

# WEED AND GRASS CONTROL IS A PREPLANT CONSIDERATION

By Thomas A. Fretz, Professor and Head, Department of Horticulture, Kansas State University, Manhattan, KS

The control of annual grass and broadleaf weeds in and around annual bedding plant displays is a serious problem for those involved in landscape maintenance. The solution to this problem is most often accomplished by the laborious and costly process of manual weeding, however it should be remembered that several herbicides are available and labelled for use on annual bedding plants.

Prior to selecting one of the herbicides labelled for use on annuals, it is important to review a few of the principles of weed control. Initially, it must be remembered that in order to achieve success with a weed control program on annuals, it will be necessary to have a good idea of the weed species which are going to be present. While this is not always possible, it will be a great help in finally selecting the proper herbicide to do the job. In general, the herbicides which are labelled for use on annuals will control annual grass and annual broadleaf weeds.

Secondly, the herbicides which are labelled for use on bedding plants are pre-emergent herbicides, thus they need to be applied prior to weed seed germination in order to be effective.

Thirdly, herbicides to be used on annual bedding plants can be applied at 2 times, prior to planting of the annuals (pre-plant) or prior to the emergence of the weeds but after transplanting of the annuals (pre-emergent). Except for an occasional spot treatment, the post emergent herbicides would rarely be used around annual bedding plants. In our research, we have generally applied the herbicides pre-emergent to weed seed germination, that is following transplanting and establishment of the annual flowers.

Also, it will generally be easier to use a granular formulation of the herbicide than either a wettable powder or emulsifiable concentrate. Our research observations have indicated that in general, less phytotoxicity occurs with granular when compared to the other formulations, however weed control is not always as satisfactory with the granules.

Well, what about specific herbicides for use on annual bedding plants? Of all of the materials labelled for this use, DCPA (Dacthal) which is available in either a 75% wettable powder or a 5% granular formulation has the broadest spectrum in terms of plant safety. Dacthal is labelled for use on alyssum, petunia, chrysanthemum, coleus, dahlia, geranium, salvia, snapdragon, and zinnia to name a few. Applied after transplanting on clean, weed-free soil at a rate of 8-10 pounds of active ingredient per acre, Dacthal will control annual grass and broadleaf weeds including large crabgrass, annual bluegrass, speedwell, witchgrass, carpetweed, common chickweed, lambsquarter, purslane and others. Irrigation immediately after application with 1/2 inch of water will enhance and improve the weed control. Dacthal will cause injury to carnation, pansy, phlox, and sweet william and for this reason should not be used on these crops. A single application should control weed growth for ap-

proximately 6 weeks, after which there should be sufficient coverage of the area by the annuals to prevent or severely restrict further weed growth.

The second material which can be successfully used in annual plant beds in diphenamid (Enide). Available as a 50% wettable powder, this herbicide is recommended for use on a wide diversity of annual crops including aster, chrysanthemum, dahlia, marigold, petunia, phlox, salvia, shasta daisy, snapdragon, sweet william and zinnia at a rate of 5 pounds of active material per acre. Pre-emergent control of large crabgrass, annual bluegrass, yellow foxtail, goosegrass, ryegrass, pigweed, lambsquarter, smartweed, purslane, common chickweed, knotweed, pepperweed and shepherdspurse can be expected. As with Dacthal, irrigation immediately after application is recommended if maximum weed control is to be achieved. Also, if Enide is to be used on lighter, sandy soils, a lower application rate should be considered.

Trefluralin (Treflan) also has a broad, general purpose label which includes a great number of annuals and established flower crops. Available in either a 5% granular or a 4 pound emulsifiable concentrate formulation, Treflan in generally recommended for use as a pre-plant treatment at a rate of 1 pound of active ingredient per acre followed by mechanical incorporation to a depth of 1 inch. Treflan is safe for application on ageratum, allysum, aster, carnation, chrysanthemum, dahlia, marigold, periwinkle, petunia, phlox, portulaca, salvia, shasta daisy, snapdragon, sweet pea, sweet william and zinnia to cite a few of the more than 40 flower crops on the label.

At the 1 pound per acre rate, long lasting control of a wide variety of annual grass and broadleaf weeds including crabgrass, foxtail, goosegrass, annual bluegrass, pigweed, lambsquarter, purslane, chickweed and knotweed can be expected. In addition, if the annual beds have large amounts of organic matter present, it may be necessary to increase the rate of Treflan application in order to achieve the desired weed control.

Bensulide (Prefar or Betasan) is another pre-emergent herbicide registered for use on annual flowers, including alyssum, aster, dahlia, marigold, pansy, sweet pea, and zinnia. In addition, Betasan is labelled for use on several bulbous crops including daffodil, gladiolus, ranunculus, and tulip. Applied following transplanting and pre-emergent to weed seed germination, Betasan, in either the 12.5% granular or the 4% emulsifiable formulation, is used at the rate of 10 pounds of active ingredient per acre. Excellent control of annual grasses including, annual bluegrass, barnyardgrass, large crabgrass, foxtail, fall panicum and goosegrass can be achieved, however control of broadleaf weeds with Betasan is limited.

EPTC (Eptam) also has a label for use on several annual flowering crops, however it must be applied prior to transplanting and incorporated to a depth of 2-3 inches in the soil to be effective.



(Photo by T. A. Fretz)

Available as either a 7% emulsifiable concentrate, 5 or 10% granular, Eptam can be used safely on alyssum, ageratum, aster, begonia, chrysanthemum, dahlia, marigold, pansy, petunia and zinnia at a rate of 3 pounds of active material per acre. Control of a wide selection of annual and perennial grasses and broadleaf weeds including bermudagrass, ryegrass, purple and yellow nutsedge, quackgrass, foxtail, mugwort, purslane, lambsquarter and shepherdspurse.

Lastly Chloramben (Ornamental Weeder) can be used in annual beds, however it is not recommended for use on plantings unless they have been established a minimum of 6 weeks. Applications of 4% Ornamental Weeder at 4 pounds of active ingredient per acre will control a wide assortment of weeds including chickweed, crabgrass, foxtail, lambsquarter, pigweed, smartweed and velvetleaf. Crops tolerant to Ornamental Weeder include celosia, chrysanthemum, dahlia, marigold, snapdragon and zinnia. Because plants need to be fully established for a 6 week period prior to the application of Ornamental Weeder, its usefulness is limited.

Lastly, one might consider a mulch in order to help reduce weed competition in annual plant beds. A 2 to 3 inch layer of organic mulch alone will help suppress weed growth, but it can also be applied after herbicide application. The mulch applied after herbicide application will help reduce herbicide losses due to volatility, but will also extend the period of useful weed control.

**WTT**



**WE'RE  
JUST  
A  
DIAL  
AWAY**

**WITH COMPLETE  
ELECTRICAL  
RUBBER TESTING  
CAPABILITIES**

**PLUS  
EQUIPMENT AND  
SUPPLIES TO  
COMPLETE ANY  
TASK IN**

- Vegetation Management
- Utility Construction
- Tree Trimming
- Park & Grounds Maintenance
- Pole & Tree Climbing
- Bucket Work
- Industrial Maintenance
- Utility Maintenance
- Industrial Safety
- Traffic Control



CALL NOW

**SAFETY TEST, INC.**  
P. O. DRAWER 400  
SHELBY, N.C. 28150

Write 156 on free information card