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 sprayer equipped with one Teejet AI8008EVS nozzle. 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 3rd, 2021 and subsequent applications were made at 14- or 28-day intervals. Plots were not inoculated but two Evergreen tarps were used to cover the plot to encourage infection in late July and early August. Emerald and Subdue Maxx were applied across all treatments to suppress dollar spot and Pythium foliar blight. 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 in June, decreased during cooler conditions in July, then increased significantly following warmer conditions and covering with the Evergreen tarp in August. All treatments reduced brown patch severity relative to the nontreated control on all rating dates. Turf quality results mirrored disease severity results with all fungicide treatments providing acceptable turf quality (>6) on all rating dates. 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 2021.

	Treatment	Rate	Application Interval	Application Code[b]	Brown Patch Severity[a]		
					Jun 30	Jul 14	Aug 11
1	Non-treated control				23.8 a	12.5 a	35.0 a
2	Pedigree	3.25 fl oz/1000ft2	28 day	EIM	0.0 a	0.0 b	0.0 b
3	NB40451	3.85 fl oz/1000ft2	28 day	EIM	0.0 a	2.5 b	2.5 b
4	NB40451	4.4 fl oz/1000ft2	28 day	EIM	3.8 a	2.5 b	0.0 b
5	Tekken	3.0 fl oz/1000ft2	28 day	EIM	0.0 a	0.0 b	0.0 b
6	NUP-19022 NUP-19026 NUP-09092	0.21 fl oz/1000ft2 0.5 fl oz/1000ft2 0.5 fl oz/1000ft2	14 day	EGIKMO	0.0 a	0.0 b	0.0 b
7	Azoxy 2SC Select	0.77 fl oz/1000ft2	28 day	EIM	0.0 a	2.5 b	0.0 b
				LSD P=.05	17.5	5.6	4.5

[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 E = Jun 3, G = Jun 17, I = July 1, K = July 15, M = July 28, O = August 12

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 2021.

	Treatment	Rate	Application Interval	Application Code[b]	Turfgrass Quality[a]		
					Jun 30	Jul 14	Aug 11
1	Non-treated control				5.3 b	5.5 b	4.5 c
2	Pedigree	3.25 fl oz/1000ft2	28 day	EIM	7.0 a	7.0 a	7.0 a
3	NB40451	3.85 fl oz/1000ft2	28 day	EIM	7.0 a	6.5 a	6.5 b
4	NB40451	4.4 fl oz/1000ft2	28 day	EIM	6.5 a	6.8 a	7.0 a
5	Tekken	3.0 fl oz/1000ft2	28 day	EIM	7.0 a	7.0 a	7.0 a
6	NUP-19022 NUP-19026 NUP-09092	0.21 fl oz/1000ft2 0.5 fl oz/1000ft2 0.5 fl oz/1000ft2	14 day	EGIKMO	7.0 a	7.0 a	7.0 a
7	Azoxy 2SC Select	0.77 fl oz/1000ft2	28 day	EIM	7.0 a	6.8 a	7.0 a
				LSD P=.05	1.2	0.6	0.5

[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 E = Jun 3, G = Jun 17, I = July 1, K = July 15, M = July 28, O = August 12