

# **Anthracnose Control on Annual Bluegrass**

**Jeff Gregos<sup>1</sup>, Bill Schweitzer<sup>2</sup>, and Mike Zedreck<sup>3</sup>**

\*<sup>1</sup> Owner, GEC (jeff@gecturf.com); <sup>2</sup> Superintendent, Clover Hill G C; <sup>3</sup> Superintendent, Pittsburgh Field Club

## **PURPOSE**

To evaluate fungicides for the control of anthracnose basal rot on annual bluegrass maintained under golf green conditions.

## **MATERIALS AND METHODS**

This evaluation was conducted at Clover Hill Golf Course (CHGC), Franklin Park, PA and Pittsburgh Field Club (PFC), Fox Chapel, PA. The CHGC study was conducted on a mixed stand of annual bluegrass and creeping bentgrass maintained under golf course green management conditions, at approximately 0.125 inch cutting height. The PFC study was conducted on a mixed stand of creeping bentgrass and annual bluegrass maintained under golf course tee conditions at approximately 0.375 inch cutting height. Individual plots, of 3 ft x 4 ft (CHGC) and 3 ft x 10 ft (PFC), were arranged in a randomized complete block design with three replications. The experimental area was not inoculated; all disease development was of natural occurrence. Treatments were applied with a CO<sub>2</sub>-powered boom sprayer, using XR TeeJet 8005 VS nozzles, at 30 psi, in water equivalent to 2.0 gal per 1000 sq ft. Applications were initiated on May 10, 2005. Treatments were continued on appropriate schedules until August 31, 2005, with the 14-day treatments receiving 9 applications and the 28-day treatments receiving 5 applications. Percent anthracnose damage was rated 9 times during the season. Phytotoxicity was rated on June 1, 2005 using a 1-5 scale, 1 = dead turf, 5 = no phytotoxicity. Turfgrass quality was rated on August 21, 2005 using a 1-9 scale, 1 = dead turf, 9 = ideal turf, and 6 being acceptable turf. On July 26, 2005 the plots were evaluated by the superintendent and assistant superintendent to determine job performance. Job performance had a scale of 1-4, with 1 = fired, 2 = possible job retention, 3 = job retention, and 4 = salary raise. Data obtained was subjected to analysis of variance and LSD was used to determine significant differences between treatment means.

## **DISCUSSION AND CONCLUSION**

No disease developed on the study at the Pittsburgh Field Club and all ratings are from Clover Hill Golf Course. The CHGC site also received an application of 0.5 oz/1000 sq ft Medallion + 3.2 oz/1000 sq ft Daconil Ultrex on August 3, 2005 due to the severe anthracnose outbreak. The regular treatments were continued even after the above treatment. Throughout the entire season, only one treatment received 10% or less anthracnose damage, in fact it maintained less than 5% damage. That treatment was #21 (Medallion 0.25 oz/1000 sq ft, 14-day schedule).

Other notable treatments included the season-long programs, treatment #27, 28, and 29. These three treatments had less than 11% damage throughout the summer. Treatments #16, 17, and 18 received less than 14% damage during the length of the study. While these

may not be acceptable, the plot suffered extensive damage with some plots having 47% anthracnose damage at time during the length of the summer.

Phytotoxicity was noted with two treatments #15, 16, and 29. Both #15 and 16 included wetting agents that caused some leaf-tip burn early in the summer. The rate on treatment #16 was initially 16 fl oz/1000 sq ft for the Cascade, this was later changed to 4 fl oz/1000 sq ft after the initial application. Treatment #29 included Primo MAXX which caused some discoloration of the plot.

When the plots were evaluated by the superintendent and assistant, treatments # 4, 9, and 20 received a rating of "fired" by both parties. Treatment # 21 was the only one to achieve a "raise" rating. The superintendent felt that 14 treatments would allow them to maintain their job, whereas the assistant felt that only 8 treatments would qualify for job retention.

Quality was rated on August 21, 2005, at which time 10 treatments had acceptable rating or better. These included treatments #7, 17, 18, 21, 24, 25, 26, 27, 28, and 29. A majority of the decrease in quality was the result of damage from disease.

Table 1. Percent anthracnose damage ratings from June 1 to August 21, 2005 at the Clover Hill Golf Course

Treatment	Rate			Schdl.	% Anthracnose Damage*				
					Jun-01-05	Jun-21-05	Jun-22-05	Jun-28-05	
1 EXP A	80	WP	2	OZ/1000 FT2	14 Day	1 ab	7 abc	7 a-f	5 b-e
2 EXP A	80	WP	3	OZ/1000 FT2	14 Day	2 ab	5 a-d	8 abc	15 a-d
3 EXP A	80	WP	4	OZ/1000 FT2	14 Day	2 ab	4 a-d	5 a-f	16 abc
4 EXP B	80	WP	2	OZ/1000 FT2	14 Day	2 ab	7 ab	10 ab	22 a
5 EXP B	80	WP	3	OZ/1000 FT2	14 Day	1 ab	5 a-d	5 a-f	13 a-e
6 EXP B	80	WP	4	OZ/1000 FT2	14 Day	1 ab	5 a-d	8 a-d	12 a-e
7 EXP C	50	WP	0.6	OZ/1000 FT2	14 Day	2 ab	7 abc	8 a-e	10 a-e
8 EXP C	50	WP	0.13	OZ/1000 FT2	14 Day	1 ab	5 a-d	7 a-f	9 b-e
9 EXP C	50	WP	0.25	OZ/1000 FT2	14 Day	1 ab	8 a	8 a-d	18 ab
10 EXP A	80	WP	4	OZ/1000 FT2	14 Day	2 ab	5 a-d	6 a-f	9 b-e
EXP C	50	WP	0.06	OZ/1000 FT2	14 Day				
11 EXP A	80	WP	4	OZ/1000 FT2	14 Day	2 a	7 ab	8 a-e	15 a-d
EXP C	50	WP	0.13	OZ/1000 FT2	14 Day				
12 EXP A	80	WP	4	OZ/1000 FT2	14 Day	2 a	4 a-d	4 b-f	17 ab
EXP C	50	WP	0.25	OZ/1000 FT2	14 Day				
13 Heritage	50	WP	0.2	OZ/1000 FT2	14 Day	2 a	4 a-d	7 a-f	14 a-e
14 Insignia	20	WG	0.9	OZ/1000 FT2	14 Day	2 ab	3 a-d	4 a-f	7 b-e
15 Insignia	20	WG	0.9	OZ/1000 FT2	14 Day	1 ab	1 cd	2 c-f	7 b-e
Revolution	100	L	6	FL OZ/1000 FT2	14 Day				
16 Insignia	20	WG	0.9	OZ/1000 FT2	14 Day	1 ab	4 a-d	3 c-f	7 b-e
Cascade	100	L	4	FL OZ/1000 FT2	14 Day				
17 Insignia	20	WG	0.9	OZ/1000 FT2	14 Day	1 ab	2 a-d	3 c-f	3 de
Daconil Ultrex	82.5	WG	2.8	OZ/1000 FT2	14 Day				
18 Insignia	20	WG	0.9	OZ/1000 FT2	14 Day	2 ab	4 a-d	8 a-d	7 b-e
Banner MAXX	1.3	ME	1	OZ/1000 FT2	14 Day				
19 Heritage TL	1	ME	1	FL OZ/1000 FT2	14 Day	2 ab	3 a-d	4 a-f	5 b-e
20 Heritage	50	WG	0.4	OZ/1000 FT2	28 Day	1 ab	2 bcd	3 c-f	7 b-e
21 Medallion	50	WP	0.25	OZ/1000 FT2	14 Day	1 ab	1 d	1 def	2 e
22 Banner MAXX	1.3	ME	1	FL OZ/1000 FT2	14 Day	1 ab	2 a-d	3 c-f	4 cde
23 Banner MAXX	1.3	ME	2	FL OZ/1000 FT2	28 Day	1 ab	3 a-d	5 a-f	5 b-e
24 Signature	80	WP	4	OZ/1000 FT2	14 Day	0 b	0 d	0 f	4 cde
Chipco 26 GT	2	SC	4	FL OZ/1000 FT2	14 Day				
25 Signature	80	WP	4	OZ/1000 FT2	14 Day	1 ab	1 d	1 ef	3 de
Daconil Ultrex	82.5	WG	2.4	OZ/1000 FT2	14 Day				
26 Signature	80	WP	4	OZ/1000 FT2	14 Day	1 ab	3 a-d	6 a-f	7 b-e
Compass	50	WP	0.25	OZ/1000 FT2	14 Day				
27 Heritage	50	WG	0.2	OZ/1000 FT2	May 1	1 ab	1 d	2 c-f	2 e
Chipco 26 GT	2	SC	4	FL OZ/1000 FT2	May 1				
Banner MAXX	1.3	ME	2	FL OZ/1000 FT2	May 2				
Signature	80	WG	4	OZ/1000 FT2	May 2				
Daconil Ultrex	82.5	WG	2.8	OZ/1000 FT2	June 1				
Cleary's 3336	50	WP	4	OZ/1000 FT2	June 1				
Signature	80	WP	4	OZ/1000 FT2	June 2				
Chipco 26 GT	2	SC	2	FL OZ/1000 FT2	June 2				
Insignia	20	WG	0.9	OZ/1000 FT2	July 1				
Daconil Ultrex	82.5	WG	2.8	OZ/1000 FT2	July 1				
Banner MAXX	1.3	ME	1	FL OZ/1000 FT2	July 1				
Signature	80	WP	4	OZ/1000 FT2	July 2				
Compass	50	WP	0.25	OZ/1000 FT2	July 2				
Daconil Ultrex	82.5	WG	2.8	OZ/1000 FT2	July 2				
Emerald	50	WG	0.13	OZ/1000 FT2	Aug 1				
Medallion	50	WG	0.25	OZ/1000 FT2	Aug 1				
Heritage	50	WG	0.2	OZ/1000 FT2	Aug 1				
Cleary's 3336	50	WP	4	OZ/1000 FT2	Aug 2				
Signature	80	WP	4	OZ/1000 FT2	Aug 2				
Banner MAXX	1.3	ME	1	FL OZ/1000 FT2	Aug 3				
Medallion	50	WP	0.25	OZ/1000 FT2	Aug 3				

\* Means followed by the same letter do not significantly differ (P=0.05, LSD)

Table 1. (Continued)

Treatment	Rate		Schdl.	% Anthracnose Damage*					
				Jun-01-05	Jun-21-05	Jun-22-05	Jun-28-05		
28 Banner MAXX	1.3	ME	2	FL OZ/1000 FT2	May 1	0 b	1 d	2 c-f	4 cde
Chipco 26 GT	2	SC	4	FL OZ/1000 FT2	May 1				
Insignia	20	WG	0.9	OZ/1000 FT2	May 2				
Daconil Ultrex	82.5	WG	2.8	OZ/1000 FT2	May 2				
Banner MAXX	1.3	ME	1	FL OZ/1000 FT2	June 1				
Cleary's 3336	50	WP	1	OZ/1000 FT2	June 1				
Urea	46	WG	8.6	OZ/1000 FT2	June 1				
Compass	50	WG	0.25	OZ/1000 FT2	June 2				
Emerald	50	WG	0.13	OZ/1000 FT2	June 2				
Urea	46	WG	8.6	OZ/1000 FT2	June 2				
Signature	80	WG	4	OZ/1000 FT2	July 1				
Daconil Ultrex	82.5	WG	2.8	OZ/1000 FT2	July 1				
Urea	46	WG	8.6	OZ/1000 FT2	July 1				
Banner MAXX	1.3	ME	1	FL OZ/1000 FT2	July 2				
Heritage	50	WG	0.4	OZ/1000 FT2	July 2				
Urea	46	WG	8.6	OZ/1000 FT2	July 2				
Chipco 26 GT	2	SC	4	FL OZ/1000 FT2	Aug 1				
Daconil Ultrex	82.5	SC	2.8	OZ/1000 FT2	Aug 1				
Urea	46	WG	8.6	OZ/1000 FT2	Aug 1				
Cleary's 3336	50	WP	4	OZ/1000 FT2	Aug 2				
Medallion	50	WG	0.25	OZ/1000 FT2	Aug 2				
Urea	46	WG	8.6	OZ/1000 FT2	Aug 2				
Banner MAXX	1.3	ME	1	FL OZ/1000 FT2	Aug 3				
Insignia	20	WG	0.9	OZ/1000 FT2	Aug 3				
Urea	46	WG	8.6	OZ/1000 FT2	Aug 3				
29 Banner MAXX	1.3	ME	2	FL OZ/1000 FT2	May 1	2 ab	3 a-d	4 b-f	6 b-e
Daconil Ultrex	82.5	WG	3.2	OZ/1000 FT2	May 1				
Primo MAXX	1	ME	0.125	FL OZ/1000 FT2	May 1				
Medallion	50	WG	0.25	OZ/1000 FT2	May 2				
Daconil Ultrex	82.5	WG	3.2	OZ/1000 FT2	May 2				
Primo MAXX	1	ME	0.125	FL OZ/1000 FT2	May 2				
Heritage TL	1	ME	2	FL OZ/1000 FT2	June 1				
Banner MAXX	1.3	ME	1	FL OZ/1000 FT2	June 1				
Daconil Ultrex	82.5	WG	1.8	OZ/1000 FT2	June 1				
Primo MAXX	1	ME	0.125	FL OZ/1000 FT2	June 1				
Banner MAXX	1.3	ME	1	FL OZ/1000 FT2	June 2				
Medallion	50	WP	0.25	OZ/1000 FT2	June 2				
Daconil Ultrex	82.5	WG	1.8	OZ/1000 FT2	June 2				
Primo Maxx	1	ME	0.125	FL OZ/1000 FT2	June 2				
Heritage TL	1	ME	2	FL OZ/1000 FT2	July 1				
Daconil Ultrex	82.5	WG	3.2	OZ/1000 FT2	July 1				
Subdue MAXX	1	ME	1	FL OZ/1000 FT2	July 1				
Primo MAXX	1	ME	0.125	FL OZ/1000 FT2	July 1				
Banner MAXX	1.3	ME	1	FL OZ/1000 FT2	July 2				
Medallion	50	WP	0.25	OZ/1000 FT2	July 2				
Daconil Ultrex	82.5	WG	1.8	OZ/1000 FT2	July 2				
Primo MAXX	1	ME	0.125	FL OZ/1000 FT2	July 2				
Heritage TL	1	ME	2	FL OZ/1000 FT2	Aug 1				
Daconil Ultrex	82.5	WG	3.2	OZ/1000 FT2	Aug 1				
Subdue MAXX	1	ME	1	FL OZ/1000 FT2	Aug 1				
Primo MAXX	1	ME	0.125	FL OZ/1000 FT2	Aug 1				
Banner MAXX	1.3	ME	1	FL OZ/1000 FT2	Aug 2				
Medallion	50	WP	0.25	OZ/1000 FT2	Aug 2				
Daconil Ultrex	82.5	WG	1.8	OZ/1000 FT2	Aug 2				
Primo MAXX	1	ME	0.125	FL OZ/1000 FT2	Aug 2				
Cleary's 3336	50	WP	4	OZ/1000 FT2	Aug 3				
Daconil Ultrex	82.5	WG	1.8	OZ/1000 FT2	Aug 3				
Primo MAXX	1	ME	0.125	FL OZ/1000 FT2	Aug 3				
30 Check						2 ab	7 abc	11 a	13 a-e
<b>LSD (P=.05)</b>						<b>1.99</b>	<b>5.45</b>	<b>6.81</b>	<b>12.83</b>
<b>Standard Deviation</b>						<b>1.22</b>	<b>3.33</b>	<b>4.17</b>	<b>7.86</b>
<b>CV</b>						<b>88.37</b>	<b>88.02</b>	<b>81.03</b>	<b>87.07</b>

\* Means followed by the same letter do not significantly differ (P=0.05, LSD)

Table 1. (Continued)

Treatment	% Anthracnose Damage*				
	Jul-04-05	Jul-14-05	Jul-21-05	Aug-10-05	Aug-21-05
1 EXP A	11 a-f	21 a-h	28 a-h	20 a-e	20 a-d
2 EXP A	20 a-d	32 abc	47 a	20 a-e	23 ab
3 EXP A	12 a-f	22 a-h	35 a-e	22 a-e	18 a-e
4 EXP B	25 a	35 a	38 a-d	23 a-d	20 a-d
5 EXP B	12 a-f	30 a-d	32 a-g	13 b-f	17 a-f
6 EXP B	15 a-f	23 a-g	28 a-h	23 a-d	18 a-e
7 EXP C	14 a-f	25 a-f	32 a-g	17 a-f	7 fgh
8 EXP C	8 c-f	14 d-i	16 f-l	10 def	15 a-h
9 EXP C	19 a-e	24 a-g	45 a	28 ab	20 a-d
10 EXP A	10 a-f	17 b-i	32 a-g	23 a-d	18 a-e
11 EXP A	16 a-f	23 a-h	28 a-h	22 a-e	22 abc
12 EXP A	24 ab	33 ab	42 abc	30 a	23 ab
13 Heritage	21 abc	27 a-e	43 ab	27 abc	23 ab
14 Insignia	11 a-f	14 d-i	25 b-i	17 a-f	19 a-e
15 Insignia Revolution	4 def	9 f-i	10 h-l	15 a-f	25 a
16 Insignia Cascade	7 c-f	8 f-i	9 i-l	13 b-f	13 b-h
17 Insignia Daconil Ultrex	4 def	6 hi	9 i-l	13 b-f	7 gh
18 Insignia Banner MAXX	6 c-f	8 ghi	13 g-l	10 def	12 c-h
19 Heritage TL	7 c-f	15 c-i	23 c-j	17 a-f	20 a-d
20 Heritage	15 a-f	27 a-e	37 a-e	27 abc	22 abc
21 Medallion	3 f	2 i	4 kl	4 f	5 h
22 Banner MAXX	3 ef	17 b-i	8 i-l	12 c-f	13 b-h
23 Banner MAXX	9 b-f	10 e-i	22 d-k	22 a-e	17 a-g
24 Signature Chipco 26 GT	3 f	8 ghi	18 e-l	12 c-f	7 gh
25 Signature Daconil Ultrex	7 c-f	10 e-i	18 e-l	10 def	9 e-h
26 Signature Compass	15 a-f	20 a-h	33 a-f	17 a-f	10 d-h
27 Heritage Chipco 26 GT	4 ef	2 i	9 i-l	11 def	5 h
Banner MAXX					
Signature					
Daconil Ultrex					
Cleary's 3336					
Signature					
Chipco 26 GT					
Insignia					
Daconil Ultrex					
Banner MAXX					
Signature					
Compass					
Daconil Ultrex					
Emerald					
Medallion					
Heritage					
Cleary's 3336					
Signature					
Banner MAXX					
Medallion					

\* Means followed by the same letter do not significantly differ (P=0.05, LSD)

Table 1. (Continued)

Treatment	% Anthracnose Damage*				
	Jul-04-05	Jul-14-05	Jul-21-05	Aug-10-05	Aug-21-05
28 Banner MAXX Chipco 26 GT Insignia Daconil Ultrex Banner MAXX Cleary's 3336 Urea Compass Emerald Urea Signature Daconil Ultrex Urea Banner MAXX Heritage Urea Chipco 26 GT Daconil Ultrex Urea Cleary's 3336 Medallion Urea Banner MAXX Insignia Urea	4 ef	3 i	6 jkl	8 def	11 d-h
29 Banner MAXX Daconil Ultrex Primo MAXX Medallion Daconil Ultrex Primo MAXX Heritage TL Banner MAXX Daconil Ultrex Primo MAXX Banner MAXX Medallion Daconil Ultrex Primo Maxx Heritage TL Daconil Ultrex Subdue MAXX Primo MAXX Banner MAXX Medallion Daconil Ultrex Primo MAXX Heritage TL Daconil Ultrex Subdue MAXX Primo MAXX Banner MAXX Medallion Daconil Ultrex Primo MAXX Cleary's 3336 Daconil Ultrex Primo MAXX	4 ef	3 i	3 l	7 ef	11 d-h
30 Check	10 a-f	18 a-i	33 a-f	23 a-d	22 abc
<b>LSD (P=0.05)</b>	<b>15.74</b>	<b>16.85</b>	<b>18.41</b>	<b>15.4</b>	<b>10.61</b>
<b>Standard Deviation</b>	<b>9.64</b>	<b>10.32</b>	<b>11.27</b>	<b>9.43</b>	<b>6.5</b>
<b>CV</b>	<b>89.98</b>	<b>61.07</b>	<b>46.4</b>	<b>54.91</b>	<b>41.28</b>

\* Means followed by the same letter do not significantly differ (P=0.05, LSD)

Table 2. Phytotoxicity, job retention and quality ratings from Summer 2005 at Clover Hill Golf Course

	Treatment	Phytotoxicity‡ Jun-01-05	Job Rating Sup <sup>1</sup> Jul-26-05	Job Rating Assist <sup>1</sup> Jul-26-05	Quality <sup>2</sup> Aug-21-05
1	EXP A	5 a	2.3 b-e	1.7 bc	5.33 def
2	EXP A	5 a	1.7 de	1.7 bc	5.33 def
3	EXP A	5 a	2.7 bcd	2.3 abc	5.67 b-f
4	EXP B	5 a	1.3 e	1.3 c	5.33 def
5	EXP B	4.83 ab	2 cde	2 abc	5.5 c-f
6	EXP B	5 a	2 cde	1.7 bc	5.5 c-f
7	EXP C	5 a	2 cde	2 abc	6.5 ab
8	EXP C	5 a	2.7 bcd	2.7 abc	5.67 b-f
9	EXP C	5 a	1.3 e	1.3 c	5.17 ef
10	EXP A EXP C	5 a	2 cde	2 abc	5.5 c-f
11	EXP A EXP C	5 a	1.7 de	1.7 bc	5.17 ef
12	EXP A EXP C	5 a	2 cde	2 abc	5 f
13	Heritage	4.83 ab	1.7 de	1.3 c	5 f
14	Insignia	4.83 ab	2.7 bcd	2 abc	5.67 b-f
15	Insignia Revolution	4.67 b	3 abc	2.3 abc	5 f
16	Insignia Cascade	4.33 c	2.7 bcd	2.3 abc	5.83 a-f
17	Insignia Daconil Ultrex	5 a	3.3 ab	3 ab	6.33 abc
18	Insignia Banner MAXX	5 a	3 abc	2.7 abc	6 a-e
19	Heritage TL	5 a	2.3 b-e	2 abc	5 f
20	Heritage	5 a	1.3 e	1.3 c	5 f
21	Medallion	5 a	4 a	3.3 a	6.67 a
22	Banner MAXX	5 a	2.7 bcd	2.3 abc	5.67 b-f
23	Banner MAXX	5 a	1.7 de	2 abc	5.67 b-f
24	Signature Chipco 26 GT	5 a	2.7 bcd	2.3 abc	6.33 abc
25	Signature Daconil Ultrex	5 a	3 abc	3 ab	6.17 a-d
26	Signature Compass	5 a	2.3 b-e	2 abc	6.17 a-d
27	Heritage Chipco 26 GT Banner MAXX Signature Daconil Ultrex Cleary's 3336 Signature Chipco 26 GT Insignia Daconil Ultrex Banner MAXX Signature Compass Daconil Ultrex Emerald Medallion Heritage Cleary's 3336 Signature Banner MAXX Medallion	5 a	3.3 ab	3 ab	6.17 a-d

\*Means followed by the same letter do not significantly differ (P=0.05, LSD)

‡Phytotoxicity: 1-5 scale, 1 = dead turf, 5 = no phytotoxicity

<sup>1</sup>Superintendent and assistant superintendent job performance rating: scale of 1-4, with 1 = fired, 2 = possible job retention, 3 = job retention, and 4 = salary raise.

<sup>2</sup>Turfgrass quality: 1-9 scale, 1 = dead turf, 9 = ideal turf, and 6 being acceptable turf

Table 2. (Continued)

	Treatment	Phytotoxicity Jun-01-05	Job Rating Sup. Jul-26-05	Job Rating Assist Jul-26-05	Quality Aug-21-05
28	Banner MAXX Chipco 26 GT Insignia Daconil Ultrex Banner MAXX Cleary's 3336 Urea Compass Emerald Urea Signature Daconil Ultrex Urea Banner MAXX Heritage Urea Chipco 26 GT Daconil Ultrex Urea Cleary's 3336 Medallion Urea Banner MAXX Insignia Urea	4.83 ab	3.3 ab	3 ab	6 a-e
29	Banner MAXX Daconil Ultrex Primo MAXX Medallion Daconil Ultrex Primo MAXX Heritage TL Banner MAXX Daconil Ultrex Primo MAXX Banner MAXX Medallion Daconil Ultrex Primo Maxx Heritage TL Daconil Ultrex Subdue MAXX Primo MAXX Banner MAXX Medallion Daconil Ultrex Primo MAXX Heritage TL Daconil Ultrex Subdue MAXX Primo MAXX Banner MAXX Medallion Daconil Ultrex Primo MAXX Cleary's 3336 Daconil Ultrex Primo MAXX	4.33 c	3.3 ab	3 ab	6 a-e
30	Untreat Control	5 a	2.7 bcd	1.7 bc	5.17 ef
	<b>LSD (P=.05)</b>	<b>0.268</b>	<b>1.2</b>	<b>1.47</b>	<b>0.993</b>
	<b>Standard Deviation</b>	<b>0.164</b>	<b>0.73</b>	<b>0.9</b>	<b>0.608</b>
	<b>CV</b>	<b>3.33</b>	<b>30.33</b>	<b>41.61</b>	<b>10.76</b>

\*Means followed by the same letter do not significantly differ (P=0.05, LSD)

‡Phytotoxicity: 1-5 scale, 1 = dead turf, 5 = no phytotoxicity

†Superintendent and assistant superintendent job performance rating: scale of 1-4, with 1 = fired, 2 = possible job retention, 3 = job retention, and 4 = salary raise.

<sup>2</sup>Turfgrass quality: 1-9 scale, 1 = dead turf, 9 = ideal turf, and 6 being acceptable turf