Brown Patch Suppression on Colonial Bentgrass

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OBJECTIVE

To determine the efficacy of standard and experimental fungicides for the control of brown patch caused by the fungus *Rhizoctonia solani*.

MATERIALS AND METHODS

The study was conducted at the O. J. Noer Turfgrass Research and Education Facility on a stand of colonial bentgrass (*Agrostis capillaris*) maintained at 0.5 inches. The individual plots measured 3 feet by 10 feet and were arranged in a randomized complete block design with four replications. Individual treatments were applied at a nozzle pressure of 40 psi using a CO_2-pressurized boom sprayer equipped with two XR Teejet AI8004 nozzles. All fungicides were agitated by hand and applied in the equivalent of 1.5 gallons of water per 1000 ft^2. All treatments were initiated June 4th, 2020 and subsequent applications were made at 14-day intervals. Plots were not inoculated. Brown patch severity (percent plot area affected) and turf quality (1-9, 9 being excellent and 6 acceptable) were visually assessed and subjected to an analysis of variance and means were separated using Fisher's LSD ($P = 0.05$). Results of the disease severity and turfgrass quality ratings can be found in table 1 and 2, respectively.

RESULTS AND DISCUSSION

Brown patch severity was moderate during July with non-treated controls averaging between 20% and 23% on all three rating dates in July. Of the seven fungicide treatments on Jul 28, five provided complete control of brown patch. Turf quality results mirrored disease severity results, with 5 of 7 treatments providing acceptable turf quality ≥ 6) on Jul 28. No phytotoxicity was observed with any of the treatments.

Table 1. Mean brown patch severity per treatment on colonial bentgrass maintained at fairway height at the OJ Noer Turfgrass Research Facility in Madison, WI during 2020.

	Treatment	Rate	Application Interval	Application Code[b]	Brown Patch Severity[a]		
					Jul 8	Jul 22	Jul 28
1	Non-treated control				21.3 a	22.5 a	20.0 a
2	Zio	1.0 LB/A	7 day	CDEFGHIJK	5.0 caf	13.8 bc	11.3 cd
3	Zio	1.0 LB/A	14 day	CEGIK	16.3 ab	20.0 ab	18.8 ab
4	Zio Heritage	1.0 LB/A 8.7 OZ/A	7 day 14 day	CDEFGHIJK GIK	6.3 caf	0.0 f	0.0 g
5	Zio Heritage	1.0 LB/A 8.7 OZ/A	14 day 14 day	CEGIK GIK	7.5 cde	1.3 f	0.0 g
6	Zio Heritage	2.5 LB/A 8.7 OZ/A	14 day 14 day	CEGIK GIK	8.8 cd	1.3 f	0.0 g
7	Zio Heritage	2.5 LB/A 8.7 OZ/A	14 day 14 day	GIK GIK	5.0 caf	0.0 f	0.0 g
8	Heritage	8.7 OZ/A	14 day	GIK	7.5 cde	1.3 f	0.0 g
				LSD P=.05	6.35	7.14	5.03

[a]Brown patch severity was visually assessed as percent disease. Means followed by the same letter do not significantly differ (P=.05, Fisher's LSD).

[b]Application code C = Jun 4, D = Jun 11, E = Jun 17, F = Jun 25, G = Jul 1, H = Jul 9, I = Jul 16, J = Jul 23, K = Jul 30

Table 2. Mean turfgrass quality per treatment on colonial bentgrass maintained at fairway height at the OJ Noer Turfgrass Research Facility in Madison, WI during 2020.

	Treatment	Rate	Application Interval	Application Code[b]	Turfgrass Quality[a]		
					Jul 8	Jul 22	Jul 28
1	Non-treated control				5.0 e	5.3 d	5.0 e
2	Zio	1.0 LB/A	7 day	CDEFGHIJK	6.3 bc	5.3 d	5.5 de
3	Zio	1.0 LB/A	14 day	CEGIK	5.3 e	5.3 d	5.0 e
4	Zio Heritage	1.0 LB/A 8.7 OZ/A	7 day 14 day	CDEFGHIJK GIK	6.0 cd	7.0 a	7.0 a
5	Zio Heritage	1.0 LB/A 8.7 OZ/A	14 day 14 day	CEGIK GIK	6.3 bc	6.8 ab	7.0 a
6	Zio Heritage	2.5 LB/A 8.7 OZ/A	14 day 14 day	CEGIK GIK	6.0 cd	6.8 ab	7.0 a
7	Zio Heritage	2.5 LB/A 8.7 OZ/A	14 day 14 day	GIK GIK	6.3 bc	7.0 a	7.0 a
8	Heritage	8.7 OZ/A	14 day	GIK	6.0 cd	6.8 ab	7.0 a
				LSD P=.05	0.72	0.75	0.61

[a]Turfgrass quality was rated visually on a 1 – 9 scale with 6 being acceptable. Means followed by the same letter do not significantly differ (P=.05, Fisher's LSD).

[b]Application code C = Jun 4, D = Jun 11, E = Jun 17, F = Jun 25, G = Jul 1, H = Jul 9, I = Jul 16, J = Jul 23, K = Jul 30