Control of Anthracnose on Golf Course Fairways

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OBJECTIVES

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. The site is a mixed stand of annual bluegrass (*Poa annua*) and creeping bentgrass (*Agrostis stolonifera*) maintained under fairway conditions. The individual plots measured 3 ft by 10 ft and were organized in a randomized complete block design with four replications. All treatments were applied using a CO_2-pressurized boom sprayer with two Teejet AI8004VS nozzles at a pressure of 40 psi. All pesticides were agitated by hand and applied at 1.5 gallons of water per 1000 ft^2. All treatments were initiated on June 1, 2020 and subsequent applications were made at 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 assessed every two weeks. Turf quality and disease severity were subjected to an analysis of variance and means were separated using Fisher's LSD ($P = 0.05$). Due to extensive drought and traffic damage that affected all treatments in the first two replications, only replications 3 and 4 were analyzed as part of these results. Results of the disease severity and turfgrass quality ratings can be found in table 1 and 2, respectively.

RESULTS AND DISCUSSION

Disease severity in the non-treated controls was high starting in early July through the end of August. Non-treated controls averaged around 40% disease on the last 3 rating dates. All fungicide treatments significantly reduced disease severity on Aug 24. All treatments provided acceptable turf quality on Aug 24. 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 2020.

	Treatment	Application Rate	App Interval	App Dates[b]	Anthracnose Severity (%)[a]		
					Jul 28	Aug 11	Aug 24
1	Non-treated control				40.0 a	37.5 a	42.5 a
2	Navicon	0.85 fl oz/1000ft2	14 day	CEGIKM	7.5 a	2.5 a	0.0 b
3	Insignia Civitas One	0.7 fl oz/1000 ft2 8.0 fl oz/1000ft2	14 day	CEGIKM	5.0 a	0.0 a	0.0 b
4	Maxtima	0.4 fl oz/1000ft2	14 day	CEGIKM	22.5 a	7.5 a	7.5 b
5	Maxtima	0.6 fl oz/1000ft2	14 day	CEGIKM	7.5 a	0.0 a	2.5 b
6	Velista	0.5 oz/1000ft2	14 day	CEGIKM	10.0 a	2.5 a	5.0 b
				LSD P=.05	28.06	28.76	20.79

[a] Anthracnose severity was visually assessed as percent disease. Means followed by the same letter do not significantly differ (P=.05, Fisher's LSD).
[b] Application dates: C = Jun 1, E = Jun 15, F = Jun 22, G = Jun 29, I = Jul 13, K = Jul 27, M = Aug 11

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 2020.

	Treatment	Application Rate	App Interval	App Dates[b]	Turfgrass Quality[a]		
					Jul 28	Aug 11	Aug 24
1	Non-treated control				4.5 a	4.5 cd	4.0 c
2	Navicon	0.85 fl oz/1000ft2	14 day	CEGIKM	6.0 a	6.5 ab	7.0 a
3	Insignia Civitas One	0.7 fl oz/1000 ft2 8.0 fl oz/1000ft2	14 day	CEGIKM	6.5 a	7.5 a	7.0 a
4	Maxtima	0.4 fl oz/1000ft2	14 day	CEGIKM	5.0 a	6.0 abc	6.0 ab
5	Maxtima	0.6 fl oz/1000ft2	14 day	CEGIKM	6.0 a	7.0 a	6.5 ab
6	Velista	0.5 oz/1000ft2	14 day	CEGIKM	5.5 a	6.5 ab	6.5 ab
				LSD P=.05	2.21	1.86	1.52

[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 dates: C = Jun 1, E = Jun 15, F = Jun 22, G = Jun 29, I = Jul 13, K = Jul 27, M = Aug 11