Summer Patch Fungicide Studies - 1995

Fungicide studies for the preventive control of summer patch (*Magnaporthe poae*) on annual bluegrass were initiated when the soil temperature reached 65°F at a 2" depth at the Hancock Turfgrass Research Center on the MSU campus in E. Lansing, MI. Studies were established on irrigated, annual bluegrass (*Poa annua*) fairways on two golf courses in Michigan where disease was present in past years. All treatments were applied prior to disease occurrence, with re-application taking place at the intervals listed in the data tables (Tables 4&5). Application equipment and procedures were as previously described in this report (refer to snow mold report). The fairways were maintained at 1/2 inch height of cut and were fertilized at 1/2 lb N/mo. (except for treatments containing fertilizer). Application intervals and frequencies were occasionally altered from contract protocols in order to conform to our standard recommendation for preventive control of summer patch in Michigan. Initial applications were made when the soil temperature reached 65° F at a 2" depth. A second application was made one month later, or as indicated in the data tables.

Some phytotoxicity was observed in these studies this year, as indicated in the data tables.

Summer Patch Fungicide Study #1, Dearborn Country Club, Dearborn, MI.

The summer patch study at Dearborn C.C. was initiated on May 15, with most treatments being re-applied on 6/12, except as noted on the data table (Table 4). A few treatments were initiated when the soil temperature reached 75° F at a 2 inch depth (6/19) and were re-applied 30 days later (7/17).

Disease pressure at Dearborn was slow to develop, but eventually reached moderately severe levels. The disease rating was taken on Sept. 11. Because September was unusually cool this year, this rating coincided with the peak of disease pressure. As Table 4 indicates, a number of treatments gave significant disease control compared to the fertilized control. Among the best treatments were Heritage combinations, Bayleton (3 applications) applied initially at 65°F, and Heritage and Banner, alone, applied at 75° F. Clearys 3336 performed well applied as a curative (with significant disease already present) on 8/31 and 9/5. Sentinel at the 0.25 of rate, applied at 65° F, also performed respectably, although some disease was evident in these plots.

As indicated in Table 4, a number of combination treatments proved phytotoxic to the turf in the Dearborn study. The same degree of phytotoxicity was not consistently observed in the same treatments in the Twin Beach study. The Dearborn fairway on which the study was located had received an early Embark application for annual bluegrass seedhead suppression which discolored and stunted the turf temporarily. Despite an apparent full recovery by the time our treatments were applied, the turf proved very susceptible to renewed damage from some of our treatments, especially the Heritage + Rubigan treatments and combination treatments containing plant growth regulators. Interestingly, whereas the Heritage + Rubigan combination treatments initially burned severely at both locations, once the turf recovered, disease control was excellent for the remainder of the season. It should be noted that contract protocols requested the wettable powder (50% active ingredient) Rubigan formulation which, at a 2 oz./1000 ft^2 application rate, provides an unusually high use rate of Rubigan. This may be the reason a severe burn was observed in both studies with this combination treatment.

Summer Patch Fungicide Study #2, Twin Beach Country Club, West Bloomfield, MI.

The summer patch study at the Twin Beach Country Club was initiated on May 16, with most treatments being re-applied on June 19, except as noted on data Table 4. A few treatments were initiated when the soil temperature reached 75 F at a two inch depth on June 19, and were re-applied 30 days later, on July 17 (Table 4.)

Disease pressure in the Twin Beach study peaked at moderately severe levels in early September. As in the Dearborn study, the Heritage and Rubigan combinations provided excellent disease control through the Sept. 6 rating date, but the level of phytotoxicity was unacceptable. The Banner, Rubigan, and Sentinel standards also provided good disease control, although phytotoxicity was observed in the Sentinel + plant growth regulator treatments for a brief period following the May 16 and June 19 applications.

Table 4. Summer Patch Fungicide Study #1- 1995 Dearborn Country Club, Dearborn, MI

Rating Scale:
Percent plot area infected by summer patch (*Magnaporthe poae*).

Rating Date:
Sept. 11, 1995

Treatment	Rate/1000 ft[2b]	Applic. Interval	I	II	III
Heritage	0.4 oz	75° + 30 days	0	0	0
Heritage + Rubigan (WP)	0.4 oz + 2 oz	65° + 30 days	0[h]	0[f]	0[g]
Heritage + Rubigan (WP)	0.2 oz + 2 oz	65° + 30 days	0[g]	3[h]	2[h]
Heritage	0.2 oz	75° + 30 days	2	1	5
Cleary 3336	8 oz	applied 8/21 and 9/5 curatively	5[c]	2	5
Heritage + Banner	0.4 oz + 4 fl oz	65° + 30 days	3	5	5
Banner	4 fl oz	75° + 30 days	7	5	3
Sentinel & Primo[e]	0.25 oz & 0.09 lb ai/A	65° + 30 days & 6/5 + 8/7	3[f]	7	5[g]
Bayleton	2 oz (3 apps.)	65° + 30 days + 30 days	5	5	5
Sentinel & Cutless[e]	0.25 oz & 0.25 lb ai/A	65° + 30 days & 6/5 + 8/7	12[f]	2[g]	3[f]
Heritage + Bayleton	0.4 oz + 2 oz	65° + 30 days	5	10	10
Heritage	0.4 oz	65° + 30 days	15	7	3
Rubigan AS	4 fl oz	65° + 30 days	20	5	2
Sentinel	0.25 oz	65° + 30 days	12	12[f]	5[g]
Rubigan AS	4 fl oz	75° + 30 days	12	5	12
Heritage + Bayleton	0.2 oz + 2 oz	65° + 30 days	12	15	3
Scts. S-6128	1.25 lbs	14 day	15	2	15
Lynx	1 oz (3 apps.)	65° + 30 days + 30 days	7	20	15
Scts. S-6115	1.33 lbs	14 day	12	20	12
Sentinel & Turf Enhancer	0.25 oz & 0.125 lb ai/A	65° + 30 days & 6/5 + 8/7	30[f]	12[g]	2[g]
Lynx	1.5 oz	65° + 30 days	10	5	35
Heritage + Banner	0.2 oz + 4 fl oz	65° + 30 days	5	30	15
Cutless[e]	0.25 lb ai/A	6/5 + 8/7	3	15	35
Primo[e]	0.09 lb ai/A	6/5 + 8/7	15	20	30
Sentinel	0.167 lb ai/A	65° + 30 days	20	15	35
RH-0611	6 oz	65° + 30 days	25	20	25
Sentinel + Cleary 3336	0.167 oz + 2 oz	65° + 30 days	25	20	25
Bayleton	2 oz	75° + 30 days	20	25	30
Eagle + Fore	0.6 oz + 4.5 oz	65° + 30 days	30	25	25

Bayleton	1 oz	65° + 30 days	40	15	25
IB 11924[d]	2.75 fl oz	applied 6/5 + 7/5	35	20	25
Embark[e]	0.0625 lb ai/A	6/5 + 8/7	2	35	50
IB 11924	6 fl oz	65° + 30 days	20	35	35
Bayleton	2 oz	65° + 30 days	30	30	35
Fluazinam 500	0.5 fl oz	65° + 30 days	40	20	35
Bayleton + Panasea Plus	1 oz & 4 fl oz	65° + 30 days & 21 days	40	20	35
Heritage	0.2 oz	65° + 30 days	30	35	35
Control (Unfert.)	--	--	15	50	35
Fluazinam 500	1 fl oz	65° + 30 days	20	35	50
Turf Enhancer[e]	0.125 1b. ai/A	6/5 + 8/7	35	30[f]	40
Sentinel & Embark[e]	0.25 oz & 0.0625 lb ai/A	65° + 30 days & 6/5 + 8/7	35	35[f]	35[f]
Panasea Plus	4 fl oz	21 days	50	35	35
Control (Fertilized)	--	--	35	35	50
Clearys 3336	2 oz	65° + 30 days	40	50	35
Menafee Humate	250 lbs./A	app. 5/22, 6/5, 6/19, 7/5	40	40	50
Menafee Humate	400 lbs./A	app. 5/22, 6/5, 6/19, 7/5	30	45	65
Herbruck's Fert.	0.25 lb N.	14 days	40	35	65

[a]Treatments followed by same letter are not significantly different from each other at the 5% level. (Tukeys Honestly Significant Difference Test).
[b]Rates are formulation, unless listed as active ingredient (ai).
[c]Pre-treatment disease ratings (percent area infected): Rep. I = 40%, Rep. II = 40%, Rep. III = 40%.
[d]IB 11924 applied at reduced rate, at request of corporate sponsor, on 6/5 and 7/5.
[e]Plant growth regulators applied initially on 6/5 and re-applied on 8/7.
[f]Mild phytotoxicity on 6/29.
[g]Moderately severe phytotoxicity on 6/29
[h]Severe phytotoxicity on 6/29

Table 5. Summer Patch Fungicide Study #2 - 1995 Twin Beach Golf Club, West Bloomfield, MI

Rating Scale:
Percent plot area infected by summer patch (*Magnaporthe poae*).
Rating Date:
Sept. 6, 1995

Treatment	Rate/1000 ft²[b]	Applic. Interval	I	II	III	Avg
Heritage + Rubigan (WP)	0.2 oz + 2 oz	65° + 30 days	1[e]	3[f]	2[e]	2.0
Rubigan AS	4 fl oz	75° + 30 days	5	0	5	3.3
Heritage + Rubigan (WP)	0.4 oz + 2 oz	65° + 30 days	7[f]	2[f]	3[f]	4.0
Sentinel & Cutless	0.25 oz + .25 lb ai/A	65° + 30 days & monthly	5	7[h]	3	5.0
Sentinel & Primo	0.25 oz + 0.09 lb ai/A	65° + 30 days & monthly	7[h]	2[h]	7[h]	5.3
Banner	4 fl oz	75° + 30 days	2	10	5	5.7
Lynx	1.5 oz	65° + 30 days	10	7	5	7.3
Sentinel	0.167 oz	65° + 30 days	12	2	10	8.0

Rubigan AS	4 fl oz	65° + 30 days	7	12	5	8.0
Sentinel & Turf Enhancer	0.25 oz + 0.125 lb ai/A.	65° + 30 days & monthly	7	0	20[h]	9.0
Sentinel	0.25 oz	65° + 30 days	5	12	15	10.7
Scts. S-6115	1.33 lb	14 days	5	10	20	11.7
Heritage	0.4 oz	75° + 30 days	12	25	0	12.3
Bayleton	2 oz	75° + 30 days	12	25	7	14.7
Sentinel + Cleary 3336	0.167 oz + 2 oz	65° + 30 days	10	25	10	15.0
Heritage + Bayleton	0.2 oz + 2 oz	65° + 30 days	15	7	25	15.7
Clearys 3336	8 oz	one curative applic. on 8/22	12(5)[c]	7(5)	30(10	16.3(6.7
Bayleton + Panasea Plus	1 oz + 4 fl oz	65° + 30 days & 21 days	20	25	5	16.7
Lynx	1 oz (3 apps.)	65° + 30 days + 30 days	15	15	25	18.3
Heritage + Banner	0.4 oz + 4 fl oz	65° + 30 days	15	20	20	18.3
Turf Enhancer	0.125 lbs ai/A	monthly	25[h]	15[h]	15[h]	18.3
Scts. S-6128	1.25 lb	14 days	15	25	20	20.0
Bayleton	2 oz (3 apps.)	65° + 30 days + 30 days	15	12	35	20.7
Sentinel & Embark	0.25 oz + 0.0625 lb ai/A	65° + 30 days & monthly	35[g]	12[g]	15[g]	20.7
Heritage	0.2 oz	75° + 30 days	25	15	25	21.7
Bayleton	1 oz	65° + 30 days	12	30	25	22.3
Heritage + Bayleton	0.4 oz + 2 oz	65° + 30 days	7	30	40	25.7
RH-0611	6 oz	65° + 30 days	25	25	30	26.7
Heritage + Banner	0.2 oz + 4 fl oz	65° + 30 days	20	40	20	26.7
Primo	0.09 lb ai/A	monthly	30	35	15	26.7
Eagle + Fore	0.6 oz + 4.5 oz	65° + 30 days	15	35	35	28.3
Heritage	0.4 oz	65° + 30 days	35	15	35	28.3
Cutless	0.25 lb ai/A	monthly	40	25	25[h]	30.0
Bayleton	2 oz	65° + 30 days	40	10	40	30.0
Clearys 3336	2 oz	65° + 30 days	40	35	15	30.0
IB 11924[d]	2.75 fl oz	applied 6/5 and 7/5	30	20	45	31.7
Heritage	0.2 oz	65° + 30 days	15	35	55	35.0
Menafee Humate	250 lb./A	5/22, 6/5, 6/19, 7/5	25	40	40	35.0
Control (fertilized)	--	--	35(30	35(25	35(30	35.0(28)
Herbrucks Fert.	0.5 lb N.	monthly	50	15	40	35.0
Panasea Plus	4 fl oz	21 day	35	45	35	38.3
IB 11924	6 fl oz	65° + 30 days	40	40	35	38.3
Fluazinam 500	0.5 fl oz	65° + 30 days	40	40	35	38.3

Menafee Humate	400 lb./A	5/22, 6/5, 6/19, 7/5	30	30	65	41.7
Fluazinam 500	1 fl oz	65° + 30 days	35	40	55	43.3
Control (unfertilized)	--	--	60	20	50	43.3
Embark	0.062 lb ai/A	monthly	50[g]	70[g]	60[g]	60.0

[a]Treatments followed by the same letter are not significantly different from each other at the 5% level (Tukeys Honestly Significant Differences Test).
[b]Rates are formulation, unless indicated as active ingredient (ai).
[c]Ratings in parentheses represent disease levels on Sept. 11, following a second Clearys 3336 application on 9/5.
[d]IB 11924 applied at reduced rate at request of corporate sponsor, on 6/5 and 7/5.
[e]Mild phytotoxicity observed throughout much of summer.
[f]Moderately severe phytotoxicity observed throughout much of summer.
[g]Mild phytoxicity and turf stunting observed briefly, following each monthly Embark application.
[h]Mild to moderately severe phytotoxicity observed on 6/29/95, but abated shortly thereafter.