

# Evaluation of Foliar Fungicides for Plant Health in Soybeans

Andy Kleinschmidt, AGNR Extension Educator- Van Wert County  
Gary Prill, Program Manager- Farm Focus Research- Van Wert County

## Objective

The objective of this study was to evaluate the yield effects of three different foliar fungicide applications on soybeans. The applications are referred to as “plant health” by industry because the applications are based on plant growth stage rather than the presence of diseases at economic threshold.

## Background

---

Crop Year:	2008	Herbicide:	
Cooperator:	Farm Focus/Marsh Foundation	PREPLANT	Gangster at 3 oz/A +
County/Town:	Van Wert/Van Wert	(May 5)	Roundup OriginalMax at 22
Drainage:	Nonsystematic tile		oz/A + 2,4-D LVE6 at 10 oz/A
Soil Type:	Hoytville clay		+ AMS at 17 lb/100 gal
Previous Crop:	Corn	POST	Roundup WeatherMax at
Tillage:	No-till	(July 15)	32 oz/A + AMS at 17 lb/100
Soil Test (2005):	pH 6.7, P 24 ppm, K 133 ppm		gal
Fertilizer:	390 lb/A 7-19-35 surface broadcast (November 2007)	Variety:	Gries Seed Farms 2907RRS
		Row width:	15 inches
		Planting Rate:	200,000 seeds/A
		Planting Date:	May 26, 2008
		Harvest Date:	October 2, 2008

---

## Methods

This study was designed with four treatments in a randomized complete block design with three replications. Plot size was 45 feet wide (one sprayer pass) by 1025 feet long. The treatments were:

- 1) Nontreated check
- 2) Domark at 4.5 oz. per acre + nonionic surfactant (NIS) at 0.25% v/v
- 3) Headline at 6.0 ounces per acre + nonionic surfactant (NIS) at 0.25% v/v
- 4) Stratego at 8 oz. per acre + nonionic surfactant (NIS) at 0.125% v/v

All fungicide treatments were applied on July 31 when soybeans were at growth stage R3- beginning pod. All applications were made using 15 gallons per acre spray volume at 40 psi. using a ground sprayer equipped with Turbo TeeJet TT11002 flat fan nozzles on 15 inch spacing.

Harvest populations (September 25) were estimated by counting the number of plants on each side of a measured 10 feet section at three different locations in each plot. The average of the number of plants counted per 10 feet was converted to plants per acre. The plots were harvested with a John Deere 6620 combine equipped with a calibrated AgLeader PF3000 yield monitor.

Plot grain weights were measured with a calibrated weigh wagon. Average moisture readings for each plot were taken from the yield monitor. All yield data was adjusted to 13% moisture.

## Results

Table 1. Harvest population, moisture, and yield means<sup>1</sup> for each treatment.

Treatment	Harvest Population (plants/A)	Moisture (%)	Yield (bu/A)
Nontreated check	84,600	12.3 a	57.1
4.5 oz/A Domark + 0.25% NIS	97,000	12.3 a	59.0
6.0 oz./A Headline + 0.25% NIS	94,500	12.8 b	60.7
8.0 oz./A Stratego + 0.125% NIS	96,600	12.7 b	56.5
LSD (P=0.05)	NS	0.3	NS
CV (%)	8.0	1.3	5.3

<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 one year study indicate there was not a statistically significant increase in yield from any of the three fungicide treatments over the nontreated check. The study did show a significant difference in moisture between the Headline and Stratego treatments as compared to the nontreated check.

Similar studies conducted in 2006 and 2007 indicated a statistically significant yield increase of 4.2 and 3.6 bushels per acre respectively with the Headline fungicide applications over the untreated check. The 2006 and 2007 studies can be accessed on the Farm Focus website at <http://farmfocus.osu.edu> under each respective year's studies. Based on the results of all three years, using fungicides on soybeans strictly as a preventative measure (plant health) may provide a net return to the investment in some years, but there may be years when the additional cost of the fungicides (\$11-\$14/A) plus the cost of application (\$6/A) will not be recovered. OSU Extension plant pathology specialists still recommend an integrated pest management approach of scouting the crop and applying pesticides only when disease and insect levels reach economic thresholds.

## Acknowledgements

OSU Extension- Van Wert and Farm Focus express appreciation to BASF, Bayer CropSciences, and Valent for supplying the fungicides tested in this study. Also, thanks go to Monsanto and Valent for supplying the herbicides used for weed control, and to Gries Seed Farms for supplying the seed beans for this trial.

For additional information contact:

Gary Prill  
1055 South Washington Street  
Van Wert, OH 45891  
419-238-1214  
prill.1@osu.edu

