

Poa Control on Bentgrass Greens

Principal Investigator: Larry Stowell

Cooperators: Eric Lover, Dove Canyon Country Club

Sponsor: PACE Consulting

Summary: Dimension and Prograss were evaluated for control of *Poa annua* (poa) encroaching into Penncross creeping bentgrass greens. In both cases, bentgrass damage was too severe to recommend their use on bentgrass mowed at green height.

Background: Poa encroachment into bentgrass greens is the leading weed control problem on greens in California. Once poa patches reach two to three inches, the battle is frequently lost within the following few years. Prolific seed production by poa at all mowing heights, even 1/8 inch, is the primary cause of poa encroachment into bentgrass greens. Only manual weeding of all small poa seedlings from a green almost daily can prevent complete conversion of a bentgrass green to poa. The labor cost of manual weeding is generally thought to be too high for most golf courses. Therefore, chemical or biological controls would be highly desirable.

Dimension (dithiopyr, Rohm and Haas) is a newly labeled product in California with excellent pre- and early post-emergence crabgrass activity. Moreover, Dimension is labeled, with precautions, for use in poa control on bentgrass greens. Prograss (ethofumesate, AgrEvo), on the other hand, has been around for many years and has proven effective for poa control in fairways throughout the country. Prograss is not labeled for use on bentgrass greens and representatives from AgrEvo have indicated that the company has no intent of labeling Prograss for use on greens. Bentgrass mowed at greens heights are to sensitivity to Prograss applications. However, if a product is reasonably safe for use on bentgrass greens and effectively controls poa, a 24C special local need registration could be applied for by PTRI or the golf course superintendents association.

Materials and Methods: Dimension and Prograss were evaluated on a bentgrass putting green suffering from mild poa invasion at Dove Canyon Country Club. The practice green was still in use at the time of the trial but the green

was scheduled for removal so turf damage did would not cause great concern. All applications to the four by four foot plots were made using a single nozzle to uniformly deliver 4.1 gal of spray mixture/1000 sq ft. Dimension was applied once on 12/7/95 at 1.5 and 3.0 oz/1000 sq ft. Prograss was applied three times; 12/7/95, 12/19/95 and 1/17/96. The third application of Prograss was modified by offsetting the 4 by 4 foot plots by 2 feet so that the third application only treated half of the plots already treated two times. This modification was implemented because turf damage was already significant and a third application over the entire plot would have surely caused too much damage. Plots were evaluated for turf damage and percent poa control on 2/5/96.

Results: Dimension appeared to effectively control about 30% of the poa patches. However, the remaining poa patches were not damaged by Dimension. This effect is likely caused by the wide range of poa biotypes and their varying sensitivity to the herbicide. Support for this theory is the fact that the same proportion of poa patches were controlled at both the 1.5 and 3.0 oz/1000 sq ft rates. The "sensitive" biotypes were completely killed by the Dimension. In addition to unwanted bentgrass damage, Dimension is a pre-emergence herbicide. If the turf dies, seeding a severely damaged Dimension-treated green will not be successful for three months. If all of the biotypes of the poa were controlled by this herbicide, the turf damage reported in Table 1 might be tolerable. However, the poor control combined with the significant turf damage are an undesirable combination.

Prograss provided good control of poa at the 1.5 and 3.0 oz/1000 sq ft rates when applied two or three times. Unfortunately, 10% bentgrass damage is too great to recommend the use of Prograss for use on golf course greens. Dimension does not provide sufficient control of poa and Prograss treatment results in unacceptable turf damage. Neither product is suitable for use in control of poa on Penncross creeping bentgrass greens.

Table 1. Ratings on 2/5/96. Values followed by the same letter are not significantly different (Fisher's LSD p,0.05)

Treatment (oz/1000 x number of apps)	% Poa Control	% Bentgrass Damage
Dimension 1.5 x 1	27 b	7 b
Dimension 3.0 x 1	27 b	5 b
Prograss 1.5 x 2	97 c	10 b
Prograss 1.5 x 3	100 c	28 c
Prograss 3.0 x 2	100 c	57 d
Prograss 3.0 x 3	100 c	77 e
Non-treated check	0 a	0 a