

Turfgrass Update

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Record drought and heat during the summer of 2012 took a toll on the cool-season turf across the northern Great Plains. Adding insult to injury was continuation of the drought into the fall, limiting seeding during the prime establishment period, and thus turf remained thin going into winter. However, a relatively snowy and mild winter limited damage from desiccation or direct cold temperature, so at least the turf damage did not worsen over the winter. Many cool-season turf areas will require some intervention early this spring to improve density and aesthetics.

As of writing this article in mid-March, consistent warming temperatures are not yet in the extended forecast, but it is still important to seed Kentucky bluegrass or tall fescue as soon as possible. Seeding from Thanksgiving through usually mid-March is considered dormant seeding because germination would not be expected for weeks to months when soil temperatures warm. The earliest references to dormant seeding in turf that I found was a 1923 version of the United States Golf Association's Green Section Record, though it was likely used much before that in agriculture. The benefit of dormant seeding is that the seed is in the ground, likely has absorbed water, and is ready to begin the germination process as soon as temperatures warm. Waiting to seed after temperatures warm up in spring may lead to delays due to wet soils, wind, busy schedules, etc., thus costing the seedlings valuable time to mature. Seeding cool-season grasses in the spring is hampered by weed competition from crabgrass and other weeds, increased water requirements because of shallow rooting, and poor tolerance of immature plants to summer's heat. Dormant seeding should maximize the time for seedlings to mature prior to summer stresses. The downsides of dormant seeding could include some seed loss from predation or erosion, or seedling death from extended warm periods in winter followed by cold temperatures. The latter becomes less of an issue as we move later into winter. We currently compensate potential seed loss of winter by increasing seeding rates by 10-20%; we are currently conducting research to try to understand potential changes in seed viability or seed loss during the winter.

Regardless of whether turf areas were dormant-seeded or yet to be seeded this spring, weed management is critical. All herbicides labeled for turf have restrictions for use over seedlings. However, minor herbicide injury to seedlings is quickly compensated by reduced weed pressure, so much of our recent research focuses on identifying herbicides that can be used safely and effectively over newly-seeded cool-season grasses. Recently released herbicides have increased the flexibility in weed control in new seedlings. A summary of our research results follows:

- Mesotrione (Tenacity®) is probably the most flexible product to use over cool-season seedlings and can be used in the seedbed as a preemergence (PRE) herbicide and as early as 28 days after emergence (DAE) according to the label. Our research indicates it could be applied earlier with little risk to seedlings and it will control crabgrass as well as many broadleaf weeds PRE and POST.
- Quinclorac (Drive® and many trade names) is labeled for use at 28 days after emergence (DAE), but our work shows it could also be applied earlier with little risk of damage. Do not use the methylated seed oil additive when using over seedlings. It will control crabgrass as well as many broadleaf weeds POST.
- Carfentrazone (QuickSilver®) is a contact broadleaf herbicide and has almost no restrictions on use over seedling turf. However, multiple applications will be required since it is a contact herbicide.
- Quinclorac+carfentrazone (SquareOne®). Can be used as early as 7 DAE and control crabgrass as well as many broadleaf weeds POST.
- Dithiopyr (Dimension® and others) (primarily preemergence plus early postemergence on annual grasses) is the safest of the typical PRE herbicides and can be used usually after the second mowing. This herbicide is often recommended after an application or two of quinclorac (Drive) or mesotrione (Tenacity) for long-term PRE control.
- Siduron (Tupersan®) is an older PRE herbicide that can be used in the seed bed to provide crabgrass control while allowing the cool-season grasses to germinate. Siduron has a short residual and therefore will require repeat applications about every 3 to 4 weeks for extended control; or one or two applications can be used shortly after seeding followed by traditional PRE's with better residual.

The drought has spurred tremendous interest in converting lawns to buffalograss. Our buffalograss breeder/geneticist Keenan Amundsen has been extremely busy spearheading the last details for releasing our newest seeded cultivar, "Sundancer," as well as collaborating on research to further refine establishment and management of buffalograss. One frequent complaint on buffalograss is its slow establishment. However, in side-by-side research plots seeded in spring, buffalograss that is maintained properly will establish almost as fast as tall fescue and faster than Kentucky bluegrass. We believe the complaint on slow establishment is usually a result of consumers perceiving buffalograss as a low maintenance grass that needs "little or no inputs." However, buffalograss requires similar irrigation, fertilization and mowing as Kentucky bluegrass or tall fescue during the first year of establishment to maximize cover, and only then can maintenance be dramatically reduced. We are also in the process of evaluating a number of new herbicides with apparent safety on seedling buffalograss. In the past, quinclorac was the standard herbicide, and though it is still effective, a number of new products like Tenacity (mesotrione), Dismiss® (sulfentrazone) Solitaire® (sulfentrazone+quinclorac), or Echelon® (sulfentrazone+prodiamine) can be applied at seeding with little risk of buffalograss injury. Different herbicide options should improve buffalograss establishment and thus reduce long-term inputs. Much more information on dormant seeding as well as establishing and maintaining buffalograss can be found at <http://turf.unl.edu>.