

ANNUAL BLUEGRASS (*Poa annua*)
Anthracnose foliar blight; *Colletotrichum graminicola*
Dollar spot; *Sclerotinia homoeocarpa*

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Evaluation of fungicides for prevention of anthracnose foliar blight, 2005.

Fungicides were evaluated for their effect on dollar spot and anthracnose foliar blight on annual bluegrass putting greens. This trial was conducted at Blowing Rock Country Club in Blowing Rock, NC on annual bluegrass maintained under putting green conditions. Mowing was performed daily at a height of 0.125 in. with clippings collected, and the site was irrigated to prevent drought stress. Fertilizer was applied as 8-3-5 on 30 Mar (0.5 lb N/1000 sq ft), as 19-2-19 on 29 Apr (0.5 lb N/1000 sq ft), as 18-9-18 on 28 Jul (0.5 lb N/1000 sq ft), and as 14-2-14 on 20 Aug (0.5 lb N/1000 sq ft). Proxy growth regulator was applied at 5 fl oz/1000 sq ft on 21 Mar and Proxy + Primo Maxx was applied at 5 + 0.2 fl oz/1000 sq ft on Apr 6. Light applications of foliar fertilizers were also applied throughout the growing season. Experimental 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 nozzles. All treatments were initiated on 23 May and were reapplied on approximately 14 day intervals. Anthracnose foliar blight incidence was determined on 25 Jul and 15 Aug by estimating the percentage of plot surface area exhibiting disease symptoms using a point-intersect method. Anthracnose foliar blight severity was also determined on 15 Aug using a 1 to 9 scale (9=most severe, 5=acceptable). Dollar spot incidence was assessed by counting the number of infection centers in each plot on 25 Jul and 15 Aug. Turfgrass quality was evaluated on 6 Jun, 29 Jun, 25 Jul, and 15 Aug, 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 anthracnose were first observed in the experimental area on 25 Jul, but no significant differences were detected among treatments on this date. On 15 Aug, statistical differences were detected in disease incidence and severity ratings. Several treatments resulted in excellent reductions in both parameters, including Endorse (4 oz), Medallion (0.5 oz), Daconil Ultrex (3.2 oz), 26/36 (3.75 fl oz), and Spectro (4 oz). Treatments containing the phosphonate fungicides Chipco Signature or Alude also provided excellent anthracnose control when applied alone or tank-mixed with Daconil Ultrex. Thiophanate-methyl (3336) and the QoI fungicides (Compass, Insignia, and Heritage) did not provide effective control of anthracnose in this study, and isolates of *Colletotrichum graminicola* with resistance to benzimidazole and QoI fungicides were isolated from infected plants. Significant dollar spot activity was observed in plots treated with Chipco Signature (4 oz), Alude (6 fl oz), and Endorse (4 oz), whereas all other treatments provided acceptable suppression of the disease. All fungicide treatments significantly improved turf quality on 15 Aug, but only Chipco Signature (4 oz), Chipco Signature + Daconil Ultrex (4 + 3.2 oz), Alude + Daconil Ultrex (6 + 3.2 oz), Daconil Ultrex (3.2 oz), 3336 (4 fl oz), and Spectro (4 oz) increased turf quality on both 25 Jul and 15 Aug compared to the untreated control.

Treatment and rate / 1000 sq ft	Spray interval (days)	Anthracnose incidence (%)		Anthracnose severity ^z	Dollar spot incidence (infection centers/plot)	
		25 Jul	15 Aug	15 Aug	25 Jul	15 Aug
Chipco Signature 80WDG 4 oz.....	14 ^y	1 a ^x	0 fg	0.0 d	3 abc	12 abc
Chipco Signature 80WDG 4 oz + Daconil Ultrex 82.5WDG 3.2 oz	14	0 a	0 g	0.0 d	1 bc	0 e
Alude SC 6 fl oz	14	4 a	1 efg	0.3 d	3 abc	9 bcd
Alude SC 6 fl oz + Daconil Ultrex 82.5WDG 3.2 oz	14	2 a	0 g	0.0 d	0 c	0 e
Endorse 2.5WP 4 oz.....	14	5 a	2 efg	0.8 cd	6 a	18 a
Medallion 50WP 0.5 oz	14	4 a	2 d-g	0.5 d	1 bc	2 de
Daconil Ultrex 82.5WDG 3.2 oz.....	14	1 a	0 g	0.0 d	0 c	1 de
3336 4F 4 fl oz.....	14	3 a	9 b-g	2.8 bc	3 abc	5 cde
26GT 2SC 3 fl oz	14	3 a	10 b-e	3.8 b	2 abc	1 de
26/36 3.2SC 3.75 fl oz	14	2 a	4 c-g	1.0 cd	1 bc	0 e
Spectro 90WDG 4 oz.....	14	1 a	0 g	0.0 d	1 bc	0 e
Compass 50WDG 0.2 oz	14	3 a	11 bcd	4.8 ab	1 bc	4 de
Insignia 20WG 0.5 oz	14	2 a	14 b	4.0 b	1 bc	1 de
Heritage 50WG 0.2 oz	14	3 a	10 b-f	3.3 b	2 abc	5 cde
Heritage TL 0.8ME 1 fl oz	14	4 a	13 bc	3.3 b	1 bc	2 de
Untreated Control.....	--	9 a	25 a	6.5 a	5 ab	14 ab

^zAnthracnose severity on a 1 to 9 scale, where 0=no disease, 5 = moderate severity, and 9 = highest severity.

^yFungicides were applied on 23 May, 6 Jun, 20 Jun, 11 Jul, and 25 Jul.

^xValues 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).

Treatment and rate / 1000 sq ft	Spray interval (days)	Turf quality ^z			
		6 Jun	29 Jun	25 Jul	15 Aug
Chipco Signature 80WDG 4 oz.....	14 ^y	8.5 a ^x	6.5 a	7.0 a-d	7.3 ab
Chipco Signature 80WDG 4 oz + Daconil Ultrex 82.5WDG 3.2 oz	14	8.3 a	7.8 a	8.5 a	8.8 a
Alude SC 6 fl oz	14	8.0 a	6.8 a	6.3 a-e	6.0 bcd
Alude SC 6 fl oz + Daconil Ultrex 82.5WDG 3.2 oz	14	7.5 a	7.0 a	7.8 abc	8.8 a
Endorse 2.5WP 4 oz.....	14	7.8 a	6.0 a	5.0 cde	5.8 bcd
Medallion 50WP 0.5 oz	14	8.0 a	7.0 a	5.5 b-e	7.3 ab
Daconil Ultrex 82.5WDG 3.2 oz.....	14	7.3 a	6.5 a	8.3 ab	8.8 a
3336 4F 4 fl oz.....	14	7.3 a	6.5 a	7.3 a-d	5.8 bcd
26GT 2SC 3 fl oz	14	8.5 a	6.8 a	5.5 b-e	6.3 bcd
26/36 3.2SC 3.75 fl oz	14	7.0 a	6.3 a	6.5 a-e	7.0 abc
Spectro 90WDG 4 oz.....	14	7.3 a	7.0 a	7.5 abc	9.0 a
Compass 50WDG 0.2 oz	14	7.8 a	6.3 a	5.0 cde	5.0 cd
Insignia 20WG 0.5 oz	14	7.5 a	7.3 a	5.5 b-e	4.8 d
Heritage 50 WG 0.2 oz	14	7.5 a	6.5 a	4.5 de	5.5 bcd
Heritage TL 0.8ME 1 fl oz	14	7.5 a	6.3 a	5.5 b-e	5.0 cd
Untreated Control.....	--	7.5 a	6.5 a	3.8 e	2.5 e

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

^yFungicides were applied on 23 May, 6 Jun, 20 Jun, 11 Jul, and 25 Jul..

^xValues 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).