



## Before You Buy or Apply an Herbicide . . .

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**H**erbicides are useful tools to supplement other methods to prevent or control weed infestation in lawns, landscapes, crops, and gardens. Before you buy an herbicide, read its label and be sure that it is the right product for the use you plan. To decide if that is the case, consider the following questions.

**What weed do you want to control?** Some herbicides control many kinds of weeds, others control only a few. Some control primarily broadleaf weeds, others control grasses. The weeds an herbicide will control are listed on the label. You should know the name of the weed you want to control—if you don't, try to have it identified\*.

**At what stage of weed growth should you apply the herbicide?** An herbicide may affect

- only the seeds of weeds, before they sprout
- only newly sprouted seedlings with just a few leaves
- older, actively growing weeds.

Check the label for this information.

**Where are the weeds growing?** It is illegal to use an herbicide to treat weeds in a crop or site if it is not named on the herbicide's label. Applications in or near streams or water bodies are often specifically restricted. Look for the crop name or key words such as "ornamentals" or "lawn grasses." Improperly used, herbicides may result in injury to plants other than the weeds to be controlled.

**At what stage of crop growth will you apply the herbicide?** Some herbicides work properly only if you apply them to the bare soil before planting. Other herbicides are applied after planting but at a particular stage of crop growth; for example, before the crop has a specific number of leaves. The proper timing of the application is stated in the instructions on the herbicide label. To use a herbicide in a manner inconsistent with the label instructions is illegal and can harm the crop.

**Do you have the application equipment to apply the herbicide safely and properly?** Some herbicides work

best and are less hazardous when applied with specialized equipment such as a granule spreader or a sprayer. Tillage equipment (or irrigation) may be needed to mix (or wash) pre-emergence herbicides into the soil surface soon after application; otherwise, they may break down in sunlight, or evaporate.

**Do you have the protective gear to safely handle and apply the herbicide without overexposing yourself to the product?** Find this information on the label too. If you don't have the protective gear specified by the label, you should buy it, and then wear it.

**What is a reasonable amount of the product to buy?**

Avoid buying too much of any pesticide. Over time, a pesticide container may deteriorate and leak, or the label may become illegible or fall off. If you buy a large container of the product and manage to use only a small portion, you might have both a human-exposure problem and a hazardous-waste disposal problem. Estimate how much herbicide you will use in a reasonable period, and buy the appropriate size. To make your estimate, use three bits of information:

- the dosage or dilution specified for your crop or site (look for this on the label)
- the area (ft<sup>2</sup> or acres) of the site that you will treat
- how many times a year you will treat the area (some product labels limit the number of treatments to a crop or a site over a period of time).

*Example:* An herbicide label specifies a dose of 1 quart per acre; you have 3 acres of crop, and you plan to make 2 applications per year. You would use 6 quarts (1½ gallon) of herbicide product per year. If you bought a 5-gallon container, it would be around for about 3 years.

*Caution:* Pesticide use is governed by state and federal regulations. Read the label to ensure that the intended use is included on it, and follow all label directions.

*See page 2 (over) for guidelines on safe pesticide use.*

\*Contact your local CTAHR Cooperative Extension Service office for assistance.

## Safe Pesticide Use

Here are some general guidelines for working with agricultural chemicals:

- Identify the pest to be controlled and read the entire pesticide label before purchasing to be *sure* that you can legally use it for the intended purpose.
- Follow all label instructions when applying the pesticide. Obey all warnings on the label. The label may also include statements of hazards to humans and animals, and first-aid instructions.
- Purchase the smallest amount of product that you will need, thus avoiding problems with storage and disposal of excess material.
- If you have pesticide left over, package and store it in a covered container where children, pets, and persons unfamiliar with pesticides cannot reach it. Never store pesticides near food or food preparation equipment, such as a barbecue, or in offices, resting or eating rooms, or toilet areas.
- Do not mix or apply pesticides around children or pets.
- When measuring or mixing pesticides, do it outside or in a well ventilated area.
- Do not smoke while working with pesticides.
- Do not apply pesticides during very hot weather or when it is windy.
- Always wear the protective clothing and equipment specified on the pesticide label. If none is specified, it is generally advisable to wear clothing that covers any part of the body that the pesticide might contact. Destroy any clothing heavily contaminated by a spill or leak of pesticide.
- Wash up with soap and water after handling a pesticide. Wash clothing worn to apply pesticides separately from other laundry.

The easiest and most environmentally friendly way to dispose of a pesticide in Hawaii is to *use it up* according to label directions; this minimizes environmental impacts. Plan ahead, and don't buy more product than you need.

### In addition to the above, the following guidelines may be useful for commercial producers:

To be sure that you can legally use it for the purpose you intend, read the entire label *before* you purchase a pesticide or open its container. Check the label for answers to any of the following that apply to you:

- Must the pesticide storage be locked and limited to people who understand the hazards of pesticides?
- Are only "certified" pesticide applicators allowed to make or supervise treatments?
- How many feet must be between the treatment area and a school, water source, or other "sensitive" area?
- At what stage of the crop's or animal's production cycle is treatment allowed?
- How many treatments are allowed?
- How many days after treatment must pass before harvesting, grazing, slaughtering, or selling milk?
- What special tools or equipment must a pesticide handler use to make a treatment?
- What special personal safety equipment must a pesticide handler wear during a treatment or for clean-

ing up afterwards?

- What is the maximum dosage allowed per pot, or animal, or acre?
- What is the "strongest" spray mixture allowed (dilution minimum)?

If the pesticide's label has "Agricultural Use Requirements" statements (in a box) and the pesticide will be used to treat plants for sale, the grower should also ask:

- Can employees be kept out of a field being treated and safely away from spray drift?
- How hours after treatment must pass before allowing an employee to enter a treated field?
- Must a treated area be posted with "Danger—Pesticides—Keep Out" signs? Must employees be verbally warned about entering a treated area?
- Has basic pesticide safety education been provided to field workers and pesticide handlers?
- Are written records of pesticide use being kept?