Crabgrass Control in Lawns

Crop and Soil Environmental News, March 2008

Author: Mike Goatley, Extension Turfgrass Specialist and Shawn Askew, Extension Turfgrass Weed Specialist

Crabgrass seed lies in the soil in wait, biding its time for just the right temperature and moisture to emerge and wreak havoc in lawns for another season. Crabgrass continues to be the number one pest in lawns worldwide. No matter how much effort you've taken in previous years to control crabgrass, our soils remain a veritable seed bank of crabgrass from years past. This warm-season summer annual grass germinates from seed just prior to the first significant growth period of our lawn grasses. And as annual plants are genetically programmed to do since they live such a short time, they grow like mad under optimal temperature conditions. Hence, a warm-season crabgrass plant has an inherent competitive advantage against cool-season lawn grasses (fescues, bluegrasses, and ryegrasses) and can even slug it out with perennial warm-season grasses (things like bermudagrass and zoysiagrass) because it gets a jump on them in early spring growth.

Use your turf to maximize crabgrass control. Crabgrass requires sunlight to germinate, a requirement that we can use to our advantage. Dr. Askew preaches that the lawn itself controls far more weeds than any chemical you will ever apply because the most weed control is gained by maintaining a dense turf canopy. If you were fortunate enough to survive the drought of 2007 with a reasonably dense lawn, spring weed pressure will be minimal. You still might want to use a standard preemergent (PRE) herbicide (a product that controls germinating plant seedlings), but it is unlikely your lawn will be swamped with weeds. If your turf stand is very sparse, then it is almost guaranteed that you will have significant weed pressure. So there is now a decision to be made—do you apply a PRE herbicide to control weeds OR do you apply new grass seed to fill in the gaps. For standard PRE herbicides available to most homeowners, there is no selectivity in control between weed or grass seed. So if the lawn is really thin, you will likely be better served to plan on a spring seeding over the next few weeks (more specifics on spring plantings to follow next week). You can still expect crabgrass pressure as the new grasses try to establish, but since the best weed control comes from the grass in your lawn and not the chemicals applied, this is likely the best approach. For those of you working with a professional lawn care operator, there are PRE options (chemical names of siduron and quinclorac) available to them that can be applied at spring seeding of cool-season grasses (not warm-season). This is another of the advantages available to homeowners when working with trained professionals.

What PRE herbicides are readily available to homeowners? There are many trade names of products on the market, so while it takes a little extra effort to look for the complicated common chemical names, it's the safest way to identify the product you are looking for. The following chemicals can most often be found at stores that deal with specialty products for lawns and landscapes, and at least a few of them will likely be available at your big-box retailers. Look for these chemical names under the "Active Ingredient" label of the prospective product: benefin, benefin + trifluralin, dithiopyr, pendimethalin, and prodiamine.

There is also an organic weed control product on the market as well: corn gluten meal (CGM). CGM works by releasing a protein that slows development of weed seedling roots leaving seedlings vulnerable to drought. In periods of extended rainfall CGM will fail to control weeds and its length of activity is very short-lived (a few weeks) as compared to standard synthetic chemistry which may last 120 days. If you are trying to establish turfgrass seedlings, CGM can harm them similar to synthetic chemistries, so consider if seeding is desired. CGM works best in northern climates and in lawns that have good turf density. Labeled rates of CGM treatments will deliver approximately 1 pound of water insoluble nitrogen per 1000 sq ft, making CGM another offering in the group of products known as "weed and feed" materials. For noticeable effects on crabgrass populations, 2 to 3 applications are needed in Virginia. Thus, 2 to 3 pounds of nitrogen is added to the turf in the spring. In the north, this added fertility tends to increase turfgrass competitiveness with crabgrass and reduce crabgrass infestation. In southern areas like Virginia, this added fertility in the spring can be injurious to tall fescue and lead to decline in turf during the stressful summer months. This decline in turf due to over fertility from CGM will leave openings in the turfgrass canopy and might actually promote weed infestation. For the Virginia do-it-yourselfer interested in CGM, we suggest you use CGM only once in early spring and add a half rate of synthetic preemergence crabgrass herbicide. Be sure that the herbicide does not contain any fertilizer. In so doing, you can rest assured that you have reduced your use of synthetic pesticides by using the half rate and reduced excessive nitrogen by using only one treatment of CGM.

Timing of PRE applications? Mother Nature provides us a valuable visual tool in the landscape that typically allows us to optimize the timing of PRE herbicides for homeowners: the forsythia. Its blooming can never be taken as an absolute signal of pending crabgrass emergence as Mother Nature is not perfect (in 2007 forsythia was blooming in January and February, well before crabgrass was germinating). However, it works in most years and Dr. Askew's research has found that the time when forsythia starts to drop its blooms is when PRE herbicides need to be in place in order to maximize crabgrass control. Now, don't be alarmed if your lawn care operator has applied earlier because due to sheer numbers of lawns to treat, there is no way they could make all the applications to their customers according to forsythia bloom. The PRE herbicides they are using have soil activity for 6-8 weeks that will address a broad window of crabgrass germination potential and any extension specialist will tell you "it is better to be extra early rather than late when applying preemergence herbicides for crabgrass control."

Post-treatment considerations? One thing required for all PRE herbicide applications is to water the product into the soil with either a suitable rainfall or irrigation event. The only way the product works is if it gets into the top of the soil profile to form a chemical barrier that germinating seedlings penetrate. Appropriate moisture is critical to optimize herbicide efficacy. And remember to keep all products on the turf and off hardscapes. This is the easiest way to protect our water resources.

Need help? Remember that your local Virginia Cooperative Extension office and website (www.ext.vt.edu/) are invaluable resources for the latest information on best management practices in lawn and landscape management, as well as a host of other topics. And check out the podcasts at Turf and Garden Tips for timely homeowner topics in lawn management (www.weblogs.cals.vt.edu/).