

2013-2014 Pink Snow Mold Control Evaluation OJ Noer Center – Verona, WI



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OBJECTIVES

To evaluate fungicides for the control of Microdochium patch caused by the fungus *Microdochium nivale*.

MATERIALS AND METHODS

This evaluation was conducted at the OJ Noer Turfgrass Research and Educational Facility in Madison, WI on an ‘Alpha’ creeping bentgrass (*Agrostis stolonifera*) plot maintained at a height of 0.5 inches. Individual plots measured 3 ft x 10 ft 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 8004 VS nozzles. All fungicides were agitated by hand and applied in the equivalent of 2 gallons of water per 1000 ft². Early applications were made on November 7th, 2013 and late applications were made on December 2nd, 2013. The experimental plot area was inoculated with *M. nivale*-infested rye grain and covered with a GreenJacket® cover on December 3rd. Snow cover was consistent from mid-December until late March, a period of approximately 100 days. Disease severity, turf quality, and turf color were recorded on April 1st, 2014. Disease severity was visually rated as percent area affected, turfgrass quality was visually rated on a 1-9 scale with 6 being acceptable, and Normalized Difference Vegetative Index (turfgrass color) was rated using a HCS 100 GreenSeeker® from Trimble Navigation Ltd (Sunnyvale, CA). Treatment means were analyzed using the Waller Duncan method and are presented in Table 1. In addition, surface temperature on the research plot was recorded using a Spectrum Watchdog® datalogger and is presented in Figure 1.

RESULTS AND DISCUSSION

Despite the prolonged snow cover in 2013-2014, Microdochium patch severity was very low on the experimental area with non-treated controls averaging just 3.8%. Disease was not observed on any other treatment with the exception of minor amounts on treatments 26 and 29. Other snow mold diseases such as gray (*Typhula incarnata*) and speckled (*T. ishikariensis*) were not observed. This decreased severity was likely due to the extremely cold temperatures observed in southern Wisconsin and a lack of snow depth required to properly insulate the turf surface, as evidenced by the cold surface temperatures observed in Figure 1. Differences in turf color were not observed using the NDVI meter, though products containing green pigments did appear slightly more green and resulted in a slight increase in turf quality.

Table 1: Mean snow mold severity, turf quality, and turf color assessed on April 1st, 2014 at the OJ Noer Turfgrass Research Facility in Madison, WI.

Treatment	Rate	Application Timing ^a	Disease Severity ^b	Turf Quality ^c	Turf Color ^d	
1	Non-treated control		3.8a	7.0cd	0.555a	
2	Chipco26GT	4.0 fl oz/1000 ft2	Late	0.0a	7.0cd	0.572a
3	Banner MAXX II	2.0 fl oz/1000 ft2	Late	0.0a	7.0cd	0.562a
4	Triton FLO	0.85 fl oz/1000 ft2	Late	0.0a	7.3c	0.582a
5	Heritage TL	2.0 fl oz/1000 ft2	Late	0.0a	7.3c	0.562a
6	1786-G	12.0 fl oz/1000 ft2	Early/Late	0.0a	8.8a	0.590a
7	Interface	6.0 fl oz/1000 ft2	Late	0.0a	7.8b	0.575a
	Triton FLO	0.85 fl oz/1000 ft2	Late			
8	Interface	3.0 fl oz/1000 ft2	Late	0.0a	8.0b	0.580a
	Triton FLO	0.55 fl oz/1000 ft2	Late			
	Droplex	10.0 fl oz/a	Late			
9	Instrata	5.5 fl oz/1000 ft2	Late	0.0a	7.0cd	0.560a
	Droplex	10.0 fl oz/a	Late			
10	Banner MAXX II	1.0 fl oz/1000 ft2	Late	0.0a	8.0b	0.575a
	Civitas	8.0 fl oz/1000 ft2	Late			
	Harmonizer	0.5 fl oz/1000 ft2	Late			
	Droplex	10.0 fl oz/a	Late			
11	A13705W	2.6 fl oz/1000 ft2	Late	0.0a	7.0cd	0.592a
12	Secure	0.5 fl oz/1000 ft2	Late	0.0a	7.3c	0.582a
13	Secure	0.5 fl oz/1000 ft2	Late	0.0a	7.0cd	0.580a
	Daconil Weatherstik	5.5 fl oz/1000 ft2	Late			
14	Concert II	8.5 fl oz/1000 ft2	Late	0.0a	7.0cd	0.582a
15	A13705W	2.6 fl oz/1000 ft2	Late	0.0a	7.0cd	0.555a
	Daconil Weatherstik	5.5 fl oz/1000 ft2	Late			
16	A15457	0.236 fl oz/1000 ft2	Late	0.0a	8.0b	0.575a
	A17856	1.09 fl oz/1000 ft2	Late			
	A7087	0.5 fl oz/1000 ft2	Late			
	PAR	0.36 fl oz/1000 ft2	Late			
17	A15457	0.236 fl oz/1000 ft2	Late	0.0a	8.0b	0.587a
	A17856	1.09 fl oz/1000 ft2	Late			
	Heritage TL	1.01 fl oz/1000 ft2	Late			
	PAR	0.36 fl oz/1000 ft2	Late			
18	A15457	0.236 fl oz/1000 ft2	Late	0.0a	7.8b	0.567a
	A17856	1.09 fl oz/1000 ft2	Late			
	Banner MAXX II	2.0 fl oz/1000 ft2	Late			
	PAR	0.36 fl oz/1000 ft2	Late			
19	A19188	1.0 fl oz/1000 ft2	Late	0.0a	8.0b	0.590a
	A17856	1.09 fl oz/1000 ft2	Late			
	PAR	0.36 fl oz/1000 ft2	Late			
20	Instrata	9.4 fl oz/1000 ft2	Late	0.0a	8.0b	0.565a
	PAR	0.36 fl oz/1000 ft2	Late			

^aEarly fungicide treatments were applied on Nov. 7th, 2013 and late treatments applied on Dec. 2nd, 2013.

^bMean percent diseased area assessed on April 1st, 2014.

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

^dColor was assessed using an HCS 100 NDVI GreenSeeker from Trimble Navigation Ltd®.

Table 1: Mean snow mold severity, turf quality, and turf color assessed on April 1st, 2014 at the OJ Noer Turfgrass Research Facility in Madison, WI.

Treatment	Rate	Application Timing ^a	Disease Severity ^b	Turf Quality ^c	Turf Color ^d	
21	A20744	0.5 oz/1000 ft ²	Late	0.0a	8.0b	0.600a
	A17856	1.09 fl oz/1000 ft ²	Late			
	A7087	0.5 fl oz/1000 ft ²	Late			
	PAR	0.36 fl oz/1000 ft ²	Late			
22	A20744	0.5 oz/1000 ft ²	Late	0.0a	8.0b	0.597a
	A17856	1.09 fl oz/1000 ft ²	Late			
	Heritage TL	1.01 fl oz/1000 ft ²	Late			
	PAR	0.36 fl oz/1000 ft ²	Late			
23	A20744	0.5 oz/1000 ft ²	Late	0.0a	8.0b	0.582a
	A17856	1.09 fl oz/1000 ft ²	Late			
	Banner MAXX II	2.0 fl oz/1000 ft ²	Late			
	PAR	0.36 fl oz/1000 ft ²	Late			
24	A20581	0.47 fl oz/1000 ft ²	Late	0.0a	8.0b	0.577a
	PAR	0.36 fl oz/1000 ft ²	Late			
25	1786-A	12.0 fl oz/1000 ft ²	Early/Late	0.0a	9.0a	0.587a
26	1786-B	12.0 fl oz/1000 ft ²	Early/Late	1.3a	8.8a	0.595a
27	1786-C	12.0 fl oz/1000 ft ²	Early/Late	0.0a	7.3c	0.590a
28	1786-D	12.0 fl oz/1000 ft ²	Early/Late	0.0a	7.3c	0.570a
29	1786-E	12.0 fl oz/1000 ft ²	Early/Late	1.3a	7.0cd	0.585a
30	1786-F	12.0 fl oz/1000 ft ²	Early/Late	0.0a	6.8d	0.555a

^aEarly fungicide treatments were applied on Nov. 7th, 2013 and late treatments applied on Dec. 2nd, 2013.

^bMean percent diseased area assessed on April 1st, 2014.

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

^dColor was assessed using an HCS 100 NDVI GreenSeeker from Trimble Navigation Ltd®.

Surface Temperature - Pink Snow Mold (Madison, WI) 2013-2014

