

Understanding Pesticide Labels

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Introduction

Research has shown that consumers find reading and understanding the label to be the most difficult aspect of applying pesticides safely. However, an understanding of the label information is essential before work begins. The label printed on or attached to a container of pesticide tells how to use it correctly and warns of any environmental or health safety measures to take.

What's on a Label?

The **brand name** is used on the front of the label to identify the manufacturer's product. **Type of formulation** identifies the way the pesticide in that container is mixed for application, usually in one of the following forms:

- Emulsifiable concentrate: an oil-based liquid which you mix with water, then spray on affected plant.
- Flowable or liquid: a liquid which you mix with water, then spray.
- Soluble powder a powder which you dissolve in water, then spray.
- Granules: no mixing required, apply dry.
- Dust: no mixing required, apply dry.
- Solution: ready-to-use liquid; often in a spray bottle.
- Aerosol: ready-to-use spray, in a spray can.

Ingredient statement lists the names and amounts of the active ingredients and the amount of inert ingredients. Comparing the cost per unit of active

ingredient on different brands and formulations can save money, but don't buy more than you need just to reduce cost-per-unit; you may end up creating serious disposal problems.

The active ingredient in a pesticide has a complex **chemical name** derived from its chemical composition; it may have a common name which makes it easier to identify. One pesticide may be sold under different brand names, but the same chemical name will be on all of the product labels.

Net contents indicates the amount in the container.

The law also requires the maker or distributor of a product to print the name and address of the company on the label, along with an **establishment number** telling which factory made the chemical. An **EPA registration number** shows that the product has been registered with the Environmental Protection Agency for the uses listed on the label.

The **signal word and symbol** on the label tell how toxic a product is. Signal words to look for are **danger** along with the word **poison** and the **skull and crossbones symbol** (highly toxic), **warning** (moderately toxic), and **caution** (slightly toxic).

If the product is harmful to swallow or inhale or can damage eyes or skin, the label contains **emergency first aid measures** and states exposure conditions requiring medical attention.

The pesticide label is the most important information you can take to the physician when someone has been poisoned. Without the label, it may be difficult for the physician to help.

The label tells how to avoid **damage to the environment**. Some examples: "This product is highly toxic to bees exposed to direct treatment or residues on crops." "Do not contaminate water when cleaning equipment or when disposing of wastes." "Do not apply where runoff is likely to occur."

Physical and chemical hazards are listed and include specific fire, explosion, and chemical hazards that the product may have.

The **directions for use** include the pests the product controls; the crops, animals, or other items the product can be used on legally; how the product should be applied; how much to use; and where and when the product should be applied. This is often the most difficult part of the label to follow and, therefore, needs special attention.

Application to harvest specifies the amount of time that must pass from the time of application until it is safe to pick and use a food crop. Expressed as "days to harvest," this is the time required for the residue to drop to safe levels. It is often listed as a number in parentheses following the crop name. A residue cannot be washed off.

The **misuse statement** is a reminder that it is a violation of Federal law to use a product in a manner inconsistent with its labeling.

Storage and disposal directions must be followed for environmental and human safety.

Understanding the Label Helps Reduce Environmental Problems

Home gardeners often use more pesticides per square foot in their gardens than farmers do in the fields. Overapplication of a pesticide is a serious mistake and a misuse of the product. Misuse of

pesticides has a number of adverse effects. It can cause health hazards, such as making food less safe to eat, especially if there are residues at harvest time. It can also make handling the plants more dangerous; each time a pesticide is sprayed, the gardener is exposed to the dangers of inhalation or absorption of the toxin. Misuse can cause various environment problems as well - beneficial insects, earthworms, birds, and even pets may be harmed or killed along with the pests. Some pesticides used near water may contaminate the water supply. Continuous use of certain pesticides may induce resistance in the pests they are designed to control, thus requiring the gardener to switch to more toxic substances. Some pesticides do not break down easily and can remain in the environment for years.

Read the label when you purchase a pesticide, and again before mixing or applying it. If you are confused about any part of the label, consult your Extension agent or a representative of the product manufacturer. Many pesticides now list a toll-free number for consumers. The label includes specific information that you should be aware of and learn to understand.

Read the label; it's the law. The registration and use of pesticides are regulated by the United States Environmental Protection Agency and the Virginia Department of Agriculture and Consumer Services. Under the amended Federal Insecticide, Fungicide, and Rodenticide Act (Federal Environmental Control Act of 1972), it is illegal to use a pesticide on a crop unless the crop is listed on the label. It is also illegal to exceed the given rate of application on the label.

For more information on selection, planting, cultural practices, and environmental quality, contact your local Virginia Cooperative Extension office.

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