

## Understanding and Using Garden and Home Grounds Herbicides

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Beautiful weed-free gardens and home landscapes provide a feeling of satisfaction. Hand weed control is hard, time-consuming work. Proper use of chemicals called herbicides can make weed control easier.

Herbicides are designed to kill plants. Those used among other plants are called selective herbicides because they will kill one type of plant without injury to another. Most home garden uses involve this type of herbicide. Proper use of selective herbicides is essential. Concentration, weather conditions and methods of application may influence the effectiveness of these materials. Too much may damage desirable plants; too little may mean poor weed control. Erratic application may cause damage in some spots and poor weed control in others. Always read herbicide labels carefully before use. Apply only as directed and only to approved plants.

Most selective herbicides are decomposed by microorganisms in the soil. The speed of decomposition is often determined by temperatures and rainfall. Some herbicides applied in early spring may be inactive by midsummer, requiring a second application to keep weed seeds from germinating in late summer.

### Terminology

Terminology relating to chemical weed control may be confusing. Following are a few terms relating to herbicides and their use.

**Active ingredient** (a.i.) is the percent of herbicidal chemical in a product. In liquids, a.i. may be indicated as pounds per gallon. In dry formulations it is usually given as percent of total weight.

**Band application** is application in a continuous specific area such as in or along a row rather than over an entire area.

**Directed application** is application to weed foliage while avoiding foliage contact of desirable plants.

**Drift** is the movement of spray particles from application area to nontreated area. Extremely fine spray particles, high-pressure application and too much wind may cause drift.

**Emulsifiable concentrate** (E.C.) is a liquid formulation that may be mixed with water for spray application.

**Formulation** is the mixture of active chemical with inert ingredients to ease application or increase safety.

**Granular** means a herbicide is formulated in small pel-

lets to be applied dry to the soil. It is usually indicated on the label with "G." Therefore, 10 G would indicate a granular formulation containing 10 percent herbicidal chemical.

**Nondirected** spray application covers all plants without regard to contact on desirable plant foliage.

**Nonselective** herbicide will kill any plant it contacts.

**Preplant** application of a herbicide occurs before the crop is planted.

**Preemergence** herbicide is able to kill weeds only if it is present while the seeds of the weed are germinating. Label directions indicate proper time for use. Pre-emergence herbicides do not kill growing plants that have developed green color.

**Postemergence** herbicide kills plants after they are green and growing actively. It may be used to kill annual weeds that have emerged from the soil as well as some perennial weeds.

**Rate** refers to the amount of herbicide applied per unit of land area (1,000 square feet, acre, etc.); for insecticide sprays, rates are specified at a precise amount per gallon or 100 gallons. Directions usually indicate the best method for spray application of these liquid materials. Fertilizer spreaders may be used for granular herbicides but should be calibrated and set according to directions.

**Selective herbicide** is more toxic to some plants than others when used at proper concentrations.

**Wettable powder** is often designated as "WP" on labels. A 50W indicates a 50 percent chemical in a powdered form that can be mixed with water for spraying.

**Mineral soil** is sand, clay, silt or other soil with less than 10 percent organic matter.

**Organic soil** contains more than 10 percent organic material.

### Naming herbicides

Home gardeners often find the names of weed-killing materials confusing. Each material may have names in four separate categories: chemical name, common name, trade name and brand name.

**Chemical name** is a long, usually difficult name that describes the chemical structure of the material. This name is found in small print somewhere on the container label.

**Trade name** is a name given to the chemical by the

major producer or marketer. In many cases the trade name is better known than the common name. Most materials have only one trade name, although a few have more. For example, sethoxydim can be found under the trade names Poast, Vantage, Checkmate or Expand. Bensulide might be found as Betasan, Prefar or Presan. Some have only one dominant trade name, such as trifluralin, which is sold primarily as Treflan.

**Common name** is a chemical shorthand that may or may not be given on the label. Example: 2,6-Dichloro benzonitrile (chemical name) becomes dichlobenil (common name).

**Brand name** is often the name given by the packaging company. Such names as Garden Weed Preventer, Weed-B-Gon, Ornamental Weeder and Garden Weed and Feed are brand names. Materials may be listed under a brand name, although consumers may find some recommended materials in containers giving the trade name in large letters. The label must be read carefully to determine which chemical it actually contains.

## Label clearance

For a herbicide to be used among food crops or ornamental plants, it must be tested and receive label registration. Each label will list those plants, crops or conditions in which the material may be used. Labels and the list of plants given on them should be checked carefully before a herbicide is used. Failure to use herbicides as recommended may result in plant damage and is also a violation of the Federal Insecticide, Fungicide and Rodenticide Act.

## Application of herbicides

**Sprays.** Most herbicides can be applied easily and economically as sprays. Low-pressure sprayers should be used among ornamental plants because they produce large, coarse droplets less likely to drift than those from fog or mist sprayers. When using sprays for preemergence herbicides, use only enough water to cover the area thoroughly. For postemergence herbicides, which must penetrate weed foliage, a larger volume of water is needed. Low volume usually means 20 to 40 gallons of liquid applied per acre. On the home grounds, 20 to 40 gallons per acre converts to about ½ to 1 gallon of liquid per 1,000 square feet. This should be the minimum quantity. It is always better to apply more water but not more herbicide for better coverage. In general, a low-volume application for the home garden using the required amount of herbicide in 1 gallon of water sprayed on 1,000 square feet should be adequate.

As already indicated, the amount of liquid sprayed per unit area of land is not as critical as the amount of herbicide. If a recommendation calls for 20 pounds of herbicide per acre, this could be reduced to about ½ pound herbicide per 1,000 square feet. The ½ pound is critical and must be

kept constant per 1,000 square feet, but might be applied in either ½ gallon or 2 gallons of liquid. The amount of liquid used may depend on the equipment available. Sprays should be applied close to the ground. Larger volumes of liquid allow application twice at right angles over the same area for more uniform coverage. Rates may sometimes be recommended in terms of active ingredient. If a rate of 6 pounds per acre of active ingredient is required and a formulation contains 50 percent active ingredient, we need to apply 12 pounds of material from the bag per acre.

**Cleaning a sprayer.** It is almost impossible to adequately clean a sprayer that has been used for spraying herbicides. Therefore, it is best to designate and mark a sprayer specifically for herbicide use. A sprayer used for herbicide application should not be used for insecticide or fungicide application to desirable crops and plants.

**Granular.** Granular formulations of many herbicides have become popular because they are easier to use and less subject to drift. Herbicides that act as preemergence materials for annual weeds have been most successful in these formulations. However, some postemergence materials have also been formulated for effective use by this means of application.

For large areas, fertilizer spreaders may be used at the settings recommended by the herbicide manufacturer. For small areas, some manufacturers supply shaker cans that help scatter granular materials properly.

## Precautions

Keep all new or unused herbicides in their original containers, and keep them locked out of the reach of children. Don't take herbicides internally or allow them to contact the skin or eyes. Do not smoke while using herbicides.

After using herbicides, wash skin thoroughly. Do not pour unused herbicides down the drain or in streams, irrigation channels or drainage ditches.

Trade names are used in this publication for better understanding of information presented. No endorsement of named products is intended, nor is criticism implied for similar products not mentioned. Suggested herbicides for use on fruit, vegetable and landscape plants are listed in MU publication [G 6952](#), *Garden and Home Grounds Weed Control*.

**CAUTION:** Always read the herbicide label before use. Never use more herbicide than recommended, or damage to desirable plants may result. Follow directions carefully. The container label will list plants for which that herbicide has been approved. Since registration status of pesticides is reviewed continuously and is subject to change, read the product label before purchasing to make sure it is registered for your need. To use a product in any way that is inconsistent with the label is a violation of federal law.



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