Controlling Dollar Spot on Creeping Bentgrass with Fungicides

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Photo by Aaron Patton

Dollar spot is a common disease of creeping bentgrass. A tip of a key is shown for reference.

Summary. Dollar spot is one of the most problematic diseases of creeping bentgrass putting greens in Arkansas. The objective of this research was to evaluate a few commonly used fungicides for their ability to suppress dollar spot on a creeping bentgrass putting green. All treatments (Emerald, Trinity, Iprodione) provided excellent control of dollar spot on 20 August with the exception of Daconil Ultrex. All fungicides performed similarly on subsequent evaluation dates. No phytotoxicity was noted with any of the products from any of the three application timings.

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Dollar spot (*Sclerotinia homoeocarpa*) is one of the most problematic diseases of creeping bentgrass (*Agrostis stolonifera*) putting greens in Arkansas, and the U.S. Dollar spot can significantly be reduced on Arkansas golf courses by selecting the appropriate cultivar (Karcher et al., 2008). But fungicide applications are still needed for complete control. The objective of this research was to evaluate a few commonly used fungicides for their ability to suppress dollar spot on a creeping bentgrass putting green.

Materials and Methods

Research was conducted at the Arkansas Agricultural Research and Extension Center, Fayetteville. The plots were located on an eight-year old 'SR1020' creeping bentgrass putting green maintained at a height of 0.156 inch under typical golf course conditions and constructed on a sand-based rootzone according to United States Golf Association specifications. Grass clippings were collected when mown (6/wk) and the site was irrigated to prevent stress. Plots were spoon-fed nitrogen at a rate of 0.25 lb N/1000 ft^2 every two weeks until 21 July when nitrogen applications were stopped to help stimulate dollar spot activity. No other fungicides were applied to these plots although Acelepryn™ (chlorantraniliprole) and Advion® (indoxacarb) were applied to control caterpillar feeding and ant mounding, respectively. Plots were 5 ft by 5 ft with 1 foot borders. Disease was allowed to develop from natural inoculum as the site has had an occurrence of dollar spot in previous years. Approximately five active dollar spot infection centers were present in each plot prior to the study being initiated on 31 July. Treatments were initiated on 31 July and applied sequentially on 21 August and 3 September. Fungicide applications were made using a Tee-Jet XR8002VS flat fan nozzle. Fungicides were applied in 2 gal water-carrier per 1000 ft^2 at 30 psi using a CO_2-powered sprayer. Dollar spot was visually assessed by counting the number of active dollar spot infection centers per plot until more than 300 infection centers occurred in untreated plots. Percent dollar spot incidence was visually rated on 24 September on the last evaluation date.

Results and Discussion

All treatments provided excellent control of dollar spot on 20 August with the exception of Daconil Ultrex. Dollar spot control with Daconil Ultrex was less than expected early in the study likely because there was a three-week period between the initial and second sequential application which is beyond the application window recommended on the label. All fungicides performed similarly on subsequent evaluation dates (Figs. 1 and 2). No phytotoxicity was noted with any of the products from any of the three application timings. These results are consistent with previous reports on the efficacy of these fungicides for controlling dollar spot (Vincelli and Powell, 2009).

Literature Cited

Karcher, D., M. Richardson, A. Patton and J. Landreth. 2008. Summary of the 2003 NTEP Bentgrass Trial. Arkansas Turfgrass Report 2007, Ark. Ag. Exp. Stn. Res. Ser. 557:12-16.

Vincelli, P. and A.J. Powell. 2009. Chemical control of turfgrass diseases 2009. University of Kentucky Cooperative Extension Service. Publication no. PPA-1. [Online] Available at: http://www.ca.uky.edu/agc/pubs/ppa/ppa1/ppa1.pdf/

Table 1. Dollar spot control with fungicides in Arkansas on 'SR1020' creeping bentgrass.

	Dollar spot				
	Number of infection centers/plot[z]				Incidence (%)[z]
Treatment and rate/1000 ft^2	11-Aug.	20-Aug.	1-Sep.	11-Sep.	24-Sep.
Emerald 70 WG 0.13 fl oz	0 b[y]	0 b	0 b	0 b	0 b
Emerald 70 WG 0.18 fl oz	0 b	0 b	0 b	0 b	0 b
Daconil Ultrex 3.25 oz	2 b	29 a	7 b	3 b	1 b
Iprodione Pro 2 SE 4 fl oz	0 b	1 b	0 b	0 b	2 b
Trinity 19.2 SC 2 fl oz	0 b	0 b	0 b	0 b	0 b
Untreated	25 a	47 a	53 a	261 a	23 a
Days after fungicide application	11	20	11	8	21

[z] Value represent means of 4 replications

[y] Means followed by the sample letter are not significantly different according to Fisher's protected LSD, alpha=0.05.

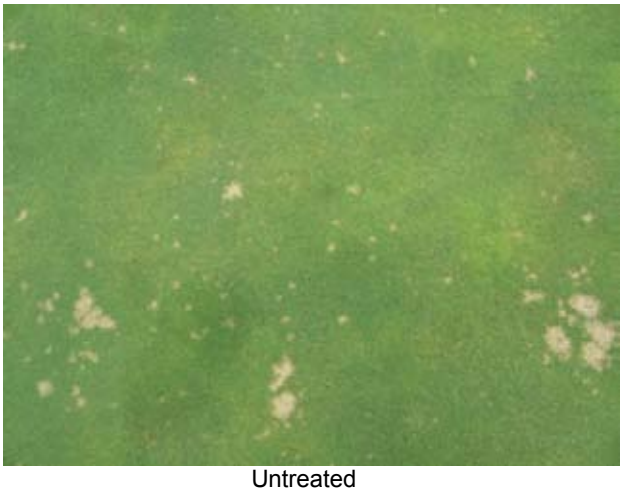
Emerald 70 WG 0.13 fl oz/1000 ft^2

Emerald 70 WG 0.18 fl oz/1000 ft^2

Iprodione Pro 2 SE 4 fl oz/1000 ft^2

Trinity 19.2 SC 2 fl oz/1000 ft^2

Daconil Ultrex 3.25 oz/1000 ft^2



Untreated

Fig. 1. Images showing dollar spot control taken of the second replication on 11 September 2009.

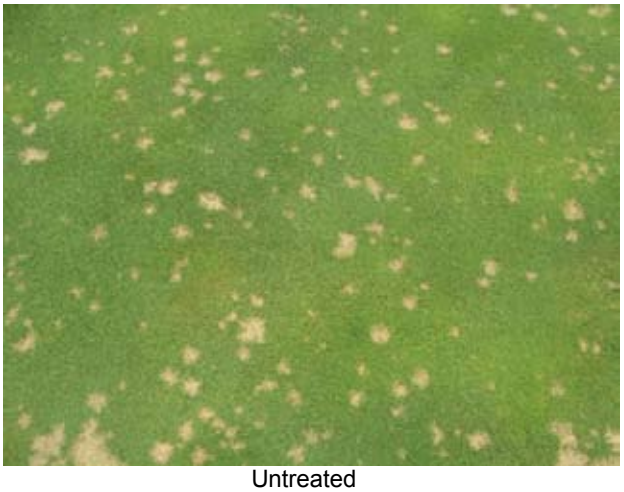
Emerald 70 WG 0.13 fl oz/1000 ft^2

Emerald 70 WG 0.18 fl oz/1000 ft^2

Iprodione Pro 2 SE 4 fl oz/1000 ft^2

Trinity 19.2 SC 2 fl oz/1000 ft^2

Daconil Ultrex 3.25 oz/1000 ft^2



Untreated

Fig. 2. Images showing dollar spot control taken of the second replication on 24 September 2009.