

Gray Snow Mold Disease Control in California



Gray Snow Mold (*Typhula spp.*) activity on the 4th fairway (site of fungicide trial) at Martis Camp Club in Truckee, CA on 2 May 2017, one day after snow melt.

Research Report Brought To You By:



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The Bottom Line: Fifteen commercial and experimental fungicides were tested alone or in combination against an untreated control for management of Gray Snow Mold (GSM) disease caused by *Typhula spp.* on a Kentucky bluegrass fairway at Martis Camp Club in Truckee, CA (near Lake Tahoe). All treatments were applied on 25 October 2016. Permanent snowfall (>20 ft during 2016-17 winter season) did not occur for more than one month after application. Most treatments reduced GSM severity and improved turfgrass quality compared to the untreated control; however, Fame + T (fluoxastrobin + tebuconazole), Lexicon (pyraclostrobin + fluxapyroxad) + Trinity (triticonazole) + Daconil Ultrex (chlorothalonil) and/or 26019 FLO (iprodione), Instrata (chlorothalonil + fludioxanil + propiconazole) + Ambient Plus, and Interface Stressgard (iprodione + trifloxystrobin) + Mirage Stressgard (tebuconazole) provided the best results even though turf recovery from disease was rapid. In addition, Civitas Turf Defense (mineral oil) significantly improved GSM control when tank-mixed with Tourney (tebuconazole) + Daconil WeatherStik (chlorothalonil).

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Introduction:

Gray Snow Mold (GSM), caused by the fungi *Typhula incarnata* or *T. ishkariensis*, is a cool-season turfgrass disease in areas with prolonged snow cover. Typically, disease activity and resultant turf injury is related to the length of snow cover. Control of GSM on large areas like golf course fairways with extended snow cover normally involves one timely application before the first significant snowfall event. PCNB, DMI, strobilurin, and dicarboximide fungicides are typically used to manage this disease.

Materials and Methods:

The study was conducted on the 4th fairway (Kentucky bluegrass) at Martis Camp Club in Truckee, CA near Lake Tahoe. Experimental design was a randomized block with 4 replications. Plot size was 6-ft x 8-ft with 2-ft alleys. Fungicides were applied using a CO₂-powered backpack sprayer equipped with 8003VS nozzles to deliver 2 gal/M. Fungicide treatments were applied on 25 October 2016. Soil temperatures averaged 50F from 2 inches into the profile on the day of treatment. Due to subsequent rainfall and no permanent snowfall following application, an identical but separate study was initiated on a different fairway on 14 November 2016 (2-inch soil temperature = 42F).

Results:

Martis Camp Club received substantial (>20 ft) snowfall during the winter 2016-17 season. Snow melted permanently around 1 May 2017. Unfortunately, the study area that received fungicide treatments on 14 November 2016 closer to the first permanent snowfall received widespread winter injury, thus disease control ratings were not possible. Snow mold disease symptoms and treatment differences were apparent on the area where applications were made on 25 October 2016 (cover photo). However, turf recovery was very rapid (characteristic of *T. incarnata*), thus only one disease cover rating was possible (Table 1).

Most treatments reduced GSM severity and improved turfgrass quality compared to the untreated control; however, Fame + T (fluoxastrobin + tebuconazole), Lexicon (pyraclostrobin + fluxapyroxad) + Trinity (triticonazole) + Daconil Ultrex (chlorothalonil) and/or 26019 FLO (iprodione), Instrata (chlorothalonil + fludioxanil + propiconazole) + Ambient Plus, and Interface Stressgard (iprodione + trifloxystrobin) + Mirage Stressgard (tebuconazole) provided the best results even though turf recovery from disease was rapid. In addition, Civitas Turf Defense (mineral oil) significantly improved GSM control when tank-mixed with Tourney (tebuconazole) + Daconil WeatherStik (chlorothalonil).

A second GSM fungicide trial is scheduled for 2017-18 at Martis Camp Club.

Table 1. Gray snow mold disease severity (0-100%) after snowmelt on a Kentucky bluegrass fairway following fall (25 October 2016) application of fungicides. Martis Camp Club, Truckee, CA. 2017.

No.	Product(s)	Company	Rate (oz/M)	5/11/17
1	Untreated Control	--	--	49 A
2	Concert II 4.3SE	Syngenta	8.3	17 B-D
2	Banner Maxx 1.3MEC	Syngenta	1.0	
2	Ambient Plus	Simplot	0.37	
3	A19188 0.85MEC	Syngenta	1.0	14 B-D
3	Banner Maxx 1.3MEC	Syngenta	2.0	
3	Ambient Plus	Simplot	0.37	
4	A19188 0.85MEC	Syngenta	1.0	6 CD
4	A13705 1.6 SE	Syngenta	2.6	
4	Ambient Plus	Simplot	0.37	
5	A19188 0.85MEC	Syngenta	1.0	19 B-D
5	Renown 5.16SE	Syngenta	2.5	
5	Ambient Plus	Simplot	0.37	
6	A19188 0.85MEC	Syngenta	1.0	14 B-D
6	Heritage TL 0.8MEC	Syngenta	2.0	
6	Ambient Plus	Simplot	0.37	
7	Instrata	Syngenta	7.0	2 D
7	Ambient Plus	Simplot	0.37	
8	A22164A	Syngenta	0.8	23 BC
8	Banner Maxx	Syngenta	1.4	
8	Ambient Plus	Simplot	0.37	
9	Interface Stressgard	Bayer	4.0	2 D
9	Mirage Stressgard	Bayer	1.5	
10	Interface Stressgard	Bayer	4.0	16 B-D
10	Mirage Stressgard	Bayer	1.5	
10	Turfcide 400	Amvac	6.0	
11	Lexicon	BASF	0.47	1 D
11	Trinity	BASF	1.0	
11	Daconil Ultrex	Syngenta	5.0	
11	26019 FLO	Bayer	4.0	
12	Lexicon	BASF	0.47	2 D
12	Trinity	BASF	1.0	
12	26019 FLO	Bayer	5.0	
13	Lexicon	BASF	0.47	2 D
13	Trinity	BASF	1.0	
13	Daconil Ultrex	Syngenta	5.0	
14	Tourney	NuFarm	0.4	33 AB
14	Daconil WeatherStik	Syngenta	5.0	
15	Tourney	NuFarm	0.4	5 CD
15	Daconil WeatherStik	Syngenta	5.0	
15	Civitas Turf Defense	Intelligro	17.0	
16	Fame + T	FMC	0.67	1 D

Means followed by the same letter in a column are not significantly different ($\alpha=0.05$).