CONTROL OF ANNUAL BLUEGRASS SEEDHEADS ON A GOLF COURSE FAIRWAY USING PLANT GROWTH REGULATOR PRODUCTS, 2019

T.T. Lulis, K. Tang, and J.E. Kaminski

Department of Plant Science
The Pennsylvania State University

This study was conducted at the Joseph Valentine Turfgrass Research Center in University Park, PA. The site was maintained as a golf course fairway with mowing performed 3 times per week at a height of 0.5 in. Fairway soil rootzone was a silty loam with a pH of 7.6 and 2.1% organic matter. Individual plots measured 3 ft x 6 ft and were arranged as a randomized complete block design with four replications. Treatments were applied with a CO^2-pressurized backpack sprayer at 40 PSI with a single TeeJet AI9508EVS nozzle and calibrated to deliver 1.0 gallon of water per 1000 ft^2. Treatments were initially applied in the late fall and followed up with spring applications based a growing degree day model. Spring applications were initiated at 197 GDD (base 32), with sequential applications made at 488 and 720 GDD. All application dates are listed in the tables. Percent seedhead was visually assessed on a 0 to 100 percent scale where 0 = no seedheads present and 100 = entire plot area covered with seedheads. All data were subjected to analysis of variance and means separated at $P \leq 0.05$ according to Fisher's Protected least significant difference test.

Seedheads were first observed at the site in late April 2019. Seedhead pressure continued to increase until 20 May when peak pressure was reached with the nontreated plots having 74% seedhead coverage (Table 1). Seedhead pressure then declined within all treatments with the nontreated plots exhibiting 28% seedheads by 3 Jun. Plots treated with Proxy/Anuew provided excellent seehead control (3 to 6%) when compared to the nontreated plots (21 to 74%) on all rating dates. No differences in percent seedhead were observed between Anuew-treated plots, regardless of application rate. Injury was not observed from any treatment in this study.

Table 1. Percent *Poa annua* seedheads on a fairway following the application of plant growth regulators, 2019.

Treatment and rate per 1000ft^2		App Code[y]	Percent seedhead[z]					
			29 Apr	6 May	13 May	20 May	27 May	3 Jun
1	Proxy 5.0 fl oz.....	ABC	3.3 b[x]	4.0 b	6.0 b	5.0 b	5.3 b	2.8 b
	Anuew 1.3 grams	C						
	Anuew 2.6 grams	D						
2	Nontreated	-	21.3 a	42.0 a	73.8 a	86.3 a	48.8 a	28.3 a
3	Proxy 5.0 grams	ABC	2.8 b	4.0 b	5.8 b	4.0 b	4.5 b	3.5 b
	Anuew 2.6 grams	CD						

[z] Percent seedhead was visually assessed on a 0 to 100 percent scale where 0 = no seedheads present and 100 = entire plot area covered in seedheads.

[y] Treatments were applied on the following dates: A = 13 Dec 2018, B = 30 Mar 2019, C = 17 Apr, and D = 26 Apr 2019.

[x] Means in a column followed by the same letter are not significantly different at $P \leq 0.05$ according to the Fisher's Protected least significant difference.