

Seedhead Suppression of Annual Bluegrass on a Putting Green

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Introduction

This study was conducted on a mixed stand of ‘Penncross’ creeping bentgrass (*Agrostis stolonifera*) and annual bluegrass (*Poa annua*) at the Penn State Blue Golf Course in State College, PA. The objective of the study was to evaluate selected growth regulators, with and without adjuvants, for the seedhead suppression of annual bluegrass.

Methods and Materials

This study was a randomized complete block design with three replications, and a plot size of 21 ft². Treatments were applied on April 3 (GU), April 21 (BT), and May 15 (3 WAT), 2007, respectively, using a three-foot CO₂ powered boom sprayer calibrated to deliver 40 gpa using one 11004E even tip/flat fan nozzle at 40 psi.

Boot stage of the annual bluegrass was observed April 27, 2007.

The site was maintained using cultural practices for irrigation, mowing, and fertilization that would be typical for a putting green. The test area was mowed three times with a Toro Triplex with an eleven blade reel, bench set to 0.115”, before the April 3, 2007 application of selected materials. Prior to the initiation of the study, the site was fertilized with a Nature Safe 8-3-5 fertilizer at a rate of 1 lb N/M in February and again with Anderson’s Contec DG 18-9-18 at a rate of 1lb N/M on May 10, 2007.

Results and Discussion

Turfgrass phytotoxicity was rated seven times during the study (Table 1). Unacceptable phytotoxicity was only found on the May 8th, 2007 rating date. This unacceptable phytotoxicity was a result of applications of: Embark T&O at 40 oz/A alone or combined with Ferromec, Embark T&O at 40 oz/A plus Eco-N, Primo MAXX plus Embark T&O at 40 oz/A plus Eco-N, and Proxy plus Embark T&O at 30 oz/A plus Ferromec.

Annual bluegrass seedhead suppression was rated twice during the study (Table 2). On the final rating date, June 1st, 2007, all treated turfgrass had significantly more seedhead suppression than non treated turfgrass. On this date, turfgrass treated with Embark T&O at 40 oz/A plus Ferromec plus Eco-N, Embark T&O at 30 oz/A plus Primo MAXX plus Eco-N with or with out Ferromec, Embark T&O at 40 oz/A plus Primo MAXX plus Eco-N plus Ferromec had significantly less annual bluegrass seedhead suppression than all other treated turfgrass. It should be noted that the test site had relatively “light seedhead production” during the 2007 season. In 2007 the untreated turfgrass only had about 35% coverage of annual bluegrass seedheads in contrast to prior years when the site had 90% or more coverage in non treated areas. The relatively “light pressure” of 2007 may have lead to the increase of suppression that had not previously been observed.

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Table 2. Ratings of the percent seedhead suppression of an annual bluegrass/creeping bentgrass putting green in 2007.

Treatment	Form	Rate oz/M	Timing	(-----%Suppression ¹ -----)	
				5/24	6/1
EMBARK T&O	0.2SL	40 oz/A	BT	89.2a	90.6a
EMBARK T&O	0.2SL	40 oz/A	BT	89.2a	86.4a
FERROMECC	L	5	BT		
EMBARK T&O	0.2SL	40 oz/A	BT	79.2ab	85.3a
ECO-N (24-0-0)	2.2L	0.25 lb N/M	BT		
PRIMO MAXX	1MEC	0.125	BT/3 WAT	48.6ab	93.9a
PROXY	2SL	5	BT/3 WAT		
PRIMO MAXX	1MEC	0.125	BT/3 WAT	58.3ab	93.9a
PROXY	2SL	5	BT/3 WAT		
ECO-N (24-0-0)	2.2L	0.25 lb N/M	BT/3 WAT		
CHECK				0.0c	0.0c
ECO-N (24-0-0)	2.2L	0.25 lb N/M	GU	76.7ab	58.3b
EMBARK T&O	0.2SL	40oz/A	BT		
FERROMECC	L	5	BT		
ECO-N (24-0-0)	2.2L	0.25 lb N/M	GU	75.3ab	63.9b
PRIMO MAXX	1MEC	0.125	GU		
EMBARK T&O	0.2SL	30 oz/A	BT		
ECO-N (24-0-0)	2.2L	0.25 lb N/M	GU	55.6ab	65.3b
PRIMO MAXX	1MEC	0.125	GU		
EMBARK T&O	0.2SL	30 oz/A	BT		
FERROMECC	L	5	BT		
ECO-N (24-0-0)	2.2L	0.25 lb N/M	GU	80.8ab	89.4a
PRIMO MAXX	1MEC	0.125	GU		
EMBARK T&O	0.2SL	40 oz/A	BT		
ECO-N (24-0-0)	2.2L	0.25 lb N/M	GU	51.4ab	56.9b
PRIMO MAXX	1MEC	0.125	GU		
EMBARK T&O	0.2SL	40 oz/A	BT		
FERROMECC	L	5	BT		
PROXY	2SL	5	GU	89.2a	90.6a
EMBARK T&O	0.2SL	30 oz/A	BT		
FERROMECC	L	5	BT		
PROXY	2SL	5	GU/BT/3 WAT	62.5ab	93.9a
PRIMO MAXX	1MEC	0.125	BT/3 WAT		
QUALI-PRO T-NEX	1MEC	0.125	BT/3 WAT	47.2ab	93.9a
ETHEPHON	2SL	5	BT/3 WAT		
QUALI-PRO T-NEX	1MEC	0.125	BT/3 WAT	40.3b	97.2a
ETHEPHON	2SL	5	BT/3 WAT		
ECO-N (24-0-0)	2.2L	0.25 lb N/M	BT/3 WAT		
ETHEPHON	2SL	5	GU/BT	75.0ab	92.8a
QUALI-PRO T-NEX	1MEC	0.125	BT		

1 - Means followed by same letter do not significantly differ (P = 0.05 Duncan's New MRT)