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

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Objective

Determine the effects of foliar fungicide application timing 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 this trial was to evaluate whether the application of the foliar fungicide Approach® from Corteva corporation would result in a significant yield difference based on the timing of application. The applications were performed at the R1 (Silking) and R2 (Blister) reproductive growth stages of corn.

Materials and Methods

Crop Year–2021

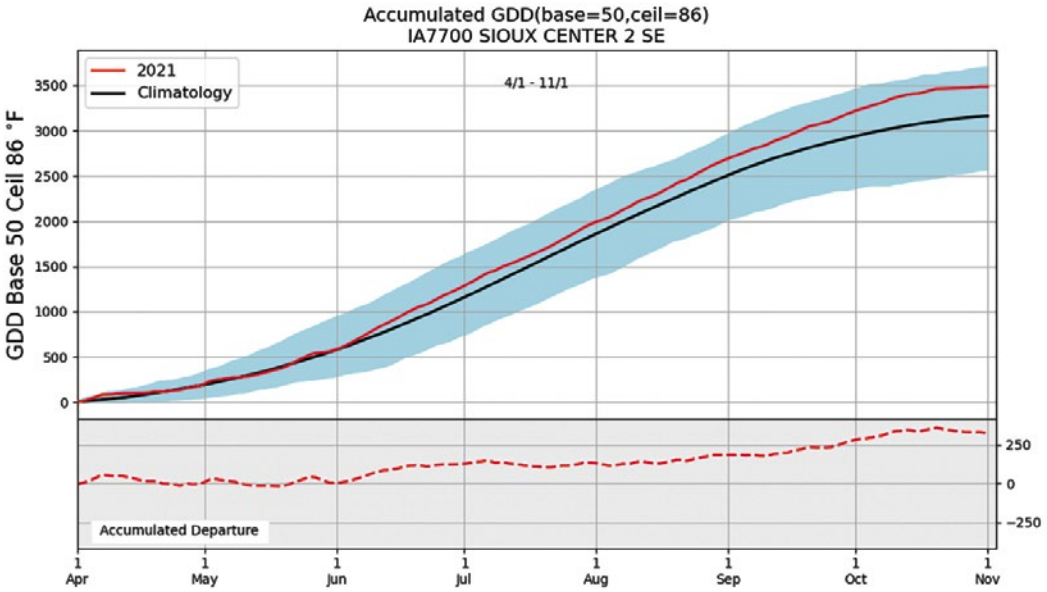
Trial	210107
Trial County	Sioux
Soil Type	8B, 31, 91, 91B, 133, 310B, 310B2, 310C2, 428B
Previous Crop	Soybean
Tillage	Conventional
Current Crop	Corn
Hybrid–Variety Number	P0220Q
Hybrid–Variety Company	Pioneer/Corteva
Row Spacing	3- in.
Seeding Rate	34,000/ac.
Planting Date	April 24
Harvest Date	October 11
Fungicide	Approach 9oz./ac.
Fungicide Application	July 21-29
Experimental Type	On-Farm Demo
Replications	3

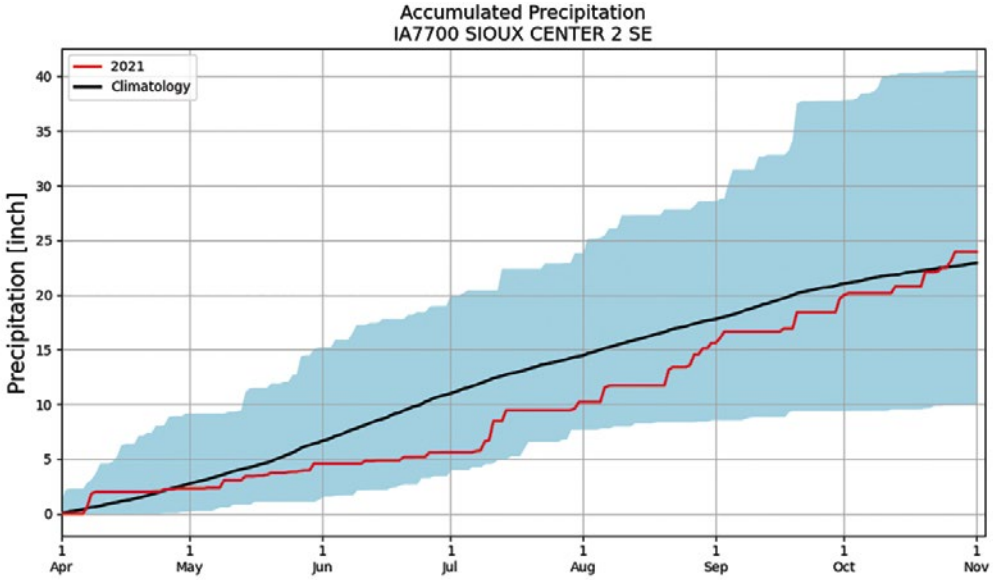
Results

Trial Number	Treatment	Yield (bu./ac.)[a]	P-value[b]	Moisture	P-value[b]	Return on Treatment[c]
210107	Approach® R1 Application	224.4 a	0.18	18.2 a	0.78	$986.53/ac.
	Approach® R2 Application	221.1 a		18.2 a		$971.58/ac.
	Untreated Control	215.5 a		18.5 a		$976.21/ac.

[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, there is 90% confidence the yield differences are in response to treatments. This is consistent for demonstration trials.
[c]Profit of Production based on $17/ac. cost of Veltyma® product and $12/ac. application cost, $4.53 corn commodity prices. ((Yield x Price)-Costs) Commodity price is the 2020 national average cash price for corn.

Location Climate Analysis





Key Takeaways

- The usage of Approach® fungicide did not show any significant yield difference between the untreated control and with the given application timings.
- The fungicide had no significant effect on grain moisture in the trial.
- Return on treatment was higher for the untreated control over the R2 application of fungicide.

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.