

New Options for Annual Bluegrass Control

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Man has been attempting to control annual bluegrass (*Poa annua*) ever since he began maintaining turfgrasses. A tiny plant, rarely reaching over 6 inches in height, this species is found throughout the world. Attempts to control annual bluegrass have ranged from cultural strategies such as limiting phosphorous use to the use of herbicides. At one time even inorganic arsenic was used to control annual bluegrass in creeping bentgrass putting greens. Despite the best of efforts and technology annual bluegrass has continued to remain a problem weed in most turfgrasses. Why? The over-riding reason is that annual bluegrass is highly adapted to turfgrass environments. In other words the maintenance procedures (mowing, irrigation, etc.) used in turfgrasses create an ideal environment for this weed. For example, annual bluegrass can be mowed at a height of 1/8 inch and still produce seed. It thrives in compacted soils. It grows well in wet soils. It can produce over 2,000 seeds per plant. While weed scientists agree that the majority of annual bluegrass seeds germinate in the early fall months, recent research at Auburn University has shown that a small percentage of annual bluegrass seed can germinate at the high air temperatures found during the summer months. This new research indicates that annual bluegrass is capable of germinating year round. Another factor contributing to the continue presence of annual bluegrass is that both annual and perennial biotypes are known to exist. *Poa annua* var. *annua*, is classified as the true annual biotype that dies in the late spring months. *Poa annua* var. *reptans* is classified as a perennial that can survive high summer air temperatures under management regimes used to maintain creeping bentgrass putting greens. Practices such as syringing and fungicide use that are necessary to insure creeping bentgrass survival in the South, also favor the survival of the perennial biotype of annual bluegrass.

Research has shown that both preemergence and postemergence herbicides can be used to control annual bluegrass in most turfgrass sites. Application timing with preemergence herbicides is critical to achieving high levels of control. Annual bluegrass starts its primary period of germination in late summer and early fall when soil temperatures at the 4-inch level drop to the low- to mid-70s F or lower. Preemergence herbicide application should be timed just prior to expected period of peak germination. Annual bluegrass often has a second germination flush in mid- to late-winter. This is important for turf managers to recognize because fall herbicide applications normally do not provide season-long control and repeat applications may be necessary.

Research as repeatedly shown that the majority of preemergence herbicides labeled for use in turfgrasses will provide 80 to 90% control of annual bluegrass when applied according label directions. Similarly postemergence applications of atrazine, simazine and pronamide (Kerb) during the November through February time frame will provide high levels of annual bluegrass control in non-overseeded

warm-season turfgrasses. In addition to bermudagrass, Kerb is now labeled for use in centipedegrass, zoysiagrass and St. Augustinegrass. For best result with Kerb, it should be applied during the cool winter months, and “watered-in” with 0.25 inch of irrigation water within 24 hours of application. Kerb is root-absorbed. Thus, adequate water is necessary to move Kerb into the root zone and to prevent volatilization. Kerb is highly phytotoxic to cool-season turfgrasses and should not be applied to overseeded warm-season turfgrasses, or adjacent to cool-season turfgrass sites.

The difficulty of annual bluegrass control becomes complicated when warm-season turfgrasses are over-seeded in the fall months with perennial ryegrass or *Poa trivialis*. Perennial ryegrass is commonly overseeded on warm-season turfgrasses from mid-September to late October in the southeastern United States. Thus, the primary time for seeding perennial ryegrass occurs during the same time that preemergence herbicides would be applied for annual bluegrass control. Preemergence herbicides used for annual bluegrass control inhibit perennial ryegrass establishment when applied before seeding. Due to soil persistence characteristics of preemergence herbicides used for weed control in turfgrasses, perennial ryegrass may not be seeded following an application for periods of time that range from 6 to 16 weeks depending upon the herbicide and application rate. Therefore, while effective annual bluegrass control can be achieved with most turfgrass preemergence herbicides, the time interval from application to overseeding is critical for successful perennial ryegrass establishment. Unfortunately there is not a preemergence herbicide that can be applied at the time of overseeding for annual bluegrass control. Additionally, postemergence herbicide options for annual bluegrass control in overseeded turfgrass sites is limited only to the late fall-early winter use of Prograss on bermudagrass.

A large amount of research has been conducted in the southern states to identify the time interval from preemergence herbicide application to overseeding perennial ryegrass and *Poa trivialis*. This research has shown that several preemergence herbicides can be applied at reduced rates 6 to 8 weeks before overseeding and not inhibit perennial ryegrass establishment. For example, Dimension formulations are now labeled for applications up to 8 weeks in advance of overseeding perennial ryegrass. Another new annual bluegrass control option that is expected to be labeled in time for use this fall and winter is TranXit (rimsulfuron). Griffin LLC will be marketing this herbicide this fall and winter for annual bluegrass control in overseeded and non-overseeded bermudagrass. TranXit will be used for annual bluegrass control in two distinctly different situations. On bermudagrass sites scheduled to be overseeded, TranXit can be applied 10 to 14 days before seeding perennial ryegrass or *Poa trivialis*. Research conducted in Georgia and Alabama has showed that TranXit at 2.0 oz. product/acre applied 10 to 14 days in advance of seeding perennial ryegrass does not inhibit establishment and provides approximately 80% annual bluegrass control at 6 months after application. In non-overseeded, dormant bermudagrass, late winter to early spring applications of TranXit at the same rate will also provide about 80% annual bluegrass control. TranXit is a sulfonylurea herbicide that has primarily postemergence activity on annual bluegrass. However, preemergence activity has also been demonstrated with this herbicide. TranXit will also be labeled for use as a spring transition aid. Late spring applications of TranXit at approximately the 50% green-up growth stage of bermudagrass will control perennial ryegrass with only slight injury to bermudagrass. Under no circumstances should TranXit be applied to control annual bluegrass in desirable fall-seeded cool-season turfgrasses or to creeping bentgrass.

The number of herbicides labeled for the control of annual bluegrass in overseeded and non-overseeded warm-season turfgrasses continues to increase. And, several new experimental herbicides are currently being evaluated for this purpose in the southern states. In my opinion, the new label changes for Kerb and Dimension definitely have added new tools to the annual bluegrass control toolbox. Also, TranXit will be a useful new tool in both overseeded and non-overseeded bermudagrass. However, regardless of the product selected, the level of annual bluegrass control is influenced by environmental factors, herbicide application timing and uniformly applying the product at the recommended rate. Annual bluegrass is a formidable weed. It may be tiny, but it continues to thrive despite the best of our efforts. Careful attention to proper turfgrass maintenance practices, application timing, and following the herbicide label will be necessary to adequately control this problem species.