2007 - 2008
Fungicide Report

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2007-2008 Snow Mold (*Typhula ishikariensis* and *T. incarnata*)

This corporation-sponsored snow mold fungicide field study was conducted during the fall and winter of 2007-2008 at the Treetops/Sylvan Resort in Gaylord, MI. Treatments were applied preventively to four replicate 6' x 9' creeping bentgrass (*Agrostis palustris*)/annual bluegrass (*Poa annua*) fairway plots on the dates indicated in Table 1. The turf was maintained at approximately ½" height of cut with industry standard level fertility applications made by the golf course personnel. An application of Emerald (0.18 oz) was made on 10/6/07 to the entire study area to control dollar spot, which was active and aggressive at the time of initial treatment applications on 10/4/07. Liquid treatments were applied with a CO_2 backpack sprayer at a pressure of 36 psi and a spray volume of 100 GPA using a double-nozzle boom with 8002E flat fan Tee Jet nozzles, unless otherwise indicated in Table 1. Granular products were pre-weighed and hand-applied.

The late fall-winter weather in the Gaylord, MI area was considered a typical Michigan winter with monthly average temperatures and precipitation in the historic average range most of the time. Snow started falling in early to mid-November, and continued through the winter and, with cool November temperatures, the ground snow cover remained from November, 2007 until the spring thaw in April, 2008. The snow mold study was rated on April 14-15, 2008 following snow-cover melt-off. The plots were rated for percent plot area infected with snow mold, which included gray snow mold (*Typhula ishikariensis* and *T. incarnata*) and Microdochium patch (*Microdochium nivale*).

Disease pressure was moderately heavy this year, with the controls averaging approximately 61% disease (Table 1). Even under such pressure, many fungicide combinations provided excellent snow mold control with less than 5% disease including: ARY0474006 in combination with Banner Maxx and with Chipco 26GT; Trinity, Iprodione Pro, Insignia, and Daconil Ultrex in combinations and split applications; Reserve in combination with Compass and with Daconil Ultrex; Tartan in combination with Daconil Ultrex and with Turfcide 400; Instrata alone, in split applications alone, and in combination with Medallion; Lynx + Compass + Daconil Ultrex; Trinity + Chipco 26GT + Daconil Ultrex; and our standard recommendation of the three-way combination of Chipco 26GT + Daconil Ultrex + PCNB. A notable decrease in performance is seen in this 3-way combination at nearly full label rates, which is being attributed to an omitted spray application in the fourth replication. Although the study area had good disease pressure, there was a high degree of variability in that pressure across the study, demonstrated by our untreated control plots having 70, 99, 40, and 30 percent disease in replications 1-4, respectively. Due to this variability in snow mold pressure, treatment means were not statistically separated to the extent that typically occurs in this study.

Overall turfgrass quality in the study area was decreased in some plots due, in part, to residual dollar spot infection from the fall that never fully recovered (Table 2). Some phytotoxicity was observed, as yellowing of the turf, particularly in the plots that received 12 oz or more of PCNB.

Table 1. Treetops Snow Mold - 2007-2008
Rating Date: April 14, 2008.
Rating Scale: Total percent plot area infected with snow mold (*Microdochium nivale, Typhula ishikariensis* and *T. incarnata*.)

Trt #	Treatment and Rate/1000 sq ft	Interval (Days)	I	II	III	IV	Mean[a]	LSD[b]
50	ARY 0474006 5.7 fl oz + Banner Maxx 3 fl oz	29-Oct	1	0	0	0	0.1	p
47A	Trinity 0.5 oz + Iprodione Pro 4 oz	4-Oct	1	0	0	0.3	0.2	p
47B	Insignia 0.7 oz + Iprodione Pro 4 oz + Daconil Ultrex 5 oz	29-Oct						
21	Reserve 3.8 fl oz + Compass WG 0.25 oz	29-Oct	1	0	0	0.5	0.3	p
58	Proprietary							
16	Tartan 2 fl oz + Daconil Ultrex 5 oz	29-Oct	1	0.5	0	2	0.8	op
51	ARY 0474006 SC 2.85 fl oz + Chipco 26GT 3 fl oz	29-Oct	1	0	1	2	0.9	op
36	Instrata 11 fl oz + Medallion 0.2 oz	29-Oct	0	0.3	2	3	1.4	n-p
37	Instrata 5.5 fl oz	Oct 4, Oct 29	3	0.3	2	0.3	1.4	b-p
17	Tartan 2 fl oz + Turfcide 400 F 6 fl oz	29-Oct	1	5	3	0	2.3	n-p
53	Proprietary							
15	Lynx Fungicide 1.5 fl oz + Compass WG 0.25 oz + Daconil Ultrex 5 oz	29-Oct	7	3	0	0.3	2.6	n-p
22	Instrata 9.3 fl oz	29-Oct	1	0	1	10	3.0	m-p
46	Trinity 1 oz + Chipco 26GT 4 fl oz + Daconil Ultrex 3.7 oz	29-Oct	10	0.5	1	1	3.1	m-p
39	Instrata 11 fl oz	29-Oct	3	0.5	1	10	3.5	m-p
45	Proprietary							
28	Proprietary							
20	Reserve 7.6 fl oz + Ch.26GT 4 fl oz	29-Oct	10	5	1	1	4.1	m-p
40	Chipco 26GT 4 fl oz + Daconil Ultrex 3.2 oz + PCNB 6 fl oz	29-Oct	15	1	1	0	4.1	m-p
30	Proprietary							
48	Proprietary							
49	ARY 0474006 SC 2.85 fl oz + Banner Maxx 1.5 fl oz	29-Oct	7	15	1	0	5.8	l-p
38	Instrata 7.0 fl oz	Oct 4, Oct 29	7	7	3	10	6.8	l-p
52	Proprietary							
18	Lynx Fungicide 1.5 fl oz + Chipco 26GT 4 fl oz + Daconil Ultrex 5 oz	29-Oct	1	10	0	20	7.8	k-p
41	Chipco 26GT 8 fl oz + Daconil Ultrex 3.2 oz + PCNB 12 fl oz	29-Oct	2	5	0	25[c]	8.0	k-p
57	Proprietary							
3	Insignia 0.7 oz + Chipco 26GT 4 fl oz + Daconil Ultrex 3.7 oz	29-Oct	25	15	3	2	11.3	i-p
4	Insignia 0.7 oz + Chipco 26GT 4 fl oz + PCNB 6 oz (Revere 4000)	29-Oct	35	10	1	1	11.6	h-p

29	Proprietary							
13	Rubigan 2 oz + Chlorothalonil 0.214 lb ai (D. Ultrex) + Thiophanate Methyl 0.054 lb ai	29-Oct	30	20	7	7	16.0	g-p
2	Insignia 0.7 oz + Trinity 1 oz + PCNB 6 oz (Revere 4000)	29-Oct	20	30	5	10	16.3	g-p
11A	Spectro 4 oz +	4-Oct	30	7	3	30	17.5	h-p
11B	CX-09 1.2 oz + Endorse 4 oz	29-Oct						
1	Insignia 0.7 oz + Trinity 1 oz + Daconil Ultrex 3.7 oz	29-Oct	50	1	2	25	19.5	f-p
25	Proprietary							
27	Proprietary							
19	Reserve 4.6 fl oz	29-Oct	40	12	35	20	26.8	e-o
26	Proprietary							
23	Chipco 26GT 4 fl oz + Compass WG 0.125 oz	29-Oct	75	20	1	20	29.0	d-m
8A	Spectro 4 oz +	4-Oct	50	25	40	7	30.5	d-l
8B	26/36 4 oz + Endorse 4 oz	29-Oct						
6A	Spectro 4 oz +	4-Oct	90	10	10	15	31.3	d-l
6B	26/36 8 oz + CX-09 1.2 oz	29-Oct						
10A	Spectro 4 oz +	4-Oct	40	90	5	0.5	33.9	c-k
10B	26/36 4 oz + Endorse 4 oz + CX-11 6 oz	29-Oct						
9A	Spectro 4 oz +	4-Oct	75	30	3	30	34.5	d-j
9B	26/36 8 oz + Endorse 4 oz	29-Oct						
7	Spectro 5.75 oz + Endorse 4 oz	29-Oct	60	25	15	40	35.0	b-j
43	Proprietary							
14	GWN-4380 2 lb + Chlorothalonil 0.214 lb ai (D. Ultrex) + thiophanate-methyl 0.054 lb ai	29-Oct	35	40	70	5	37.5	b-h
34	Proprietary							
24	Proprietary							
33	Proprietary							
35	Proprietary							
5A	Spectro 4 oz +	1-Oct	80	30	30	45	46.3	b-e
5B	Cleary 26/36 4 oz + CX-09 1.2 oz	29-Oct						
31	Proprietary							
44	Proprietary							
55	CX-2250 4 oz	7 days	50	80	7	95	58.0	a-c
56	CX-2250 6 oz	7 days	99	35	38	60	58.0	a-c

54	Proprietary							
42	Control		70	99	45	30	61.0	ab
12	Proprietary							
32	Proprietary							

[a] Mean of 4 replications.

[b] Treatment means followed by the same letter do not significantly differ (LSD, p=0.05).

[c] Level of disease in rep 4 suggests possible omission of application.

Treetops Snow Mold - 2007-2008
Table 2. Treetops Snow Mold - 2007-2008
Rating Date: April 15, 2008.
Rating Scale: Quality 1-10. 1=poor, 7=acceptable, 10=excellent.

	Treatment and Rate/1000 sq ft	Interval (Days)	I	II	III	IV	Mean[a]	LSD[b]
21	Reserve 3.8 fl oz + Compass WG 0.25 oz	29-Oct	6	7	8	8	7.3	a
37	Instrata 5.5 fl oz	Oct 4, Oct 29	6	8	7	8	7.3	a
47A	Trinity 0.5 oz + Iprodione Pro 4 oz	4-Oct	7	7	7	7	7.0	ab
47B	Insignia 0.7 oz + Iprodione Pro 4 oz + Daconil Ultrex 5 oz	29-Oct						
51	ARY 0474006 SC 2.85 fl oz + Chipco 26GT 3 fl oz	29-Oct	6	7	8	7	7.0	ab
15	Lynx Fungicide 1.5 fl oz + Compass WG 0.25 oz + Daconil Ultrex 5 oz	29-Oct	6	7	8	6	6.8	a-c
16	Tartan 2 fl oz + Daconil Ultrex 5 oz	29-Oct	7	5	8	7	6.8	a-c
46	Trinity 1 oz + Chipco 26GT 4 fl oz + Daconil Ultrex 3.7 oz	29-Oct	6	7	7	7	6.8	a-c
22	Instrata 9.3 fl oz	29-Oct	6	6	8	6	6.5	a-d
36	Instrata 11 fl oz + Medallion 0.2 oz	29-Oct	7	6	7	6	6.5	a-d
50	ARY 0474006 5.7 fl oz + Banner Maxx 3 fl oz	29-Oct	7	6	6	7	6.5	a-d
53	Proprietary							
58	Proprietary							
18	Lynx Fungicide 1.5 fl oz + Chipco 26GT 4 fl oz + Daconil Ultrex 5 oz	29-Oct	6	6	8	5	6.3	a-d
20	Reserve 7.6 fl oz + Ch.26GT 4 fl oz	29-Oct	6	6	6	7	6.3	a-d
40	Chipco 26GT 4 fl oz + Daconil Ultrex 3.2 oz + PCNB 6 fl oz	29-Oct	5	7	7	6	6.3	a-d
45	Proprietary							
17	Tartan 2 fl oz + Turfcide 400 F 6 fl oz	29-Oct	6	7	6	5	6.0	a-e
28	Proprietary							
38	Instrata 7.0 fl oz	Oct 4, Oct 29	6	6	6	6	6.0	a-e
39	Instrata 11 fl oz	29-Oct	6	6	6	6	6.0	a-e
48	Proprietary							
49	ARY 0474006 SC 2.85 fl oz + Banner Maxx 1.5 fl oz	29-Oct	6	5	7	6	6.0	a-e
3	Insignia 0.7 oz + Chipco 26GT 4 fl oz + Daconil Ultrex 3.7 oz	29-Oct	5	5	7	6	5.8	a-f
4	Insignia 0.7 oz + Chipco 26GT 4 fl oz + PCNB 6 oz (Revere 4000)	29-Oct	5	5	7	6	5.8	a-f
52	Proprietary							
8A	Spectro 4 oz +	4-Oct	3	5	8	6	5.5	b-g
8B	26/36 4 oz + Endorse 4 oz	29-Oct						
11A	Spectro 4 oz +	4-Oct	5	6	7	4	5.5	b-g

11B	CX-09 1.2 oz + Endorse 4 oz	29-Oct						
30	Proprietary							
41	Chipco 26GT 8 fl oz + Daconil Ultrex 3.2 oz + PCNB 12 fl oz	29-Oct	6	5	7	4[c]	5.5	b-g
1	Insignia 0.7 oz + Trinity 1 oz + Daconil Ultrex 3.7 oz	29-Oct	3	7	7	4	5.3	c-h
13	Rubigan 2 oz + Chlorothalonil 0.214 lb ai (D. Ultrex) + Thiophanate Methyl 0.054 lb ai	29-Oct	4	5	6	6	5.3	c-h
57	Proprietary							
2	Insignia 0.7 oz + Trinity 1 oz + PCNB 6 oz (Revere 4000)	29-Oct	5	4	6	5	5.0	d-i
29	Proprietary							
6A	Spectro 4 oz +	4-Oct	1	6	6	5	4.5	e-j
6B	26/36 8 oz + CX-09 1.2 oz	29-Oct						
10A	Spectro 4 oz +	4-Oct	4	1	7	6	4.5	e-j
10B	26/36 4 oz + Endorse 4 oz + CX-11 6 oz	29-Oct						
25	Proprietary							
9A	Spectro 4 oz +	4-Oct	2	4	7	4	4.3	g-k
9B	26/36 8 oz + Endorse 4 oz	29-Oct						
19	Reserve 4.6 fl oz	29-Oct	3	5	4	5	4.3	f-k
27	Proprietary							
43	Proprietary							
7	Spectro 5.75 oz + Endorse 4 oz	29-Oct	3	4	6	3	4.0	g-k
24	Proprietary							
26	Proprietary							
14	GWN-4380 2 lb + Chlorothalonil 0.214 lb ai (D. Ultrex) + thiophanate-methyl 0.054 lb ai	29-Oct	4	3	2	6	3.8	h-k
23	Chipco 26GT 4 fl oz + Compass WG 0.125 oz	29-Oct	2	4	5	4	3.8	h-k
33	Proprietary							
5A	Spectro 4 oz +	1-Oct	1	4	4	3	3.0	j-m
5B	Cleary 26/36 4 oz + CX-09 1.2 oz	29-Oct						
34	Proprietary							
35	Proprietary							
44	Proprietary							
56	CX-2250 6 oz	7 days	1	4	5	2	3.0	j-m
31	Proprietary							
42	Control		4	1	3	3	2.8	k-m

54	Proprietary							
55	CX-2250 4 oz	7 days	3	2	5	1	2.8	k-m
12	Proprietary							
32	Proprietary							

[a] Mean of 4 replications.
[b] Treatment means followed by the same letter do not significantly differ (LSD, p=0.05).

Anthracnose (*Colletotrichum graminicola*)

Crown Rot Anthracnose Study

A crown rot anthracnose study was set up on an annual bluegrass green at the Hancock Turfgrass Research Center, East Lansing, MI. The study was set up in a randomized complete block design with 4 replicates of each treatment. Plots measured 2' x 6' with 6" alleys. Treatments were applied preventively using a CO_2 backpack sprayer at 42 PSI and 96 GPA, unless listed otherwise in Tables 3-4, with a single 8002E Tee Jet flat fan nozzle. The annual bluegrass study area was inoculated with *Colletotrichum graminicola* grown on sand/cornmeal using a drop spreader on 5/30, 6/27, 7/8, and 7/14. Plots were fertilized at a rate of 0.4 lbs N/1000 ft^2/month using Country Club 18-4-12. Fertilizer applications were made as follows: ¼ lb actual nitrogen/1000 ft^2 on 6/25, 7/14, and 7/25, and ½ lb actual nitrogen/1000 ft^2 on 7/8. The entire study area was treated with Emerald at 0.13 oz/1000 ft^2 for the control of dollar spot on 7/18. Treatments were applied beginning on 6/2/08. Subsequent applications of the treatments are listed in Tables 3-4. Plots were rated by visual estimation of percent area infected with crown rotting anthracnose (Table 3). Quality ratings were taken using a 1-10 scale where 1 = poor, 7 = acceptable, and 10 = excellent turf quality (Table 4). Data were analyzed using ANOVA and means separated by LSD (p=0.05).

Crown rot anthracnose began to develop in the study area in July. By late July, the untreated controls reach their season maximum disease averaging 26% anthracnose. Disease pressure declined slowly through the August ratings. Several combination and alternation treatments provided good disease control (Table 3.) These top performing products included Autograph/Kestrel alternated with Autograph/Pegasus, Floratine products in a program with two groups of their products used in alternation, Instrata, Disarm C, Propiconazole and TM in a tank mix, Propiconazole and TM/C tank mixed, Concert, Signature/Banner Maxx alternated with Signature/Daconil Ultrex, and Trinity. Inexplicably, Banner Maxx at 2 fl oz/1000 ft^2 applied on a 14 day schedule, considered a reliable standard treatment, did not provide good crown rot anthracnose control, particularly during the middle to end of July after four applications had been made.

Overall turfgrass quality was lower than acceptable due to the conditions maintained on the study. Fertility in the study area was, low during early treatment applications. Although several fertilizer applications were made in July to compensate for this, the study area did not fully respond and plots remained thin. In addition to less than ideal fertility

levels, the study area was stressed further by restricting irrigation. The plots were subjected to periods of low irrigation levels followed by soil saturation from heavy irrigation "events." These somewhat cyclic irrigation events also stressed the turf, reducing overall vigor and quality. Even under such stressful conditions, there were many treatments that provided significantly better quality than the untreated control plots exhibited (see Table 4.)

Table 3. Crown Rot Anthracnose, 2008
Location: Hancock Turfgrass Research Center, East Lansing, MI.
Rating Type: Percent plot area infected with crown rot anthracnose.

Rating Date					**7/17/2008**		**7/24/2008**		**7/30/2008**		**8/6/2008**		**8/15/2008**	
Trt	**Treatment**		**Rate**	**Appl**										
No.	**Name**	**Rate**	**Unit**	**Interval**	**Mean[a]**	**LSD[b]**	**Mean**	**LSD**	**Mean**	**LSD**	**Mean**	**LSD**	**Mean**	**LSD**
35A	Autograph	4.57	oz/1000 ft2	14 days[f] +	0.0	j	3.4	h	6.8	e-h	4.8	h-k	1.0	j
35A	Kestrel	2	oz/1000 ft2	14 days[f] alt										
35B	Autograph	4.57	oz/1000 ft2	14 days[f] +										
35B	Pegasus HPX	3.6	fl oz/1000 ft2	14 days[f]										
22A	Astron	1.5	fl oz/1000 ft2	7 days[c, g]	2.7	f-j	4.3	gh	2.8	h	1.8	k	1.3	ij
22A	C3arbon N	6	fl oz/1000 ft2	7 days[c, g]										
22A	Echo Ultimate	2	oz/1000 ft2	7 days[c, g]										
22A	Floradox Pro	3	fl oz/1000 ft2	7 days[c, g]										
22A	P-48	1.6	oz/1000 ft2	7 days[c, g]										
22A	PK Fight	2	fl oz/1000 ft2	7 days[c, g]										
22A	Renaissance	1	fl oz/1000 ft2	7 days[c, g]										
22B	Astron	1.5	fl oz/1000 ft2	7 days[c, g]										
22B	C3arbon N	6	fl oz/1000 ft2	7 days[c, g]										
22B	Echo Ultimate	2	oz/1000 ft2	7 days[c, g]										
22B	P-48	1.6	oz/1000 ft2	7 days[c, g]										
22B	PK Fight	2	fl oz/1000 ft2	7 days[c, g]										
22B	ProteSyn	3	fl oz/1000 ft2	7 days[c, g]										
22B	Renaissance	1	fl oz/1000 ft2	7 days[c, g]										
32	Instrata	4	fl oz/1000 ft2	14 days[d]	2.5	f-j	4.3	gh	6.0	f-h	2.5	jk	1.5	ij
29	Disarm C	4.32	fl oz/1000 ft2	14 days[d]	3.3	f-j	4.8	gh	5.0	gh	3.6	i-k	2.5	g-j
27	Propiconazole	2	fl oz/1000 ft2	14 days[d]	0.3	ij	6.3	f-h	6.8	e-h	2.6	jk	1.3	ij
27	TM 4.5 Flowable	2	fl oz/1000 ft2	14 days[d]										

37	Propiconazole	2	fl oz/1000 ft2	14 days[d]	3.5	f-j	7.3	fgh	8.3	d-h	4.6	h-k	3.4	g-j
37	TM/C	4	oz/1000 ft2	14 days[d]										
33	Concert	5.4	fl oz/1000 ft2	14 days[d]	2.8	f-j	8.0	e-h	10.0	d-h	6.4	e-k	5.4	d-j
36A	Signature	4	oz/1000 ft2	14 days[f] +	0.3	ij	8.3	e-h	8.8	d-h	6.8	e-k	4.0	f-j
36A	Banner Maxx	2	fl oz/1000 ft2	14 days[f] alt										
36B	Signature	4	oz/1000 ft2	14 days[f] +										
36B	Daconil Weather Stik	3.6	fl oz/1000 ft2	14 days[f]										
9	Proprietary													
12	Trinity	1	fl oz/1000 ft2	14 days[d]	1.0	h-j	8.9	e-h	12.3	d-h	9.0	e-k	7.3	c-j
4	Proprietary													
34	Concert	4.5	fl oz/1000 ft2	14 days[d]	5.5	d-j	10.8	d-h	8.5	d-h	3.4	jk	2.1	h-j
30	Disarm 480SC	0.27	fl oz/1000 ft2	14 days[d]	4.1	f-j	10.8	d-h	11.8	d-h	7.0	e-k	3.8	g-j
30	ARY-0438-002	0.44	oz/1000 ft2	14 days[d]										
21	Proprietary													
19	Proprietary													
41	Proprietary													
13	Insignia	0.7	oz/1000 ft2	14 days[d]	7.5	c-h	11.8	c-h	12.8	d-h	7.1	e-k	2.9	g-j
13	Trinity	1	fl oz/1000 ft2	14 days[d]										
43	Rhapsody	5	fl oz/1000 ft2	14 days[d]	5.2	d-j	11.9	c-h	13.8	d-h	8.3	e-k	5.5	c-j
43	Banner Maxx	1	fl oz/1000 ft2	14 days[d]										
28	Disarm 480SC	0.27	fl oz/1000 ft2	14 days[d]	5.5	d-j	12.6	c-h	13.0	d-h	9.0	e-k	4.3	e-j
7	Proprietary													
25	Spectro 90WDG	4	oz/1000 ft2	14 days[d]	5.5	d-j	12.6	c-h	14.4	d-h	11.3	c-k	10.0	c-j
25	Alude	6	fl oz/1000 ft2	14 days[d]										
40	Proprietary													
5	Proprietary													
39	Proprietary													
11	Insignia	0.9	oz/1000 ft2	14 days[d]	4.8	e-j	15.3	b-h	14.8	d-h	10.3	d-k	11.5	b-i
10	Proprietary													
24	Alude	6	fl oz/1000 ft2	14 days[d]										
1	Proprietary													
18	Proprietary													
8	Proprietary													
26	Proprietary													

6	Proprietary													
2	Proprietary													
31	Proprietary													
16	Proprietary													
20	Proprietary													
17	Proprietary													
3	Proprietary													
38	Untreated Control				8.5	c-g	25.8	a-d	23.3	a-d	17.0	b-f	12.8	b-g
44	Banner Maxx	2	fl oz/1000 ft2	14 days[d]	5.5	d-j	26.3	a-c	22.5	a-d	9.5	e-k	6.8	c-j
42	Proprietary													
45A	Rhapsody	5	fl oz/1000 ft2	14 days[f] alt	16.8	ab	28.0	ab	30.0	a-c	25.5	ab	21.3	ab
45B	Banner Maxx	1	fl oz/1000 ft2	14 days[f]										
23	Proprietary													
14	Proprietary													
15	Proprietary													

[a] Mean of 4 replications.
[b] Means followed by same letter do not significantly differ (P=.05, LSD)
Treatment Application Dates
[c] 7 day alternating treatment –part A applied on 6/2, 6/19, 7/1, 7/15, 7/31, 8/12 and part B applied on 6/12, 6/23, 7/9, 7/23, 8/6.
[d] 14 day treatments applied on: 6/2, 6/19, 7/1, 7/15, 7/31, 8/12.
[f] 14 day alternating treatments – part A applied on 6/2, 7/1, and 7/31 and part B applied on 6/19, 7/15, and 8/12.
[g] Treatment applied in 48 GPA rather than 96 GPA.

Table 4. Crown Rot Anthracnose, 2008
Location: Hancock Turfgrass Research Center, East Lansing, MI.
Rating Type: Turfgrass Quality.
Rating Scale: 1 – 10, where 1=poor, 7=acceptable, and 10=excellent.

Rating Date					**8/6/2008**		**8/15/2008**	
Trt	**Treatment**		**Rate**	**Application**				
No.	**Name**	**Rate**	**Unit**	**Interval**	**Mean[a]**	**LSD[b]**	**Mean**	**LSD**
27	Propiconazole	2	fl oz/1000 ft2	14 days[d]	7.5	a	6.5	ab
27	TM 4.5 Flowable	2	fl oz/1000 ft2	14 days[d]				
22A	Astron	1.5	fl oz/1000 ft2	7 days[c, g]	7.0	ab	7.0	a
22A	C3arbon N	6	fl oz/1000 ft2	7 days[c, g]				
22A	Echo Ultimate	2	oz/1000 ft2	7 days[c, g]				
22A	Floradox Pro	3	fl oz/1000 ft2	7 days[c, g]				

22A	P-48	1.6	oz/1000 ft2	7 days[c, g]				
22A	PK Fight	2	fl oz/1000 ft2	7 days[c, g]				
22A	Renaissance	1	fl oz/1000 ft2	7 days[c, g]				
22B	Astron	1.5	fl oz/1000 ft2	7 days[c, g]				
22B	C3arbon N	6	fl oz/1000 ft2	7 days[c, g]				
22B	Echo Ultimate	2	oz/1000 ft2	7 days[c, g]				
22B	P-48	1.6	oz/1000 ft2	7 days[c, g]				
22B	PK Fight	2	fl oz/1000 ft2	7 days[c, g]				
22B	ProteSyn	3	fl oz/1000 ft2	7 days[c, g]				
22B	Renaissance	1	fl oz/1000 ft2	7 days[c, g]				
34	Concert	4.5	fl oz/1000 ft2	14 days[d]	6.8	a-c	5.3	b-g
35A	Autograph	4.57	oz/1000 ft2	14 days[f] +	6.8	a-c	7.0	a
35A	Kestrel	2	oz/1000 ft2	14 days[f] alt				
35B	Autograph	4.57	oz/1000 ft2	14 days[f] +				
35B	Pegasus HPX	3.6	fl oz/1000 ft2	14 days[f]				
7	Proprietary							
29	Disarm C	4.32	fl oz/1000 ft2	14 days[d]	6.5	a-d	6.3	a-c
36A	Signature	4	oz/1000 ft2	14 days[f] +	6.5	a-d	6.3	a-c
36A	Banner Maxx	2	fl oz/1000 ft2	14 days[f] alt				
36B	Signature	4	oz/1000 ft2	14 days[f] +				
36B	Daconil Weather Stik	3.6	fl oz/1000 ft2	14 days[f]				
37	Propiconazole	2	fl oz/1000 ft2	14 days[d]	6.5	a-d	4.3	f-h
37	TM/C	4	oz/1000 ft2	14 days[d]				
40	Proprietary							
4	Proprietary							
5	Proprietary							
28	Disarm 480SC	0.27	fl oz/1000 ft2	14 days[d]	6.3	a-e	6.0	a-d
30	Disarm 480SC	0.27	fl oz/1000 ft2	14 days[d]	6.3	a-e	6.3	A-c
30	ARY-0438-002	0.44	oz/1000 ft2	14 days[d]				
32	Instrata	4	fl oz/1000 ft2	14 days[d]	6.3	a-e	5.5	b-f
33	Concert	5.4	fl oz/1000 ft2	14 days[d]	6.3	a-e	5.0	c-h
9	Proprietary							
10	Proprietary							
13	Insignia	0.7	oz/1000 ft2	14 days[d]	6.0	a-f	5.3	b-g
13	Trinity	1	fl oz/1000 ft2	14 days[d]				

19	Proprietary							
21	Proprietary							
1	Proprietary							
2	Proprietary							
3	Proprietary							
25	Spectro 90WDG	4	oz/1000 ft2	14 days[d]	5.8	b-g	5.3	b-g
25	Alude	6	fl oz/1000 ft2	14 days[d]				
41	Proprietary							
11	Insignia	0.9	oz/1000 ft2	14 days[d]	5.5	b-g	5.8	a-e
12	Trinity	1	fl oz/1000 ft2	14 days[d]	5.5	b-g	5.3	b-g
18	Proprietary							
24	Endorse	4	oz/1000 ft2	14 days[d]	5.5	b-g	5.3	b-g
24	Alude	6	fl oz/1000 ft2	14 days[d]				
39	Proprietary							
44	Banner Maxx	2	fl oz/1000 ft2	14 days[d]	5.5	b-g	4.5	e-h
6	Proprietary							
20	Proprietary							
43	Rhapsody	5	fl oz/1000 ft2	14 days[d]	5.3	c-g	5.3	b-g
43	Banner Maxx	1	fl oz/1000 ft2	14 days[d]				
14	Proprietary							
16	Proprietary							
17	Proprietary							
26	Proprietary							
31	ARY-0438-002	0.44	oz/1000 ft2	14 days[d]	5.0	d-g	5.0	c-h
8	Proprietary							
38	Untreated Control				4.5	fg	4.8	d-h
42	Proprietary							
45A	Rhapsody	5	fl oz/1000 ft2	14 days[f] alt	4.5	fg	4.5	e-h
45B	Banner Maxx	1	fl oz/1000 ft2	14 days[f]				
15	Proprietary							
23	Proprietary							

[a] Mean of 4 replications.

[b] Means followed by same letter do not significantly differ (P=.05, LSD)

Treatment Application Dates

[c] 7 day alternating treatment –part A applied on 6/2, 6/19, 7/1, 7/15, 7/31, 8/12 and part B applied on 6/12, 6/23, 7/9, 7/23, 8/6.

[d] 14 day treatments applied on: 6/2, 6/19, 7/1, 7/15, 7/31, 8/12.
[f] 14 day alternating treatments – part A applied on 6/2, 7/1, and 7/31 and part B applied on 6/19, 7/15, and 8/12.
[g] Treatment applied in 48 GPA rather than 96 GPA.

Foliar Anthracnose Fairway Study.

A preventative foliar anthracnose study was set up on an annual bluegrass fairway at the Hancock Turfgrass Research Center, East Lansing, MI. The study was set up in a randomized complete block design with 4 replicates of each treatment. Plots measured 3' x 6'. Treatments were applied using a CO_2 backpack sprayer at 40 PSI and 96 GPA using a double nozzle boom with 8002E Tee Jet flat fan nozzles. The annual bluegrass study area was inoculated with *Colletotrichum graminicola* grown on sand/cornmeal using a drop spreader on 6/16 and 6/27. Plots were fertilized at a rate of 0.4 lb N/1000 ft^2/month using Country Club fertilizer (18-4-12). The entire study area was treated with Emerald (0.13 oz /1000 sq ft) for dollar spot control on 7/18. Treatments were applied beginning on 6/19/08, or as otherwise noted in Tables 5 and 6. Subsequent applications of the 14-day treatments were made on 7/3, 7/16, 7/31, and 8/14, or as shown in Tables 5-6. For treatments that were applied on a 14 day alternation schedule, part A was applied on 6/19, 7/16, and 8/14 and part B was applied on 7/3 and 7/31. Plots were rated by visual estimation of percent area infected with anthracnose (Table 5). Quality ratings were taken using a 1-10 scale where 1 = poor, 7 = acceptable, and 10 = excellent turf quality (Table 6). Data were analyzed using ANOVA and means separated by LSD (p=0.05).

Foliar anthracnose began to develop in the study area in early July, with the untreated control plots reaching their highest average infection rating of 36% in mid to late July (Table 5). Many of the fungicides and fungicide combinations tested in this trial provided statistically significant anthracnose control when compared to the untreated control plots. Trinity, Propiconazole Pro + TM, Insignia + Trinity, Propiconazole Pro + TM/C, Insignia, Concert, Banner Maxx, and Instrata, in addition to some other combinations and alternations as shown in Table 5, provided good foliar anthracnose control. Many of these top performing fungicides and combinations also provided good turfgrass quality in a stressful study area when compared to the untreated control (Table 6.)

Table 5. Foliar Anthracnose Study, 2008.
Location: Hancock Turfgrass Research Center, East Lansing, MI.
Rating Type: Percent plot area infected with anthracnose.

Rating Date					**7/11/2008**		**7/22/2008**		**7/30/2008**		**8/6/2008**		**8/12/2008**	
Trt	**Treatment**		**Rate**	**Application**										
No.	**Name**	**Rate**	**Unit**	**Interval**	**Mean[a]**	**LSD[b]**	**Mean**	**LSD**	**Mean**	**LSD**	**Mean**	**LSD**	**Mean**	**LSD**
12	Trinity	1	fl oz/1000 ft2	14 days	0.1	h	0.8	f	1.1	k	0.8	l	0.5	l

27	Propiconazole Pro	2	fl oz/1000 ft2	14 days +	0.1	h	2.9	f	2.4	jk	1.5	kl	0.3	l
27	TM 4.5 Flowable	2	fl oz/1000 ft2	14 days										
10	Proprietary													
9	Proprietary													
13	Insignia	0.7	oz/1000 ft2	14 days +	4.8	e-h	3.1	f	6.8	i-k	1.5	kl	0.5	l
13	Trinity	1	fl oz/1000 ft2	14 days										
5	Proprietary													l
3	Proprietary													kl
21	Proprietary													
28	Propiconazole Pro	2	fl oz/1000 ft2	14 days +	4.1	f-h	4.8	f	8.5	i-k	5.3	i-l	3.3	kl
28	TM/C	4	oz/1000 ft2	14 days										
18	Proprietary													
20	Proprietary													
4	Proprietary													
11	Insignia	0.9	oz/1000 ft2	14 days	4.0	f-h	8.3	ef	10.5	h-k	7.0	i-l	6.9	i-l
23	Concert	5.4	fl oz/1000 ft2	14 days	0.1	h	5.0	f	10.5	h-k	5.8	i-l	3.5	kl
30	Banner Maxx	2	fl oz/1000 ft2	14 days	5.5	e-h	9.8	ef	10.8	h-k	5.5	i-l	4.3	kl
22	Instrata	4	fl oz/1000 ft2	14 days	2.0	gh	11.8	d-f	11.0	h-k	5.8	i-l	5.3	kl
1	Proprietary													
2	Proprietary													
7	Proprietary													
16	Proprietary													
24	Concert	4.5	fl oz/1000 ft2	14 days	5.8	e-h	11.8	d-f	12.5	g-k	6.5	i-l	1.5	l
34	Proprietary													
17	Proprietary													
26A	Signature	4	oz/1000 ft2	14 days +	1.6	gh	8.1	ef	14.3	f-k	6.0	i-l	6.1	j-l
26A	Banner Maxx	2	fl oz/1000 ft2	14 days alt										
26B	Signature	4	oz/1000 ft2	14 days +										
26B	Daconil Weather Stik	3.6	fl oz/1000 ft2	14 days										
25A	Autograph	4.57	oz/1000 ft2	14 days +	8.8	d-h	12.4	d-f	16.5	e-j	3.5	j-l	1.5	l
25A	Kestrel MEX	2	fl oz/1000 ft2	14 days alt										
25B	Autograph	4.57	oz/1000 ft2	14 days +										
25B	Pegasus HPX	3.6	fl oz/1000 ft2	14 days										
6	Proprietary													
29	Rhapsody	5	fl oz/1000 ft2	14 days +	8.0	d-h	15.1	c-f	17.5	e-i	13.3	f-l	11.5	g-l

29	Banner Maxx	1	fl oz/1000 ft2	14 days										
39	Proprietary													h-l
8	Proprietary													h-l
19	Proprietary													
31A	Rhapsody	5	fl oz/1000 ft2	14 days alt	17.6	a-f	22.5	b-e	23.8	c-h	16.3	d-i	12.3	f-l
31B	Banner Maxx	1	fl oz/1000 ft2	14 days										
36	Proprietary													
33	Proprietary													
44	Proprietary													
43	Proprietary													
38	Proprietary													
14	Proprietary													
37	Proprietary													
40	Proprietary													
35	Proprietary													
42	Control				24.3	a-c	31.3	ab	36.3	a-c	30.0	a-c	31.3	a-c
32	Proprietary													
41	Proprietary													
15	Proprietary													

[a] Mean of 4 replications.
[b] Means followed by same letter do not significantly differ (P=.05, LSD).

Table 6. Foliar Anthracnose, 2008
Location: Hancock Turfgrass Research Center, East Lansing, MI.
Rating Type: Turfgrass Quality.
Rating Scale: 1 – 10, where 1=poor, 7=acceptable, and 10=excellent.

Rating Date					**7/17/2008**		**7/22/2008**		**7/30/2008**		**8/6/2008**		**8/12/2008**	
Trt	**Treatment**		**Rate**	**Application**										
No.	**Name**	**Rate**	**Unit**	**Interval**	**Mean[a]**	**LSD[b]**	**Mean**	**LSD**	**Mean**	**LSD**	**Mean**	**LSD**	**Mean**	**LSD**
13	Insignia	0.7	oz/1000 ft2	14 days +	5.5	a-c	7.3	a	6.8	a	8.0	a	7.5	a
13	Trinity	1	fl oz/1000 ft2	14 days										
5	Proprietary													
9	Proprietary													
12	Trinity	1	fl oz/1000 ft2	14 days	5.8	ab	7.0	ab	6.5	ab	7.3	ab	6.0	a-f

23	Concert	5.4	fl oz/1000 ft2	14 days	5.5	a-c	6.5	a-d	6.5	ab	5.0	d-h	7.0	ab
2	Proprietary													
11	Insignia	0.9	oz/1000 ft2	14 days	5.3	a-d	7.0	ab	6.3	a-c	7.3	ab	6.8	a-c
17	Proprietary													
18	Proprietary													
19	Proprietary													
20	Proprietary													
24	Concert	4.5	fl oz/1000 ft2	14 days	4.8	b-e	6.3	a-e	6.3	a-c	6.8	a-c	6.3	a-e
27	Propiconazole Pro	2	fl oz/1000 ft2	14 days +	5.8	ab	7.0	ab	6.3	a-c	7.3	ab	6.5	a-d
27	TM 4.5 Flowable	2	fl oz/1000 ft2	14 days										
1	Proprietary													
3	Proprietary													
7	Proprietary													
10	Proprietary													
16	Proprietary													
21	Proprietary													
22	Instrata	4	fl oz/1000 ft2	14 days	5.5	a-c	6.8	a-c	6.0	a-d	7.0	ab	6.0	a-f
25	Autograph	4.57	oz/1000 ft2	14 days +	5.8	ab	6.5	a-d	6.0	a-d	7.3	ab	6.5	a-d
25	Kestrel MEX	2	fl oz/1000 ft2	14 days alt										
25	Autograph	4.57	oz/1000 ft2	14 days +										
25	Pegasus HPX	3.6	fl oz/1000 ft2	14 days										
4	Proprietary													
28	Propiconazole Pro	2	fl oz/1000 ft2	14 days +	5.0	a-d	6.8	a-c	5.8	a-e	6.3	b-e	6.3	a-e
28	TM/C	4	oz/1000 ft2	14 days										
30	Banner Maxx	2	fl oz/1000 ft2	14 days	5.0	a-d	6.5	a-d	5.8	a-e	6.5	a-d	6.0	a-f
8	Proprietary													
26	Signature	4	oz/1000 ft2	14 days +	6.3	a	6.8	a-c	5.5	a-f	6.8	a-c	6.5	a-d
26	Banner Maxx	2	fl oz/1000 ft2	14 days alt										
26	Signature	4	oz/1000 ft2	14 days +										
26	Daconil Weather Stik	3.6	fl oz/1000 ft2	14 days										
29	Rhapsody	5	fl oz/1000 ft2	14 days +	5.0	a-d	5.8	b-f	5.5	a-f	5.0	d-h	6.0	a-f
29	Banner Maxx	1	fl oz/1000 ft2	14 days										
34	Proprietary													
39	Proprietary													

6	Proprietary													
44	Proprietary													
31	Rhapsody	5	fl oz/1000 ft2	14 days alt	4.5	b-f	5.8	b-f	5.0	c-g	5.8	b-g	6.0	a-f
31	Banner Maxx	1	fl oz/1000 ft2	14 days										
36	Proprietary													
37	Proprietary													
38	Proprietary													
41	Proprietary													
14	Proprietary													
33	Proprietary													
40	Proprietary													
35	Proprietary													
43	Proprietary													
15	Proprietary													
32	Proprietary													
42	Control				4.3	c-f	4.8	f	4.0	g	4.5	f-h	4.0	h

[a] Mean of 4 replications.
[b] Means followed by same letter do not significantly differ (P=.05, LSD).

Summer Patch (*Magnaporthe poae*), 2008

This study was established on an irrigated annual bluegrass fairway at the Dearborn Country Club in Dearborn, MI. The study consisted of 4 replicate 6'x 9' plots in a random block design. Treatments were applied using a CO_2 backpack sprayer at 40 PSI and 96 GPA. Treatments were applied preventively unless otherwise noted in Tables 7 and 8. The treatments that were applied when the soil temperature at 2" soil depth was 65˚ were initiated on April 13. The treatments that were initially applied when the soil temperature was 75˚ at 2" depth were applied beginning on June 11. Subsequent reapplications were made at intervals listed in Tables 7 and 8. An average of 0.3 lb nitrogen/1000 sq ft/month using Country Club (18-4-12) was applied to the study in ¼ lb nitrogen applications on the following dates: 5/13, 5/28, 6/17, and 7/14. The entire study area was background sprayed with Banol (1 fl oz/1000 sq ft) and Chipco 26GT (2 fl oz/1000 sq ft) to control dollar spot, brown patch, and Pythium blight on August 4. Data represent percent plot area diseased (Table 7). Quality ratings are provided in Table 8. They were taken using a 1-10 scale where 1 = poor, 7 = acceptable, and 10 = excellent turf quality. Data were analyzed using ANOVA and means separated by LSD (p=0.05).

Summer patch pressure was good this season with the untreated control plot averaging a maximum of 38% disease by late August (Table 7.) Insignia (0.7 oz) + Trinity (1.5 oz) and Trinity (2 oz) provided excellent summer patch

control averaging a maximum of less than 4% summer patch during the entire trial period. Headway, at 2 different rates, and Chipco Triton both also provided good disease control as well. There were many new experimental products that provided very good summer patch control as well. By the time disease pressure peaked in the untreated control, a majority of the treatments tested provided statistically significant summer patch control compared to the untreated control plots. A notable exception to this is Bayleton, which has worked well in the past but is continuing a trend over the last several years when it has failed to control summer patch in our trial. Insignia (0.7 oz) + Trinity 1.5 oz) and Trinity (2 oz) were among the treatments that provided the best turfgrass quality in this study. As the study progressed and disease continued to develop, overall turfgrass quality in many treatments declined to less than acceptable golf course standards. No phytotoxicity was observed in the study this year.

Table 7. Summer Patch, 2008
Location: Dearborn Country Club, Dearborn, MI
Rating Type: Percent plot area infected with summer patch.

Rating Date					7/24/2008		8/4/2008		8/11/2008		8/18/2008		8/27/2008		9/3/2008	
Trt	Treatment		Rate	Application												
No.	Name	Rate	Unit	Interval (days)	Mean[a]	LSD[b]	Mean	LSD	Mean	LSD	Mean	LSD	Mean	LSD	Mean	LSD
4	Proprietary															
5	Proprietary															
12	Proprietary															
13	Proprietary															
14	Proprietary															
27	Proprietary															
41	Proprietary															
42	Proprietary															
45	Proprietary															
46	Proprietary															
40	Proprietary															
8	Proprietary															
20	Proprietary															
28	Proprietary															
3	Proprietary															
18	Insignia	0.7	oz/1000 ft2	75+30[e]	0.8	f-h	2.0	j-l	1.3	hi	2.5	kl	1.3	jk	0.3	kl
18	Trinity	1.5	fl oz/1000 ft2	75+30[e]												

6	Proprietary															
2	Proprietary															
19	Trinity	2	fl oz/1000 ft2	75+30[e]	0.0	h	5.3	f-l	0.5	i	0.0	l	3.8	i-k	0.8	kl
9	Proprietary															h-l
1	Proprietary															kl
53B	Proprietary															
22	Proprietary															g-l
39	Headway	3	fl oz/1000 ft2	75 + 21 (2 apps)[f]	0.9	f-h	1.9	j-l	1.3	hi	3.0	kl	5.3	h-k	7.5	g-l
43	Proprietary															
57	Proprietary															
10	Proprietary															
52	Proprietary															
51	Proprietary															
7	Proprietary															
50	Headway	2	fl oz/1000 ft2	75 + 30 (3-4 apps)[e]	1.8	d-h	5.5	e-l	0.8	hi	5.0	j-l	10.0	e-k	9.3	f-l
23	Proprietary															
11	Proprietary															
49	Chipco Triton 70 WDG	0.225	oz/1000 ft2	75 + 30 (3-4 apps)[e]	1.3	e-h	3.3	j-l	2.0	hi	16.3	b-k	12.0	d-k	12.5	d-l
35	Proprietary															
21	Proprietary															
30	Proprietary															
24	Proprietary															
26	Proprietary															
34	Proprietary															
44	Proprietary															
16	Largo	1.25	fl oz/1000 ft2	75 + 14, 50 gal vol[c]	6.8	a-d	20.1	a-c	16.9	a-e	23.3	a-g	20.5	b-h	21.3	b-i
16	MKP	1.6	oz/1000 ft2	75 + 14, 50 gal vol[c]												
16	Propensity 1.3ME	0.25	fl oz/1000 ft2	75 + 14, 50 gal vol[c]												
29	Proprietary															
17	Insignia	0.9	oz/1000 ft2	75+30[e]	5.0	a-h	16.8	a-h	10.0	b-i	20.0	a-i	21.3	b-g	23.8	a-g
31	Proprietary															
32	Proprietary															
33	Proprietary															
38	Proprietary															

36	Proprietary															
25	Proprietary															
15	Astron	0.75	fl oz/1000 ft2	75 + 14, 50 gal vol[c]	7.0	a-c	24.3	a	21.8	ab	28.8	a-c	27.5	a-d	26.3	a-e
15	MKP	1.6	oz/1000 ft2	75 + 14, 50 gal vol[c]												
15	PhlexMan	0.5	fl oz/1000 ft2	75 + 14, 50 gal vol[c]												
15	Propensity 1.3ME	0.25	fl oz/1000 ft2	75 + 14, 50 gal vol[c]												
47	Bayleton FLO	1.92	fl oz/1000 ft2	65 +30 (4 apps)[h]	8.9	ab	18.8	a-d	20.0	a-c	23.8	a-f	27.5	a-d	30.0	a-c
55	Proprietary															
56	Proprietary															
48	Tartan	2	fl oz/1000 ft2	65 +30 (4 apps)[h]	2.3	c-h	18.0	a-e	17.3	a-d	30.0	ab	32.0	a-c	31.8	a-c
54	Proprietary															
37	Untreated Control				10.0	a	22.0	ab	27.5	a	31.8	a	37.5	a	33.0	ab

[a] Mean of 4 replications.
[b] Means followed by same letter do not significantly differ (P=.05, LSD).
Treatment Applications made on the following dates as indicated in table above:
[c] 75° 14 day – 6/11, 6/24, 7/7, 7/24, 8/4, 8/18
[d] 75° 28 day – 6/11, 7/7, 8/4
[e] 75° 30 day – 6/11, 7/7, 8/4
[f] 75° 21 day – 6/11, 7/2
[g] 65° 14 day – 5/13, 5/28, 6/11, 6/24, 7/7, 7/24, 8/4
[h] 65° 30 day – 5/13, 6/11, 7/7, 8/4
[J] Applied 5/13, 5/28, 6/11, 6/24, 7/7, 7/24, 8/4 and 8/18

Table 8. Summer Patch, 2008
Location: Dearborn Country Club, Dearborn, MI
Rating Type: Turfgrass quality.
Rating Scale: 1-10, where 1=poor, 7=acceptable, and 10=excellent.

Rating Date					**8/4/2008**		**8/11/2008**		**8/18/2008**		**8/27/2008**		**9/3/2008**	
Trt	**Treatment**		**Rate**	**Application**										
No.	**Name**	**Rate**	**Unit**	**Interval (days)**										
20	Proprietary													
12	Proprietary													
42	Proprietary													
18	Insignia	0.7	oz/1000 ft2	75+30[e]	7.5	a-c	7.8	bc	7.5	a-c	7.8	a-c	7.8	ab

18	Trinity	1.5	fl oz/1000 ft2	75+30[e]										
28	Proprietary													
45	Proprietary													
1	Proprietary													
2	Proprietary													
3	Proprietary													
14	Proprietary													
19	Trinity	2	fl oz/1000 ft2	75+30[e]	6.8	c-f	7.3	b-e	8.0	a	7.5	a-d	7.8	ab
41	Proprietary													
46	Proprietary													
53B	Proprietary													
4	Proprietary													
5	Proprietary													
8	Proprietary													
13	Proprietary													
27	Proprietary													
40	Proprietary													
52	Proprietary													
6	Proprietary													
9	Proprietary													
10	Proprietary													
11	Proprietary													
22	Proprietary													
39	Headway	3	fl oz/1000 ft2	75 + 21 (2 apps)[f]	7.3	a-d	7.3	b-e	7.0	a-e	7.0	a-f	6.8	b-f
51	Proprietary													
57	Proprietary													
7	Proprietary													
23	Proprietary													
35	Proprietary													
50	Headway	2	fl oz/1000 ft2	75 + 30 (3-4 apps)[e]	7.3	a-d	7.5	b-d	7.5	a-c	6.8	b-g	6.5	b-g
26	Proprietary													
34	Proprietary													
43	Proprietary													
21	Proprietary													
44	Proprietary													

49	Chipco Triton 70 WDG	0.225	oz/1000 ft2	75 + 30 (3-4 apps)[e]	7.0	b-e	7.0	b-f	6.3	d-h	6.3	d-i	6.0	d-i
17	Insignia	0.9	oz/1000 ft2	75+30[e]	6.0	f-h	6.3	e-h	6.0	e-i	6.0	e-j	5.8	e-i
25	Proprietary													
30	Proprietary													
24	Proprietary													
32	Proprietary													
16	Largo	1.25	fl oz/1000 ft2	75 + 14, 50 gal vol[c]	5.8	gh	5.8	gh	5.0	ij	5.5	g-k	5.0	h-j
16	MKP	1.6	oz/1000 ft2	75 + 14, 50 gal vol[c]										
16	Propensity 1.3ME	0.25	fl oz/1000 ft2	75 + 14, 50 gal vol[c]										
31	Proprietary													
33	Proprietary													
38	Proprietary													
47	Bayleton FLO	1.92	fl oz/1000 ft2	65 +30 (4 apps)[h]	6.3	e-h	5.8	gh	5.8	f-j	5.5	g-k	4.8	ij
15	Astron	0.75	fl oz/1000 ft2	75 + 14, 50 gal vol[c]	5.5	h	5.8	gh	4.8	j	5.3	h-k	4.3	j
15	MKP	1.6	oz/1000 ft2	75 + 14, 50 gal vol[c]										
15	PhlexMan	0.5	fl oz/1000 ft2	75 + 14, 50 gal vol[c]										
15	Propensity 1.3ME	0.25	fl oz/1000 ft2	75 + 14, 50 gal vol[c]										
29	Proprietary													
36	Proprietary													
48	Tartan	2	fl oz/1000 ft2	65 +30 (4 apps)[h]	6.3	e-h	6.5	d-h	5.0	ij	5.3	h-k	5.0	h-j
56	Proprietary													
55	Proprietary													
54	Proprietary													
37	Untreated Control				5.8	gh	5.5	h	4.8	j	4.5	k	4.3	j

[a] Mean of 4 replications.

[b] Means followed by same letter do not significantly differ (P=.05, LSD).

Treatment Applications made on the following dates as indicated in table above:

[c] 75° 14 day – 6/11, 6/24, 7/7, 7/24, 8/4, 8/18

[d] 75° 28 day – 6/11, 7/7, 8/4

[e] 75° 30 day – 6/11, 7/7, 8/4

[f] 75° 21 day – 6/11, 7/2

[g] 65° 14 day – 5/13, 5-28, 6/11, 6/24, 7/7, 7/24, 8/4

[h] 65° 30 day – 5/13, 6/11, 7/7, 8/4

Summer Stress Syndrome in Bentgrass, 2008

This trial was conducted on a Penncross creeping bentgrass green at the Hancock Turfgrass Research Center, E. Lansing, MI. The plot area was initially mowed at 0.170" using a triplex mower and gradually reduced to 0.130" using a walk-behind mower. Fertility was maintained at approximately 0.37 lb. N/1000 ft^2/ month with Country Club 18-4-12 fertilizer over the entire study. The study was set up in a randomized complete block design with four replications of each treatment. Plots measured 2' x 7.5' with 1' alleys. Treatments were applied at 42 PSI in a 48 GPA spray volume using a CO_2 backpack sprayer and a single 8002E Tee-Jet flat fan nozzle. Initial treatment applications were made on June 2, unless specified otherwise in Tables 8 and 9. All treatments were reapplied on 6/16, 7/1, 7/15, 7/29, and 8/12 for the 14 day treatments and on 6/23, 7/15, and 8/5 for the 21 day treatments unless indicated in Tables 9 and 10. Quality ratings, which were a combination of turfgrass color and density, were visually estimated using a 1 to 10 scale, where 1 = poor, 7 = acceptable, and 10 = excellent. All data were analyzed using ANOVA and means separated by LSD (p= 0.05).

Stressful conditions on this creeping bentgrass research putting green were achieved due to a combination of the low mowing height, less than optimal irrigation level, and summer heat. Turfgrass quality in the untreated control plots declined as the study progressed with the lowest quality ratings coming in early August (Table 9.) Daconil Ultrex + Signature and the Floratine program were two treatments tested that provided superior turfgrass quality throughout the study period, although there were some other treatments tested that were not statistically different from these two treatments on various rating dates as listed in Table 9. The Daconil Ultrex + Signature treatment continues to set a standard for maintaining good turfgrass quality during summer stress. There were many other treatments tested that provided significant quality improvement over the untreated control including two Advan experimental combinations, Raven + Disarm, Chipco 26GT + Signature, and Quali Pro Fosetyl-Al + Quali-Gard + QP Chlorothalonil. No phytotoxicity was observed in the study.

Table 9. 2008 Summer Decline on Creeping Bentgrass
Hancock Turfgrass Research Center, East Lansing, MI
Rating Type: Turfgrass Quality
Rating Scale: 1-10, where 1=poor, 7=acceptable, and 10=excellent.

Rating Date					6/26/2008		7/14/2008		7/21/2008		7/29/2008		8/5/2008		8/11/2008		8/22/2008	
Trt	Treatment		Rate	Application														
No.	Name	Rate	Unit	Interval (days)	Mean[a]	LSD[b]	Mean	LSD	Mean	LSD	Mean	LSD	Mean	LSD	Mean	LSD	Mean	LSD
1	Astron	2	fl oz/1000 ft2	14 days	7.0	a	7.0	bc	8.0	a	7.0	a-c	7.3	ab	7.5	a	8.0	a
1	C3arbon N	4.5	fl oz/1000 ft2	14 days														
1	Echo Ultimate	3.25	oz/1000 ft2	14 days														
1	Knife	2	fl oz/1000 ft2	14 days														

1	P-48	1.92	oz/1000 ft2	14 days														
1	PK Fight	3	fl oz/1000 ft2	14 days														
1	ProteSyn	3	fl oz/1000 ft2	14 days														
7	Daconil Ultrex	3.25	oz/1000 ft2	14 days	7.5	a	7.8	a	8.0	a	7.3	ab	7.8	a	7.8	a	7.8	ab
7	Signature	4	oz/1000 ft2	14 days														
4	ADV6003	3.6	fl oz/1000 ft2	14 days	7.3	a	6.5	c-e	6.5	cd	6.5	bc	6.5	b-d	6.8	ab	7.0	a-c
4	Phyte-off	2	fl oz/1000 ft2	14 days														
6	ADV6004	4	oz/1000 ft2	14 days	7.0	a	7.3	ab	7.0	bc	6.5	bc	6.8	b-d	6.8	ab	6.8	bc
3	Raven	3	oz/1000 ft2	21 days	6.3	a	6.5	c-e	6.5	cd	6.5	bc	6.0	d	6.3	b	6.5	c
3	Disarm 480SC	0.09	fl oz/1000 ft2	21 days														
8	Chipco 26GT	4	fl oz/1000 ft2	14 days	7.3	a	7.3	ab	7.3	b	7.5	a	7.0	a-c	7.3	ab	6.3	c
8	Signature	4	oz/1000 ft2	14 days														
11	Quali-Pro Fosetyl-Al	4	oz/1000 ft2	14 days	6.8	a	6.8	b-d	7.0	bc	6.3	cd	6.3	cd	6.8	ab	6.3	c
11	QualiGard	0.36	oz/1000 ft2	14 days														
11	QP Chlorothalonil DF	3.2	oz/1000 ft2	14 days														
5	ADV6004	3.25	oz/1000 ft2	14 days	6.8	a	6.5	c-e	6.3	d	6.5	bc	6.0	d	6.3	b	6.3	c
5	Phyte-off	2	fl oz/1000 ft2	14 days														
2	Proprietary																	
9	Untreated Control				6.5	a	6.0	e	5.5	e	5.5	de	4.3	e	4.8	c	4.8	d
10	Quali-Pro Fosetyl-Al	4	oz/1000 ft2	14 days	6.5	a	6.3	de	5.0	e	5.3	e	4.8	e	4.8	c	4.3	d
10	QualiGard	0.36	oz/1000 ft2	14 days														

[a] Mean of 4 replications.
[b] Means followed by same letter do not significantly differ (P=.05, LSD).

Summer Decline Syndrome in Annual Bluegrass, 2008

This trial was conducted on an annual bluegrass green at the Hancock Turfgrass Research Center, East Lansing, MI. The plot area was initially mowed at 0.170" using a triplex mower and gradually reduced to 0.130" using a walk-behind mower. Fertility was maintained at approximately 0.25 lb. N/1000 ft^2/ month with Country Club 18-4-12 fertilizer, except for the Floratine program treatment, which only received supplemental fertility on 6/25. The study was set up in a randomized complete block design with four replications of each treatment. Plots measured 2' x 6' with 1' alleys.

Treatments were applied at 42 PSI in a 48 GPA spray volume using a CO_2 backpack sprayer and a single 8002E Tee-Jet flat fan nozzle. Initial treatment applications were made on June 11, unless specified otherwise in Tables 10. The 7-day treatment was reapplied on 6/25, 7/3, 7/9, 7/16, 7/23, 7/29, 8/6, and 8/12. All 14 day interval treatments were reapplied on 6/25, 7/9, 7/23, and 8/6 and on 7/3, 7/23 and 8/12 for the 21 day treatments unless indicated in Table 10. Quality ratings, which were a combination of turfgrass color and density, were visually estimated using a 1 to 10 scale, where 1 = poor, 7 = acceptable, and 10 = excellent. All data were analyzed using ANOVA and means separated by LSD (p= 0.05).

The degree of stress exerted on the annual bluegrass in this trial was tremendous when factors including mowing the area down, low irrigation levels, and erratic fertility applications are considered. The plot area was extremely thin, and at no rating date during the study did any of the treatments exhibit turf quality that would meet acceptable golf course standards. However, if one takes into account the severity of the test and compares the treatments to the untreated control, some of them performed very well, improving turfgrass quality significantly. Two of the top-performing treatments tested were Daconil Ultrex + Signature and the Floratine program which both exhibited significant improvement in turf quality compared to the control on every rating date in the study. Other treatments that performed well in the study, some of which were not statistically different from the two previously mentioned treatments, include: Raven + Disarm, Chipco 26GT + Signature, Advan experimental combinations, and some QualiPro combinations. No phytotoxicity was observed in the study.

Table 10. 2008 Summer Decline on Annual Bluegrass
Hancock Turfgrass Research Center, East Lansing, MI
Rating Type: Turfgrass Quality
Rating Scale: 1-10, where 1=poor, 7=acceptable, and 10=excellent.

Rating Date					**7/2/2008**		**7/14/2008**		**7/22/2008**		**7/29/2008**		**8/5/2008**		**8/11/2008**		**8/22/2008**	
Trt	**Treatment**		**Rate**	**Application**														
No.	**Name**	**Rate**	**Unit**	**Interval (days)**														
1	Astron	1.5	fl oz/1000 ft2	7 days	5.8	a	5.5	a	5.3	a	4.3	a-c	5.8	a	5.5	ab	5.8	a
1	C3arbon N	5	fl oz/1000 ft2	7 days														
1	Echo Ultimate	1.5	oz/1000 ft2	7 days														
1	Knife	1	fl oz/1000 ft2	7 days														
1	P-48	2.08	oz/1000 ft2	7 days														
1	PK Fight	2	fl oz/1000 ft2	7 days														
1	ProteSyn	2	fl oz/1000 ft2	7 days														
7	Daconil Ultrex	3.25	oz/1000 ft2	14 days	5.8	a	5.3	a	5.0	ab	4.5	ab	4.8	ab	6.0	a	5.8	a

7	Signature	4	oz/1000 ft2	14 days														
3	Raven	3	oz/1000 ft2	21 days	4.8	b	5.3	a	4.3	b-d	4.3	a-c	5.0	ab	5.3	ab	5.5	a
3	Disarm 480SC	0.09	fl oz/1000 ft2	21 days														
4	ADV6003	3.6	fl oz/1000 ft2	14 days	4.8	b	5.3	a	4.8	a-c	3.8	b-d	4.8	ab	5.0	ab	5.5	a
4	Phyte-off	2	fl oz/1000 ft2	14 days														
8	Chipco 26GT	4	fl oz/1000 ft2	14 days	5.8	a	5.3	a	5.0	ab	4.8	a	4.8	ab	5.5	ab	5.5	a
8	Signature	4	oz/1000 ft2	14 days														
5	ADV6004	3.25	oz/1000 ft2	14 days	4.8	b	5.5	a	5.0	ab	4.0	a-c	5.5	a	5.0	ab	5.0	ab
5	Phyte-off	2	fl oz/1000 ft2	14 days														
6	ADV6004	4	oz/1000 ft2	14 days	4.8	b	5.0	ab	4.8	a-c	3.8	b-d	4.5	ab	4.5	bc	4.8	ab
11	Quali-Pro Fosetyl-Al	4	oz/1000 ft2	14 days	4.8	b	5.3	a	4.3	b-d	3.5	c-e	3.8	bc	4.5	bc	4.8	ab
11	Quali-Gard	0.36	oz/1000 ft2	14 days														
11	QP Chlorothalonil DF	3.2	oz/1000 ft2	14 days														
12	Proprietary																	
10	Quali-Pro Fosetyl-Al	4	oz/1000 ft2	14 days	4.5	b	4.5	bc	3.5	d-f	2.5	fg	2.8	cd	2.8	de	3.5	cd
10	Quali-Gard	0.36	oz/1000 ft2	14 days														
9	Untreated Control				4.3	b	4.0	c	3.3	ef	2.0	g	2.3	d	2.8	de	3.3	cd
14	Proprietary																	
13	Proprietary																	
2	Proprietary																	
15	Proprietary																	

[a] Mean of 4 replications.
[b] Means followed by same letter do not significantly differ (P=.05, LSD).

Dollar Spot (*Sclerotinia homoeocarpa/Rutstroemia floccosum*), 2008

Preventive Dollar Spot Study 2008

This preventive study was set up on a creeping bentgrass/annual bluegrass putting green in four replications of a randomized complete block design. The plots measured 2' x 7.5' with 6" alleys. Spray treatments were applied using a CO_2 backpack sprayer set at 38 psi with a single 8002E Tee Jet flat fan nozzle. Spray volume was 48 GPA unless otherwise noted in Table 11. Plots were irrigated and fertilized as needed to maintain turf quality and vigor. Fungicide treatments were applied initially on 8/5 and re-applied at the intervals indicated in Tables 11 and 12. The 14-day treatments were re-applied on 8/21, 9/16, and 9/30, unless otherwise indicated in Table 11. The 21-day treatments were

re-applied on 8/26 and 9/16. Data represent mean percent plot area infected with dollar spot (Table 11). Quality ratings were also taken using a 1 (worst) to 10 (excellent) scale, where 7 represents acceptable turf quality based on turf density and color (Table 12.) Data were analyzed using ANOVA and means separated by LSD (p= 0.05).

For the first time in more than 20 years, dollar spot pressure was light in our preventive study. The untreated controls exhibited a season maximum average of only 13% dollar spot, quite a mild infestation compared to the amount of disease pressure typically experienced at this trial location. Even with such low disease pressure, many plots provided statistically significant dollar spot suppression compared to the untreated controls. Some of those top-performing products included: Emerald, Trinity, Emerald + Trinity, Tourney, Disarm C, Instrata, Concert, Chipco 26GT and several experimental products, alone and in combination. Disease levels in these treatments never averaged more than 2% dollar spot. With such low pressure, less separation between treatments was observed compared to a year with heavier pressure. Quality differences were observed in the study with most treatments providing significantly better quality than the untreated controls (Table 12.) Disarm C, Emerald, Concert, and an Advan experimental product were among the few that exhibited acceptable quality, receiving a mean rating of 7 or higher on each rating date. No phytotoxicity was observed.

Table 11. PREVENTIVE Dollar Spot Study, 2008
Location: Hancock Turfgrass Research Center, East Lansing, MI
Rating Type: Percent plot area infected with dollar spot.

Rating Date						**9/17/2008**		**9/24/2008**		**10/2/2008**		**10/9/2008**	
Trt No.	**Treatment Name**	**Form Type**	**Rate**	**Rate Unit**	**Application Interval (days)**	**Mean[a]**	**LSD[b]**	**Mean**	**LSD**	**Mean**	**LSD**	**Mean**	**LSD**
4	Proprietary												
5	Proprietary												
6	Proprietary												
7	Proprietary												
8	Proprietary												
10	Proprietary												
13	Proprietary												
14	Proprietary												
15	Proprietary												
16	Proprietary												
17	Emerald	WDG	0.13	oz/1000 ft2	14 days	0.0	f	0.0	h	0.0	g	0.0	h
18	Emerald	WDG	0.18	oz/1000 ft2	21 days	0.1	f	0.0	h	0.0	g	0.0	h

19	Trinity	SC	1	fl oz/1000 ft2	14 days	0.0	f	0.0	h	0.0	g	0.0	h
20	Trinity	SC	1	fl oz/1000 ft2	21 days	0.8	f	0.3	gh	0.1	g	0.0	h
21A	Emerald	WDG	0.13	oz/1000 ft2	14 days[d] alt	0.0	f	0.0	h	0.0	g	0.0	h
21B	Trinity	SC	1	fl oz/1000 ft2	14 days[d]								
22	Tourney[c]	WDG	0.28	oz/1000 ft2	14 days	0.1	f	0.0	h	0.0	g	0.0	h
23	EX 190[c]	SC	0.26	fl oz/1000 ft2	14 days	0.1	f	0.1	h	0.0	g	0.0	h
24	EX 190[c]	SC	0.52	fl oz/1000 ft2	14 days	0.1	f	0.1	h	0.0	g	0.0	h
25	EX 190[c]	SC	0.78	fl oz/1000 ft2	14 days	0.0	f	0.0	h	0.0	g	0.0	h
26	EX 190[c]	SC	1.04	fl oz/1000 ft2	14 days	0.0	f	0.0	h	0.0	g	0.0	h
27	EX 190[c]	SC	2.08	fl oz/1000 ft2	14 days	0.0	f	0.0	h	0.0	g	0.0	h
29	CX-26	L	2	fl oz/1000 ft2	14 days	0.0	f	0.0	h	0.0	g	0.0	h
34	Disarm C	L	4.32	fl oz/1000 ft2	14 days	0.0	f	0.0	h	0.0	g	0.0	h
36	Instrata	FL	4	fl oz/1000 ft2	14 days	0.1	f	0.0	h	0.0	g	0.0	h
37	Concert	FL	4	fl oz/1000 ft2	14 days	0.1	f	0.0	h	0.0	g	0.0	h
56	Proprietary												
50	Proprietary												
40	Proprietary												
43	Proprietary												
45	ADV6005	F	4	fl oz/1000 ft2	14 days	0.3	f	0.1	h	0.3	g	0.1	h
45	ADV6006	F	1	% v/v	14 days								
48	Proprietary												
49	Proprietary												
57	Proprietary												
2	Proprietary												
9	Proprietary												
32	Chipco 26GT	FL	4	fl oz/1000 ft2	14 days	0.1	f	0.1	h	0.1	g	0.1	h
38	Proprietary												
61	Proprietary												
12	Proprietary												
28	Tourney[c]	WDG	0.28	oz/1000 ft2	14 days	0.0	f	0.1	h	0.0	g	0.3	h
28	EX 190[c]	SC	0.26	fl oz/1000 ft2	14 days								
41	Proprietary												
30	CX-25	L	2	fl oz/1000 ft2	14 days	0.1	f	0.1	h	0.1	g	0.3	h
47	Proprietary												
44	ADV6005	F	4	fl oz/1000 ft2	14 days	1.3	e-f	0.8	f-h	0.8	g	0.3	h

31	Rhapsody	L	5	fl oz/1000 ft2	14 days	0.2	f	0.3	gh	0.3	g	0.4	h
31	Daconil Ultrex	WDG	1.6	oz/1000 ft2	14 days								
1	Proprietary												
39	Proprietary												
55	Proprietary												
42	Proprietary												
3	Proprietary												
33	Disarm 480SC	SC	0.27	fl oz/1000 ft2	14 days	0.8	f	0.8	f-h	2.9	fg	1.8	h
54	Proprietary												
11	Proprietary												
52	Proprietary												
53	Proprietary												
58	Proprietary												
60	Proprietary												
46	Control					5.3	ab	8.0	b	9.5	dc	13.0	c-e
62	Proprietary												
51	Proprietary												
35	ARY-0473-009	G	3.5	lb/1000 ft2	14 days	5.1	ab	7.3	cb	12.5	bc	17.3	cb
63	Proprietary												
59	Proprietary												

[a] Mean of 4 replications.
[b] Means followed by same letter do not significantly differ (P=.05, LSD).
[c] Treatment applied in 96 GPA rather than 48 GPA.
[d] The 14-day alternated treatments were applied as follows: part A on 8/5 and 9/16 and part B on 8/21 and 9/30.

Table 12. 2008 Dollar Spot
Location: Hancock Turfgrass Research Center, East Lansing, MI
Rating Type: Turfgrass Quality
Rating Scale: 1-10, where 1=poor, 7=acceptable, and 10=excellent.

Rating Date					**9/24/2008**		**10/3/2008**		**10/9/2008**	
Trt	**Treatment**		**Rate**	**Application**						
No.	**Name**	**Rate**	**Unit**	**Interval (days)**	**Mean[a]**	**LSD[b]**	**Mean**	**LSD**	**Mean**	**LSD**
5	Proprietary									
6	Proprietary									

10	Proprietary									
43	Proprietary									
12	Proprietary									
15	Proprietary									
4	Proprietary									
34	Disarm C	4.32	fl oz/1000 ft2	14 days	7.3	b-e	7.0	a-c	7.3	a-d
39	Proprietary									
42	Proprietary									
1	Proprietary									
2	Proprietary									
3	Proprietary									
7	Proprietary									
9	Proprietary									
16	Proprietary									
17	Emerald	0.13	oz/1000 ft2	14 days	7.0	c-f	7.0	a-c	7.0	b-e
18	Emerald	0.18	oz/1000 ft2	21 days	7.3	b-e	7.0	a-c	7.0	b-e
19	Trinity	1	fl oz/1000 ft2	14 days	6.8	d-g	7.0	a-c	7.0	b-e
21A	Emerald	0.13	oz/1000 ft2	14 days[d] alt	6.8	d-g	7.0	a-c	7.0	b-e
21B	Trinity	1	fl oz/1000 ft2	14 days[d]						
22	Tourney[c]	0.28	oz/1000 ft2	14 days	6.8	d-g	7.0	a-c	7.0	b-e
24	EX 190[c]	0.52	fl oz/1000 ft2	14 days	7.0	c-f	7.0	a-c	7.0	b-e
26	EX 190[c]	1.04	fl oz/1000 ft2	14 days	7.0	c-f	7.0	a-c	7.0	b-e
27	EX 190[c]	2.08	fl oz/1000 ft2	14 days	7.3	b-e	7.0	a-c	7.0	b-e
29	CX-26	2	fl oz/1000 ft2	14 days	6.3	f-i	7.0	a-c	7.0	b-e
30	CX-25	2	fl oz/1000 ft2	14 days	6.8	d-g	7.0	a-c	7.0	b-e
31	Rhapsody	5	fl oz/1000 ft2	14 days	6.5	e-h	7.0	a-c	7.0	b-e
31	Daconil Ultrex	1.6	oz/1000 ft2	14 days						
37	Concert	4	fl oz/1000 ft2	14 days	7.0	c-f	7.0	a-c	7.0	b-e
38	Proprietary									
41	Proprietary									
45	ADV6005	4	fl oz/1000 ft2	14 days	7.0	c-f	7.0	a-c	7.0	b-e
45	ADV6006	1	% v/v	14 days						
48	Proprietary									
56	Proprietary									
11	Proprietary									

13	Proprietary									
14	Proprietary									
23	EX 190[c]	0.26	fl oz/1000 ft2	14 days	7.3	b-e	7.0	a-c	6.8	c-f
28	Tourney[c]	0.28	oz/1000 ft2	14 days	6.8	d-g	6.8	a-d	6.8	c-f
28	EX 190[c]	0.26	fl oz/1000 ft2	14 days						
33	Disarm 480SC	0.27	fl oz/1000 ft2	14 days	6.5	e-h	6.5	b-d	6.8	c-f
40	Proprietary									
54	Proprietary									
57	Proprietary									
8	Proprietary									
20	Trinity	1	fl oz/1000 ft2	21 days	6.5	e-h	6.5	b-c	6.5	d-g
25	EX 190[c]	0.78	fl oz/1000 ft2	14 days	6.8	d-g	6.5	b-d	6.5	d-g
32	Chipco 26GT	4	fl oz/1000 ft2	14 days	6.5	e-h	6.3	c-e	6.5	d-g
44	ADV6005	4	fl oz/1000 ft2	14 days	6.3	f-i	6.8	a-d	6.5	d-g
47	Proprietary									
49	Proprietary									
53	Proprietary									
36	Instrata	4	fl oz/1000 ft2	14 days	6.5	e-h	6.8	a-d	6.3	e-h
55	Proprietary									
61	Proprietary									
35	ARY-0473-009	3.5	lb/1000 ft2	14 days	5.3	j-l	5.3	f-h	6.0	f-h
51	Proprietary									
52	Proprietary									
58	Proprietary									
62	Proprietary									
50	Proprietary									
46	Control				5.5	i-l	5.3	f-h	5.5	hi
60	Proprietary									
59	Proprietary									
63	Proprietary									

[a] Mean of 4 replications.
[b] Means followed by same letter do not significantly differ (P=.05, LSD).
[c] Treatment applied in 96 GPA rather than 48 GPA.
[d] The 14-day alternated treatments were applied as follows: part A on 8/5 and 9/16 and part B on 8/21 and 9/30.

Curative Dollar Spot Study, 2008

A second dollar spot study was set up this year after a relatively uniform dollar spot outbreak on a local golf course. This curative study was set up on a creeping bentgrass/annual bluegrass fairway at Forest Acres Golf Course East in East Lansing, MI. The study included four replications of each treatment and was set up in a randomized complete block design. The plots measured 2' x 6'. Spray treatments were applied using a CO_2 backpack sprayer set at 38 psi with a single 8002E Tee Jet flat fan nozzle. Spray volume was 48 GPA unless otherwise noted in Table 13. Plots were irrigated and fertilized as needed to maintain turf quality and vigor. Fungicide treatments were applied initially on 8/28 and re-applied at the intervals indicated in Tables 13 and 14. The 14-day treatments were re-applied on 9/9, unless otherwise indicated. The 21-day treatments were re-applied on 9/19. Data represent mean percent recovery calculated from the 8/28 pretreatment rating (Table 13.) Quality ratings were also taken using a 1 (worst) to 10 (excellent) scale, where 7 represents acceptable turf quality based on turf density and color (Table 14.) Data were analyzed using ANOVA and means separated by LSD (p= 0.05).

Trinity (1 fl oz rate), Emerald + Trinity, EX 190 (0.52, 1.04, and 2.08 fl oz rates), CX-25, Instrata, Concert (4 oz rate), and ADV6005 + ADV6006 all provided 100% dollar spot recovery on both rating dates. There were many other treatments, as listed in Table 13, which conferred 60-99% recovery and were not statistically different from the first group noted. The untreated controls experienced a slight increase in disease, with a 30-39% increase over the initial, pretreatment disease rating. Most of the treatments provided good turf quality, as indicate in Table 14. No phytotoxicity was observed.

Table 13. CURATIVE Dollar Spot Study, 2008
Location: Forest Acres East Golf Course, East Lansing, MI
Rating Type: Percent recovery calculated from 8/29/08 pretreatment rating.

Rating Date						**9/9/2008**		**9/20/2008**	
Trt No.	**Treatment Name**	**Form Type**	**Rate**	**Rate Unit**	**Application Interval (days)**	**Mean[a]**	**LSD[b]**	**Mean**	**LSD**
10	Proprietary								
19	Trinity	SC	1	fl oz/1000 ft2	14 days	100.0	a	100.0	a
21A	Emerald	WDG	0.13	oz/1000 ft2	14 days[d] alt	100.0	a	100.0	a
21B	Trinity	SC	1	fl oz/1000 ft2	14 days[d]				
24	EX 190[c]	SC	0.52	fl oz/1000 ft2	14 days	100.0	a	100.0	a
26	EX 190[c]	SC	1.04	fl oz/1000 ft2	14 days	100.0	a	100.0	a

27	EX 190[c]	SC	2.08	fl oz/1000 ft2	14 days	100.0	a	100.0	a
30	CX-25	L	2	fl oz/1000 ft2	14 days	100.0	a	100.0	a
36	Instrata	FL	4	fl oz/1000 ft2	14 days	100.0	a	100.0	a
37	Concert	FL	4	fl oz/1000 ft2	14 days	100.0	a	100.0	a
45	ADV6005	F	4	fl oz/1000 ft2	14 days	100.0	a	100.0	a
45	ADV6006	F	1	% v/v	14 days				
34	Disarm C	L	4.32	fl oz/1000 ft2	14 days	99.0	ab	100.0	a
2	Proprietary								
43	Proprietary								
32	Chipco 26GT	FL	4	fl oz/1000 ft2	14 days	97.9	a-c	100.0	a
15	Proprietary								
28	Tourney[c]	WDG	0.28	oz/1000 ft2	14 days	97.5	a-c	100.0	a
28	EX 190[c]	SC	0.26	fl oz/1000 ft2	14 days				
42	Proprietary								
18	Emerald	WDG	0.18	oz/1000 ft2	21 days	97.4	a-c	100.0	a
25	EX 190[c]	SC	0.78	fl oz/1000 ft2	14 days	97.1	a-c	100.0	a
8	Proprietary								
22	Tourney[c]	WDG	0.28	oz/1000 ft2	14 days	96.8	a-c	100.0	a
20	Trinity	SC	1	fl oz/1000 ft2	21 days	96.7	a-c	46.4	c-e
44	ADV6005	F	4	fl oz/1000 ft2	14 days	96.4	a-c	100.0	a
48	Proprietary								
6	Proprietary								
40	Proprietary								
9	Proprietary								
4	Proprietary								
11	Proprietary								
63	Proprietary								
5	Proprietary								
33	Disarm 480SC	SC	0.27	fl oz/1000 ft2	14 days	92.3	a-d	100.0	a
16	Proprietary								
58	Proprietary								
14	Proprietary								
12	Proprietary								
57	Proprietary								
49	Proprietary								

50	Proprietary								
62	Proprietary								
39	Proprietary								
13	Proprietary								
1	Proprietary								
41	Proprietary								
55	Proprietary								
61	Proprietary								
3	Proprietary								
29	CX-26	L	2	fl oz/1000 ft2	14 days	70.0	a-g	82.1	a-d
52	Proprietary								
38	Proprietary								
56	Proprietary								
7	Proprietary								
31	Rhapsody	L	5	fl oz/1000 ft2	14 days	49.3	b-i	100.0	a
31	Daconil Ultrex	WDG	1.6	oz/1000 ft2	14 days				
60	Proprietary								
23	EX 190[c]	SC	0.26	fl oz/1000 ft2	14 days	44.6	d-j	100.0	a
47	Proprietary								
54	Proprietary								
59	Proprietary								
35	ARY-0473-009	G	3.5	lb/1000 ft2	14 days	17.9	h-k	48.6	c-e
51	Proprietary								
53	Proprietary								
17	Emerald	WDG	0.13	oz/1000 ft2	14 days	-7.6	kl	100.0	a
46	Control					-38.8	l	-30.0	f

[a] Mean of 4 replications.
[b] Means followed by same letter do not significantly differ (P=.05, LSD).
[c] Treatment applied in 96 GPA rather than 48 GPA.
[d] The 14-day alternated treatments were applied as follows: part A on 8/28 and part B on 9/9.

Table 14. 2008 Curative Dollar Spot Study
Location: Forest Acres East Golf Course, East Lansing, MI
Rating Type: Turfgrass Quality

Rating Scale: 1-10, where 1=poor, 7=acceptable, and 10=excellent.

Rating Date						9/9/2008		9/20/2008	
Trt	Treatment	Form		Rate	Application				
No.	Name	Type	Rate	Unit	Interval (days)	Mean[a]	LSD[b]	Mean	LSD
14	Headway 1.39EC	EC	1.5	fl oz/1000 ft2	14 days	7.5	a-c	8.0	a
27	EX 190[c]	SC	2.08	fl oz/1000 ft2	14 days	7.0	b-e	8.0	a
43	Proprietary								
6	Proprietary								
21A	Emerald	WDG	0.13	oz/1000 ft2	14 days[d] alt	7.0	b-e	7.8	ab
21B	Trinity	SC	1	fl oz/1000 ft2	14 days[d]				
26	EX 190[c]	SC	1.04	fl oz/1000 ft2	14 days	7.3	a-d	7.8	ab
42	Proprietary								
48	Proprietary								
49	Proprietary								
56	Proprietary								
3	Proprietary								
9	Renown (A15935)	SC	2.5	fl oz/1000 ft2	14 days	7.0	b-e	7.5	a-c
10	Renown (A15935)	SC	4.5	fl oz/1000 ft2	14 days	7.0	b-e	7.5	a-c
15	Tartan 2.4SC	SC	1	fl oz/1000 ft2	14 days	7.8	ab	7.5	a-c
28	Tourney[c]	WDG	0.28	oz/1000 ft2	14 days	7.3	a-d	7.5	a-c
28	EX 190[c]	SC	0.26	fl oz/1000 ft2	14 days				
30	CX-25	L	2	fl oz/1000 ft2	14 days	7.3	a-d	7.5	a-c
33	Disarm 480SC	SC	0.27	fl oz/1000 ft2	14 days	7.0	b-e	7.5	a-c
36	Instrata	FL	4	fl oz/1000 ft2	14 days	8.0	a	7.5	a-c
37	Concert	FL	4	fl oz/1000 ft2	14 days	7.3	a-d	7.5	a-c
40	Proprietary								
50	Proprietary								
61	Proprietary								
2	Proprietary								
5	Proprietary								
7	Proprietary								
8	Proprietary								
12	Renown (A15935)	SC	4.5	fl oz/1000 ft2	21 days	7.0	b-e	7.3	b-d
16	Concert 4.3SE	SE	3	fl oz/1000 ft2	14 days	6.8	c-f	7.3	b-d
17	Emerald	WDG	0.13	oz/1000 ft2	14 days	6.5	d-g	7.3	b-d

19	Trinity	SC	1	fl oz/1000 ft2	14 days	7.3	a-d	7.3	b-d
31	Rhapsody	L	5	fl oz/1000 ft2	14 days	7.0	b-e	7.3	b-d
31	Daconil Ultrex	WDG	1.6	oz/1000 ft2	14 days				
32	Chipco 26GT	FL	4	fl oz/1000 ft2	14 days	7.0	b-e	7.3	b-d
34	Disarm C	L	4.32	fl oz/1000 ft2	14 days	7.0	b-e	7.3	b-d
39	Proprietary								
44	ADV6005	F	4	fl oz/1000 ft2	14 days	7.0	b-e	7.3	b-d
57	Proprietary								
58	Proprietary								
62	Proprietary								
63	Proprietary								
4	Proprietary								
11	Renown (A15935)	SC	2.5	fl oz/1000 ft2	21 days	7.0	b-e	7.0	cd
13	Heritage 50WG	WG	0.2	oz/1000 ft2	14 days	6.5	d-g	7.0	cd
13	Daconil Weather Stik 6F	SC	2	fl oz/1000 ft2	14 days				
18	Emerald	WDG	0.18	oz/1000 ft2	21 days	6.8	c-f	7.0	cd
20	Trinity	SC	1	fl oz/1000 ft2	21 days	7.5	a-c	7.0	cd
22	Tourney[c]	WDG	0.28	oz/1000 ft2	14 days	7.0	b-e	7.0	cd
23	EX 190[c]	SC	0.26	fl oz/1000 ft2	14 days	6.5	d-g	7.0	cd
24	EX 190[c]	SC	0.52	fl oz/1000 ft2	14 days	7.0	b-e	7.0	cd
25	EX 190[c]	SC	0.78	fl oz/1000 ft2	14 days	7.0	b-e	7.0	cd
35	ARY-0473-009	G	3.5	lb/1000 ft2	14 days	6.0	fg	7.0	cd
41	Proprietary								
45	ADV6005	F	4	fl oz/1000 ft2	14 days	7.0	b-e	7.0	cd
45	ADV6006	F	1	% v/v	14 days				
47	Proprietary								
53	Proprietary								
54	Proprietary								
55	Proprietary								
1	Proprietary								
29	CX-26	L	2	fl oz/1000 ft2	14 days	6.5	d-g	6.8	de
38	Proprietary								
51	Proprietary								
52	Proprietary								
59	Proprietary								

60	Proprietary								
46	Control					5.8	gh	6.3	e

[a] Mean of 4 replications.
[b] Means followed by same letter do not significantly differ (P=.05, LSD).
[c] Treatment applied in 96 GPA rather than 48 GPA.
[d] The 14-day alternated treatments were applied as follows: part A on 8/28 and part B on 9/9.

Dollar Spot (*Sclerotinia homoeocarpa, Rutstroemia floccosum*) Fairway Studies 2008

Two dollar spot studies were conducted on an annual bluegrass fairway (0.5" height of cut). Each study was set up in a randomized complete block design and consisted of 4 replicate 2' x 6' plots with 1' alleys. Treatments were applied using a CO_2 backpack sprayer at 38 PSI and 48 GPA application volume using a single 8002E Tee Jet flat fan nozzle.

Preventive Fairway Dollar Spot Study

Plots were fertilized at a rate of approximately 1/4 lb nitrogen/1000 sq ft/month. The treatments in this study were applied beginning on 6/16/08, with subsequent applications of the 21-day interval treatments being made on 7/8, 7/28, and 8/21The 28-day treatment was reapplied on 7/14 and 8/11. Dollar spot ratings were taken (Table 15.) Quality ratings were taken using a 1-10 scale where 7 = acceptable turfgrass quality, and 1= poor quality (Table 16). Data were analyzed using ANOVA and means separated by LSD (p= 0.05).

Dollar spot developed slowly in the study area with the untreated controls averaging less than 5% dollar spot until the 8/12/08 rating date when the average increased to 8%. It wasn't until the 8/29 and 9/5 ratings that the control plots averaged 20 and 24% dollar spot, respectively. Banner Maxx, CX-15, Concert (at both rates tested), Bayleton and 26/36 provided excellent dollar spot control, with disease averaging less than 2.2% disease for the entire duration of the study, significantly better than the untreated control at every rating date presented in Table 15. There were no statistical differences between any of the chemical treatments throughout the study. Concert and CX-15 exhibited the best turfgrass quality and were the only treatments that were statistically better than the untreated controls at every rating date (Table 16.) As can be seen from the late August and early September ratings, when the controls averaged 4.5 and 3.8 respectively, overall turfgrass quality in the study area declined due to lack of fertility applications in August and increased disease pressure. Although treatment quality ratings did not meet golf course industry standards, turfgrass quality was acceptable considering the conditions of the study. No phytotoxicity was observed in this study.

Table 15. Preventive fairway dollar spot study.

Location: Hancock Turfgrass Research Center, East Lansing, MI.
Rating: Percent plot area infected with dollar spot.

Rating Date					7/14/08		7/28/08		8/12/08		8/29/08		9/5/08	
Trt	Treatment		Rate	Application										
No.	Name	Rate	Unit	Interval	Mean[a]	LSD[b]	Mean	LSD	Mean	LSD	Mean	LSD	Mean	LSD
6	Banner Maxx	1.5	fl oz/1000 ft2	21 days	0.1	b	0.1	b	0.0	b	0.0	b	0.0	b
2	CX-15	1	oz/1000 ft2	21 days	0.1	b	0.1	b	0.1	b	0.0	b	0.1	b
5	Concert	4.5	fl oz/1000 ft2	21 days	0.1	b	0.1	b	0.1	b	0.0	b	0.1	b
1	26/36	4	fl oz/1000 ft2	21 days	0.1	b	0.2	b	0.0	b	0.1	b	0.4	b
4	Concert	5.4	fl oz/1000 ft2	21 days	0.1	b	0.1	b	0.0	b	0.3	b	0.4	b
8	Proprietary													
7	Bayleton 50 WDG	0.5	oz/1000 ft2	28 days	0.8	b	1.4	b	2.1	b	1.6	b	1.9	b
3	CX-24	5.5	fl oz/1000 ft2	21 days	0.9	ab	2.1	ab	2.1	b	6.0	b	10.8	b
9	Control				2.3	a	4.3	a	7.8	a	20.5	a	24.0	a

[a] Mean of 4 replications.
[b] Means followed by same letter do not significantly differ (P=.05, LSD).

Table 16. Preventive fairway dollar spot study.
Location: Hancock Turfgrass Research Center, East Lansing, MI.
Rating Type: Turfgrass Quality.
Rating Scale: 1 – 10, where 1=poor, 7=acceptable, and 10=excellent.

Rating Date					7/28/08		8/12/08		8/29/08		9/5/08	
Trt	Treatment		Rate	Application								
No.	Name	Rate	Unit	Interval	Mean[a]	LSD[b]	Mean	LSD	Mean	LSD	Mean	LSD
4	Concert	5.4	fl oz/1000 ft2	21 days	7.3	a	6.8	a	6.5	ab	5.8	A
8	Proprietary											
5	Concert	4.5	fl oz/1000 ft2	21 days	6.5	a-c	6.8	a	6.5	ab	5.5	Ab
2	CX-15	1	oz/1000 ft2	21 days	6.3	bc	6.0	ab	6.0	bc	5.3	a-c
6	Banner Maxx	1.5	fl oz/1000 ft2	21 days	6.0	b-d	5.3	bc	5.5	cd	4.8	b-d
1	26/36	4	fl oz/1000 ft2	21 days	6.5	a-c	6.0	ab	5.8	bc	4.5	c-e
7	Bayleton 50 WDG	0.5	oz/1000 ft2	28 days	5.8	cd	5.0	bc	5.5	cd	4.5	c-e
3	CX-24	5.5	fl oz/1000 ft2	21 days	6.0	b-d	4.8	c	4.8	de	4.3	De

9	Control				5.3	d	4.8	c	4.5	e	3.8	e

[a] Mean of 4 replications.
[b] Means followed by same letter do not significantly differ (P=.05, LSD).

Waitea Patch (*Waitea circinata*), 2008

A curative Waitea patch study was conducted on an annual bluegrass putting green at Forest Acres East Golf Course, in East Lansing, MI. The study was set up in a randomized complete block design with four replicates of each treatment. Plots measured 3' x 6'. The green was maintained by golf course personnel who mowed, fertilized and irrigated the area using standard golf course practices. Treatments were applied using a CO_2-powered backpack sprayer with two TeeJet 80002E flat fan nozzles on a double-nozzle boom. Treatments were delivered in a spray volume of 96 GPA at 40-44 psi. Treatments were scheduled on a 14-day application interval and sprayed on May 9, May 23, and June 6, 2008. Plots were rated for percent area displaying Waitea Patch symptoms, with a pretreatment rating taken on May 9 prior to treatment application (Table 21). Turfgrass quality was also rated using a 1 – 10 scale, where 1=poor, 7=acceptable, and 10=excellent (Table 22.) Turfgrass quality was a visual estimation of quality based on a combination of turfgrass color, density, and overall appearance. Data were analyzed using AOV and means separated with LSD (p=0.05).

Disease pressure in the study area was fairly uniform at the start of the study, with all plots exhibiting between 30-44% (data not shown.) All treatments provided statistically significant disease control compared to the untreated control plots for each of the subsequent ratings following initial treatment application. Within two weeks of the 1st treatment application, Headway, Endorse, Prostar, Trinity, and Medallion-treated plots all exhibited an average of less than 5% Waitea patch, while the control plots averaged 41%. After the 2nd treatment application, by the 6/6 rating date, all treatments except Chipco 26GT displayed an average of less than 4% disease (Table 21.) Prostar, Medallion, Headway, and Trinity-treated plots also exhibited good turf quality as shown in Table 21. A darkening of the turf was observed in the Headway-treated plots, which was not deleterious to their overall quality. Upon visiting the study site 2 weeks after the last rating date, slight phytotoxicity was observed in the Trinity-treated plots.

Table 21. 2008 Waitea Patch/Brown Ring Patch
Location: Forest Acres G.C., East Lansing, MI
Rating Type: Percent recovery from initial pretreatment rating on 5/9/08.

Trt	Treatment	Form	Form		Rate	Appl	5/23/2008		6/6/2008	
No.	Name	Conc	Type	Rate	Unit	Interval	Mean[a]	LSD[b]	Mean	LSD

6	Prostar 70WP	70	WP	3	oz/1000 ft2	14 days	90.3	A	97.9	A
5	Headway		L	1.5	fl oz/1000 ft2	14 days	95.2	A	96.9	A
1	Insignia	20	WDG	0.9	oz/1000 ft2	14 days	73.1	A	96.2	A
2	Trinity	1.69	SC	1	fl oz/1000 ft2	14 days	90.7	A	91.5	A
4	Medallion	50	WP	0.25	oz/1000 ft2	14 days	87.7	A	90.8	A
3	Endorse	2.5	WP	4	oz/1000 ft2	14 days	90.9	A	90.7	A
7	Chipco 26GT	2	FL	3	fl oz/1000 ft2	14 days	33.3	B	44.2	B
8	Untreated control						3.8	C	14.7	B

[a] Mean of 4 replicates.
[b] Means followed by same letter do not significantly differ (P=.05, LSD).

Table 22. 2008 Waitea Patch/Brown Ring Patch
Location: Forest Acres G.C., East Lansing, MI
Rating Type: Turfgrass Quality
Rating Scale: 1-10, where 1=poor, 7=acceptable, and 10=excellent.

Rating Date					**6/6/08**	
Trt	**Treatment**		**Rate**	**Appl**		
No.	**Name**	**Rate**	**Unit**	**Interval**	**Mean[a]**	**LSD[b]**
6	Prostar 70WP	3	oz/1000 ft^2	14 days	7.8	a
4	Medallion	0.25	oz/1000 ft^2	14 days	7.5	ab
2	Trinity	1	fl oz/1000 ft^2	14 days	7.3	ab
5	Headway	1.5	fl oz/1000 ft^2	14 days	7.0	ab
1	Insignia	0.9	oz/1000 ft^2	14 days	6.8	bc
3	Endorse	4	oz/1000 ft^2	14 days	6.8	bc
7	Chipco 26GT	3	fl oz/1000 ft^2	14 days	6.0	cd
8	Untreated control				5.3	d

[a] Mean of 4 replicates.
[b] Means followed by same letter do not significantly differ (P=.05, LSD).

Microdochium Patch (*Microdochium nivale*), 2007-08

Two preventive Microdochium patch (*Microdochium nivale*) studies were established, one on a Pennlinks creeping bentgrass (*Agrostis palustris*) green and the other on an annual bluegrass (*Poa annua*) green at the Hancock Turfgrass Research Center on the MSU campus. Both studies included 4 replicate 2' x 9' plots with 1' alleys that were arranged in a randomized complete block design. Liquid treatments were applied using a CO_2–powered backpack sprayer with a single-nozzle boom (8002E TeeJet flat fan nozzle) at 40 PSI and a spray volume of 2.2 gallons/1000 sq ft. Treatments were applied on 11/18/07. The entire plot area was inoculated with *Microdochium nivale* growing on sand/cornmeal using a drop spreader on 11/25 and 11/30. After inoculation, the plot area was covered with a vinyl tarp to induce disease. No disease activity was observed in the fall of 2007. The annual bluegrass study was rated on March 15, 2008 for percent plot area diseased and turfgrass quality on a 1-10 scale where 1=poor, 7=acceptable, and 10=excellent (Table 23.) The bentgrass study was rated on March 20, 2008 for percent plot area diseased and turfgrass quality on a 1-10 scale where 1=poor, 7=acceptable, and 10=excellent (Table 24.)

Disease pressure was moderate in both studies this year, with all treatments providing statistically significant disease control compared to the untreated control. The only exception to this was the Chipco 26GT alone (6 fl oz) treatment in the annual bluegrass study, which was not significantly different from the control. In the annual bluegrass green study (Table 23), many treatments provided complete control of the disease. In terms of turfgrass quality in the annual bluegrass study, all treatments provided acceptable to nearly-acceptable turfgrass quality except for the untreated control. In the creeping bentgrass green study (Table 24), all treatments provided significant disease control compared to the untreated control. In addition, turfgrass quality differences were observed, with most treatments providing good turfgrass quality. No phytotoxicity was observed in either study.

Table 23. Microdochium Patch disease and turfgrass quality on an annual bluegrass green, 2007-08.
Location: Hancock Turfgrass Research Center, E. Lansing, MI
Disease Rating Scale: Percent plot area infected with Microdochium patch.
Quality Rating Scale: 1-10, where 1=poor, 7=acceptable, and 10=excellent.

Rating Date					3/15/2008		3/15/2008	
Rating Data Type					MP Disease		Quality	
Rating Unit					% area		Scale 1-10	
No.	Name	Rate	Unit	Application				
Trt	Treatment		Rate	Date	Mean[a]	LSD[b]	Mean	LSD
1	Lynx Fungicide	1.5	fl oz/1000 ft2	11/18/2007	0	c	7.0	bc

1	Compass WG	0.25	oz/1000 ft2	11/18/2007				
2	Lynx Fungicide	1.5	fl oz/1000 ft2	11/18/2007	0	c	7.0	bc
2	Chipco 26GT	4	fl oz/1000 ft2	11/18/2007				
3	Lynx Fungicide	1.5	fl oz/1000 ft2	11/18/2007	0	c	7.3	ab
3	Daconil Ultrex	5	oz/1000 ft2	11/18/2007				
4	Reserve	5.75	fl oz/1000 ft2	11/18/2007	0	c	7.0	bc
5	Tartan	2	fl oz/1000 ft2	11/18/2007	0	c	7.5	ab
6	Tartan	2	fl oz/1000 ft2	11/18/2007	0	c	7.0	bc
6	Daconil Ultrex	5	oz/1000 ft2	11/18/2007				
8	Lynx Fungicide	2	fl oz/1000 ft2	11/18/2007	0	c	7.5	ab
10	Proprietary							
11	Instrata	11	fl oz/1000 ft2	11/18/2007	0	c	6.8	bc
12	Instrata	11	fl oz/1000 ft2	11/18/2007	0	c	6.8	bc
12	Medallion	0.2	oz/1000 ft2	11/18/2007				
13	Instrata	5.5	fl oz/1000 ft2	11/18/2007	0	c	6.8	bc
14	Instrata	7	fl oz/1000 ft2	11/18/2007	0	c	7.0	bc
15	Compass WG	0.25	oz/1000 ft2	11/18/2007	0	c	7.0	bc
17	Proprietary							bc
20	Proprietary							ab
21	Proprietary							
18	Proprietary							cd
19	Proprietary							
7	Tartan	2	fl oz/1000 ft2	11/18/2007	10	b	6.8	bc
7	Chipco 26GT	4	fl oz/1000 ft2	11/18/2007				
9	Chipco 26GT	6	fl oz/1000 ft2	11/18/2007	17.5	ab	5.8	de
16	Untreated Control			---	25.5	a	5.0	e

[a] Mean of 4 replications.
[b] Means followed by same letter do not significantly differ (P=.05, LSD)

Table 24. Microdochium Patch disease and turfgrass quality on a creeping bentgrass green, 2007-08.
Location: Hancock Turfgrass Research Center, E. Lansing, MI
Disease Rating Scale: Percent plot area infected with Microdochium patch.
Quality Rating Scale: 1-10, where 1=poor, 7=acceptable, and 10=excellent.

Rating Date					3/20/2008		3/20/2008	
Rating Data Type					MP Disease		Quality	
Rating Unit					% area		Scale 1-10	
Trt	Treatment		Rate	Application				
No.	Name	Rate	Unit	Date	Mean[a]	LSD[b]	Mean	LSD
1	Lynx Fungicide	1.5	fl oz/1000 ft2	11/18/2007	0	c	8.0	ab
1	Compass WG	0.25	oz/1000 ft2	11/18/2007				
2	Lynx Fungicide	1.5	fl oz/1000 ft2	11/18/2007	0	c	8.0	ab
2	Chipco 26GT	4	fl oz/1000 ft2	11/18/2007				
3	Lynx Fungicide	1.5	fl oz/1000 ft2	11/18/2007	0	c	8.0	ab
3	Daconil Ultrex	5	oz/1000 ft2	11/18/2007				
4	Reserve	5.75	fl oz/1000 ft2	11/18/2007	0	c	8.0	ab
5	Tartan	2	fl oz/1000 ft2	11/18/2007	0	c	7.8	abc
7	Tartan	2	fl oz/1000 ft2	11/18/2007	0	c	8.0	ab
7	Chipco 26GT	4	fl oz/1000 ft2	11/18/2007				
10	Proprietary							
11	Instrata	11	fl oz/1000 ft2	11/18/2007	0	c	7.3	bcd
12	Instrata	11	fl oz/1000 ft2	11/18/2007	0	c	7.0	cde
12	Medallion	0.2	oz/1000 ft2	11/18/2007				
13	Instrata	5.5	fl oz/1000 ft2	11/18/2007	0	c	7.3	bcd
14	Instrata	7	fl oz/1000 ft2	11/18/2007	0	c	7.0	cde
15	Compass WG	0.25	oz/1000 ft2	11/18/2007	0	c	7.0	cde
17	Proprietary							
20	Proprietary							
21	Proprietary							

9	Chipco 26GT	6	fl oz/1000 ft2	11/18/2007	0.2	c	7.0	cde
8	Lynx Fungicide	2	fl oz/1000 ft2	11/18/2007	0.5	c	8.0	ab
6	Tartan	2	fl oz/1000 ft2	11/18/2007	1.3	c	8.0	ab
6	Daconil Ultrex	5	oz/1000 ft2	11/18/2007				
19	Proprietary							
18	Proprietary							
16	Untreated Control			---	25.5	a	5.3	g

[a] Mean of 4 replications.
[b] Means followed by same letter do not significantly differ (P=.05, LSD)