

Preemergence Herbicides for Kentucky Lawns

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What Are They?

Herbicides are used to control unwanted plants in many different locations. Postemergence herbicides are sprayed on actively growing weeds. In turfgrass, several herbicides are used to control weeds *before* they germinate and begin to grow. These are called “preemergence herbicides” and are commonly sold as “weed preventers.” They control germinating weed seeds and subsequent growth. Therefore, to be effective, preemergence herbicides must be present in the upper soil surface before weed seeds germinate. Some common preemergence herbicides are listed in Table 1.

How Do They Work?

To use these preemergence herbicides effectively, the user needs to understand what weeds germinate from seed each year. For example, crabgrass is an annual weed germinating in early spring in Kentucky. The best control of crabgrass is achieved using preemergence herbicides to disrupt its germination. Preemergence herbicides are not effective on perennial weeds that emerge from vegetative structures instead of seed.

Why Should I Use Them?

- When weeds are controlled as they germinate, it can reduce the need for further postemergence treatments.
- Preemergence herbicides may be safe to use around well-established plants in the landscape. **Always read and follow the herbicide label.**
- Preemergence herbicides are the best treatment for several problematic turfgrass weeds, such as crabgrass and goosegrass, which have limited options for postemergence treatments.
- Since summer temperatures do not favor cool-season lawn grasses in Kentucky, preemergence herbicides can help control weed seeds that germinate in late summer and early fall when desirable grasses are less competitive.



Figure 1. Preemergence herbicide in the spring is effective at controlling common summer weeds, such as goosegrass (a) and crabgrass (b).

When to Apply

An application of a preemergence herbicide in the spring is an effective way to control many common summer annual weeds in Kentucky lawns, such as crabgrass, foxtail, and goosegrass (Figure 1). Germination of this warm-season weed seed is regulated by soil temperature. For example, research shows that crabgrass germination begins when soil temperatures reach 57°. For effective control of crabgrass and other warm season grassy weeds, preemergence herbicides should be applied in the spring when soil temperatures reach an average of 50°-55° for approximately five days.

Soil temperature data can be found online with some weather reporting services. One source with soil temperature recordings is the Kentucky Mesonet website (kymesonet.org). Two-inch soil temperatures are measured daily at approximately 40 locations across the state. As spring temperatures can fluctuate from day to day it is important to aim for 50°-55° daily average soil temperature for five days. Soil temperatures may also be tracked with a soil thermometer or an inexpensive meat thermometer. Measurements should be made to a depth of two inches.

Traditionally, turf managers have also relied on plants as indicators for soil temperatures. The yellow bloom of forsythia is a signal that soil temperatures are ideal for warm-season annual grasses, such as crabgrass, to begin germination. While forsythia bloom is a tool managers can use, bloom times can vary based on the plant’s environment; therefore, monitoring soil temperature data is a more precise way to predict weed seed germination. To be effective, the application of preemergence herbicides must be timely.

Winter annual weeds, such as henbit, purple deadnettle, and common chickweed, can also be a problem for Kentucky lawns and can be controlled by preemergence herbicide applications (Figure 2). A late summer to early fall application is needed to prevent winter annual germination.

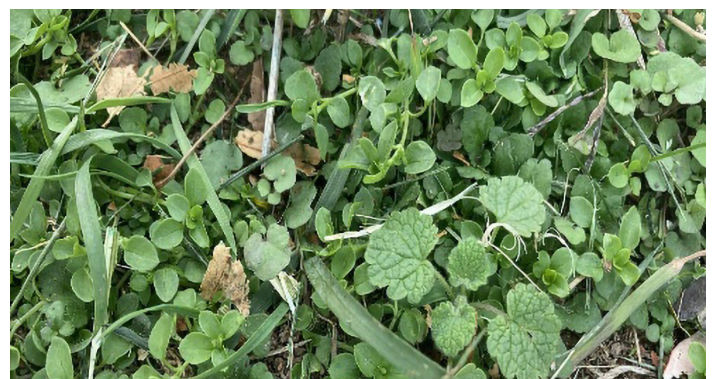


Figure 2. Winter annual weeds, such as common chickweed and purple deadnettle, can be controlled by preemergence herbicide applications in late summer or early fall.

Table 1. Common Preemergence Herbicides for Turfgrass.

For use on cool- or warm-season grasses.*			
Active Ingredient	Common Name	HRAC+	Notes
Bensulide	Bensumec	0	
Dithiopyr	Dimension	3	
Dithiopyr + Isoxaben	Crew	3+21	
Isoxaben	Gallery	21	Controls selected broadleaves, but will not control crabgrass or goosegrass emergence.
Pendimethalin	Pendulum	3	
Prodiamine	Barricade	3	
Prodiamine + Isoxaben	Gemini	3+21	
Prodiamine + Quinclorac	Cavalcade PQ	3+4	Quinclorac is a postemergence herbicide.
Sulfentrazone + Prodiamine	Echelon	14+3	Sulfentrazone also has postemergence activity.
For use on warm-season grasses only*			
Active Ingredient	Common Name	HRAC	Notes
Dimethenamid	Tower	15	
Dimethenamid + Pendimethalin	Freehand	15+3	
Indaziflam	Specticle	29	
S-metolachlor	Pennant Magnum	15	

*Read all labels carefully to ensure turf species and location of application are labeled for use.

+Herbicide Resistance Action Committee (HRAC) assigns numbers based on mode of action to assist in herbicide resistance management.

**Restricted use pesticides are only to be applied by licensed pesticide applicators.

How to Apply

Preemergence herbicides can be formulated in either granular or liquid forms. Granular preemergence herbicides are often impregnated on a fertilizer-type prill and may be broadcast with a fertilizer spreader. To be effective, spreaders must be calibrated to ensure the proper rate is being applied. For information on calibrating a spreader, please see University of Kentucky Extension publication AGR-211: *Calibrating Fertilizer Spreaders for the Home Lawn*.

Preemergence herbicides can also be sprayed using liquid formulations. Hose end sprayers and backpack sprayers are effective tools to apply herbicides evenly across the lawn. Attention must be paid to applying the herbicide evenly and at the proper rate. For more information on calibration of sprayers, consult University of Kentucky Extension publication AGR-220: *A No-Math Method for Calibrating Backpack Sprayers and Lawn Care Spray Guns*.

Resources

For more information regarding the differences between cool-season and warm-season species of grass for Kentucky lawns, consult University of Kentucky Extension publication AGR-52: *Selecting the Right Grass for your Kentucky Lawn*.