

On-Farm Demonstration Trial: Crop Protection Studies Miravis Neo® Fungicide Application on Soybean

Mike Witt—on-farm trials coordinator and agronomist, ISU Extension and Outreach
Brandon Zwiefel—agricultural specialist, Northern Research and Demonstration Farm
Chad Hesseltine—agricultural specialist, Southeast Research and Demonstration Farm
Iowa Central Community College, Ag Department

Objective

Determine the effects of foliar fungicide application on soybean yields to define best management practices.

Introduction

An application of foliar fungicide to corn and soybean has become a common practice for many farmers in Iowa. The effect of fungicide on corn and soybean yield, however, can vary from year to year. Environmental conditions, such as rainfall and temperature, influence disease development, which will determine whether a fungicide affects yield. Because environmental conditions vary from one year to the next, it is difficult to predict how and when to use a fungicide. The objective of this trial was to evaluate whether the application of the foliar fungicide Miravis Neo® from Syngenta Corporation would result in a significant yield difference in soybean.

Materials and Methods

Crop Year—2021

Trial	210408	210409	210703
Trial County	Webster	Webster	Louisa
Soil Type	Nicollet(55), Webster(107)	Nicollet(55), Webster(107)	Taintor
Previous Crop	Corn	Corn	Corn
Tillage	Conventional	Conventional	Conventional
Current Crop	Soybean	Soybean	Soybean
Hybrid –Number	P25A96	P24EA12	Arthur 2230E
Hybrid–Company	Pioneer/Corteva	Pioneer/Corteva	Merschman Seeds
Row Spacing	30 in.	30 in.	30 in.
Seeding Rate	150,000/ac.	150,000/ac.	160,000/ac.
Planting Date	4/28	4/28	4/24
Harvest Date	October 4	October 4	September 27
Experimental Type	On-Farm Demo	On-Farm Demo	On-Farm Demo
Replications	4	4	4
Fungicide	Miravis Neo 13.7 oz. /acre	Miravis Neo 13.7 oz. /acre	Miravis Neo 13.7 oz. /acre
Fungicide Application	July 29 R3	July 29 R3	July 29 R3

Results

Trial Number	Treatment	Yield (bu./ac.) ^a	P-value ^b	Moisture	P-value ^b	Return on Treatment ^c
210408	Miravis Neo 13.7 oz. / acre	79.2 a	<0.01	12.9 a	0.32	\$832.36/ac.
	Control	77.0 b		12.8 a		\$831.60/ac.
210409	Miravis Neo 13.7 oz. / acre	72.9 a	0.06	12.5 a	0.64	\$764.32/ac.
	Control	71.3 b		12.5 a		\$770.04/ac.
210703	Miravis Neo 13.7 oz. / acre	67.1 a	0.89	6.9 a	0.92	\$701.68/ac.
	Control	67.4 a		6.9 a		\$727.92/ac.

^aValues denoted with the same letter within a trial are not statistically different at the significance level of 0.10.

^bP-value = the calculated probability that the difference in yields can be attributed to the treatments and no other factors. For example, if a trial has a P-value of 0.10, there is 90% confidence the yield differences are in response to treatments. This is consistent for demonstration trials.

^cReturn on Treatment based on \$11/ac. cost of Miravis Neo® product and \$12/ac application cost. And \$10.80 soybean commodity prices. ((Yield x Price)-Costs). Commodity price is the 2020 national average cash price for soybeans.

Key Takeaways

- The usage of Miravis Neo® fungicide in both trials at a rate of 13.7 oz. per acre applied July 29 resulted in a significant yield gain of 2.2 bushels per acre in 210408 and 1.3 bushels per acre in 210409.
- The fungicide did not have a significant effect on grain moisture.
- Even with the increased cost of application and product, there was a gain of \$.76 per acre in profitability with the addition of the fungicide in trial 210408. However, there was a loss for return on treatment on fungicide application in trial 210409 of \$5.72 per acre.
- NOTE: The results presented are from replicated demonstration trials. Statistics are used to detect differences at a location and should not be interpreted beyond the single location.

