

ANNUAL BLUEGRASS (*Poa annua*)  
CREEPING BENTGRASS (*Agrostis palustris* 'Penncross')  
Anthracnose; *Colletotrichum cereale*  
Dollar spot; *Sclerotinia homoeocarpa*

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### **Control of anthracnose foliar blight in annual bluegrass putting greens, 2006.**

Fungicides were evaluated for preventative control of foliar anthracnose in annual bluegrass. This trial was conducted at the Blowing Rock Country Club in Blowing Rock, NC on a mixed stand of annual bluegrass (~90%) and creeping bentgrass (~10%) maintained under putting green conditions. 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 CO<sub>2</sub> powered sprayer at 40 psi using TeeJet 8004 nozzles. All treatments were initiated on 24 May and were reapplied on 7 and 28 Jun. Percent turf area exhibiting anthracnose symptoms was assessed on 26 Jun and 12 Jul. Turfgrass quality was evaluated visually on 7 and 26 Jun and 12 Jul, using a 1 to 9 scale (9=best, 5=acceptable) based on color, density, and uniformity. Multispectral radiometry was also used to assess turfgrass quality on these dates using a CropScan MSR16R radiometer. Data were subjected to analysis of variance and means separation by Waller-Duncan k-ratio t test (k=100).

Anthracnose symptoms were first observed in the experimental area on 26 Jun, following a 10 day period of hot and dry weather. Anthracnose incidence reached a peak of 34% on 12 Jul, after which the trial was terminated to prevent unacceptable damage to the putting green. Treatments of Lynx Fungicide (all rates), Lynx Fungicide + Signature, Lynx SC, Signature + Daconil Ultrex, and SP102000014883 (all rates) provided excellent anthracnose control on both 26 Jun and 12 Jul. Tartan (1 fl oz) provided superior anthracnose control compared to Armada (0.6 oz), indicating a possible role of the StressGard pigment in suppressing anthracnose development. Plots treated with Lynx Fungicide (1.5 or 2.0 fl oz), Lynx Fungicide + Signature, Signature + Daconil Ultrex, and SP102000014883 (1.5, 2.0, or 2.5 fl oz) exhibited the highest turf quality on 26 Jun and 12 Jul. Lynx Fungicide (1.5 fl oz) provided a greater increase in turf quality compared to Lynx SC (1.5 fl oz) on 26 Jun, again demonstrating a positive impact of StressGard. No significant differences in multispectral radiometry indices were detected on 7 and 26 Jun (data not shown). Differences detected on 12 Jul were similar to those from visual quality ratings, with Lynx Fungicide (1.5 or 2.0 fl oz), Lynx Fungicide + Signature, Lynx SC, Signature + Daconil, and SP102000014883 exhibiting higher LAI and lower Stress 1 and Stress 2 values compared to other treatments.

	Spray interval (days)	Anthracnose (%)		Turfgrass quality <sup>z</sup>		
		26 Jun	12 Jul	7 Jun	26 Jun	12 Jul
Lynx Fungicide 1.0 fl oz.....	14 <sup>y</sup>	4 fg <sup>x</sup>	2 gh	8.3 a	6.8 bcd	8.5 abc
Lynx Fungicide 1.5 fl oz.....	14	2 g	1 h	8.3 a	8.0 ab	8.0 bcd
Lynx Fungicide 2.0 fl oz.....	14	1 g	2 gh	7.8 a	7.5 abc	8.0 bcd
Lynx Fungicide 1.5 fl oz + Signature 80WG 4.0 oz.....	14	0 g	0 h	8.3 a	8.8 a	9.0 a
Lynx 2SC 1.5 fl oz.....	14	6 efg	3 gh	7.8 a	6.5 cde	7.5 de
Signature 80WG 4.0 oz.....	14	12 c-f	11 ef	7.8 a	5.3 efg	6.3 fg
Daconil Ultrex 82.5WG 3.2 oz.....	14	9 d-g	8 fg	7.8 a	6.0 def	6.8 ef
Signature 80WG 4.0 oz + Daconil Ultrex 82.5WG 3.2 oz.....	14	4 fg	1 gh	7.8 a	7.8 abc	8.5 abc
Banner Maxx 1.3ME 1.0 fl oz.....	14	20 b	26 bc	7.5 a	3.5 hi	4.3 ij
SP102000014883 1.0 fl oz.....	14	3 g	3 gh	8.0 a	7.0 bcd	7.8 cd
SP102000014883 1.5 fl oz.....	14	1 g	1 h	7.8 a	7.8 abc	8.5 abc
SP102000014883 2.0 fl oz.....	14	1 g	0 h	8.0 a	8.0 ab	8.8 ab
SP102000014883 2.5 fl oz.....	14	1 g	1 gh	7.5 a	8.0 ab	8.3 a-d
Tartan 2.4SC 1.0 fl oz.....	14	15 bcd	22 cd	7.8 a	5.0 fg	5.3 h
Tartan 2.4SC 2.0 fl oz.....	14	16 bcd	16 de	8.5 a	5.0 fg	5.8 gh
Armada 50WP 0.6 oz.....	14	17 bc	32 ab	8.0 a	4.3 gh	4.0 j
Headway 1.39ME 1.5 fl oz.....	14	13 b-e	16 de	7.8 a	5.3 efg	5.0 hi
Untreated.....		30 a	34 a	6.3 a	2.8 i	3.5 j

<sup>z</sup>Turfgrass quality on a 1 to 9 scale, where 9=highest quality and 5=acceptable.

<sup>y</sup>Fungicides were applied on 24 May, 7 and 28 Jun.

<sup>x</sup>Values are means of four replications. Means within columns followed by the same letter are not significantly different according to Waller-Duncan k-ratio t-test (k=100).

	Spray interval (days)	NDVI <sup>z</sup> 12 Jul	LAI <sup>y</sup> 12 Jul	Stress 1 <sup>x</sup> 12 Jul	Stress 2 <sup>w</sup> 12 Jul
Lynx Fungicide 1.0 fl oz.....	14 <sup>v</sup>	1093 a <sup>u</sup>	8.70 bcd	0.4124 cde	0.3609 c-f
Lynx Fungicide 1.5 fl oz.....	14	1061 a	9.03 abc	0.4090 cde	0.3553 efg
Lynx Fungicide 2.0 fl oz.....	14	1117 a	8.84 a-d	0.4096 cde	0.3573 efg
Lynx Fungicide 1.5 fl oz + Signature 80WG 4.0 oz.....	14	1050 a	9.42 a	0.3942 de	0.3419 g
Lynx 2SC 1.5 fl oz.....	14	1102 a	9.00 abc	0.3921 e	0.3461 fg
Signature 80WG 4.0 oz.....	14	1123 a	8.28 de	0.4191 c	0.3673 cde
Daconil Ultrex 82.5WG 3.2 oz.....	14	1159 a	8.55 cd	0.4100 cde	0.3618 c-f
Signature 80WG 4.0 oz + Daconil Ultrex 82.5WG 3.2 oz.....	14	1081 a	9.30 ab	0.3943 de	0.3451 fg
Banner Maxx 1.3ME 1.0 fl oz.....	14	1088 a	7.86 ef	0.4256 bc	0.3755 bcd
SP102000014883 1.0 fl oz.....	14	1145 a	8.89 a-d	0.4113 cde	0.3599 c-f
SP102000014883 1.5 fl oz.....	14	1106 a	8.68 bcd	0.4191 c	0.3635 cde
SP102000014883 2.0 fl oz.....	14	1141 a	9.05 abc	0.4130 cd	0.3589 d-g
SP102000014883 2.5 fl oz.....	14	1067 a	8.90 a-d	0.4075 cde	0.3543 efg
Tartan 2.4SC 1.0 fl oz.....	14	1129 a	7.67 ef	0.4418 ab	0.3866 ab
Tartan 2.4SC 2.0 fl oz.....	14	1102 a	7.71 ef	0.4443 ab	0.3853 b
Armada 50WP 0.6 oz.....	14	1116 a	7.51 fg	0.4428 ab	0.3905 ab
Headway 1.39ME 1.5 fl oz.....	14	1146 a	7.89 ef	0.4279 bc	0.3771 bc
Untreated.....		1140 a	6.97 g	0.4568 a	0.4035 a

<sup>z</sup>Normalized Difference Vegetation Index determined using CropScan MSR16R multispectral radiometer.  $NDVI = \frac{930nm - (660nm/930nm) + 660 nm}{930nm - 660 nm}$ .

<sup>y</sup>Leaf Area Index determined using CropScan MSR16R multispectral radiometer.  $LAI = \frac{930nm}{660nm}$ .

<sup>x</sup>Stress 1 determined using CropScan MSR16R multispectral radiometer.  $Stress\ 1 = \frac{710nm}{760nm}$ .

<sup>w</sup>Stress 2 determined using CropScan MSR16R multispectral radiometer.  $Stress\ 2 = \frac{710nm}{810nm}$ .

<sup>v</sup>Fungicides were applied on 24 May, 7 and 28 Jun.

<sup>u</sup>Values are means of four replications. Means within columns followed by the same letter are not significantly different according to Waller-Duncan k-ratio t-test (k=100).