



Dollar Spot Suppression on Golf Course Putting Greens

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

Objective

To determine the efficacy of standard and experimental fungicides for controlling dollar spot caused by the fungus *Clarireedia jacksonii* on a creeping bentgrass putting green.

Materials and Methods

The study was conducted at the O. J. Noer Turfgrass Research and Education Facility on a mixed stand of 'Penncross' creeping bentgrass (*Agrostis stolonifera*) and annual bluegrass (*Poa annua*) 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. Most treatments were initiated on May 20th, 2026. Subsequent applications were made at 14-, 21-, or 28-day intervals. 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 low on this study with nontreated controls averaging only 9 dollar spot infection centers per plot on the peak disease Aug 12 rating date. A total of 17 of 26 treatments provided excellent dollar spot suppression of 2 dollar spots or less on this peak disease date. Turf quality mirrored disease severity, with 19 treatments providing acceptable turf quality on Aug 12. No phytotoxicity was observed with any treatment.

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	Non-treated control	NA	NA	NA	1.8bcd	9.3b-e	8.8bcd	239.8b-f
2	Daconil Action Posterity XT Appear II Primo Maxx	3.5 fl oz/1000ft ² 1.5 fl oz/1000ft ² 6.0 fl oz/1000ft ² 0.1 fl oz/1000ft ²	14d	BDFHJLN	0.0d	0.0f	0.0e	0.0g
3	Daconil Action Briskway Appear II Promo Maxx	3.5 fl oz/1000ft ² 0.5 fl oz/1000ft ² 6.0 fl oz/1000ft ² 0.1 fl oz/1000ft ²	14d	BDFHJLN	0.0d	0.3f	0.3e	5.3g
4	Daconil Action Posterity XT Appear II Primo Maxx	2.4 fl oz/1000ft ² 1.5 fl oz/1000ft ² 6.0 fl oz/1000ft ² 0.1 fl oz/1000ft ²	14d	BDFHJLN	0.0d	0.0f	0.0e	0.0g
5	Daconil Action Briskway Appear II Primo Maxx	2.4 fl oz/1000ft ² 0.5 fl oz/1000ft ² 6.0 fl oz/1000ft ² 0.1 fl oz/1000ft ²	14d	BDFHJLN	0.0d	0.0f	0.0e	0.0g
6	Secure Action	0.5 fl oz/1000ft ²	14d	BDFHJLN	0.5cd	1.0f	0.5de	24.5g
7	25-579 21-418A CP 99-031 15-128B 19-349 99-034	0.64 fl oz/1000ft ² 0.195 fl oz/1000ft ² 0.26 fl oz/1000ft ² 3.0 fl oz/1000ft ² 2.0 fl oz/1000ft ² 3.5 fl oz/1000ft ²	14d	BFJ BN DL F H J	0.3cd	0.8f	0.0e	14.0g
8	25-579 21-418A CP 99-031 15-128B 15-114	0.64 fl oz/1000ft ² 0.195 fl oz/1000ft ² 0.26 fl oz/1000ft ² 3.0 fl oz/1000ft ² 0.77 fl oz/1000ft ²	21d	BHN B EK H N	0.0d	1.8ef	1.5de	38.5fg
9	25-579 21-418A CP 99-031 15-128B 15-114	0.64 fl oz/1000ft ² 0.195 fl oz/1000ft ² 0.26 fl oz/1000ft ² 3.0 fl oz/1000ft ² 0.77 fl oz/1000ft ²	28d	BFJN B J F N	0.0d	2.0ef	1.0de	35.0fg
10	21-418A	0.13 fl oz/1000ft ²	14d	BDFHJLN	0.0d	2.0ef	0.8de	33.3fg
11	21-418A	0.195 fl oz/1000ft ²	14d	BDFHJLN	0.0d	1.3f	1.0de	28.0g
12	CP 99-003	0.195 fl oz/1000ft ²	14d	BDFHJLN	0.0d	1.8ef	0.5de	28.0g

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
13	GF-4536	13.7 fl oz/A	14d	BDFHJLN	0.5cd	5.3c-f	3.5cde	119.0c-g
14	GF-4536	17.1 fl oz/A	14d	BDFHJLN	0.0d	5.5b-f	2.8de	106.8d-g
15	GF-4536	20.5 fl oz/A	14d	BDFHJLN	0.0d	2.8def	1.5de	49.0efg
16	Xzemplar	11.4 fl oz/A	14d	BDFHJLN	0.0d	0.0f	0.0e	0.0g
17	UREA 46-0-0	3.5 oz/1000ft ²	14d	BDFHJLN	1.3bcd	12.0bc	16.3ab	299.3bcd
18	EXP260AN18	3.7 fl oz/1000ft ²	14d	BDFHJLN	3.0ab	12.0bc	12.5b	322.0bc
19	EXP260AN18	3.7 fl oz/1000ft ²	28d	BFJN	2.3bcd	9.8bcd	11.3bc	253.8b-e
20	EXP260AN18	8.0 fl oz/1000ft ²	14d	BDFHJLN	2.5bc	13.0b	13.0b	329.0b
21	EXP260AN18	8.0 fl oz/1000ft ²	28d	BFJN	3.0ab	13.0b	15.8b	348.3b
22	NFA080010 NF0800034 NF0800033	0.26 fl oz/1000ft ² 0.7 fl oz/1000ft ² 0.36 oz/1000ft ²	14d	BDFHJLN	0.0d	0.0f	0.0e	3.5g
23	NF0630401	0.75 fl oz/1000ft ²	14d	BDFHJLN	0.0d	0.0f	0.0e	0.0g
24	Lexicon	0.47 fl oz/1000ft ²	14d	BDFHJLN	0.0d	0.0f	0.0e	0.0g
25	NF0800039	1.5 % v/v	14d	BDFHJLN	5.3a	21.0a	24.3a	596.8a
26	NUP19026	0.5 fl oz/1000ft ²	14d	BDFHJLN	0.0d	1.8ef	0.8de	29.8g
NA	NA	NA	NA	LSD P= .05	2.4	7.54	8.45	28.75

Table Notes by Column Name

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).

Application Code B = May 20th, C = May 27th, D = June 3rd, F = June 18th, H = June 30th, J = July 15th, K = July 22nd, L = July 29th, N = August 12th

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

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

Ref #	Treatment	Rate	Application Interval	Application Code	Turfgrass Quality July 29 th	Turfgrass Quality Aug 12 th	Turfgrass Quality Aug 26 th	Turfgrass Quality AUTQC
1	Non-treated control	NA	NA	NA	6.0ef	5.3fg	5.0h	518.0jk
2	Daconil Action Posterity XT Appear II Primo Maxx	3.5 fl oz/1000ft ² 1.5 fl oz/1000ft ² 6.0 fl oz/1000ft ² 0.1 fl oz/1000ft ²	14d	BDFHJLN	7.8ab	7.3ab	7.8ab	647.5a
3	Daconil Action Briskway Appear II Promo Maxx	3.5 fl oz/1000ft ² 0.5 fl oz/1000ft ² 6.0 fl oz/1000ft ² 0.1 fl oz/1000ft ²	14d	BDFHJLN	7.8ab	7.8a	7.5abc	651.0a
4	Daconil Action Posterity XT Appear II Primo Maxx	2.4 fl oz/1000ft ² 1.5 fl oz/1000ft ² 6.0 fl oz/1000ft ² 0.1 fl oz/1000ft ²	14d	BDFHJLN	7.8ab	7.5a	7.5abc	651.0a
5	Daconil Action Briskway Appear II Primo Maxx	2.4 fl oz/1000ft ² 0.5 fl oz/1000ft ² 6.0 fl oz/1000ft ² 0.1 fl oz/1000ft ²	14d	BDFHJLN	8.0a	7.5a	8.0a	658.0a
6	Secure Action	0.5 fl oz/1000ft ²	14d	BDFHJLN	7.0c	7.0abc	6.8c-f	591.5bc
7	25-579 21-418A CP 99-031 15-128B 19-349 99-034	0.64 fl oz/1000ft ² 0.195 fl oz/1000ft ² 0.26 fl oz/1000ft ² 3.0 fl oz/1000ft ² 2.0 fl oz/1000ft ² 3.5 fl oz/1000ft ²	14d	BFJ BN DL F H J	7.3bc	6.3cde	7.3a-d	593.3bc
8	25-579 21-418A CP 99-031 15-128B 15-114	0.64 fl oz/1000ft ² 0.195 fl oz/1000ft ² 0.26 fl oz/1000ft ² 3.0 fl oz/1000ft ² 0.77 fl oz/1000ft ²	21d	BHN B EK H N	7.3bc	6.5bcd	6.5def	588.0bcd
9	25-579 21-418A CP 99-031 15-128B 15-114	0.64 fl oz/1000ft ² 0.195 fl oz/1000ft ² 0.26 fl oz/1000ft ² 3.0 fl oz/1000ft ² 0.77 fl oz/1000ft ²	28d	BFJN B J F N	7.0c	6.5bcd	6.5def	577.5b-e
10	21-418A	0.13 fl oz/1000ft ²	14d	BDFHJLN	7.0c	6.0def	6.3ef	568.8c-g
11	21-418A	0.195 fl oz/1000ft ²	14d	BDFHJLN	7.0c	6.3cde	6.5def	574.0b-e
12	CP 99-003	0.195 fl oz/1000ft ²	14d	BDFHJLN	7.0c	6.3cde	6.5def	570.5b-f
13	GF-4536	13.7 fl oz/A	14d	BDFHJLN	6.8cd	5.5efg	6.3ef	551.3e-i
14	GF-4536	17.1 fl oz/A	14d	BDFHJLN	7.0c	5.8d-g	6.0fg	560.0d-h

Ref #	Treatment	Rate	Application Interval	Application Code	Turfgrass Quality July 29 th	Turfgrass Quality Aug 12 th	Turfgrass Quality Aug 26 th	Turfgrass Quality AUTQC
15	GF-4536	20.5 fl oz/A	14d	BDFHJLN	7.0c	6.3cde	6.3ef	575.8b-e
16	Xzemplar	11.4 fl oz/A	14d	BDFHJLN	7.0c	7.5a	7.0b-e	598.5b
17	UREA 46-0-0	3.5 oz/1000ft ²	14d	BDFHJLN	6.0ef	5.3fg	5.0h	532.0hij
18	EXP260AN18	3.7 fl oz/1000ft ²	14d	BDFHJLN	6.3de	5.8d-g	5.3gh	540.8g-j
19	EXP260AN18	3.7 fl oz/1000ft ²	28d	BFJN	6.3de	5.5efg	5.3gh	544.3f-j
20	EXP260AN18	8.0 fl oz/1000ft ²	14d	BDFHJLN	5.5f	5.0g	5.0h	518.0jk
21	EXP260AN18	8.0 fl oz/1000ft ²	28d	BFJN	5.8ef	5.5efg	5.0h	525.0ijk
22	NFA080010	0.26 fl oz/1000ft ²	14d	BDFHJLN	7.3bc	7.5a	7.0b-e	598.5b
	NF0800034	0.7 fl oz/1000ft ²						
	NF0800033	0.36 oz/1000ft ²						
23	NF0630401	0.75 fl oz/1000ft ²	14d	BDFHJLN	7.0c	7.0abc	7.0b-e	588.0bcd
24	Lexicon	0.47 fl oz/1000ft ²	14d	BDFHJLN	7.0c	7.3ab	7.0b-e	595.0bc
25	NF0800039	1.5 % v/v	14d	BDFHJLN	5.5f	5.0g	5.0h	497.0k
26	NUP19026	0.5 fl oz/1000ft ²	14d	BDFHJLN	7.0c	6.3cde	6.5def	574.0b-e
NA	NA	NA	NA	LSD P= .05	0.67	0.84	0.88	28.75

Table Notes by Column Name

^a 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).

^b Application Code B = May 20th, C = May 27th, D = June 3rd, F = June 18th, H = June 30th, J = July 15th, K = July 22nd, L = July 29th, N = August 12th

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