

TURFGRASS TRENDS

POA CONTROL

Controlling Your Poa

Integrating cultural practices, products and proper timing are necessary for control

By Bert McCarty

Annual bluegrass (*Poa annua* L.) is the most troublesome winter annual grass weed on golf courses. Its low-growth habit and unique ability to thrive in moist conditions and compacted areas make golf courses ideal candidates for invasion. This article focuses on postemergence control in established turfgrasses.

Non-overseeded fairways

A recent three-year study [*Postemergent Annual Bluegrass Control in Dormant Nonoverseeded Bermudagrass Turf*, HortScience 42(3):670-672] investigated various herbicides and timings for postemergence *Poa* control in dormant bermudagrass fairways. TranXit, Monument, Katana, Finale + Envoy, Finale alone, Kerb, Revolver, Finale + Roundup Pro, Roundup Pro + Reward, and Roundup Pro + Envoy treatments provided best control in April whether they were applied in late December or early February.

Roundup Pro alone provided better control when applied in February compared to December while Princep and Image were better when applied in Decem-

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PHOTO 1



Gradually, *Poa* encroaches into greens from untreated fairways.

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ber compared to February. This might explain why some “failures” have occurred with certain products as timing may make a difference. For example, since Roundup has very short residual activity, applying it as late in the season as feasible (bermudagrass is still dormant) normally works better than applying it earlier.

The opposite would be true for Princep since it works best on smaller *Poa* plants plus has some soil residual activity.

Overseeded fairways

Much interest has been created on the possibility of using Prograss 1.5EC for postemergence *Poa* control in overseeded ryegrass. The key to success is proper timing.

In the Carolinas, two applications are necessary — the first during the third week in November followed by a sequential application three weeks later. It should not be applied after Jan. 15 as *Poa* control will suffer, and chances of injuring or delaying bermudagrass green-up increases. This is why Prograss should not be used where bermudagrass fails to experience complete dormancy.

Another twist we tried was applying a normal initial pre-emergence herbicide 60 days before overseeding followed by one early December postemergence application of Prograss at 1 pound active ingredient per acre (ai/a). We had excellent *Poa* control through spring of 2006 and good control in 2007.

Finally, bispyribac-sodium (Velocity) allows *Poa* control when treated just prior to seedhead expression. It typically is applied twice, the first in mid to late February followed by a sequential three weeks later. However, temperatures during and immediately following application largely dictate success. Temperatures during the application window should be 70 degrees Fahrenheit daytime and 50 F nighttime (21 degrees Celsius and 10 C, respectively), which is when *Poa* is most actively growing. If applied outside this temperature window, *Poa* is not as actively growing, and the herbicide can dissipate before control occurs.

In 2008, a 17.6 SG formulation of Veloc-

ity will be introduced. Rates will range for overseeded fairways from 6 ounces per acre (oz/a) — or 420 grams per hectare (g/ha) — for two applications or 12 oz/acre (840 g/ha) for a single application. Use the higher rate if mature *Poa* is present. Short term (about five days) yellowing to the treated ryegrass may follow application.

Program approach

Since no single product will provide 100 percent control in overseeded fairways containing moderate to heavy *Poa* populations, courses should consider a program approach. The following components of a program approach have provided most consistent *Poa* control in my research. Of course, each step in the program approach adds expense.

1) Apply 0.75 lbs ai/a Barricade 60 days prior to overseeding. By itself, this treatment will provide about 80 percent control.

To boost this percentage, 2) apply either 0.5 oz/a Tranxit 25DG, 0.3 oz/a Monument 75DF, or 9 oz/a Revolver 0.19L prior to overseeding as per their labels. This assumes you are overseeding after Oct. 1, therefore, allowing as much *Poa* as possible to germinate prior to overseeding. Since these are postemergence herbicides, any *Poa* that germinates after application will not be controlled. If overseeding earlier than Oct. 1, Step 2 will have diminishing effects.

3) Apply 1 gallon per acre of Prograss 1.5L in early December to mid-December for early postemergence control. Refer to the previous comments on successful Prograss use.

4) In mid- to late-February, apply Velocity 17.6 SC at 6 to 12 oz/acre (420 to 840 g/ha) when day/night air temperatures are at least 70/50 F, respectively. Repeat in three weeks if using the low rate.

Courses that haven't overseeded in several years might just need Step 1, Step 3, or Step 4. As *Poa* pressure increases, however, more steps are necessary. In heavier *Poa* populations, at a minimum, I would recommend steps 1 and 2. Superintendents should scout their fairways in early December and early February to determine if steps 3 and/or 4 are necessary.



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QUICK TIP

An excellent transition aid, Revolver® herbicide selectively removes cool-season grasses from warm-season grasses. Use it to control clumpy ryegrass, *Poa annua*, goosegrass and a number of other weeds in bermudagrass greens, teeboxes, collars and approaches surrounding bermudagrass greens, fairways and roughs. Results are generally apparent within one to two weeks.

10-Step Plan for Golf Greens

A total management program which favors bentgrass growth over *Poa*, is necessary when battling this weed. Without a totalitarian program against *Poa*, products will be less effective.

1. Fumigate all soil mix before planting or topdressing.
2. Provide good drainage to prevent soil compaction and excessive soil moisture that favor *Poa*.
3. Use certified seed, sprigs or sod free of *Poa* when planting.
4. Obtain and maintain good turf density to reduce *Poa* invasion, including adequate nitrogen.
5. Aerify consistently to relieve soil compaction.
6. Use pre-emergence herbicides in spring and fall.
7. Use PGRs in spring and fall to reduce *Poa* competition and seedhead development.
8. Hand pick or blotter nonselective herbicide (glyphosate, for example) on small *Poa* plants, about 1-inch or 2.5-cm diameter, for example.
9. Plug larger spots with *Poa*-free turf.
10. Provide control in other areas of the golf course to minimize seed transfer to greens by players, water movement, and maintenance equipment.

Bentgrass is sensitive to most postemergence grass herbicides. Additionally, most of these products are ineffective against annual bluegrass. As a result, pre-emergence herbicides are the most common means of controlling this weed on bentgrass golf greens. Erratic control of annual bluegrass, however, has occurred with many pre-emergence herbicides.

The presence of perennial biotypes of the species can contribute to this erratic control. Subsequently, repeat applications over multiple years (minimum of four years) are necessary for significant reduction of the perennial biotypes in bentgrass golf greens. Currently available pre-emergence herbicides labeled

for bentgrass golf greens include bensulide (Betasan, Weed Grass Preventer, others) and bensulide plus oxadiazon (Goosegrass/Crabgrass Control).

PGRs

Since annual bluegrass elimination in golf greens is not always achievable with current herbicide technology, suppressing its growth and seed-head production has become a primary goal.

Paclotrutzol (Trimmit) and flurprimidol (Cutless) selectively suppress annual bluegrass in bentgrass golf greens and fairways. Combining these PGRs with other products such as the sterol inhibitor (DMI) fungicides may also help suppress *Poa* in bentgrass. In a typical program, paclobutrazol or flurprimidol is applied to actively growing bentgrass two to three times in fall and two to three times in early spring when the turf is actively growing (50 to 70 degrees F (10 to 21 degrees C). Thirty-day intervals should occur between applications.

DMI fungicides applied two weeks following each PGR treatment increases *Poa* control but also stunts bentgrass growth. Repeating applications during these time periods over several years is necessary to gradually eliminate the perennial biotype. Treatments should not be made during periods of heat, moisture or cold stress to the bentgrass. Treated turf also may appear more "grainy" with a wider leaf texture while treated *Poa* plants often have noticeable discoloration in terms of a lighter-green to yellow color. Other materials (such as mefluidide, maleic hydrazide and ethephon) also are available, but only for higher-mowed turf and/or cause excessive turf damage on closely mowed greens.

Acknowledgements:

We conduct numerous Poa research trials yearly. This would be impossible without the cheerful assistance from Clemson University employees, superintendents who allow us to conduct these studies on their courses, and the various companies and their representatives for helping sponsor much of this research. We will have another Poa control mini-field day this spring, so plan on attending and comparing and contrasting your results with others.

Bert McCarty is a professor of turfgrass science at Clemson University in Clemson, S.C. He can be reached at bmccrty@clemson.edu.

The presence of perennial *Poa* biotypes can lead to erratic control and require a program that spans several years.