



Control of Anthracnose on Golf Course Fairways

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Objective

To determine the efficacy of standard and experimental fungicides for control of foliar anthracnose caused by the fungus *Colletotrichum cereale*.

Materials and Methods

This study was conducted at Yahara Hills Golf Course in Madison, WI on a mixed stand of annual bluegrass (*Poa annua*) and creeping bentgrass (*Agrostis stolonifera*) maintained under fairway conditions. The individual plots measured 3 ft by 5 ft and were organized in a randomized complete block design with four replications. All treatments were applied using a CO₂-pressurized sprayer with one Teejet AI9508EVS nozzle at a pressure of 40 psi. All treatments were agitated by hand and applied in 1.5 gallons of water per 1000 ft². All treatments were initiated on May 28th, 2026, and subsequent applications were made at 7-, 14-, or 21-day intervals. Disease severity (percent plot area affected) and turfgrass quality (1-9, 9 being excellent, 6 acceptable, and 1 bare soil) were visually assessed starting in mid-July once symptoms appeared. Turf quality and disease severity were subjected to an analysis of variance and means were separated using Fisher's LSD ($P = 0.05$). Results of the 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

Anthracnose severity in the experimental area was moderate throughout much of the summer with non-treated controls averaging 20% disease on the peak disease Jul 29 rating date. Unfortunately, drought damage due to exceptionally dry conditions in July and poor irrigation coverage in this area damaged a portion of the plot. Efforts were made to improve statistical differentiation of treatments by removing the first replication (the most damaged) from the analysis but statistical differences did not improve so all replications were left in for this report. There were no statistical differences in either disease severity or turf quality ratings. No phytotoxicity was observed with any treatments.

Table 1: Mean anthracnose severity per treatment on creeping bentgrass/annual bluegrass maintained at fairway height at Yahara Hills Golf Course in Madison, WI during 2026.

Ref #	Treatment	Application Rate	App Interval	Application Code	Anthracnose Severity (%) July 15 th	Anthracnose Severity (%) July 29 th	Anthracnose Severity (%) Aug 26 th	Anthracnose Severity (%) AUDPC
1	Nontreated Control	NA	NA	NA	20.0a	20.0a	15.0a	770.0a
2	ESTC456 Daconil Ultrex	4.5 fl oz/1000 ft ² 3.2 oz/1000 ft ²	14 day 14 day	DFHJLN	36.3a	36.3a	8.0a	1127.0a
3	ESTC456 Chipco GT	4.5 fl oz/1000 ft ² 4 oz/1000 ft ²	14 day 14 day	DFHJLN	13.8a	18.8a	6.0a	574.0a
4	ESTC456 Affirm WDG	4.5 fl oz/1000 ft ² 0.88 oz/1000 ft ²	14 day 14 day	DFHJLN	11.3a	11.3a	2.3a	346.5a
5	NFA0630401	0.75 fl oz/1000 ft ²	14 day	DFHJLN	32.5a	37.5a	9.3a	1144.5a
6	NF080010 NF080034 NF080033	0.26 fl oz/1000 ft ² 0.7 fl oz/1000 ft ² 0.36 oz/1000 ft ²	14 day 14 day 14 day	DFHJLN	13.8a	26.3a	5.0a	717.5a
7	Lexicon	0.47 fl oz/1000 ft ²	14 day	DFHJLN	15.0a	25.0a	8.0a	742.0a
8	NF080039	1.5 % v/v	7 day	DEFGHIJK LMN	6.3a	6.3a	17.3a	416.5a
9	NF080039	1.5 % v/v	14 day	DFHJLN	5.0a	5.0a	0.5a	147.0a
10	Prothioconazole	8.5 fl oz/a	14 day	DFHJLN	8.8a	21.3a	7.5a	612.5a
11	Fluazinam	21.5 fl oz/a	14 day	DFHJLN	13.8a	21.3a	14.3a	742.0a
12	ALB-F1-01	21.5 fl oz/a	14 day	DFHJLN	26.3a	28.8a	12.5a	962.5a
13	ALB-P1-01	8.5 fl oz/a	14 day	DFHJLN	21.3a	23.8a	9.3a	777.0a
14	CHG (0-0-2) Daconil Weatherstik	10.0 fl oz/1000 ft ² 3.2 fl oz/1000 ft ²	21 day 21 day	DGJM	22.5a	25.0a	10.5a	829.5a
15	CHG-2KP Daconil Weatherstik	10.0 fl oz/1000 ft ² 3.2 fl oz/1000 ft ²	21 day 21 day	DGJM	25.0a	28.8a	14.8a	985.3a
16	CHG-5AG Daconil Weatherstik	10.0 fl oz/1000 ft ² 3.2 fl oz/1000 ft ²	21 day 21 day	DGJM	6.3a	15.0a	12.5a	533.8a
17	CHG-2KP-5AG Daconil Weatherstik	10.0 fl oz/1000 ft ² 3.2 fl oz/1000 ft ²	21 day 21 day	DGJM	8.8a	16.3a	3.5a	451.5a
18	Seablend GR CHG-2KP-5AG XP Foliar SRX Foliar Daconil Weatherstik	4.2 lb/100 ft ² 10.0 fl oz/1000 ft ² 6.0 fl oz/1000 ft ² 6.0 fl oz/1000 ft ² 3.2 fl oz/1000 ft ²	Once 21 day 21 day 21 day 21 day	C DGJM DGJM DGJM DGJM	25.0a	32.5a	22.3a	1169.0a
NA	NA	NA	NA	LSD P=.05	25.08	29.6	21.56	1036.0

Table Notes by Column Name

Anthracnose Severity - was visually assessed as percent plot area affected. Means followed by the same letter do not significantly differ (P=.05, Fisher's LSD).

Application dates - C = May 28th, D = June 3rd, E = June 11th, F = June 18th, G = June 25th, H = July 1st, I = July 9th, J = July 16th, K = July 23rd, L = July 30th, M = August 6th, N = August 13th

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

Table 2: Mean turf quality per treatment on creeping bentgrass/annual bluegrass maintained at fairway height at Yahara Hills Golf Course in Madison, WI during 2026.

Ref #	Treatment	Application Rate	App Interval	Application Code	Turfgrass Quality July 15 th	Turfgrass Quality July 29 th	Turfgrass Quality Aug 26 th	Turfgrass Quality AUTQC
1	Nontreated Control	NA	NA	NA	5.3a	5.5a	5.5a	229.3a
2	ESTC456 Daconil Ultrex	4.5 fl oz/1000 ft ² 3.2 oz/1000 ft ²	14 day 14 day	DFHJLN	4.3a	4.5a	5.5a	201.3a
3	ESTC456 Chipco GT	4.5 fl oz/1000 ft ² 4 oz/1000 ft ²	14 day 14 day	DFHJLN	5.5a	5.5a	5.3a	227.5a
4	ESTC456 Affirm WDG	4.5 fl oz/1000 ft ² 0.88 oz/1000 ft ²	14 day 14 day	DFHJLN	5.8a	6.3a	6.3a	259.0a
5	NFA0630401	0.75 fl oz/1000 ft ²	14 day	DFHJLN	4.8a	5.0a	5.5a	215.3a
6	NF080010 NF080034 NF080033	0.26 fl oz/1000 ft ² 0.7 fl oz/1000 ft ² 0.36 oz/1000 ft ²	14 day 14 day 14 day	DFHJLN	5.5a	4.5a	5.8a	213.5a
7	Lexicon	0.47 fl oz/1000 ft ²	14 day	DFHJLN	5.5a	5.3a	6.0a	232.8a
8	NF080039	1.5 % v/v	7 day	DEFGHIJK LMN	6.0a	5.8a	5.5a	239.8a
9	NF080039	1.5 % v/v	14 day	DFHJLN	6.5a	6.5a	6.8a	276.5a
10	Prothioconazole	8.5 fl oz/a	14 day	DFHJLN	6.3a	5.5a	6.3a	246.8a
11	Fluazinam	21.5 fl oz/a	14 day	DFHJLN	5.8a	5.5a	5.3a	229.3a
12	ALB-F1-01	21.5 fl oz/a	14 day	DFHJLN	5.5a	4.8a	5.3a	211.8a
13	ALB-P1-01	8.5 fl oz/a	14 day	DFHJLN	5.3a	5.3a	6.5a	238.0a
14	CHG Daconil Weatherstik	10.0 fl oz/1000 ft ² 3.2 fl oz/1000 ft ²	21 day 21 day	DGJM	5.3a	5.3a	6.0a	231.0a
15	CHG-2KP Daconil Weatherstik	10.0 fl oz/1000 ft ² 3.2 fl oz/1000 ft ²	21 day 21 day	DGJM	4.8a	4.8a	5.0a	203.0a
16	CHG-5AG Daconil Weatherstik	10.0 fl oz/1000 ft ² 3.2 fl oz/1000 ft ²	21 day 21 day	DGJM	6.3a	5.5a	5.5a	236.3a

Table Notes by Column Name

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).

Application Dates - C = May 28th, D = June 3rd, E = June 11th, F = June 18th, G = June 25th, H = July 1st, I = July 9th, J = July 16th, K = July 23rd, L = July 30th, M = August 6th, N = August 13th

AUTQC - Area under the turf quality curve was calculated using the trapezoidal method.

Table 2 continued: Mean turf quality per treatment on creeping bentgrass/annual bluegrass maintained at fairway height at Yahara Hills Golf Course in Madison, WI during 2026.

Ref #	Treatment	Application Rate	App Interval	Application Code	Turfgrass Quality July 15th	Turfgrass Quality July 29th	Turfgrass Quality Aug 26th	Turfgrass Quality AUTQC
17	CHG-2KP-5AG Daconil Weatherstik	10.0 fl oz/1000 ft ² 3.2 fl oz/1000 ft ²	21 day 21 day	DGJM	5.8a	5.3a	6.0a	234.5a
18	Seablend GR CHG-2KP-5AG XP Foliar SRX Foliar Daconil Weatherstik	4.2 lb/100 ft ² 10.0 fl oz/1000 ft ² 6.0 fl oz/1000 ft ² 6.0 fl oz/1000 ft ² 3.2 fl oz/1000 ft ²	Once 21 day 21 day 21 day 21 day	C DGJM DGJM DGJM DGJM	5.0a	4.5a	5.0a	199.5a
NA	NA	NA	NA	LSD P=.05	1.6	1.69	1.59	62.79