

CREEPING BENTGRASS (*Agrostis palustris* 'L-93')
Brown patch; *Rhizoctonia solani*
Dollar spot; *Sclerotinia homeocarpa*
Disease Incidence
Visual Quality

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Preventative control of brown patch and dollar spot in creeping bentgrass greens, 2004.

Fungicides were evaluated for their effect on brown patch, dollar spot, and visual quality. This trial was conducted at the Sandhills Research Station in Jackson Springs, NC on 'L-93' creeping bentgrass maintained under golf course putting green conditions. Mowing was performed 3 times weekly at a height of 0.187 in. with clippings collected, and the site was irrigated to prevent drought stress. Fertilizer was applied as 18-6-15 on 23 Feb (0.75 lb N/1000 sq ft), as 18-3-16 on 30 Mar (1.24 lb N/1000 sq ft), as 20-20-20 on 15 Jun (0.08 lb N/1000 sq ft), 29 Jul (0.08 lb N/1000 sq ft), and 13 Jul (0.14 lb N/1000 sq ft), and as 15.5-0-0 (0.08 lb N /1000 sq ft) on 10 Aug and 23 Aug. Insect pests were suppressed with Deltagard GC (0.4 oz/1000 sq ft) on 6 May, 10 Aug, and 23 Aug and with Sevin SL (2.6 oz/1000 sq ft) on 3 Aug. Plots were 3.33 ft x 6 ft and were arranged in a randomized complete block with four replications. Fungicides were applied in water equivalent to 2 gal per 1000 sq ft with a CO₂ powered sprayer at 40 psi using TeeJet 8004 flat fan nozzles. All treatments were initiated on 4 Jun. Fungicides were re-applied at the appropriate intervals as indicated in the table. The experimental area was inoculated on 16 Jun using rye grain infested with *Rhizoctonia solani* AG2-2 IIIB to encourage brown patch development. Percent turf area exhibiting brown patch symptoms was assessed on 1 Jul, 14 Jul, 22 Jul, 30 Jul, and 1 Sep. Dollar spot incidence was assessed by counting the total number of infection centers in each plot on 16 Jun, 1 Jul, and 1 Sep. Turfgrass quality was evaluated on 1 Sep, using a 1 to 9 scale (9=best, 5=acceptable) based on color, density, and uniformity. All data were subjected to analysis of variance and means separation by Waller-Duncan k-ratio t test (k=100).

Symptoms of brown patch were first observed in the experimental area on 1 Jul. Brown patch pressure was low throughout June and fluctuated throughout July. Most treatments resulted in significant suppression of brown patch on 14 Jul, 22 Jul, and 30 Jul, except for Banner Maxx, which did not significantly reduce brown patch on 14 Jul, 22 Jul, or 30 Jul when compared to the untreated control (Table 1). No significant differences in brown patch incidence were detected among treatments on 1 Sep.

Dollar spot pressure was low to moderate throughout the study. On the 16 Jun rating date, Endorse was the only treatment not to provide significant dollar spot control (Table 2). All treatments, except Compass, Endorse, Heritage TL, Heritage 50WG, and Insignia (0.5 oz), provided excellent dollar spot control on 16 Jun. Plots treated with Heritage TL at 1 fl oz on 14 day intervals exhibited lower dollar spot incidence than plots treated with Heritage 50WG at 0.2 oz on 14 day intervals. No treatments were significantly different from the untreated control on the 1 Jul and 1 Sep rating dates.

The turfgrass quality rating on 1 Sep indicated that most treatments provided an acceptable turfgrass quality (≥ 5), but few treatments were significantly different from the untreated control (Table 2). A14212 (3.08 fl oz) and Daconil Ultrex (3.2 oz) were the only treatments to provide significantly better turfgrass quality when compared to the untreated control on 1 Sep.

Table 1. Brown patch incidence ratings.

Treatment and rate / 1000 sq ft	Application code ^z	Brown patch incidence (%) ^y				
		1 Jul	14 Jul	22 Jul	30 Jul	1 Sep
1. Compass 50WG 0.2 oz	ACEGIK	1.5 hi	1.5 gh	0 d	0.5 e	3 a
2. Endorse 2.5WP 4 oz	ACEGIK	2.3 f-i	2.3 fgh	0 d	1.3 de	3.3 a
3. Endorse 11DF 0.9 oz	ACEGIK	2 ghi	2.3 fgh	0 d	0.8 e	2.3 a
4. Spectro 90WDG 4 oz	ACEGIK	4.5 efg	4.5 d-h	0 d	5.3 cde	1 a
5. Heritage TL 0.8ME 1 fl oz	ACEGIK	1.8 hi	0.5 h	0 d	0.8 e	1 a
6. Heritage TL 0.8ME 2 fl oz	AEI	4.8 def	1.3 gh	0 d	1.5 de	2.5 a
7. Heritage 50WG 0.2 oz	ACEGIK	1 i	0.5 h	0.5 cd	0.5 e	5.8 a
8. Heritage 50WG 0.4 oz	AEI	2 ghi	2 gh	0 d	0.8 e	2 a
9. Insignia 20WG 0.5 oz	ACEGIK	2.5 f-i	0 h	0 d	0.5 e	3 a
10. Insignia 20WG 0.9 oz	AEI	1.3 hi	0.8 h	0 d	0.5 e	2.8 a
11. A14212 167EC 1.54 fl oz	ACEGIK	1 i	0 h	0 d	0 e	1.8 a
12. A14212 167EC 3.08 fl oz	AEI	3 f-i	0.8 h	0 d	1.8 de	0 a
13. A13705 200SC 1.28 fl oz	ACEGIK	1.5 hi	0.8 h	0.8 cd	1.5 de	3.5 a
14. A13705 200SC 0.96 fl oz	ACEGIK	1 i	2 gh	0 d	0 e	4.3 a
15. Heritage 50WG 0.2 oz + Banner Maxx 1.3ME 1 fl oz	ACEGIK	0.8 i	0 h	0 d	0 e	1.3 a
16. Daconil Ultrex 82.5WDG 3.2 oz	ACEGIK	1.8 hi	3 e-h	0 d	3.3 de	0 a
17. Banner Maxx 1.3ME 1 fl oz	ACEGIK	6 de	16.5 ab	5 abc	20 a	1.5 a
18. Medallion 50WP 0.5 oz	ACEGIK	3.8 e-h	8 cde	2.5 bcd	5 cde	1.5 a
19. Banner Maxx 1.3ME 1 fl oz	A					
Heritage 50WG 0.2 oz	C					
Daconil Ultrex 82.5WDG 3.2 oz + Subdue Maxx 2ME 0.5 fl oz	E					
Banner Maxx 1.3ME 1 fl oz + Heritage 50WG 0.2 oz	G					
Medallion 50WP 0.25 oz + Daconil Ultrex 82.5WDG 3.2 oz..	I					
Banner Maxx 1.3ME 1 fl oz + Heritage 50WG 0.2 oz	K	1 i	0 h	0 d	0 e	0.8 a
20. Curalan 50WG 1 oz	ACEGIK	3.3 f-i	7.8 c-f	3 bcd	11.5 bc	2 a
21. 26GT 2SC 4 fl oz	ACEGIK	2.3 f-i	6.8 c-g	1.3 cd	2.8 de	0.8 a
22. Untreated Control	--	13.3 bc	22 a	9.3 a	21.5 a	5.8 a

^z Application code indicates the application date(s) for each treatment component: A, 4 Jun; C, 18 Jun; E, 2 Jul; G, 16 Jul; I, 30 Jul; K, 17 Aug.

^y Values are means of four replicates. Means within columns followed by the same letter are not significantly different according to Waller-Duncan k-ratio t-test (k=100).

Table 2. Dollar spot incidence and turf quality ratings.

Treatment and rate / 1000 sq ft	Application code ^z	Dollar spot incidence ^y (Infection centers/plot)			Turf quality ^x
		16 Jun	1 Jul	1 Sep	1 Sep
1. Compass 50WG 0.2 oz	ACEGIK	41.3 bc	43.3 a	96.5 ab	3.8 d
2. Endorse 2.5WP 4 oz	ACEGIK	48 ab	37.5 a	76.8 ab	4.8 a-d
3. Endorse DF 11DF 0.9 oz	ACEGIK	20.5 e-h	35.3 a	53.8 ab	4.8 a-d
4. Spectro 90WDG 4 oz	ACEGIK	2.3 hij	0.8 a	11.8 ab	5.5 a-d
5. Heritage TL 0.8ME 1 fl oz	ACEGIK	19 e-i	28 a	66.5 ab	4.8 a-d
6. Heritage TL 0.8ME 2 fl oz	AEI	21.8 d-g	41.8 a	107.8 a	4 cd
7. Heritage 50WG 0.2 oz	ACEGIK	39.5 bcd	24 a	77 ab	4.3 bcd
8. Heritage 50WG 0.4 oz	AEI	23 c-f	18.8 a	77 ab	4.5 bcd
9. Insignia 20WG 0.5 oz	ACEGIK	28 cde	0.8 a	78 ab	4.5 bcd
10. Insignia 20WG 0.9 oz	AEI	12.8 e-j	7 a	5.8 ab	5 a-d
11. A14212 167EC 1.54 fl oz	ACEGIK	0 j	0 a	0 b	6 abc
12. A14212 167EC 3.08 fl oz	AEI	0 j	0 a	0.8 b	6.8 a
13. A13705 200SC 1.28 fl oz	ACEGIK	0.5 ij	0 a	15.8 ab	5 a-d
14. A13705 200SC 0.96 fl oz	ACEGIK	5.8 f-j	0 a	0 b	5.5 a-d
15. Heritage 50WG 0.2 oz					
+ Banner Maxx 1.3ME 1 fl oz	ACEGIK	2 hij	0 a	0 b	5.8 a-d
16. Daconil Ultrex 82.5WDG 3.2 oz	ACEGIK	3.5 g-j	0 a	0.3 b	6.8 a
17. Banner Maxx 1.3ME 1 fl oz	ACEGIK	0 j	0 a	17 ab	5.3 a-d
18. Medallion 50WP 0.5 oz	ACEGIK	7.5 f-j	5.8 a	9.5 ab	5 a-d
19. Banner Maxx 1.3ME 1 fl oz	A				
Heritage 50WG 0.2 oz	C				
Daconil Ultrex 82.5WDG 3.2 oz					
+ Subdue Maxx 2ME 0.5 fl oz	E				
Banner Maxx 1.3ME 1 fl oz					
+ Heritage 50WG 0.2 oz	G				
Medallion 50WP 0.25					
+ Daconil Ultrex 82.5WDG 3.2 oz..	I				
Banner Maxx 1.3ME 1 fl oz					
+ Heritage 50WG 0.2 oz	K	0.5 ij	0 a	0 b	6.3 ab
20. Curalan 50WG 1 oz	ACEGIK	0.5 ij	0 a	21 ab	5.3 a-d
21. 26GT 2SC 4 fl oz	ACEGIK	0 j	0 a	3.3 b	5.8 a-d
22. Untreated Control	--	61 a	47 a	64.8 ab	4.5 bcd

^z Application code indicates the application date(s) for each treatment component: A, 4 Jun; C, 18 Jun; E, 2 Jul; G, 16 Jul; I, 30 Jul; K, 17 Aug.

^y Values are means of four replicates. Means within columns followed by the same letter are not significantly different according to Waller-Duncan k-ratio t-test (k=100).

^x Turf quality on a 1 to 9 scale, where 9=highest quality and 5=acceptable quality.