

Evaluation of Fungicides for Control of Brown Patch and Dollar Spot in Creeping Bentgrass – 2004

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Trials were conducted at Veenker Memorial Golf Course in Ames, Iowa. ‘Washington’ creeping bentgrass was maintained at 0.16-inch cutting height. Fungicides selected for activity against brown patch were applied using a backpack sprayer at 30 psi and a dilution rate of 5 gal per 1000 sq ft. The experimental design was a randomized complete block with four replications. All plots measured 4 ft x 5 ft. Spray applications were initiated on 4 Jun, except for curative treatments, which were initiated on 2 Jul. These were followed by re-applications at recommended intervals until 13 Aug.

For brown patch, visual estimates of disease severity were made at approximately 10-day intervals starting on 15 Jul with a qualitative scale of 0-5, where 0 = no disease; 1 = 1-5%; 2 = 6-10%; 3 = 11-25%; 4 = 26-50%; 5 = >50% plot symptomatic. For dollar spot, visual estimates of disease severity (% dollar spot) were made at approximately 7-day intervals starting on 23 Jun. Data were analyzed using the GLM procedure in SAS and mean separations were determined using Fisher’s protected LSD at $P \leq 0.05$.

Because of cool temperatures, disease pressure was low to moderate for brown patch and severe for dollar spot. Most of the tested products suppressed brown patch and dollar spot significantly ($P \leq 0.05$) in comparison to the unsprayed check. No phytotoxicity symptoms were observed during the trial.

Table 1. BROWN PATCH TRIAL, Veenker Memorial Golf Course, Ames IA (creeping bentgrass) – 2004
Plot size: 20 ft² (4 ft x 5 ft); 4 plots per treatment

Product	Rate/100ft ²	Interval (days)	Brown patch severity (1-5 scale)			
			15 Jul	28 Jul	10 Aug	19 Aug
Unsprayed check	---	---	1.75 a-c	2.25 a-d	1.50 a	0.25 bc
3336 F	4 fl oz	14	0.00 d	0.00 f	0.00 e	0.00 c
3336 F + Spotrete WDG	4 fl oz + 5 oz	14	0.00 d	0.50 ef	0.00 e	0.00 c
Spectro 90WDG	4 oz	14	0.00 d	1.00 c-f	0.00 e	0.00 c
Endorse 2.5WP	4 oz	14	0.25 d	0.50 ef	0.00 e	0.00 c
Clery EXP 0214	4 oz	Once (4 June)	0.00 d	0.00 d	0.25 de	0.00 c
Super GT 3SC	2.67 fl oz	14	0.25 d	0.25 ef	0.00 e	0.00 c
26GT 2SC	4 fl oz	14	0.00 d	0.00 f	0.00 e	0.00 c
Bayleton DF	0.5 oz	14	0.00 d	0.00 f	0.00 e	0.00 c
Bayleton DF ¹	0.5 oz	14	0.50 cd	0.25 ef	0.00 e	0.00 c
Compass 50WG	0.1 oz	14	0.00 d	0.75 d-f	0.25 de	0.00 c
Compass 50WG ¹	0.1 oz	14	1.25 a-d	1.50 a-f	0.25 de	0.50 a-c
Compass 50WG	0.2 oz	14	0.00 d	0.00 f	0.00 e	0.00 c
Compass 50WG + Bayleton DF	0.1 oz + 0.5 oz	14	0.00 d	0.00 f	0.00 e	0.00 c
Compass 50WG + Bayleton DF ¹	0.1 oz + 0.5 oz	14	1.25 a-d	1.75 a-e	0.00 e	0.00 c
Compass 50WG + Bayleton DF	0.2 oz + 1 oz	14	0.25 d	0.50 ef	0.00 e	0.00 c
Compass 50WG + Bayleton DF ¹	0.2 oz + 1 oz	14	0.75 cd	0.50 ef	0.00 e	0.25 bc
Banner MAXX 1.24 MEC + Daconil Ultrex 82.5WDG	1 fl oz + 3.25 oz	14	0.00 d	0.25 ef	0.00 e	0.00 c
Bayer EXP 0357 0.157 GR	5 lb	14	0.00 d	0.75 d-f	0.00 e	0.00 c
Bayer EXP 0357 0.157 GR	10 lb	14	0.00 d	1.25 b-f	0.00 e	0.00 c
Emerald 70WG	0.13 oz	14	0.00 d	0.00 f	0.00 e	0.00 c
Emerald 70WG ¹	0.13 oz	14	0.00 b-d	0.75 d-f	0.25 de	0.25 bc
Insignia 20WG	0.5 oz	14	0.00 d	0.00 f	0.25 de	0.00 c
Insignia 20WG	0.9 oz	14	0.00 d	0.00 f	0.00 e	0.00 c
Insignia 20WG ¹	0.9 oz	14	0.25 d	0.25 ef	0.00 e	0.00 c
Insignia 20WG	0.9 oz	28	0.00 d	0.00 f	0.00 e	0.00 c
Daconil Ultrex 82.5WDG	3.25 oz	7	0.00 d	0.50 ef	0.00 e	0.00 c
Daconil Ultrex 82.5WDG	3.25 oz	28	1.00 b-d	3.00 a	0.75 b-d	0.00 c
Ecoguard BioFungicide WS	20 fl oz	7	0.75 cd	0.25 ef	0.00 e	0.00 c
Ecoguard BioFungicide WS	20 fl oz	14	0.00 d	0.25 ef	0.00 e	0.00 c
Ecoguard BioFungicide WS + Daconil Ultrex 82.5 WDG	20 fl oz + 3.25 oz	14	0.00 d	0.75 d-f	0.00 e	0.00 c
Ecoguard BioFungicide WS + Daconil Ultrex 82.5 WDG	20 fl oz + 2.45 oz	14	0.75 cd	1.25 b-f	0.00 e	0.00 c
Ecoguard BioFungicide WS + Daconil Ultrex 82.5 WDG	20 fl oz + 1.63 oz	14	0.25 d	1.50 a-f	0.75 b-d	0.00 c
Ecoguard BioFungicide WS ROTATE Daconil Ultrex 82.5 WDG ²	20 fl oz + 3.25 oz	14	1.00 b-d	1.75 a-e	0.50 c-e	0.00 c
Ecoguard BioFungicide WS ROTATE Banner MAXX 1.24MEC ²	20 fl oz + 1 fl oz	14	0.75 cd	0.75 d-f	0.00 e	0.00 c
Ecoguard BioFungicide WS ROTATE Compass 50WG ³	20 fl oz + 0.2 oz	14	0.25 d	0.75 d-f	0.00 e	0.00 c
Ecoguard BioFungicide WP 140	5 oz	7	1.00 b-d	0.75 d-f	0.00 e	0.00 c
Ecoguard BioFungicide WP 140	5 oz	14	1.75 a-c	2.25 a-d	0.25 de	0.00 c
Ecoguard BioFungicide WP 145	1 oz	7	0.25 d	1.25 b-f	1.00 a-c	0.75 ab
Ecoguard BioFungicide WP 145	1 oz	14	2.50 ab	3.00 a	1.25 ab	0.75 ab
LSD (0.05) ³			1.40	1.69	0.75	0.60

¹Application of products was initiated on 2 Jul.

²Product applications were rotated on a 14-day interval (First product 4 Jun, 2 Jul and 30 Jul; Second product 18 Jun, 16 Jul and 13 Aug).

³Means marked by the same letter are not significantly different according to Fisher's protected LSD at P≤0.05.

Table 2. DOLLAR SPOT TRIAL, Veenker Memorial Golf Course, Ames IA (creeping bentgrass) – 2004
Plot size: 20 ft² (4 ft x 5 ft); 4 plots per treatment

<i>Product</i>	<i>Rate/100ft²</i>	<i>Interval (days)</i>	<i>Dollar spot severity (%)</i>			
			<i>7 Jul</i>	<i>21 Jul</i>	<i>4 Aug</i>	<i>18 Aug</i>
Unsprayed check	---	---	5.5 b-h	17.5 b-i	24.0 ab	25.1 ab
3336 F	4 fl oz	14	0.1 i	0.1 k	0.0 k	0.1 j
3336 F + Spotrete WDG	4 fl oz + 5 oz	14	0.0 i	0.0 k	0.0 k	0.0 j
Spectro 90WDG	4 oz	14	0.0 i	0.0 k	0.0 k	0.2 j
Endorse 2.5WP	4 oz	14	0.0 i	5.0 h-k	5.8 f-k	7.6 f-j
Cleary EXP 0214	4 oz	Once (4 June)	4.0 c-i	20.8 b-f	36.2 a	29.0 ab
Super GT 3SC	2.67 fl oz	14	0.0 i	2.1 jk	0.5 jk	0.1 j
26GT 2SC	4 fl oz	14	0.1 i	3.5 i-k	1.5 jk	0.1 j
Bayleton DF	0.5 oz	14	0.0 i	0.0 k	0.0 k	0.0 j
Bayleton DF ¹	0.5 oz	14	2.3 g-i	2.6 jk	1.0 jk	0.4 ij
Compass 50WG	0.1 oz	14	0.4 hi	4.5 h-k	4.9 f-k	4.1 g-j
Compass 50WG ¹	0.1 oz	14	11.3 a	29.5 a-c	25.0 ab	23.1 ab
Compass 50WG	0.2 oz	14	2.3 g-i	12.0 e-k	11.0 d-i	12.4 c-g
Compass 50WG + Bayleton DF	0.1 oz + 0.5 oz	14	0.0 i	0.0 k	0.1 k	0.1 j
Compass 50WG + Bayleton DF ¹	0.1 oz + 0.5 oz	14	3.3 d-i	6.0 g-k	4.0 h-k	1.6 h-j
Compass 50WG + Bayleton DF	0.2 oz + 1 oz	14	0.0 i	0.0 k	0.5 jk	0.1 j
Compass 50WG + Bayleton DF ¹	0.2 oz + 1 oz	14	6.5 a-g	7.0 f-k	2.5 i-k	1.2 h-j
Banner MAXX 1.24 MEC + Daconil Ultrex 82.5WDG	1 fl oz + 3.25 oz	14	1.0 hi	0.1 k	0.0 k	0.0 j
Bayer EXP 0357 0.157 GR	5 lb	14	8.3 a-e	28.3 a-d	17.0 b-g	4.6 g-k
Bayer EXP 0357 0.157 GR	10 lb	14	3.0 e-i	11.0 e-k	9.5 g-m	1.1 i-k
Emerald 70WG	0.13 oz	14	0.8 hi	0.1 k	0.0 k	0.0 j
Emerald 70WG ¹	0.13 oz	14	5.5 b-h	8.5 f-k	2.8 h-k	0.5 ij
Insignia 20WG	0.5 oz	14	0.3 hi	1.6 jk	3.1 h-k	2.9 g-j
Insignia 20WG	0.9 oz	14	2.5 f-i	15.5 c-j	14.0 c-f	7.1 f-j
Insignia 20WG ¹	0.9 oz	14	6.5 a-g	30.3 ab	24.3 ab	33.3 a
Insignia 20WG	0.9 oz	28	3.3 d-i	25.0 a-e	21.3 a-c	25.0 ab
Daconil Ultrex 82.5WDG	3.25 oz	7	0.0 i	0.0 k	0.0 k	0.0 j
Daconil Ultrex 82.5WDG	3.25 oz	28	2.0 g-i	18.8 b-h	17.0 b-e	5.4 f-j
Ecoguard BioFungicide WS	20 fl oz	7	3.9 c-i	8.8 f-k	1.9 i-k	1.4 h-j
Ecoguard BioFungicide WS	20 fl oz	14	1.9 g-i	3.6 i-k	4.0 h-k	3.6 g-j
Ecoguard BioFungicide WS + Daconil Ultrex 82.5 WDG	20 fl oz + 3.25 oz	14	0.0 i	1.3 jk	0.1 k	0.0 j
Ecoguard BioFungicide WS + Daconil Ultrex 82.5 WDG	20 fl oz + 2.45 oz	14	2.3 g-i	6.3 g-k	3.8 h-k	1.2 h-j
Ecoguard BioFungicide WS + Daconil Ultrex 82.5 WDG	20 fl oz + 1.63 oz	14	1.4 g-i	7.8 f-k	5.9 f-k	2.2 g-j
Ecoguard BioFungicide WS ROTATE Daconil Ultrex 82.5 WDG ²	20 fl oz + 3.25 oz	14	1.8 g-i	9.8 f-k	5.5 f-k	3.0 g-j
Ecoguard BioFungicide WS ROTATE Banner MAXX 1.24MEC ²	20 fl oz + 1 fl oz	14	2.8 f-i	8.8 f-k	4.8 g-k	0.9 ij
Ecoguard BioFungicide WS ROTATE Compass 50WG ³	20 fl oz + 0.2 oz	14	8.8 a-c	26.5 a-d	16.0 b-e	9.9 e-j
Ecoguard BioFungicide WP 140	5 oz	7	1.0 hi	3.8 i-k	2.9 h-k	1.4 h-j
Ecoguard BioFungicide WP 140	5 oz	14	4.0 c-i	14.0 d-k	11.8 d-h	8.0 f-j
Ecoguard BioFungicide WP 145	1 oz	7	4.8 b-i	21.3 a-f	13.8 c-g	6.8 f-j
Ecoguard BioFungicide WP 145	1 oz	14	10.0 ab	35.5 a	26.5 a	22.1 bc
LSD (0.05) ³			5.3	14.5	9.8	10.5

¹Application of products was initiated on 2 Jul.

²Product applications were rotated on a 14-day interval (First product 4 Jun, 2 Jul and 30 Jul; Second product 18 Jun, 16 Jul and 13 Aug).

³Means marked by the same letter are not significantly different according to Fisher's protected LSD at $P \leq 0.05$.