

Preliminary Evaluation of Materials Applied to Perennial Ryegrass For Symptom Suppression of Etiolated Tiller Syndrome

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Introduction

Symptom presence, phytotoxicity, and disease severity evaluations were conducted on a mature stand of 'Jet-Eilte' perennial ryegrass (*Lolium perenne* L.) at the Valentine Turfgrass Research Center, Penn State University, University Park, Pa. The objective of the study was to determine the symptom presence, phytotoxicity, and disease severity of perennial ryegrass following applications of selected compounds.

Methods and Materials

The study was a randomized complete block design with three replications. All treatments were applied using a three foot CO₂ powered boom sprayer calibrated to deliver 80 gpa using one, flat fan, 11008E nozzle at 40 psi. SIGNATURE, ZEROTOL, 26GT, COCS, ACTIGARD, and CLEARY'S 3336 were applied as the turf began to green up (GU) on April 10, 2006 and were reapplied every two weeks, April 26 (2 WA GU), May 9 (4 WA GU), May 22 (6 WA GU), June 5 (8 WA GU), June 28 (10 WA GU), July 11 (12 WA GU), and July 25, 2006 (14 WA GU). BANNER MAXX and HERITAGE were applied at green up (GU), April 10, 2006 and reapplied every four weeks, May 9 (4 WA GU), June 5 (8 WA GU), and July 11, 2006 (12 WA GU). PRIMO MAXX, PROXY, PRIMO MAXX+PROXY, AND PRIMO MAXX+TRIMMIT were applied April 17, 2006 at the boot stage timing (BS) to mimic an annual bluegrass seedhead suppression application and treatments were reapplied every four weeks, May 12 (4 WA BS), June 13 (8 WA BS), and July 11, 2006 (12 WA BS). TRIMMIT was applied on May 12, 2006 at an annual bluegrass seedhead shatter timing (SHTR) to mimic annual bluegrass control program and reapplied every four weeks, June 13 (4 WA SHTR), and July 11, 2006 (8 WA SHTR). The test plot size was 21 ft².

Symptoms of Etiolated Tiller Syndrome were first recorder on the test area on April 13, 2006. The test site was mowed first on April 12, 2006, at one and one half inches, and then twice weekly with a Toro 228-D Groundsmaster rotary mower with clippings returned to the site. The test site was fertilized twice during the trial with 1 lb of N/M from IBDU on April 27, 2006 and again on May 24, 2006 2. The test area was irrigated to prevent moisture stress.

Results and Discussion

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Table 1. Quantitative evaluations of perennial ryegrass symptoms using a 1ft² grid to count affected tillers with three sub samples per plot in 2006.

Treatment	Form	Rate oz/M	Timing	-----Tiller Counts ¹ -----	
				7/26	8/28
PRIMO MAXX	1MEC	1	BS/4/8 WA BS	2.8f	3.8ab
TRIMMIT	2SC	0.5 lb ai/A	SHTR/4/8 WA SHTR	17.0d	3.8ab
PROXY	2SL	5	BS/4/8 WA BS	27.8abc	6.0ab
PRIMO MAXX	1MEC	0.25	BS/4/8 WA BS	3.4ef	5.0ab
PROXY	2SL	5	BS/4/8 WA BS		
SIGNATURE	80WP	8	GU/2/4/6/8/10/12/14 WA GU	19.7cd	4.4ab
BANNER MAXX	1.3L	4	GU/4/8/12 WA GU	21.6bcd	4.6ab
CHECK				19.6cd	4.4ab
PRIMO MAXX	1MEC	0.125	BS/4/8 WA BS	12.1de	4.7ab
TRIMMIT	2SC	0.25 lb ai/A	BS BS/4/8 WA BS		
ZEROTOL	L	12	GU/2/4/6/8/10/12/14 WA GU	19.0cd	2.8b
26GT	2L	8	GU/2/4/6/8/10/12/14 WA GU	31.9a	3.1ab
COCS	WP	2.5 lb/A	GU/2/4/6/8/10/12/14 WA GU	21.4bcd	4.2ab
ACTIGARD	50WG	1 oz/A	GU/2/4/6/8/10/12/14 WA GU	20.3cd	2.3b
CLEARY'S 3336	50WP	8	GU/2/4/6/8/10/12/14 WA GU	18.6cd	4.2ab
HERITAGE	50WG	0.4	GU/4/8/12 WA GU	30.2ab	6.9a

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

Table 2. Visual evaluations of perennial ryegrass phytotoxicity where 0 = dead turf, 7 = acceptable, and 10 = no phytotoxicity in 2006.

Treatment	Form	Rate oz/M	Timing	-----Phytotoxicity-----	
				5/18	6/5
PRIMO MAXX	1MEC	1	BS/4/8 WA BS	5.8	10.0
TRIMMIT	2SC	0.5 lb ai/A	SHTR/4/8 WA SHTR	8.7	10.0
PROXY	2SL	5	BS/4/8 WA BS	10.0	10.0
PRIMO MAXX	1MEC	0.25	BS/4/8 WA BS	7.5	10.0
PROXY	2SL	5	BS/4/8 WA BS		
SIGNATURE	80WP	8	GU/2/4/6/8/10/12/14 WA GU	10.0	10.0
BANNER MAXX	1.3L	4	GU/4/8/12 WA GU	10.0	10.0
CHECK				10.0	10.0
PRIMO MAXX	1MEC	0.125	BS/4/8 WA BS	6.5	10.0
TRIMMIT	2SC	0.25 lb ai/A	BS BS/4/8 WA BS		
ZEROTOL	L	12	GU/2/4/6/8/10/12/14 WA GU	9.3	10.0
26GT	2L	8	GU/2/4/6/8/10/12/14 WA GU	10.0	10.0
COCS	WP	2.5 lb/A	GU/2/4/6/8/10/12/14 WA GU	8.3	10.0
ACTIGARD	50WG	1 oz/A	GU/2/4/6/8/10/12/14 WA GU	9.0	10.0
CLEARY'S 3336	50WP	8	GU/2/4/6/8/10/12/14 WA GU	8.7	10.0
HERITAGE	50WG	0.4	GU/4/8/12 WA GU	10.0	10.0

Table 3. Visual evaluations of disease severity of perennial ryegrass where 0 = no incidence and 9 = severe incidence in 2006.

Treatment	Form	Rate oz/M	Timing	-----Severity ¹ -----				
				4/27	5/18	6/12	6/27	8/28
PRIMO MAXX	1MEC	1	BS/4/8 WA BS	4.3b	1.7d	1.3d	1.3f	2.0b
TRIMMIT	2SC	0.5 lb ai/A	SHTR/4/8 WA SHTR	5.0ab	4.7abc	3.3c	4.7cd	3.0b
PROXY	2SL	5	BS/4/8 WA BS	5.0ab	5.3ab	5.0bc	7.0ab	3.3b
PRIMO MAXX	1MEC	0.25	BS/4/8 WA BS	4.7ab	1.3d	3.3c	2.3ef	3.0b
PROXY	2SL	5	BS/4/8 WA BS					
SIGNATURE	80WP	8	GU/2/4/6/8/10/12/14 WA GU	5.7a	5.7ab	5.0bc	6.0bcd	3.7b
BANNER MAXX	1.3L	4	GU/4/8/12 WA GU	5.3ab	4.3bc	4.0c	4.7cd	3.7b
CHECK				5.3ab	5.7ab	4.3c	7.0ab	3.3b
PRIMO MAXX	1MEC	0.125	BS/4/8 WA BS	5.3ab	3.0cd	3.7c	4.0de	3.7b
TRIMMIT	2SC	0.25 lb ai/A	BS BS/4/8 WA BS					
ZEROTOL	L	12	GU/2/4/6/8/10/12/14 WA GU	5.3ab	5.3ab	4.3c	6.3bc	3.7b
26GT	2L	8	GU/2/4/6/8/10/12/14 WA GU	5.7a	6.3a	6.7a	8.7a	3.7b
COCS	WP	2.5 lb/A	GU/2/4/6/8/10/12/14 WA GU	5.7a	5.0ab	4.7c	6.7abc	3.0b
ACTIGARD	50WG	1 oz/A	GU/2/4/6/8/10/12/14 WA GU	6.0a	4.0bc	3.7c	6.3bc	2.3b
CLEARY'S 3336	50WP	8	GU/2/4/6/8/10/12/14 WA GU	6.0a	5.0ab	4.7c	6.3bc	3.7b
HERITAGE	50WG	0.4	GU/4/8/12 WA GU	6.0a	5.3ab	6.3ab	6.7abc	5.7a

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