

TURFGRASS DISEASE UPDATE 1992
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INTRODUCTION

The fungicide field trials conducted this year were established under a standard format of 3 or 4 replications/treatment in a randomized block design. Plot size was generally 6' x 9', with the exception of the dollar spot trial on creeping bentgrass (1' x 9' plots) and the melting-out fungicide trials on Kentucky bluegrass (3' x 6' plots).

All sprayable (WP, WDG, FL, EC, etc.) treatments were applied with a CO₂ back-pack sprayer utilizing Tee-jet flat fan nozzles (8002E) producing 48 gal. of spray volume/acre at 30 PSI. Granular (non-sprayable) treatments were pre-weighed and hand-applied. All field studies were initiated preventively with the exception of the dollar spot, take - all, and necrotic ring spot studies, some of which were curative.

Data were analyzed using an analysis of variance test and a Duncan's multiple range test at a 5% level of significance.

A list of all compounds tested this season is included at the end of this report, providing formulation and manufacturer information.

SNOW MOLD FUNGICIDE STUDIES - 1991-92

Three snow mold fungicide studies were conducted during the fall and winter of 1991-92. Two studies were established on the Boyne Highlands Resort in Harbor Springs, MI, and a third study was established on the Birchwood Farms Golf Course, also in Harbor Springs, MI. The treatments were applied preventively to three replicate 6' x 9' plots on bentgrass/annual bluegrass fairway turf mowed at ½". Boyne Highlands study #1 was applied on 10/28/91, and study #2 was applied on 11/14/91. The Birchwood Farms study was also applied on 11/14/91.

Boyne Highlands Resort, Harbor Springs, MI

The studies were rated on 4/8/92, immediately following snow cover melt-off. The predominant gray snow mold this year was *Typhula incarnata*, with small amounts of *Typhula ishkariensis* present also. An insignificant amount of pink snow mold (*Microdochium nivale*) was observed. Disease pressure was moderately severe this year, but virtually all treatments gave statistically significant control of the disease, compared to the control plots (Table 1). In study 2, only the treatments containing Banner or Calo-Clor gave significant disease control.

No phytotoxicity was observed in these studies this year.

Table 1. Snow Mold Fungicide Study #1
Boyne Highlands Resort, Harbor Springs, MI

Rating Scale: Percent plot area infected by gray snow mold (*Typhula incarnata*, *Typhula ishikariensis*)
 and pink snow mold (*Microdochium nivale*).

Rating Date: April 8, 1992

Treatment	Rate/1000 ft ^{2b}	I	II	III	AVG	DMR (0.5) ^a
Ch. 26019(WDG) + D. 2787	4 oz + 8 fl oz	0	0	0	0	N
S 3122	1X	0	0	0	0	N
Rizolex	4 oz	0	0	0	0	N
Calo-Clor	3 oz	0	0	0	0	N
GS/SM-09	—	0	0	0	0	N
GS/SM-10	—	0	0	0	0	N
ASC 66825	1.2 oz	.25	0	0	.1	N
ASC 66825	1.8 oz	0	0	.25	.1	N
SAN 832F	4 oz	.25	0	0	.1	N
SAN 832F	6 oz	.25	0	0	.1	N
Calo-Gran	6 lbs	0	0	.25	.1	N
GS/SM-08	—	0	.25	.1	.1	N
Calo-Clor + X-77	1.5 oz + .1% v/v	0	0	.25	.1	N
Ch. 26019 (WDG) + D. 2787	2 oz + 8 fl oz	.5	0	.25	.3	N
Ch. 26019 (WDG) + D. 2787 + Clearspray	2 oz + 8 fl oz + 6 fl oz	0	.25	.5	.3	N
Calo-Clor + LAD + X-77	1.5 oz + 10 ppm + .1% v/v	1	0	.5	.5	N
Broadway	16 fl oz	2	0	0	.7	N
Calo-Clor + LAD + X-77	1.5 oz + 1 ppm + .1% v/v	1	0	1	.7	N
GS/SM-07	—	1	0	2	1	N
D. 2787	8 fl oz	.5	.25	3	1.3	MN
Sentinel	.33 oz	2	.25	2	1.4	MN
S 2408	3X	.25	0	5	1.8	MN
ASC 66825	.6 oz	.5	.25	7	2.6	MN
ASC 66791	8 oz	0	10	.25	3.4	MN
UBI-1876 + Thiram	6 fl oz + 6 fl oz	.5	0	10	3.5	MN
SCTS F + F II	2X	12	0	.25	4.1	MN

Treatment	Rate/1000 ft ^{2b}	I	II	III	AVG	DMR (0.5) ^a
GS/SM-04	—	2	.25	10	4.1	MN
ASC 66791 + ASC 67019	8 oz + 2.5% v/v	5	10	3	6	L-N
Sentinel	.66 oz	0	20	2	7.3	K-N
GS/SM-06	—	10	10	5	8.3	K-N
ASC 66825	.3 oz	.5	10.3 ^c	20	10.3	J-N
Ch. 26019 (WDG)	4 oz	5	25	1	10.3	J-N
Rubigan	8 fl oz	1	10	20	10.3	J-N
D. 2787 + ASC 67019	8 fl oz + 2.5% v/v	3	3	25	10.3	J-N
EXP 10064B	3 fl oz	15	2	15	10.7	J-N
UBI-1876	12 fl oz	15	1	20	12	I-N
D. 2787 + T. 1991	8 fl oz + 2 oz	10	12.5 ^c	15	12.5	I-N
UBI-1876	9 fl oz	12.5 ^c	10	15	12.5	I-N
Terraclor	8 oz	25	10	7	14	H-N
Silbos + X-77	7.5 oz + .25% v/v	25	5	20	16.7	G-N
Rubigan	4 fl oz	10	5	35	16.7	G-N
GS/SM-03	—	10	30	15	18.3	F-N
GS/SM-05	—	35	.5	25	20.2	F-N
Terraclor + X-77	4 oz + .1% v/v	35	.5	25	20.2	F-N
SCTS F + F II	1X	30	3	30	21	F-N
EXP 10064B + Ch. 26019 (WDG)	1.5 fl oz + 2 oz	35	10	20	21.7	F-N
ASC 66791	4 oz	15	20	35	23.3	F-N
ASC 66791 + ASC 67019	4 oz + 2.5% v/v	30	27.5 ^c	25	27.5	F-N
UBI-1876 + Thiram	4 fl oz + 4 fl oz	15	20	50	28.3	F-M
GS/SM-01	—	30	20	35	28.3	F-M
Terraclor + LAD + X-77	4 oz + 10 ppm + .1% v/v	0	15	80	31.7	F-L
Lesco PCNB	7.5 lbs	50	15	35	33.3	E-K
GS/SM-02	—	10	35	65	36.7	D-J
Terraclor + LAD + X-77	4 oz + 1 ppm + .1% v/v	35	5	75	38.3	D-I
Silbos + X-77	5 oz + .25% v/v	35	35	50	40	C-H
EXP 10064B	1.5 fl oz	35	20	70	41.7	B-G
Lesco PCNB	5 lbs	55	50	20	41.7	C-G
Silbos + X-77	2.5 oz + .25 % v/v	35	60	35	43.3	B-F
S 2621	1x	30	57.5 ^c	85	57.5	A-E
UBI-1876	6 fl oz	25	85	70	60.0	A-D

Treatment	Rate/1000 ft ^{2b}	I	II	III	AVG	DMR (0.5) ^a
Lesco R0003	7.5 lbs	50	45	90	61.7	A-D
S 2621	2x	75	40	80	65	A-C
Lesco R0003	5 lbs	60	50	85	65	A-C
Control	—	40	80	80	66.7	AB
S 2621	3x	40	85	80	68.3	A

^aTreatments followed by the same letter are not significantly different from each other at the 5% level.

^bRates listed are formulation.

^cActual rating unavailable due to turf winter-kill. Rating represents average of remaining 2 replicates.

Table 2. Snow Mold Fungicide Study #2
Boyne Highlands Resort, Harbor Springs, MI

Rating Scale: Percent plot area infected with gray snow mold (*Typhula incarnata*, *Typhula ishikariensis*) and pink snow mold (*Microdochium nivale*).

Rating Date: April 8, 1992

Treatment	Rate/1000 ft ^{2b}	I	II	III	AVG	DMR (.05) ^a
Calo-Clor	3 oz	.25	0	0	.1	C
Banner (gel)	16 gm ai	65	30	50	48.3	B
CGA-173506 + Banner	3.5 gm ai + 8 gm ai	75	40	70	61.7	B
CGA-173506	14 gm ai	95	75	90	86.7	A
CGA-173506	7 gm ai	80	90	95	88.3	A
CGA-173506	10 gm ai	95	95	75	88.3	A
Control	—	90	95	85	90	A

^aTreatments followed by the same letter are not significantly different from each other at the 5% level.

^bRates listed are formulation, unless indicated as active ingredient (ai).

Birchwood Farms Resort, Harbor Springs, MI

This study was rated on 4/18/92, immediately after snow melt-off. The predominant snow mold was gray snow mold (*Typhula incarnata*) although significant levels of pink snow mold (*Microdochium nivale*) were observed in certain plots, as indicated in Table 3. Once again, most treatments gave significant disease control, compared to the controls. No phytotoxicity was observed in this study.

Table 3. Snow Mold Fungicide Study #3
Birchwood Farms Golf Course Snow Mold Study - 1991-92
Harbor Springs, MI

Rating Scale: Percent plot area infected with gray snow mold (*Typhula incarnata*, *Typhula ishikariensis*) and pink snow mold (*Microdochium nivale*).

Rating Date: April 18, 1992

Treatment	Rate/1000 ft ^{2b}	I	II	III	AVG	DMR (.05) ^a
SAN 832 F	6 oz	.25	1	2	1.1	B
GS/SM-10	—	.25	.5	3	1.3	B
EXP 10064B	3 fl oz	3	1	1	1.7	B
ASC 66791	4 oz	5	.25	.5	1.9	B
EXP 10064B + Ch. 26019 (WDG)	1.5 fl oz + 2 oz	2	3	1	2.0	B
UBI-1876	12 fl oz	.25	1	5	2.1	B
GS/SM-08	—	3	3	3	3.0	B
GS/SM-03	—	.25	2	7	3.1	B
GS/SM-04	—	1	.25	10	3.8	B
Ch. 26019 (WDG) + D. 2787	4 oz + 8 fl oz	.5	1	10	3.8	B
Ch. 26019 (WDG) + D. 2787	2 oz + 8 fl oz	1	10	1	4.0	B
S 2621	2x	.25	10	2	4.1	B
Sentinel	.33 oz	.5	2	10 ^c	4.2	B
GS/SM-09	—	5	7	.5	4.2	B
Calo-Gran	6 lbs	5	5	3	4.3	B
S 2621	3x	0	10	5	5.0	B
UBI-1876	9 fl oz	2	3	10	5.0	B
GS/SM-05	—	.5	.25	15	5.3	B
GS/SM-07	—	.25	1	15	5.4	B
SAN 832F	4 oz	2	5	10	5.7	B
Sentinel	.66 oz	15	1	3 ^c	6.3	B
ASC 66791 + ASC 67019	8 oz + 2.5% v/v	0	10	10	6.7	B
Calo-Clor	3 oz	5	3	15	7.7	B
S 2408	3x	10	10	5	8.3	B
ASC 66791	8 oz	5	.25	20	8.4	B

Treatment	Rate/1000 ft ^{2b}	I	II	III	AVG	DMR (.05) ^a
UBI-1876	6 fl oz	3	.25	25	9.4	B
UBI-1876 + Thiram	6 fl oz + 6 fl oz	10	15	5	10.0	B
Scotts F + FII	2x	.5	10	20	10.2	B
D. 2787 + T. 1991	8 fl oz + 2 oz	1	5	25	10.3	B
ASC 66825	1.8 oz	5	2	25	10.7	B
Rubigan	8 fl oz	2	10	20	10.7	B
Ch. 26019 (WDG)	4 oz	3 ^c	20 ^c	10	11.0	B
CGA 173506 + Banner	3.5 gm ai + 8 gm ai	5	3	25	11.0	B
Broadway	16 fl oz	.5	15 ^c	20	11.8	B
GS/SM-06	—	5	7	30	14.0	B
Banner (gel)	16 gm ai	5 ^c	4 ^c	35	14.7	B
ASC 66791 + ASC 67019	4 oz + 2.5% v/v	15	15	15	15.0	B
UBI-1876 + Thiram	4 fl oz + 4 fl oz	5	20	20	15.0	B
Lesco R0003	7.5 lbs	20 ^c	5	10	15.0	B
Rizolex	4 oz	10	2	35	15.7	B
S 2621	1x	15	5	30	16.7	B
ASC 66825	.3 oz	30 ^c	2	20	17.3	B
Scotts F + FII	1x	20	2	50	17.5	B
Ch. 26019 (WDG) + D. 2787 + Clearspray	2 oz + 8 fl oz + 6 fl oz	25 ^c	30 ^c	1	18.7	B
CGA 173506	7 gm ai	3	25	30	19.3	AB
ASC 66825	1.2 oz	10	10	45 ^c	21.7	AB
Rubigan	4 fl oz	10	25	30	21.7	AB
GS/SM-02	—	30	5	30	21.7	AB
Terraclor	8 oz	.25	15	50	21.8	AB
EXP 10064B	1.5 fl oz	5	65	.25	23.4	AB
Lesco PCNB	5 lbs	15	60 ^c	3	26.0	AB
CGA 173506	14 gm ai	3	5	80	29.3	AB
D. 2787	8 fl oz	15	25	60 ^c	33.3	AB
GS/SM-01	—	15	50 ^c	75	35.0	AB
CGA-173506	10 gm ai	30	10	65	35.0	AB
D. 2787 + ASC 67019	8 fl oz + 2.5% v/v	35	40 ^c	35 ^c	36.7	AB

Treatment	Rate/1000 ft ^{2b}	I	II	III	AVG	DMR (.05) ^a
Silbos + X-77	5 oz + .25% v/v	30 ^c	35 ^c	45	38.3	AB
Lesco R0003	5 lbs	50	15	50	38.3	AB
ASC 66825	.6 oz	35 ^c	5	80	40.0	AB
Silbos + X-77	2.5 oz + .25% v/v	30	45 ^c	50 ^c	41.7	AB
Silbos + X-77	7.5 oz + .25% v/v	30 ^c	55	50	45.0	AB
Lesco PCNB	7.5 lbs	40	50	50	46.7	AB
S 3122	1x	50	35 ^c	75	53.3	AB
Control	—	65 ^c	75 ^c	70	70.0	A

^aTreatments followed by same letter are not significantly different from each other at the 5% level.

^bRates listed are formulation, unless listed as active ingredient (ai).

^cSignificant levels of pink snow mold observed in plot.