

Management of Basal-rot Anthracnose on a Putting Green with Fungicides, 2005

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Introduction

Basal-rot Anthracnose (*Colletotrichum graminicola*) frequently causes major injury to putting greens; particularly those comprised of high populations of annual bluegrass (*Poa annua*). The use of fungicides is a significant component of a turf manager's approach in the management of basal-rot Anthracnose. The objective of this study was to evaluate the effects of various products, rates, rotations, and application timings for controlling Anthracnose infection on *Poa annua*.

Materials and Methods

The study was conducted at the Valentine Turfgrass Research Center, University Park, PA, on a mixed stand of annual bluegrass and creeping bentgrass. The site was maintained as a golf course green, mowed six times per week at 0.125-inch cutting height. The soil was a modified sandy clay loam with a pH of 7.0. The experiment was fertilized on 19 Apr with 1.0 lb nitrogen (18-9-18). Treatment plots, 3 ft x 6 ft, were arranged in a randomized complete block design with three replications. Treatments were applied with a CO₂-powered sprayer, using a TeeJet 11008E nozzle at 40 psi, in water equivalent to 2 gal per 1000 sq ft. Treatment applications were made on 5 and 18 May, and 2, 15, and 29 Jun, unless otherwise noted in the table. Disease severity was evaluated on 24 May, 2, 9, and 22 Jun, and 14 Jul. Only the annual bluegrass was evaluated, as the bentgrass was not symptomatic. Data were subjected to analysis of variance and multiple comparisons of the mean values were made using the Waller-Duncan k-ratio test. Data from 24 May, and 2 and 9 Jun are presented.

Results and Discussion

Anthracnose basal rot severity was moderate in the experiment; and declined after 9 Jun. The 9 Jun evaluation revealed six of the treatments were significantly different from the untreated check: Ecoguard (7-and 14-day intervals), Insignia + Cascade, Heritage 50WG, Spectro + Alude, and the Ecoguard-Endorse alternation. Only the two Ecoguard (applied alone) treatments and the Insignia + Cascade combination were significantly different from the untreated check on each of the three rating dates. Phytotoxicity was observed after the first application of the Insignia-Cascade mixture in which the Cascade had been applied at 16.0 fl oz. The Cascade rate was changed to 8.0 fl oz, after which no phytotoxicity was observed in the study.

Table. Management of basal-rot anthracnose on a putting green with fungicides, 2005.

Treatment, formulation, and rate per 1000 sq ft	Anthracnose severity ^z					
	24 May		2 Jun		9 Jun	
Untreated Check.....	4.3	a ^y	4.0	a-d ^y	4.0	b-f ^y
Lynx 45WP 0.6 oz	4.0	ab	5.0	ab	4.7	a-d
Lynx 45WP 0.3 oz	3.7	abc	5.0	ab	4.3	a-e
Lynx 45WP 1.2 oz ^x	3.3	abc	4.0	a-d	5.0	abc
BASF Northern Greens Program ^w	3.3	abc	4.0	a-d	3.3	b-h
1. Insignia 20WG 0.5 oz + Emerald 70WG 0.13 oz						
2. Manicure 82.5WG 3.2 oz + Propiconazole Pro ME 1.0 fl oz						
3. Insignia 20WG 0.5 oz + Emerald 70WG 0.13 oz						
4. Manicure 82.5WG 3.2 oz + Propiconazole Pro ME 1.0 fl oz						
5. Manicure 82.5WG 3.2 oz + Iprodione Pro 2SC 2.0 fl oz						
Endorse 2.5WP 4.0 oz.....	3.0	abc	4.0	a-d	4.3	a-e
Lynx Flo 2SC 0.5 fl oz.....	3.0	abc	3.3	b-f	4.3	a-e
Insignia 20WG 0.9 oz + Revolution L 6.0 fl oz	3.0	abc	2.0	e-h	2.3	e-i
Tartan SC 1.28 fl oz.....	2.7	abc	4.3	abc	2.7	d-i
Medallion 50WP 0.25 oz	2.7	abc	5.3	a	4.0	b-f
3336 Plus F 6.0 fl oz + Alude L 5.5 fl oz	2.3	abc	1.0	h	3.0	c-i
Spectro 90WDG 4.0 oz.....	2.3	abc	3.7	a-e	3.0	c-i
Signature 80WG 4.0 oz + Daconil Ultrex 82.5WG 2.4 oz	2.3	abc	3.0	c-g	3.0	c-i
Tartan SC 0.6 fl oz.....	2.3	abc	3.0	c-g	3.7	b-g
Lynx Flo 2SC 1.0 fl oz.....	2.3	abc	5.3	a	6.3	a
Lynx Flo 2SC 2.0 fl oz ^x	2.3	abc	3.3	b-f	5.3	ab
Insignia 20WG 0.9 oz + Propiconazole Pro 1.3ME 1.0 fl oz	2.3	abc	5.3	a	3.0	c-i
Insignia 20WG 0.9 oz + Primer L 6.0 fl oz	2.3	abc	1.7	fgh	2.0	f-i
Daconil Ultrex 82.5WG 3.25 oz	2.3	abc	2.3	d-h	2.0	f-i
Ecoguard L 20.0 fl oz alternate Endorse 2.5WP 4.0 oz ^v	2.3	abc	2.3	d-h	1.3	hi
Spectro 90WDG 4.0 oz + Alude L 5.0 fl oz	2.0	abc	1.7	fgh	1.7	ghi
Heritage TL 0.8ME 1.0 fl oz.....	2.0	abc	3.0	c-g	3.0	c-i
Insignia 20WG 0.9 oz + Manicure 82.5WG 3.2 oz	2.0	abc	4.3	abc	2.3	e-i
3336 4F 6.0 fl oz.....	1.7	abc	1.7	fgh	3.7	b-g
3336 Plus F 6.0 fl oz	1.7	abc	1.3	gh	3.0	c-i
Heritage 50WG 0.2 oz	1.7	abc	1.7	fgh	1.3	hi
Insignia 20WG 0.9 oz	1.7	abc	2.3	d-h	2.0	f-i
Signature 80WG 4.0 oz + 26GT 2SC 3.0 fl oz.....	1.3	bc	1.7	fgh	3.0	c-i
Insignia 20WG 0.9 oz + Cascade L 8.0 fl oz.....	1.3	bc	1.3	gh	1.3	hi
Ecoguard L 20.0 fl oz alt. Daconil Ultrex 82.5WG 3.25 oz ^u	1.3	bc	2.0	e-h	3.0	c-i
Ecoguard L 20.0 fl oz ^t	1.3	bc	0.7	h	1.0	i
Ecoguard L 20.0 fl oz.....	1.0	c	2.0	e-h	1.3	hi

^zDisease severity index 0-10; 0=asymptomatic, and 10=>90% annual bluegrass symptomatic, mean of three replications.

^yMeans within column followed by different letters are significantly different (P≤0.05) according to the

Waller-Duncan k-ratio test.

^xTreatment applied as a curative treatment 2, 15, and 29 Jun.

^wTreatments were applied on 14-day intervals in the order indicated in the table beginning 5 May.

^yProducts were applied alternately on a 14-day interval (Ecoguard 5 May, 2 and 29 Jun; Endorse 18 May and 15 Jun).

^uProducts were applied alternately on a 14-day interval (Ecoguard 5 May, 2 and 29 Jun; Daconil Ultrex 18 May and 15 Jun).

^tTreatment applied on a 7-day interval from 5 May through 6 Jul.