

Assessment of Fungicides for Control of *Sclerotinia* Dollarspot on Creeping Bentgrass

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Abstract

A comparison of *Sclerotinia* dollarspot control on 'SR1020' bentgrass was made for commercial and experimental fungicides applied on a 14 day and 28 day spray interval. Of fungicide regimes applied on a 14d schedule, best of treatment applications was: Daconil WS 4.125oz, Lynx 0.28oz +Daconil 90WG 1.7oz, Lynx 0.28oz + Heritage 0.2oz and Bayleton 0.25oz + Heritage 0.25oz. Of the fungicide regimes applied on a 28d schedule, best of treatment was Eagle 1.2oz, UCC-A1562 8oz and RH3866a 1.0oz. Control of dollarspot with best of 14 day applied treatments was the same as with the control of best of 28 day applied treatments

Introduction

Sclerotinia homoeocarpa is the pathogen responsible for causing the turfgrass disease commonly referred to as dollarspot. Dollarspot is one of the most frequently observed diseases on golf course bentgrass greens. Conditions favoring the disease include long periods of high humidity with air temperatures in the range of 70 and 80 degrees F. Fine-leaved grasses forming a dense compact growth habit, such as bentgrass, are especially susceptible to the disease.

Materials and Methods

Fourteen experimental and commercial fungicide treatments were evaluated for their ability to control *Sclerotinia* dollarspot on an inoculated SR1020 bentgrass green. Disease severity data was determined during the spring-1998 on a SR1020 nursery green at Texas Agricultural Experiment Station-Dallas, Texas. The green was composed of a sand/peat mixture (90:10), maintained at a 0.4 cm cutting height with moderate fertilization and daily irrigation. The inoculum (#SH-03) was prepared by growing a virulent isolate of *S. homoeocarpa* on autoclaved rye grain 5 days prior to field inoculation. Plots were arranged in a randomized block design with four replications 1m² in dimension. Infested rye grain was applied by hand-scattering at an approximate density of 10 grains /15cm diam. Fungicides were applied 1-day prior to field inoculation with the infested rye grain. Fungicide treatments were applied using a pressurized CO₂ sprayer (30psi) at a rate of 3gal/1000ft². The experimental area was thoroughly watered following inoculation and mowing was suspended to allow fungal colonization. Individual inoculated areas were covered with a plastic plate to insure high humidity for field disease

development. Disease assessment was made 3-days after inoculation by visual evaluation of the fungal mycelium growth from the infected rye grain (0-100% infected). Data were subjected to ANOVA using SAS ANOVA procedure to evaluate the statistical significance of treatment means. Where differences were detected, the Duncan multiple range comparison test was employed to separate treatment means.

Results and Discussion

In evaluations of the inoculated test plots for disease suppression, disease control varied among the test fungicides (Table 1). Lynx45WP + Chlorothalonil90WG[®], Bayleton50WP[®] + Chlorothalonil90WG[®] and Bayleton50WP[®] + Heritage50WG[®] all provided significant protection from *Sclerotinia* dollarspot on four of five observation dates. Lynx45WP + Heritage50WG[®] provided protection from dollarspot on only one occasion over the five week trial.

DaconilWS[®] (4.125oz/1000ft²) applied at 14d intervals provided disease control similar to tank mixes of Lynx45WP + Chlorothalonil90WG[®], Lynx45WP + Heritage50WG[®] and + Heritage50WG[®] for *Sclerotinia* dollarspot. The addition of Chlorothalonil90WG[®] and Bayleton50WP[®] in the tank mixes increased the efficacy of the mixes for control of dollarspot. Lynx45 + Heritage 50WG[®] tank mix provided little protection from dollarspot, while Lynx45 + Chlorothalonil90WG[®] protected the turfgrass from dollarspot on four of five observation dates. Bayleton50WP[®] + Heritage50WG[®] also provided good protection from dollarspot disease.

Eagle 40WSP[®] (1.2oz/1000ft²) applied twice over a five week period provided significant disease protection against dollarspot on three dates while the experimental RH-3866a (1.0oz/1000ft²) applied twice over a five week period, provided significant protection from dollarspot on four of five observation dates.

UCC-A1562 20SC (8oz/1000ft²) applied twice over a five week period provided significant disease protection against dollarspot on four dates. Results with the A1562 4oz, and A1562 8oz were better than the lower 1oz rate. The 8oz rate of UCC-A1562 provided consistent protection from dollarspot. Results with the highest rate of 8oz were comparable to the Daconil WS[®] standard. The greatest disease protection occurred during the last week of the trial, where above normal temperatures in the 100's, reduced disease growth.

Table 1. Fungicide application interval and disease assessment for *Sclerotinia* dollarspot control on a SR1020 bentgrass green.

<u>Treatment</u> <u>Rate/1000²</u>	Interval Days	<u>Percent Disease (0-100%)*</u>					Mean
		22May	30May [†]	5June	12June	19June	
UCC-A1562							
1floz	28	43.0 ab [‡]	51.0	37.0 abc	64.0 abc	20.0 a	43.0 ab
4floz	28	12.0 cd	70.0	38.0 ab	62.0 abc	6.3 b	37.0 abc
8floz	28	8.0 d	39.0	24.0 bcde	64.0 abc	5.0 b	28.0 bc
Lynx +Chlorothalonil							
.278oz +1.67oz	14	9.0 cd	81.0	0.5 f	29.0 e	0.88 b	24.0 bc
Lynx + Heritage.							
.278oz + .20oz	14	34.0 abc	73.0	9.3 ef	65.0 ab	13.0 ab	39.0 abc
Bayleton+Chlorothalonil							
.25oz +1.67	14	23.0 bcd	54.0	0.75 f	32.0 de	8.0 b	24.0 bc
Bayleton+Heritage							
.25oz + .2oz	14	2.5 d	74.0	6.0 ef	24.0 e	0.94 b	22.0 c
Eagle							
.60oz	28	11.0 cd	65.0	23.0 bcde	58.0 abcd	0.89 b	32.0 bc
1.2oz		6.0 d	54.0	13.3 def	44.3 abcde	1.6 b	24.0 bc
RH-3866a							
.50oz	28	19.0 cd	63.0	39.0 ab	61.0 abc	7.0 b	38.0 abc
1.0oz		7.3 d	56.0	16.0 cdef	39.0 bcde	3.3 b	24.3 bc
RH3866a+RH0753							
.5oz+1.0oz	28	7.0 d	75.0	35.0 abcd	58.0 abcd	1.1 b	36.0 abc
RH3866a+RH0753							
.50oz+2.0oz	28	7.5 d	68.0	24.3 abcd	66.0 abcd	0.90 b	33.3 abc
Daconil WS							
4.125oz	14	14.0 cd	56.0	14.0 def	37.0 cde	3.3 b	25.0 bc
Untreated		55.0 a	70.0	50.3 a	68.0 a	20.3 a	53.0 a

* Fungicide treatments applied 4days prior to evaluation date. Eagle products and Heritage applied 5/18 and 6/15/98. Daconil applied 5/18, 6/01 and 6/15. Treatments were inoculated 3days prior to evaluation dates. Initial application of all fungicide treatments, applied 18 May. Daconil WS applied 14D interval, all others 28D interval. 3gal/1000ft² water volume with 30psi CO₂ Sprayer. Four replications 1m². Second 28D spray interval application applied 15 June. Temperatures in high 90's low 100's.

[†] Data not statistically significant on this date.

[‡] Means followed by the same letter within columns are not significantly different.