

Turfgrass Disease Management Report 1996-97
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Boyne Highlands Snow Mold Data (1996-97)

Snow Mold Fungicide Studies - 1996-97

Studies A & B

Two corporation-sponsored snow mold fungicide studies were conducted during the fall and winter of 1996-97. Study A was applied on Oct. 26, 1996, and study B was applied on Oct. 27, 1996. Treatments were applied preventively to 6' x 9' creeping bentgrass (*Agrostis palustris*) / annual bluegrass (*Poa annua*) fairway plots where the turf was mowed at about 1/2". Liquid treatments were applied with a CO₂ back-pack sprayer at a pressure of 32 PSI and at a volume of 48 GPA. Granular products were pre-weighed and hand-applied.

Study A was rated following snow cover melt-off on April 22, 1997. The predominant snow mold was gray snow mold, caused primarily by *Typhula incarnata*, in this case. There was, however, sufficient Microdochium patch (pink snow mold), caused by *Microdochium nivale*, to warrant an individual rating of each disease in this study (table 1).

Study B was rated on April 23, 1997. The predominant snow mold disease in this study was Microdochium patch, but there was sufficient gray snow mold (*Typhula ishkariensis*) present to warrant individual ratings for each disease in this study also (table 2).

As the data in table 1 indicates, most of the standard snow mold fungicides (Daconil, Turfcide 400, Terraclor, Scotts FFII, etc.) gave good control of snow mold disease in the Boyne Highlands test this past winter. Relatively new compounds, such as Heritage and Sentinel also performed well, especially when used in combinations. In the Tree Tops study (table 2), we experienced significantly greater disease pressure, so the only treatments that performed satisfactorily were combinations of standards such as Turfcide 400 with Daconil, or Turfcide 400 with Heritage or Sentinel. Variability in disease pressure between the replicate plots led to diminished statistical separation between treatments in this study, but some standard products, when used alone, did have surprisingly high levels of disease in individual plots.

Table 1. Snow Mold Fungicide Study A - 1996-97
Boyne Highlands Resort, Harbor Springs, MI

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

Rating Date: April 22, 1997

Treatment	Rate per 1000 ft ^{2d}	Rep <i>M.nv</i>	1 <i>T.in</i>	Rep <i>M.nv</i>	2 <i>T.in</i>	Rep <i>M.nv</i>	3 <i>T.in</i>	Mean ^a
Heritage + Turficide 400	0.7 oz + 12 fl oz	0	0	0	0	0	0	0.0 L
Heritage + Turficide 400	0.7 oz + 6 fl oz	0	0	0	0	0	0	0.0 L
Rizolex + Turficide 400	4 oz + 6 fl oz	0	0	0	0	0	0	0.0 L
EXP 10790A +Dac. 2787 + Turficide 400	4 fl oz + 8 fl oz + 8 fl oz	0	1	0	0	0	0	0.3
UBI SF-4860	106.7oz	0	0.5	0	1	0	0	0.5 L
Turficide (75 WG) + Daconil Ultrex	6 oz + 5 oz	0	2	0	0	0	0	0.6 L
Turficide 400	12 fl oz	0	2	0	0	0	0	0.6 L
Fore + Terraclor	8 oz + 8 oz	0	1	0	1	0	0	0.6 L
Sentinel + Turficide 400	0.33 oz + 6 fl oz	2	0	0	0	0	0	0.6 L
Heritage + Turficide 400	0.4 oz + 6 fl oz	0	0	0	3	0	0	1.0 L
Sentinel + Heritage	0.33 oz + 0.4 oz	3	0	0	0	0	0	1.0 L
Heritage + Turficide 400	0.4 oz + 12 fl oz	0	3	0	0	0	0	1.0 L
Terraclor	8 oz	0	0	0	2	0	2	1.3 L
Caloclor	3 oz	0	1	0	0	0	3	1.3 L
Turficide (75 WG) + Ch 26019 FLO	6 oz + 4 fl oz	0	5	0	0	0	0	1.6 L
Banner Maxx + Daconil 2787	3 fl oz + 8 fl oz	0	1	0	3	0	1	1.6 L
L002	Preweigh-ed	0	3	0	0.5	0	2	1.8 L

Table 1 cont.

Treatment	Rate per 1000 ft ^{2d}	Rep <i>M.nv</i>	1 <i>T.in</i>	Rep <i>M.nv</i>	2 <i>T.in</i>	Rep <i>M.nv</i>	3 <i>T.in</i>	Mean ^a
UBI SF-3048	106.7	0	1	0	2	0	3	2.0 L
Fore + Terraclor	6 oz + 8 oz	0	3	0	3	0	0.5	2.2 L
Dac. Weather Stik + Turficide 400	5.5 fl oz + 6 fl oz	0	0	0	7	0	0	2.3 L
Daconil ZN + Ch. 26019 FLO	8 fl oz + 4 fl oz	2	0	0	5	0	0	2.3 L
Dac. Ultrex + Ch. 26019 FLO	3.8 oz + 4 fl oz	7	0	0	0	0	0.5	2.5 L
L004	Prewritegh-ed	4	1	0	1	0	2	2.7 L
CGA-BMP	2 oz	0	0	0	1	0	7	2.7 L
EXP 10790A + Dac. Weather Stik	4 fl oz + 6 fl oz	0	1	0	2	5	0	2.7 L
Banner Maxx + Heritage	3 fl oz + 0.4 oz	0	5	0	3	0	1	3.0 L
EXP 10790A + PCNB (75WP)	4 fl oz + 8 oz	0	5	0	2	0	2	3.0 L
Ch. 26019 FLO + Dac. 2787	4 fl oz + 8 fl oz	0	0	0	3	0	7	3.3 L
Turficide (75WG) + Spotrete (WDG)	6 oz + 6 oz	0	3	0	0	0	7	3.3 L
EXP 10790A + Dac. 2787	4 fl oz + 8 fl oz	0	2	0	1	7	0	3.3 L
Scotts FFII	103.9 oz (2x)	0	5	0	1	0	5	3.7 KL
Vig. Fert. + PCNB	5 lbs	0	10	0	0	0	5	5.0 J-L
Rizolex	4 oz	7	0	0	0	10	0	5.7 J-L
L005	Prewritegh-ed	3	7	0	0.5	0	7	5.8 J-L
EXP 10790A + Heritage	4 fl oz + 0.4 oz	0	5	0	7	0	7	6.3 J-L
Turficide (75WG)	8 oz	0	2	0	2	0	15	6.3 J-L
L003	Prewritegh-ed	0	7	0	10	1	4	7.3J-L
UBI 4121	160 oz	0	15	0	0	0	7	7.3 J-L
UBI 4141	160 oz	0	10	0	5	0	10	8.3 J-L

Table 1 cont.

Treatment	Rate per 1000 ft ^{2d}	Rep <i>M.nv</i>	1 <i>T.in</i>	Rep <i>M.nv</i>	2 <i>T.in</i>	Rep <i>M.nv</i>	3 <i>T.in</i>	Mean ^a
Banner Maxx + Turfside 400	3 fl oz + 9 fl oz	0	7	0	5	5	10	9.0 J-L
UBI 4142	106.7 oz	0	5	0	15	0	7	9.0 J-L
UBI 4140	160 oz	0	20	0	0	0	7	9.0 J-L
WAC 71	12 oz	5	2	0	1	10	10	9.3 J-L
UBI 4118	106.7 oz	0	5	15	10	0	1	10.3 I-L
WAC 71	8 oz	8	2	30	0	0	5	15.0 H-L
CGA-BMP ^b	1 oz (fall) 1 oz (spring)	0	15	0	25	1	11	17.3 G-L
Fore + Eagle	8 oz + 1.2 oz	0	10	5	25	5	20	21.7 F-K
UBI 4143	160 oz	0	25	0	20	5	15	21.7 F-K
CGA-BMP	1 oz	0	15	0	12	0	40	22.3 E-J
UBI 4040-01	106.7 oz	3	9	5	60	0	7	28.0 D-I
Consyst	8 oz	20	15	25	15	2	13	30.0 D-H
Spotrete F	16 fl oz	10	10	35	5	15	25	33.3 D-G
Defend 4F ^c	12 fl oz	0	20	0	7	30	45	34.0 D-G
Defend 4F ^c + Spotrete (WDG)	8 fl oz + 4 oz	10	25	25	10	5	30	35.0 D-G
UBI 4044	160 oz	10	60	0	35	20	5	41.7 CD
Fore	8 oz	5	35	50	30	0	7	42.3 B-D
Control	----	30	50	15	35	40	40	70.0 A

^aMeans followed by the same letter are not significantly different from each other (LSD - 0.05).

^bSpring re-application omitted due to failure of fall treatment.

^cMay have mistakenly used Defend 2F due to possible product mis-labelling.

^dRates are formulation/1000 ft², unless otherwise indicated.

Table 2. Snow Mold Fungicide Study B - 1996-97
Tree Tops/Sylvan Resort, Gaylord, MI

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

Rating Date: April 23, 1996

Treatment	Rate per 1000 ft ^{2d}	Rep <i>M.nv</i>	1 <i>T.in</i>	Rep <i>M.nv</i>	2 <i>T.in</i>	Rep <i>M.nv</i>	3 <i>T.in</i>	Mean ^a
EXP 10790A + Dac. 2787 + Turficide 400	4 fl oz + 8 fl oz + 8 fl oz	0	0.5	0	0	0	0	0.2 R
Heritage + Turficide 400	0.7 oz + 6 fl oz	0.5	0	0	2	0	0.5	1.0 QR
Dac. Weather Stik + Turficide 400	5.5 fl oz + 6 fl oz	0	2	0	1	0	0	1.0 QR
Heritage + Turficide 400	0.4 oz + 12 fl oz	0	0	0	2	0	2	1.3 P-R
Proprietary								
Heritage + Turficide 400	0.4 oz + 6 fl oz	0	3	0	5	0	1	3.0 O-R
Heritage + Turficide 400	0.7 oz + 12 fl oz	0.5	0	0	5	0	7	4.2 N-R
Rizolex + Turficide 400	4 oz + 6 fl oz	0	2	0	10	0	2	4.7 N-R
Fore + Terraclor	6 oz + 8 oz	0	10	0	3	0	2	5.0 N-R
Caloclor	3 oz	0	7	1	1	0	12	7.0 M-R
Fore + Terraclor	8 oz + 8 oz	0	3	0	20	0	0	7.7 M-R
Dac. Weather Stik + 3336 WP	5.3 fl oz + 2 oz	0	20	0	2	0	2	8.0 M-R
Sentinel + Turficide 400	0.33 oz + 6 fl oz	20	0	1	4	0	0	8.3 M-R
Terraclor	8 oz	0	20	0	5	0	2	9.0 M-R
Banner Maxx + Turficide 400	3 fl oz + 9 fl oz	25	5	2	3	3	0	12.7 L-R
Turficide (75 WG) + Daconil Ultrex	6 oz + 5 oz	0	35	0	3	0	1	13.0 L-R
L002	Preweighed	0	20	0	20	0	2	14.0 K-R
L004	Preweighed	20	10	2	5	5	10	14.0 K-R
Scotts FFII	103.9 oz (2x)	0	35	0	7	0	0.5	14.2 K-R

Table 2. cont.

Treatment	Rate per 1000 ft ^{2d}	Rep <i>M.nv</i>	1 <i>T.in</i>	Rep <i>M.nv</i>	2 <i>T.in</i>	Rep <i>M.nv</i>	3 <i>T.in</i>	Mean ^a
UBI SF-4860	106.7oz	0	40	0	10	0	3	17.7J-R
Turficide 400	12 fl oz	0	25	0	25	0	10	20.0 I-R
Rizolex	4 oz	10	0	20	20	10	2	20.7 I-R
UBI SF-3048	106.7oz	0	50	0	1	0	12	21.0 I-R
EXP 10790A + PCNB (75WP)	4 fl oz +8 oz	0	60	1	1	0	3	21.7 I-R
Consyst	8 oz	0	55	0	7	0	0.5	23.0 I-R
Daconil ZN + Ch. 26019 FLO	8 fl oz + 4 fl oz	30	0	15	0	25	0	23.3 I-R
WAC 71	12 oz	65	0	0	7	0	0.5	24.2 H-R
EXP 10790A + Dac. Weather Stik	4 fl oz +6 fl oz	0	40	30	0	0	5	25.0 H-R
L005	Preweighed	30	10	20	15	0	2	25.7 H-R
UBI 4141	160 oz	0	65	0	7	0	7	26.3 H-R
Banner Maxx + Daconil 2787	3 fl oz +8 fl oz	40	15	15	0	10	0	26.7 G-R
UBI 4040-01	106.7 oz	0	75	0	2	0	5	27.3 G-R
UBI 4118	106.7 oz	5	25	0	45	2	5	27.3 G-R
Ch. 26019 FLO + Dac. 2787	4 fl oz +8 fl oz	75	5	0	1	0	3	28.0 G-R
L003	Preweighed	45	5	30	0	5	0	28.3 G-R
Banner Maxx + Heritage	3 fl oz +0.4 oz	55	5	20	0	3	2	28.3 G-R
EXP 10790A + Dac. 2787	4 fl oz +8 fl oz	75	10	0	1	0	3	29.7 G-R
CGA-BMP ^b	1 oz (fall) 1 oz (spring)	30	20	15	5	15	5	30.0 G-R
UBI 4142	160 oz	20	55	5	10	0	3	31.0 G-Q
Turficide (75 WG)	8 oz	0	65	0	30	0	0	31.7 F-P
Turficide (75 WG) + Ch 26019 FLO	6 oz + 4 fl oz	25	50	0	20	0	0.5	31.8 F-O

Table 2. cont.

Treatment	Rate per 1000 ft ^{2d}	Rep <i>M.nv</i>	1 <i>T.in</i>	Rep <i>M.nv</i>	2 <i>T.in</i>	Rep <i>M.nv</i>	3 <i>T.in</i>	Mean ^a
CGA-BMP	2 oz	0	80	5	7	2	5	33.0 F-O
WAC 71	8 oz	70	0	0	25	2	5	34.0 F-N
Vig. Fert. + PCNB	5 lbs	0	75	0	20	0	7	34.0 F-N
Defend 4F ^c	12 fl oz	40	40	0	3	15	10	36.0 F-M
Turfcide (75WG) + Spotrete (WDG)	6 oz +6 oz	50	35	0	10	0	15	36.7 F-M
Dac. Ultrex + Ch. 26019 FLO	3.8 oz +4 fl oz	65	15	30	0	0	1	37.0 F-M
UBI 4121	160 oz	0	80	0	30	0	15	41.7 E-L
UBI 4143	160 oz	0	80	5	45	0	2	44.0 D-K
EXP 10790A + Heritage	4 fl oz +0.4 oz	30	45	0	30	30	5	46.7 C-J
UBI 4140	160 oz	0	95	5	35	0	7	47.3 C-J
Sentinel + Heritage	0.33 oz + 0.4 oz	48	50	15	10	23	2	49.3 B-I
CGA-BMP	1 oz	70	25	10	40	23	2	56.3 A-G
Fore + Eagle	8 oz + 1.2 oz	50	35	3	12	80	5	61.7 A-F
EXP 10806A	10 lbs	50	40	10	0	85	0	61.7 A-F
Fore	8 oz	65	25	50	10	20	15	61.7 A-F
EXP 10806A	5 lbs	58	40	0	80	20	5	67.7 A-E
Spotrete F	16 fl oz	75	20	65	30	20	5	73.0 A-D
UBI 4044	160 oz	60	35	30	40	20	40	75.0 A-C
Control	-----	60	40	60	30	35	15	80.0 A
Defend 4F ^c + Spotrete (WDG)	8 fl oz +4 oz	65	30	10	65	50	30	83.3 A

^aMeans followed by the same letter are not significantly different from each other (LSD - 0.05).

^bSpring re-application omitted due to failure of fall treatment.

^cMay have mistakenly used Defend 2F due to possible product mis-labelling.

^dRates are formulation per 1000 ft², unless indicated otherwise.