Brown Patch Suppression on Colonial bentgrass fairways

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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* on a colonial bentgrass fairway.

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 AI9508EVS nozzle. All fungicides were agitated by hand and applied in 1.5 gal H2O/1000 sq ft. All treatments were initiated on June 12th, 2025, and subsequent applications were made at 14- or 21-day intervals. Plots were not inoculated but were periodically double covered with an Evergreen tarp to optimize infection conditions. Brown patch severity (percent plot area affected) and turf quality (1-9, 9 being excellent and 6 acceptable) were visually assessed every two weeks 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. Area under the disease progress curve (AUDPC) and area under the turf quality curve (AUTQC) were calculated using the trapezoidal method and summarize the whole season disease severity and turf quality and are included in tables 1 and 2, respectively.

RESULTS AND DISCUSSION

Moderate disease pressure developed on the study with nontreated control plots averaging over 23% disease on the peak disease Jul 23 rating date. All public treatments provided exceptional brown patch control except for Heritage Action on Jul 23. Turf quality mirrored disease severity and no phytotoxicity was observed with any treatment.

Table 1. Mean brown patch severity per treatment on a colonial bentgrass fairway at the OJ Noer Turfgrass Research Facility in Madison, WI during 2025.

Treatment	Rate	Application Code[b]	Application Interval	Brown Patch Severity[a] July 9th	Brown Patch Severity July 23rd	Brown Patch Severity Aug 6th	Brown Patch Severity AUDPC[c]
1 Non-treated control				3.8a	23.8a	7.5bc	437.5a
8 EF-719	1.47 fl oz/1000 ft2	FIL	21 day	0.0a	0.0c	0.0d	0.0d
9 NB41543	1.5 fl oz/1000 ft2	FIL	21 day	0.0a	1.3c	0.0d	17.5d
10 Tekken	3.0 fl oz/1000 ft2	FIL	21 day	0.0a	0.0c	2.5cd	17.5d
15 Heritage Action	0.4 oz/1000 ft2	GIKM	14 day	0.0a	12.5abc	2.5cd	192.5bcd
			LSD P=0.5	3.4	13.4	5.9	205.6

[a]Brown patch was rated as percent plot area affected. Means followed by the same letter do not significantly differ (P=.05, Fisher's LSD).
[b]Application code F = Jun 12th, G = Jun 19th, I = Jul 3rd, K = Jul 16th, L = Jul 24th, M = Jul 31st
[c]Area under the disease progress curve (AUDPC) was calculated using the trapezoidal method.

Table 2. Mean turfgrass quality per treatment on a colonial bentgrass fairway at the OJ Noer Turfgrass Research Facility in Madison, WI during 2025.

Treatment	Rate	Application Code[b]	Application Interval	Turfgrass Quality[a] July 9th	Turfgrass Quality July 23rd	Turfgrass Quality Aug 6th	Turfgrass Quality AUTQC[c]
1 Non-treated control				6.5a	5.0c	6.5ab	255.5d
8 EF-719	1.47 fl oz/1000 ft2	FIL	21 day	7.0a	6.5ab	7.0a	287.0ab
9 NB41543	1.5 fl oz/1000 ft2	FIL	21 day	7.0a	6.8ab	7.0a	290.5ab
10 Tekken	3.0 fl oz/1000 ft2	FIL	21 day	7.0a	7.0a	7.0a	294.0a
15 Heritage Action	0.4 oz/1000 ft2	GIKM	14 day	7.0a	7.0a	6.8a	292.3a
			LSD P=.05	0.42	1.32	0.59	20.0

[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: F = Jun 12th, G = Jun 19th, I = Jul 3rd, K = Jul 16th, L = Jul 24th, M = Jul 31st
[c]Area under the turf quality curve (AUTQC) was calculated using the trapezoidal method.