



Dollar Spot Control Using Alternative Methods

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OBJECTIVE

To monitor the impacts of various fertilizer and other alternative suppression methods on 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. 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 initiated on June 1st and products were reapplied at a 14-day interval or as determined by the Smith-Kerns Dollar Spot Prediction Model. 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 pressure on the experimental area was moderate in 2017, likely due to repeated flooding in June and July. Non-treated controls averaged 66 dollar spot infection centers per plot on the June 26th rating date, and the only treatments to significantly reduce dollar spot severity was the fungicide treatment (positive control) and the urea treatments. These were also the only treatments to increase turf quality compared to the non-treated controls. The urea treatments also were the only treatments to increase turf color ratings.

Table 1. Mean number of dollar spot foci per treatment at the OJ Noer Turfgrass Research and Education Facility in Madison, WI during 2017.

Treatment		Application Interval	Rate	Application Code ^a	Dollar Spot Severity ^b		
					Jun 26	Jul 27	Aug 7
1	Non-treated control				66.3a	33.5 a	25.8 a
2	Urea	14 day	0.6 lbs N/1000 ft2	DFHJLNP	29.3ab	0.0 b	1.1 b
3	Urea	20% risk	0.6 lbs N/1000 ft2	DFHJLNP	16.7ab	0.5 b	1.4 b
4	Iron Sulfate	14 day	3 oz/1000 ft2	DFHJLNP	59.6a	34.3 a	28.5 a
5	Iron Sulfate	20% risk	3 oz/1000 ft2	DFHJLNP	42.5ab	48.5 a	26.5 a
6	Potassium Carbonate	14 day	1.1 oz/1000 ft2	DFHJLNP	44.6ab	51.3 a	36.2 a
7	Potassium Carbonate	20% risk	1.1 oz/1000 ft2	DFHJLNP	9.6ab	26.5 a	16.6 a
8	Sulfur Duraphite 12	14 day	0.25 lbs S/1000 ft2 3.14 fl oz/1000 ft2	DFHJLNP	21.8ab	40.5 a	31.3 a
9	Sulfur Duraphite 12	20% risk	0.25 lbs S/1000 ft2 3.14 fl oz/1000 ft2	DFHJLNP	43.4ab	34.0 a	39.1 a
10	Manganese Sulfate	14 day	3 oz/1000 ft2	DFHJLNP	45.2ab	45.5 a	24.7 a
11	Manganese Sulfate	20% risk	3 oz/1000 ft2	DFHJLNP	47.2ab	36.5 a	11.8 a
12	Xzemplar		0.26 fl oz/1000 ft2	D	0.4b	4.5 b	0.6 b
	Banner Maxx		1.5 fl oz/1000 ft2	H			
	Secure		0.5 fl oz/1000 ft2	J			
	Xzemplar		0.26 fl oz/1000 ft2	L			
	Secure		0.5 fl oz/1000 ft2	P			
LSD P = .05					48.58	18.29	24.22

^aApplication code D=June 1st, F=June 15th, H=June 27th, J=July 11th, L=July 25th, N=August 8th, P= August 22nd.

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

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

	Treatment	Application Interval	Rate	Application Code ^a	Turf Quality ^b		
					Jun 26	Jul 27	Aug 7
1	Non-treated control				5.0c	5.0 b	4.8 b
2	Urea	14 day	0.6 lbs N/1000 ft2	DFHJLNP	7.0ab	7.0 a	7.0 a
3	Urea	20% risk	0.6 lbs N/1000 ft2	DFHJLNP	7.2a	7.0 a	7.0 a
4	Iron Sulfate	14 day	3 oz/1000 ft2	DFHJLNP	5.2c	5.3 b	5.0 b
5	Iron Sulfate	20% risk	3 oz/1000 ft2	DFHJLNP	5.0c	5.0 b	4.8 b
6	Potassium Carbonate	14 day	1.1 oz/1000 ft2	DFHJLNP	5.2c	5.0 b	5.0 b
7	Potassium Carbonate	20% risk	1.1 oz/1000 ft2	DFHJLNP	6.5abc	5.5 b	5.3 b
8	Sulfur Duraphite 12	14 day	0.25 lbs S/1000 ft2 3.14 fl oz/1000 ft2	DFHJLNP	6.1abc	5.0 b	4.5 b
9	Sulfur Duraphite 12	20% risk	0.25 lbs S/1000 ft2 3.14 fl oz/1000 ft2	DFHJLNP	5.5bc	5.3 b	4.8 b
10	Manganese Sulfate	14 day	3 oz/1000 ft2	DFHJLNP	5.2c	5.3 b	4.5 b
11	Manganese Sulfate	20% risk	3 oz/1000 ft2	DFHJLNP	5.7abc	5.0 b	5.3 b
12	Xzemplar		0.26 fl oz/1000 ft2	D	7.0ab	7.0 a	7.0 a
	Banner Maxx		1.5 fl oz/1000 ft2	H			
	Secure		0.5 fl oz/1000 ft2	J			
	Xzemplar		0.26 fl oz/1000 ft2	L			
	Secure		0.5 fl oz/1000 ft2	P			
LSD P = .05					1.09	0.41	0.78

^aApplication code D=June 1st, F=June 15th, H=June 27th, J=July 11th, L=July 25th, N=August 8th, P= August 22nd.

^bTurfgrass 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 at the OJ Noer Turfgrass Research and Education Facility in Madison, WI during 2017.

	Treatment	Application Interval	Rate	Application Code ^a	Chlorophyll Rating ^b		
					Jun 26	Jul 27	Aug 7
1	Non-treated control				289.5 b	268.3 b	271.3 b
2	Urea	14 day	0.6 lbs N/1000 ft ²	DFHJLNP	391.8 a	280.5 b	405.5 a
3	Urea	20% risk	0.6 lbs N/1000 ft ²	DFHJLNP	387.3 a	293.3 b	386.3 a
4	Iron Sulfate	14 day	3 oz/1000 ft ²	DFHJLNP	300.5 b	274.3 b	300.0 b
5	Iron Sulfate	20% risk	3 oz/1000 ft ²	DFHJLNP	304.0 b	268.7 b	305.5 b
6	Potassium Carbonate	14 day	1.1 oz/1000 ft ²	DFHJLNP	294.3 b	270.8 b	293.5 b
7	Potassium Carbonate	20% risk	1.1 oz/1000 ft ²	DFHJLNP	315.3 b	298.8 b	314.3 b
8	Sulfur Duraphite 12	14 day	0.25 lbs S/1000 ft ² 3.14 fl oz/1000 ft ²	DFHJLNP	298.8 b	274.0 b	317.3 b
9	Sulfur Duraphite 12	20% risk	0.25 lbs S/1000 ft ² 3.14 fl oz/1000 ft ²	DFHJLNP	293.8 b	286.0 b	298.3 b
10	Manganese Sulfate	14 day	3 oz/1000 ft ²	DFHJLNP	298.0 b	274.3 b	276.0 b
11	Manganese Sulfate	20% risk	3 oz/1000 ft ²	DFHJLNP	321.3 b	289.5 b	283.8 b
12	Xzemplar		0.26 fl oz/1000 ft ²	D	330.5 b	356.0 a	378.0 a
	Banner Maxx		1.5 fl oz/1000 ft ²	H			
	Secure		0.5 fl oz/1000 ft ²	J			
	Xzemplar		0.26 fl oz/1000 ft ²	L			
	Secure		0.5 fl oz/1000 ft ²	P			
LSD P = .05					31.07	41.33	36.89

^aApplication code D=June 1st, F=June 15th, H=June 27th, J=July 11th, L=July 25th, N=August 8th, P= August 22nd.

^bColor 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).