

standards (Dac 2787, Chipco 26019) continue to work well against melting-out. All treatments gave significant disease control compared to the controls.

No phytotoxicity was observed.

#### BROWN PATCH FUNGICIDE TRIAL - 1988

Hancock Turfgrass Research Center, MSU, E. Lansing, MI

The 1988 brown patch (Rhizoctonia solani) fungicide trial was conducted on irrigated Loretta perennial ryegrass (Lolium perenne L.) mowed at a 2" height of cut. Treatments were applied preventively to 6' x 9' plots in three replicates of a random block design beginning on June 24 with reapplication at the intervals listed on the data table. The treatments were applied with a CO<sub>2</sub> small-plot sprayer at a volume of 48 gal/A and 30 PSI. The area was fertilized at 1 lb N/1000 ft<sup>2</sup> per month to promote disease development.

At the time of the rating (8/3/88), the 7 day treatments had been applied 6 times, the 14 day treatments had been applied 3 times and the 21 and 28 day treatments had been applied twice. As the controls indicate (Table 3), disease pressure was relatively light this year, probably due to the dry, hot weather we experienced through June and July. Much of the disease that did occur was expressed as a sweeping and superficial leaf spot symptom as opposed to the more typical defined, crown and sheath-level patches. Nevertheless, a number of compounds such as Daconil 2787 and the SDS 66534 experimental did give significant control of this disease compared to the control.

#### SUMMER PATCH FUNGICIDE STUDIES - 1988

As a result of our 1987 summer patch (Magnaporthe poae, formerly Phialophora graminicola) studies which suggested preventive fungicide applications were more effective and practical than curative treatments for the control of summer patch, we decided to conduct all summer patch fungicide trials preventively in the 1988 season. We, therefore, established preventive studies on irrigated, annual bluegrass (Poa annua) golf course fairways in three different locations in Michigan where the disease was observed in previous years. All treatments were applied prior to disease occurrence in three replications of a random block design utilizing a 6' x 9' plot size. The fairways were maintained at 1/2" cutting height and were fertilized with 1/2 #N/mo (except as noted on data tables). They were also treated for weed and insect pests as necessary. No fungicides, other than those being tested, were applied to the studies.

Applications were made foliarly using a CO<sub>2</sub> small-plot sprayer at 30 PSI and a volume of 48 gal/A (except as noted on data tables). Granular treatments were pre-weighed and applied by hand.

In general, summer patch disease pressure was severe this summer because of the record high temperatures we experienced in Michigan. We, therefore, experienced a break-down of disease control by August, as the data tables indicate. It is still our feeling, however, that preventive fungicide control of summer patch is preferable to curative control efforts, although recommendations for timing and number of treatments may be modified for next

year.

Orchard Lake Country Club, Orchard Lake, MI

Summer Patch Fungicide Study #1

The summer patch fungicide study #1 at Orchard Lake Country Club was initiated preventively on May 12, 1988 with a second application being made on June 13, 1988. The plots were rated on August 27.

As the data from the control shows (Table 4), disease pressure slowly intensified during the July 20--August 27 period. Disease control by the various treatments also declined as disease pressure grew, however, the experimental compounds (Spotless, H6573, HWG 1608, etc.) seemed to maintain control of the disease longer than did many of the standards. Of special note was the Spotless compound which maintained season-long control of the disease at the 1 lb ai/1000 ft<sup>2</sup> rate after the turf outgrew some initial chemical phytotoxicity.

Phytotoxicity was observed as noted on the data tables.

Grand Rapids Elks Country Club, Grand Rapids, MI

Summer Patch Fungicide Study #4

The summer patch fungicide study #4 was initiated preventively on May 24, 1988 with a second application being made on June 21, 1988. The plots were rated for summer patch infection on August 30, 1988.

As the data shows (Table 5) this study was very heavily diseased by summers end. Rather large variations in disease severity between replications are attributable to lack of uniform disease pressure in the plot area. As in the other summer patch trials, experimental compounds such as Spotless, ICIA 523, H6573 and Prochloraz continued to perform well. Banner, Rubigan and Bayleton were the best performing standard compounds.

No phytotoxicity was noted on the dates the ratings were taken.

DOLLAR SPOT FUNGICIDE TRIALS - 1988

Hancock Turfgrass Research Center, MSU, E. Lansing, MI

Preventive Study

The 1988 preventive dollar spot (Moellerodiscus sp., Lanzia sp.) fungicide trial was conducted on an irrigated Emerald creeping bentgrass (Agrostis palustris huds) putting green at the Hancock Turfgrass Research Center on the MSU campus. The green was maintained at 1/4" height of cut and fertilized at .33 #N/mo. Treatments were applied preventively to 3' x 6' plots in three replications of a random block design on 7, 14, 21 or 28 day schedules as indicated on the data table. Because of the hot, dry wether we experienced this summer, disease did not begin to develop in the plot area until the rains came in mid-August. Our initial treatments were applied on August 18. All treatments were applied with a CO<sub>2</sub> small-plot sprayer at 30 PSI and 48

Table 4. Summer Patch Fungicide Trial #1 - 1988

Orchard Lake Country Club, Orchard Lake, MI

Percent plot area infected

Rating date: 8/27/88

Treatment	Rate/1000 ft <sup>2</sup>	Interval	I	II	III	Ave	DMR(.05) <sup>a</sup>
Spotless	1 lb ai/A	May, June	3 <sup>d</sup>	10	5 <sup>d</sup>	6.0	P
Spotless	.5 lb ai/A	May, June	20	35	1	18.7	OP
H6573 + Tersan 1991	.25 oz ai + 1 oz ai	May, June	35	10	25	23.3	NOP
HWG 1608	.5 oz ai	May, June	30	10	30	23.3	NOP
H6573	.25 oz ai	May, June	30	35	10	25.0	MNOP
Spotless	.25 lb ai/A	May, June	20	35	35	30.0	LMNOP
Flutolanil + SN596	2 oz + 1 oz	May, June	20	60	25	35.0	KLMNO
H6573	.125 oz ai	May, June	50	25	35	36.7	JKLMNO
HWG 1608	.25 oz ai	May, June	20	40	60	40.0	IJKLMNO
Dac 2787 + SDS 66533	6 fl oz + 4 fl oz	May, June	40	40	40	40.0	IJKLMNO
Prochloraz + SN 99731	4.5 fl oz + 1 oz	May, June	40	30	55	41.7	HIJKLMNO
Bayleton	1 oz	June	20	70	40	43.3	GHIJKLMNO
Rubigan	3.75 fl oz	May, June	30	35	70 <sup>C</sup>	45.0	FGHIJKLMNO
ICIA523 + X-77	6 gm ai + .05% v/v	May, June	30	70	40	46.7	EFGHIJKLMNO
ICIA523 + X-77	4 gm ai + .05% v/v	May, June	40	60	45	48.3	DEFGHIJKLMNO
H6573 + Tersan 1991	.125 oz ai + 1 oz ai	May, June	60	55	30	48.3	DEFGHIJKLMNO
Banner	4 fl oz	May, June	30	60	55	48.3	DEFGHIJKLMNO
H6573 + DPX-965	.125 oz ai + 1 oz ai	May, June	35	50	60	48.3	DEFGHIJKLMNO
Prochloraz	4.5 fl oz	May, June	30	45	75	50.0	CDEFGHIJKLMN
ICIA523 + X-77	8 gm ai + .05% v/v	May, June	30	45	75	50.0	CDEFGHIJKLMN
Banner	4 fl oz	May	25	80	50	51.7	BCDEFGHIJKLMN
SDS 66534	4.3 fl oz	May, June	70	30	60	53.3	BCDEFGHIJKLM
Bayleton	2 oz	May, June	65	50	50	55.0	ABCDEFGHIJKLM
Flutolanil + SN99731	2 oz + 1 oz	May, June	50	40	80	56.7	ABCDEFGHIJKL
Spotless	.125 lb ai/A	May, June	70	45	55	56.7	ABCDEFGHIJKL
H6573 + DPX-965	.06 oz ai + 1 oz ai	May, June	40	50	80	56.7	ABCDEFGHIJKL
SDS 66534	2.1 fl oz	May, June	60	45	65	56.7	ABCDEFGHIJKL
Faeriefungin <sup>b</sup>	500 ppm	Monthly	40	80	55	58.3	ABCDEFGHIJKL
Bayleton	2 oz	June	25	70	85	60.0	ABCDEFGHIJKL
Banner	4 fl oz	June	30	75	75	60.0	ABCDEFGHIJKL
Tersan 1991	2 oz	July	80	70	30	60.0	ABCDEFGHIJKL
Bayleton	1 oz	May, June	70	55	65	63.3	ABCDEFGHIJK
Rubigan	3.75 fl oz	June	65	70	60 <sup>C</sup>	65.0	ABCDEFGHIJK
Banner	2 fl oz	June	50	70	75	65.0	ABCDEFGHIJK
Bayleton	2 oz	May	75	90	60	66.7	ABCDEFGHIJ
Banner	2 fl oz	May, June	80	75	50	68.3	ABCDEFGHI
LS84.606	0.05 oz ai	May, June	70	80	55	68.3	ABCDEFGHI
Rubigan	1.75 fl oz	May, June	55	70	80	68.3	ABCDEFGHI
Lesco Fungicide	6 oz	May, June	80	50	80	70.0	ABCDEFGHI
Tersan 1991	2 oz	June, July	70	90	50	70.0	ABCDEFGHI
Dac 2787 + SDS 66533	3 fl oz + 1 fl oz	May, June	80	80	50	70.0	ABCDEFGHI

Table 4. Summer Patch Fungicide Trial #1 - 1988 (cont.)

Treatment	Rate/1000 ft <sup>2</sup>	Interval	I	II	III	Ave	DMR(.05) <sup>a</sup>
H6573 + Tersan 1991	.06 oz ai + 1 oz ai	May, June	70	65	75	70.0	ABCDEFGHI
Tersan 1991	1 oz ai	May, June	70	85	55	70.0	ABCDEFGHI
Tersan 1991	2 oz	June	75	70	70	71.7	ABCDEFGH
Bayleton + Lawn Restore <sup>b</sup>	2 oz + 5 lb	May, June, Monthly	70	70	75	71.7	ABCDEFGH
Dac 2787 + SDS 66533	6 fl oz + 2 fl oz	May, June	60	70	85	71.7	ABCDEFGH
Flutolanil	4 oz	May, June	65	80	70	71.7	ABCDEFGH
H6573	.06 oz ai	May, June	80	70	65	71.7	ABCDEFGH
Faeriefungin	1000 ppm	Monthly	80	80	60	73.3	ABCDEFG
Rubigan	3.75 fl oz	May	80	65	80	75.0	ABCDEF
Rubigan	1.75 fl oz	June	70	80	75	75.0	ABCDEF
Banner	2 fl oz	May	70	65	90	75.0	ABCDEF
Fungo 50	4 oz	June, July	70	80	80	76.7	ABCDE
Fungo 50	8 oz	June, July	70	70	90	76.7	ABCDE
Bayleton	1 oz	May	75	75	85	78.3	ABCD
DPX-965	1 oz ai	May, June	50	90	95	78.3	ABCD
Rubigan	1.75 fl oz	May	80	80	80	80.0	ABC
Control	---	---	80	80	80	80.0	ABC
Ch26019 + LS84.606	1 oz ai + .05 oz ai	May, June	80	80	80	80.0	ABC
Ch26019	2 oz ai	May, June	65	95	85	81.7	AB
Fertilizer (10-4-4) <sup>b</sup>	1.0 lb N	Monthly	70	80	95	81.7	AB
Faeriefungin <sup>b</sup>	1000 ppm	May, June	90	80	85	85.0	A
Turf Restore <sup>B</sup>	20 lb, 15 lb, 10 lb	May, June, Sept	severely damaged - no disease data available				
	(with & w/o microorganisms)						

a = treatments followed by same letter are not significantly different from each other at the 5% level

b = no supplemental fertility applied to these treatments

c = mild phytotoxicity evident

d = greening effect

Table 5. Summer Patch Fungicide Trial #4 - 1988

Grand Rapids Elks Country Club, Grand Rapids, MI

Percent plot area infected

Rating date: 8/30/88

Treatment	Rate/1000 ft <sup>2</sup>	Interval	I	II	III	Ave	DMR(.05) <sup>a</sup>
Spotless	.5 lb ai/A	May, June	0	0	2	0.7	JK
Rubigan	3.75 fl oz	May, June	0	0	3	1.0	JK
Banner	4 fl oz	June	5	0	0	1.7	JK
Spotless	1 lb ai/A	May, June	0	7	0	2.3	JK
ICIA523 + X-77	8 g ai + 0.05% v/v	May, June	5	0	5	3.3	IJK
ICIA523 + X-77	6 g ai + 0.05% v/v	May, June	0	2	10	4.0	HIJK
ICIA523 + X-77	4 g ai + 0.05% v/v	May, June	0	0	20	6.7	HIJK
Bayleton	2 oz	May, June	0	5	15	6.7	HIJK
SDS-66534	4.3 fl oz	May, June	0	7	15	7.3	HIJK
Prochloraz + SN99731	4.5 fl oz + 1 oz	May, June	0	3	20	7.7	GHIJK
Flutolanil + SN99731	2.0 oz + 1 oz	May, June	0	5	20	8.3	GHIJK
Bayleton	2 oz	May	5	5	15	8.3	GHIJK
Bayleton	1 oz	May, June	0	20	5	8.3	GHIJK
H6573	.06 oz ai	May, June	0	20	10	10.0	GHIJK
H6573	.25 oz ai	May, June	15	15	2	10.7	FGHIJK
Flutolanil + SN596	2.0 oz + 1 oz	May, June	0	30	3	11.0	FGHIJK
Dac 2787 + SDS66533	3 fl oz + 1 fl oz	May, June	2	25	10	12.3	FGHIJK
Banner	4 fl oz	May, June	40	0	0	13.3	EFGHIJK
Bayleton + Turf Restore <sup>b</sup>	2 oz + 5 lb	May, June,	2	2	40	14.7	EFGHIJK
		Monthly					
H6573 + Tersan 1991	.25 oz ai + 1 oz ai	May, June	0	30	15	15.0	EFGHIJK
Faeriefungin	1000 ppm	Monthly	20	5	20	15.0	EFGHIJK
Dac 2787 + SDS66533	6 fl oz + 2 fl oz	May, June	0	20	25	15.0	EFGHIJK
Dac 2787 + SDS66533	6 fl oz + 4 fl oz	May, June	0	10	35	15.0	EFGHIJK
H6573 + DPX965	.06 oz ai + 1 oz ai	May, June	2	7	40	16.3	EFGHIJK
Biogroundskeeper + P <sup>b</sup>	2 oz + .25 lb	Monthly	5	5	40	16.7	EFGHIJK
H6573	.125 oz ai	May, June	0	35	15	16.7	EFGHIJK
Rubigan	3.75 fl oz	May	7	15	40	20.7	DEFGHIJK
Fungo 50	8 oz	June, July	7	15	40	20.7	DEFGHIJK
Turf Restore <sup>b</sup>	5 lb	Monthly	2	20	40	20.7	DEFGHIJK
Banner	4 fl oz	May	7	20	40	22.3	DEFGHIJK
Banner	2 fl oz	May, June	5	20	45	23.3	DEFGHIJK
Bayleton	2 oz	June	40	20	10	23.3	DEFGHIJK
Spotless	.125 lb ai/A	May, June	0	60	10	23.3	DEFGHIJK
Biogroundskeeper + P + K <sup>b</sup>	2 oz + .25 lb + .25 lb	Monthly	7	25	40	24.0	DEFGHIJK
Tersan 1991	2 oz	June	15	20	40	25.0	DEFGHIJK
Flutolanil	4.0 fl oz	May, June	1	65	10	25.3	DEFGHIJK
Prochloraz	4.5 fl oz	May, June	0	30	50	26.7	CDEFGHIJK

Table 5. Summer Patch Fungicide Trial #4 - 1988 (cont.)

Treatment	Rate/1000 ft <sup>2</sup>	Interval	I	II	III	Ave	DMR(.05) <sup>a</sup>
H6573 + DPX965	.125 oz ai + 1 oz ai	May, June	25	35	20	26.7	CDEFGHIJK
Spotless	.25 lb ai/A	May, June	0	5	75	26.7	CDEFGHIJK
Biogroundskeeper + K <sup>b</sup>	2 oz + .25 lb	Monthly	2	30	50	27.3	CDEFGHIJK
Ch26019	2 oz ai	May, June	0	60	25	28.3	BCDEFGHIJK
Banner	2 fl oz	June	65	15	5	28.3	BCDEFGHIJK
HWG1608	.25 oz ai	May, June	0	45	40	28.3	BCDEFGHIJK
Phosphorus	1 lb	Monthly	3	40	45	29.3	BCDEFGHIJK
Rubigan	1.75 fl oz	June	7	60	25	30.7	BCDEFGHIJK
SDS66534	2.1 fl oz	May, June	0*	50	45	31.7	ABCDEFGHIJK
Lesco Fungicide	6 oz	May, June	55	40	0	31.7	ABCDEFGHIJK
Sustain <sup>bc</sup>	1 lb N	Monthly	35	40	20	31.7	ABCDEFGHIJK
Rubigan	1.75 fl oz	May	7	30	60	32.3	ABCDEFGHIJK
H6573 + T1991	.125 oz ai + 1 oz ai	May, June	0	70	30	33.3	ABCDEFGHIJK
Tersan 1991	2 oz	June, July	40	60	5	35.0	ABCDEFGHIJK
Greenspeed + Biogroundskeeper <sup>b</sup>	4 oz + 2 oz	Monthly	50	45	10	35.0	ABCDEFGHIJK
Bayleton	1 oz	June	45	45	15	35.0	ABCDEFGHIJK
Banner	2 fl oz	May	20	65	25	36.7	ABCDEFGHIJK
Fungo	4 oz	June, July	35	45	30	36.7	ABCDEFGHIJK
Tersan 1991	2 oz	July	7	55	50	37.3	ABCDEFGHIJK
Biogroundskeeper <sup>b</sup>	2 oz	Monthly	40	40	35	38.3	ABCDEFGHIJK
Bayleton	1 oz	May	20	35	60	38.3	ABCDEFGHIJK
Faeriefungin	500 ppm	Monthly	50	15	50	38.3	ABCDEFGHIJK
LS84.606	0.05 oz ai	May, June	3	85	30	39.3	ABCDEFGHIJK
Rubigan	3.75 fl oz	June	5	50	65	40.0	ABCDEFGHIJ
Faeriefungin	1000 ppm	May, June	65	20	40	41.7	ABCDEFGHI
Biogroundskeeper + N,P,K <sup>b</sup>	2oz + .5lb, .25lb, .25lb	Monthly	35	45	45	41.7	ABCDEFGHI
Rubigan	1.75 fl oz	May, June	25	50	55	43.3	ABCDEFGH
H6573 + Tersan 1991	.06 oz ai + 1 oz ai	May, June	25	25	80	43.3	ABCDEFGH
Turf Restore <sup>b</sup>	20 lb, 15 lb, 10 lb	May, Jun, Sep	15	45	70	43.3	ABCDEFGH
Turf Restore w/o microbes <sup>b</sup>	20 lb, 15 lb, 10 lb	May, Jun, Sep	20	65	45	43.3	ABCDEFGH
Tersan 1991	1 oz ai	May, June	35	75	25	45.0	ABCDEFGH
DPX 965	1 oz ai	May, June	50	70	20	46.7	ABCDEFG
Sustain <sup>bc</sup>	.5 lb N	Monthly	45	50	45	46.7	ABCDEFG
Greenspeed <sup>b</sup>	4 oz	Monthly	30	75	45	50.0	ABCDEF
Greenspeed <sup>b</sup>	8 oz	Monthly	70	45	40	51.7	ABCDE
Ch26019 + LS84.606	1 oz ai + .05 oz ai	May, June	45	65	65	58.3	ABCD
Biogroundskeeper + N <sup>b</sup>	2 oz + .5 lb	Monthly	45	70	80	65.0	ABC
Control	----	----	80	60	60	66.7	AB
Fertilizer (10-4-4) <sup>b</sup>	1.0 lb N	Monthly	70	75	65	70.0	A

a = treatments followed by the same letter are not significantly different at the 5% level

b = no supplemental fertility applied

c = Sustain treatments initiated on 6/28