

2012-2013 Snow Mold Fungicide Trial Results

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As the fall fast approaches it is time to begin thinking about Typhula blight (*Typhula ishikariensis* and *Typhula incarnata*) and Microdochium patch (*Microdochium nivale*). We urge you to review the results of past trials on the Turfgrass Diagnostic Lab website (tdl.wisc.edu) to aid in developing your fungicide program for the upcoming winter. Though results dating to 2004 are posted on the website, I will focus on the most recent results from the winter of 2012-2013.

Disease was low in most of the trials last winter, and in fact was completely absent in some trials. This was surprising to many, as the duration of snow cover well exceeded 60 days in many parts of the state and would seem to encourage snow mold development. In hindsight the key to last year's lack of snow mold can be directly attributed to the lack of a suitable environment. In many areas snow cover came in mid-December and remained until April or later. But a significant thaw in January left many areas of the state with a shallow cover of snow and ice. Under this scenario the ground had little insulation from the harsh temperatures of winter. Lack of snow cover did not insulate the surface of the soil, allowing the soil to freeze. We know that the fungi that cause snow mold thrive in cold conditions, but not in below-freezing temperatures. The insulating effect of snow cover is what allows snow mold fungi to cause disease, and this past winter our surface temperatures were too cold and unfavorable for widespread disease development.

The trials at Odana Hills Golf Course in Madison and Sentry World Golf Course in Stevens Point did not provide a significant test of the fungicide treatments. In both of these trials nearly all the treatments provided acceptable control of snow mold. One interesting aspect of the SentryWorld trials was the differentiation of color after snow melted due to the applications of turf colorants the previous fall. With a wide array of effective snow mold fungicides to choose from, superintendents are increasingly interested in characteristics aside from merely excellent disease control. Spring color has been one of these characteristics that has garnered significant interest in recent years, and at last year's Snow Mold Field Day there was a fair amount of discussion as to why this could be an important tool for golf course superintendents (Figure 1). It may not improve control of Snow Mold but there are other benefits. The discussion focused on what color was most desired by superintendents and how the early spring golfer would see the greener turf in early spring and how this could potentially bring turf health benefits, increased play, or both.



Figure 1: Plots at Sentry World. Notice the green plots from the Fungicide additive or colorant added to the spray

The logo for Hartman Golf & Sports Turf Restoration features a stylized green tree and a red flag on a golf club. Below the logo, the text "Golf & Sports Turf Restoration & Restoration" is displayed. The background of the advertisement shows a serene golf course scene with a green, a sand trap, and a body of water reflecting the sky.

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**Figure 2: Wawanowin 10th Fairway
May 8, 2013**

Higher disease pressure at Wawanowin Country Club in Champion, MI provided a slightly stiffer test of the fungicide treatments. The snow mold pressure was higher there than at the other trials but did not provide the level of disease we are accustomed to at that site (Figure 2). Of the 56 treatments 42 allowed less than 5% disease. All these treatments provided acceptable provided disease control and turf quality.

Of these treatments, 23 provided complete control. Of all the treatments most of them contained 3 active ingredients. The full results can be seen in the adjoining tables, and we encourage you to look over the results and compare with results from previous years.

We want to thank all of our cooperators from last years trials for all their assistance and allowing us to use their facility; Jeff Jushka at Odana Hills GC, Gary Tanko at SentryWorld GC, Andy Hakaarinen at Wawanowin CC Brent Belanger at Les Bolstad GC, and Matt Mckinnon at Cragun's Resort. Without their generous support we would not be able to provide you with the independent research you need to make informed decisions.

Snow is coming and our schedules will be slowing down. Take the time to reconnect with family and friends and continue your turfgrass education. If you have any questions regarding the trials or about snow mold in general, please don't hesitate to contact Bruce (bschweiger@wisc.edu) or Paul (plkoch@wisc.edu).



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Table 1: Mean snow mold severity, turf quality, and turf color assessed on May 8th, 2013 at Wawonowin CC in Champion, MI.

	Treatment	Rate	Application Timing ^a	Disease Severity ^b	Turf Quality ^c	Turf Color ^d
1	Non-treated control			61.3a	3.0j	0.572a
2	Interface Triton FLO	3.0 FL OZ/1000 FT2 0.55 FL OZ/1000 FT2	Late Late	0.0f	7.0a-d	0.628a
3	Interface Triton FLO	3.0 FL OZ/1000 FT2 0.75 FL OZ/1000 FT2	Late Late	1.3f	6.8a-e	0.633a
4	Interface Triton FLO	4.0 FL OZ/1000 FT2 0.55 FL OZ/1000 FT2	Late Late	1.3f	6.8a-e	0.608a
5	Interface Triton FLO	4.0 FL OZ/1000 FT2 0.85 FL OZ/1000 FT2	Late Late	0.0f	7.0a-d	0.626a
6	Interface Triton FLO	5.0 FL OZ/1000 FT2 0.85 FL OZ/1000 FT2	Late Late	0.0f	7.0a-d	0.657a
7	Interface Triton FLO	6.0 FL OZ/1000 FT2 0.85 FL OZ/1000 FT2	Late Late	0.0f	7.0a-d	0.634a
8	Interface Triton FLO	6.0 FL OZ/1000 FT2 1.1 FL OZ/1000 FT2	Late Late	0.0f	7.0a-d	0.610a
9	Concert II	8.5 FL OZ/1000 FT2	Late	0.0f	7.0a-d	0.585a
10	Secure	0.5 FL OZ/1000 FT2	Late	8.8ef	5.5fgh	0.638a
11	Instrata	9.0 FL OZ/1000 FT2	Late	0.0f	7.0a-d	0.675a
12	Instrata	9.3 FL OZ/1000 FT2	Late	0.0f	7.0a-d	0.666a
13	Instrata	11.0 FL OZ/1000 FT2	Late	0.0f	7.0a-d	0.664a
14	Instrata PAR	7.0 FL OZ/1000 FT2 0.36 FL OZ/1000 FT2	Late Late	1.3f	7.0a-d	0.649a
15	Instrata PAR	9.0 FL OZ/1000 FT2 0.36 FL OZ/1000 FT2	Late Late	1.3f	7.0a-d	0.598a
16	Instrata PAR	9.4 FL OZ/1000 FT2 0.36 FL OZ/1000 FT2	Late Late	1.3f	6.8a-e	0.638a
17	Banner MAXX II PAR	2.0 FL OZ/1000 FT2 0.36 FL OZ/1000 FT2	Late Late	6.3f	6.0d-g	0.589a
18	Instrata Secure	7.5 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late	0.0f	7.0a-d	0.646a
19	Instrata Secure PAR	7.5 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 0.36 FL OZ/1000 FT2	Late Late Late	0.0f	7.3abc	0.649a
20	Instrata Secure PAR	5.5 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 0.36 FL OZ/1000 FT2	Late Late Late	0.0f	7.0a-d	0.624a
21	Concert II Secure	8.5 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late	0.0f	7.0a-d	0.613a
22	Concert II Secure PAR	8.5 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 0.36 FL OZ/1000 FT2	Late Late Late	1.3f	6.8a-e	0.636a

^aEarly fungicide treatments were applied on Oct. 8th, 2012 and late treatments were applied on Oct. 30th, 2012.

^bMean percent diseased area assessed on May 8th, 2013.

^cQuality was visually assessed where 1 = dead, 6 = acceptable, 9 = dark green.

^dColor was assessed using a TCM 500 NDVI Turf Color Meter from Spectrum Technologies®.

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Table 1 (cont): Mean snow mold severity, turf quality, and turf color assessed on May 8th, 2013 at Wawonowin CC in Champion, MI.

	Treatment	Rate	Application Timing ^a	Disease Severity ^b	Turf Quality ^c	Turf Color ^d
23	Concert II Secure PAR	4.5 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 0.36 FL OZ/1000 FT2	Late Late Late	1.3f	7.0a-d	0.610a
24	Concert II Banner MAXX II	8.5 FL OZ/1000 FT2 1.0 FL OZ/1000 FT2	Late Late	1.3f	6.8a-e	0.628a
25	Concert II Banner MAXX II PAR	8.5 FL OZ/1000 FT2 1.0 FL OZ/1000 FT2 0.36 FL OZ/1000 FT2	Late Late Late	1.8f	7.0a-d	0.626a
26	Headway Secure PAR	1.5 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 0.36 FL OZ/1000 FT2	Late Late Late	10.0def	5.8e-h	0.591a
27	Banner MAXX II Secure	3.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late	5.0f	6.3c-g	0.601a
28	Banner MAXX II Secure Medallion TL PAR	2.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 1.0 FL OZ/1000 FT2 0.36 FL OZ/1000 FT2	Late Late Late Late	0.0f	7.0a-d	0.617a
29	Banner MAXX II Secure Medallion TL	2.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 1.0 FL OZ/1000 FT2	Late Late Late	1.3f	6.8a-e	0.643a
30	Secure PAR	0.5 FL OZ/1000 FT2 0.36 FL OZ/1000 FT2	Early/Late Late	22.5cd	4.8hi	0.642a
31	Daconil Action Secure PAR	5.4 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 0.36 FL OZ/1000 FT2	Late Late Late	1.3f	7.0a-d	0.642a

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	Treatment	Rate	Application Timing ^a	Disease Severity ^b	Turf Quality ^c	Turf Color ^d
39	Torque	0.9 FL OZ/1000 FT2	Late	5.0f	6.3c-g	0.638a
40	Torque 26/36	0.9 FL OZ/1000 FT2 4.0 FL OZ/1000 FT2	Late Late	1.3f	6.8a-e	0.640a
41	Torque 26/36 Spectro	0.9 FL OZ/1000 FT2 4.0 FL OZ/1000 FT2 3.67 OZ/1000 FT2	Late Late Late	1.3f	6.8a-e	0.683a
42	Torque Affirm Spectro	0.9 FL OZ/1000 FT2 0.9 OZ/1000 FT2 3.67 OZ/1000 FT2	Late Late Late	0.0f	7.0a-d	0.628a
43	A293	12.0 FL OZ/1000 FT2	Early/Late	52.5ab	3.8ij	0.621a
44	Trinity	1.0 FL OZ/1000 FT2	Late	8.8ef	6.0d-g	0.614a
45	Insignia SC Trinity	0.7 FL OZ/1000 FT2 1.0 FL OZ/1000 FT2	Late Late	0.0f	7.0a-d	0.631a
46	Lexicon	0.47 FL OZ/1000 FT2	Early/Late	6.3f	5.8e-h	0.655a
47	Lexicon Daconil Ultrex	0.34 FL OZ/1000 FT2 3.0 OZ/1000 FT2	Early/Late Early/Late	5.0f	6.0d-g	0.671a
48	Pillar G	3.0 LB/1000 FT2	Late	5.0f	6.0d-g	0.624a
49	Insignia SC Trinity Daconil Ultrex	0.7 FL OZ/1000 FT2 1.0 FL OZ/1000 FT2 3.2 OZ/1000 FT2	Late Late Late	0.0f	7.5ab	0.658a
50	Honor Trinity Daconil Ultrex	0.84 OZ/1000 FT2 1.0 FL OZ/1000 FT2 3.2 OZ/1000 FT2	Late Late Late	1.3f	6.8a-e	0.672a
51	Civitas Harmonizer Secure	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Early/Late Early/Late Late	26.3c	4.8hi	0.560a
52	Civitas Harmonizer Curalan EG Chipco 26GT	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 1.0 FL OZ/1000 FT2 4.0 FL OZ/1000 FT2	Early/Late Early/Late Early Late	22.5cd	4.8hi	0.651a
53	Civitas Harmonizer Torque	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 0.6 FL OZ/1000 FT2	Early/Late Early/Late Early/Late	0.0f	7.0a-d	0.631a
54	Civitas Harmonizer Torque Chipco 26GT	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 0.6 FL OZ/1000 FT2 4.0 FL OZ/1000 FT2	Early/Late Early/Late Early Late	0.0f	7.8a	0.636a

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55	Civitas Harmonizer Trinity Trinity	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 1.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Early/Late Early/Late Early Late	11.3def	5.8e-h 0.607a
56	Civitas Harmonizer Daconil Ultrex Chipco 26GT	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 5.0 OZ/1000 FT2 4.0 FL OZ/1000 FT2	Early/Late Early/Late Late Late	10.0def	5.8e-h 0.670a
57	Civitas Harmonizer Concert II	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 5.5 FL OZ/1000 FT2	Early/Late Early/Late Late	21.3cde	5.5fgh 0.637a
58	Civitas Harmonizer Instrata	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 5.5 FL OZ/1000 FT2	Early/Late Early/Late Late	8.8ef	6.5b-f 0.649a
59	Civitas Harmonizer Chipco 26GT Daconil Action	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2 4.0 FL OZ/1000 FT2 5.4 FL OZ/1000 FT2	Early/Late Early/Late Late Late	7.5f	5.8e-h 0.644a
60	Civitas Harmonizer	14.5 FL OZ/1000 FT2 4.0 FL OZ/1000 FT2	Early/Late Early/Late	27.5c	5.3gh 0.576a
61	QP TM/C QP Iprodione QP Propiconazole Foursome	6.0 OZ/1000 FT2 4.0 FL OZ/1000 FT2 2.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late Late Late	0.0f	7.5ab 0.659a
62	QP TM/C QP Iprodione QP Tebuconazole Foursome	6.0 OZ/1000 FT2 4.0 FL OZ/1000 FT2 0.6 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late Late Late	0.0f	7.8a 0.629a
63	QP Iprodione QP Tebuconazole Foursome	4.0 FL OZ/1000 FT2 1.1 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late Late	0.0f	7.3abc 0.629a
64	QP Enclave Foursome	8.0 FL OZ/1000 FT2 0.5 FL OZ/1000 FT2	Late Late	0.0f	7.5ab 0.670a
65	Turfside 400	10 FL OZ/1000 FT2	Late	3.8f	6.5b-f 0.649a
66	Chipco 26GT Daconil WeatherStik	4.0 FL OZ/1000 FT2 5.5 FL OZ/1000 FT2	Late Late	6.3f	6.0d-g 0.678a

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