Early Season Suppression of Dollar Spot

Sam Soper, Bruce Schweiger, and Paul Koch, Ph.D.
Department of Plant Pathology
University of Wisconsin - Madison

OBJECTIVE

To determine length and degree of efficacy of different fungicides and fungicide combinations in preventing dollar spot caused by the fungus *Sclerotinia homoeocarpa*.

MATERIALS AND METHODS

The study was conducted at the O. J. Noer Turfgrass Research and Education Facility in Madison, WI on a stand of creeping bentgrass (*Agrostis stolonifera* 'Penncross') 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. Treatments were applied at a nozzle pressure of 40 p.s.i. using a CO_2 pressurized boom sprayer equipped with two XR Teejet AI8004 VS 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 applied once on May 4th. Number of dollar spot foci per plot, turfgrass quality (1-9, 9 being excellent, 6 acceptable, and 1 bare soil), and normalized difference vegetation index (NDVI) were assessed every 2 weeks. Turf quality and disease severity were subjected to an analysis of variance and means were separated using the Tukey's Honest Significant Difference test ($P = 0.05$). Results of the disease intensity and turfgrass quality ratings can be found in table 1 and 2, respectively.

RESULTS AND DISCUSSION

Dollar spot pressure began to increase throughout June, which led to apparent differences between the non-treated control and treated plots during that month June. Statistical differences were not apparent, however, due to significant variability in dollar spot severity between the non-treated control replications. Slight differences between treatments appeared during the June 22nd rating date with Emerald providing the most effective suppression, though all three treatments still provided acceptable turfgrass quality. Protection started to break down by the June 29th rating date, with no statistical difference in disease pressure or turfgrass quality between the non-treated controls and Kabuto, though Emerald still provided acceptable disease suppression and turfgrass quality. All product protection broke down by mid-July. Phytotoxicity was not observed with any treatment.

Table 1: Mean number of dollar spots per treatment at fairway height at the OJ Noer Turfgrass Research and Education Facility in Madison, WI during 2015.

	Treatment	Rate	Application Date(s)	Dollar Spot Severity[a]		
				Jun 15	Jun 22	Jun 29
1	Non-treated control			73.0a	93.8a	137.8a
2	Kabuto	0.4 FL OZ/1000 FT2	May 4	13.0b	25.0b	126.0a
3	Kabuto	0.5 FL OZ/1000 FT2	May 4	10.0b	23.0b	83.0a
4	Emerald	0.18 OZ/1000 FT2	May 4	5.5b	8.0b	21.0b

[a]Dollar spot was visually assessed as number of dollar spot infection centers. Means followed by the same letter do not significantly differ (P=.05, Tukey's HSD).

Table 2. Mean turfgrass quality per treatment at fairway height at the O. J. Noer Turfgrass Research and Education Center in Madison, WI during 2015.

	Treatment	Rate	Application Date(s)	Turfgrass Quality[a]		
				Jun 16	Jun 22	Jun 29
1	Non-treated control			5.0b	5.0a	4.8a
2	Kabuto	0.4 FL OZ/1000 FT2	May 4	6.5a	6.3a	4.8a
3	Kabuto	0.5 FL OZ/1000 FT2	May 4	6.5a	6.0a	5.3a
4	Emerald	0.18 OZ/1000 FT2	May 4	6.8a	6.5a	6.3b

[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, Tukey's HSD).