

Evaluation of a 1/2 Rate of a Foliar Fungicide on Wheat

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Objective

To evaluate disease incidence and yield responses of soft red winter wheat to the application of an early-spring, 1/2 rate, foliar fungicide at growth stage Feekes 5-6. This use of fungicide is rare and unprecedented, but has been locally promoted.

Background

Crop Year:	2008	Nitrogen:	127 lbs/A total: 26 lbs fall, 56 lbs 1 st spring split, 45 lbs 2 nd spring split
Cooperator:	Louis Shininger	Herbicide:	MPCA, 0.93 pt/A
County/Town:	Defiance/Ney	Fungicide:	Stratego® 5 oz/A (1/2 rate)
Soil Type:	Paulding clay Roselms silty clay	Row Width:	7.5 inches
Drainage:	Systematic subsurface	Planting Rate:	1,800,000 seeds/A
Previous Crop:	Soybeans	Planting Date:	September 24, 2007
Tillage:	No-till	Harvest Date:	July 8, 2008
Variety:	Cooper and Branson		
Soil Test:	(post harvest 7/30/08) pH 6.3, P 10 ppm, K 212 ppm		

Methods

Treatments were replicated four times in each wheat variety in a strip plot design across the field, with variety as the main plot and fungicide treatment as the sub plot. Plots were 90 feet wide by 1000 feet long and the treatments were:

- 1) Untreated check- no foliar fungicide (control)
- 2) Stratego® @ 5 oz/A and MPCA @0.93 oz/ac

Stratego® fungicide and herbicide were applied on April 27, 2008 at Feekes wheat growth stage 5-6 by the cooperator with a pull-type sprayer with a 90-foot boom and GPS guidance system. The herbicide and fungicide were tank-mixed so no herbicide or wheel tracks were added to the untreated check plots. A disease assessment for Septoria and Stagonospora leaf blotch and weed pressure assessment was completed on May 19, 2008 by Dr. Pierce Paul, OSU Plant Pathology, the cooperator, and the author. Harvest width was the center 30 foot of the treatment plots. Yield was measured using the cooperator's combine equipped with a calibrated Ag Leader™ yield monitor and by the OSU Extension office using SMS Ag Leader™ software. Moistures were taken from the yield monitor average readings for each plot. All yield data were adjusted to 13.5% moisture.

Results

This study compared the treatments as two production systems. No significant differences were observed in disease presence in any plots in either treatment. No significant differences were observed in weed pressure in any plots in either treatment. The wheat crop developed very densely and offered weed suppression in all plots. There were no significant yield differences among treatments.

N	Treatment	Wheat Yields (bu/ac)	
		Cooper	Branson
	Untreated Check	84.4	88.6
	Stratego® + MPCA	84.8	88.6
	LSD (0.05)	NS	NS

¹ Cooper is rated³ susceptible to Septoria and Stagonospora

² Branson is rated³ moderately resistant to Septoria and Stagonospora

³ 2008 Ohio Wheat Performance Test, Horticulture & Crop Science Series 228

NS= not significant

Summary

Results from this one-year study indicate that the addition of a ½ rate of fungicide at growth stage Feekes 5-6 did not significantly increase yields on either variety. Cooper is a susceptible variety to leaf blotch, but environmental conditions were not favorable for disease development. Disease levels were low, even in the untreated plots, at the time of fungicide application and throughout the season. It has been suggested that early application would prevent disease development. This use of fungicides goes against the proven principles of integrated pest management (IPM) and provided no return on investment per acre.

The Stratego® application would require an additional 2.0 bushels of yield in order to cover the cost of the product and application. This is based on in-season pricing of Stratego® at \$5.76/A, a wheat market price of \$6/bushel, and a cost of \$6.30/A for each application.

Acknowledgement

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