

Controlling Rough Bluegrass in Bentgrass Fairways

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Rough bluegrass (*Poa trivialis* L.) is a pernicious weed in many golf course fairways of the Midwest. In some cases it appears as a contaminant in the seed used for establishment, in other cases it is intentionally planted in shaded areas. Its stoloniferous growth habit aid its spread into areas previously uninfested areas. While it can form a pleasant turf, rough bluegrass has a coarser leaf texture, shinier leaves, and more horizontal growth habit than creeping bentgrass which make it stand out when it grows in bentgrass fairways. Moist conditions favor growth of rough bluegrass: in dry and/or hot weather, the leaves may quickly turn brown, making its presence even more obvious in creeping bentgrass which has better heat and drought tolerance.

Cultural controls for removing rough bluegrass do not work very well. It grows fine at mowing heights used for fairways and roughs/home lawns. Allowing the area to dry out will kill the leaves, but chances are that at least some stolon tissue will survive to repopulate the area with rough bluegrass foliage. Hand removal is impractical, as with most stoloniferous weeds as some stolon tissue always seems to be left in the ground.

Herbicide control has never been much of an option for removing rough bluegrass unless a non-selective herbicide such as glyphosate (e.g., Roundup®) is used, usually in repeat applications to control new growth from stolons. Consequently, the recent availability of two selective herbicides labeled for rough bluegrass control provides new hope for superintendents dealing with rough bluegrass in their fairways.

Sulfosulfuron sold as Certainty®, is an example of the sulfonyl urea class of herbicides that have recently exploded into the market. We have been experimenting with it for several years as a selective control for quackgrass (*Elytrigia repens*) and tall fescue in Kentucky bluegrass turf with quite a bit of success and demonstrated it at field days (Garrison et al., 2007). Last year we also showed its potential as a growth regulator of creeping bentgrass fairways (Schneider et al., 2007). Bispyribac-sodium, sold as Velocity®, has been marketed primarily as a *Poa annua* control in bentgrass fairways. We have demonstrated its potential for this purpose for several years at the O.J. Noer facility and at one of Wisconsin's golf courses (Koeritz and Stier, 2006). Bispyribac-sodium is in the herbicide class of acetolactate synthase inhibitors. Both of these herbicides prevent the acetolactate synthase enzyme in plants from producing key amino acids needed for protein production. Without new proteins, affected plants quit growing, turn yellow and die within three to four weeks. Both products are used at extremely low rates (about 10 to 40 times less than conventional products) and pose low hazards to humans and the environment.

Preliminary trials with the two products in Illinois and Indiana led to a multi-state collaboration to test various rates for controlling different types of rough bluegrass in 2006. Because bispyribac-sodium seems to be more effective during warmer summer temperatures, our first treatments were applied 19 June. Sequential treatments were applied at two-week intervals for a total of two to four applications (Table 1). Treatments were applied to one of the creeping bentgrass fairways at Hawks Landing Golf Course, Madison, WI that was infested with rough bluegrass. Soil type was a silty clay with pH 7.1 and 4.1% organic matter. Turf was mowed at approximately 0.5 inch height. Herbicide treatments were applied in 2 gal water/1000 ft² using XR 8004 flat fan nozzles. A randomized block design was used with three replications of each treatment. We evaluated the percent cover of rough bluegrass in each plot at the beginning of the trial, then rated percent cover at 4, 8, and 12 weeks after the initial treatment (WAIT). Phytotoxicity of the treatments was rated on a 1 to 9 scale at 2-week intervals.

We achieved better than 90% control of rough bluegrass within 8 WAIT when Certainty was applied three times at 0.5 oz/A and Velocity

Table 1. Treatment rates and intervals for testing sulfosulfuron and bispyribac-sodium for control of rough bluegrass in creeping bentgrass fairway turf.

Herbicide	Rate	Number of applications
Control (surfactant only)	0.25% vol/vol	3
Certainty	0.25 oz/Acre	2
Certainty	0.50 oz/Acre	2
Certainty	0.25 oz/Acre	3
Certainty	0.50 oz/Acre	3
Velocity	0.65 oz/Acre	4
Velocity	0.98 oz/Acre	4
Velocity	1.3 oz/Acre	4

applied four times at 0.98 and 1.3 oz/A (Fig. 1). Similar control was seen with three applications of Certainty at 0.25 oz/A and two applications of Certainty at 0.5 oz/A, but control declined by 12 WAIT as the effects wore off before the stolons were completely killed. The low rates of Certainty and Velocity were ineffective. About 20% control was achieved in the surfactant only treatment-this was due either to natural death at high summer temperatures, the surfactant itself, or both.

Both products caused minor injury to creeping bentgrass within two weeks after the initial application (approximately a rating of 7 on a 1 to 9 scale with 9 equal to no injury and 6 equal to acceptable turf quality). Injury from Velocity applications virtually disappeared within four weeks, but injury at the high (and most effective) rate of Certainty continued and caused unacceptable injury (a rating of 5)

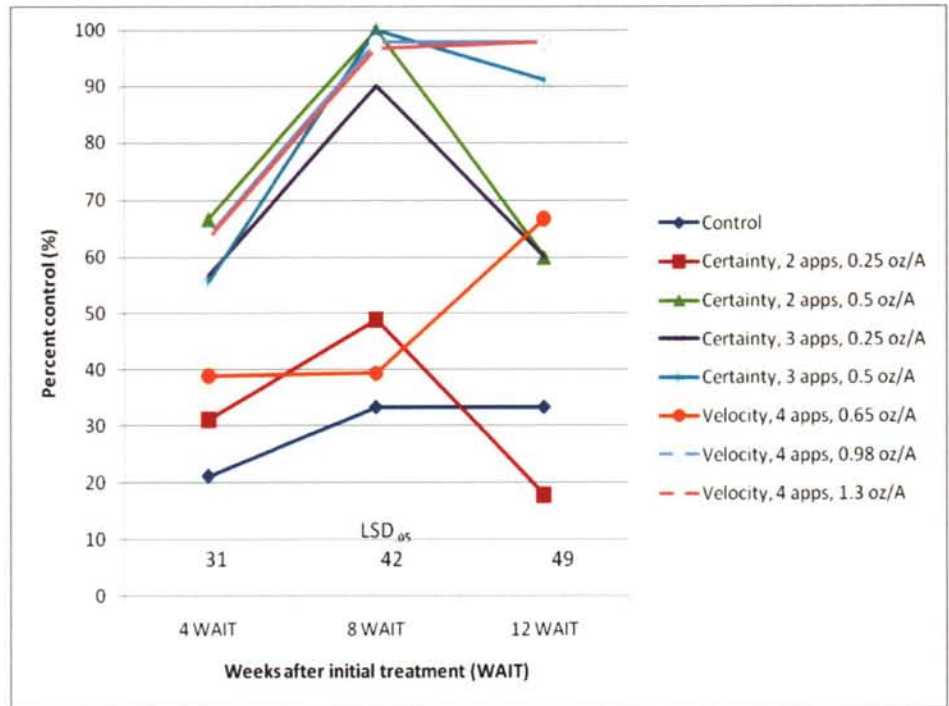
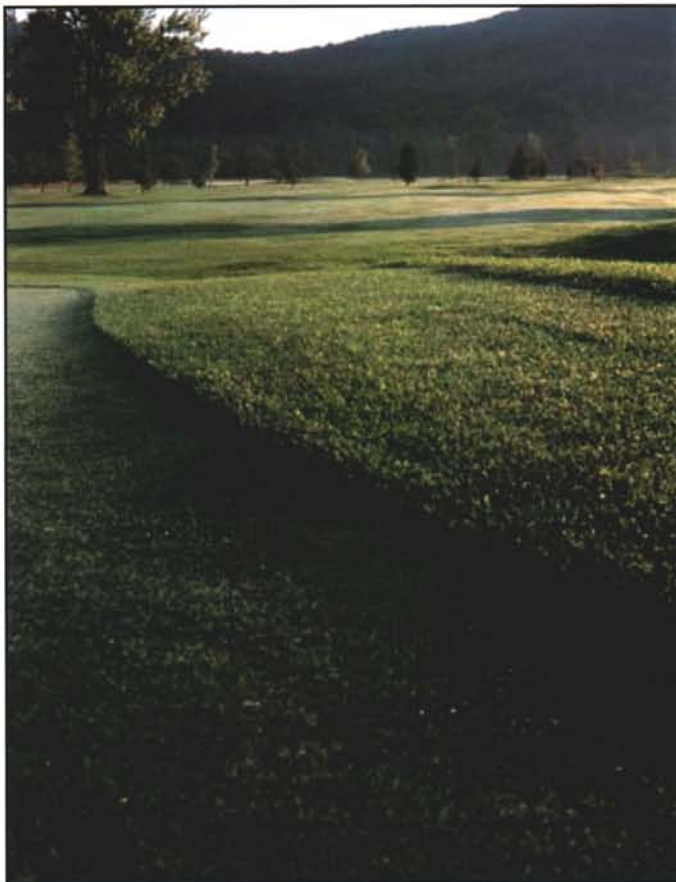


Fig. 1. Rough bluegrass control in creeping bentgrass fairway turf, Madison, WI, 2006, using Certainty (sulfosulfuron) and Velocity (bispyribac-sodium) herbicides.



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within 8 weeks of treatment; injury symptoms almost disappeared completely by 12 WAT.

Plots at Illinois and Indiana showed similar levels of control (Morton et al., 2007). However, treatments in South Dakota in both sunny and shaded conditions failed to control rough bluegrass, with the best effect (50% control) seen with the high rate of Certainty applied four times. The lack of control in South Dakota may be due to a resistant biotype of rough bluegrass or drier conditions which may have interfered with absorption and metabolism of the products as air temperature at the time of applications was similar to air temperatures in Illinois and Indiana.

Two years of consistent results in Illinois, Indiana, and one year in Wisconsin suggest that both Certainty and Velocity herbicides can be used to successfully control rough bluegrass in creeping bentgrass fairways. Herbicide applications should begin in mid to late June or when daytime temperatures have consistently reached at least 68 F and night temperatures are above 50 F. Applications should only be made if some phytotoxicity to the creeping bentgrass is acceptable. If phytotoxicity really needs to be avoided, four applications of Velocity at 1 oz/Acre should provide sufficient control of rough bluegrass. If less labor

is desired, three applications of Certainty can be used at 0.5 oz/A but expect greater phytotoxicity for perhaps two months after the initial application. Since both herbicides have very specific modes of action, the buildup of resistant weed populations is possible given sufficient use, but one season of multiple applications should be enough to virtually eliminate rough bluegrass from fairways for an extended period of time.

References

- Garrison, M., E.J. Koeritz, and J. Stier. 2007. Selective control of tall fescue in bluegrass. WTA/UWEX Turfgrass Field Day Res. Rpts. 12-13.
- Koeritz, E., and J. Stier. 2006. Evaluation of *Poa annua* control with Velocity herbicide. 2006 Wisc. Turfgrass Res. Rpts. 26:88-93 (www.wisconsinturfgrassassociation.com)
- Morton, D., D. Weisenberger, Z. Reicher, B. Branham, B. Sharp, R. Gaussoin, J. Stier, and E.
- Koeritz. 2007. Evaluating bispyribac-sodium and sulfosulfuron for control of roughstalk bluegrass. HortScience 42:1710-1714.
- Schneider, J., E. Koeritz, and J. Stier. 2007. Certainty™ as a plant growth regulator for fairway turf. WTA/UWEX Turfgrass Field Day Res. Rpts. 12-13. 🌱

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