

Soil Temperatures and Spring Preemergence Herbicide Applications



Warm temperatures in March had many homeowners wondering about this year's first spring preemergence (PRE) herbicide application. When is the right time to apply in spring? Actually, it's still at least three weeks too early and there are several good reasons to wait.

PRE Herbicide Residual

PRE herbicides act by killing newly germinated weed seedlings, which come in contact with the herbicide as they grow their first shoot or root. The herbicide is gradually broken down by light and soil microbes, and this process starts as soon as the product is applied regardless of whether weed seedlings are present or not. Applying your PRE herbicide too early reduces the length of its actual effectiveness during periods of active weed growth, providing less weed control for your dollar.

Several PRE herbicides are available to homeowners. To figure out which one you are buying, look for the chemical name in the active ingredient statement on the front of the fertilizer bag.

- trifluralin and benefin (Team)
- dithiopyr (Dimension)
- pendimethalin (Pendelum, Pre-M)
- prodiamine (Barricade)

Soil Temperatures Still Cool

Eastern Nebraska is still experiencing freezing night temperatures, while many parts of western Nebraska still have snow on the ground. In each of the last three years, Lincoln's last freeze has occurred between April 12th and May 16th, according to data from UNL's School of Natural Resources. The 130-year average last freeze for Lincoln is April 23rd.

If crabgrass, one of the main weeds controlled by PRE herbicides, did germinate before April 15th plants will likely be killed by one of these late freezes. So let Mother Nature take care of the early germinating weeds and wait to make your first PRE application.

The guideline for PRE applications is based on the required soil temperature for germination of crabgrass and foxtail; 55° F at 4-inch soil depth for several days. As of April 3rd, soil temperatures for Lancaster county were 42° F. Check soil temperature reports for your location from the Nebraska State Climate Office online at Nebraska Extension's Hort Update website, <http://hortupdate.unl.edu>.)

When to Apply

For DIYers, who can make their application at the optimal time, wait and make your first PRE application between April 15th and the first week of May. Each product has a specific residual length. Follow label directions for the product you buy and make a second PRE application as directed in midsummer, or about mid-June, for season-long weed control. Many DIYers skip the second PRE application and are frustrated by the amount of weeds appearing in late summer. Once the PRE herbicide barrier is gone, dormant weed seeds germinate quickly in the warm soils of July and August. And remember, pre-emergence products are often impossible to find by mid-summer, so buy all the products you need for this season's weed control in spring and store them in your garage until you need them.

Why do lawn care companies apply early? With so many lawns to take care of, commercial lawn care companies have to start applications early so all their client's lawns are protected before weed germination begins. They often use products like prodiamine, which has a very long residual, so the herbicide is still effective when crabgrass is germinating.

Early Post Emergence Control

If you are concerned some crabgrass has already germinated before your PRE application was made, there are options. Products containing prodiamine or pendimethalin control young, one-leaf crabgrass plants if watered in immediately following application. Another option is dithiopyr, which when applied at the full label rate, kills crabgrass seedlings before they reach the tillering stage.

Weed Control in New Seedings

If you are reseeding or overseeding your lawn this spring, the only pre-emergent herbicide available to homeowners for use on new seedings is siduron, commonly sold as Tupersan. This herbicide will provide good control of annual grassy weeds like crabgrass and foxtail, yet still allow the grass seed to germinate.

Weed Control and Mowing

Finally, remember mowing height is an important long-term strategy to manage your lawn's weed problems. Research at the UNL Turfgrass Research Facility has shown raising your mowing height from 1.5 inches to 2.5 inches in Kentucky bluegrass decreased crabgrass infestation from 80% to less than 15% respectively. This is one of the primary reasons why a mowing height of 3.0 inches season-long is recommended on all lawns in Nebraska.

There is a direct relationship between mowing height and turfgrass rooting depth. Using a taller mowing height enables your lawn to develop a deeper root system and draw water from a larger soil area during hot, dry summer conditions. Choosing a taller mowing height will reduce crabgrass germination, even with no application of pre-emergent herbicide.

Your Suggestions are Welcome!

Is there a lawn and gardening topic you would like to learn more about? Sarah Browning is an Extension Educator with Nebraska Extension and can be contacted by phone 402 441-7180, by mail at 444 Cherrycreek Road, Lincoln, NE 68528: or by e-mail sarah.browning@unl.edu.



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