



Early Season Suppression of Dollar Spot

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OBJECTIVE

To determine length and degree of efficacy of different fungicides and fungicide combinations when applied early in the season 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 CO₂ 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 ft². All treatments were applied on May 17th when GDD base 50°F reached 140 units, and some treatments received a second application 21 days later. Number of dollar spot foci per plot and turfgrass quality (1-9, 9 being excellent, 6 acceptable, and 1 bare soil) were visually assessed while chlorophyll content was rated using a FieldScout CM1000 Chlorophyll Meter from Spectrum Technologies, Inc. every 2 weeks. Turf quality, disease severity, and chlorophyll content were subjected to an analysis of variance and means separated using Fisher's LSD (P = 0.05). Results of disease severity, turfgrass quality, and chlorophyll content ratings can be found in tables 1, 2, and 3, respectively.

RESULTS AND DISCUSSION

Dollar spot did not develop on the plots until early June, and statistical differences were not apparent until the June 13th rating date. Disease pressure was extremely high by the July 13th rating date and only treatment 2 and 6 had lower dollar spot levels relative to the non-treated control. All treatments were below the acceptable level of turf quality by mid-July.

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 2017.

Treatment		Rate	Application Date(s)	Dollar Spot Severity ^a		
				Jun 13	Jun 26	Jul 13
1	Non-treated control			17.3 a	79.5 a	202.5 a
2	Propiconazole	1 fl oz/1000 ft ²	5/17	0.5b	2.3 b	92.3 b
	Civitas	8.5 fl oz/1000 ft ²	5/17			
	Emerald	0.13 oz/1000 ft ²	6/6			
	Civitas	12 fl oz/1000 ft ²	6/6			
3	Propiconazole	1 fl oz/1000 ft ²	5/17	3.5 b	7.8 b	140.8 ab
	Emerald	0.13 oz/1000 ft ²	6/6			
4	Emerald	0.18 oz/1000 ft ²	5/17	2.5 b	22.0 b	157.8 ab
5	Xzemplar	0.26 fl oz/1000 ft ²	5/17	1.0 b	15.5 b	155.0 ab
6	Xzemplar	0.26 fl oz/1000 ft ²	5/17, 6/6	1.3 b	0.3 b	93.0 b
7	Xzemplar	0.26 fl oz/1000 ft ²	6/6	10.3 ab	1.8 b	112.3 ab
LSD P = 0.5				8.17	24.09	63.80

^aDollar spot was visually assessed as number of dollar spot infection centers. Means followed by the same letter do not significantly differ (P=.05, Fisher's LSD).

Table 2. Mean turfgrass quality per treatment at fairway height at the OJ Noer Turfgrass Research and Education Facility in Madison, WI during 2017.

Treatment		Rate	Application Date(s)	Turfgrass Quality ^a		
				Jun 13	Jun 26	Jul 13
1	Non-treated control			4.3 b	4.0 c	3.8 b
2	Propiconazole	1 fl oz/1000 ft ²	5/17	7.0 a	6.8 a	4.8 ab
	Civitas	8.5 fl oz/1000 ft ²	5/17			
	Emerald	0.13 oz/1000 ft ²	6/6			
	Civitas	12 fl oz/1000 ft ²	6/6			
3	Propiconazole	1 fl oz/1000 ft ²	5/17	6.0 a	6.0 ab	4.5 ab
	Emerald	0.13 oz/1000 ft ²	6/6			
4	Emerald	0.18 oz/1000 ft ²	5/17	5.0 b	5.0 bc	4.0 b
5	Xzemplar	0.26 fl oz/1000 ft ²	5/17	6.3 a	6.0 ab	4.8 ab
6	Xzemplar	0.26 fl oz/1000 ft ²	5/17, 6/6	7.0 a	6.8 a	5.3 a
7	Xzemplar	0.26 fl oz/1000 ft ²	6/6	6.8 a	6.8 a	4.8 ab
LSD P = 0.5				0.87	1.10	0.82

^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, Fisher's LSD).

Table 3. Mean chlorophyll rating per treatment at fairway height at the OJ Noer Turfgrass Research and Education Facility in Madison, WI during 2017.

Treatment		Rate	Application Date(s)	Chlorophyll Rating ^a		
				Jun 13	Jun 26	Jul 13
1	Non-treated control			261.0 a	219.0 b	157.3 b
2	Propiconazole	1 fl oz/1000 ft ²	5/17	300.0 a	268.3 a	224.5 a
	Civitas	8.5 fl oz/1000 ft ²	5/17			
	Emerald	0.13 oz/1000 ft ²	6/6			
	Civitas	12 fl oz/1000 ft ²	6/6			
3	Propiconazole	1 fl oz/1000 ft ²	5/17	270.5 a	250.5 ab	207.3 ab
	Emerald	0.13 oz/1000 ft ²	6/6			
4	Emerald	0.18 oz/1000 ft ²	5/17	269.3 a	241.8 ab	177.5 ab
5	Xzemplar	0.26 fl oz/1000 ft ²	5/17	296.5 a	254.8 ab	203.0 ab
6	Xzemplar	0.26 fl oz/1000 ft ²	5/17, 6/6	280.8 a	250.0 ab	220.8 a
7	Xzemplar	0.26 fl oz/1000 ft ²	6/6	266.3 a	232.8 ab	199.3 ab
LSD P = 0.5				25.93	28.27	41.45

^aColor was assessed using a FieldScout CM1000 Chlorophyll Meter from Spectrum Technologies, Inc. Means followed by the same letter do not significantly differ (P=.05, Fisher's LSD).