



Dollar Spot Suppression Using Strobilurin Fungicides

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OBJECTIVE

To determine the efficacy of various strobilurin fungicides in suppressing dollar spot caused by the fungus *Sclerotinia homoeocarpa* on creeping bentgrass.

MATERIALS AND METHODS

The study was conducted at the O. J. Noer Turfgrass Research and Education Facility on a stand of creeping bentgrass (*Agrostis stolonifera* 'Penncross') maintained at 0.125 inches. Individual plots measured 3 feet by 5 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 CO₂ pressurized boom sprayer equipped with two XR Teejet 8004 VS nozzles. All fungicides were agitated by hand and applied in the equivalent of 2 gallons of water per 1000 ft². All treatments were initiated on June 16th and subsequent applications were made at 21-day intervals. 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 Waller-Duncan 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 was high throughout most of 2014, reaching extreme levels near the end of August as non-treated controls averaged 450 foci per plot on the August 27th rating date. All treatments reduced dollar spot relative to the non-treated control on the July 17th rating date, and all treatments except for Heritage TL reduced dollar spot relative to the non-treated control on the August 27th rating date. Insignia SC appeared to provide more effective dollar spot suppression than either Heritage TL or Compass, and when mixed with the succinate dehydrogenase inhibitor (SDHI) fungicide Xzemplar (forming Lexicon) it provided exceptional dollar spot suppression even under the extreme disease pressure found in late August. Turfgrass quality mirrored disease severity, and only Lexicon and Xzemplar provided acceptable turf quality on the August 27th rating date. Phytotoxicity was not observed with any treatment.

Table 1. Mean number of dollar spot foci per treatment at the OJ Noer Turfgrass Research and Education Facility in Madison, WI during 2014.

Treatment	Rate	Application Interval	Dollar Spot Severity ^a			
			Jun 20	Jul 17	Aug 27	
1	Non-treated control		17.8a	149.5a	451.3c	
2	Heritage TL	2.0 FL OZ/1000 FT2	21 Day	4.5b	58.8bc	382.3ab
3	Compass 50 WDG	0.25 OZ/1000 FT2	21 Day	0.8b	36.8bc	298.3b
4	Insignia Intrinsic	0.7 FL OZ/1000 FT2	21 Day	1.3b	16.3c	171.5c
5	Lexicon	0.47 FL OZ/1000 FT2	21 Day	2.5b	13.0c	13.0d
6	Xzemplar	0.26 FL OZ/1000 FT2	21 Day	2.5b	32.5bc	6.8d

^aDollar spot severity assessed as number of dollar spot infection centers per plot. Means followed by the same letter do not significantly differ (P=.05, Waller Duncan).

Table 2. Mean turfgrass quality at the OJ Noer Turfgrass Research and Education Facility in Madison, WI during 2014.

Treatment	Rate	Application Interval	Turfgrass Quality ^a			
			Jun 20	Jul 17	Jul 17	
1	Non-treated control		6.3b	4.3c	3.3c	
2	Heritage TL	2.0 FL OZ/1000 FT2	21 Day	7.0a	5.0abc	3.5c
3	Compass 50 WDG	0.25 OZ/1000 FT2	21 Day	7.0a	5.3abc	4.0bc
4	Insignia Intrinsic	0.7 FL OZ/1000 FT2	21 Day	7.0a	5.8ab	4.8b
5	Lexicon	0.47 FL OZ/1000 FT2	21 Day	7.0a	6.0a	6.0a
6	Xzemplar	0.26 FL OZ/1000 FT2	21 Day	7.0a	5.3abc	6.5a

^aTurfgrass 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, Waller Duncan).