



## **2011-2012 Snow Mold Control Evaluation: Sentryworld Golf Course - Stevens Point, WI.**

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### **OBJECTIVE**

To evaluate fungicides for the control of Typhula blight (caused by *Typhula ishikariensis* and *T. incarnata*) and Microdochium patch (caused by *Microdochium nivale*).

### **MATERIALS AND METHODS**

This evaluation was conducted at Sentryworld Golf Course in Stevens Point, WI on a 'Penneagle' creeping bentgrass (*Agrostis stolonifera*) fairway nursery maintained at a height of 0.5 inches. Individual plots measured 3 ft x 10 ft (30 ft<sup>2</sup>), 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 CO<sub>2</sub> 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<sup>2</sup>. Exceptions were granular treatments 10 and 34 and FeDCON, which was applied in 2.5 gallons of water per 1000 ft<sup>2</sup>. Early applications were applied on October 21<sup>st</sup>, 2011 and late applications were applied on November 17<sup>th</sup>, 2011. The experimental plot area was not inoculated. There was a shallow but continuous snow cover on the plots from mid-December mid-February, a total of approximately 60 days. Disease severity, turf quality, and color were recorded on March 23<sup>rd</sup>, 2012. Disease severity was visually rated as percent area affected, turfgrass quality was visually rated on a 1-9 scale with 6 being acceptable, and non-diseased turfgrass color was visually rated on a 1-9 scale with 6 being acceptable. Data was subjected to an analysis of variance and means were separated using the Waller-Duncan test. Means for disease severity, turf quality and color for individual treatments are presented in the following tables.

### **RESULTS AND DISCUSSION**

Disease pressure was non-existent this year at Sentryworld due to near-record warmth and low snowfall. Turfgrass quality ratings were generally acceptable due to the lack of snow mold, but higher ratings were observed with those products containing pigments due to the darker green color. Products containing pigments provided the greenest color with the greatest increases in color coming from those treatments including Civitas, Interface, Reserve, Tartan, and PAR.

**Snow Mold and Quality Ratings Recorded on March 23rd, 2012 at Sentryworld GC**

Treatment	Rate	Timing <sup>a</sup>	Dis Severity <sup>b</sup>	Quality <sup>c</sup>	Color <sup>d</sup>
1 Nontreated Control			0.0 a	6.5 a-d	6.5 f-i
2 Tourney	0.37 OZ/M	Late	0.0 a	6.3 a-e	6.3 g-j
3336 Plus	4.0 FL OZ/M	Late			
3 Velista	0.7 OZ/M	Late	0.0 a	6.5 a-d	6.5 f-i
4 Velista	0.7 OZ/M	Late	0.0 a	6.0 b-e	6.0 h-k
Daconil Ultrex	5.0 OZ/M	Late			
Chipco 26GT	4.0 FL OZ/M	Late			
5 Velista	0.7 OZ/M	Late	0.0 a	6.3 a-e	6.3 g-j
Daconil Ultrex	5.0 OZ/M	Late			
Heritage	0.7 OZ/M	Late			
6 Velista	0.7 OZ/M	Late	0.0 a	6.5 a-d	6.5 f-i
Daconil Ultrex	5.0 OZ/M	Late			
Banner MAXX II	2.0 FL OZ/M	Late			
7 Velista	0.7 OZ/M	Late	0.0 a	6.0 b-e	6.0 h-k
Daconil Ultrex	5.0 OZ/M	Late			
3336 Plus	2.0 FL OZ/M	Late			
8 Velista	0.7 OZ/M	Late	0.0 a	6.3 a-e	6.3 g-j
Daconil Ultrex	5.0 OZ/M	Late			
9 Velista	0.7 OZ/M	Late	0.0 a	6.3 a-e	6.3 g-j
Medallion	0.25 OZ/M	Late			
Banner MAXX II	2.0 FL OZ/M	Late			
10 Pillar G	3.0 LB/M	Late	0.0 a	6.3 a-e	6.3 g-j
11 Insignia SC	0.7 FL OZ/M	Late	0.0 a	6.3 a-e	6.3 g-j
Trinity	1.0 FL OZ/M	Late			
Daconil Ultrex	3.2 OZ/M	Late			
12 Honor	0.84 OZ/M	Late	0.0 a	6.0 b-e	6.0 h-k
Trinity	1.0 FL OZ/M	Late			
Daconil Ultrex	3.2 OZ/M	Late			
13 Interface	3.0 FL OZ/M	Late	0.0 a	6.8 abc	7.0 d-g
Triton FLO	0.5 FL OZ/M	Late			
14 Interface	3.0 FL OZ/M	Late	0.0 a	6.8 abc	6.8 e-h
Triton FLO	0.75 FL OZ/M	Late			
15 Interface	4.0 FL OZ/M	Late	0.0 a	7.0 ab	6.8 e-h
Triton FLO	0.5 FL OZ/M	Late			
ES TC006A	3.0 GAL/A	Late			
16 Interface	4.0 FL OZ/M	Late	0.0 a	6.8 abc	6.8 e-h
Triton FLO	0.75 FL OZ/M	Late			
17 Interface	4.0 FL OZ/M	Late	0.0 a	6.5 a-d	6.5 f-i
Triton FLO	0.5 FL OZ/M	Late			
18 Interface	4.0 FL OZ/M	Late	0.0 a	6.5 a-d	6.5 f-i
Reserve	4.5 FL OZ/M	Late			
19 Tartan	1.5 FL OZ/M	Late	0.0 a	6.8 abc	6.8 e-h
Reserve	4.50 FL OZ/M	Late			
20 Tartan	1.0 FL OZ/M	Late	0.0 a	6.3 a-e	6.0 h-k
Interface	3.0 FL OZ/M	Late			
21 Tartan	1.5 FL OZ/M	Late	0.0 a	6.5 a-d	6.3 g-j
Interface	3.0 FL OZ/M	Late			
22 Interface	3.0 FL OZ/M	Late	0.0 a	6.3 a-e	6.3 g-j
Torque	0.6 FL OZ/M	Late			
23 Torque	0.6 FL OZ/M	Late	0.0 a	6.3 a-e	6.3 g-j
26/36	4.0 FL OZ/M	Late			
Spectro	3.6 OZ/M	Late			

Means followed by same letter do not significantly differ (P=.05, Waller Duncan)

<sup>a</sup>Early and late fungicide treatments were applied on Oct 21st and Nov 17th 2012, respectively

<sup>b</sup>Mean % diseased area

<sup>c</sup>Quality was visually rated on a scale of 1-9 where 1 = completely dead, 6 = acceptable, 9 = dark green

<sup>d</sup>Color was visually rated on a scale of 1-9 where 1 = completely brown, 6 = acceptable, 9 = dark green

## Snow Mold and Quality Ratings Recorded on March 23rd, 2012 at Sentryworld GC

Treatment	Rate	Timing <sup>a</sup>	Dis Severity <sup>b</sup>	Quality <sup>c</sup>	Color <sup>d</sup>
24 Torque	0.6 FL OZ/M	Late	0.0 a	6.0 b-e	6.0 h-k
Affirm	0.9 OZ/M	Late			
Spectro	3.6 OZ/M	Late			
25 Torque	0.9 FL OZ/M	Late	0.0 a	6.0 b-e	6.0 h-k
3336 Plus	4.0 FL OZ/M	Late			
26 FeDCON	12.0 FL OZ/M	Early/Late	0.0 a	6.5 a-d	8.0 abc
Torque	0.4 FL OZ/M	Late			
27 FeDCON	12.0 FL OZ/M	Late	0.0 a	6.8 abc	7.0 d-g
Torque	0.4 FL OZ/M	Late			
28 Instrata	7.0 FL OZ/M	Late	0.0 a	5.5 de	5.5 jk
29 Instrata	9.0 FL OZ/M	Late	0.0 a	6.0 b-e	6.0 h-k
30 Concert II	8.5 FL OZ/M	Late	0.0 a	6.0 b-e	6.0 h-k
31 Concert II	8.5 FL OZ/M	Late	0.0 a	6.5 a-d	6.8 e-h
PAR	0.37 FL OZ/M	Late			
32 Concert II	8.5 FL OZ/M	Late	0.0 a	6.8 abc	6.5 f-i
Medallion	0.25 OZ/M	Late			
PAR	0.37 FL OZ/M	Late			
33 Concert II	8.5 FL OZ/M	Late	0.0 a	6.5 a-d	6.3 g-j
Secure	0.5 FL OZ/M	Late			
PAR	0.37 FL OZ/M	Late			
34 Headway G	4.0 LB/A	Early/Late	0.0 a	6.0 b-e	6.0 h-k
35 A9898A	1.3 FL OZ/M	Late	0.0 a	5.5 de	5.5 jk
Daconil Action	5.4 FL OZ/M	Late			
36 A9898A	1.3 FL OZ/M	Late	0.0 a	5.3 e	5.3 k
Medallion TL	0.96 FL OZ/M	Late			
37 A9898A	1.3 FL OZ/M	Late	0.0 a	6.0 b-e	6 h-k
Secure	0.5 FL OZ/M	Late			
38 A9898A	1.3 FL OZ/M	Late	0.0 a	6.3 a-e	6.0 h-k
Secure	0.5 FL OZ/M	Late			
Medallion TL	0.96 FL OZ/M	Late			
39 Instrata	9.0 FL OZ/M	Late	0.0 a	6.5 a-d	6.5 f-i
PAR	0.37 FL OZ/M	Late			
40 Instrata	5.5 FL OZ/M	Late	0.0 a	6.8 abc	6.5 f-i
Secure	0.5 FL OZ/M	Late			
PAR	0.37 FL OZ/M	Late			
41 Banner MAXX II	2.0 FL OZ/M	Late	0.0 a	5.8 cde	5.8 ijk
Secure	0.5 FL OZ/M	Late			
Medallion TL	0.96 FL OZ/M	Late			
42 Banner MAXX II	2.0 FL OZ/M	Late	0.0 a	6.3 a-e	6.3 g-j
Medallion TL	0.96 FL OZ/M	Late			
PAR	0.37 FL OZ/M	Late			
43 Banner MAXX II	2.0 FL OZ/M	Late	0.0 a	5.8 cde	5.8 ijk
Medallion TL	0.96 FL OZ/M	Late			
44 Interface	4.0 FL OZ/M	Late	0.0 a	5.8 cde	5.8 ijk
Chipco Triton WDG	0.3 OZ/M	Late			
45 QP TM/C	6.0 OZ/M	Late	0.0 a	6 b-e	6.0 h-k
QP Iprodione	4.0 FL OZ/M	Late			
QP Propiconazole	2.0 FL OZ/M	Late			

Means followed by same letter do not significantly differ (P=.05, Waller Duncan)

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46 QP TM/C	6.0 OZ/M	Late	0.0 a	6.0 b-e	6.0 h-k
QP Iprodione	4.0 FL OZ/M	Late			
QP Tebuconazole	0.60 FL OZ/M	Late			
47 QP Enclave	8 FL OZ/M	Late	0.0 a	5.5 de	5.5 jk
48 QP Enclave	8.0 FL OZ/M	Late	0.0 a	6.8 abc	6.5 f-i
Foursome	0.5 FL OZ/M	Late			
49 Civitas	16.0 FL OZ/M	Late	0.0 a	6.8 abc	7.0 d-g
Harmonizer	1.0 FL OZ/M	Late			
Concert	4.5 FL OZ/M	Late			
50 Civitas	16.0 FL OZ/M	Late	0.0 a	7.0 ab	7.3 c-f
Harmonizer	1.0 FL OZ/M	Late			
Torque	0.6 FL OZ/M	Late			
51 Civitas	16 FL OZ/M	Late	0.0 a	6.8 abc	6.8 e-h
Harmonizer	1.0 FL OZ/M	Late			
Torque	0.6 FL OZ/M	Late			
Daconil Wstik	1.5 FL OZ/M	Late			
52 Civitas	16 FL OZ/M	Late	0.0 a	7.0 ab	7.3 c-f
Harmonizer	1.0 FL OZ/M	Late			
QP Iprodione	2.0 FL OZ/M	Late			
Torque	0.6 FL OZ/M	Late			
53 Civitas	16.0 FL OZ/M	Late	0.0 a	7.0 ab	7.5 b-e
Harmonizer	1.0 FL OZ/M	Late			
Trinity	1.0 FL OZ/M	Late			
Daconil Wstik	1.5 FL OZ/M	Late			
54 Civitas	16.0 FL OZ/M	Late	0.0 a	6.5 a-d	7.3 c-f
Harmonizer	1.0 FL OZ/M	Late			
QP Iprodione	3.0 FL OZ/M	Late			
Daconil Wstik	1.5 FL OZ/M	Late			
55 Civitas	8.0 FL OZ/M	Late	0.0 a	6.8 abc	6.5 f-i
Harmonizer	0.5 FL OZ/M	Late			
Torque	0.6 FL OZ/M	Late			
56 Civitas	8.0 FL OZ/M	Late	0.0 a	7.0 ab	7.0 d-g
Harmonizer	0.5 FL OZ/M	Late			
Torque	0.6 FL OZ/M	Late			
Daconil Wstik	1.5 FL OZ/M	Late			
57 Civitas	8.0 FL OZ/M	Late	0.0 a	6.3 a-e	6.5 f-i
Harmonizer	0.5 FL OZ/M	Late			
Torque	0.6 FL OZ/M	Late			
Daconil Wstik	5.5 FL OZ/M	Late			
58 Civitas	8.0 FL OZ/M	Early/Late	0.0 a	7.0 ab	7.3 c-f
Harmonizer	0.5 FL OZ/M	Early/Late			
Torque	0.6 FL OZ/M	Early/Late			
59 Civitas	8.0 FL OZ/M	Late	0.0 a	6.8 abc	6.5 f-i
Harmonizer	0.5 FL OZ/M	Late			
Trinity	1.0 FL OZ/M	Late			
Daconil Wstik	1.5 FL OZ/M	Late			
60 Civitas	16.0 FL OZ/M	Late	0.0 a	7.0 ab	7.3 c-f
Harmonizer	1.0 FL OZ/M	Late			
Emerald	0.18 OZ/M	Late			

Means followed by same letter do not significantly differ (P=.05, Waller Duncan)

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Treatment	Rate	Timing <sup>a</sup>	Dis Severity <sup>b</sup>	Quality <sup>c</sup>	Color <sup>d</sup>
61 Civitas	8.0 FL OZ/M	Late	0.0 a	7.0 ab	7.0 d-g
Harmonizer	0.5 FL OZ/M	Late			
Emerald	0.18 OZ/M	Late			
62 Civitas	8.0 FL OZ/M	Late	0.0 a	6.8 abc	8.3 ab
Harmonizer	4.0 FL OZ/M	Late			
Emerald	0.18 OZ/M	Late			
63 Civitas	16.0 FL OZ/M	Late	0.0 a	7.3 a	7.5 b-e
Harmonizer	1.0 FL OZ/M	Late			
Instrata	2.5 FL OZ/M	Late			
64 Civitas	16.0 FL OZ/M	Late	0.0 a	7.0 ab	8.5 a
Harmonizer	4.0 FL OZ/M	Late			
Torque	0.6 FL OZ/M	Late			
65 Civitas	8.0 FL OZ/M	Late	0.0 a	7.0 ab	7.8 a-d
Harmonizer	4.0 FL OZ/M	Late			
Torque	0.6 FL OZ/M	Late			
66 Civitas	8.0 FL OZ/M	Late	0.0 a	7.3 a	8.3 ab
Harmonizer	4.0 FL OZ/M	Late			
Concert	4.5 FL OZ/M	Late			
67 651-0350	17.0 FL OZ/M	Late	0.0 a	6.5 a-d	7.0 d-g
Concert	4.5 FL OZ/M	Late			
68 651-0350	17.0 FL OZ/M	Late	0.0 a	6.8 abc	6.8 e-h
Torque	0.6 FL OZ/M	Late			
69 Chipco 26GT	4.0 FL OZ/M	Late	0.0 a	6.3 a-e	6.3 g-j
Daconil Ultrex	5.0 OZ/M	Late			
70 Affirm	0.9 OZ/M	Late	0.0 a	5.8 cde	5.8 ijk
3336 Plus	4.0 FL OZ/M	Late			
71 Chipco 26GT	4.0 FL OZ/M	Late	0.0 a	6.5 a-d	6.3 g-j
Trinity	1.0 FL OZ/M	Late			

Means followed by same letter do not significantly differ (P=.05, Waller Duncan)

<sup>a</sup>Early and late fungicide treatments were applied on Oct. 21st and Nov 17th 2012, respectively

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