5 Keys for Better Weed Control

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Preemergence herbicides continue to be our best option for the control of annual grassy weeds such as crabgrass. Also, with the cancellation of MSMA and DSMA, the use of preemergence herbicides becomes more important for the control of weeds such as dallisgrass and goosegrass. Preemergence herbicides can effectively control crabgrass, other annual grasses, and even some annual broadleaf weeds.

However, they are effective for a finite amount of time after application (weeks or a few months). Several factors influence the overall performance of a preemergence herbicide and how long it will remain effective following application. Some of these factors, such as the amount of thatch and organic matter in the turf/soil profile and the weather, cannot be controlled.

The warmer the temperatures or the higher the rainfall, the faster the product will degrade or leach and lose effectiveness. Similarly, the amount of thatch and organic matter can usually only be slowly altered over time. Higher amounts of thatch and organic matter will increase the rate of degradation of the product.

You do, however, have control over other factors that affect control of weeds with a preemergence herbicide. Here are five tips to assist in maximizing your control of weeds with these products.

1. Some areas are more prone for weeds.

The best defense against weeds, especially annual grasses and broadleaves, is a dense turfgrass stand promoted by proper management. Choose the most appropriate species and cultivars for your site and management situation. Then practice good mowing, fertilization and irrigation management supplemented with cultural practices, disease and insect management as necessary. In doing so, you can increase the turfgrass plant’s ability to out-compete germinating potential weeds for light, water and nutrients.

Despite your best efforts to manage your turf, you may have some areas that are prone to annual grass and broadleaf infestation. While weed seeds may be dispersed over considerable distances by a variety of means, a good percentage of them will fall in the immediate vicinity of the mother plant. Recognizing these areas and mapping them out will allow you to concentrate your weed control efforts on those areas. This can be helpful if you are attempting to reduce your use of herbicides due to budget limitations, for example.

2. Apply the right product.

Some preemergence herbicides work better on certain weeds. In addition, preemergence herbicides vary greatly in their duration of effectiveness. Longest-term control of crabgrass is typically achieved when using a product that contains either pendimethalin, prodiamine or dithiopyr. If goosegrass is your main problem then you should choose a product with better activity against this species, for example oxadiazinon or dimethinamid-p. The latter product is a recent introduction in turfgrass.

The other materials on the chart also have advantages. Formulations that contain benefin, for example, tend to be less expensive. The trade-off is shorter duration of residual activity and slightly less effective control. But, that shorter residual activity may be an advantage if you plan on overseeding latter in the season. Consult the label for specific usage recommendations.

With each active ingredient, you tend to get the same level of preemergence weed control whether you apply the product as a liquid or as a granular application (usually on fertilizer). Both application methods rely on light irrigation post application in order to “activate” the product – that is, disperse the herbicide into a uniform layer over the soil. Note, however, that while you do not need to use a greens grade size particle to insure uniform distribution of the herbicide, you may wish to avoid formulations that have excessively large particle sizes.

3. Know your target weeds and apply product at the right time.

When determining the areas that require treatment, also make note of what weeds you are dealing with. The timing of application of your herbicide may vary, depending on the weed species you are concerned with. For example, smooth crabgrass (*Digitaria ischaemum*) will begin to germinate when soil temperatures are in the upper 50s for a few consecutive nights.

In contrast, many other grassy weeds, such as goosegrass (*Eleusine indica*), germinate later in the season, when soil temperatures are in the upper 60s to low 70s. Failure to properly identify your target weed may result in applications that are too early or too late to be effective. If you apply too early, the herbicide may dissipate before the end of the weed’s germination window. If you apply too late, you will not, in most cases, effectively control already emerged weeds.

Proper application timing is important to ensure the maximum chance of

season-long control with your preemergence product. In a typical year the earliest germinating crabgrass may be killed by subsequent frosts. However, in order to be effective, the preemergence herbicide must be applied before the first crabgrass that germinates following the last frost. It must also be activated by either rainwater or irrigation after application. Because of this, typically, they are applied two to three weeks earlier, when an indicator plant, such as forsythia in the northern United States or dogwoods in the South, are in bloom.

4. Apply your herbicide at the right rate and consider splitting the application.

Ideally, a preemergence herbicide barrier should last for about four months in the North and up to seven months in the South to prevent seed germination for the entire season. However, after application, these herbicides are subject to numerous processes that act to degrade the product. Once the level of product in the soil falls below a certain minimum concentration then annual weeds will be able to germinate through the herbicide barrier. As long as you are within the label limits, you can increase the duration of effective control by increasing the initial application rate. Some products have language on their labels that reflect this.

“Split applications” refers to the practice of applying a portion of the pesticide initially followed by a subsequent application around six to 15 weeks later. This practice is widely followed in the South due to the extended season. In the northern United States the results of using split applications have been more mixed.

When in doubt, follow the recommendation of the manufacturer and your state’s extension specialist.

Some products perform as well or better if more is applied in a single application. Others perform better if the application is split.

Dithiopyr has been on the market for several years. It provides excellent preemergence control of crabgrass for up to four months. It also will control emerged one- to two-leaf stage crabgrass. This makes dithiopyr an excellent candidate if the traditional application window is missed and emerged crabgrass is present.

But, dithiopyr is also being marketed in a co-pack with the herbicide florasulam, which provides excellent control of dandelion, clover and some winter annual broadleaf weeds. This combination of herbicides can be applied in early spring to control weeds early and perhaps even reduce dandelion bloom. The combination can be applied later, after one- to two-leaf stage crabgrass is present and this will result in good to excellent control of dandelion, clover, and the leaf stage crabgrass as well as providing a preemergence barrier that will last longer in the summer. Dithiopyr and florasulam can also be applied as a split application about six to eight weeks apart, which will lengthen the window of effective control.

5. Apply a preemergnce + postemergence herbicide to leaf stage crabgrass.

In areas where crabgrass cover is very heavy or you have had difficulty with late-season breakthroughs in the past, perhaps the best option is to use a product that allows for later application of the preemergence herbicide while also controlling any emerged crabgrass, a preemergence herbicide combined with a postemergence herbicide. Dithiopyr is a single-active ingredient with preemergence and early postemergence activity.

Mesotrione has good activity as a preemergence herbicide when seeding turfgrass on bare soil. In mature turfgrass if used as a preemergence herbicide it appears to break down too quickly to provide a long-lasting barrier. However, mesotrione also has good postemergence activity on crabgrass. Because of this, mesotrione can be combined with a preemergence herbicide.

Research conducted at The Ohio State University suggests that you may achieve 100 percent control of crabgrass for 160 days when mesotrione is used as a postemergence herbicide in combination with another preemergence herbicide such as prodiamine. This combination was effective when applied either in early April (preemergence), early May (to leaf stage crabgrass) or early June (to tillering crabgrass).

The idea here is to apply the combination to leaf stage crabgrass. The postemergence herbicide will control the young crabgrass and the preemergence herbicide goes out later, increasing the chance that it will last and be effective through the summer.

There are a couple of products on the market that combine an herbicide with preemergence activity and an herbicide with postemergence activity. Cavalcade PQ herbicide is a combination of quinclorac and prodiamine and Echelon herbicide is a combination of prodiamine and sulfentrazone. Each of these products is effective on crabgrass up to one- to two-tiller stage, in addition to providing a preemergence barrier for the remainder of the season.

The timing of application is less critical, because either can be applied anytime from preemergence up until crabgrass is at that tiller stage. Since they can be applied until crabgrass reaches one- to two-tiller stage, it is less likely that the preemergence barrier in the product will dissipate before season’s end. In fact, one thing to consider with the use of these products is if any fall overseeding projects are planned, as the remaining herbicide residues could potentially interfere with August, or even September, overseeding activities.

In summary, there have been a few new chemistries introduced to the market for the control of annual grassy weeds in the past five years. However, most of our advances in annual weed control of late have come from understanding how to properly use existing products.

By following the five strategies described here, you can significantly improve your odds of achieving satisfactory season long control of annual

weeds using preemergence herbicides.