

NATIONAL CEMETERY ADMINISTRATION
SED
Agronomic Information Sheet # 6

Preemergence Control of Crabgrass and Other Annual Grass Weeds in Turfgrass

Introduction: Crabgrass is without doubt the single most commonly recognized weed pest in established stands of cool season turfgrass. Even the average homeowner with a lawn of any size is aware of this pest and has probably joined the annual battle to control it. The professional lawn care industry in the United States was built on the promise of dark green lawns free of crabgrass. The crabgrass species in question here is most likely *Digitaria sanguinalis*, common name, large crabgrass. There are, however, several other members of the same family that could be involved. Whether they are or not is unimportant. The control tactics discussed here are the same regardless of the actual family members involved. In addition to crabgrass, several other annual weed grass pests are often encountered across the geography of SED. These include foxtail, both yellow and green, barnyardgrass, goosegrass, and annual bluegrass (*Poa annua*). With the exception of annual bluegrass, which is a winter annual and germinates around Labor Day, the others are summer annuals and germinate during the spring.

Herbicide Selection and Factors Effecting Performance: There are a number of commercially available herbicide products that will effectively control the germinating seeds of crabgrass and other annual grass weeds listed above. The best choice for each turfgrass maintenance situation can be made following consideration of a number of factors. These might include cost, formulations available, soil residual properties, turfgrass species tolerance, weed efficacy spectrum and user handling and safety. It is therefore beneficial to have an understanding of the characteristics of the available choices in order to make an informed decision. The list of products from which a user can choose includes, benefin (trade name Balan), trifluralin+benefin (trade name Team and Team Pro), pendimethalin (trade name Pendulum and Pre-M), prodiamine (trade name Barricade) and dithiopyr (trade name Dimension).

Four of the five products listed above belong to the same chemical family, dinitroanilines, and they clearly dominate this category of herbicide usage. Dithiopyr is the only product not a member of this family. All preemergence herbicides must however share the same basic properties in order to perform effectively. They must be soil active materials in order to kill weed seeds as they germinate, they must not be prone to soil leaching so they will remain near the soil surface where the weed seeds germinate and also so they don't come into contact with the principle root mass of the desirable perennial turfgrass species, they must possess sufficient soil residual longevity in order to remain above herbicidal activity thresholds during the primary germination period of the target annual weeds but not so long they impede reseeding or over-seeding operations should those be necessary and of course, they must demonstrate a wide range of tolerance for use on all commonly grown turfgrass species. It is also comforting to know that any pesticide product that has been registered for general use under the very stringent Federal

and State guidelines existing today has successfully cleared all environmental, ecological, and human safety test hurdles. The user marketplace itself will determine whether a pesticide product performs well enough to be a commercial success. All of the products listed above have been in use for some time and have definitely established themselves as highly effective herbicides when properly used.

Application Timing and Formulation Options: The most common error users make when applying a preemergence herbicide involves application timing. Usually, applications are made much earlier than necessary to achieve optimum performance. Crabgrass begins to germinate in the spring after soil temperatures in the top 1 to 2 inches of soil have reached 50 – 55 degrees Fahrenheit. The germination process will not begin just because there have been a few unseasonably warm days in March or April. Soil temperatures are slow to warm in the spring. If the soils have been more moist than normal the warming process will be even slower. Water is a very poor conductor of heat. If the herbicide is applied 4 to 6 weeks before germination begins, you will be wasting a significant percentage of the active ingredient, as it begins to degrade in the soil as soon as it is applied. Ideally, application should be timed one to two weeks prior to the onset of germination. It is also critical however, that the application not be delayed until after germination. Although all of these herbicides will control a recently emerged one to two-leaf stage crabgrass plant, they should not be counted on to reach back any further than that. **Bottom line**-- Don't rely on artificial signals or old wives tales such as when the forsythia blooms. Buy several inexpensive soil thermometers, place them at strategic locations around the property at a soil depth of 2 inches and let science be your guide. When they record in excess of 50 degrees during mid afternoon for 3 to 4 consecutive days, make your application.

All of these products are commercially available from numerous sources and in several different formulations. They can be purchased in several sprayable formulations, true liquids, wettable powders, flowables or dry flowables. Uniform application to the target area is of course essential. Generally speaking, most users will find that a granular or fertilizer combination formulation is easier to apply. Standard fertilizer spreading equipment will do the job efficiently and with less likelihood of error than with a spraying procedure. Fertilizer combination products that have the selected herbicide impregnated on them have become very popular. This approach kills two birds with one stone as they say. It is also easier to uniformly spread the higher volume of product recommended with a fertilizer combination than with a straight granular formulation of the herbicide alone.

In general, a single properly timed application of one the herbicides discussed will control in excess of 90% of any annual weed grass seeds that germinate during a normal spring season across SED. Although it is a common practice among many professional lawn care companies and high dollar golf courses to make two sequential crabgrass control applications to ensure total full season control, this practice is not deemed appropriate or necessary on SED cemetery properties.