

ANNUAL BLUEGRASS (*Poa annua*)
CREEPING BENTGRASS (*Agrostis palustris* 'Penncross')
Turfgrass quality
Seedhead production
Dollar spot; *Sclerotinia homoeocarpa*

L.P. Tredway, E.L. Butler, and M.D. Soika
Department of Plant Pathology
North Carolina State University
Raleigh, NC 27695

Effects of ethephon and trinexapac-ethyl on annual bluegrass putting greens, 2006.

Two plant growth regulators were evaluated for their effect on turf quality, seedhead production, and disease development in annual bluegrass putting greens. This trial was conducted at the Blowing Rock Country Club in Blowing Rock, NC on a mixed stand of annual bluegrass (~90%) and creeping bentgrass (~10%) maintained under putting green conditions. Plots were 3.33 ft x 6 ft and were arranged in a randomized complete block with four replications. Fungicides were applied in water equivalent to 1 gal per 1000 sq ft with a CO₂ powered sprayer at 40 psi using TeeJet 8002 nozzles. All treatments were initiated on 29 Mar. Fungicides were reapplied at the appropriate intervals as indicated in the table. Dollar spot incidence was evaluated on 7 and 12 Jul by counting the number of dollar spot infection centers per plot. Percent turf area exhibiting annual bluegrass seedheads was assessed on 28 Apr, 7 Jun, and 12 Jul. Turfgrass quality was evaluated on 7 Jun and 12 Jul, using a 1 to 9 scale (9=best, 5=acceptable) based on color, density, and uniformity. Data were subjected to analysis of variance and means separation by Waller-Duncan k-ratio t test (k=100).

No treatments provided significant suppression of seedhead formation on 28 Apr, presumably because applications were initiated too late to control this initial flush of seed production. Two additional flushes of seedhead formation occurred and were evaluated on 7 Jun and 12 Jul. On 7 Jun, all treatments provided a significant reduction in seedhead formation, but repeat applications of Proxy or Proxy + Primo Maxx provided superior control compared to single applications. On 12 Jul, only treatments receiving 4 applications of Proxy or Proxy + Primo Maxx provided excellent seedhead suppression.

Plots receiving 3 or 4 applications of Proxy alone exhibited increased dollar spot incidence on 12 Jul, but Proxy + Primo Maxx had no impact on dollar spot development. Plots treated with Proxy alone on 24 May exhibited reduced turf quality on 7 Jun in the form of severe chlorosis, and similar effects were observed on 12 Jul resulting from the treatment applied on 28 Jun. Treatments containing Proxy + Primo Maxx did not induce chlorosis or reduce turfgrass quality. Throughout the trial, no differences were observed between treatments receiving 4 applications of Proxy + Primo Maxx or 1 application of Proxy followed by 3 applications of Proxy + Primo Maxx. Repeat applications of Proxy are necessary to obtain season-long suppression of annual bluegrass seedheads, but this can cause reductions in turf quality and increased susceptibility to dollar spot. Proxy + Primo Maxx combinations provide similar benefits in seedhead suppression without these negative side effects.

Treatment, formulation, and rate per 1000 sq ft	Application code	Annual bluegrass seedheads (percent of plot infested)		
		28 Apr	7 Jun	12 Jul
		Proxy 21.7%F 5 fl oz	A ^z	45 a
Proxy 21.7%F 5 fl oz	AE	61 a	3 c	10 de
Proxy 21.7%F 5 fl oz	AEI	55 a	1 c	6 ef
Proxy 21.7%F 5 fl oz	AEIM	46 a	1 c	1 fg
Proxy 21.7%F 5 fl oz + Primo Maxx 11.3%ME 0.125 fl oz	A	41 a	10 b	23 b
Proxy 21.7%F 5 fl oz + Primo Maxx 11.3%ME 0.125 fl oz	AE	55 a	4 c	11 cd
Proxy 21.7%F 5 fl oz + Primo Maxx 11.3%ME 0.125 fl oz	AEI	53 a	3 c	8 de
Proxy 21.7%F 5 fl oz + Primo Maxx 11.3%ME 0.125 fl oz	AEIM	54 a	3 c	1 fg
Proxy 21.7%F 5 fl oz + Primo Maxx 11.3%ME 0.125 fl oz ^x	EIM	53 a	1 c	0 g
Untreated Control		61 a	17 a	33 a

^zApplication code indicates the application date(s) of each treatment: A-29 Mar, E-28 Apr, I-24 May, and M-28 Jun.

^yValues are means of four replications. Means within columns followed by the same letter are not significantly different according to Waller-Duncan k-ratio t-test (k=100).

^xPrimo Maxx was not a component of the mixture on 29 Mar.

Treatment, formulation, and rate per 1000 sq ft	Application code	Dollar spot incidence ^z		Turfgrass quality ^y	
		7 Jun	12 Jul	7 Jun	12 Jul
		Proxy 21.7%F 5 fl oz	A ^x	1 a ^w	1 c
Proxy 21.7%F 5 fl oz	AE	1 a	3 bc	7.3 a-d	7 abc
Proxy 21.7%F 5 fl oz	AEI	1 a	5 ab	6.0 d	7 abc
Proxy 21.7%F 5 fl oz	AEIM	1 a	8 a	6.3 d	4 d
Proxy 21.7%F 5 fl oz + Primo Maxx 11.3%ME 0.125 fl oz	A	1 a	4 abc	8.0 abc	5 cd
Proxy 21.7%F 5 fl oz + Primo Maxx 11.3%ME 0.125 fl oz	AE	2 a	4 bc	6.8 cd	6 bc
Proxy 21.7%F 5 fl oz + Primo Maxx 11.3%ME 0.125 fl oz	AEI	2 a	2 bc	8.0 abc	8 ab
Proxy 21.7%F 5 fl oz + Primo Maxx 11.3%ME 0.125 fl oz	AEIM	5 a	1 c	7.0 bcd	8 a
Proxy 21.7%F 5 fl oz + Primo Maxx 11.3%ME 0.125 fl oz ^v	EIM	3 a	1 c	7.3 a-d	7 ab
Untreated Control		3 a	1 c	8.3 ab	6 abc

^zDollar spot incidence is represented by the number of dollar spot infection centers per plot.

^yTurfgrass quality on a 1-9 scale, where 9=highest quality, and 5=acceptable.

^xApplication code indicates the application date(s) of each treatment: A-29 Mar, E-28 Apr, I-24 May, and M-28 Jun.

^wValues are means of four replications. Means within columns followed by the same letter are not significantly different according to Waller-Duncan k-ratio t-test (k=100).

^vPrimo Maxx was not a component of the mixture on 29 Mar.