



Resurgence of Dollar Spot After Fungicide Mixture Cessation on Putting Greens

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Objective

To determine whether mixtures of 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 0.125 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 CO₂-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 ft². All treatments were initiated on May 27th, 2026 and subsequent applications were made at 14 or 28-day intervals. The final application of all fungicide treatments was made on the 22nd of July. 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 two weeks through the end of September. Brown patch disease severity was assessed once during August when symptoms were present. 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 (dollar spot and brown patch %) and turfgrass quality ratings can be found in Table 1, 2, and 3 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 3, respectively.

Results and Discussion

Dollar spot pressure was moderate starting in late July with nontreated controls averaging over 34 infection centers per plot on the peak disease rating date of Aug 26. Dollar spot damage did rebound once fungicide applications stopped, though not to the same levels as the nontreated control. All treatments reduced brown patch severity. Turf quality ratings mostly mirrored disease severity.

Table 1: Mean number of dollar spots per treatment at greens height at the OJ Noer Turfgrass Research Facility in Madison, WI during 2026.

Ref #	Treatment	Rate	Application Interval	Application Code	Dollar Spot Severity July 29 th	Dollar Spot Severity Aug 12 th	Dollar Spot Severity Aug 26 th	Dollar Spot Severity AUDPC
1	Nontreated Control	NA	NA	NA	9.5a	26.0a	34.8a	867.38a
2	Chlorothalonil	5.5 fl oz/1000 ft ²	14 day	CEGIK	0.0b	9.0bc	12.5bc	227.75b
3	Mancozeb	8.0 oz/1000 ft ²	14 day	CEGIK	2.0b	13.3ab	17.0b	385.50b
4	Propiconazole	2.0 fl oz/1000 ft ²	14 day	CEGIK	0.0b	1.3bc	2.0c	35.00b
5	Boscalid	0.18 oz/1000 ft ²	28 day	CGK	0.0b	2.3bc	7.3bc	96.63b
6	Chlorothalonil Mancozeb	5.5 fl oz/1000 ft ² 8.0 oz/1000 ft ²	14 day 14 day	CEGIK CEGIK	0.0b	4.3bc	5.0bc	154.38b
7	Chlorothalonil Propiconazole	5.5 fl oz/1000 ft ² 2.0 oz/1000 ft ²	14 day 14 day	CEGIK CEGIK	1.0b	0.0c	0.0c	17.50b
8	Propiconazole Boscalid	2.0 fl oz/1000 ft ² 0.18 oz/1000 ft ²	14 day 28 day	CEGIK CGK	0.3b	0.0c	0.3c	12.25b
NA	NA	NA	NA	LSD P=.05	5.58	13.08	13.21	407.54

Table Notes by Column Name

- **Application Code** - C = May 27th, E = June 10th, G = June 25th, I = July 8th, K = July 27th
- **Dollar Spot Severity** - was rated as number of dollar spot infection centers. Means followed by the same letter do not significantly differ (P=.05, Fisher's LSD).
- **AUDPC** - Area under the disease progress curve (AUDPC) was calculated using the trapezoidal method.

Table 2: Mean brown patch percentage per treatment at greens height at the OJ Noer Turfgrass Research Facility in Madison, WI during 2026.

Ref #	Treatment	Rate	Application Interval	Application Code	Brown Patch Percentage Aug 12 th
1	Nontreated Control	NA	NA	NA	7.5a
2	Chlorothalonil	5.5 fl oz/1000 ft ²	14 day	CEGIK	2.3b
3	Mancozeb	8.0 oz/1000 ft ²	14 day	CEGIK	1.8b
4	Propiconazole	2.0 fl oz/1000 ft ²	14 day	CEGIK	1.3b
5	Boscalid	0.18 oz/1000 ft ²	28 day	CGK	2.5b
6	Chlorothalonil Mancozeb	5.5 fl oz/1000 ft ² 8.0 oz/1000 ft ²	14 day 14 day	CEGIK CEGIK	0.5b
7	Chlorothalonil Propiconazole	5.5 fl oz/1000 ft ² 2.0 oz/1000 ft ²	14 day 14 day	CEGIK CEGIK	0.0b
8	Propiconazole Boscalid	2.0 fl oz/1000 ft ² 0.18 oz/1000 ft ²	14 day 28 day	CEGIK CGK	0.0b
NA	NA	NA	NA	LSD P=.05	5.55

Table Notes by Column Name

- **Application Code** - C = May 27th, E = June 10th, G = June 25th, I = July 8th, K = July 27th
- **Brown Patch Percentage** - was rated as percentage of plot area affected. Means followed by the same letter do not significantly differ (P=.05, Fisher's LSD).

Table 3: Mean turf quality ratings per treatment at greens height at the OJ Noer Turfgrass Research Facility in Madison, WI during 2026.

Ref #	Treatment	Rate	Application Interval	Application Code	Turf Quality July 29 th	Turf Quality Aug 12 th	Turf Quality Aug 26 th	Turf Quality AUTQC
1	Nontreated Control	NA	NA	NA	5.5d	5.3c	4.5d	504.0b
2	Chlorothalonil	5.5 fl oz/1000 ft ²	14 day	CEGIK	7.0a	6.3ab	5.3bc	565.3a
3	Mancozeb	8.0 oz/1000 ft ²	14 day	CEGIK	6.8ab	5.5bc	5.0cd	537.3a
4	Propiconazole	2.0 fl oz/1000 ft ²	14 day	CEGIK	6.0cd	6.5a	6.5a	549.5a
5	Boscalid	0.18 oz/1000 ft ²	28 day	CGK	7.0a	6.5a	5.5bc	565.3a
6	Chlorothalonil Mancozeb	5.5 fl oz/1000 ft ² 8.0 oz/1000 ft ²	14 day 14 day	CEGIK CEGIK	7.0a	6.5a	5.8b	561.8a
7	Chlorothalonil Propiconazole	5.5 fl oz/1000 ft ² 2.0 oz/1000 ft ²	14 day 14 day	CEGIK CEGIK	6.3bc	7.0a	7.0a	563.5a
8	Propiconazole Boscalid	2.0 fl oz/1000 ft ² 0.18 oz/1000 ft ²	14 day 28 day	CEGIK CGK	6.0cd	6.5a	7.0a	553.0a
NA	NA	NA	NA	LSD P=.05	0.63	0.86	0.67	28.82

Table Notes by Column Name

- **Application Code** - C = May 27th, E = June 10th, G = June 25th, I = July 8th, K = July 27th
- **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).
- **AUTQC** - Area under the turfgrass quality curve (AUTQC) was calculated using the trapezoidal method.