On-Farm Demonstration Trial: Crop Protection Studies Veltyma® Fungicide Application on Corn

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Objective

Determine the effects of foliar fungicide application on corn 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 these trials was to evaluate whether the application of the foliar fungicide Veltyma® from BASF corporation would result in a significant yield difference in multiple hybrids.

Crop Year–2021

Trial	210803
Trial County	Floyd
Soil Type	83B,84,198B, 399
Previous Crop	Soybean
Tillage	Conventional
Current Crop	Corn
Hybrid – Variety Number	Multiple
Hybrid – Variety Company	
Row Spacing	30 in.
Seeding Rate	35,000/ac.
Planting Date	April 27
Harvest Date	October 21
Experimental Type	
Replications	3
Fungicide	Veltyma 7oz./ac.
Fungicide Application	7/29/2021

Key Takeaways

- The usage of Veltyma® fungicide in these trials at a rate of 7 oz. per ac. applied on July 29 resulted in a significant yield difference in three out of 28 hybrids. The average grain yield increase from the fungicide application was 5.4 bu. per ac.
- The fungicide had significant effect on grain moisture in two out of 28 hybrids.
- Return on investment was variable depending on the yields obtained by the individual hybrids.
- Major in-season wind event cause significant lodging across this trial.
- 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.

Results

Trial Number	Treatment	Yield (bu./ac.)[a]	P- value[b]	Moisture	P- valueb	Return on Treatmentc	Lodging %
	Dekalb 51-98 RIB Control	197.9	0.10	16.5	0.63	$896.60	20
	Dekalb 51-98 RIB Veltyma	207.7		16.4		$912.25	16.7
	Dekalb 52-18 RIB Control	173.6	0.32	17.4	0.10	$786.75	60
	Dekalb 52-18 RIB Veltyma	184.7		17.8		$807.70	63.3
	Dekalb 52-34 RIB Control	203.7	0.36	17.2	0.72	$922.83	16.7
	Dekalb 52-34 RIB Veltyma	212.4		17.2		$933.32	20
	Dekalb 53-27 RIB Control	224.1	0.73	17.9	0.56	$1015.14	23.3
	Dekalb 53-27 RIB Veltyma	226.7		17.6		$998.14	28.3
	Dekalb 54-38 RIB Control	215.8	0.51	20.8	0.93	$977.93	46.7
	Dekalb 54-38 RIB Veltyma	213.3		20.7		$937.35	46.7
	Dekalb 55-37 RIB Control	194.4	0.91	17.4	0.17	$880.60	8.3
	Dekalb 55-37 RIB Veltyma	192.6		17.7		$843.60	18.3
	Dekalb 57-97 RIB Control	210.7	0.05	17.6	0.87	$954.61	6.7
	Dekalb 57-97 RIB Veltyma	224.6		17.6		$988.39	5
	Dekalb 58-34 RIB Control	204.1	0.42	19.0	0.14	$924.36	36.7
	Dekalb 58-34 RIB Veltyma	216.8		18.6		$953.26	30
	Dekalb 59-81 RIB Control	220.1	0.92	18.4	0.53	$997.16	73.3
	Dekalb 59-81 RIB Veltyma	221.3		18.7		$973.40	80
	Kruger 4R 1005 Control	236.6	0.89	19	0.36	$1071.81	66.7
	Kruger 4R 1005 Veltyma	238.0		19.2		$1049.14	63.3
	Kruger 4R 9706 Control	231.9	0.80	19.8	0.78	$1050.59	11.7
	Kruger 4R 9706 Veltyma	233.7		19.7		$1029.90	16.7
	Kruger 4R 9802 Control	191.5	0.47	17.4	0.64	$867.52	2
	Kruger 4R 9802 Veltyma	199.8		17.3		$876.21	5.7
	Pioneer 0075Q Control	197.8	0.37	17.4	0.64	$896.32	26.6
	Pioneer 0075Q Veltyma	210.5		17.2		$924.46	26.6
	Pioneer 0157 AMX Control	213.9	0.04	19.1	0.88	$969.36	56.7
	Pioneer 0157 AMX Veltyma	216.3		19.1		$950.72	56.7
	Pioneer 0220 Q Control	219.1	0.79	16.6	0.83	$992.63	46.6
210101	Pioneer 0220 Q Veltyma	218.3		16.5		$960.04	50
	Pioneer 0306 Q Control	200.1	0.89	17.2	0.78	$906.52	60
	Pioneer 0306 Q Veltyma	201.5		17.1		$883.88	66.7
	Pioneer 0404 AM Control	217.2	0.34	17.1	0.21	$984.02	28.3
	Pioneer 0404 AM Veltyma	223.4		18		$983.01	30
	Pioneer 0421 AM Control	198.9	0.38	17.3	1.0	$901.30	2
	Pioneer 0421 AM Veltyma	205.3		17.3		$901.37	2
	Pioneer 0589 AM Control	212.8	0.78	18.0	0.24	$964.26	5
	Pioneer 0589 AM Veltyma	208.5		18.4		$915.36	16.7
	Pioneer 0622Q Control	223.3	0.61	19.0	0.16	$1011.55	6.7
	Pioneer 0622Q Veltyma	229.3		18.5		$1009.67	6.7
	Pioneer 0953 AM Control	237.3	0.56	19.7	0.07	$1074.42	2
	Pioneer 0953 AM Veltyma	244.4		18.9		$1078.00	2
	Pioneer 1082 AM Control	225.5	0.57	20.0	0.23	$1021.37	18.3
	Pioneer 1082 AM Veltyma	233.3		20.5		$1028.09	16.7
	Pioneer 1185 AM Control	229.3	0.21	19.7	0.46	$1038.84	8
	Pioneer 1185 AM Veltyma	239.9		19.5		$1057.53	8
	Pioneer 1366 Q Control	226.2	0.50	19.0	0.84	$1024.90	20
	Pioneer 1366 Q Veltyma	228.7		19.1		$1007.29	20
	Wyffels 2506 Control	207.4	0.31	16.8	0.29	$939.61	60
	Wyffels 2506 Veltyma	214.7		16.3		$943.79	56.7
	Wyffels 4196 Control	212.5	0.87	18.7	1.0	$962.62	6.7
	Wyffels 4196 Veltyma	209.4		18.7		$919.84	7.3
	Wyffels 5086 Control	221.4	0.64	18.0	0.89	$1003.09	5.7
	Wyffels 5086 Veltyma	228.0		17.9		$1004.06	4
	Wyffels 5516 Control	213.8	0.27	18.0	0.77	$968.68	75
	Wyffels 5516 Veltyma	229.2		18.1		$1009.36	71.7

[a]Values denoted with the same letter within a trial are not statistically different at the significance level of 0.10.
[b]P-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, then we are 90% confident the yield differences are in response to treatments. This is consistent for demonstration trials.