

The Landscape Alert

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Preemergence Annual Bluegrass Control in Turfgrass

Dr. Patrick McCullough, University of Georgia Extension Weed Specialist

Annual bluegrass (*Poa annua*) is a major problematic weed in turfgrass that begins to germinate this time of year. Compared to most turfgrasses, annual bluegrass has a lighter green color, coarser leaf texture, and produces unsightly seed heads.

Contrary to its name, both annual (live for one season) and perennial (live for many seasons) biotypes of annual bluegrass may be found in turf. Perennial biotypes will be more prevalent:

- On highly maintained lawns that receive frequent irrigation and high nitrogen fertilization.
- In shady or highly trafficked lawn areas with compacted soil.

While the two biotypes may not be easily distinguished from each other, annual types are more upright in growth and produce greater seed than lower-growing perennial types.

Annual bluegrass seed germinates in late summer/early fall once soil temperatures fall below 70° F. Seedlings mature in fall, overwinter in a vegetative state, and produce seed in late spring and early summer. Annual bluegrass is a prolific seed producer as individual plants may produce over 360 viable seeds even when closely mowed. Seed may lie dormant in soil for many years before germinating. Annual bluegrass flowers and produces viable seed in spring and at virtually any mowing height. Annual bluegrass grows well under short day lengths and cool conditions, and may out-compete other turf species during late fall and early spring. Annual bluegrass often dies from summer stresses but may survive if irrigated and pests are adequately controlled, especially perennial biotypes.

Cultural Control

Several cultural practices improve annual bluegrass control.

- Deep and infrequent irrigation encourages turfgrass root development which improves the ability of desired grasses to compete with annual bluegrass.
- Withhold water until desirable turfgrass species exhibit initial drought stress symptoms. Overwatering, especially in shady areas, will predispose turfgrass to annual bluegrass invasion.
- Avoid practices that promote soil compaction. Relieve compaction with regular aerifications in spring and fall.
- Voids left in turf with exposed soil following aerifications may permit annual bluegrass invasion during periods of peak germination. Time aerifications in early fall to allow turf to recover before annual bluegrass germinates.
- Reduce nitrogen fertilization during peak annual bluegrass germination and during periods of vigorous growth (cool weather). High nitrogen at these times encourages annual bluegrass spread and survival in to winter and spring. Fertilizing dormant turfgrasses when annual bluegrass is actively growing will exacerbate infestations.
- Lower mowing heights encourage annual bluegrass invasion. Height of cut for lawns should be no less than 2 inches.

- Mow lawns at least once per week during periods of vigorous growth to prevent scalping. Scalping thins out turf enabling weeds such as annual bluegrass to establish. While returning clippings is recommended to recycle nutrients to the soil, removal of clippings may be useful when annual bluegrass is present and producing seed heads. Removing clippings at this time will reduce the spread of viable seed through the lawn.

Chemical Control

Preemergence herbicides may prevent annual bluegrass infestation via seed and limit current infestations from further spreading. However, preemergence herbicides will not eradicate established plants and will not effectively control perennial biotypes of annual bluegrass from spreading vegetatively. Application timing of preemergence herbicides for annual bluegrass control is very important, and thus herbicides must be applied in late summer/early fall before annual bluegrass germination. A second application can be applied in spring to control germinating plants. Fall applied preemergence herbicides cannot be used if reseeding or resodding is needed to repair areas of damaged turf within several months after herbicide applications.

Several preemergence herbicides effectively control annual bluegrass in fall and winter which are similar to products used for summer annual weed control. These herbicides include dithiopyr (Dimension), oxadiazon (Ronstar, Starfighter), pendimethalin (Pendulum, others), and prodiamine (Barricade, others).

Combination herbicide products are also available which may improve efficacy of applications. These products include oxadiazon plus bensulide (Anderson's Crab and Goose) and benflin plus oryzalin (Team 2G or Team Pro). Many preemergence herbicides are available under a wide variety of trade names and formulations, and thus, turf managers should carefully read and follow label instructions before applying products.

Most preemergence herbicides will provide similar initial efficacy if applied before annual bluegrass germination and sufficient rain or irrigation is received. Preemergence herbicides require incorporation from irrigation or rainfall so that weeds may absorb the applied material. In order to effectively control annual bluegrass, preemergence herbicides must be concentrated in the upper 1/3 inch of the soil profile. Herbicide retention on leaf tissue can be avoided by irrigating turf immediately after applications for effective soil incorporation.

Preemergence herbicide applications on non-irrigated sites have less potential for successful residual control compared to irrigated turf. Turf managers should return clippings on non-irrigated sites to help reduce herbicide retention on leaf tissue and incorporate herbicide concentration into the soil. If clippings are collected as part of routine maintenance, turf managers should consider returning clippings until at least half to one inch of rainfall is received in order to move the herbicide off leaf tissue.

Turf managers applying liquid formulations of preemergence herbicides to non-irrigated sites should use high water volumes (>100 gallons per acre) to reduce foliar contact and increase soil water concentration with the herbicide. Applying dry granular products on non-irrigated sites may reduce contact with turfgrass leaf tissue for more effective soil incorporation. Granular products may be easier to handle and apply with less equipment necessary than sprayable formulations. Granular herbicides should be applied when morning dew is no longer present to avoid interference from turfgrass leaf tissue.