

1. Basics on Pesticides

Topic 1e

Hazards of Pesticides

FACT SHEET

1. Basics on Pesticides

Topic 1e: Hazards of Pesticides

Pesticides are safe if used strictly according to the label by experienced persons who know how to take the necessary precautions. The precautions will match the level of hazard. If the pesticide is very toxic, more precautions will need to be taken than with a pesticide low in toxicity. The golden rule is to treat all pesticides with great care and precaution, because they can cause great harm to people and the environment.

Pesticides and the human body

The human body is first in line when an accident or improper use of pesticides occurs.

Pesticides can enter the body through three major routes:

- Dermal: through the skin (skin and eyes).
- Oral: through the mouth.
- Respiratory: through breathing (inhalation).

The following dangers can occur to the human body:

Route into body	Reasons for contamination	Prevention
Dermal	<ul style="list-style-type: none"> • Not wearing proper protection. • Applying pesticides in windy conditions. • Accidents while mixing pesticides. • Not washing hands after working with pesticides. • Wearing contaminated clothes. 	<ul style="list-style-type: none"> • Read the label. • Wear proper protective clothing. • Be a responsible operator when applying pesticides. • Always wash hands after handling a pesticide. • Start each day with clean clothes and protective equipment.
Oral	<ul style="list-style-type: none"> • Keeping pesticides in bottles for beverages and food. • Eating, drinking, or smoking while working with pesticides. • No mouth protection when working with pesticides. 	<ul style="list-style-type: none"> • Read the label. • Do not reuse empty containers. • Never eat, drink, or smoke while handling pesticides; first wash properly. • Always wear protective clothing when working with pesticides.
Respiratory	<ul style="list-style-type: none"> • Not wearing proper protection. • Working carelessly with powder pesticide formulations. 	<ul style="list-style-type: none"> • Read the label. • Always wear protective clothing when working with pesticides.

	<ul style="list-style-type: none"> Working with volatile chemicals in enclosed areas. 	<ul style="list-style-type: none"> Work with volatile chemicals in a well-ventilated area and use the right protection.
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The consequences for contamination of each part of the body are described in detail in topic 26a on why wearing protective equipment is important.

Pesticides and the environment

Everything around us makes up the environment, including animals. Certain areas of the environment are more vulnerable to pesticide contamination than others:

- Wells, ponds, lakes, rivers and underground water.
- Cultivated land with crops.
- Uncultivated land that supports wild plants and animals.

The following dangers can occur to the environment:

Area	Reasons for contamination	Consequences of contamination	Prevention
Water sources	<ul style="list-style-type: none"> Improper disposal of empty containers. Careless disposal of leftover pesticide mixes. Spills and leaking containers. Application of spray drift. 	Polluted water that can: <ul style="list-style-type: none"> Make humans and animals sick after drinking or using it. Harm fish or plants in the water or at the waterside. 	<ul style="list-style-type: none"> Read the label. Dispose of empty containers and leftovers away from all water sources. Attend to spills and accidents quickly. Never apply pesticides in strong winds.
Cultivated lands with crops	<ul style="list-style-type: none"> Mixing pesticides stronger than indicated on the label. Overapplying pesticides to the target area. 	<ul style="list-style-type: none"> Damage or destroy crops. 	<ul style="list-style-type: none"> Read the label. Mix and apply pesticides strictly as indicated on the label.
Uncultivated land that supports wild plants and animals	<ul style="list-style-type: none"> Improper disposal of empty containers. Careless disposal of leftover pesticide mixes. Spills and leaking containers. Application of spray drift. 	<ul style="list-style-type: none"> Damage plants. Make animals sick. 	<ul style="list-style-type: none"> Read the label. Dispose of empty containers and leftovers away from all water sources. Attend to spills and accidents quickly. Never apply pesticides in strong winds.



INSTRUCTIONS

1. Basics on Pesticides

Topic 1e: Hazards of Pesticides

Materials needed:

- Flip-sheet board with flip-sheets
- Markers (1 black, 1 blue, 1 green, 1 red)

Time needed: 30 minutes

Preparations: Flip-sheet with the heading *Hazards of pesticides*

Note: There is no need to go into too much detail. Most points will be discussed in detail in other sessions. The main objective of this session is to introduce participants to the risks.

Set up

- Attention:** Tell participants that pesticides can be very useful but also extremely dangerous.
- Title:** Tell participants the title while showing the flip-sheet with the title: *Hazards of Pesticides*.
- Credibility:** Explain your experience in responsible use of pesticides.
- Objectives:** To explain the different types of hazards that pesticides cause to humans and the environment.
- Benefits:** Knowing the different types of hazards caused by pesticides will help you explain to your farmer customers the dangers and the proper precautions.
- Direction:** During this session, we will focus on the types of hazards caused by pesticides. We will not discuss protective equipment or first aid in case of poisoning by pesticides.

Delivery

Explanation, Demonstration, Exercise, and Guidance:

1. Tell participants that pesticides are safe if used strictly according to the label by experienced persons who know how to take the necessary precautions. On the other hand, pesticides can cause **great harm and damage** to human beings and the environment if handled carelessly and without taking precautions.
2. Tell participants that we will start with **humans**. Ask if someone knows how pesticides can enter the body. They can enter through three routes: **dermal** (skin and eyes), **oral** (mouth), and **respiratory** (breathing).
3. Ask participants **how** this can happen. This can happen if people do not wear protective equipment; wear contaminated equipment; apply pesticides in windy conditions; have accidents while mixing; do not wash themselves after applying; reuse empty containers; eat or drink during application; work in enclosed areas; etc. Write all answers on a flip-sheet in key words.
4. Ask participants how to **avoid contamination**. We can prevent contamination by reading the label; wearing protective equipment; washing after use; washing protective equipment after use; being a responsible user; not reusing empty containers; never eating, drinking, or smoking when handling pesticides; etc. Write all answers on a flip-sheet in key words.
5. Tell participants that in another session we will discuss in detail the **consequences** of human contamination and how we can protect ourselves with protective equipment.
6. Continue with the environment. Tell participants that we will focus on water sources, cultivated land with crops, and uncultivated land with plants and animals. Ask participants how water, crops, and plants and animals can become contaminated. This can happen because of improper disposal of empty containers; careless disposal of leftover pesticide mixes; spills and leaking containers; application of spray drift; etc. Write all answers on a flip-sheet in key words.
7. Ask what the **consequences** are. They can be water pollution; damaging or destroying crops; damaging plants; making humans, fish, and animals sick; etc. Write all answers on a flip-sheet in key words.
8. Ask how to **avoid contamination** of the environment. We can prevent contamination by reading the label, triple rinsing, and disposing of empty containers; attending to spills and leakages; mixing and applying pesticides strictly as indicated on the label; disposing of empty containers and leftovers away from all water sources; etc. Write all answers on a flip-sheet in key words.

Finish

- Summary:** Give a summary by telling the participants that, if handled incorrectly, pesticides can enter the body through the skin, orally, or by inhalation. Pesticides can also damage crops, water sources, and nature if not handled with care.
- Questions:** Ask if anyone has a question or comment.
- Evaluation:** Ask them how pesticides can enter the body. Ask them how pesticides can damage the environment. Ask them what we can do to prevent damage to the environment by pesticides.
- Next step:** In this session, we learned about the types of hazard caused by pesticides. In other sessions, we will discuss the consequences of contamination for people, protective equipment, and first aid.

Distribute the **fact-sheet** to all participants.