



2020-2021 Snow Mold Control Evaluation: Cragun's Legacy Golf Club – Brainerd, MN



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OBJECTIVE

To evaluate fungicides for the control of gray snow mold (caused by *Typhula incarnata*), speckled snow mold (*T. ishikariensis*), and Microdochium patch (*Microdochium nivale*) on golf course turfgrass.

MATERIALS AND METHODS

This evaluation was conducted at the Legacy Courses at Cragun's near Brainerd, MN on a creeping bentgrass (*Agrostis stolonifera*) and annual bluegrass (*Poa annua*) golf course fairway 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 psi using a CO₂-pressurized boom sprayer equipped with two XR Teejet AI8008 VS nozzles. All fungicides were agitated by hand and applied in the equivalent of 1.5 gallons of water per 1000 ft². All applications were made on 4 Nov 2020. The experimental plot area was not inoculated. Snow cover was present from mid-November through mid-March, a total of approximately 120 days. Disease severity, turf quality, and turf color were measured on 6 Apr 2021. Disease severity was visually rated as percent area affected, turfgrass quality was visually rated on a 1-9 scale with 6 being acceptable, and chlorophyll content (turfgrass color) was rated using a FieldScout CM 1000 Chlorophyll Meter from Spectrum Technologies, Inc. (Aurora, IL). Treatment means were analyzed using Fisher's LSD method and are presented in Table 1.

RESULTS AND DISCUSSION

Disease pressure was relatively low in Brainerd this year with non-treated controls averaging 27.5% disease. The predominant snow mold disease present was speckled snow mold (90%), with minor amount of Microdochium patch (10%) also present. All treatments provided complete disease control, most of which contained a mixture of 3 or 4 active ingredients. Turf quality was acceptable with each treatment, and both turf quality and turf color were slightly higher in treatments that included a pigment. No phytotoxicity was observed with any treatment.

Table 1: Mean snow mold severity, turf quality, and turf color were assessed on April 6, 2021 at Cragun’s Legacy near Brainerd, MN.

	Treatment	Rate	Application Timing ^a	Disease Severity ^b	Turf Quality ^c	Turf Color ^d
1	Non-treated control			27.5a	4.8d	158.8d-h
2	Turficide	6.0 fl oz/1000 ft2	Late	0.0b	7.5abc	165.5c-g
	Banner Maxx Foursome	2.0 fl oz/1000 ft2 0.5 fl oz/1000 ft2				
3	Turficide	8.0 fl oz/1000 ft2	Late	0.0b	7.5abc	172.8a-e
	Banner Maxx Foursome	2.0 fl oz/1000 ft2 0.5 fl oz/1000 ft2				
4	Turficide	6.0 fl oz/1000 ft2	Late	0.0b	7.3bc	164.3c-g
	Torque Foursome	1.1 fl oz/1000 ft2 0.5 fl oz/1000 ft2				
5	Turficide	8.0 fl oz/1000 ft2	Late	0.0b	7.5abc	164.5c-g
	Torque Foursome	1.1 fl oz/1000 ft2 0.5 fl oz/1000 ft2				
6	Turficide	6.0 fl oz/1000 ft2	Late	0.0b	7.8ab	167.8a-f
	Mirage Foursome	2.0 fl oz/1000 ft2 0.5 fl oz/1000 ft2				
7	Turficide	8.0 fl oz/1000 ft2	Late	0.0b	7.8ab	167.0b-f
	Mirage Foursome	2.0 fl oz/1000 ft2 0.5 fl oz/1000 ft2				
8	Premion	10.0 fl oz/1000 ft2	Late	0.0b	7.5abc	166.3c-g
	Previa Foursome	4.0 fl oz/1000 ft2 0.5 fl oz/1000 ft2				
9	Premion	10.0 fl oz/1000 ft2	Late	0.0b	7.3bc	165.0c-g
	Secure Foursome	0.5 fl oz/1000 ft2 0.5 fl oz/1000 ft2				
10	Concert II	5.5 fl oz/1000 ft2	Late	0.0b	7.8ab	174.3a-d
	Turficide Foursome	6.0 fl oz/1000 ft2 0.5 fl oz/1000 ft2				
11	Concert II	5.5 fl oz/1000 ft2	Late	0.0b	7.5abc	168.5a-e
	Turficide Foursome	8.0 fl oz/1000 ft2 0.5 fl oz/1000 ft2				
12	Concert II	8.3 fl oz/1000 ft2	Late	0.0b	7.5abc	157.0e-i
	Turficide Foursome	8.0 fl oz/1000 ft2 0.5 fl oz/1000 ft2				
13	Turficide	8.0 fl oz/1000 ft2	Late	0.0b	7.3bc	162.0d-h
	Previa Foursome	5.5 fl oz/1000 ft2 0.5 fl oz/1000 ft2				
14	Turficide	3.33 fl oz/1000 ft2	Late	0.0b	7.0c	163.5c-g
	Previa Mirage	1.825 fl oz/1000 ft2 0.67 fl oz/1000 ft2				
15	Turficide	6.66 fl oz/1000 ft2	Late	0.0b	7.0c	156.3e-i
	Previa Mirage	3.65 fl oz/1000 ft2 1.33 fl oz/1000 ft2				
16	Turficide	8.0 fl oz/1000 ft2	Late	0.0b	7.0c	163.5c-g
	Previa Mirage	4.4 fl oz/1000 ft2 1.6 fl oz/1000 ft2				
LSD P=.05				5.92	0.58	16.9

^aAll treatments applied on Nov 4, 2020.

^bMean percent diseased area assessed on Apr 6, 2021.

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

^dColor was assessed using a FieldScout CM1000 Chlorophyll Meter from Spectrum Technologies, Inc.

Table 1(cont): Mean snow mold severity, turf quality, and turf color were assessed on April 6, 2021 at Cragun's Legacy near Brainerd, MN.

	Treatment	Rate	Application Timing ^a	Disease Severity ^b	Turf Quality ^c	Turf Color ^d
17	Turfcide	10.0 fl oz/1000 ft ²	Late	0.0b	7.5abc	151.5f-i
	Previa	5.5 fl oz/1000 ft ²				
	Mirage	2.0 fl oz/1000 ft ²				
18	Turfcide	3.0 fl oz/1000 ft ²	Late	0.0b	7.0c	172.8a-e
	26GT	2.0 fl oz/1000 ft ²				
	3336F	1.0 fl oz/1000 ft ²				
19	Mirage	0.6 fl oz/1000 ft ²	Late	0.0b	7.0c	165.0c-g
	Turfcide	6.0 fl oz/1000 ft ²				
	26GT	4.0 fl oz/1000 ft ²				
20	3336F	2.0 fl oz/1000 ft ²	Late	0.0b	7.8ab	165.3c-g
	Mirage	1.2 fl oz/1000 ft ²				
	Turfcide	8.0 fl oz/1000 ft ²				
21	26GT	5.33 fl oz/1000 ft ²	Late	0.0b	7.8ab	165.0c-g
	3336F	2.67 fl oz/1000 ft ²				
	Mirage	1.6 fl oz/1000 ft ²				
22	Turfcide	9.0 fl oz/1000 ft ²	Late	0.0b	7.0c	165.3c-g
	26GT	6.0 fl oz/1000 ft ²				
	Torque	0.3 fl oz/1000 ft ²				
23	Banner Maxx	0.5 fl oz/1000 ft ²	Late	0.0b	7.0c	160.0d-h
	Turfcide	3.0 fl oz/1000 ft ²				
	26GT	1.0 fl oz/1000 ft ²				
24	Torque	0.6 fl oz/1000 ft ²	Late	0.0b	7.0c	145.3hi
	Banner Maxx	1.0 fl oz/1000 ft ²				
	Turfcide	9.0 fl oz/1000 ft ²				
25	26GT	3.0 fl oz/1000 ft ²	Late	0.0b	7.0c	141.8i
	Torque	0.9 fl oz/1000 ft ²				
	Banner Maxx	1.5 fl oz/1000 ft ²				
26	Turfcide	8.0 fl oz/1000 ft ²	Late	0.0b	7.0c	149.8ghi
	26GT	2.0 fl oz/1000 ft ²				
	Torque	0.6 fl oz/1000 ft ²				
27	Banner Maxx	1.0 fl oz/1000 ft ²	Late	0.0b	7.0c	163.0d-g
	Enclave	8.0 fl oz/1000 ft ²				
	Turfcide	8.0 fl oz/1000 ft ²				
28	26GT	2.0 fl oz/1000 ft ²	Late	0.0b	7.0c	172.5a-e
	Insignia	0.65 fl oz/1000 ft ²				
	Trinity	1.0 fl oz/1000 ft ²				
LSD P=.05				5.92	0.58	16.9

^aAll treatments applied on Nov 4, 2020.

^bMean percent diseased area assessed on Apr 6, 2021.

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

^dColor was assessed using a FieldScout CM1000 Chlorophyll Meter from Spectrum Technologies, Inc.

Table 1(cont): Mean snow mold severity, turf quality, and turf color were assessed on April 6, 2021 at Cragun's Legacy near Brainerd, MN.

	Treatment	Rate	Application Timing ^a	Disease Severity ^b	Turf Quality ^c	Turf Color ^d
29	Insignia	0.65 fl oz/1000 ft ²	Late	0.0b	7.0c	183.3ab
	Trinity	1.0 fl oz/1000 ft ²				
	26GT	4.0 fl oz/1000 ft ²				
30	Insignia	0.65 fl oz/1000 ft ²	Late	0.0b	7.0c	167.3b-f
	Trinity	1.0 fl oz/1000 ft ²				
	Daconil Weatherstik	4.4 fl oz/1000 ft ²				
31	Insignia	0.65 fl oz/1000 ft ²	Late	0.0b	7.0c	167.5b-f
	Trinity	1.0 fl oz/1000 ft ²				
	Medallion	0.94 fl oz/1000 ft ²				
32	Enclave	8.0 fl oz/1000 ft ²	Late	0.0b	7.8ab	184.5a
	Foursome Plus	0.4 fl oz/1000 ft ²				
33	Intaglio	11.0 fl oz/1000 ft ²	Late	0.0b	8.0a	184.5a
	Foursome Plus	0.4 fl oz/1000 ft ²				
34	BCP1803	1.7 fl oz/1000 ft ²	Late	0.0b	7.3bc	169.5a-e
	Fame	0.36 fl oz/1000 ft ²				
35	BCP1803	1.7 fl oz/1000 ft ²	Late	0.0b	7.3bc	180.3abc
	Fame	0.36 fl oz/1000 ft ²				
	3336F	5.75 fl oz/1000 ft ²				
36	BCP1803	1.7 fl oz/1000 ft ²	Late	0.0b	7.3bc	172.3a-e
	Fame	0.36 fl oz/1000 ft ²				
	Daconil Weatherstik	4.0 fl oz/1000 ft ²				
LSD P=.05				5.92	0.58	16.9

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