



## Effects of Dew Removal on Dollar Spot Control

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### OBJECTIVE

To determine if dew removal has any effect on efficacy of various fungicides for the control of 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 CO<sub>2</sub>-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<sup>2</sup>. All treatments were initiated on June 1st and fungicides were reapplied at either a 14 or 21-day interval. Half of the fungicide treatments were applied early in the morning when the dew was thick, and the other half were applied at the same time but only after the dew had been removed with a dew whip. Disease severity (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 80.8 (dew) and 46.3 (no dew) dollar spot infection centers per plot on the June 26<sup>th</sup> rating date, but was the only rating date where dew removal significantly reduced the level of disease. On fungicide-treated turf, dew removal reduced dollar spot severity only for the 26GT treatment on July 27th. On the July 27th rating date turf quality was acceptable for Emerald treatments regardless of dew removal, and for Daconil and 26GT only when dew was removed. No differences in turf color were observed.

**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		Dew/No Dew	Rate	Application Interval	Application Code	Dollar Spot Severity <sup>a</sup>		
						Jun 26	Jul 13	Jul 27
1	Non-treated control	Dew				80.8a	12.3 a	37.5 a
2	Daconil Weatherstik	Dew	5.5 fl oz/1000 ft2	14 day	DFHJLNP	6.8c	2.0 ab	27.8 a
3	26 GT	Dew	3 fl oz/1000 ft2	14 day	DFHJLNP	20.5c	2.7 ab	21.8 a
4	Emerald	Dew	0.13 oz/1000 ft2	21 day	DFILO	9.0c	0.9 b	3.2 bc
5	Non-treated control	No Dew				46.3b	6.4 ab	39.3 a
6	Daconil Weatherstik	No Dew	5.5 fl oz/1000 ft2	14 day	DFHJNLP	3.8c	0.3 b	11.5 ab
7	26 GT	No Dew	3 fl oz/1000 ft2	14 day	DFHJLNP	1.5c	1.8 ab	0.8 c
8	Emerald	No Dew	0.13 oz/1000 ft2	21 day	DFILO	2.3c	2.4 ab	1.6 c
LSD P = 0.5						49.03	9.15	27.74

<sup>a</sup>Dollar 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).

<sup>b</sup>Application Code D=May 31st, F=June 10th, G=June 14<sup>th</sup>, H=June 19<sup>th</sup>, I=June 22nd, J=July 6<sup>th</sup>, K=July 18<sup>th</sup>, L=July 25<sup>th</sup>, M=August 1<sup>st</sup>, N=August 8<sup>th</sup>, O= August 15<sup>th</sup>, P=August 22<sup>nd</sup>.

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

	Treatment	Dew/No Dew	Rate	Application Interval	Application Code	Turf Quality <sup>a</sup>		
						Jun 26	Jul 13	Jul 27
1	Non-treated control	Dew				4.5b	4.3 bc	5.0 c
2	Daconil Weatherstik	Dew	5.5 fl oz/1000 ft <sup>2</sup>	14 day	DFHJLNP	6.8a	5.0 ab	5.3 c
3	26 GT	Dew	3 fl oz/1000 ft <sup>2</sup>	14 day	DFHJLNP	6.3a	5.0 ab	5.5 bc
4	Emerald	Dew	0.13 oz/1000 ft <sup>2</sup>	21 day	DFILO	6.5a	5.5 a	6.5 ab
5	Non-treated control	No Dew				4.8b	3.8 c	5.5 bc
6	Daconil Weatherstik	No Dew	5.5 fl oz/1000 ft <sup>2</sup>	14 day	DFHJNLP	6.8a	5.3 ab	6.5 ab
7	26 GT	No Dew	3 fl oz/1000 ft <sup>2</sup>	14 day	DFHJLNP	6.8a	6.0 a	6.8 a
8	Emerald	No Dew	0.13 oz/1000 ft <sup>2</sup>	21 day	DFILO	6.8a	6.0 a	6.8 a
LSD P = 0.5						0.80	0.81	0.76

<sup>a</sup>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, Fisher's LSD).

<sup>b</sup>Application Code D=May 31<sup>st</sup>, F=June 10<sup>th</sup>, G=June 14<sup>th</sup>, H=June 19<sup>th</sup>, I=June 22<sup>nd</sup>, J=July 6<sup>th</sup>, K=July 18<sup>th</sup>, L=July 25<sup>th</sup>, M=August 1<sup>st</sup>, N=August 8<sup>th</sup>, O= August 15<sup>th</sup>, P=August 22<sup>nd</sup>.

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

	Treatment	Dew/No Dew	Rate	Application Interval	Application Code	Chlorophyll Rating <sup>a</sup>		
						Jun 26	Jul 13	Jul 27
1	Non-treated control	Dew				276.0 a	249.0 a	230.0 a
2	Daconil Weatherstik	Dew	5.5 fl oz/1000 ft <sup>2</sup>	14 day	DFHJLNP	287.3 a	299.8 a	303.0 a
3	26 GT	Dew	3 fl oz/1000 ft <sup>2</sup>	14 day	DFHJLNP	295.5 a	309.0 a	302.3 a
4	Emerald	Dew	0.13 oz/1000 ft <sup>2</sup>	21 day	DFILO	296.5 a	293.8 a	283.3 a
5	Non-treated control	No Dew				282.0 a	257.8 a	233.8 a
6	Daconil Weatherstik	No Dew	5.5 fl oz/1000 ft <sup>2</sup>	14 day	DFHJNLP	290.3 a	312.3 a	307.0 a
7	26 GT	No Dew	3 fl oz/1000 ft <sup>2</sup>	14 day	DFHJLNP	306.8 a	316.8 a	328.5 a
8	Emerald	No Dew	0.13 oz/1000 ft <sup>2</sup>	21 day	DFILO	295.0 a	300.0 a	287.5 a
LSD P = 0.5						22.30 a	53.91 a	31.45 a

<sup>a</sup>Color 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).

<sup>b</sup>Application Code D=May 31st, F=June 10th, G=June 14<sup>th</sup>, H=June 19<sup>th</sup>, I=June 22nd, J=July 6<sup>th</sup>, K=July 18<sup>th</sup>, L=July 25<sup>th</sup>, M=August 1<sup>st</sup>, N=August 8<sup>th</sup>, O= August 15<sup>th</sup>, P=August 22<sup>nd</sup>.