2006-07 Snow Mold Control Evaluation

Gateway Golf Club, Land O' Lakes, WI

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OBJECTIVE

To evaluate fungicides for the control of Typhula blight (caused by Typhula ishikariensis and Typhula incarnata) and pink snow mold (caused by Microdochium nivale).

MATERIALS AND METHODS

This evaluation was conducted at Gateway Golf Course in Land O' Lakes, Wis. on a creeping bentgrass (Agrostis stolonifera) and annual bluegrass (Poa annua) fairway nursery maintained at 0.5-inch cutting height. Individual plots measured 3 ft x 10 ft (30 ft 2), and were arranged in a randomized complete block design with three 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 1,000 ft 2 except treatment 8 was applied in 5 gallons of water per 1,000 ft 2 .

Granular applications were applied using a shaker jar. Approximately 1 lb/1000 ft 2 of nitrogen fertilizer was applied to the experimental plot throughout the 2006 growing season. Early treatments were applied on October 16, 2006 and late applications were applied on November 5, 2006. The experimental plot area was not inoculated. There was continuous snow cover on the plots from November 30, 2006 to late-March 2007, a total of approximately 120 days. The percent cover of snow mold and phytotoxicity were recorded on March 28, 2007. There was an even distribution of pink snow mold across the experimental plots before the first treatment application, and that was excluded from the final rating. Data obtained was subjected to an analysis of variance to determine significant differences between treatments. The mean percent diseased area snow mold and mean phytotoxicity rating for each individual treatment are located in the table on Page 8.

RESULTS AND DISCUSSION

Disease pressure from Typhula ishikariensis was fairly high at Gateway GC this season, with untreated control plots averaging 92% disease damage. Despite this high pressure, many of the treatments provided excellent control of pink and gray snow mold. Most treatments limited damage caused by T. ishikariensis to less than 10%, while many did not allow any T. ishikariensis damage. The untreated controls were rated as having a color of 7, with only minor variations found within the treatments. The mean percent snow mold and mean phytotoxicity rating for each individual treatment is presented in the table below.

SNOW MOLD FIELD DAY SUPPORTERS

The Andersons; Arysta LifeScience; BASF Corporation; Bayer Environmental Science; Chemtura Corporation; Cleary Chemical Corporation; LESCO; Quali-Pro; Syngenta Professional Products; Northern Great Lakes Golf Course Superintendents Association; Wisconsin Golf Course Superintendents Association; Gateway GC, Todd Renk, Sup't. Lake Wisconsin Country Club, Kendall Marquadt, Sup't.; The Legend at Giants Ridge, Jared Finch, Sup't., and Sentryworld, Gary Tanko, Sup't.

FIELD DAY SPONSORS

Turfgrass Diagnostic Lab
University of Wisconsin-Madison
Wisconsin Turfgrass Association
University of Minnesota

Table 1

Snow Mold and Phytotoxicity Ratings Recorded on March 28th, 2007 at Gateway GC

	Treatment	Rate	Timing[a]	% Snow Mold[b]	Phytotoxicity[c]
1	Untreated Control			91.7 a	7 bc
2	Instrata	5 FL OZ/M	Late	0 f	7 bc
3	Instrata	9 FL OZ/M	Late	0 f	7 bc
4	Instrata	11 FL OZ/M	Late	0 f	7 bc
5	Medallion	0.15 OZ/M	Late	0 f	7 bc
	Daconil WeatherStik	2.5 OZ/M	Late		
	Banner MAXX	1.8 FL OZ/M	Late		
6	Banner MAXX	2 FL OZ/M	Late	3.3 def	7 bc
	Daconil WeatherStik	5.5 FL OZ/M	Late		
7	Banner MAXX	2 FL OZ/M	Late	0 f	7 bc
	Turfcide 400	6 FL OZ/M	Late		
8	Turfcide 400	12 FL OZ/M	Late	5 def	7 bc
9	Insignia	0.7 OZ/M	Early	1.7 ef	7 bc
	Manicure Ultra	5 OZ/M	Late		
	Revere 4000	12 FL OZ/M	Late		
10	18 Plus	4 FL OZ/M	Late	0 f	6.3 c
	Manicure Ultra	5 OZ/M	Late		
	Revere 4000	12 FL OZ/M	Late		
11	Spectator Ultra	4 FL OZ/M	Early	1.7 ef	7 bc
	Insignia	0.7 OZ/M	Early		
	Manicure Ultra	5 OZ/M	Late		
12	Spectator Ultra	4 FL OZ/M	Early	0 f	7 bc
	Revere 4000	12 FL OZ/M	Late		
13	Insignia	0.7 OZ/M	Early	1.7 ef	7 bc
	18 Plus	4 FL OZ/M	Late		
	Manicure Ultra	5 OZ/M	Late		
14	Armada	1.2 OZ/M	Early	0 f	7 bc
	Revere 4000	12 FL OZ/M	Late		
15	Tartan	2 FL OZ/M	Late	0 f	7.7 ab
	Daconil WeatherStik	5.5 FL OZ/M	Late		
16	Tartan	2 FL OZ/M	Late	0 f	7.7 ab
	Turfcide 400	6 FL OZ/M	Late		
17	Tartan	2 FL OZ/M	Late	3.3 def	7.7 ab
	Chipco 26019GT	6 FL OZ/M	Late		
18	Tartan	2 FL OZ/M	Late	0 f	7.7 ab
	Prostar	2.2 OZ/M	Late		
19	TBZ+TFS Green	2 FL OZ/M	Late	0 f	7.3 b
20	TBZ+TFS Green	2 FL OZ/M	Late	0 f	8 a
	Chipco 26019GT	4 FL OZ/M	Late		
21	Lynx	1 FL OZ/M	Late	0 f	7.7 ab
	Chipco 26019GT	4 FL OZ/M	Late		
	Daconil WeatherStik	5.5 FL OZ/M	Late		
22	Insignia	0.7 OZ/M	Late	3.3 def	7 bc
	Revere 4000	4 FL OZ/M	Late		
	Manicure Ultra	5 OZ/M	Late		

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

[a] Early and late fungicide treatments were applied on Oct. 16, 2006 and Nov. 5, 2006, respectively

[b] Mean percent diseased area

[c] Phytotoxicity was rated on a scale of 1-9 where 1 = straw colored, 6 = acceptable, 9 = dark green

Table 1 *(Continued)*

Snow Mold and Phytotoxicity Ratings Recorded on March 28th, 2007 at Gateway GC

	Treatment	Rate	Timing[a]	% Snow Mold[b]	Phytotoxicity[c]
23	Insignia	0.7 OZ/M	Late	3.3 def	7 bc
	Iprodione Pro	4 FL OZ/M	Late		
	Manicure Ultra	5 OZ/M	Late		
24	Insignia	0.7 OZ/M	Late	0 f	7 bc
	BAS 595	1 FL OZ/M	Late		
	Manicure Ultra	5 OZ/M	Late		
25	Insignia	0.7 OZ/M	Late	5 def	7 bc
	Revere 4000	4 FL OZ/M	Late		
	Manicure Ultra	4 OZ/M	Late		
26	Spectro	4 OZ/M	Early	1.7 ef	7 bc
	26/36	4 FL OZ/M	Late		
	CLEX-9	1.2 OZ/M	Late		
27	Spectro	4 OZ/M	Early	1.7 ef	7 bc
	26/36	4 FL OZ/M	Late		
	Daconil Ultrex	5.5 OZ/M	Late		
28	Spectro	4 OZ/M	Early	11.7 def	7 bc
	26/36	4 FL OZ/M	Late		
	Endorse	4 OZ/M	Late		
29	26/36	4 FL OZ/M	Late	0 f	7 bc
	CLEX-9	1.2 OZ/M	Late		
30	26/36	4 FL OZ/M	Late	5 def	7.3 b
	Daconil Ultrex	5.5 OZ/M	Late		
31	26/36	4 FL OZ/M	Late	25 cd	7 bc
	Endorse	4 OZ/M	Late		
32	Spectro	5.75 OZ/M	Late	3.3 def	7 bc
	CLEX-9	1.2 OZ/M	Late		
33	Turfcide 400	12 FL OZ/M	Late	25 cd	7 bc
34	Turfcide 400	9 FL OZ/M	Late	5.7 def	6.3 c
	Daconil Ultrex	3.7 OZ/M	Late		
35	Instrata	7 FL OZ/M	Late	5 def	7 bc
36	Instrata	3 FL OZ/M	Early	0 f	7 bc
	Instrata	8 FL OZ/M	Late		
37	Instrata	5.5 FL OZ/M	Early/Late	0 f	7 bc
38	Instrata	7 FL OZ/M	Early/Late	0 f	7 bc
47	Disarm	0.18 FL OZ/M	Early/Late	53.3 b	7 bc
48	Disarm	0.36 FL OZ/M	Early/Late	8.3 def	7 bc
	Banner MAXX	0.36 FL OZ/M	Early/Late		
49	Disarm	0.18 FL OZ/M	Early/Late	6.7 def	7 bc
	Banner MAXX	2 FL OZ/M	Early/Late		
50	AND6242	6.36 lb/M	Late	31.7 c	7 bc
51	AND6243	6.36 lb/M	Late	22.3 c-f	7 bc
52	AND3224	6.36 lb/M	Late	5 def	7 bc
53	AND6244	6.36 lb/M	Late	1.7 ef	7 bc

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

[a] Early and late fungicide treatments were applied on Oct. 16, 2006 and Nov. 5, 2006, respectively

[b] Mean percent diseased area

[c] Phytotoxicity was rated on a scale of 1-9 where 1 = straw colored, 6 = acceptable, 9 = dark green

Table 1 *(Continued)*

Snow Mold and Phytotoxicity Ratings Recorded on March 28th, 2007 at Gateway GC

Treatment	Rate	Timing[a]	% Snow Mold[b]	Phytotoxicity[c]
54 AND6245	6.66 lb/M	Late	5.7 def	7 bc
55 AND6246	6.66 lb/M	Late	9.3 def	7 bc
56 AND5017	6.66 lb/M	Late	1.7 ef	7 bc
57 AND6247	6.66 lb/M	Late	0 f	7 bc
58 AND6248	10 lb/M	Late	3.3 def	7 bc
59 AND6259	10 lb/M	Late	10 def	7 bc
60 AND6249	10 lb/M	Late	6.7 def	7 bc
61 AND6251	10 lb/M	Late	10 def	7 bc
62 AND6252	10 lb/M	Late	4.3 def	7 bc
63 AND6254	10 lb/M	Late	3.3 def	7 bc
64 AND6253	10 lb/M	Late	6.7 def	7 bc
65 AND6255	10 lb/M	Late	8.3 def	7 bc
66 Prophesy	5 lb/M	Early	1.7 ef	7 bc
AND6257	10 lb/M	Late		
67 Prophesy	5 lb/M	Early	3.3 def	7 bc
AND6258	10 lb/M	Late		
68 Prophesy	5 lb/M	Early	1.7 ef	7 bc
AND6259	10 lb/M	Late		
69 Prophesy	5 lb/M	Early	1.7 ef	7 bc
AND6260	10 lb/M	Late		
70 AND6261	9 lb/M	Late	8.3 def	7 bc
71 AND6262	9 lb/M	Late	2.7 def	7 bc
72 AND6263	9 lb/M	Late	6.7 def	7 bc
73 AND6264	9 lb/M	Late	18.3 c-f	7 bc
74 AND6265	9 lb/M	Late	6.7 def	7 bc
75 AND6266	9 lb/M	Late	3.3 def	7 bc
76 AND6267	9 lb/M	Late	1 ef	7 bc
77 AND6268	9 lb/M	Late	6.7 def	7 bc
78 Prophesy	5 lb/M	Early	1.7 ef	7 bc
AND6269	9 lb/M	Late		
79 Prophesy	5 lb/M	Early	1.7 ef	7 bc
AND6270	9 lb/M	Late		
80 Prophesy	5 lb/M	Early	5 def	7 bc
AND6271	9 lb/M	Late		
81 Prophesy	5 lb/M	Early	0 f	7 bc
AND6272	9 lb/M	Late		
82 Prophesy	5 lb/M	Early	1.7 ef	7 bc
AND6273	9 lb/M	Late		
83 Prophesy	5 lb/M	Early	4.3 def	7 bc
AND6274	9 lb/M	Late		
84 Prophesy	5 lb/M	Early	3.3 def	7 bc
AND6275	9 lb/M	Late		
85 Prophesy	5 lb/M	Early	3.3 def	7 bc
AND6276	9 lb/M	Late		
86 Daconil WeatherStik	5.5 FL OZ/M	Late	0.7 ef	7 bc
26GT	4 FL OZ/M	Late		
87 Daconil WeatherStik	5.5 FL OZ/M	Late	1.7 ef	7 bc
Medallion	0.5 OZ/M	Late		

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

[a] Early and late fungicide treatments were applied on Oct. 16, 2006 and Nov. 5, 2006, respectively

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