

# Evaluation of Foliar Fungicides on Wheat

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## Objective

The objective of this study was to evaluate the yield response of wheat to the application of foliar fungicides at specific growth stages.

## Background

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Crop Year:	2009	Fertilizer (cont.):	195 lb/A 45-0-0 broadcast
Cooperator:	Farm Focus/Marsh Foundation		topdress (April 18)
County/Town:	Van Wert/Van Wert	Herbicide:	none applied
Soil Type:	Hoytville clay	Variety:	Wellman Seeds W-122
Drainage:	Tile- systemic	Insecticide:	none applied
Previous Crop:	Soybeans	Row Width:	7.5 inches
Tillage:	No-till	Planting Rate:	2,000,000 seeds/A
Soil Test(2005):	pH 6.7, P 24 ppm, K 133 ppm	Planting Date:	October 2, 2008
Fertilizer:	340 lb/A 9-21-22 surface broadcast (October 2)	Harvest Date:	July 3 and July 6, 2009

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## Methods

This study was designed with two foliar fungicide programs and a nontreated check treatment. All three treatments were replicated five times in a randomized complete block design. Plot size was 45 feet wide (one sprayer pass) by 1025 feet long. The treatments were:

- 1) Nontreated check- no foliar fungicide
- 2) Stratego @ 5 oz/A at Feekes 8, followed by Prosaro @ 6.5 oz/A at Feekes 10.5.1
- 3) Prosaro @ 6.5 oz/A at Feekes 10.5.1

Both the Stratego and Prosaro fungicide applications included the addition of a non-ionic surfactant (NIS) at 0.125% and 0.25% volume per volume, respectively. Stratego was applied at 15 gallons per acre and 45 psi operating pressure. Prosaro was applied at 20 gallons per acre and 42 psi operating pressure. All treatments were applied using Turbo TeeJet nozzles (TT11002) on 15 inch spacings. The Stratego treatment was applied on May 5 with the wheat at the Feekes 8 growth stage (flag leaf emergence). The Prosaro treatment was applied on May 26 with the wheat at the Feekes 10.5.1 growth stage (beginning flowering) with the nozzles rotated alternately forward/backward (per Bayer recommendation).

Plots were scouted for foliar disease presence and severity on May 15, 10 days after the Stratego application. Head scab assessments were conducted on June 17 to determine the percentage of infected heads. This was accomplished by counting the total number of heads in one foot of row, and the number of heads within this same sample infected with head scab. These assessments were completed at three separate locations in each plot. The number of heads per acre was estimated from the total number of heads counted in one foot of row during the head scab

assessment. Harvesting was accomplished with a John Deere 6620 combine equipped with a calibrated AgLeader PF3000 yield monitor. Plot grain weights were determined with a calibrated weigh wagon. Moistures were taken from the average yield reading for each plot. All yields were adjusted to 13.5% moisture.

## Results

**Table 1.** Harvest moisture, yield, head count, and percent head scab means<sup>1</sup>.

Treatment	Moisture (%)	Yield (bu/A)	Head Count (heads/A)	Head Scab (% heads)
Nontreated Check- no foliar fungicide	13.2 b	98.8 c	3,438,300	3.0 b
Stratego @ 5 oz/A applied Feekes 8 f/b	14.0 a	108.9 a	3,573,100	1.2 a
Prosaro @ 6.5 oz/A applied Feekes 10.5.1	14.0 a	103.9 b	3,480,100	0.8 a
LSD (P=0.05)	0.2	4.8	NS	1.0
CV(%)	1.1	3.2	9.5	42

<sup>1</sup> Means followed by the same letter in the same column are not significantly different.  
NS= not significant

## Summary

The results of this single-year study indicate that there were statistical differences among the treatments for moisture, yield, and head scab. The fungicide treatments resulted in significantly lower incidence of head scab compared to the check. However, it is not clear that this lower scab incidence translated into the yield increases for the fungicide treated plots. Scouting of the test field plots for powdery mildew and other disease pressure 10 days after the May 5 Stratego application indicated only low levels of disease in any of the plots, including the nontreated checks.

The Stratego plus Prosaro applications would require an additional 9.7 bushels of yield in order to cover the cost of the products and two applications. The Prosaro application alone would require an additional 6.2 bushel yield increase in order to cover the cost of product and application. These estimates were based on in-season pricing of Stratego at \$7.81/A, Prosaro at \$18.17/A, a wheat market price of \$4.00/bushel, and a cost of \$6.50/A for each application.

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