

EVALUATION OF FUNGICIDES FOR CONTROL OF ERGOT IN KENTUCKY BLUEGRASS, 1998

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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 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 as well.

During the 1998 season fungicides evaluated for control of ergot were 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/ft² on March 12. Sclerotia were placed in a freezer for 2 weeks to break dormancy prior to distribution. Single and double applications of Tilt, Folicur, Quadris, Stratego, Flint, BAS 500 00F, and Rally 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 00F 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-foot 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 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, seed weight, and percent germination was determined for each plot.

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 lowest 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 fungicides 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	Total sclerotia	Sample weight	1000 seed weight	Seed germination
	June 6	June 23					
	----- (fl oz/a) -----		-- (no./100 panicles) --		----- (grams) -----		(%)
Tilt ¹	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 00F	9oz		48	148	6.8	0.38	73
BAS 500 00F	9 oz	9 oz	46	114	6.4	0.39	68
Rally	6oz		69	336	6.3	0.41	85
Rally	6 oz	6 oz	48	137	6.4	0.38	85
Untreated	---		56	299	7.2	0.40	82
			NS ²	NS	NS	NS	NS

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

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