Anthracnose Suppression using ISK Biosciences® Fungicides

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OBJECTIVE

To determine the efficacy of ISK Biosciences® fungicides for management of anthracnose caused by the fungus *Colletotrichum cereale*.

MATERIALS AND METHODS

The study was conducted at Yahara Hills Golf Course in Madison, WI on a mixed stand of creeping bentgrass (*Agrostis stolonifera* 'Penncross') and annual bluegrass maintained at 0.5 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 p.s.i. using a CO_2 pressurized boom sprayer equipped with two XR Teejet 8004 VS nozzles. All fungicides were agitated by hand and applied in the equivalent of 2 gallons of water per 1000 ft^2. All treatments were initiated on July 24th and subsequent applications were made at 14 day intervals. Anthracnose severity and turfgrass 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

Minor to moderate anthracnose was present over the experimental area at the time of the initial fungicide application on July 24th, and much of it had not recovered by the initial rating on August 13th. However, moderate temperatures and low humidity throughout the remainder of the summer resulted in anthracnose reductions across all treatments, including the non-treated control. As a result, differences in disease severity between treatments were not observed. Turfgrass quality mirrored disease severity, with no differences between treatments observed. Phytotoxicity was not observed with any treatment.

Table 1. Mean anthracnose severity at fairway height at Yahara Hills Golf Course in Madison, WI during 2014.

	Treatment	Rate	Application Interval	Anthracnose Severity[a]		
				Aug 13	Aug 19	Sep 2
1	Non-treated control			17.5a	5.0a	3.8a
2	IB11171 IB17256	0.5 FL OZ/1000 FT2 0.0106 OZ WT/1000 FT2	14 Day	13.8a	1.3a	0.0a
3	IB11171 IB17256 Daconil Action	0.5 FL OZ/1000 FT2 0.0106 OZ WT/1000 FT2 1.6 FL OZ/1000 FT2	14 Day	13.8a	0.0a	0.0a
4	Secure	0.5 FL OZ/1000 FT2	14 Day	10.0a	3.8a	0.0a
5	Insignia SC	0.4 FL OZ/1000 FT2	14 Day	15.0a	2.5a	2.5a
6	Trinity	0.5 FL OZ/1000 FT2	14 Day	15.0a	3.8a	3.8a

[a]Anthracnose severity was visually estimated as the percentage of affected area within each plot. Means followed by the same letter do not significantly differ (P=0.05, Waller Duncan).

Table 2. Mean turfgrass quality at fairway height at Yahara Hills Golf Course in Madison, WI during 2014.

	Treatment	Rate	Application Interval	Turfgrass Quality[a]		
				Aug 13	Aug 19	Sep 2
1	Non-treated control			5.0a	6.0a	4.3b
2	IB11171 IB17256	0.5 FL OZ/1000 FT2 0.0106 OZ WT/1000 FT2	14 Day	5.5a	6.8a	6.0a
3	IB11171 IB17256 Daconil Action	0.5 FL OZ/1000 FT2 0.0106 OZ WT/1000 FT2 1.6 FL OZ/1000 FT2	14 Day	5.3a	6.8a	6.0a
4	Secure	0.5 FL OZ/1000 FT2	14 Day	5.8a	6.3a	6.0a
5	Insignia SC	0.4 FL OZ/1000 FT2	14 Day	5.3a	6.5a	4.5b
6	Trinity	0.5 FL OZ/1000 FT2	14 Day	5.3a	6.3a	4.8b

[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, Waller Duncan).