Early Season Suppression of Dollar Spot

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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 on a stand of creeping bentgrass (*Agrostis stolonifera* 'Penncross') maintained at 0.5 inches. The 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 CO_2 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 ft^2. All treatments were applied once on May 14th and treatments 17, 18, and 19 were applied a second time on June 10th. 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 the summer to date, with non-treated controls averaging over 200 foci per plot by mid-July. Significant differences between treatments existed on June 20th with Velista, Secure, Bayleton FLO, Tartan, Mirage, and Emerald all providing the most effective suppression. Protection began to break down by the July 2nd rating date, though in general those products that performed well on June 20th still had the lowest amount of dollar spot. All product protection had broken down by the July 17th rating date. 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 2014.

	Treatment	Rate	Application Date(s)	Dollar Spot Severity[a]		
				Jun 20	Jul 2	Jul 17
1	Non-treated control			26.8b	22.5a	201.8a
2	Velista	0.3 OZ/1000 FT2	May 14th	18.0bc	29.0a	107.3a
3	Velista	0.5 OZ/1000 FT2	May 14th	4.5bc	11.5a	157.0a
4	Velista	0.7 OZ/1000 FT2	May 14th	3.3c	18.0a	108.8a
5	Secure	0.5 FL OZ/1000 FT2	May 14th	13.5bc	17.5a	110.5a
6	A20235	0.5 FL OZ/1000 FT2	May 14th	10.5bc	16.8a	119.0a
7	A20581	0.47 FL OZ/1000 FT2	May 14th	5.5bc	16.8a	107.3a
8	A20866	0.26 FL OZ/1000 FT2	May 14th	1.8c	8.8a	84.3a
9	Velista Secure	0.3 OZ/1000 FT2 0.5 FL OZ/1000 FT2	May 14th	11.3bc	17.3a	106.5a
10	Velista Secure	0.5 OZ/1000 FT2 0.5 FL OZ/1000 FT2	May 14th	0.8c	9.0a	89.8a
11	Velista A20235	0.3 OZ/1000 FT2 0.5 FL OZ/1000 FT2	May 14th	2.5c	9.5a	176.8a
12	Velista A20235	0.5 OZ/1000 FT2 0.5 FL OZ/1000 FT2	May 14th	1.8c	8.3a	170.0a
13	A19188	1.0 FL OZ/1000 FT2	May 14th	17.8bc	13.3a	164.5a
14	A19188 Secure	1.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	May 14th	20.5bc	5.0a	216.5a
15	A18126	0.16 OZ/1000 FT2	May 14th	44.3a	8.8a	94.0a
16	A18126 Secure	0.16 OZ/1000 FT2 0.5 FL OZ/1000 FT2	May 14th	18.0bc	14.0a	95.8a
17	[b]Bayleton Flo	1.5 FL OZ/1000 FT2	May 14th, June 20th	1.8c	9.0a	127.0a
18	Tartan	2.0 FL OZ/1000 FT2	May 14th, June 20th	1.0c	19.3a	129.8a
19	Mirage	2.0 FL OZ/1000 FT2	May 14th, June 20th	1.5c	14.0a	79.3a
20	Emerald	0.18 OZ/1000 FT2	May 14th	3.0c	13.8a	81.3a

[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, Waller Duncan).

Table 2. Mean turfgrass quality per treatment at putting green height at the O. J. Noer Turfgrass Research and Education Center in Madison, WI during 2014.

	Treatment	Rate	Application Date(s)	Turfgrass Quality[a]		
				Jun 20	Jul 2	Jul 17
1	Non-treated control			6.3ab	5.5a	4.3a
2	Velista	0.3 OZ/1000 FT2	May 14th	6.8a	5.3a	4.0a
3	Velista	0.5 OZ/1000 FT2	May 14th	7.0a	5.8a	4.0a
4	Velista	0.7 OZ/1000 FT2	May 14th	7.0a	5.8a	4.0a
5	Secure	0.5 FL OZ/1000 FT2	May 14th	6.8a	5.5a	4.0a
6	A20235	0.5 FL OZ/1000 FT2	May 14th	6.8a	5.8a	4.3a
7	A20581	0.47 FL OZ/1000 FT2	May 14th	7.0a	5.5a	4.0a
8	A20866	0.26 FL OZ/1000 FT2	May 14th	7.0a	5.5a	4.5a
9	Velista Secure	0.3 OZ/1000 FT2 0.5 FL OZ/1000 FT2	May 14th	7.0a	5.8a	4.3a
10	Velista Secure	0.5 OZ/1000 FT2 0.5 FL OZ/1000 FT2	May 14th	7.0a	5.8a	4.0a
11	Velista A20235	0.3 OZ/1000 FT2 0.5 FL OZ/1000 FT2	May 14th	7.0a	6.0a	4.0a
12	Velista A20235	0.5 OZ/1000 FT2 0.5 FL OZ/1000 FT2	May 14th	7.0a	6.0a	4.0a
13	A19188	1.0 FL OZ/1000 FT2	May 14th	6.5ab	5.8a	4.0a
14	A19188 Secure	1.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	May 14th	6.5ab	6.0a	4.0a
15	A18126	0.16 OZ/1000 FT2	May 14th	6.0b	5.8a	4.0a
16	A18126 Secure	0.16 OZ/1000 FT2 0.5 FL OZ/1000 FT2	May 14th	6.5ab	5.8a	4.0a
17	Bayleton Flo	1.5 FL OZ/1000 FT2	May 14th, June 20th	7.0a	5.8a	4.3a
18	Tartan	2.0 FL OZ/1000 FT2	May 14th, June 20th	7.0a	5.5a	4.0a
19	Mirage	2.0 FL OZ/1000 FT2	May 14th, June 20th	7.0a	5.5a	4.3a
20	Emerald	0.18 OZ/1000 FT2	May 14th	7.0a	6.0a	4.5a

[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, Waller Duncan).