



Control of *Bipolaris* leaf spot on golf course fairways

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OBJECTIVE

To determine the efficacy of standard and experimental fungicides for the control of leaf spot caused by the fungus *Bipolaris sorokiniana*.

MATERIALS AND METHODS

The study was conducted on the 11th fairway at Pine Hills Country Club in Sheboygan, WI on a mixed stand of creeping bentgrass (*Agrostis stolonifera*) and annual bluegrass (*Poa annua*) maintained at 0.5 inches. The individual plots measured 3 feet by 5 feet and were arranged in a randomized complete block design with four replications. Individual treatments were applied at a nozzle pressure of 40 p.s.i. using a CO₂ pressurized boom sprayer equipped with two XR Teejet 8005 VS nozzles. All fungicides were agitated by hand and applied in the equivalent of 2 gallons of water per 1000 ft², except for 1367A which was applied in 2.5 gallons per 1000 ft². All treatments were initiated June 7th, 2010 and a subsequent application was made three weeks later on June 28th. Disease severity was visually assessed on July 19th and August 25th, but only older vegetative bentgrasses are susceptible to this particular leaf spot. Therefore the disease severity depended on the amount of susceptible bentgrass within each plot, which complicated the final results. Leaf spot severity and turf quality (1-9, 9 being excellent and 6 acceptable) were visually assessed and subjected to an analysis of variance and means were separated using the Waller-Duncan test ($P = 0.05$). Results of the disease severity and turfgrass quality ratings can be found in table 1 and 2, respectively

RESULTS AND DISCUSSION

Due to the variation in the amount of susceptible bentgrass throughout the experimental area, disease severity ratings on July 19 and Aug 25 were highly variable. Consequently, consistent statistically significant separations among treatments were not always achieved. Leaf spot severity was most severe on July 19th and displayed the best separation among treatments. Treatments that provided the best protection against *Bipolaris* leaf spot on the July 19th rating date were the high rate of Interface, Insignia, Banner MAXX, Headway, and 2 experimental compounds. Turf Quality mirrored leaf spot severity, and those treatments that provided the best leaf spot control generally provided the highest turf quality.

Table 1. Leaf spot disease severity on a mixed stand of creeping bentgrass and annual bluegrass maintained at fairway height at Pine Hills Country Club in 2011.

Treatment	Rate	Application Interval	Leaf Spot Severity ^a		Turfgrass Quality ^b		
			July 19	Aug 25	July 19	Aug 25	
1	Non-treated control		63.8a-e	17.5ab	4.8def	5.5b	
2	Interface	3.0 FL OZ/1000 FT2	21 Days	20.0f-i	3.8bc	6.5ab	6.5ab
3	Interface	4.0 FL OZ/1000 FT2	21 Days	8.8ghi	5.0bc	6.5ab	6.5ab
4	Chipco 26019	4.0 FL OZ/1000 FT2	21 Days	63.8a-e	7.5bc	4.8def	5.8ab
5	Iprodione Pro	4.0 FL OZ/1000 FT2	21 Days	45.0c-f	0.0c	5.3b-f	7.0a
6	Chipco 26GT	4.0 FL OZ/1000 FT2	21 Days	61.3a-e	5.0bc	4.8def	6.3ab
7	Chipco 26GT	3.0 FL OZ/1000 FT2	21 Days	42.5c-g	0.0c	5.5b-e	7.0a
8	Daconil Ultrex	5.5 OZ/1000 FT2	21 Days	85.0a	8.8bc	4.0f	5.8ab
9	Daconil Ultrex	1.8 OZ/1000 FT2	21 Days	82.5ab	12.5abc	4.0f	5.5b
10	Heritage	0.7 OZ/1000 FT2	21 Days	32.5e-i	0.0c	5.5b-e	7.0a
11	Heritage	0.2 OZ/1000 FT2	21 Days	48.8b-f	7.5bc	4.8def	6.3ab
12	Insignia	0.9 OZ/1000 FT2	21 Days	0.0i	0.0c	7.0a	7.0a
13	Banner MAXX	2.0 FL OZ/1000 FT2	21 Days	8.8ghi	2.5c	6.5ab	6.5ab
14	Headway	3.0 FL OZ/1000 FT2	21 Days	2.5hi	0.0c	7.0a	7.0a
15	Civitas Harmonizer	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	21 Days	22.5f-i	3.8bc	6.3abc	6.3ab
17	Civitas Harmonizer Daconil Ultrex	16.0 FL OZ/1000 FT2 1.0 FL OZ/1000 FT2 1.8 OZ/1000 FT2	21 Days	36.3d-h	2.5c	5.3b-f	6.5ab
18	Civitas Harmonizer Heritage	16.0 FL OZ/1000 FT2 1.0 FL OZ/1000 FT2 0.2 OZ/1000 FT2	21 Days	17.5f-i	3.8bc	6.0a-d	6.5ab
19	Civitas Harmonizer Chipco 26GT	16.0 FL OZ/1000 FT2 1.0 FL OZ/1000 FT2 3.0 FL OZ/1000 FT2	21 Days	30.0e-i	3.8bc	5.8a-d	6.3ab
20	1367A	12 FL OZ/1000 FT2	21 Days	46.3c-f	26.3a	5.0c-f	5.3b

^aDisease severity was visually assessed as percent disease. Means followed by the same letter do not significantly differ (P=.05, Waller-Duncan).

^bTurfgrass quality was visually assessed on 1-9 scale, with 9 being excellent, 6 being acceptable, and 1 bare dirt. Means followed by the same letter do not significantly differ (P=.05, Waller-Duncan).