

***POA ANNUA* CONTROL IN TURF**

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Poa annua, also known as annual bluegrass, is a cosmopolitan weed in all turfgrass situations. In Arizona, the vast majority of the annual bluegrass is the true winter annual (*Poa annua* var. *annua*) that germinates in the fall, grows throughout the winter season, flowers profusely in the spring during March and April, and then dies as the summer temperatures rise. The seed will remain in the soil all summer long and will germinate again early during the next fall. The annual form of *Poa annua* produces stemmy seedheads that often grow in a circular pattern around the leaves, especially when the turf is mowed regularly. In the summer, when bermudagrass grows well and is manicured regularly, the bermudagrass greens will squeeze out most of the *Poa*, both annual and perennial forms. The hot weather stress is not conducive for *Poa* growth.

The perennial form of “annual” bluegrass, *Poa annua* var. *reptans*, occurs much less frequently. The perennial types of *Poa annua* essentially survive only in very close-cut turfs like golf course greens. They are found more often on bentgrass greens. Since *Poa* and bentgrass are cool season grasses, both respond to weather and seasonal stresses in the same way and at the same time. Bentgrass greens are typically first infested with the annual type of *Poa annua* and then the perennial type will encroach and then become the dominant weed in a period of 5 to 10 years. In higher cut turfs on tees, fairways, and roughs, the annual type will be the more common weed.

Weed control programs in turfgrasses generally are targeted against the annual form of *Poa* and consideration should be given to strategies based on the type of herbicides to apply at different growth stages of *Poa* in different turfgrasses. Situations for considering different *Poa* control strategies are:

1. Control *Poa* at the time of germination and prevent emergence by using a preemergence herbicide, or wait until after most of the *Poa* infestation is emerged and visible then use a postemergence herbicide.
2. Control *Poa* in overseeded winter turfgrasses, perennial ryegrass or roughstalk bluegrass (*Poa trivialis*) or in non-overseeded dormant bermudagrass by safely using preemergence or postemergence herbicides.
3. Prevent *Poa* from maturing and inhibit seedhead growth without affecting ryegrass emergence.

Preemergence Control of *Poa annua*

There are many options available if a winter turfgrass is not overseeded into the bermudagrass. Several preemergence grass herbicides will easily control *Poa* by preventing seedling emergence (Table 1). Treat bermudagrass turf before late September. If these herbicides were applied in the previous spring for summer annual grass weed control, these chemicals will not last long enough in the soil to be effective against *Poa* in the fall season.

Table 1. Preemergence control of *Poa* when bermudagrass is **not** overseeded

- benefin (Balan*)
- bensulide (Betasan*)
- dithiopyr (Dimension*)
- oryzalin (Surflan*)
- pendimethalin (Pendulum*, Pre-M*)
- prodiamine (Barricade*)
- trifluralin (Treflan*)

When bermudagrass **will** be overseeded with a winter turf (ryegrass), the selection of an herbicide is limited and timing of application of a preemergence herbicide is very critical (Table 2). In this case, ryegrass must be able to emerge safely after overseeding and at the same time try to prevent *Poa* establishment. Most preemergence herbicides will also prevent the ryegrass from emerging. However, a properly timed and a very early application of a preemergence herbicide is one option. Another option is to use selective chemicals that control the *Poa* while being safe on the emerging winter turf.

Table 2. Preemergence control of *Poa* when bermudagrass **will** be overseeded with a winter turf (ryegrass)

- prodiamine (Barricade*)
Barricade, when applied 6 to 8 weeks before overseeding, will stop 95% of the *Poa* from germinating, and let the ryegrass come through. The ryegrass roots will be stunted for a while. Irrigation is critical and the ryegrass should not be allowed to dry and become stressed. Barricade is labeled for use on golf course turf (not greens), lawns, and sod farms. The label states that rates for this special use of Barricade are 12 to 21 oz product/A.
- rimsulfuron (Tranxit*)
Tranxit can be applied 5 days before seeding, at 2.0 oz prod/A. It is labeled for many turf sites including sod farms, seed farms, golf courses, professionally managed college and professional stadium turf, and industrial and commercial sites. It is not labeled for residential turfs. Tranxit can remove cool season grasses when applied in the spring for transition to bring back the bermudagrass.
- fenarimol (Rubigan*)
Rubigan is a fungicide that has activity against *Poa*, but not on ryegrass and *Poa trivialis*. Rubigan should be applied in a 2 or 3 application program for a total of 12 oz prod/1000 sq ft in the fall season. If only ryegrass is used for the overseed turf, use 2 applications of 6 oz prod/1000 sq ft. Rubigan can be applied up to 2 weeks before overseeding. If *Poa trivialis* is used for the overseed turf, use 3 applications, with the last application being made 30 days before overseeding. For both, 2 or 3 application programs the treatment intervals are 14 days apart.

Postemergence Control of *Poa annua*

The *Poa* is emerged and exists as a seedling or established plant. The size and age of the weed and the “background” turfgrass are important considerations when applying postemergence herbicides for a *Poa* control program.

When ryegrass is overseeded and established as a winter turfgrass, the safety to ryegrass and the underlying dormant bermudagrass is critical (Table 3).

In situations when the bermudagrass is not overseeded with a winter turf, there are many options available (Table 4). Many of the herbicides are non-selective and so it is critical to be sure that the underlying bermudagrass is dormant before making applications. The *Poa* will begin to flower from late January to mid-April with profuse flowering in March. It is better to eliminate the *Poa* before flowering.

Table 3. Postemergence control of *Poa* in overseeded bermudagrass (with ryegrass)

- ethofumesate (Prograss*)

Prograss is applied to the overseeded turf after the ryegrass has emerged and the bermudagrass is dormant. It is safe on ryegrass but the bermudagrass must be totally dormant or injury will appear during spring green-up. It works best when the *Poa* is young or smaller than the 2-3 tiller stage. Prograss has both preemergence and postemergence activity on *Poa*. It is safe on ryegrass, Kentucky bluegrass, tall fescue, St. Augustine, and dormant bermudagrass. It is not to be used on golf greens. Prograss is applied at 0.65 to 0.75 gallon prod/A. Two applications near the dates of December 20 and January 6 should be effective and safest when the bermudagrass should be dormant. The label states February 1 or 4 weeks before bermudagrass breaks dormancy as last date for application or spring green-up will be delayed.

- fenarimol (Rubigan*)

Late January to early February postemergence applications are not as effective as fall applications applied preemergence to *Poa* emergence.

- prodiamine (Barricade*)

A second application at 4 to 8 weeks after overseeding or when the ryegrass roots are deeper than 2 inches in soil may enhance *Poa* control. Ryegrass roots must be well established and there should be no injury from the preemergence application in the fall. Be careful! Barricade will not control *Poa* after it is emerged and established. This application extends the length of control of the first application and prevents emergence of *Poa* in the late winter and early spring.

Table 4. Postemergence control of *Poa* in non-overseeded bermuda (ryegrass not present)

- glyphosate (ROUNDUP* and similar products)
A broad-spectrum and non-selective herbicide, glyphosate will control most actively growing green plants. Therefore, the bermudagrass must be dormant or injury will occur. Weed control is slow in winter and may take longer than 7 to 14 days but application at that time helps with *Poa* seedhead management. Rates range from 8 to 64 oz prod/A, or as a directed spray or spot spray, use a ¾% solution (1 oz prod/gallon of water).
- diquat (Reward*)
A broad-spectrum and non-selective herbicide, Reward will rapidly control most weeds and *Poa* on contact. Therefore, the bermudagrass must be dormant or injury will occur. Use a rate in the range of 1 to 2 pt prod/A.
- pelargonic acid (Scythe*)
This is fatty acid soap that is a broad-spectrum and non-selective herbicide. Apply it to dormant bermudagrass. Use rates are from 1-1/3 to 10 oz prod/gallon water. Spray until the foliage is wet.
- pronamide (Kerb*)
Kerb is a herbicide that controls all cool season grasses. It will move with water after it is applied on the turf. Be cautious since it will physically move laterally! Kerb has both postemergence as well as preemergence activity on *Poa*. Application rates range from 1 to 2 lb prod/A.
- ethofumesate (Prograss*)
Again, Prograss will control young *Poa* plants only if it is smaller than the 1-2 tiller stage. Do not apply it within 4 weeks of the expected dormancy break of bermudagrass. The label states “do not apply past February 1”. This is in the interest of protecting the bermudagrass.
- simazine (Princep*)
Simazine has both preemergence activity and postemergence activity on young seedling *Poa*. It won't be effective on mature *Poa* in March. The recommended rate is 1.0 qt prod/A. Simazine must be watered in and applied October 1. Simazine will “yellow” bermudagrass temporarily. It is not to be used on golf course greens.
- glufosinate ammonium (Finale*)
Finale, similar to Roundup, is a non-selective postemergence herbicide that must be applied when the bermudagrass is dormant. Application rates range from 2 to 6 qt prod/A and the high rate should be used in cold weather or if the *Poa* exists in dense populations. If using a directed or spot spray, use 3 to 4 oz prod/gallon water.

***Poa annua* Control on Golf Course Greens**

Bermudagrass greens overseeded with ryegrass or *Poa trivialis* and bentgrass greens require special attention. Many plant growth regulators can be used safely to suppress *Poa* (Table 5A). Read the labels in their entirety, as particular protocols exist when using these products on greens.

Rarely will you find the perennial form of *Poa* on these greens. If you missed the golden opportunity to use a preemergence herbicide during fall overseeding, then you probably will have some of the true winter annual *Poa*. Since you have winter ryegrass on the green, it is safest to stop the seedheads from emerging in the spring and then letting the annual *Poa* die from heat in late June. In this case, starting in the beginning of January, apply a tank mix of PROXY at 5.0 oz prod/1000 sq ft and PRIMO at 0.25 oz prod/1000 sq ft every 24 days (Table 5B). Apply this combination regularly through May or until the *Poa* is eliminated by the high temperatures.

Table 5A. Bentgrass greens
Vegetative suppression of <i>Poa</i> <ul style="list-style-type: none">• flurprimidol (Cutless*)• paclobutrazol (TGR*)• mefluidide (Embark*)• fenarimol (Rubigan*)
Seedhead control of <i>Poa</i> <ul style="list-style-type: none">• trinexapac-ethyl (PRIMO*) mixed with ethephon (PROXY*)
Table 5B. Overseeded bermudagrass (ryegrass and/or <i>Poa trivialis</i> present)
<ul style="list-style-type: none">• PROXY at 5.0 oz prod/1000 sq ft and PRIMO at 0.25 oz prod/1000 sq ft every 24 days. (follow label instructions as there is a limit to the number of applications or amount of product that can be applied)

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