

What's Creeping You Out Now?

Ideas In Pest Management

Pre-emergent Herbicides and Overseeding of Turfgrass

Dave Gardner, Dept. of Horticulture and Crop Science, The Ohio State University

As the end of March approaches it is time to begin to plan for preemergence herbicide applications for the control of crabgrass and other grassy weeds in turf. Crabgrass is by far the most common of the warm season weedy grasses on lawns. Unlike the other warm season grassy weeds, such as goosegrass, smooth crabgrass begins to germinate when soil temperatures reach about 58 degrees Fahrenheit. The other warm season grasses germinate when soil temperatures are in the upper 60's to low 70's, which can be several weeks later.

You may begin to notice some crabgrass germinating as early as the 10-15th of April. This mostly will occur along sidewalks and other areas that warm up more quickly in the spring. Oftentimes however, this early germinating crabgrass is killed by late season frosts and freezes. For example, in Ohio we may see some crabgrass germination in April, but we usually don't see the first surviving crabgrass until about the second week of May.

In order for a preemergence herbicide to be effective, the herbicide must be applied before weed seed germination that occurs

after the last killing frost of the season. Typically the herbicide must be applied before a rainfall or watered in within a certain period of time. Check the label for specifics. Because of this, we usually like to allow for about a 3 week window of safety and prefer to target the application for about April 15th, or when Forsythia come into full bloom. Forsythia are the common shrub that flowers bright yellow on bare wood and serves as a remarkably effective indicator for when to apply preemergence herbicides.

After application, the herbicide barrier will begin to degrade, at first quickly and then more slowly over time. Once the herbicide has dissipated to a certain minimum threshold in the soil, crabgrass and other weed seeds will begin to break through. In the hypothetical example pictured in figure 1, a herbicide applied on April 15th degraded to about 20% of its original concentration on about July 1, after which crabgrass began to break through. One of the reasons that we try to avoid applying the herbicide too early is to maximize the chance of the herbicide barrier lasting through the season. You can increase your chances of getting effective season long control by doing the following:

- 1) Select a product with a long lasting active ingredient, such as prodiamine or dithiopyr. Both provide 90% control for up to 16 weeks. Dithiopyr also has early

postemergence activity for those cases where some crabgrass may have already emerged.

2) To increase duration of control, increase the application rate (within label limits).

The more product that is applied - the longer it takes for it to dissipate to below the minimum threshold level. Also, split applications, the practice of applying once at a lower rate followed again 6-8 weeks later, is not always effective and generally not recommended in the northern U.S.

Crabgrass can be a serious problem, but it can be effectively controlled by applying the right herbicides and targeting the application for the right time of year.

But What if I'm Overseeding?

If you are thinking of applying a preemergence herbicide to control crabgrass on thin spots in the turf that you are also planning to overseed, you had better think again. Almost all of the preemergence herbicides on the market are very effective at controlling not only weed seedlings, but also the seedlings of our desired turfgrasses. Figure 2 shows the recommended reseeding interval for the active ingredients used as preemergence herbicides where cool season turfgrasses are grown. These were taken straight from the label of a product that contains the herbicide. Note that most of the intervals are long enough that, were they to be applied in March or April, you would not be able to safely overseed until summer. And we all know that summer is not a real good time to overseed either. If you have small areas that are thin or bare, you may wish to apply the preemergence herbicide

and attempt to manage the existing grass to fill in the bare spot. If it is a large area, then you are probably best off overseeding and avoiding the use of the herbicide.

Alternatively, note that siduron is safe for use on seedling turf. Follow the label directions carefully. When used properly, siduron will reduce crabgrass, goosegrass, foxtail, and many summer annual broadleaf weeds by about 80%.

Tenacity Herbicide – A new option when overseeding

Tenacity herbicide is a new product from Syngenta that contains the active ingredient mesotrione. This active is in a unique class of chemistry and this product has a very diverse label, including pre- and post emergence control of both broadleaf weeds and annual grasses. It also controls sedges preemergence and certain perennial weedy grasses postemergence. Unfortunately, it is not yet labeled for use on commercial turf or sports fields. But, the product was recently labeled for use on golf courses and the label changes are pending to allow its use on other turf areas. When this product becomes labeled for use on sports fields, one of its key uses will be the preemergence control of annual grassy and broadleaf weeds in newly seeded turfgrass (Figure 3). When used as directed, Tenacity herbicide will result in nearly complete control of crabgrass, goosegrass, foxtail, and many summer annual broadleaf weeds. But, it will not affect the growth and development of the seedling turf.

Figure 1. Model of dissipation of a preemergence herbicide following application. After the pesticide concentration degrades to below a certain minimum threshold, weeds will begin to germinate through the barrier. The duration of effective control is effected by: product choice (some last longer than others), weather (warmer and wetter=faster degradation), amount of thatch (more=faster degradation) and rate of application (more, within label limits=longer control).

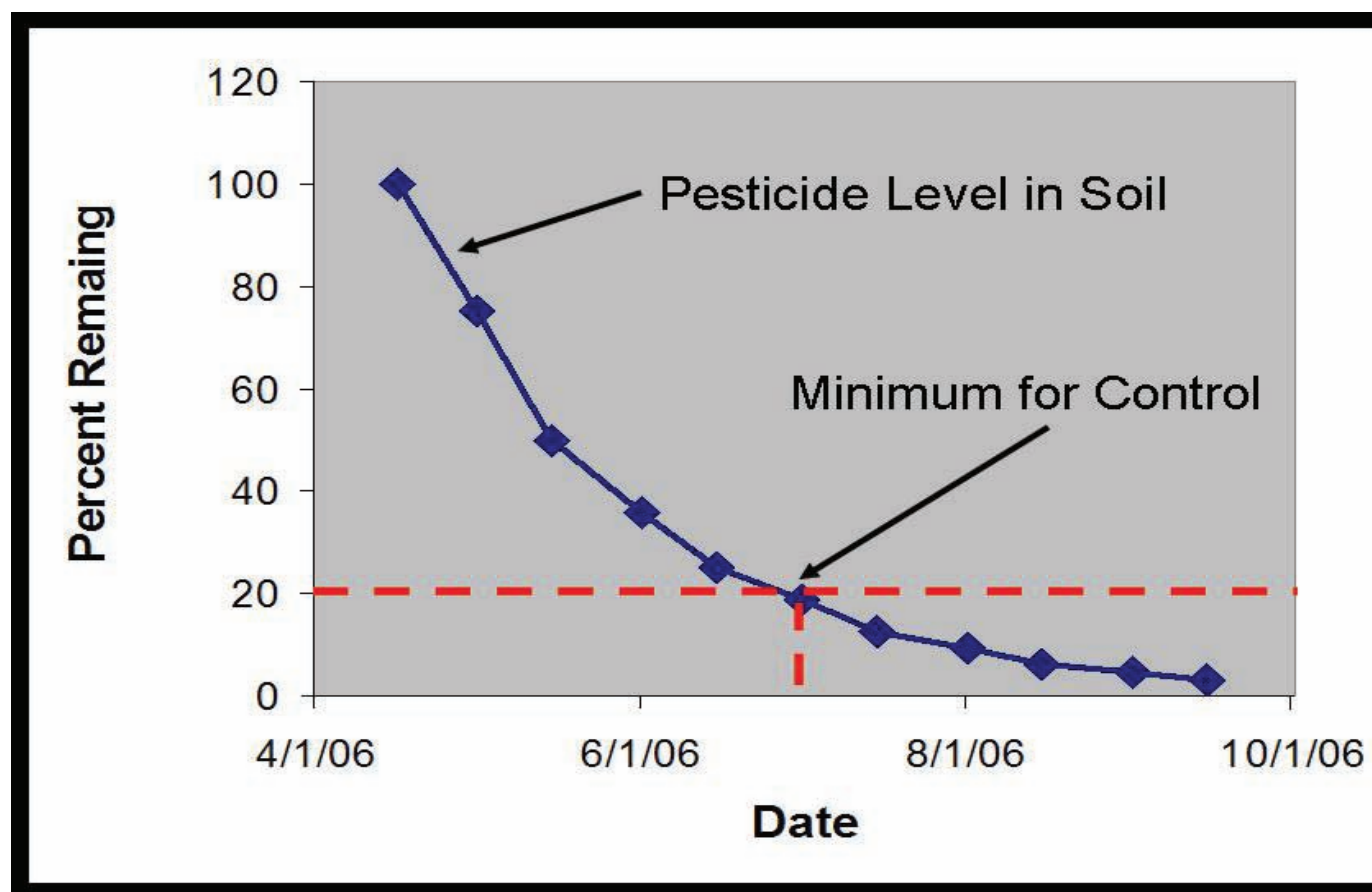


Figure 2. Carefully consider your options when planning to apply a preemergence herbicide to thin spots in the lawn or areas that you plan on overseeding or reseeding.

Turf Tolerances to Preemergence Herbicides						
Products	Kentucky	Perennial ryegrass	Tall Fescue	Fine Fescue	Creeping	Reseeding Interval†
Bensulide (Betasan, Bensumec, Lescosan) - Controls <i>P.annua</i> , others	✓	✓	✓	✓	✓	4 months
Ethofumasate (Prograss) - Controls <i>P.annua</i> , other weeds	✓	✓	✓		‡	6 weeks
Benefin (Balan, LESCO Benefin 2.5G)	✓	✓	✓	✓		6-16 weeks
Oryzalin (Surflan, XL – combination with benefin)			✓			6-16 weeks
Pendimethalin (Pendulum, LESCO Pre-M, PROTURF)	✓	✓	✓	✓		3 months
Prodiamine (Barricade)	✓	✓	✓	✓	‡	4-6 months
Trifluralin (Team) - Combination product with Benefin	✓	✓	✓	✓	‡	8-16 weeks
Siduron (Tupersan) - Safe to turfgrass seedlings. Consult label	✓	✓	✓	✓	§	Safe to most seedlings
Oxadiazon (Chipco Ronstar) - Controls goosegrass and other weeds	✓	✓	✓			4 months
Dithiopyr (Dimension) - Pre + Post-emergence	✓	✓	✓	✓	¶	6 weeks to 4 months

† Stated reseeding interval is for one example product only and this can vary among brands or formulations of the same active ingredient. Always consult the label of the product you are using for specifics prior to application.

‡ Fairway and tees height bentgrass only. Consult label for specifics.

§ Seaside, Highland, Astoria, and C-7 creeping bentgrass only. Consult label for specifics.

¶ Use restrictions on putting greens vary among formulations. Consult label for specifics.

Figure 3. Control of crabgrass, goosegrass, yellow foxtail, yellow nutsedge, pigweed, and purslane was nearly 100% when Tenacity herbicide was applied at seeding. Perennial ryegrass was seeded into the area, lightly incorporated and then Tenacity was sprayed over the top on July 25, 2007. Photographs taken on August 8, 2007 (14 DAT)



About Our Guest Writer

Dr. Dave Gardner is an associate professor of turfgrass science at The Ohio State University. His research interests are in the areas of pesticide/nutrient fate and shade stress physiology. He also conducts a large number of herbicide trials each year. Dr. Gardner teaches undergraduate courses in the areas of turfgrass management, statistics, and landscape horticulture.

