

Brown Patch (*Rhizoctonia solani*)

Two preventive studies were set up this year, one on a ryegrass plot area and a second on a bentgrass green at the Hancock Turfgrass Research Center, E. Lansing, MI. Both studies were randomized complete block designs with 4 replicates of each treatment. Plots measured 2' x 4.5' with 1' alleys. Treatments were applied using a CO₂ backpack sprayer at 34 PSI and 48 GPA, unless otherwise noted in Table 8, using a single 8002E Tee Jet flat fan nozzle. Subdue Maxx was applied at 1 oz/1000 ft² on 7/3, 7/18, and 7/30 to prevent a Pythium blight outbreak. The study area was inoculated (6/24, 7/11, 7/30) with *Rhizoctonia solani* growing on a sand/cornmeal mixture using a drop spreader at approximately 2.5#/1000 sq ft. Plots were fertilized at a rate of 1.25# N/1000 ft²/month on the ryegrass area and a rate of 0.75# N/1000 ft²/month on the bentgrass study. Treatments were applied beginning on June 24 unless otherwise noted in Table 8. The seven day combination treatment (Magellan + Mancozeb) was reapplied on 7/1, 7/8, 7/16, 7/23, 7/30, 8/6, and 8/15, and the Spotrete from the alternating combination treatment on 7/8, 7/30, and 8/15. Subsequent applications of the 14-day treatments were made on 7/8, 7/23, and 8/6. The 21-day treatments were reapplied on 7/16 and 8/16, and the 28-day treatments on 7/23. Application of the curative treatment (Spotrete) was delayed in anticipation of disease development. The treatment was applied on 8/15 and, as a result, no data are available for this treatment in the preventive study. Plots were rated for percent area blighted by brown patch (see Table 8.) Data were analyzed using ANOVA and means separated with LSD (p=0.05).

A third study was set up curatively on an adjacent area on the bentgrass green after a relatively uniform brown patch outbreak occurred. The area was rated on August 2, just prior to treatment application, for percent plot area blighted by brown patch. All treatments were applied on August 2, except for the program treatment. The 7 and 14-day treatments were reapplied on August 19. Plots were rated prior to the initial treatment and rating (see Table 9). Data were analyzed using ANOVA and means separated with LSD (p=0.05).

As the data in Table 8 indicate, disease pressure was very low in both preventive studies with the untreated control having a slightly higher mean in the ryegrass study than in the bentgrass study at 10.8%. As a result, separation of treatment means was not strong. Several treatments provided significant disease control at this low pressure level including Prostar, Insignia in combination, Heritage, Cleary's 3336 alternated with Spotrete, Magellan and Mancozeb in combination, and Spectro.

Data in Table 9 represent the curative (third) study. Several treatments provided good curative control of brown patch including Heritage, Insignia in combination, Prostar, Iprodione Pro, Chipco 26GT, and Endorse.

Table 8. Preventative Brown Patch 2002.

Location: Hancock Turf Research Center, E. Lansing, MI		Ryegrass		Bentgrass			
Rating Scale: Mean % area with Brown Patch.	Interval (Days)	22-Jul		22-Jul		6-Aug	
Treatment/rate		Mean ^a	LSD ^b	Mean	LSD	Mean	LSD
Prostar 70WP 2.2 oz	21	0.0	D	0.0	C	0.0	C
Insignia 0.5 oz	14	0.0	D	0.4	BC	0.1	C
Insignia 0.5 oz alternated with Iprodione Pro 4 fl oz	14	0.0	D	0.0	C	1.3	A-C
Heritage 0.2 oz	14	0.0	D	0.0	C	0.0	C
Program Treatment:		0.0	D	0.0	C	0.0	C
Eagle WSP 0.6 oz + Fore 6 oz	5/24						
Eagle WSP 0.6 oz	6/7						
Eagle WSP 0.6 oz + Prostar 1.5 oz	6/20						
Fore 6 oz + Chipco 26GT 4 fl oz + Subdue Maxx 1 fl oz	7/3						
Heritage 0.2 oz + Curalan 1 oz	7/18						
Fore 6 oz	7/23						
Fore 6 oz + Chipco 26GT 4 fl oz	8/15						
Eagle WSP 0.6 oz ^f	--						
Prostar 70WP 2.2 oz	14	0.0	D	0.0	C	0.0	C
Clearys 3336 4 oz alt Spotrete 4 oz	14 alt 7	0.0	D	0.1	C	0.0	C
Magellan 4.1 fl oz + Mancozeb 4 oz ^c	7	0.1	D	0.0	C	0.1	C
Echo 720 2 fl oz + PropiMax EC 0.36 fl oz	21	0.1	D	0.0	C	0.0	C
Insignia 0.5 oz alt. with Concorde DF 3.2 oz	14	0.3	D	0.3	BC	0.5	BC
Spectro 4 oz	14	0.3	D	2.1	BC	0.0	C
Daconil Ultrex 3.2 oz	14	2.3	CD	0.0	C	0.1	C
Endorse 4 oz	14	2.3	CD	2.1	BC	1.3	A-C
Echo 720 3.6 fl oz	14	2.6	CD	2.5	BC	0.1	C
TD 2390 6 oz	14	4.3	B-D	0.0	C	0.0	C
Clearys 3336 50 WSP 3 oz ^d	14	4.4	B-D	0.3	BC	0.0	C
Insignia 0.9 oz	28	4.5	B-D	0.0	C	0.0	C
Chipco 26GT 4 fl oz	14	4.5	B-D	0.5	BC	0.1	C
Chipco 26GT 4 fl oz ^d	14	4.8	B-D	2.1	BC	0.8	A-C
Clearys 3336 4 oz	14	5.3	B-D	0.5	BC	0.0	C
TMI Combo Flo 2.1 fl oz ^d	14	5.8	B-D	1.0	BC	0.1	C
Clearys 3336F 2 fl oz ^d	14	6.5	B-D	3.3	BC	0.7	A-C
Heritage 0.4 oz	28	6.5	B-D	2.6	BC	0.0	C
T Methyl Pro 4.5F 2 fl oz ^d	14	7.3	B-D	0.0	C	0.0	C

Iprodione Pro 2SE 4 fl oz ^d	14	7.5	B-D	2.0	BC	0.8	A-C
TMI Combo Flo 4.2 fl oz ^d	14	7.8	B-D	0.9	BC	0.0	C
Control	---	9.3	A-C	8.3	AB	2.8	A
Scotts/Andersons Fluid Fungicide 2.1 fl oz ^d	14	10.8	A-C	4.8	AB	0.6	BC
Spotrete 3 oz ^e	7						
T Methyl Pro 50WSP 3 oz ^d	14	16.6	A	0.3	BC	0.0	C

^a Represents the mean of 4 replicate plots.

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

^c Treatment applied in a 3 gal/1000 ft² spray volume.

^d Treatment applied in a 2 gal/1000 ft² spray volume.

^e Treatment applied curatively beginning on August 15, however, disease pressure decreased, therefore no data are available for this treatment.

^f Treatment not applied due to lack of disease pressure.

Table 9. Curative Brown Patch 2002.

Location: Hancock Turf Research Center, E. Lansing, MI										% Recovery ^d
Rating Scale: Mean % area infected with Brown Patch.		2-Aug ^a		9-Aug		15-Aug		22-Aug		
Treatment/Rate	Interval	Mean ^b	LSD ^c	Mean	LSD	Mean	LSD	Mean	LSD	
Insignia 0.5 oz alt. With Concorde DF 3.2 oz	14	15	C	6	E	3	D	0.8	E	80
Insignia 0.5 oz	14	21.3	A-C	16.8	A-E	8	B-D	3	DE	62.4
Heritage 0.2 oz	14	14.8	C	6.3	DE	3.8	CD	3	DE	74.6
Iprodione Pro 2SE 4 fl oz ^f	14	15	C	9.8	C-E	6.3	CD	3	DE	58.3
Spectro 4 oz	14	18	A-C	6.3	DE	5.3	CD	3.5	DE	70.8
Insignia 0.5 oz alt with Iprodione Pro 4 fl oz	14	21.3	A-C	14.3	A-E	11	B-D	5	C-E	48.2
Chipco 26GT 4 fl oz	14	19.3	A-C	18	A-C	11.3	B-D	5.8	C-E	41.6
T Methyl Pro 50 WSP 3 oz ^f	14	14.3	C	12.3	C-E	9.8	B-D	6.8	B-E	31.6
Daconil Ultrex 3.2 oz	14	15	C	15.5	A-E	11.8	A-D	7.3	B-E	21.7
Prostar 70WP 2.2 oz	21	18.5	A-C	15.8	A-E	11.3	B-D	7.8	B-E	39.2
Insignia 0.9 oz	28	19.3	A-C	15	A-E	11.3	B-D	8	B-E	41.6
Chipco 26GT 4 fl oz ^f	14	20.5	A-C	17.3	A-E	14.3	A-D	8	B-E	30.5
TMI Combo Flo 2.1 fl oz ^f	14	20.5	A-C	17.5	A-D	14.3	A-D	8.3	B-E	30.5
Magellan 4.1 fl oz + Mancozeb 4 oz ^e	7	15.5	C	11.3	C-E	10	B-D	8.8	A-E	35.5
Spotrete 3 oz	7	16.8	BC	10.8	C-E	10.5	B-D	9.3	A-E	37.3
T Methyl Pro 4.5F 2 fl oz ^f	14	22.5	A-C	16.8	A-E	13.5	A-D	9.8	A-D	40
Cleary's 3336 50 WSP 3 oz ^f	14	22.5	A-C	13.8	A-E	12.3	A-D	9.8	A-D	45.6
Cleary's 3336 4 oz	14	15.5	C	14.3	A-E	10.8	B-D	9.8	A-D	30.6
Echo 720 3.6 fl oz	14	18	A-C	14.3	A-E	12.3	A-D	10	A-D	31.9
Cleary's 3336 4 oz alternated with Spotrete 4 oz	14 alt 7	20	A-C	15.8	A-E	11.5	B-D	10	A-D	42.5
Endorse 4 oz	14	24.3	A-C	20.5	A-C	18.8	AB	10.3	A-D	22.7
Echo 720 2 fl oz + PropiMax EC 0.36 fl oz	21	17.5	A-C	14.3	A-E	14.3	A-D	10.5	A-D	18.6
Cleary's 3336F 2 fl oz ^f	14	19.3	A-C	14.3	A-E	15.5	A-C	10.5	A-D	19.5
Scotts/Andersons Fluid Fungicide 2.1 fl oz ^f	14	20	A-C	17.5	A-D	13.8	A-D	11.3	A-D	31.3
TMI Combo Flo 4.2 fl oz ^f	14	28.8	A	23.8	AB	19.3	AB	11.8	A-D	33
TD 2390 6 oz	14	13.8	C	13.5	B-E	15	A-D	13	A-C	-9.1
Prostar 70WP 2.2 oz	14	25	A-C	23.8	AB	18.8	AB	15	AB	25
Control	---	27.5	AB	25	A	23.8	A	17.5	A	13.6

^a Pretreatment rating.

^b Represents the mean of 4 replicate plots.

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

^d Represents the percent recovery from August 2 until August 15.

^e Treatment applied in a 3 gal/1000 ft² spray volume.

^f Treatment applied in a 2 gal/1000 ft² spray volume.

Note: Program Treatment omitted.

Red Thread (*Laetisaria fuciformis*)

This study was set up on a ryegrass fairway at the Hancock Turfgrass Research Center, E. Lansing, MI. The study consisted of 4 replicates of each treatment set up in a randomized complete block design with plots measuring 6' x 6'. Treatments were applied curatively using a CO₂ backpack sprayer at 48 GPA and 34 PSI with two 8002E flat fan nozzles. A pre-treatment rating was taken on 6/13 (Table 10), and then initial treatment applications were made. All treatments were applied on a 14 day schedule with subsequent applications made on 6/28, 7/11, 7/26, 8/8, 8/21, and 9/6. Fertilizer was applied as follows: 5/17 (1#N), 6/6 (1/8#N), 6/14 (1/8#N), 6/20 (1/8#N), 7/2 (1/8#N), 7/18 (1/8#N), 7/31 (1/8#N), and 8/6 (1/2#N). A second curative study was established on an adjacent colonial bentgrass/annual bluegrass fairway plot area. Plots measured 6' x 9' and were initially treated on June 14 with subsequent applications made as stated above. Plots were rated for percent area infected with red thread. Data were analyzed with ANOVA and means separated with LSD (5%).

Disease pressure was very low in this study this year with the control having a maximum mean of 5%. With such low pressure, treatment means did not separate from each other statistically, but all provided good control of red thread compared to the control. No phytotoxicity was observed.

Table 10. Red Thread
Location: HTRC, E. Lansing, MI
Rating Scale: Mean % red thread

		Study 1				Study 2				Study 2	
		13-Jun ^a		11-Jul		17-Jun		10-Jul		% Recovery Jun 17 – July 10	
Treatment/Rate	Interval (Days)	Mean ^b	LSD ^c	Mean	LSD	Mean	LSD	Mean	LSD	Mean	LSD
Endorse 4oz	14	1.0	A	0.2	A	3	A	0.13	A	93.8	A
Ch. 26 GT 4 oz	14	1.3	A	0.0	A	3.25	A	0	A	100	A
Heritage 0.2 oz	14	1.5	A	0.1	A	2.5	A	0.13	A	95.8	A
Control	--	1.1	A	0.4	B	4	A	0.88	B	70.6	B

^a Pretreatment rating.

^b Represents the mean of 4 replicate plots.

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