LABELS AND LABELING

Important Terms

active ingredient
brand name
Caution
chemical name
common name
Danger
establishment number
inert ingredient
Keep Out of Reach of Children
label
labeling
net contents
nontoxic
personal protective equipment
reentry
registration number
Restricted Use Pesticide
signal word
Warning

INTRODUCTION

Each time you buy a herbicide, you also receive instructions to tell you how to use it. The time you invest in reading the label is probably the most valuable time you can spend in weed control. This small investment of time will help you avoid injuring yourself or the environment by misusing the herbicide. The label is not only the primary source of information to the user, it is also the primary tool of herbicide regulation. The label will tell you how to use the product safely and correctly.

Labeling is all the information that you receive from the company or its agent about the product. Labeling includes such things as the label on the product, brochures, flyers, and other information provided by the manufacturer. It must not differ in meaning from the information furnished to the Environmental Protection Agency (EPA) when the product was registered.

The **label** is the information printed on or attached to the herbicide container (Figure _____). This label does many things:

-To the manufacturer, the label is a "license to sell."
-To the state or federal government, the label is a way to control the distribution, storage, sale, use and disposal of the product.
-To the dealer and user, the label indicates whether the herbicide is registered for restricted or general use, and whether certification is required to purchase or use it.
-To the buyer or user, the label is a source of facts on how to use the product correctly and legally.
-To the physician, the label is a source of information on proper treatment of poisoning cases.

Labels change! Reading the label each time you select and use a product allows you to recognize changes and achieve effective control while protecting yourself, others, and the environment.

LABEL TERMINOLOGY

Many terms are used on the label to describe when and how to use herbicides properly. Your understanding of these terms will help you get the best results from herbicides.

When To Use

Terms that tell you when to use the herbicide product include:

-Preplant -- used before the crop is planted

-Preemergence -- used before crop or weeds emerge. May refer to use after crops emerge or are established, but before weeds emerge.

-Postemergence -- used after the crop or weeds have emerged.

How To Use

Terms that tell you how to apply the herbicide product include:

-Band -- application to a strip over or along a crop row

-Basal -- application to stems or trunks at or just above the ground line

-Broadcast -- uniform application to an entire specific area

-Directed -- aiming the herbicide at a portion of a plant

-Drench -- saturating the soil with a herbicide

-Foliar -- application to the leaves of plants

-Soil application -- application to the soil rather than to vegetation

-Spot treatment -- application to a small area

WHAT IS ON THE LABEL?

Federal law requires every pesticide product to have a label that clearly shows the brand name, name and address of the registrant, net contents, product registration number, establishment number, ingredient statement, warning or precautionary statements, use classification, signal word, and use directions. Although EPA establishes standards for location and content of certain label information, manufacturers control much of the design and layout. Information contained on most labels can be divided into four major categories: product information, safety information, environmental information, and use information. Some labels are easier to

understand than others. Knowing where to look on labels for specific kinds of information makes for a better understanding of the correct use of herbicides.

Product Information

Brand, Trade or Product Name

A **brand name** is the name used by a manufacturer to identify a herbicide as its product. It is the most identifiable name for the product. Brand names are usually capitalized. Example: Karmex IWC.

A brand name is usually not used in the ingredient statement, but appears plainly on the front panel of the label. An applicator must beware of choosing a herbicide product by brand name alone. Many companies use the same basic name with only minor variations to designate entirely different herbicide products.

Type of Formulation

Different types of herbicide formulations (such as liquids, wettable powders, and granules) require different methods of handling. The label will usually tell you what type of formulation the package contains. The herbicide may be available in more than one formulation.

Type of Pesticide

The type of pesticide usually is listed on the front panel of the label. This short statement usually indicates in general terms what the product will control. Examples:

-insecticide for control of certain insects on fruits, nuts, and ornamentals
-soil fungicide
-herbicide for the control of trees, brush, and weeds
-algaecide

Ingredient Statement

Every herbicide label must list what is in the product. The list is written so that you can see quickly what the active ingredients are and the amount of each. The active ingredients are the portions of the formulation that actually controls the target plants. The amount of each active ingredient is given as a percentage by weight.

Chemical Name. The **chemical name** is the scientific name for an active ingredient. Example: 3-(3,4-dichloropheny)-1,1-dimethylurea.

Common Name. Because herbicides have complex chemical names, many are given a shorter **common name**. Only common names that are officially accepted by the Environmental Protection Agency may be used to identify an active ingredient on the herbicide label. The official common name may be followed by the chemical name in the list of active ingredients. Common names are usually not capitalized. Example: diuron.

When an accepted common name is available, it may be used with the chemical name in the active ingredient section on the label. By purchasing herbicides by the common or chemical names, you will always be certain of getting the right active ingredient.

Inert Ingredient. Inert ingredients allow active ingredients to be formulated into different products. As part of the formulation, they determine a product's handling properties and influence toxicity, and methods of application. There are no pest control claims for inert ingredients. Inert ingredients are not listed individually but the total amount will be indicated as a percentage by weight. The amounts of active and inert ingredients will total 100 percent.

Net Contents

The **net content** statement tells how much is in the container. This can be expressed as pounds or ounces for dry formulations and as fluid ounces, pints, quarts, and gallons for liquids. Liquid formulations usually list the pounds of active ingredient per gallon of product. Net content is always stated in terms of the largest suitable units, such as "1 pound" rather than "16 ounces."

Manufacturer

The law requires the manufacturer or distributor of a product to put the name and address of the company on the label so you will know who made or sold the product.

Registration Number

An EPA **registration number** (for example, EPA Reg. No. 3120-280-AA) appears on all herbicide labels. This indicates that the federal government has approved the herbicide label. In cases of special local needs, herbicide products may be approved by a state. These registrations are designated, for example, as EPA SLN No. KS-770009. In this case, SLN indicates "special local need" and KS means that the product is registered for use in Kansas.

Establishment Number

The **establishment number** (for example, EPA Est. No. 5l840-AZ-1) appears on either the herbicide label or container. It identifies the facility that produced the product. If there is a problem with the package or product ,, the facility that made the product can be traced.

Lot Number

All herbicide containers will also have a Lot Number printed on the outside. This identifies the specific batch as it progressed through the manufacturing process. It is the most useful number for tracing problems regarding the product.

Classification Statement

Every herbicide product that has been listed by the EPA as **Restricted Use Pesticide** must carry this statement in a prominent place at the top of the front panel of the herbicide label. Some states may “restrict” a product in certain concentrations, or the uses of a certain product. You should be familiar with a particular State’s requirements and applicator certification requirements.

RESTRICTED USE PESTICIDE

For retail sale to and use only by certified applicators or persons under their direct supervision and only for those uses covered by the certified applicator's certification.

Use Information

The instructions on how to use the herbicide are an important part of the label for you. This section if often the largest part of the label. This is the best way you can find out the right way to apply the product. The use instructions will tell you:

-the weeds that the manufacturer claims the product will control,

-the sites of application,
-the proper equipment to be used,
-how much to use,
-mixing directions,
-compatibility with other often-used products,
-phytotoxicity and other possible injury or staining problems,
-where the material should be applied, and
-when it should be applied.

Labels for herbicides often list the least number of days that must pass between the application and harvest of crops, or slaughter, or grazing of livestock. These are intervals set by EPA to allow time for the herbicide to break down in the environment. These intervals reduce the possibility residues on food, feed, or animal products and possibility of injuring grazing animals. This information may appear as a chart or it may be listed just after application directions.

Reentry Statement

The **reentry** statement tells you how much time must pass before people can reenter a treated area without appropriate protective clothing. These reentry intervals are set by both EPA and some states. The reentry statement may be printed in a box under the heading "Reentry" or it may be in a section such as "Important," "Note," or "General Information." Generally reentry statements are used in conjunction with “Agricultural” activities. If no reentry statement appears on the label, the usual waiting period is at least until the spray has dried before reentering or allowing others to reenter a treated area without protective clothing.

The minimum protective clothing for early reentry following right-of-way treatments is listed on the product label and usually includes:

-long-sleeved shirt,
-long-legged trousers or coveralls,
-hat, and
-sturdy shoes with socks.

Gloves and eye protection may also be listed.

Storage and Disposal

All herbicide labels contain general instructions for the appropriate storage and disposal of the herbicide and its container. State and local laws vary considerably, so specific instructions usually are not included. Typical statements include:

-Not for use or storage in or around the home.
-Store away from fertilizers, insecticides, fungicides, and seeds.
-Store at temperatures above 32^{O} F (0^{O} C).
-Do not re-use container.
-Do not contaminate water, food, or feed by storage and disposal.
-Open dumping is prohibited.
-Triple rinse and offer this container for recycling or reconditioning, or dispose in an approved landfill or bury in a safe place.
-Use excess product or properly dispose in an approved landfill.
-Do not re-use bag. Burn or dispose in an approved landfill. (Most states have clean air laws that prohibit open burning as a disposal method.

One or more of these statements may appear on a herbicide label. You should try to determine the best storage and disposal procedures for your operation and location. These statements usually appear in a special section of the label titled "Storage and Disposal" or under "General Instructions."

Misuse Statement

This section will remind you that it is a violation of Federal law to use a product in a manner inconsistent with its labeling. Do not use a product on a site not listed on the label. Do not use it at more than the recommended rate. By following the label directions, you will get the best results the product can give.

Safety Information

Child Hazard Warning

All pesticide labels must bear the statement ”**KEEP OUT OF REACH OF CHILDREN**”.

Signal Words

To be effective, herbicides must control the target pest. By their nature, herbicides are toxic to the target plants. Some may also be hazardous to people. You get an idea of the toxicity of a product by reading the **signal word** and looking at the symbol on the label. Every product label must have a signal word. There are three general categories of herbicides based on toxicity. These are only categories, however, and there is a range of toxicity in each group. The signal words are set by law and must appear prominently on the front of the pesticide container. They provide a one-word summary of the product's potential toxicity to humans. The three signal words, in decreasing order of toxicity, are **DANGER** (highly toxic), **WARNING** (moderately toxic), and **CAUTION** (slightly toxic or relatively nontoxic).

A product's signal word is assigned on the basis of laboratory tests conducted on that particular product. Data are compiled from animal studies on exposure through ingestion, inhalation, and dermal (skin and eye) absorption. The route of exposure that shows the highest human toxicity potential determines the signal word assigned to the label. For example, if laboratory test results indicate that Product XYZ is moderately toxic if ingested, highly toxic if inhaled, and slightly toxic if absorbed through the skin or eyes, the signal word would be DANGER based on inhalation studies.

Hazards to Humans and Domestic Animals

All herbicide labels contain additional statements to help you protect yourself, your helpers, and other persons (or domestic animals) that may be exposed. Some statements indicate which route or routes of entry (mouth, skin, and lungs) you must particularly protect. Many herbicide products are hazardous by more than one route, so study these statements carefully. A DANGER signal word followed by "May be fatal if absorbed through skin or inhaled" gives you a far different warning than "Danger, Corrosive -- Causes eye damage and severe skin burns."

Typical statements sometimes found on a DANGER label include:

-Harmful if swallowed.
-May be fatal if absorbed through skin.
-Poisonous if inhaled.
-Corrosive - causes irreversible eye damage and severe skin burns.

Typical statements sometimes found on a WARNING label include:

-Harmful if swallowed or absorbed through skin.

-Causes skin and eye irritation.

-Avoid breathing dust or spray mist.

Typical statements sometimes found on a CAUTION label include:

-Harmful if swallowed.

-May irritate eyes, nose, throat, and skin.

-Avoid contact with eyes and skin.

Personal Protective Equipment (PPE) Statements

You cannot change the toxicity of a product, but by following warning statements on the label and wearing **personal protective equipment** listed on the label you can minimize your exposure. Herbicide labels vary in the type of protective clothing and equipment statements they contain. You are required to wear the protective clothing or equipment specified on the label. However, the lack of any statement or the mention of only certain equipment does not rule out the need for additional protection. Minimal protective equipment usually includes a long-sleeved shirt, long-legged trousers or coveralls, work boots, gloves, and eye protection (safety glasses, goggles or face shield). You may consider wearing rubberized or waterproof clothing if you will be wet by an overhead spray application.

Statement of Practical Treatment

These statements tell you the first aid treatments recommended in case of exposure or poisoning. Typical statements include:

-In case of contact with skin, wash immediately with plenty of soap and water.

-In case of contact with eyes, flush with water for 15 minutes and get medical attention.

-In case of inhalation exposure, move from contaminated area and get medical attention.

-If swallowed, drink large quantities of milk, egg white, or water -- do not induce vomiting.

-If swallowed, induce vomiting.

All DANGER labels and some WARNING and CAUTION labels contain a note to physicians describing the appropriate medical procedures for poisoning emergencies and may identify an antidote. Some labels have emergency telephone numbers listed for the physician to contact in case medical emergencies.

Other Precautionary Statements

Labels often list other precautions to take while handling the product. These are self-explanatory:

-Do not contaminate food or feed.
-Remove and wash contaminated clothing before re-use.
-Wash thoroughly after handling and before eating or smoking.
-Wear clean clothes daily.
-Do not allow children or domestic animals into the treated area.

These statements represent actions, which trained applicators usually follow regardless if they are printed on the label.

Physical or Chemical Hazards

These statements will tell you of any special fire, explosion, or chemical hazards the product may pose. For example:

-Flammable -- Do not use, pour, spill, or store near heat or open flame. Do not cut or weld container.
-Corrosive -- Store only in a corrosion-resistant tank.
-Do not store concentrate or mixed solution in an unlined steel tank

Environmental Information

Herbicides may be harmful to the environment. Some products are classified as RESTRICTED USE PESTICIDE because of a potential environmental hazard. Watch for special warning statements on the label concerning hazards to the environment. These statements should help you choose the safest product for a particular job and remind you to take extra precautions. If a particular herbicide is especially hazardous to wildlife, that will be stated on the label. For example:

-This product is highly toxic to bees.
-This product is toxic to fish.
-This product is toxic to birds and other wildlife.

Some of these statements appear on nearly every herbicide label. They are reminders of common sense actions to follow to avoid contaminating the environment. The absence of any or all of these statements DOES NOT indicate that you do not have to take adequate precautions. These statements follow a "specific toxicity statement" and provide practical steps to avoid harm to wildlife. Examples of general environmental statements include:

-Do not apply where runoff is likely to occur.
-Do not apply when weather conditions favor drift from treated areas.
-Do not contaminate water by cleaning of equipment or disposal of wastes.
-Do not apply directly to water.
-Do not allow drift on desirable plants or trees.
-Do not apply when bee activity is high.

SUMMARY

Read the label before purchasing the herbicide, to determine:

-whether this is the herbicide you need for the job. Never depend on the color of the label or on the product name when you purchase a herbicide. Labels of the same color and general make-up may contain widely different active ingredients.
-whether the herbicide can be applied using the application equipment available.

Read the label before you mix the herbicide to determine:

-necessary protective equipment for safe handling.
-what you can mix with the product (compatibility).
-how much product is required.
-the proper mixing procedure.

Read the label before applying the herbicide to determine:

-safety measures necessary.
-when to apply (including waiting period on crops and animals).
-where the herbicide can be used (railroads, rights-of-way, noncrop areas, industrial sites).
-how to apply.
-restrictions of use.

Read the label before storing or disposing of the herbicide and container, to determine:

-where and how to store.
-how to properly clean and dispose of the container.
-where and how to dispose of surplus herbicides or their containers.