

Evaluation of fungicides for control of dollar spot on creeping bentgrass, 2008

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Objective:

The objective of this research is to evaluate fungicides for efficacy against dollar spot on creeping bentgrass maintained at putting green height.

Rationale:

Fungicides are essential tools for maintaining blemish-free high quality putting green surfaces. Periodic evaluation of fungicides for dollar spot control provides superintendents with accurate information on fungicide performance.

Procedures:

The research was conducted at the Purdue University Daniel Turfgrass Research and Diagnostic Center in West Lafayette, IN. The plots were located on a sward of Pennlinks creeping bentgrass maintained at a height of 0.18 in. Irrigation and aerification operations were done according to standard practices for creeping bentgrass putting greens. During spring 2008, fertilizer (18-4-10) was applied at a rate of approximately 0.75 lb N/1000 sq ft on 17 Apr. Individual treatment plots measured 3.3 ft by 6.6 ft and were randomized within each of the four replications. Disease was allowed to develop from natural inoculum as the site has been thoroughly involved with dollar spot symptoms in years past. Fungicide applications were made using a custom-built boom sprayer. Three Tee-Jet air induction nozzles (AI9503EVS for the middle, AIUB8503EVS for both sides) were mounted approximately 12 in. apart on the boom located 14 in. from the ground. The sprayer was calibrated to deliver 2 gal/1000 sq ft at 40 psi. Treatments were applied at 14 day intervals and were sprayed on 29 May, 11 June, 26 June, 10 July, and 24 July. Visual evaluations of disease severity were recorded at approximately 10-14 day intervals. For each evaluation date, severity data were analyzed by ANOVA ($\alpha=0.05$) and mean separations were performed using Fisher's Protected LSD ($\alpha=0.05$).

Results and Interpretation:

Dollar spot severity for six plot rating dates are presented in the table. The spring and summer of 2008 were relatively cool in the lower Midwest. Ample precipitation and heavy dews promoted dollar spot establishment in early June. The environmental component of disease pressure was considered moderately high throughout the experimental period. Dollar spot was established early in untreated plots.

Both Emerald treatments performed extremely well. Although disease severity exceeded 1 percent for a brief period in mid-June, plots recovered quickly and exhibited excellent disease control and turf quality through the remainder of the test period.

It is possible that the local strain of *Sclerotinia homoeocarpa* possesses some level of insensitivity to DMI fungicides, resulting in less effective disease control by the program applications and by the Trinity treatment.

The Daconil standard performed as well as expected given the 2 week application interval and the relatively high disease pressure in early June. Disarm C performed about the same as Daconil in terms of disease ratings, perhaps better in terms of turf quality. This

fungicide is a combination product that includes a QoI fungicide (fluoxastrobin) and chlorothalonil.

The Disarm 480SC treatment provided no dollar spot control. This is not unexpected because Disarm 480SC is a QoI fungicide (fluoxastrobin) and not recommended for dollar spot control in the Midwest. I would expect similar performance from all other QoI fungicides.

It is particularly noteworthy that the Emerald treatments and to some extent the program applications suppressed dollar spot 21-28 days beyond the final application, under highly favorable environmental conditions. No phytotoxicity was observed in any of the plots.

Table 1. Performance of fungicides for control of dollar spot on creeping bentgrass, 2008.

Treatment and rate per 1000 sq ft	Dollar spot severity (%) ^z					
	9-Jun	23-Jun	10-Jul	22-Jul	7-Aug	18-Aug
No fungicide	3.6 ab ^y	13.7 a	13.7 a	31.4 a	24.8 a	18.4 a
Disarm 480SC 0.27 fl oz.....	3.9 a	4.3 b	5.9 b	15.3 b	8.9 b	16.9 ab
Disarm C 4.25F 4.32 fl oz.....	2.1 abc	1.4 b	3.6 bc	3.6 c	2.4 c	10.4 b
Emerald 70W 0.13 oz	1.9 bc	1.1 b	0.0 c	0.0 c	0.0 c	0.0 c
Emerald 70W 0.18 oz	0.7 c	0.3 b	0.0 c	0.0 c	0.0 c	0.0 c
Trinity 19.2SC 1.0 fl oz	1.4 c	2.8 b	3.2 bc	5.9 c	7.3 b	12.0 ab
Daconil Ultrex 82.5WG 3.2 oz	0.8 c	1.0 b	2.1 bc	5.1 c	1.3 c	12.0 ab
Program ^x	0.5 c	0.2 b	0.4 c	0.3 c	0.5 c	1.7 c
Days after fungicide application	11	12	14	12	14	25

^z values represent means of 4 replications

^y Means followed by the same letter are not significantly different according to Fisher's Protected LSD, alpha =0.05

^x Program applications. 29 May: Emerald 0.13 oz, 11 Jun: Banner Maxx 1.0 fl oz + Daconil Ultrex 3.2 oz, 26 Jun: Chipco 26GT 2SC 4.0 fl oz + Daconil Ultrex 82.5WG 3.2 oz, 10 Jul: Heritage TL 1.0 fl oz + Daconil Ultrex 82.5WG 3.2 oz, 24 Jul: Bayleton 50WG 1.0 oz + Daconil Ultrex 82.5WG 3.2 oz.