

Evaluation of Fungicides for Control of Dollar Spot, Brown Patch and Turf Quality on Creeping Bentgrass

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Objective

The objective of this research was to evaluate fungicides and application schedules for control of dollar spot and brown patch under field conditions in 1998.

Rationale

Fungicides are critical to the health and appearance of highly managed turf. Various fungicides and application schedules are evaluated each year to provide turf managers with a source of objective information regarding the performance of disease control products.

How It Was Done

The experimental site was located at the Purdue Agronomy Research Center in West Lafayette, IN. The Penncross creeping bentgrass was mowed to a height of 0.25 inches. Trimec Bent Formulation at 1.5 oz/1000 sq ft was applied on 20 May. In an effort to increase the sensitivity of the turf to dollar spot, no nitrogen fertilizer was applied during the test period.

The plots measured 3.3 ft x 6.6 ft (1m x 2m) and were located on a site with a history of dollar spot development. All treatments were randomized within each of 4 replications.

Fungicides were applied with a custom built bicycle-wheel boom sprayer with 3 Tee-Jet 8004 EVS flat fan nozzles. The nozzles were mounted approximately 12 inches apart on the boom. Boom height was approximately 12 inches from the turf surface. The sprayer was calibrated to deliver 2 gal per 1000 sq ft at 40 psi. Treatments applied at 14-day intervals were sprayed on 27 May, 10 Jun, 24 Jun, 08 Jul, and 24 Jul. Treatments applied at 21-day intervals were sprayed on 27 May, 17 Jun, 08 Jul, and 30 Jul. Treatments applied at 28-day intervals were sprayed on 27 May, 24 Jun, and 24 Jul.

Plots were evaluated visually by counting the number of spots at 3 - 7 day intervals from 26 Jun through 12 Aug. Data were subjected to analysis of variance and mean separation procedures. Dollar spot counts for each of the assessment dates are provided in the table. Also, natural brown patch development and turf quality were appraised on 30 Jul.

Results

All treatments provided excellent dollar spot control through 30 Jul. An unusually warm, rainy period occurred from 6 Aug through 11 Aug. Dollar spots began to appear in plots treated with protectant fungicides during that period. The Aug 12 evaluation demonstrates the duration of control given by protectant and systemic fungicides. The evaluation was made 19 days after the final fungicide spray.

Table 1. Evaluation of fungicides for dollar spot and brown patch control and turf quality.

Fungicide, rate/1000 sq ft and application interval	Dollar Spot ^a			Brown ^b patch	Turf ^c quality
	10-Jul	23-Jul	12-Aug		
No fungicide	16.8 a ^d	28.8 a	134.5 a	11.18 a	4.3 c
Heritage 50 WDG 0.2 oz tankmix with Daconil Ultrex 82.5DF 3.8 oz, 14 day	0.0 b	0.3 b	23.5 c	0.81 bc	7.5 a
Daconil Ultrex 82.5DF 3.8 oz, 14 day	0.0 b	0.0 b	34.8 bc	0.00 c	7.3 ab
Daconil Weatherstik 6F 4.13 fl oz, 14 day	2.0 b	0.0 b	21.3 c	0.00 c	7.3 ab
Eagle 40W 0.6 oz, 21 day	0.0 b	0.0 b	25.3 bc	1.28 b	6.8 ab
Eagle 40W 0.6 oz, 28 day	0.3 b	2.0 b	4.3 d	0.00 c	6.5 b
Thalonil 4L 6.2 fl oz, 14 day	0.5 b	0.0 b	28.5 bc	0.00 c	7.0 ab
Thalonil 90DF 3.5 oz, 14 day	1.3 b	0.8 b	38.3 b	0.00 c	7.3 ab
Thalonil TRA 90DF 3.5 oz, 14 day	0.8 b	2.8 b	25.8 bc	0.00 c	6.8 ab
Cleary's Spectro 4.0 oz, 14 day	0.0 b	0.0 b	0.0 d	0.81 bc	7.0 ab
Bayleton 50 DF 0.25 oz tankmix with Daconil Weather Stick 4.13 fl oz, 14 day	0.0 b	0.0 b	0.0 d	0.00 c	7.3 ab
Bayleton 50 DF 0.25 oz tankmix with Heritage 50WDG 0.2 oz, 14 day	0.0 b	0.0 b	6.5 d	1.05 bc	6.5 b
Bayleton 50 DF 0.5 oz tankmix with Heritage 50WDG 0.2 oz, 21 day	0.0 b	0.0 b	1.8 d	0.81 bc	6.8 ab
Lynx 45WP 0.278 oz tankmix with Daconil Weather Stick 6F 4.13 fl oz, 14 day	0.0 b	0.0 b	1.5 d	0.00 c	7.3 ab
Lynx 45WP 0.278 oz tankmix with Heritage 50WDG 0.2 oz, 14 day	0.0 b	0.0 b	1.8 d	1.02 bc	6.8 ab
Lynx 45WP 0.556 oz tankmix with Heritage 50WDG 0.2 oz, 21 day	0.0 b	0.0 b	0.0 d	0.00 c	6.8 ab
Lynx 45WP 0.278 oz, 14 day	0.0 b	0.0 b	1.8 d	1.28 b	6.5 b
Bayleton 50W 0.25 oz, 14 day	0.0 b	0.0 b	6.8 d	1.28 b	6.5 b

^adollar spots/plot.

^bRated as percent cover of active brown patch/plot.

^cTurf quality rated on a scale of 1 to 9. 1 = dead, 5 = acceptable, and 9 = excellent.

^dMeans followed by a different letter designate significant difference at p = 0.05