

**EVALUATION OF FUNGICIDES FOR CONTROL
OF ERGOT IN KENTUCKY BLUEGRASS, 1998**
Marvin Butler, Neysa Farris, Steve N. Alderman, and Fred Crowe

Abstract

Fungicides have been evaluated for ergot control in Kentucky bluegrass (*Poa pratensis*) in central Oregon since 1992. During 1998 a single trial was conducted at the Powell Butte location of the Central Oregon Agricultural Research Center. Although there were no significant differences between treatments, two applications of Quadris were associated with the lowest number of sclerotia of *Claviceps purpurea* per sample. Double fungicide applications generally out-performed single applications at the initiation of anthesis.

Introduction

Ergot, caused by the fungus *Claviceps purpurea*, is an important flower-infecting pathogen in grass seed production regions of the Pacific Northwest. Of the grass species grown for seed in Oregon, Kentucky bluegrass (*Poa pratensis*) is particularly affected by ergot. Traditional control has been through open field burning, which has partially suppressed the disease.

Previous fungicide evaluations in central Oregon during 1992 to 1997 indicate excellent ergot control with Punch, for which there are no plans for registration in the United States. Tilt and Folicur have provided suppression of ergot. As a result of this research, and similar fungicide evaluations by William Johnston at Washington State University, ergot suppression was added to the Tilt label in 1995 through a Special Local Need 24(c) registration. Folicur was recently registered for use on grass seed.

Methods and Materials

During the 1998 season, fungicides were evaluated for control of ergot by trials conducted on 'Coventry' Kentucky bluegrass at the Central Oregon Agricultural Research Center, Powell Butte location. The plot area was infested with ergot at 1 sclerotia/fe on March 12. Sclerotia were placed in a freezer for 2 weeks to break dormancy prior to distribution. Single and double applications of Tilt (propiconazole), Folicur (tebuconazole), Quadris (azoxystrobin), Stratego, Flint, BAS 500 OOF, and Rally (myclobutanil) were evaluated during the 1998 season. Fungicides were applied at the following rates, Tilt at 6 oz/a, Folicur at 6 oz/a, Quadris at 12 oz/a, Stratego at 10 oz/a, Flint at 2.75 oz/a, BAS 500 OOF at 9 oz/a and Rally at 6 oz/a.

Plots 10 ft x 20 ft were replicated four times in a randomized complete block design. Materials were applied using a 9-ft CO₂ pressurized boom sprayer with TwinJet 8002 nozzles at 40 psi and 20 gal/a water. Silwet at 1 qt/100 gal was applied in combination with all fungicides. Treatments were applied on June 12 and June 23, 1998. The first

treatments were applied at the initiation of anthesis, followed by the second treatment 11 days later.

One hundred panicle samples were randomly collected from each plot on July 15. Number of panicles with sclerotia, total sclerotia per sample, panicles with honeydew, seed weight, and percentage of germination was determined for each plot.

Results and Discussion

Disease levels were moderate, with an average of 3 sclerotia per panicle in the untreated plots (Table 1). There were no significant differences between treatments at the 95 percent confidence level. The trend, however, indicates that fungicides applied twice generally provided greater disease control than single treatments. This is supported by earlier studies. Quadris applied twice at 12 oz/a was associated with the lowest number of infected panicles and total number of sclerotia. Seed germination appeared to be reduced following two applications of Folicur. This is supported by earlier studies where germination has been significantly reduced following Folicur treatments. Although sample weight was lowest for the double Quadris treatments, a reduction in seed weight following application of Quadris is not supported by 1997 data.

Table 1. Evaluation of fungicide applied for ergot control to 'Coventry' Kentucky bluegrass at the Central Oregon Agricultural Research Center, Powell Butte, OR, 1998.

Fungicide treatments	Rate of Product		Infected panicles no./100 panicles	Total sclerotia no./100 panicles	Sample weight (g)	1000 seed weight (g)	Seed germination (%)
	June 6	June 23					
	----- fl oz/a ---						
Tilt'	6 oz		50	193	6.2	0.40	77
Tilt	6 oz	6 oz	40	94	6.8	0.38	84
Folicur	6 oz		50	223	6.2	0.37	73
Folicur	6 oz	6 oz	37	122	6.6	0.37	61
Quadris	12 oz		57	174	6.4	0.40	84
Quadris	12 oz	12 oz	33	58	6.0	0.37	80
Stratego	10 oz		53	199	6.7	0.38	72
Stratego	10 oz	10 oz	55	199	6.7	0.40	75
Flint	2.75 oz		56	193	6.4	0.38	73
Flint	2.75 oz	2.75 oz	54	181	6.4	0.39	82
BAS 500 OOF	9oz		48	148	6.8	0.38	73
BAS 500 OOF	9oz	9oz	46	114	6.4	0.39	68
Rally	6oz		69	336	6.3	0.41	85
Rally	6oz	6oz	48	137	6.4	0.38	85
Untreated			56	299	7.2	0.40	82
			n.s. ²	n.s.	n.s.	n.s.	n.s.

Silwet at 1 qt/100 gal applied with all fungicides.

² There were no significant differences between treatments with Student-Newman-Keuls at P.0.05.