

Table 6. 1998 Summer Patch Ratings

Treatment	Rate/1000 ft ²	Spray Int.	% Summer Patch ^a		
			27 Jul	17 Aug	8 Sep
Heritage	0.2 oz	65 F + 30 days	1.5 e	1.8 e	13 a
Banner MAXX	4 fl oz	65 F + 30 days	1.8 e	5 de	16.8 a
Clearys 3336 WP	8 oz	14 days	7 c-e	8 c-e	11.8 a
Eagle	1.2 oz	65 F + 30 days	3.5 de	4 e	13 a
Sentinel	0.33 oz	65 F + 30 days	2.8 de	6.3 de	11.5 a
EXP80318C	0.5 oz	65 F + 30 days	10 b-d	17.3 bc	16.8 a
EXP80318C	1.5 oz	65 F + 30 days	14.3 a-c	15 b-d	16.3 a
Control	—	—	17.5 a	27.5 a	20 a
EXP80318C	1 oz	65 F + 30 days	14.8 ab	21 ab	25 a

^a Means of 4 replications.

^c Means followed by the same letter do not significantly differ (LSD, p=0.05.)

1997-98 Snow Mold Fungicide Field Trials

Studies A & B

Two corporation-sponsored snow mold fungicide studies were conducted during the fall and winter of 1997-98. Study A was applied on the Boyne Highlands Resort in Harbor Springs, MI on Oct. 31, 1997 (except as noted in the data table), and study B was applied on the Tree Tops/Sylvan Resort in Gaylord, MI on Oct. 30, 1997 (except as noted in the data table). Treatments were applied preventively to three replicate 6' X 9' creeping bentgrass (*Agrostis palustris*) / annual bluegrass (*Poa annua*) fairway plots where the turf was maintained at approximately 1/2" height of cut. Liquid treatments were applied with a CO₂ back-pack sprayer at a pressure of 36 PSI and a volume of 100 GPA. Granular products were pre-weighed and hand applied.

Study A was rated following snow cover melt-off on March 29, 1998 (Table 7). The predominant snow mold was gray snow mold, caused by *Typhula incarnata* and *Typhula ishikariensis*. There was insufficient *Microdochium* patch infection to warrant a separate rating.

Study B was rated on March 30, 1998. The predominant snow mold disease in this study was gray snow mold (*T. incarnata*, *T. ishikariensis*). In instances where there was sufficient *Microdochium* patch to warrant a separate rating, the percentage of disease/plot attributable to *Microdochium* patch is indicated in the data table (Table 8).

As the data in Table 7 indicate, disease pressure was quite heavy in the Boyne Highlands study this year. The various PCNB formulations (Turfcide 400, Penstar FLO, Defend, Revere 4000, Scts FF II) performed well, whether alone, or in combination with other products. The standard combination of CH 26GT and Daconil Ultrex performed moderately well this year, but the addition of Turfcide 400 to the combination greatly improved the disease control performance. The addition of Signature to the CH 26GT + Daconil Ultrex combination also improved the performance, at least when split applications were made. No phytotoxicity or turf quality differences were observed.

Table 7. Snow Mold Disease Ratings taken on Mar 29, 1998 at Boyne Highlands Resort, Harbor Springs, MI.
Rating Scale: % plot area infected with gray snow mold (*Typhula sp.*)

Treatment Name	Rate (2 gal/1000 sq ft) ^a	I	II	III	Mean	LSD ^b
Defend 4F +	8 fl oz* +					
3336 WP + Dac. Ultrex + Defend 4F	4 oz + 5 oz + 9 fl oz	0	0	0	0.00	S
Heritage + Revere 4000 ^c	0.4 oz + 12 fl oz	0	0	0	0.00	S
Heritage + Revere 4000 ^c	0.4 oz + 12 fl oz (4 gal)	0	0	0	0.00	S
Heritage + Revere 4000 ^c	0.7 oz + 12 fl oz (4 gal)	0	0	0	0.00	S
Exp Granule B	4 lbs	0	0	0	0.00	S
Defend 4F +	8 fl oz* +					
Defend 4F + WAC 71	9 fl oz + 12 oz	0.2	0	0	0.07	S
Heritage + Revere 4000 ^c	0.7 oz + 12 fl oz	0	0	0.2	0.07	S
WAC 71 +	8 oz* +					
Defend 4F	12 fl oz	0.2	0	1	0.40	S
3336 WP + Dac. Ultrex +	4 oz* + 3.8 oz* +					
Defend 4F + Dac. Ultrex + 3336 WP	9 fl oz + 5 oz + 4 oz	0	0.2	2	0.73	S
3336 WP + Dac. Ultrex +	4 oz* + 3.8 oz* +					
Defend 4F	12 fl oz	1	1	0.2	0.73	S
3336 WP + Dac. Ultrex +	4 oz* + 3.8 oz* +					
Defend 4F + WAC 71	9 fl oz + 12 oz	0.2	0	2	0.73	S
WAC 71 +	8 oz* +					
3336 WP + Dac. Ultrex + Defend 4F	4 oz + 5 oz + 9 fl oz	0.2	1	1	0.73	S
WAC 71 +	8 oz* +					
Defend 4F + WAC 71	9 fl oz + 12 oz	0.2	1	1	0.73	S
Turficide 400 + Dac. Ultrex + CH 26GT	12 fl oz + 5 oz + 8 fl oz	2	0	0.2	0.73	S
Scotts FFII	103.8 oz	3	0	0	1.00	S
CH 26GT + Dac. Weather Stik +	4 fl oz + 5.5 fl oz +					
Turficide 400	4 fl oz	2	0	3	1.67	RS
Signature + CH 26GT + Dac. Ultrex +	4 oz* + 4 fl oz* + 5 oz* +					
Signature + CH 26GT + Dac. Ultrex	4 oz + 4 fl oz + 5 oz	2	3	0	1.67	RS
Scotts FFII + Scotts Fungicide X	51.9 oz + 115.4 oz	3	0	2	1.67	RS
ANDFG 204-97	6.66 lbs	3	0	3	2.00	RS
Defend 4F +	8 fl oz* +					
WAC 71	12 oz	2	2	3	2.33	RS
UBI 4143	160 oz	5	2	1	2.67	RS
Exp Granule A	4 lbs	2	5	1	2.67	RS
ANDFG 205-97	6.66 lbs	2	2	7	3.67	Q-S
UBI 9249	160 oz	7	2	3	4.00	Q-S
Defend 4F +	8 fl oz* +					
Defend 4F	12 fl oz	7	5	0.2	4.07	Q-S
ANDFG 207-97	6.66 lbs	7	5	1	4.33	Q-S
CH 26GT + Dac. Weather Stik +	4 fl oz + 5.5 fl oz +					
Turficide 400	8 fl oz	15	1	0.5	5.50	P-S
Defend 4F + Dac. Ultrex + 3336 WP	9 fl oz + 5 oz + 4 oz	12	3	3	6.00	P-S
Dac. Ultrex + CH 26GT	5 oz + 8 fl oz	7	10	3	6.67	P-S
Fore WP + Terraclor WP	6 oz + 8 oz	15	3	2	6.67	P-S
Penstar FLO + Scotts FF II	12 fl oz + 6.3 fl oz	10	10	0.5	6.83	O-S
Defend 4F + WAC 71	9 fl oz + 12 oz	10	7	5	7.33	O-S
Thalonil 4 L + CH 26GT	8 fl oz + 8 oz	10	7	5	7.33	O-S
Thalonil 90 DF + CH 26GT	4.6 oz + 8 fl oz	15	7	0.5	7.50	O-S
Turficide 400	12 fl oz	15	7	3	8.33	O-S
CH 26GT + Turficide 400	4 fl oz + 8 fl oz	5	20	2	9.00	O-S
Vigoro 97-042	6.7 lbs	20	5	3	9.33	O-S
Fore WP + Terraclor WP	8 oz + 8 oz	15	10	7	10.67	N-S
Defend 4F	12 fl oz	25	7	5	12.33	N-S
UBI 9279 + Turficide 400	7.3 oz + 6 fl oz	10	20	10	13.33	M-S
XP-7	8 lbs	20	15	5	13.33	M-S
Vigoro 97-042	5 lbs	25	15	0.2	13.40	M-S
ANDFG 206-97	6.66 lbs	25	15	3	14.33	M-S
FL# 971556 (CGA)	6 fl oz	35	10	3	16.00	L-S
CH 26GT + Dac. Weather Stik	4 fl oz + 5.5 fl oz	15	20	15	16.67	K-S
A 1556	24 oz	25	15	30	23.33	J-P
L-0008	4 lbs	35	15	20	23.33	J-P
FL# 971557 (CGA)	6 fl oz	40	12	20	24.00	J-P
XP-7	6 lbs	35	35	3	24.33	J-P
Turficide 75WG	8 oz	50	20	7	25.67	J-O
WAC 71 +	8 oz* +					
WAC 71	12 oz	30	30	25	28.33	J-N
3336 WP + Dac. Ultrex +	4 oz* + 3.8 oz* +					

WAC 71	12 oz	20	35	40	31.67	J-M
Fore WP	8 oz	65	25	10	33.33	I-K
A 1556	6 oz	55	30	30	38.33	G-J
Terragard 50W	4 oz	60	60	35	51.67	F-I
A 1556	1.5 oz	65	50	40	51.67	F-I
A 1556	3 oz	75	40	40	51.67	F-I
UBI 4044	160 oz	70	55	35	53.33	F-H
WAC 71	12 oz	80	25	65	56.67	E-G
Terragard 50W	2 oz	65	25	80	56.67	E-G
Scotts Fungicide X	115.4 oz	75	70	75	73.33	B-E
Control	—	95	50	90	78.33	A-D
AND Check Fertilizer	6.66 lbs	95	85	85	88.33	AB

*Treatments applied on Oct. 16 only.

^aAll treatments applied on Oct 30 unless otherwise indicated.

^bTreatments followed by the same letter are not significantly different at the 5% level (LSD).

^cSubstituted Turfcide 400 for Revere 4000 at Boyne.

Table 8. Snow Mold Disease Ratings taken on Mar 30, 1998 at Tree Tops Resort, Gaylord, MI. Rating Scale: % plot area infected with gray snow mold (*Typhula* sp.) and *Microdochium* patch (*Microdochium nivale*). Parenthesis indicate percent of total infection represented by *M. nivale*.

Treatment Name	Rate (2 gal/1000 sq ft) ^a	I	II	III	Mean	LSD ^b
3336 WP + Dac. Ultrex + Defend 4F + WAC 71	4 oz* + 3.8 oz* + 9 fl oz + 12 oz	0	0	0	0.0	V
Defend 4F + Defend 4F + WAC 71	8 fl oz* + 9 fl oz + 12 oz	0.2	0	0	0.0	V
WAC 71 + 3336 WP + Dac. Ultrex + Defend 4F	8 oz* + 4 oz + 5 oz + 9 fl oz	0.2	0	0	0.0	V
CH 26GT + Dac. Weather Stik + Turfcide 400	4 fl oz + 5.5 fl oz + 4 fl oz	0	1(1)	1	0.7	UV
Signature + CH 26GT + Dac. Ultrex + Signature + CH 26GT + Dac. Ultrex Defend 4F +	4 oz* + 4 fl oz* + 5 oz* + 4 oz + 4 fl oz + 5 oz 8 fl oz* +	0	2(1)	0.2	0.1	UV
3336 WP + Dac. Ultrex + Defend 4F	4 oz + 5 oz + 9 fl oz	0	2	1	1.0	UV
CH 26GT + Dac. Weather Stik + Turfcide 400	4 fl oz + 5.5 fl oz + 8 fl oz	0	0	3	1.0	UV
3336 WP + Dac. Ultrex + Defend 4F + Dac. Ultrex + 3336 WP	4 oz* + 3.8 oz* + 9 fl oz + 5 oz + 4 oz	0	0	5	1.7	T-V
Defend 4F + WAC 71	9 fl oz + 12 oz	7	0	0	2.3	S-V
Defend 4F + Dac. Ultrex + 3336 WP	9 fl oz + 5 oz + 4 oz	7	0	1	2.7	S-V
WAC 71 + Defend 4F + WAC 71	8 oz* + 9 fl oz + 12 oz	5	1	2	2.7	S-V
WAC 71 + Defend 4F	8 oz* + 12 fl oz	0.2	10	0	3.4	S-V
3336 WP + Dac. Ultrex + Defend 4F	4 oz* + 3.8 oz* + 12 fl oz	1	1	10	4.0	S-V
Defend 4F + WAC 71	8 fl oz* + 12 oz	10	0	3	4.3	S-V
Heritage + Revere 4000	0.4 oz + 12 fl oz (4 gal)	3	10	2(2)	5.0	R-V
Heritage + Revere 4000	0.7 oz + 12 fl oz	3	3	10	5.3	Q-V
Turfcide 400 + Dac. Ultrex + CH 26GT	12 fl oz + 5 oz + 8 fl oz	0	20	0	6.7	P-V
Exp Granule B	4 lbs	15(5)	3	3	7.0	O-V
Thalonil 4 L + CH 26GT	8 fl oz + 8 oz	10(10)	5(5)	7	7.3	O-V
Thalonil 90 DF + CH 26GT	4.6 oz + 8 fl oz	20(20)	1	3(3)	8.0	N-V
Heritage + Revere 4000	0.4 oz + 12 fl oz	7	7	20	11.3	L-V
Heritage + Revere 4000	0.7 oz + 12 fl oz (4 gal)	2	3	30	11.7	L-V
Scotts FFII	103.8 oz	15(8)	0	20	11.7	L-V
Dac. Ultrex + CH 26GT	5 oz + 8 fl oz	12(12)	15(15)	10(10)	12.3	K-V
ANDFG 207-97	6.66 lbs	25	0	15	13.3	J-V
Penstar FLO + Fluid Fungicide	12 fl oz + 6.3 fl oz	20	5	20	15.0	J-V
CH 26GT + Turfcide 400	4 fl oz + 8 fl oz	20(20)	15(7)	15(10)	16.7	J-V
Defend 4F + Defend 4F	8 fl oz* + 12 fl oz	2	40	15(15)	19.0	J-V
Defend 4F	12 fl oz	30	20	10(2)	20.0	J-V
Turfcide 400	12 fl oz	40	10	10	20.0	J-V
ANDFG 205-97	6.66 lbs	45(5)	7	15	22.3	I-V
Exp Granule A	4 lbs	40(30)	20	20(15)	26.7	H-V
Fore WP + Terraclor WP	8 oz + 8 oz	0.2	20	60	26.7	H-V

WAC 71 +	8 oz* +						
WAC 71	12 oz	30(30)	35(20)	20(20)	28.3	H-V	
3336 WP + Dac. Ultrex +	4 oz* + 3.8 oz* +						
WAC 71	12 oz	3(3)	60(40)	25(20)	29.3	H-U	
WAC 71	12 oz	35(5)	20(20)	35(30)	30.0	H-T	
ANDFG 206-97	6.66 lbs	50(10)	30	10	30.0	H-T	
ANDFG 204-97	6.66 lbs	30	30	40	33.3	G-R	
CH 26GT + Dac. Weather Stik	4 fl oz + 5.5 fl oz	65(65)	2	35(35)	34.0	G-Q	
Fore WP + Terraclor WP	6 oz + 8 oz	5	30	70	35.0	F-P	
Turfcide 75WG	8 oz	50	35	25	36.7	F-N	
Vigoro 97-042	6.7 lbs	50(5)	35	25(25)	36.7	F-N	
XP-7	8 lbs	35	65	15	38.3	F-M	
Fore WP	8 oz	40	5	70	38.3	F-M	
Scotts FFII + Scotts Fungicide X	51.9 oz + 115.4 oz	40(15)	40	40(10)	40.0	F-L	
Vigoro 97-042	5 lbs	75(5)	7	40	40.7	F-K	
FL# 971557 (CGA)	6 fl oz	95(70)	30(5)	35(35)	53.3	E-H	
Terragard 50W	4 oz	90(75)	12(10)	80(70)	60.7	C-G	
XP-7	6 lbs	50	40	95(70)	61.7	C-G	
UBI 4143	160 oz	90(5)	35(30)	65(60)	63.3	B-F	
UBI 9249	160 oz	90(30)	80(10)	20(17)	63.3	B-F	
UBI 9279 + Turfcide 400	7.3 oz + 6 fl oz	85(35)	75(25)	65(60)	75.0	A-E	
L-0008	4 lbs	98(30)	65(20)	65(35)	76.0	A-E	
Terragard 50W	2 oz	95(70)	95(25)	60(35)	83.3	A-D	
A 1556	24 oz	95(40)	65(45)	90(45)	83.3	A-D	
A 1556	3 oz	100(70)	85(60)	80(40)	88.3	A-D	
UBI 4044	160 oz	95(30)	98(50)	85(60)	92.7	A	
A 1556	6 oz	98(60)	90(45)	98(80)	95.3	A	
Scotts Fungicide X	115.4 oz	98(70)	95(50)	95(40)	96.0	A	
Andersen's Check Fertilizer	6.66 lbs	100(70)	90(10)	100(70)	96.7	A	
Control		100(75)	98(40)	98(45)	98.7	A	
FL# 971556 (CGA)	6 fl oz	100(60)	98(45)	100	99.3	A	
A 1556	1.5 oz	100(70)	100(50)	100(60)	100	A	

*Treatments applied on Oct. 16 only.

^aAll treatments applied on Oct 30 unless otherwise indicated.

^bTreatments followed by the same letter are not significantly different at the 5% level (LSD).

Take All Patch Field Trial, 1998

Study A

This test was conducted at the Whittaker Woods Golf Club in New Buffalo, MI, on an irrigated creeping bentgrass fairway. Plots were mowed at ½" and fertilized monthly at 0.33 lb N/1000 sq ft. Take all patch was active in the plot area in mid-May, so curative treatments were initiated on May 28. Treatments were applied to diseased 6' x 9' plots in 4 replications using a CO₂ backpack sprayer as previously described in the report. Spray volume was 100 GPA and all treatments were allowed to dry on the foliage. All treatments were re-applied on June 26, except as noted in the data tables. The fall treatments (as indicated in Table 9) were applied on Aug 13 and Sep 6.

Study B

Because take all patch often becomes active in the cool, wet weather of the fall, the same treatments described in study A (except 3336 WP) were applied preventively to new plots on Aug 12, 1998 using the same procedures described above. Though expressing no disease symptoms, the plots used for these preventive treatments were each known to be infected from previous plot mapping. The treatments were re-applied on Sep 6, 1998.

Curative diseases ratings in study A were taken on Jun 26 and Jul 14. Because disease pressure in the plot area had abated by Jul 14, on the Jun 26 recovery data is reported (Table 9). This data describes disease activity in the treated plots after only one curative application (May 28).