Resurgence of Dollar Spot After Fungicide Cessation on Fairways

Kurt Hockemeyer, Michael Ramirez, Jeremy Persinger, Alexis-Marie Catunao,
and Paul Koch, Ph.D.
Department of Plant Pathology
University of Wisconsin - Madison

OBJECTIVE

To determine which fungicides cause a resurgence of dollar spot caused by the fungal pathogen *Clarireedia jacksonii* after fungicide applications have ceased.

MATERIALS AND METHODS

The study was conducted at the O. J. Noer Turfgrass Research and Education Facility on a stand of 'Penncross' creeping bentgrass (*Agrostis stolonifera*) 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 psi using a CO_2-pressurized boom sprayer equipped with one Teejet AI9508EVS nozzle. All fungicides were agitated by hand and applied in the equivalent of 1.5 gallons of water per 1000 ft^2. All treatments were initiated on May 23, 2023, and subsequent applications were made at 14-, 21-, or 28-day intervals. The final application of all fungicide treatments was made in mid to late July, depending on the application interval. Number of dollar spot foci per plot and turfgrass quality (1-9, 9 being excellent, 6 acceptable, and 1 bare soil) were visually assessed every 2 weeks. Turf quality and disease severity were subjected to an analysis of variance and means separated using Fisher's LSD (P = 0.05). Results of disease severity and turfgrass quality ratings can be found in Table 1 and 2, respectively. Area under the disease progress curve (AUDPC) and area under the turf quality curve (AUTQC) were calculated using the trapezoidal method and summarize the whole season disease severity and turf quality and are included in tables 1 and 2, respectively.

RESULTS AND DISCUSSION

Dollar spot pressure was very high throughout much of the summer with nontreated controls averaging 241 infection centers per plot on Jul 31. On the Aug 28 rating date, treatments containing chlorothalonil (Daconil WeatherStik) and thiophanate-methyl (3336F) were numerically higher than the nontreated control, indicating a possible 'resurgence' of dollar spot after fungicide treatments were stopped.

Table 1. Mean number of dollar spots per treatment at fairway height at the OJ Noer Turfgrass Research Facility in Madison, WI during 2024.

	Treatment	Rate	Application Interval	Application Code[a]	Dollar Spot Severity[b]	Dollar Spot Severity[b]	Dollar Spot Severity[b]	Dollar Spot Severity[b]
					Jul 31	Aug 28	Sep 25	AUDPC[c]
1	Nontreated Control				241.0 a	43.3 a	5.8 b	11245.0 a
2	Daconil Weatherstik	5.5 fl oz/1000 ft2	14 d	ACEGIK	14.0 f	69.0 a	1.3 b	1683.6 ef
3	Fore Rainshield	8.0 oz/1000 ft2	14 d	ACEGIK	228.8 ab	35.0 a	9.8 b	9250.4 b
4	26 GT	4.0 fl oz/1000 ft2	14 d	ACEGIK	27.3 ef	52.0 a	5.3 b	2744.3 de
5	Secure	0.5 fl oz/1000 ft2	14 d	ACEGIK	1.8 f	57.3 a	5.5 b	1145.0 ef
6	3336F	4.0 fl oz/1000 ft2	14 d	ACEGIK	182.8 c	71.3 a	27.5 a	10406.3 ab
7	Banner Maxx	2.0 fl oz/1000 ft2	14 d	ACEGIK	0.5 f	43.3 a	3.5 b	874.3 f
8	Torque	1.1 fl oz/1000 ft2	14 d	ACEGIK	5.5 f	52.8 a	1.3 b	1217.1 ef
9	Densicor	0.196 fl oz/1000 ft2	14 d	ACEGIK	4.5 f	56.3 a	6.5 b	1647.0 ef
10	Heritage TL	2.0 fl oz/1000 ft2	14 d	ACEGIK	194.5 bc	43.5 a	11.0 b	9144.3 b
11	Insignia SC	0.7 fl oz/1000 ft2	14 d	ACEGIK	91.8 d	55.3 a	10.0 b	3841.1 d
12	Emerald	0.18 oz/1000 ft2	28 d	AEI	223.8 abc	47.8 a	6.5 b	9297.3 b
13	Posterity	0.32 fl oz/1000 ft2	28 d	AEI	68.0 de	41.0 a	3.0 b	2593.0 def
14	Xzemplar	0.26 fl oz/1000 ft2	28 d	AEI	225.0 abc	49.0 a	5.0 b	9147.5 b
				LSD P=.05	43.94	23.6	11.34	1843.73

[a] Application code A=May 16, C=May 30, D=Jun 4, E=Jun 14, G=Jun 27, I=Jul 11, J=Jul 18, K=Jul 25

[b] Dollar spot rated as number of dollar spot infection centers. Means followed by the same letter do not significantly differ (P=.05, Fisher's LSD).

[c] Area under the disease progress curve (AUDPC) was calculated using the trapezoidal method.

Table 2. Mean turf quality ratings per treatment at fairway height at the OJ Noer Turfgrass Research Facility in Madison, WI during 2024

	Treatment	Rate	Application Interval	Application Code[a]	Turf Quality[b]	Turf Quality[b]	Turf Quality[b]	Turf Quality[b]
					Jul 31	Aug 28	Sep 25	AUTQC[c]
1	Nontreated Control				4.0 g	4.5 bcd	7.0 a	523.8 fg
2	Daconil Weatherstik	5.5 fl oz/1000 ft2	14 d	ACEGIK	5.5 cd	5.0 ab	7.0 a	681.5 b
3	Fore Rainshield	8.0 oz/1000 ft2	14 d	ACEGIK	4.0 g	4.5 bcd	6.5 ab	553.8 de
4	26 GT	4.0 fl oz/1000 ft2	14 d	ACEGIK	5.3 de	5.0 ab	7.0 a	671.0 b
5	Secure	0.5 fl oz/1000 ft2	14 d	ACEGIK	6.8 a	5.0 ab	7.0 a	720.0 a
6	3336F	4.0 fl oz/1000 ft2	14 d	ACEGIK	4.3 fg	4.0 d	6.0 b	511.8 g
7	Banner Maxx	2.0 fl oz/1000 ft2	14 d	ACEGIK	6.5 ab	5.3 a	7.0 a	734.1 a
8	Torque	1.1 fl oz/1000 ft2	14 d	ACEGIK	6.0 bc	5.0 ab	6.8 a	711.4 a
9	Densicor	0.196 fl oz/1000 ft2	14 d	ACEGIK	5.5 cd	5.0 ab	6.8 a	665.9 b
10	Heritage TL	2.0 fl oz/1000 ft2	14 d	ACEGIK	4.0 g	4.3 cd	6.8 a	543.0 ef
11	Insignia SC	0.7 fl oz/1000 ft2	14 d	ACEGIK	5.0 de	4.8 abc	6.8 a	634.3 c
12	Emerald	0.18 oz/1000 ft2	28 d	AEI	4.0 g	5.0 ab	6.8 a	574.9 d
13	Posterity	0.32 fl oz/1000 ft2	28 d	AEI	5.0 de	5.0 ab	7.0 a	674.5 b
14	Xzemplar	0.26 fl oz/1000 ft2	28 d	AEI	4.0 g	4.5 bcd	6.8 a	572.9 d
				LSD P=.05	0.52	0.53	0.52	28.59

[a] Application code A=May 16, C=May 30, D=Jun 4, E=Jun 14, G=Jun 27, I=Jul 11, J=Jul 18, K=Jul 25

[b] 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).

[c] Area under the turfgrass quality curve (AUTQC) was calculated using the trapezoidal method.