce crop yields or make the food look less attractive, so large farm corporations use them as part of a system to sell more food.

For family farmers to compete with large corporate farms, they often believe they too must use pesticides. When a struggling farmer needs to feed his family today, he may not think about what will happen to his own health or his family's health tomorrow. But this way of producing crops has high costs for people's health and the environment.

Over time, pesticides cause great harm. After years of spraying, pests may become **resistant** to chemicals (see page 273). Pesticides also kill many insects and birds that are not pests and that actually control crop pests. When this happens, pesticides no longer reduce crop loss from pests, crop yields go down, and family farmers are forced into poverty. Worse, pesticides kill thousands of people every year and make many more sick.

The companies that make pesticides say their products will help farmers "feed the world." But what these companies really want is to feed their profits without considering the long-term harm they cause. Pesticides are one part of an unjust and unhealthy system that makes a few people richer and makes everyone else sick.



There are many kinds of pesticides

There are many types and brands of pesticides, and they are called different names in different countries. Some pesticides may be banned in one country for being too dangerous, while still being sold in other countries.



Pesticides are made in different forms: powders for mixing with water and spraying, granules and dusts for dusting, liquids for spraying, coatings on seeds, pellets to kill rodents, and others. Mosquito coils and rat poisons are common for killing pests at home.

Pesticides are sold in different packages: cans, bottles, buckets, bags, and others. Pesticides are often put in other containers than the ones they originally came in. No matter what kind of pesticide it is, no matter what form it is in, no matter what kind of package it is in, **pesticides are poison!**



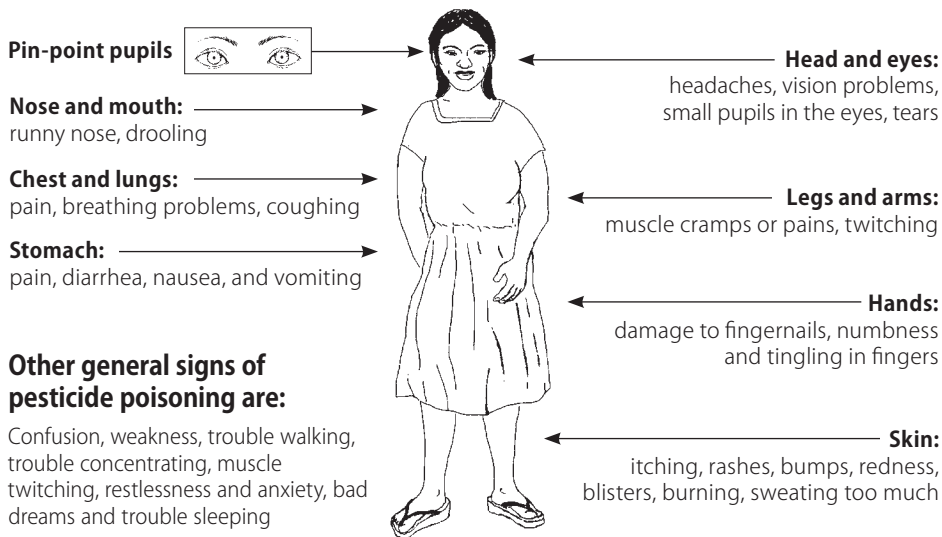
I understand that pesticides are poison. But I still need to go to work on the banana plantation. Sometimes I feel sick when I go home. How can I know if it is from the pesticides we use?

Pesticides Cause Many Health Problems

A person exposed to pesticides may have more than one sign of illness. Some signs show up at the time the person is exposed. Other signs do not show up until hours, days, or even years later. (For more on health effects of toxic chemicals, see Chapter 16.)

Many people are exposed to pesticides but may not know it. Laundry workers, garbage and recycling workers, and others who have direct contact with pesticides may be in just as much danger of poisoning as farm workers. They should be aware that there are pesticides in their environment, and they should follow the same precautions as farm workers.

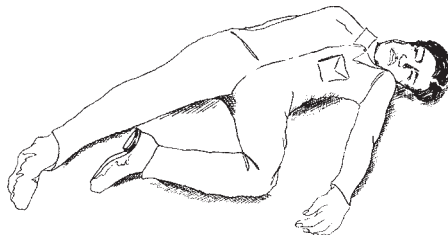
Signs of pesticide poisoning



If you have any of these problems while working with pesticides, leave the worksite immediately. Do not wait until you feel worse. Get away from the pesticides and **go to a hospital or clinic right away!**

Signs of severe poisoning:

Unconsciousness, loss of control over bladder and bowels, blue lips and fingernails, shaking



Severe pesticide poisoning can kill.

Children and Pesticide Poisoning

Pesticides are more dangerous to children than they are to adults. Because children are smaller and are still growing, they get sick from amounts of pesticides that may not hurt adults. Amounts of pesticides that will make adults sick may kill babies and children.

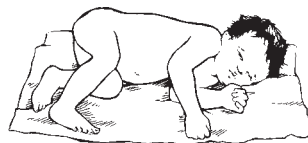


Signs of pesticide poisoning in children

Even small doses of pesticides can affect a child's ability to learn and grow, and may cause allergies and breathing problems that last his whole life.

Common signs of pesticide poisoning in children are:

- tiredness
- diarrhea
- pain in the stomach
- skin rashes
- coughing fits
- seizures ("fits") and shaking
- unconsciousness



Signs that may show up months or years after a child is exposed to chemicals include:

- allergies
- breathing problems
- difficulty learning
- slow growth
- cancer
- other health problems may be made worse

Pesticides can also cause birth defects (see page 324). For more on how toxic chemicals affect children, see page 322.

Protecting Children from Pesticides

Children should be kept away from pesticides. Children:

- should not play with, use, or even touch old pesticide containers.
- should not play on farm equipment that is used to spray pesticides.
- should not wade or swim in irrigation or drainage ditches.
- should not enter or play in recently treated fields.

Wait a moment until I change my clothes and wash, Olanike.



Adults can protect children from pesticides:

- wash work clothes, shoes and your hands before entering the house and before touching children.
- wash children's clothes apart from parents' clothes.
- wash fruits and vegetables very well before anyone eats them.
- avoid the use of pesticides at home, especially indoors.
- store pesticide containers and equipment out of children's reach.

A village struggles against pesticide poisoning

People in Padre Village in Kerala, India used to think they were cursed. Young people suffered from serious health problems such as **epilepsy**, brain damage, and cancer, and did not grow as they should. Many women were unable to give birth, and many babies were born with missing arms and legs. What could cause all this illness besides a curse?

Padre Village was famous for its rich cashew plantations. Years ago, the company that owns the cashew plantations began spraying a pesticide called endosulfan. After spraying began, villagers noticed that bees, frogs, and fish vanished from the area. Many people thought they were killed by endosulfan, but they could not prove it.



Shree Padre, a local farmer and journalist, saw his calves born with deformed limbs. Since endosulfan had been sprayed near his farm many times, he wondered if the birth defects were caused by the pesticide. Shree Padre spoke with a doctor who had noticed similar health problems in people. After writing to people all over India, they learned that almost all the problems they noticed were known to be caused by endosulfan.

Visits from other organizations confirmed what Shree Padre and the doctor had learned. Word spread that the ill health of the people was caused by endosulfan.

Villagers gathered at the plantation offices and demanded that the spraying be stopped. The plantation officials, the pesticide industry, and some local authorities denied that endosulfan caused the problems. The police were called in and protests were broken up.

Soon, the local press and television picked up the story. Before long, people across India and around the world learned about the health problems caused by endosulfan. The state government banned endosulfan in Kerala.

But the pesticide industry argued that endosulfan was safe. They paid doctors and scientists to say that the health problems had no connection to endosulfan. Soon, due to pressure from the pesticide industry, the ban was dropped. Plantations in Padre began spraying again.

Farmers, doctors, and villagers from the area demanded that the government study the problem. Finally, the government agreed with the people of Padre Village: endosulfan was a deadly poison. A law was passed to ban it once and for all in that part of India.

But endosulfan is still sprayed in other parts of India, and in other countries. Laws say it is poison in some places, while it is considered safe in others. Poisons like endosulfan are only banned when people work together to pressure industry and governments for change.

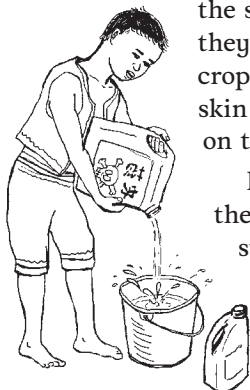


Treatment for Pesticide Poisoning

Like other toxic chemicals, pesticides can poison people in different ways: through the skin and eyes, through the mouth (by swallowing), or through the air (by breathing). Each kind of poisoning needs a different kind of treatment.

When pesticides get on the skin

Most pesticide poisonings are from pesticides being absorbed through the skin. This can happen when they spill while being moved, when they splash during mixing, during spraying, or when you touch crops that have just been sprayed. Pesticides can also get on your skin through your clothes, or when you wash clothes with pesticides on them.



Rashes and irritation are the first signs of poisoning through the skin. Because skin problems may be caused by other things, such as a reaction to plants, insect bites, infections, or allergies, it can be hard to know if the problem is caused by pesticides. Talk to other workers to find out if the crop you are working with causes this kind of reaction. If you work with pesticides and get any unexpected skin rashes, it is safest to treat them as if they are caused by pesticides.

Treatment

If you or someone else gets pesticides on the body:

- Quickly remove any clothing the pesticides spilled onto.
- Wash the pesticides off the skin as soon as possible with soap and cool water.
- If it got into the eye, rinse the eye with clean water for 15 minutes.



If the skin is burned from pesticides:

- Rinse well with cool water.
 - Do not remove anything stuck to the burn.
 - Do not apply lotions, fats, or butter.
 - Do not break blisters.
 - Do not remove loose skin.
 - Cover the area with a sterile dressing, if available.
- **If pain lasts, get medical help!** Bring the label from the pesticide containers or the names of the pesticides with you.

Pesticides can stick to your skin, hair, and clothes, even if you cannot see or smell them. Always wash with soap after using pesticides.

When pesticides are swallowed

People can swallow pesticides by eating, drinking, or smoking cigarettes in the fields while working with pesticides, or by drinking water polluted with pesticides. Children can drink or eat pesticides, especially if pesticides are stored in containers also used to hold food, or left in the open or low to the ground.



Eating foods sprayed with pesticides might make you sick later.

Treatment

When someone swallows pesticides:

- If the person is unconscious, lay her on her side and make sure she is breathing.
- If the person is not breathing, quickly do mouth-to-mouth breathing (rescue breathing, see page 557). Mouth-to-mouth breathing can also expose you to the pesticide, so cover your mouth with a pocket mask, a piece of cloth, or thick plastic wrap with a hole cut in the middle, before you start mouth-to-mouth breathing.
- Find the pesticide package and read the label right away. The label will tell you if you should make the person vomit up the poison or not.
- If the person can drink, give her lots of clean water.
- **Seek medical help.** If it is available, always take the pesticide label or name with you.

Do not vomit if the label says not to. Never vomit after swallowing a pesticide that contains gasoline, kerosene, xylene, or other petroleum-based liquids. This will make the problem worse. Never make the person vomit or drink if she is unconscious, confused, or shaking badly.

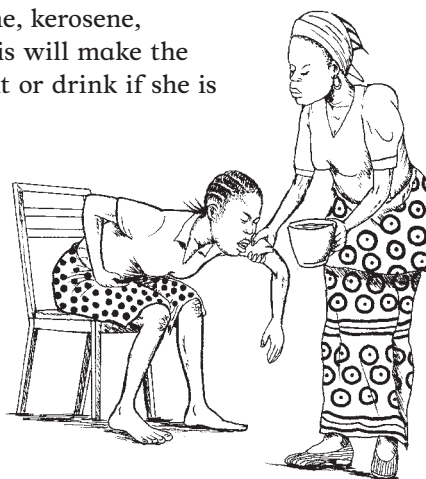
If you are sure vomiting is OK,

give the person:

- a glass of very salty water **or**
- 2 tablespoons of pounded strong-tasting edible plant (such as celery, basil, or another local herb) followed by 1 or 2 glasses of warm water

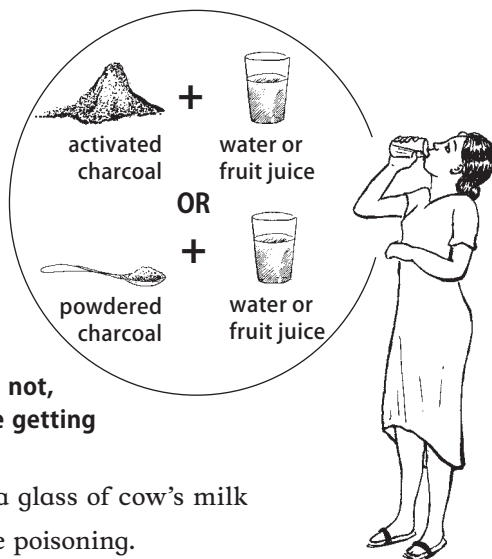
Keep the person moving around. This can help her vomit sooner.

After vomiting, activated or powdered charcoal (see next page) can help absorb any poison still in the stomach.



Mix 1/2 cup of **activated charcoal** or 1 tablespoon of finely **powdered charcoal** with warm water in a large glass or jar.

Make powdered charcoal from burnt wood, or even burnt bread or tortilla. This is not as good as activated charcoal, but it still works. NEVER use charcoal briquettes. They are poison!



After the person vomits, or even if she does not, you can slow the spread of the poison while getting to a doctor by giving her a drink of:

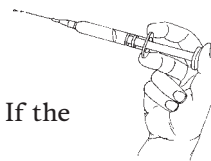
- 1 raw egg white, or • a glass of cow’s milk

Drinking milk does NOT prevent pesticide poisoning. It just slows the spread of the poison.

If someone swallowed pesticides and does not have sharp stomach pain, they can take **sorbitol** or **magnesium hydroxide** (Milk of Magnesia). These medicines cause diarrhea, which can help to get poisons out of the body.

When to use atropine

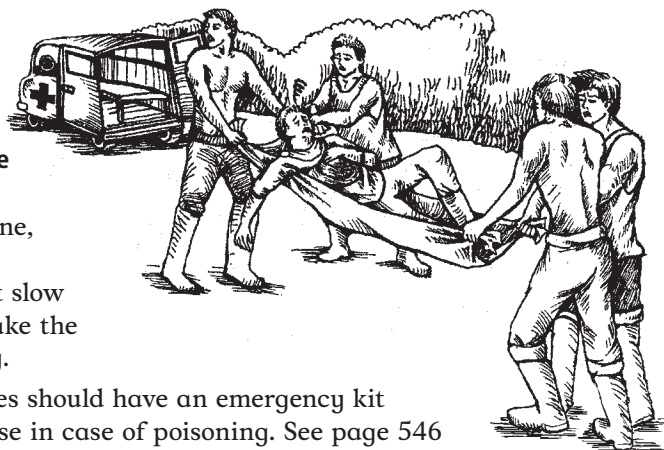
Atropine is a medicine for treating poisoning from certain pesticides called **organophosphates** and **carbamates**. If the label on the pesticide container says to use atropine, or if it says the pesticide is a “cholinesterase inhibitor,” use atropine as directed. If the label does not say to use atropine, do not use it.



Atropine is used only for organophosphate or carbamate poisoning.

Atropine does NOT prevent pesticide poisoning. It only delays the effects of poisoning. **Atropine should never be taken before spraying.**

IMPORTANT: Do NOT give these drugs for pesticide poisoning: Sleeping pills (sedatives), morphine, barbiturates, phenothiazines, aminophylline, or any drugs that slow or lessen breathing. They can make the person stop breathing completely.



Every farm that uses pesticides should have an emergency kit with medicines and supplies to use in case of poisoning. See page 546 for what to include in an emergency kit.

When pesticides are breathed in

When pesticides are released into the air, we breathe them in through our nose and mouth. Once in the lungs, the pesticides quickly enter the blood and spread poison through the whole body.

Because some pesticides have no smell, it is often hard to know if they are in the air. The most common forms of air-borne pesticides are fumigants, aerosols, foggers, smoke bombs, pest strips, sprays, and residues from spraying. You can also inhale pesticide dust in a storage area, when it is being used in an enclosed area, such as a greenhouse, or when it is being transported to the fields.

Pesticide dust in the air can travel miles to pollute an area far from where it was used. It is easy for pesticide dust to get into houses.

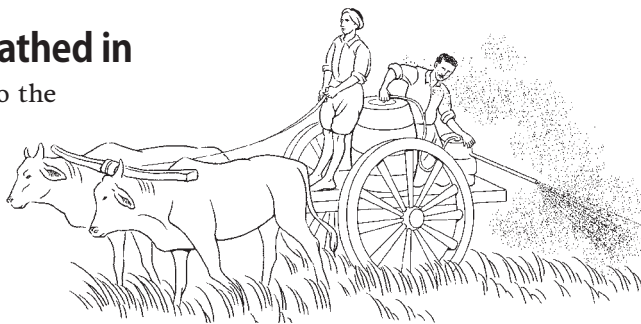
If you think you have breathed in pesticides, get away from the pesticides right away! Do not wait until you feel worse.

Treatment

If you or someone else breathes in pesticides:

- Get the person away from the area where she breathed in the poison, especially if it is an enclosed area.
- Get fresh air.
- Loosen clothing to make breathing easier.
- Sit with head and shoulders raised.
- If the person is unconscious, lay her on her side and watch her to make sure there is nothing blocking her breathing.
- If the person is not breathing, quickly do mouth-to-mouth breathing (see page 557).

Seek medical help. Take the pesticide label or name of the pesticide with you.



If you have doubt, get out!



Drawing for discussion: **How do pesticides enter the body?**



Questions for discussion:

- In what ways could this man be harmed by what he is doing?
- What can he do to protect himself?
- Who else may be affected by his actions?
- What are some reasons why he is not doing everything he can to protect himself?

Long-term Health Effects of Pesticides

Most pesticide poisoning comes from contact with pesticides over weeks, months, or years, not from using them only once. People may not get sick from pesticides until many years later. In adults, it can take 5, 10, 20, 30 years or more to get sick from regular exposure. How long it takes for illness to show up depends on many things (see page 321). In children, it usually takes less time. Illness from pesticides can start in a baby before the baby is born, while the mother is pregnant and in contact with pesticides.

When a person is exposed to pesticides over a long period of time, it is hard to know if his health problems are caused by pesticides. Long-term exposure may cause long-term harm, such as cancer, damage to the reproductive system, to the liver, brain, and other parts of the body.

Many long-term effects of pesticides are hard to see because people in farming areas are exposed to many different chemicals and because farm workers may move from place to place.

When people get cancer and other diseases, doctors and scientists may say the illness is due to chance, or to problems other than pesticides or contamination. They may tell us we cannot blame pesticides or other toxic chemicals. And sometimes people who sell pesticides or promote pesticide use will lie about it because they do not want to be responsible for other people's health problems. They can say this because it is often impossible to prove without a doubt that an illness which takes a long time to develop was caused by a particular pesticide or other toxic chemical.



Juan worked in the banana plantations...



...and 10 years later, he developed cancer.

Signs of long-term illness from pesticides

Pesticides and other toxics can cause many long-term (chronic) illnesses. Some signs of chronic illness are: weight loss, constant weakness, constant or bloody cough, wounds that do not heal, no feeling in the hands or feet, poor balance, loss of vision, very fast or very slow heartbeat, sudden mood changes, confusion, memory loss, and trouble concentrating.

If you have any of these signs, tell your doctor or health worker. Be sure to tell them all the ways you may have been in contact with pesticides and, if possible, which ones.

Some long-term health effects of pesticides



Damage to the lungs: People exposed to pesticides may get a cough that never goes away, or have a tight feeling in the chest. These can be signs of bronchitis, asthma, or other lung diseases. Damage done over time to the lungs may lead to lung cancer. If you have any signs of lung damage, do not smoke cigarettes! Smoking makes lung disease worse.

Cancer: People exposed to pesticides have a higher chance of getting cancer than other people. This does not mean you will get cancer if you work with pesticides. But it means that working with pesticides gives you a higher risk of getting the disease. (For information about cancer, see page 327.)

Hundreds of pesticides and pesticide ingredients are known or believed to cause cancer. Many more have not yet been studied. The most common cancers caused by pesticides are blood cancer (leukemia), non-Hodgkins lymphoma, and brain cancer.

Damage to the liver: The liver helps clean the blood and get rid of poisons. Because pesticides are very strong poisons, the liver sometimes cannot get rid of them. Severe liver damage can happen after a serious poisoning or after working with pesticides for many months or years.

Toxic hepatitis: It is a liver disease people get from being exposed to pesticides. Toxic hepatitis can cause nausea, vomiting and fever, yellowing of the skin, and can destroy your liver.

Damage to the nervous system: Pesticides damage the brain and the nerves. Long-term exposure to pesticides can cause loss of memory, anxiety, mood changes, and trouble concentrating.

Because alcohol can damage the liver...



...drinking alcohol makes pesticide poisoning worse.

Damage to the immune system: Some pesticides weaken the immune system, which protects the body from disease. When the immune system is weak from poor nutrition, pesticides, or from illnesses like HIV, it is easier to get allergies and infections and it is harder to heal from ordinary illnesses.

Reproductive health effects of pesticides

Pesticides have many of the same reproductive health effects as other toxic chemicals (see page 325). They can harm people's ability to have babies, or for babies to grow up healthy.

Chemicals can enter a woman's body and appear in her breast milk later. There are so many pesticides in use all over the world that even mothers who have never used pesticides have some toxic chemicals in their breast milk.



Breast is best!

Even if you think your breast milk may have pesticides in it, **the benefits of breastfeeding are stronger than any possible harm from pesticides in breast milk.** Breast milk is the best food to help a baby grow healthy and strong.

Some effects of pesticides on reproductive health are:



Sterility: Many male farm workers around the world have become unable to have children after they worked with certain pesticides because they can no longer make sperm.

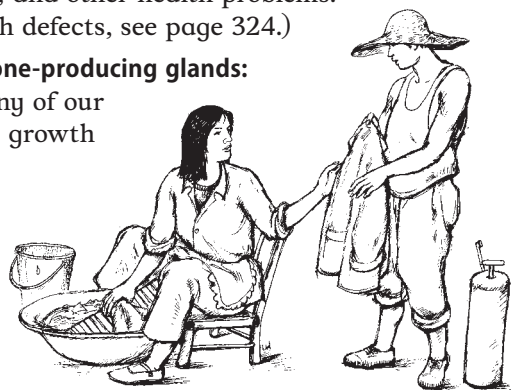
Birth defects: When a pregnant woman is exposed to pesticides, the baby inside her is also exposed and can be damaged. Being exposed to pesticides when pregnant does not always mean the baby will have birth defects. But the baby will have a higher risk of having birth defects, learning difficulties, allergies, and other health problems. (For more about birth defects, see page 324.)

Damage to hormone-producing glands:

Hormones control many of our body activities, such as growth and reproduction.

When pesticides damage the glands that produce hormones, this can cause problems with childbirth and reproduction.

Even if a woman is exposed to pesticides before she is pregnant, she can have a miscarriage or the baby may be born dead because of the exposure.

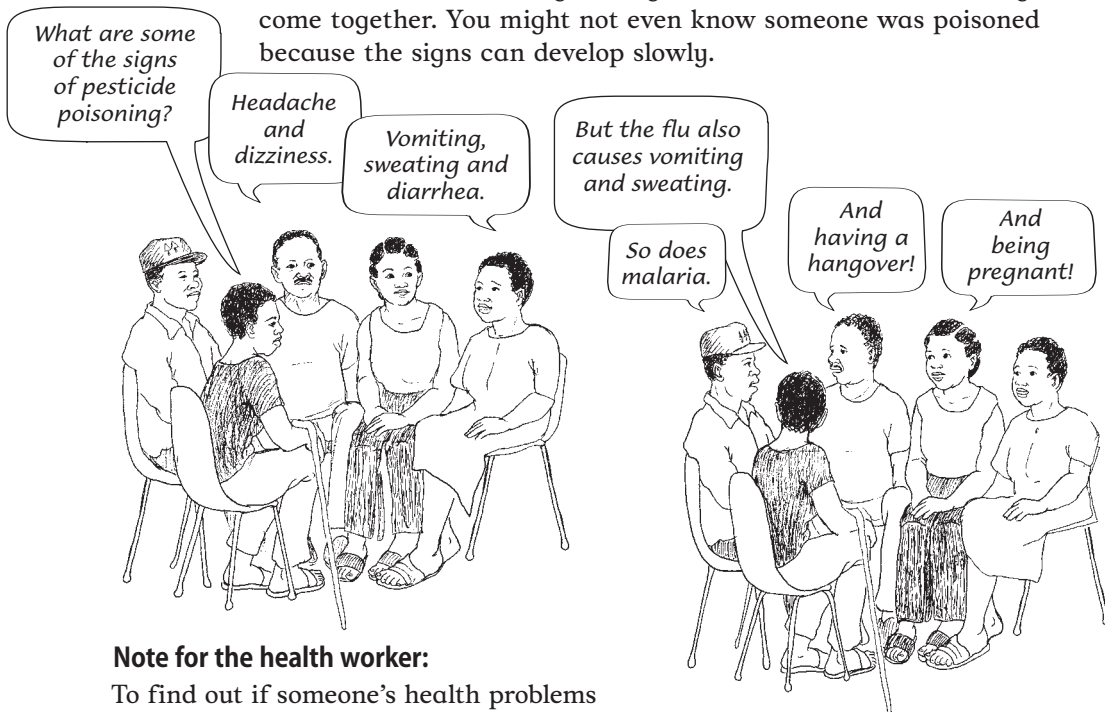


Pesticides on clothing can affect anyone who comes into contact with them.

Pesticide Poisoning Can Look Like Other Illnesses

There are many different signs of pesticide poisoning, and they are easily confused with the signs of flu, malaria, an allergic reaction, or lung diseases.

It is unusual to have only one sign. Most of the time several signs come together. You might not even know someone was poisoned because the signs can develop slowly.



Note for the health worker:

To find out if someone's health problems may be caused by pesticides, ask some simple questions, such as:

Do you work on a farm?
 Have you been in contact with pesticides lately?
 Has there been spraying in the fields near where you live?



How do you know if a health problem is caused by pesticides?

Sometimes you can find out if a sickness is from pesticides by talking to people who have the same sickness or work with the same pesticides. When people share the same signs of poisoning, and there are pesticides used nearby, there is a good chance they are all sick from the pesticides.

Doctors do not always have the answers

Carolina worked on a large strawberry farm. One day her stomach hurt and her eyes burned. She stopped working and went to talk to her boss. Her boss told her to go see the company doctor.

When she got to the doctor's office, he was not very friendly or helpful. Carolina thought pesticides might have made her sick, but she was too shy to say this to the doctor. The doctor did not ask her about her work or why she thought she was sick.



The doctor asked Carolina questions that made her feel like being sick was her fault: What did you eat today? Do you smoke cigarettes or drink a lot of alcohol? What did you do after work yesterday? Did you sleep enough?

In the end the doctor told her she was just lazy and only wanted a note to get out of work. He even said she might be sick from being drunk!

Finally the doctor gave her some pills for headaches. She was not sure the pills would help, but she took them anyway. As she went home, she wondered about going back to work the next day. She felt worse after seeing the doctor than she did before.

How could Carolina have gotten better care?

Perhaps if she brought the label of the pesticide she worked with and told the doctor it was what made her sick, he would have considered pesticide poisoning as a cause for her illness.

But even if she had done this, it might not have helped. The doctor worked for the company that owned the strawberry farm. Often company doctors will not admit that pesticides make farm workers sick. Pesticide illness can be difficult and expensive to treat. The company may prefer to hire new workers rather than treat their sick workers.

Perhaps Carolina could have gone to another doctor. But this would have been expensive, and she would have to take more time off from work. And most doctors do not know much about pesticides.

This is a very difficult problem for Carolina, and for all farm workers. The best way for farm workers like Carolina to take care of their health is to work together to change the conditions that make them sick in the first place.

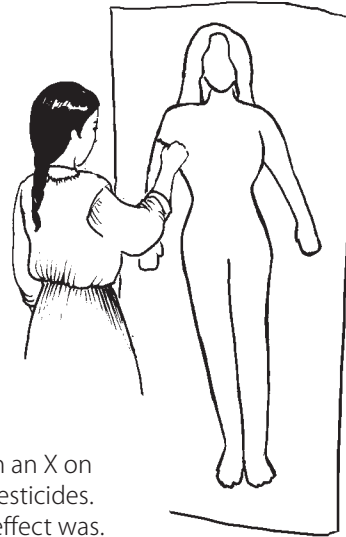
Body mapping

This activity can help people share their experiences of how pesticides affect them. By drawing an outline of a body and marking where they have been affected by pesticides (a body map), people can begin to discuss common dangers they face in their work. This is a drawing activity and a group discussion.

Time: 1 to 2 hours

Materials: Large drawing paper, pens or pencils, tacks or tape

- 1 **Make a large drawing of a person's body.** Use sheets of paper that are as large as a person, or several smaller sheets taped together. Have a person lie down on the paper while another person traces her outline. Next, tape or tack the drawing to the wall so that everyone can see it. If you want you can make 2 drawings, 1 for the front of the body and 1 for the back of the body.



- 2 **Show which parts of our bodies have been affected by pesticides.** Each person in the group marks the paper with an X on a part of the body where he or she has been affected by pesticides. If the group is small, each person can say what the health effect was. For example, was it stomach pain, skin rashes, dizziness? He or she might also say what caused the health problem. Was it a spill, a mixing accident, drift, just normal work, or something else?

If the group is large, it may be easier for someone to guide the discussion of health effects after everyone makes their marks. The activity leader can point to each mark and ask what effect the mark represents. The important thing is that everyone includes their own experience of being affected by pesticides on the body map.

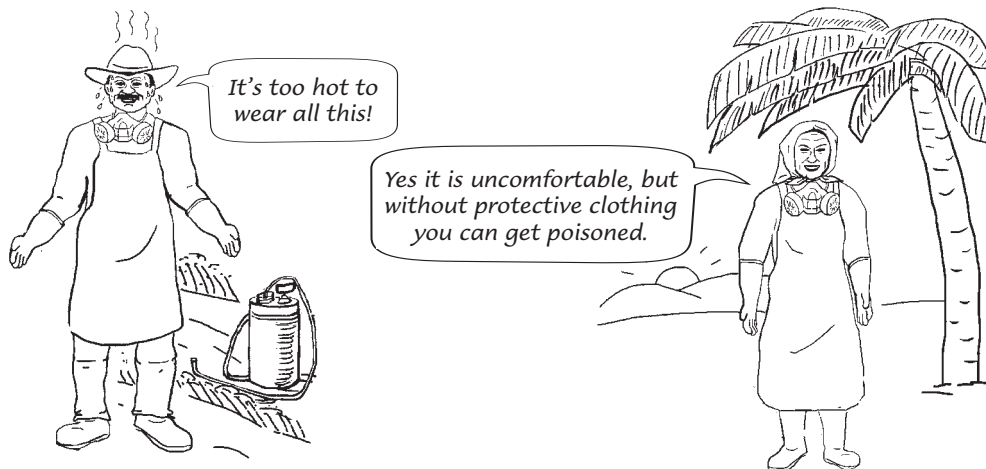
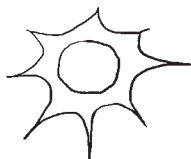
- 3 **Ask questions to help people talk about pesticides.** It can be helpful for another person to take notes on a large sheet of paper that everyone can see. The talk may be most focused if at first it is limited to 3 main questions, such as: What effects have people felt from pesticides? What activities or kinds of exposure have caused the effects? What pesticides have caused the effects?

The body map shows where people feel the harmful effects of pesticides. The discussion and the notes are a good way to record how many people suffer from the same problems with pesticides and what exposures are most common. Further discussion can cover ways to prevent more exposures.

How to Reduce Harm from Pesticide Use

If you work with pesticides, use them with great care. Whether you are a farmer or a laborer, be responsible for your own well-being, the well-being of other people, and the environment. To protect yourself and those around you:

- Control pests without pesticides (see Chapters 15 and 17).
- Do not work alone with pesticides.
- Use the pesticide only on the crop it is meant for.
- Use the smallest amount you can. More is not always better.
- Do not mix different pesticides together.
- Keep pesticides off your body and off other people.
- Keep pesticides away from water sources.
- Do not use pesticides when it is windy, raining, or about to rain.
- Make sure your clothing covers you completely.
- Try not to wipe your eyes, face, and neck when you handle pesticides.
- Wash your hands before eating, drinking, or touching your face.
- Keep your fingernails and toenails short so pesticides cannot collect under them.
- Use protective clothing and equipment.
- Do not enter sprayed fields until it is safe to do so (see page 269).
- Wash well after using pesticides.



Protective clothing may be uncomfortable, but it can save your life.

To make wearing protective clothing more comfortable, spray early in the morning or late in the afternoon when the sun is not so hot. Rest in the shade and drink a lot of clean water to prevent heat sickness. For more on protective clothing and equipment, see Appendix A. To prevent or treat heat sickness, see *Where There Is No Doctor* or another medical book.

When you work in the fields

Make sure your equipment works properly

Check equipment for safety before you use it. Make sure pesticide applicators are not damaged and will not leak on you. Do not wear a cracked or broken backpack sprayer or ripped or cracked gloves. If you have a respirator, use it and change the filters every day. Breathing any pesticide without a respirator can affect your health.



Most farmers and farm workers cannot get good protective equipment. This is one reason why using pesticides is not safe.



Respirators and gloves are made for men. They do not fit women's bodies or young people. Women use pesticides as much as men, so protective equipment should protect them too. If it does not fit, it does not protect.

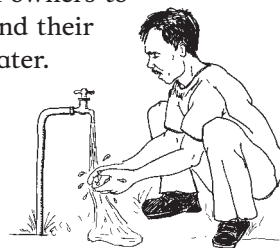
Farm owners must provide washing facilities

If farm laborers use pesticides, it is the responsibility of farm owners to make sure there are places for workers to wash themselves and their clothing and equipment, as well as enough soap and clean water.

Wash yourself well and often

Wash your hands with water and soap before eating, smoking, drinking, chewing gum or tobacco, touching your eyes, nose, or mouth, and before going to the toilet.

After working, first clean under your fingernails and toenails. Then wash your whole body with soap and cool water.



Wash your clothes with care after working with pesticides

Washing work clothes is one of the most important things you can do to prevent pesticide poisoning. When work clothes are put back on without being washed, the skin is exposed to pesticides.

After work, change clothing and put work clothes in a plastic bag to protect the person who has to wash them (even if it is you).



Use clean water and soap, and wear gloves to protect your hands. Do not wash pesticide-covered clothes in rivers. **Never bathe or wash anything in irrigation or drainage ditches.** Try not to touch the clothes without gloves, and wash your hands afterward. Throw dirty water back onto fields, away from drinking water sources.

Wash small amounts of clothes at a time and repeat until the pesticide stain or smell goes away. Also wash boots, gloves, and hats in soap and water.

Always wash work clothes apart from regular and family clothes.

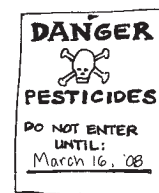
Dry clothes away from where pesticides are sprayed. Do not dry clothes outside when pesticides are being sprayed nearby or from airplanes.

Before washing other clothes in the washing basin, clean it with fresh water and detergent.

Store work clothes separately from other clothing.

Do not enter a field right after spraying

Wait until sprays have dried and dusts have settled before entering a field. Find out what pesticides have been used and do not enter the field until it is safe. See the pesticide label to find out how soon after spraying it is safe to enter a field (see page 276).



Storing pesticides

Pesticides must be stored in a safe, dry place. Pesticides are often left in storage for a long time, causing their containers to leak. Finding dead cats, birds, and other animals around buildings where pesticides are stored is often the first sign that chemicals have begun to seep into the ground and water.

Keep pesticides in their proper containers

Do not put pesticides in animal feed sacks, drink bottles, or water buckets. Make sure pesticide containers are tightly closed and stored upright. Check them regularly for breaks, leaks, and weak spots.

Label pesticide containers



If you buy small amounts of pesticides and put them in other containers, label the containers with the name of the pesticide and a picture that means “danger,” for example a skull and crossbones. Do not use those containers for anything else.

Store pesticides out of the reach of children, in a locked cabinet or container, away from food or feed.

Transport pesticides carefully

When you transport or move pesticides, put them in the back of the truck or in the car trunk. Tie the containers down securely so they cannot move or fall over. Do not carry pesticides in your food basket or on your head. Do not let children buy or carry pesticides.

Get rid of empty pesticide containers safely

Never use pesticide containers for drinking, washing, storing food, or anything else. Do not use plastic pesticide wraps for raincoats or any other personal use. The best thing to do with empty pesticide containers is to make holes in them so no one will reuse them, and then bury them.



Never use pesticide containers to carry water for drinking or washing.

When you mix and load pesticides

Wear protective clothing

When you mix pesticides and load them into applicators, wear eye protection, rubber gloves, and an apron, as well as the other protective clothing you would normally wear (see Appendix A).

IMPORTANT: Never mix pesticides with your hands.

Be careful

Open bags of pesticides with a sharp knife or scissors so pesticide dust will not spill out. Label the knife or scissors, wash them, and keep them for pesticide use only.

If you add water to pesticides, **never put a water hose directly into a pesticide mixture.** Keep the hose clean in case people use it for drinking or washing.

Follow the directions for measurements. Use the amount directed on the label. **Never mix, load, or clean equipment near waterways or drinking water sources!**

Keep pesticides out of your mouth

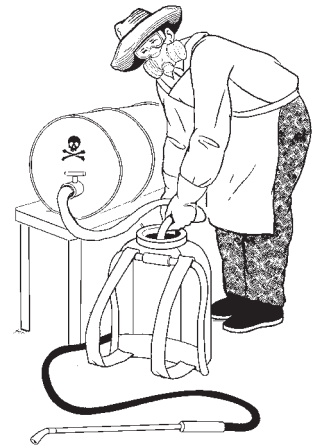
To clear out a clogged nozzle, blow through a drinking straw and then mark the end that touches the nozzle so you do not put that end in your mouth if you use it again. To draw pesticides out of an applicator, or to transfer pesticides or fuels from one container to another, never start a siphon with your mouth. And always be careful not to breathe in the poison.

Do not touch or taste pesticides or pesticide-coated seeds. Do not eat anything from the fields until you wash it carefully.

Do not smoke, drink, or eat while mixing or applying pesticides. Leave food, gum, and tobacco in sealed containers in areas that have not been treated with pesticides. Tobacco and food absorb pesticides, so do not carry them while working.

If you spill pesticides

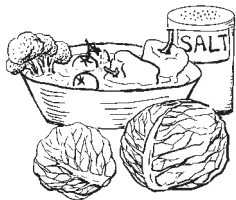
Before you clean up a pesticide spill, protect yourself, the people nearby, and water sources. If there are people more prepared than you to clean up a spill (trained to do this work), call them for help. Always wear protective clothing to clean up spills. (For information on cleaning up pesticides or other spilled chemicals, see Appendix A.)



Pesticides on Food

Fruits and vegetables grown using pesticides usually still have pesticides on them when we buy them. Meat, milk, and eggs are often contaminated with pesticides used in animal dips and sprays, or if livestock eat feed or grass that contains pesticides and other chemicals.

When people eat or drink small amounts of pesticides on their food day after day, poisons collect in their bodies over time. These small amounts can add up and cause long-term health problems.



Do not eat the outer leaves of leafy greens like cabbage and lettuce, because these parts collect the most pesticides.

To clean off most of the pesticides, wash fruits and vegetables in soapy water (do not use detergents), in salt water (5 spoonfuls of salt to 1 liter of water), or in water with baking soda (2 teaspoons of baking soda in 1 liter of water), then rinse in fresh water.

Food grown without pesticides is much safer and healthier, both for the people who eat it and the people who grow it. Unfortunately, in many places it costs more and can be hard to get. (For information on how to grow food without toxic chemicals, see Chapter 15.)



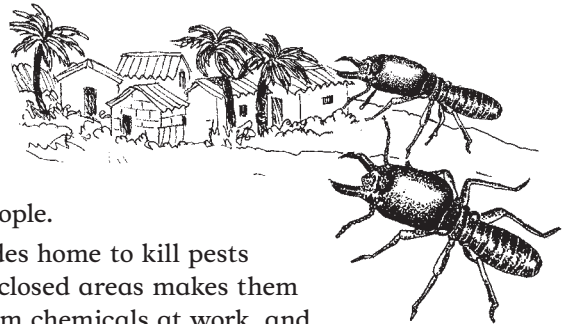
Foods that have waxy skins, like cucumbers and apples, should be peeled before eating.

Pest Control at Home

People everywhere use poisons in their homes to kill mosquitoes, ants, flies, cockroaches, termites, fleas, rats, and other pests. But many of the poisons used on these creatures can also harm people.

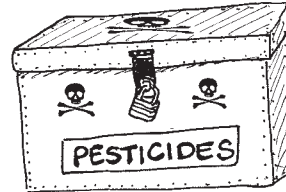
Farm workers often bring field pesticides home to kill pests around the house. But using pesticides in closed areas makes them much more harmful. It is best to leave farm chemicals at work, and to use other methods to control pests at home.

There are many ways to control pests without chemicals. These ways are safer and less costly than pesticides and may work just as well. (For other ways to keep chemicals out of your home, see Chapter 17.)



If you use pesticides at home:

- Read the label and follow the directions.
- Do not use pesticides in closed areas. Open windows and doors.
- Use pesticides only for the pests they are meant to kill.
- Keep pesticides away from children.
- Never spray pesticides on a mattress or sleep on a sprayed mattress.
- Do not spray near dishes or eating utensils.
- Never put pesticides in unmarked containers.
- Get rid of unwanted pesticides safely.



Pesticides Harm the Environment

Pesticides not only poison people and pests. They also harm other parts of the environment.

Pesticides poison animals when they eat, drink, and breathe them, just as pesticides poison people. The pesticides collect in their bodies and when larger animals eat smaller ones, the stored amount of poison gets larger too.

One day on the cotton farm I sprayed some termites with endosulfan. Later a frog ate the dying termites.



An owl swooped down on the frog and then sat in a tree to enjoy its meal. Ten minutes later, the owl fell down and died.

Pesticides poison the soil when they kill the insects, worms, fungi, and bacteria which create nutrients that keep soil alive and fertile.

Pesticides poison water when they run off into streams. They kill fish and harm animals and people that drink the water.

Pesticides poison air when they drift in the wind. Pesticides can travel many miles from where they were used.

Resistance to pesticides

There are always a few pests that do not die when they are sprayed because they are stronger or have chemicals in their bodies that block the pesticide. They give birth to other pests that have the same strengths and are not harmed by pesticides. This is called pesticide resistance. More and more pests are born with resistance, and that leads to a whole population of resistant pests that can no longer be killed with the same chemicals.

Pesticide companies then create new or stronger pesticides to kill resistant pests. Farmers buy the new chemicals, spending more money each season. Each year the environment is poisoned with more chemicals, more pests become resistant, and the pesticide companies make more profit.

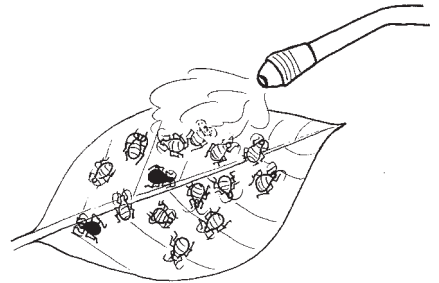
While pesticides may reduce crop losses from pests for a few seasons, in the long run they poison people, animals, the ground, and the water. The only long-term benefit goes to the chemical companies that make and sell them.

Pesticides kill helpful insects

Not all insects are pests. Many insects are helpful to farmers. Bees pollinate plants and make honey. Ladybugs attack insects that damage crops. There are more helpful insects than there are “pests.” But pesticides usually kill both the “good” insects and the “bad” insects.

For example, when a field is sprayed to kill aphids, the poison also kills the spiders and ladybugs that eat aphids. Without spiders and ladybugs to control them, more aphids come back.

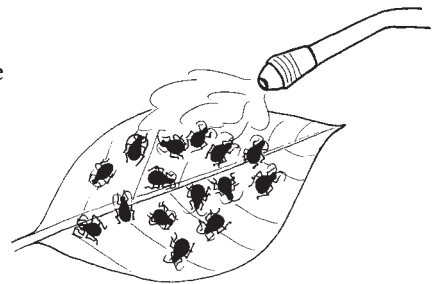
How pests become resistant to pesticides



The pesticide kills most pests, but some survive because they are resistant.



The pests that survive give birth to more resistant pests.



Soon, all the pests are resistant, and pesticides no longer work.

Pesticide Education

If everyone stopped using pesticides tomorrow, we could end the epidemic of pesticide poisonings and begin to restore our land, air, and water to health. Educating ourselves and our communities about the harm pesticides cause, and learning how to grow food without chemicals, can help make this happen. A first step might be to bring people together in your village, town, or neighborhood to talk about their experience with pesticides.

Once people are gathered, decide what things are most important to your community. Is it personal health? Is it water pollution from pesticides? Is it the cost of pesticides? After there is some understanding of the problems, the next step will be to decide on a goal or goals. Maybe people will want to organize pesticide safety trainings, or learn how to farm without pesticides.



Farmers organize to stay independent

A group of farmers in Bangladesh started a program to talk about the pesticides they used and who they bought them from. Their goals were to use pesticides safely and to save money on their farms.

They found out their local bank was working with the large agribusiness corporation Monsanto. The bank and the company had made an agreement that loans could be used only to buy products from Monsanto. This forced farmers to use pesticides and seeds made by Monsanto, and did not allow them to take out loans to buy other things, such as farm animals or organic seeds.

When these farmers found out about the partnership between Monsanto and the bank, they began to organize and speak to many other farmers.

The farmers protested at the bank and refused to take out new loans. After many protests, the bank stopped working with Monsanto.



Drawing pesticide solutions

Time: 2 to 3 hours

Materials: drawing paper, colored pens or pencils, tacks or tape

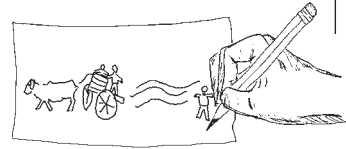
If people already know that pesticides are harmful, this activity can help them think of solutions. It is helpful to have a person lead the activity.

1 Talk about pesticide problems

Discuss the common ways people in the community come into contact with pesticides.

2 Draw pesticide problems

Each person draws a picture of 1 way people are exposed to pesticides. These pictures are then taped or tacked to a wall. The group then looks at the drawings and decides on the 3 to 5 most common problems. Next, the group begins to talk about what might cause these problems. What makes these exposures to pesticides so common? Why are they so difficult to prevent?



3 Draw solutions

In groups, people discuss possible solutions and draw pictures of their ideas. For example, if the problem is exposure from leaking backpack sprayers, short-term solutions include fixing the leaks and wearing protective clothing. Long-term solutions might include buying new equipment or changing to organic farming. A group might draw any or all of these solutions. Often a solution will solve more than one problem.

Tape or tack the solution drawings to another wall.

4 Talk about solutions

Talk about the different solutions people drew. Which solutions can be achieved soon? Which solutions will take longer to achieve? The drawings can be rearranged so the most practical short-term solutions are at the top. Have people talk about how to achieve these solutions and work toward the longer term solutions too. Discuss what the group can do to make these solutions happen.



How to read and understand pesticide labels


An important part of pesticide education is helping people understand pesticide labels. All workers have the right to know what chemicals they are exposed to, what the risks are, and what protection they need. Pesticide packages are supposed to have labels so that people know how to use them safely and correctly. These labels tell what poison is being used, how to mix and measure it, how to treat poisoning, how toxic the pesticide is, and how long to wait after using it before entering fields.

Many pesticide labels are hard to read. They may use language that is hard to understand. Or they may not be printed in your local language. Since most field-workers do not even know what pesticides they are using, labels often do little to promote the safe use of pesticides.

Here is an example of a pesticide label. Other labels may look different, but they should have the same kinds of information. Remember, even if you follow the instructions perfectly, pesticides can still harm you and your environment.

Active ingredients are the chemicals that kill the pests.

This shows how poisonous the pesticide is. Words you may see here include:

DANGER, POISON - these are the most poisonous pesticides. This picture:  near the word **Warning, Poison,** or **Danger,** means even a small amount is deadly.

WARNING - very poisonous.

CAUTION - these are the least poisonous pesticides, but they can still cause serious health problems!

This tells what kind of protection you need when you use this pesticide.

This tells what to do in case of poisoning. This is important because it will say whether or not to make the person vomit.

NO PEST
ABC ChemCorp
INSECTICIDE


Reg. No. M7485

ACTIVE INGREDIENTS
deltathion (1,2 phospho-(5)-4 chloromethane) 50%

INERT INGREDIENTS 50%

TOTAL..... 100%

KEEP OUT OF REACH OF CHILDREN

DANGER  **POISON**

PELIGRO

PRECAUTIONARY STATEMENTS
Wear long-sleeved clothing, full length trousers, eye protection, and protective gloves when handling. Wash hands and face before eating or using tobacco. Bathe at the end of work day, washing entire body and hair with soap and water. Change clothing daily. Wash contaminated clothing thoroughly before reusing.

STATEMENT OF PRACTICAL TREATMENT
Hazards to Humans and Domestic Animals
If Swallowed: Do not induce vomiting. Contains aromatic petroleum solvent. Call a physician or poison control center immediately. **If in Eyes:** Flush with plenty of water for at least 15 minutes. Get medical attention. **If on Skin:** Wash with plenty of soap and water. Get medical attention if irritation persists. **If Inhaled:** Remove to fresh air immediately. Get medical attention.

Why are pesticide labels so hard to understand?

Would you buy it if the label said, "this is poison! Use it wrong and it will kill you!"?



This means that only people with training should buy or use this pesticide. But agricultural supply stores will sell them to anyone with money.

RESTRICTED USE PESTICIDE

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

NOTE TO PHYSICIANS:

"No Pest" is a cholinesterase inhibitor. Treat symptomatically. If exposed, plasma and red blood cell cholinesterase tests may indicate significance of exposure (baseline data are useful). Atropine only by injection, is the preferable antidote.

ENVIRONMENTAL HAZARDS

This product is extremely toxic to fish and wildlife. Do not apply directly to water or wetlands (swamps, bogs, marshes, and potholes). Do not contaminate water by cleaning of equipment or disposal of wastes.

REENTRY STATEMENTS

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours. Written or oral warnings must be given to workers who are expected to go in a treated area.

DIRECTIONS FOR USE

Use specified dosage of NO PEST according to crop type described on table. Add 1/2 the amount of water indicated on table to the spray tank and begin agitation. Add the required amount of NO PEST to the spray mix. Add the remainder of the water and continue agitation until all solution has been applied.

STORAGE AND DISPOSAL

Store in original container only. Keep container tightly closed and upright. Avoid exposure to extreme temperatures. In case of spill or leakage, soak up with absorbent material such as sand, sawdust, earth, etc. Dispose of with chemical waste.

For container disposal, triple rinse and add rinsate to spray tank, then puncture and dispose of according to local authorities.

Information for a doctor about signs of poisoning and treatment. This is why the pesticide label should **always** be taken along when seeing a doctor.

If the label mentions **atropine**, this is another sign it is a very dangerous pesticide.

The **REI or Restricted Entry Interval** is the amount of time that must pass after the pesticide is applied before people can safely enter the field. This time is usually between 4 hours and 3 days.

How to mix, load, apply, store, and dispose of this pesticide.

Color Coding:

In many places, pesticide packages have different colors to show how poisonous they are. These color codes are different in different parts of the world. Learn the color codes in your area.

