



No. 27: Understanding Pesticides

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DEFINITION

A pesticide is any substance that is used to control pests by killing them, interfering with their reproduction, or other means; *by definition, pesticides are toxic*. The following are all types of pesticides:

- Antifoulants* control fouling organisms on boat hulls.
- Avicides* control birds.
- Defoliants* cause leaves to drop from a plant.
- Desiccants* promote drying or loss of moisture in plant tissues.
- Disinfectants* control bacteria, molds, and mildew.
- Fungicides* control fungi, molds, and mildews.
- Growth regulators* are substances other than fertilizers or food that alter the growth or development of a plant or animal.
- Herbicides* control weeds or unwanted plants.
- Insecticides* control insects and related arthropods such as mites and ticks.
- Molluscicides* control snails and slugs.
- Rodenticides* control rats, mice, and other rodents.

Wood preservatives control insects and fungi that damage wood.

Remember that each category above includes multiple products, each with specific targets.

REGULATION OF PESTICIDES

The Environmental Protection Agency (EPA) is responsible for regulation of pesticides in the U.S. No pesticide may be sold in the U.S. before the EPA has reviewed the manufacturer's application for registration and determined that use of the product will not present an unreasonable risk to humans or the environment. A pesticide that passes EPA's scrutiny will be registered for use on specific crops or sites, with specific directions for how the product is to be used. The presence of an EPA registration number on the product's label indicates that the product has been reviewed by the Agency; any product claiming to kill or control pests that does not bear an EPA registration number is illegal in the U.S. and should not be used.

BENEFITS

When used properly, pesticides can benefit humans and the environment. Pesticides control important crop pests, allowing us to have a plentiful and diverse food supply. They prevent diseases of humans and animals. They control pests that infest our homes, schools, hospitals, food warehouses, and other buildings.

RISKS

Pesticides are designed to be toxic to the pests they control, but they may also pose risks to humans and wildlife. Risk is a factor of both toxicity and exposure. Therefore, pest control involves more than simply identifying a pest and using a control tactic. The treatment site, whether an indoor or outdoor area, usually contains other living organisms, including people, which could be affected by the pest control measures you choose. Both pesticides and non-chemical means of control can impact the system. Unless you consider the possible effects on the entire system within which the pest exists, your pest control efforts could cause harm or lead to new pest problems.

RESPONSIBLE USE

When considering using a pesticide, the first step is to determine the cause of the problem you want to treat. Deciding what pesticide to select or whether another method would be more appropriate depends on correct identification of the problem and correct selection of the appropriate products or methods.

To avoid unwanted effects, non-target organisms, air flow, water, soils, structures, objects, and surfaces should be considered when deciding on an application.

Potential risk can be minimized by choosing alternative measures when feasible; using pesticides sparingly; wearing the proper protective gear (as indicated on the label); and applying, storing, and disposing of pesticides properly.

The EPA evaluates pesticides to determine that they should not cause undue harm when used as directed on the label. Therefore, it is extremely important that pesticides be used only in strict accordance with the label. A pesticide should never be used on a crop, plant, or site for which it is not labeled, and should never be applied more frequently or at a different rate than the label allows.

FURTHER INFORMATION ON PESTICIDES

To find out more about pesticides, visit the Pesticide Education and Assessment Program (PEAP) page at pesticide.umd.edu. [*Pesticide Information Leaflet No. 36: Pesticide Usage and Exposure Patterns*](#) provides a more detailed overview of pesticide use.

You can also contact the University of Maryland Home and Garden Information Center at **1-800-342-2507 (1-410-531-1757** from outside MD) or www.hgic.umd.edu or your county Extension at extension.umd.edu/locations.