

## 1998-1999 WHEAT SEED TREATMENT TEST

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### **OBJECTIVE:**

To evaluate the role of various seed treatment fungicides (also a fungicide/insecticide combination) in wheat production in Kentucky.

### **METHODS:**

The experiment was established on the Trevor Gilkey farm adjacent to the University of Kentucky Research and Education Center in Princeton, Caldwell County, Kentucky. The test site was in corn during 1998 and the seedbed was disced three times in preparation for planting wheat. Seed of the soft red winter wheat variety, Wakefield, which had been treated with various seed treatments by Gustafson, Inc., was planted on October 14, 1998. Seed was intentionally planted at a low seeding rate of 28 seed/ft<sup>2</sup> to test the value of treatments in a situation where tiller production and survival is critical to the success of the crop. Treatments were replicated four times and were arranged following a randomized complete block design. Plots were 6-rows-wide (7-in spacing; 4 ft.) X 10-ft -long. No insecticides or herbicides were applied to plots. Nitrogen fertility was a split application of 35 lbs actual N applied on February 19, 1999 followed by 70 lbs actual N applied on March 19. Stand counts were taken in the fall, approximately two weeks after seeding. Head counts and disease ratings were made and the dates are indicated in the table. Tilt 4E (4 fl. oz./A) was applied to all plots at Feeke's stage 10.3 (mid-heading) to protect plots from late-season diseases. Plots were harvested on June 15 using a Hege small plot combine. Seed yields were determined in the laboratory and were based on a moisture content of 13.5% and 60 lb/bu test weight.

### **RESULTS:**

Unseasonably mild fall and winter conditions were very favorable for seed germination, plant establishment, tiller production, and tiller survival. Consequently, fall stand counts and spring head counts were similar among but one treatment. That treatment was LS249 which had

significantly fewer heads than the check plots. BYD was fairly extensive in the plot area, but none of the treatments had less BYD than the control. The failure of Gaucho 480 to provide control of BYD, and our observations of other fields and plots, suggest that infection by BYDV occurred during the period late fall to early spring. This is a period when Gaucho is likely to have lost most of its activity. Speckled leaf blotch (*Septoria tritici*) was the only fungal disease which was highly active in plots, and this was mostly during April and very early May. Dry weather and Tilt application limited the development of that disease on flag leaves in plots and those leaves were not rated for disease. F-1 and F-2 leaves were rated. No treatment had less speckled leaf blotch on the F-1 leaves compared to the check, but the treatments with either Raxil-Thiram or Dividend had significantly less disease on the F-2 leaves. No significant difference were detected in yield or test weight among the different treatments. Overall, plots yields were good, but test weights were on the low side. This is likely due to the BYDV infections. Fusarium head blight was not a factor in this test. Neither were any other pests.

## **CONCLUSION:**

Seed treatments are of no measurable economic benefit when high quality seed are planted into a favorable seedbed, and good growing conditions (with concomitant low disease pressure) persist throughout the fall, winter and spring. This study indicates that this is true even when an artificially low seeding rate is used. Of course, there would be a lower seed rate limit where yields would be affected, but determining this lower limit was not the intent of this study. Data indicate that certain seed treatments can reduce the severity of speckled leaf blotch, but yield differences may not be evident if disease pressure is mid- to late-season disease is light (naturally or by the use of foliar fungicides). These results are consistent with the results of other studies over the last 10 years.

Treatment and rate/cwt	Plants / ft <sup>2*</sup>	Heads / ft <sup>2**</sup>	%BYD#	Speckled leaf blotch+		Yield Bu / Acre	Tst. Wt. lbs/bu
				F-1	F-2		
Non-treated	21.5	77.1	23.8	6.7	68.6	82	54.1
Raxil-Thiram 3.5 fl.oz.	23.2	66.6	33.8	6.1	46.9	84.8	54.4
Raxil XT 0.16 fl.oz.	24.3	68.3	28.8	6.9	59.5	87.4	54.9
LS249 5.0 fl.oz.	26.8	58.9	26.3	7.7	67.8	84.1	54.4
LS176 0.08 fl.oz.+ Allegiance 0.1 fl.oz.	23.4	72.3	38.8	9.2	67.2	85.1	54.9
LS176 0.32 fl.oz.+ Allegiance 0.1 fl.oz.	22.4	71.5	36.3	4.2	57.4	81.7	55
Dividend XL 1.0 fl.oz.	21.9	65.5	16.3	3.6	47.1	87	54.8
Raxil-Thiram 3.5 fl.oz.+ Gaucho 480 1.0 fl.oz.	22.6	65	28.8	1.5	37.6	83.8	53.9

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LSD (P=0.05)	NS	12.9	NS	NS	16.8	NS	NS
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\*October 30, 1998. \*\*May 17, 1999. #April 28, 1999. +May 20, 1999