

EVALUATION OF FUNGICIDES FOR CONTROL OF POWDERY MILDEW IN KENTUCKY BLUEGRASS SEED PRODUCTION IN CENTRAL OREGON, 2004

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Abstract

Fungicides were evaluated for control of powdery mildew in a commercial Kentucky bluegrass (*Poa pratensis*) seed field near Madras, Oregon. After the first application, April 16, disease levels dropped throughout the trial, as indicated by the ratings in the untreated plots. There were no significant differences between treated and untreated plots until June 10 following the second application on May 25. Laredo[®] provided significant powdery mildew control compared to the untreated plots on June 10, while Bayleton[®] and Laredo plus Microthiol[®] provided the greatest control on the June 23 evaluation. Other treatments that significantly reduced powdery mildew on the final evaluation include Laredo, Tilt[®] and a combination of the numbered compounds V-10118 plus V-10116.

Introduction

Fungicides have been evaluated yearly for control of powdery mildew in Kentucky bluegrass seed production fields in central Oregon since 1998. Products have included the historic industry standard Bayleton, along with Tilt, Tilt plus Bravo[®], new products such as Laredo and Folicur[®], and alternative materials like Microthiol (sulfur) and styet oil.

Methods and Materials

Fungicides were evaluated for control of powdery mildew in a commercial field of 'Merit' Kentucky bluegrass grown for seed near Madras, Oregon. The following fungicides of choice were included in the project: Bayleton, Tilt, Laredo alone and in combination with Microthiol. In addition, two Valent numbered compounds were evaluated.

A pre-application evaluation was conducted April 14. Fungicide treatments were applied to plots 10-ft by 25-ft replicated four times in a complete block design using Tee Jet 8002 nozzles on a 9-ft, CO₂-pressurized, hand-held boom sprayer at 40 psi and 20 gal of water/acre. The first application was made on April 16, with the first post-application evaluation conducted April 23. Powdery mildew levels declined throughout the trial area until May 24 at which time there was enough disease for a second evaluation. A second application was made May 25 and disease levels remained high enough for a series of evaluations on June 1, June 10 and June 23. Plots were evaluated using a rating scale from 0 to 5, with 0 being no mildew present and 5 indicating total foliar coverage.

Results and Discussion

Powdery mildew levels remained relatively low throughout the duration of the evaluation. A week after the first application there was less disease in the untreated plots and no significant differences between treated and untreated plots. There were no differences between treated and untreated plots on the May 24 evaluation; however disease levels were similar to the pretreatment evaluation. There were no significant differences in treatments a week after the second fungicide application was made on May 25, but by June 10 Laredo significantly reduced disease levels compared to the untreated. Bayleton and Laredo plus Microthiol significantly reduced powdery mildew compared to the untreated on the final evaluation on June 23. Other treatments that significantly reduced powdery mildew on the final evaluation June 23 include Laredo, Tilt and a combination of the numbered compounds V-10118 plus V-10116. Interestingly, Laredo plus Microthiol provided the best disease control (although not statistically significant) at the final observation in the 2003 evaluations.

Table 1. Severity of powdery mildew on Kentucky bluegrass near Madras, Oregon following fungicide applications on April 16 and May 25, evaluated on April 15 and April 23, June 1, June 10 and June 23.

Treatments	Application	Pre Evaluation		-----Post Evaluation-----								
	April 16 and May 25	April 14		April 23	May 24	June 1	June 10	June 23				
Bayleton	4 oz	0.67 ¹	ab ²	0.21	ab	0.67	ab	0.44	0.50	ab	0.15	c
Laredo + Microthiol	8 oz + 3 lb	0.67	ab	0.33	a	0.52	b	0.67	0.42	ab	0.15	c
Laredo	8 oz	0.69	ab	0.08	b	0.79	ab	0.44	0.29	b	0.27	bc
V- 10118 + V-10116	7.8 + 7.0 oz	0.54	b	0.08	b	0.65	ab	0.46	0.42	ab	0.29	bc
Tilt	4 oz	0.63	ab	0.13	b	0.69	ab	0.44	0.33	ab	0.29	bc
V-10116	7.0 oz	0.60	b	0.04	b	0.73	ab	0.44	0.62	ab	0.50	abc
V-10118	7.8 oz	0.71	ab	0.33	a	0.83	a	0.63	0.67	ab	0.83	ab
V-10118	15.6 oz	0.75	ab	0.08	b	0.63	ab	0.54	0.63	ab	0.85	ab
Untreated	---	0.88	a	0.17	ab	0.75	ab	0.58	0.73	a	0.94	a
								NS				

¹Rating scale was 0 (no mildew) to 5 (total leaf coverage).

²Mean separation with Least Significant Difference (LSD) at $P \leq 0.05$.