

EVALUATION OF FUNGICIDES FOR CONTROL OF POWDERY MILDEW IN KENTUCKY BLUEGRASS IN CENTRAL OREGON, 1999

Marvin Butler and Neysa Farris

Abstract

Fungicides were evaluated for control of powdery mildew in two commercial Kentucky bluegrass seed fields near Culver and Madras, Oregon. Pre-counts were made prior to the application of fungicides. Four weekly evaluations were conducted after application. At the Madras location, all fungicides except BAS 500 significantly reduced powdery mildew from 10 days to 30 days following application, compared to untreated plots. At the Culver location, fungicides Tilt, Stratego, Folicur, Laredo, and Bayleton significantly reduced powdery mildew 19 to 32 days after application. Flint took longer before significantly reducing the level of disease. Quadris and BAS 500 were minimally effective.

Introduction

Several new fungicides (some with new chemistry) are currently, or soon expected to be, on the market for grass seed production. The objective of this research was to evaluate these new products against the current industry standards to provide the grass seed industry in central Oregon with the latest information for making management decisions.

Methods and Materials

Fungicides were evaluated for control of powdery mildew in commercial fields of Kentucky bluegrass ('Kelly' and 'Geronimo') grown for seed near Culver and Madras, Oregon. The fungicides Tilt, Flint, Stratego, Folicur, Quadris, Laredo, Bayleton, and BAS 500 were applied to 10 ft x 25 ft plots replicated four times in a randomized complete block design. Fungicides were applied with 8002 TwinJet nozzles on a 9-ft, CO₂ pressurized, hand-held boom sprayer at 40 psi and 20 gal of water/a. The surfactant Sylgard 309 at 1 qt/100 gal of water was applied in combination with all fungicides. Treatments were applied on May 8 at the Culver location and May 10 at the Madras location.

Plots were evaluated using a rating scale from 0 to 5, with 0 being no mildew present and 5 indicating total foliar coverage. Plots were evaluated before treatment at the Culver location on May 5 and following treatment on May 19, May 27, June 2, and June 9. At the Madras location, pre-treatment evaluations were conducted on May 5 and post-treatment evaluations were made on May 20, May 28, June 3, and June 9.

Results and Discussion

At the Culver location, fungicides Tilt, Stratego, Folicur, Laredo, and Bayleton significantly reduced severity of powdery mildew from 19 to 32 days after application compared to untreated plots (Table 1). Laredo, Bayleton, and Stratego provided the best control, followed by Tilt and Folicur. Flint took longer before significantly reducing the level of disease. BAS 500 and Quadris were minimally effective.

At the Madras location, all fungicide treatments significantly reduced powdery mildew from 10 to 30 days following application compared to untreated plots (Table 2). The top performers were Stratego, Tilt, and Folicur, followed by Bayleton, Laredo, and Flint. BAS 500 was minimally effective.

Table 1. Powdery mildew rating on Kentucky bluegrass ('Kelly') near Culver, Oregon following fungicide application on May 8, 1999.

Treatment	Rate	Powdery mildew'					
		5-5-99 Pre-trt	5-19-99 Post-trt	5-27-99 Post-trt	6-2-99 Post-trt	6-9-99 Post-trt	
Laredo ²	6 oz	1.9	1.4	0.2 b ³	0.2 b	0.9 c	
Bayleton	4 oz	1.6	1.2	0.3 b	0.3 b	0.9 c	
Stratego	10 fl oz	1.7	1.3	0.3 b	0.2 b	1.1 c	
Tilt	4 fl oz	1.7	1.3	0.4 b	0.5 b	1.2 bc	
Folicur	4 fl oz	1.7	1.2	0.4 b	0.5 b	1.3 be	
Flint	2.75 oz	1.8	1.6	0.9 ab	0.9 b	1.5 bc	
BAS 500	9 fl oz	1.8	1.6	1.5 a	1.7 a	2.1 ab	
Quadris	12 fl oz	1.7	1.5	1.6 a	2.2 a	2.6 a	
Untreated		1.7	1.6	1.6 a	1.7 a	2.1 ab	
		ns	ns				

'Rating scale was 0-5, with 0 = no mildew and 5 = the leaves completely covered.

²All treatments applied with Sylgard 309 at 1 qt/100 gal

³Mean separation with Student-Newman-Kuels Test at P<0.05

Table 2. Powdery mildew rating on Kentucky bluegrass ('Geronimo') near Madras, Oregon following fungicide application on May 10, 1999.

Treatment	Rate	Powdery mildew'				
		5-5-99 Pre-trt	5-20-99 Post-trt	5-28-99 Post-trt	6-3-99 Post-trt	6-9-99 Post-trt
Stratego ²	10 fl oz	1.8	1.1 b ³	0.8 b	0.4 c	0.1 b
Tilt	4 fl oz	1.8	1.1 b	0.8 b	0.4 c	0.2 b
Folicur	4 fl oz	1.7	1.1 b	0.9 b	0.4 c	0.2 b
Bayleton	4 oz	1.8	1.2 b	0.9 b	0.4 c	0.3 b
Laredo	6 oz	1.8	1.0 b	1.0 b	0.5 c	0.3 b
Flint	2.75 oz	1.8	1.3 b	1.3 b	1.1 c	0.5 b
BAS 500	9 fl oz	1.6	1.6 ab	1.5 b	1.8 b	1.9 a
Untreated		2.1	1.9 a	2.4 a	2.7 a	2.1 a
		ns				

¹Rating scale was 0-5, with 0 = no mildew and 5 = the leaves completely covered.

²All treatments applied with Sylgard 309 at 1 qt/100 gal

³Mean separation with Student-Newman-Kuels Test at P<0.05