

2010-2011 UMass Snow Mold Golf Course Fungicide Trial Results

Dr. Geunhwa Jung & James Popko

EXPERIMENTAL METHODS

Snow mold trials were conducted at two sites: Glens Falls Country Club in Queensbury, NY on a mostly creeping bentgrass (*Agrostis stolonifera*) fairway with some annual bluegrass (*Poa annua*) maintained at 0.5-inch mowing height and at Berkshire Hills Country Club in Pittsfield, MA on an annual bluegrass (*P. annua*), creeping bentgrass (*A. stolonifera*), and Kentucky bluegrass (*P. pratensis*) fairway maintained at 0.5-inch mowing height. Individual plots measured 3 ft x 6 ft (18 ft²), and were arranged in a randomized complete block design with three replications and a one-foot-wide buffer strip between plots. Snow mold fungicide trial plots were not inoculated.

The fungicides listed in Table 1 were applied based on labeled or suggested rates. Individual treatments were applied at a nozzle pressure of 40 psi 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. All fungicide applications were made on November 18th, 2010 at Glens Falls Country Club and November 19th, 2010 for Berkshire Hills Country Club. Snow mold severity (caused by *Typhula incarnata*, *Typhula ishikariensis* and *Microdochium nivale*) was visually assessed as percent disease covering plots on April 5th, 2011 at Glens Falls Country Club and March 28, 2011 at Berkshire Hills Country Club. Data was subject to an analysis of variance and means were separated using Fisher's protected least significant difference. Several experimental treatments (#'s 24-27) were included in both statistical analyses, but excluded from Table 1 since they are not available for practitioners.

RESULTS

Glens Falls Country Club

Snow cover persisted on the experimental plot for approximately 100 days and high disease severity was observed within untreated plots (76.7%). Evaluation of morphological characteristics (sclerotia present) determined that most snow mold damage was caused by *T. incarnata* and *T. ishikariensis* (the causal agents of *Typhula* blight). Treatments 14, 15, 17, 18, 19, 22, 30, 31, 32 and 33 provided complete control of all snow molds. Treatments 5-8, 11, 13, 16, 20, 21, 28 and 29 provided acceptable control of snow molds (< 5%). Treatments 38 and 39 did not provide significantly better control than the untreated plots.

Berkshire Hills Country Club

Snow cover persisted on the experimental plot for approximately 90-100 days and moderate disease severity was observed within untreated plots (21.3%). Evaluation of morphological characteristics (sclerotia present) determined that most snow mold damage (90 %) was caused by *T. incarnata* and 10% of snow mold damage was caused by *M. nivale*. Only treatment 17 provided complete control of all snow molds. Many treatments provided acceptable control of snow molds (< 5% disease on plots). Treatments 6, 8, 20, 23, 35, 37-40 and 42 did not provide significantly better control than the untreated plots.

Table 1. 2010-2011 Snow Mold Fungicide Trial Results from Glens Falls Country Club (GFCC) and Berkshire Hills Country Club (BHCC).

Trt #	Trade Name	Rate (oz/M)	GFCC Snow Mold %		BHCC Snow Mold %	
1	Untreated	...	76.7 ^a	AB ^b	21.3	E-G
2	Interface	4.0	13.3	E-G	0.7	I
	Triton Flo	0.85				
3	Interface	5.0	15.0	E-G	1.0	I
	Triton Flo	0.85				
4	Interface	6.0	12.7	E-G	1.7	HI
	Triton Flo	0.85				
5	Reserve 4.8 Sc	4.5	2.0	FG	0.7	I
	Compass	0.25				
6	Reserve 4.8 Sc	5.4	3.0	FG	8.3	G-I
	Compass	0.25				
7	Tartan	2.0	1.0	FG	1.7	HI
	Daconil Ultrex	5.0				
8	Instrata	9.3	2.0	FG	6.3	G-I
9	Instrata	11.0	11.7	E-G	1.3	I
10	Interface	3.0	20.0	EF	0.3	I
	Triton Flo	0.5				
11	Reserve 4.8 Sc	5.4	1.7	FG	1.0	I
	Interface	6.0				
12	Interface	5.0	55.0	CD	3.3	HI
13	Insignia SC	0.7	0.3	G	2.0	HI
	Trinity	1.5				
	Chlorothalonil	3.2				
14	Insignia SC	0.54	0.0	G	1.3	I
	Trinity	1.0				
	Chlorothalonil	3.2				
15	Honor	0.84	0.0	G	1.7	HI
	Trinity	1.0				
	Chlorothalonil	3.2				
16	Torque	0.6	0.7	G	1.7	HI
	Cleary's 26/36	4.0				
17	Torque	0.6	0.0	G	0.0	I
	Cleary's 26/36	4.0				
	Spectro	3.67				
18	Torque	0.6	0.0	G	2.0	HI
	Affirm	0.9				
19	Torque	0.6	0.0	G	3.7	HI
	Affirm	0.9				
	Spectro	3.67				
20	QP TM/C	6.0	4.0	FG	5.0	G-I
	QP IPRO 2 SE	4.0				
	QP Propiconazole 14.3	2.0				
21	QP 642	11.75	2.7	FG	2.7	HI

^a Values represent percent disease severity mean of three replicates.

^b Means followed by the same letter are not significantly different according to the Fisher's protected least significant difference.

Table 1 cont. 2010-2011 Snow Mold Fungicide Trial Results from Glens Falls Country Club (GFCC) and Berkshire Hills Country Club (BHCC).

Trt #	Trade Name	Rate (oz/M)	GFCC Snow Mold %	BHCC Snow Mold %
22	QP Chlorothalonil 720	5.5	0.0 G	1.0 I
	QP IPRO 2 SE	4.0		
	QP Tebuconazole	0.69		
23	QP Chlorothalonil 720	4.76	15.3 E-G	6.0 G-I
	QP IPRO 2 SE	2.23		
	QP Fludioxonil	0.36		
28	Velista	0.7	5.0 E-G	3.0 HI
29	Velista	0.7	0.7 G	0.7 I
	Daconil Ultrex	5.0		
	Chipco 26 GT	4.0		
30	Velista	0.7	0.0 G	0.3 I
	Daconil Ultrex	5.0		
	Heritage	0.7		
31	Velista	0.7	0.0 G	1.7 HI
	Daconil Ultrex	5.0		
	Banner Max	2.0		
32	Velista	0.7	0.0 G	1.3 I
	Daconil Ultrex	5.0		
	Cleary's 3336	2.0		
33	Velista	0.7	0.0 G	3.0 HI
	Daconil Ultrex	5.0		
34	Velista	0.7	0.3 G	0.3 I
	Medallion	0.25		
	Banner Max	2.0		
35	Civitas	16.0	23.3 E	5.7 G-I
	Harmonizer	4.0		
	Concert	4.0		
36	Civitas	16.0	13.3 E-G	2.0 HI
	Harmonizer	4.0		
	Trinity	1.5		
37	Civitas	16.0	43.3 D	36.0 C-E
	Harmonizer	4.0		
38	Civitas	16.0	61.7 A-D	46.7 A-C
	Harmonizer	1.0		
39	Turfcide	8.0	58.3 B-D	18.3 F-H
40	Spotrete	8.0	11.0 E-G	6.0 G-I
	Teremec	12.0		
41	Pentathlon	12.0	10.0 E-G	4.3 HI
	Teremec	12.0		
42	Spotrete	8.0	15.0 E-G	43.3 A-D
	Pentathlon	12.0		

^a Values represent percent disease severity mean of three replicates.

^b Means followed by the same letter are not significantly different according to the Fisher's protected least significant difference.