

LANDSCAPE

by Dr. Elton Smith

Rising labor costs have caused an increase in the use of both preemergence and postemergence herbicides in landscape maintenance.

The landscape manager has to control weeds around a variety of desirable plant material, including deciduous and evergreen shrubs, bulbs, annual and perennial flowers, and ornamental grasses. He uses herbicides to control weeds under trees, in sand traps, around grave markers, in patios, along fences, in plant beds and groundcover, and in containers.

The effectiveness of a weed control program depends on proper selection, calibration, calculation, and application of herbicides. Reading the label is critical to see what desirable plants may be intolerant to certain

herbicides.

The weeds involved are much the same as in turf. Annual weeds, such as crabgrass, foxtail and purslane are relatively easy to control by a combination of mulching, cultivation, hand pulling, and preemergence weed control. Perennial weeds, such as bindweed, thistle, quackgrass and nutsedge, are more difficult to control because of extensive root systems.

It is important, especially with perennial weeds, to eliminate them prior to planting. There are virtually no selective postemergence herbicides to help you out when weeds take over. The variety of plant material makes it impossible for herbicides to distinguish between weeds and desirable plants. Non-selective foliage-applied postemergence



herbicides can be used only with extreme care if they do not leave residue in the soil. For example, Roundup can be applied to the foliage of weeds with a wick applicator or glove.

Prior to planting

The most successful approach to a weed-free landscape is to control perennial grasses and broadleaf weeds prior to preparing the area for planting.

Spraying the weeds in an area with one of several postemergence systemic herbicides, which will be translocated to the root system for total plant control, is one of the most effective methods of control. Examples of such herbicides are 2,4-D and related products for broadleaf weed control, dalapon for grass control, and amitrole for general weed control. Each of these normally has to be applied more than once and most have a specific waiting period prior to planting. Glyphosate (Roundup), a very effective product for perennial grass and broadleaf weed control, has no soil residue.

A number of preemergence herbicides are labelled for landscape plants and two are recommended for use prior to planting. Eptam or Treflan can be incorporated into the soil, following tillage, to control annual and some perennial weeds for a period of four to six weeks. Following incorporation to a depth specified on the label, ornamentals can be

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planted. This method has been used extensively by commercial nurserymen and is now being used by landscape contractors to a large extent, especially where maintenance for a specified period of time is in the contract.

Tillage as a method of weed control prior to planting is a successful practice for the control of annual weeds but not perennial weeds. In some cases, tillage only cuts up the root systems of perennials into smaller pieces and distributes them.

Following planting

In recent years the landscape industry has made extensive use of mulches to prevent weeds in the landscape.

Mulches should be applied about two-inches deep and renewed to that depth annually. Mulch layers much deeper than two inches accomplish little and may actually harm shallow-rooted ornamentals according to new research at the University of Maryland.

Many types of mulches are available, however, the most popular include hardwood, Cypress and pinebark mulches along with wood chips, peat moss, and an assortment of hulls and inorganic materials. Barks and inorganic materials will not rob nitrogen from the soil as raw organic material will. When using compost, make sure it has had enough time to fully break down during composting and weed seed in it is sterile.

Some weeds will come through the mulches. These must be hand pulled or sprayed. Seeds will be carried into planting beds by wind and birds and will often germinate in the mulch. Again, hand pulling is the most satisfactory control measure in small areas, however, landscape personnel are using more and more herbicides, such as glyphosate.

Several preemergence herbicides can be used as an alternative to, or in combination with

mulches. They control annual weeds for a period of four to eight weeks. Reapplications are usually necessary to achieve season-long control depending on selection of herbicide, soil, and climatic conditions.

Typically the first application of preemergence herbicides should be made prior to weed seed germination. Subsequent treatments can be made as needed, based upon regrowth of annual weeds. The soil should be weed-free and moist prior to application or the treatment should be followed by irrigation or rain.

It is important to know how much area is included in the beds to be treated. Once the area is calculated, determine the amount of herbicide needed for that area based upon the label recommendations. Apply the herbicides with equipment that is properly cali-

brated and in good working order.

Postemergence herbicides for landscape weed control

Postemergence herbicides are used for general weed cleanup around buildings, waterways, ditchbanks, fence rows, etc. Used with extreme care, these materials may be used in tree plantings. However, avoid herbicide contact with foliage and green, yellow or immature bark.

Pre- and postemergence herbicide combinations

Preemergence and postemergence herbicides can be combined to kill existing weeds and prevent emergence of others. Combinations of paraquat or Roundup with Princep, Phytar 560, or Surflan have been used extensively in trees with excellent success. **WT&T**

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Calculating rates and quantities

Granular Materials

Example—A landscaper needs to treat 4,000 sq. ft. of Juniper with 4% RONSTAR granules at 4 lbs. aia. How much RONSTAR is required?

Formula

$$\text{lbs. aia} \times \frac{\text{sq. ft. to be treated}}{44,000 \text{ sq. ft./acre}} \times \frac{100}{\% \text{ granular}} = \text{lbs. required to treat area}$$

Calculation

$$4 \text{ lbs. aia} \times \frac{4,000}{44,000} \times \frac{100}{4} = 9.1 \text{ lbs. 4\% granular RONSTAR}$$

Wettable Powders

Example—A landscape firm needs to treat 4,000 sq. ft. with 50% DEVRINOL wettable powder at the rate of 10 lbs. aia.

Formula

$$\text{lbs. aia} \times \frac{\text{sq. ft. to be treated}}{44,000 \text{ sq. ft./acre}} \times \frac{100}{\% \text{ powder}} = \text{lbs. required to treat area}$$

Calculation

$$10 \text{ lbs. aia} \times \frac{4,000}{44,000} \times \frac{100}{50} = 1.8 \text{ lbs. 50\% DEVRINOL W.P. to be mixed in enough water to cover 4,000 sq. ft.}$$

Liquid Concentrate

Formula

$$\text{lbs. aia} \times \frac{\text{sq. ft. to be treated}}{44,000} \times \frac{1}{\text{lbs. active ingredient/gallon}} = \text{gallons required to treat area}$$

Calculation

$$2 \text{ lbs. aia} \times \frac{22,000}{44,000} \times \frac{1}{4} = .25 \text{ or } \frac{1}{4} \text{ gal. TREFLAN to be mixed in enough water to cover } \frac{1}{2} \text{ acre}$$