

Understanding the Label Helps Reduce Environmental Problems

Home gardeners often use more pesticides per square foot in their gardens than farmers do in their 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 you spray a pesticide, you are 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. 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.



For more information on selection, planting, cultural practices, and environmental quality, contact your local Virginia Cooperative Extension office. If you want to learn more about horticulture through training and volunteer work, ask your Extension agent about becoming an Extension Master Gardener. For monthly gardening information, subscribe to *The Virginia Gardener Newsletter* by sending your name and address and a check for \$5.00 made out to "Treasurer, Virginia Tech" to The Virginia Gardener, Department of Horticulture (0349), Virginia Tech, Blacksburg, VA 24061. Horticultural information is also now available on the Internet by connecting with Virginia Cooperative Extension's website at <http://www.ext.vt.edu>.

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This publication was revised by Joyce Latimer, Extension specialist, Horticulture. Virginia Tech Pesticide Programs (www.vtpp.org) contributed to the content of this publication.



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. It is illegal to use a pesticide on a crop or site unless it is listed on the label. It is also illegal to exceed the labeled rate of application or the number of applications per season.

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Understanding Pesticide Labels



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Understanding Pesticide Labels

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

What's on a Label?

The **brand name** on the front of the label identifies 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 that you mix with water, then spray on an affected plant

wettable powder or dry flowable/water-dispersable granule: a powder that you suspend in water, then spray

granule or pellet: no mixing required, apply dry

dust: no mixing required, apply dry

solution: ready-to-use liquid, often in a spray bottle

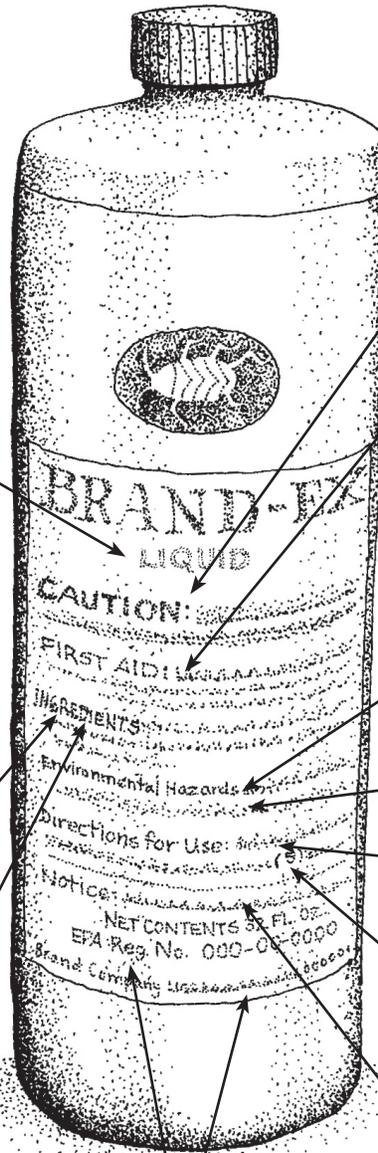
aerosol: ready-to-use spray, in a spray can

The **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. However, do not buy more than you need just to reduce the 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 also has 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** on the label tells how toxic a product is. Signal words to look for are **danger** (highly toxic), **warning** (moderately toxic), and **caution** (slightly toxic).

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." "Do not contaminate water when cleaning equipment." "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 cause.

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.

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.