

Control of Brown Patch on a Fairway Turf with Fungicides, 2005

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Introduction

Brown Patch (*Rhizoctonia solani*) can be a serious disease on golf courses during prolonged warm and humid periods of summer. This study was conducted at the Valentine Turfgrass Research Center, University Park, PA, on colonial bentgrass (*Agrostis capillaris*, 'Bardot') maintained under golf course fairway management conditions. The objective of the study was to evaluate various fungicides, rates, and tank-mixtures for effectiveness in controlling brown patch.

Materials and Methods

The experiment was conducted at the Valentine Turfgrass Research Center, University Park, PA, on colonial bentgrass maintained under golf course fairway management conditions, mowed three times per week at 0.5-inch cutting height. The soil was Hagerstown silt loam with pH 6.7. The test area was fertilized on 9 May (29-5-10) and 10 May (31-0-0) respectively with 1.0 lb nitrogen per 1000 sq ft, and 6 and 15 Jun with 0.5 lb nitrogen (15-0-29) and 1.0 lb nitrogen (19-9-18) respectively per 1000 sq ft. Besumec 4F was applied at the rate of 2.0 gal per acre on 12 May for pre-emergent control of crabgrass. Mach 2 (1.5 fl oz per 1000 sq ft) was applied on 7 Jul for control of cutworms. Treatment plots, 3 ft x 6 ft, were arranged in a randomized complete block design with three replications. Applications were made with a CO₂-powered sprayer, using a TeeJet 11008E nozzle, at 40 psi, in water equivalent to 2 gal per 1000 sq ft. Treatments were applied on 13 and 27 Jun, and 11 and 26 Jul, unless otherwise noted in the table. Disease severity was assessed weekly from 4 Jul to 26 Jul, and on 17 Aug. Data were subjected to analysis of variance and multiple comparisons of the mean values were made using the Waller-Duncan k-ratio test ($P \leq 0.05$).

Results and Discussion

Brown patch severity was light in the study. Prolonged periods of hot and dry weather were not conducive for disease development. The untreated check in the 17 Aug evaluation had less than 15% of the turf being symptomatic. Seven treatments gave excellent control of brown patch throughout the experiment. ProStar, Insignia (0.5 oz, 14-day interval), and both rates of Heritage TL provided total suppression throughout the trial. No phytotoxicity was observed during the study.

Table. Control of brown patch on a fairway turf with fungicides, 2005.

Treatment, formulation, and rate per 1000 sq ft	Brown patch severity ^z									
	4 Jul	11 Jul	18 Jul	26 Jul	17 Aug					
Propensity 1.3ME 2.0 fl oz	0.0	b ^y	0.7	bcd ^y	0.8	b ^y	1.2	ab ^y	1.8	a ^y
Iprodione Pro 2SC 4.0 fl oz	0.0	b	0.5	cd	0.2	c	0.5	bc	1.8	a
Echo Ultimate 82.5WG 3.25 oz.....	0.0	b	0.8	a-d	0.0	c	1.0	ab	1.7	ab
Echo 720 6F 3.6 fl oz.....	0.0	b	1.2	abc	0.2	c	0.7	bc	1.5	ab
Daconil Weatherstik 6F 3.6 fl oz.....	0.2	b	1.2	abc	0.2	c	0.8	ab	1.3	ab
Untreated Check.....	1.7	a	1.5	ab	1.7	a	1.5	a	1.2	ab
Bayleton 50DF 0.5 oz	0.3	b	0.5	cd	0.8	b	0.8	ab	1.2	ab
Daconil Ultrex 82.5WG 3.25 oz	0.0	b	1.7	a	0.0	c	0.5	bc	0.8	bc
Insignia 20WG 0.9 oz ^x	0.0	b	0.0	d	0.0	c	0.0	c	0.2	c
Heritage 50WG 0.2 oz	0.0	b	0.0	d	0.0	c	0.0	c	0.0	c
Heritage TL 0.5 fl oz + Banner MAXX 1.0 fl oz	0.2	b	0.0	d	0.0	c	0.0	c	0.0	c
Heritage TL 0.8ME 1.0 fl oz.....	0.0	b	0.0	d	0.0	c	0.0	c	0.0	c
Heritage TL 0.8ME 0.5 fl oz.....	0.0	b	0.0	d	0.0	c	0.0	c	0.0	c
Insignia 20WG 0.5 oz	0.0	b	0.0	d	0.0	c	0.0	c	0.0	c
ProStar 70WP 1.5 oz.....	0.0	b	0.0	d	0.0	c	0.0	c	0.0	c

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

^yMeans within each column followed by different letters are significantly different ($P \leq 0.05$) according to the Waller-Duncan k-ratio test.

^xTreatment applied on a 28-day interval (13 Jun and 11 Jul).