Effectiveness of Foliar Fungicides by Timing on Foliar Diseases on Hybrid Corn

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Foliar fungicides remain an input on hybrid corn that many farmers consider. New fungicides for use on corn are registered annually. The goal of this project is to provide data to help farmers determine the need for foliar fungicides in their production. The objectives of this project were to assess the effect of timing of application of fungicides on foliar disease, evaluate the yield response of hybrid corn to foliar fungicide application, and discern differences–if any–between fungicide products.

Materials and Methods

The corn hybrid Pioneer 1197AM, with a resistance rating of five for grey leaf spot (GLS) (1-9 scale, 9=outstanding), was planted following soybean in a minimum tillage system April 27, 2020. A randomized complete block design with six replications was used. Each plot was four rows wide (30-in. row spacing) by 30 ft. long. All plots were bordered by two rows on either side. Nitrogen (175 lbs.) was applied as 32% UAN two weeks before planting. Fungicides were applied at either V12 (July 8) or at R1 (July 19) (Table 1). A CO_2 pressurized 10 ft. hand boom was used to spray the plots, fitted with Tee Jet flat fan sprayer nozzles (XR11003VS), spaced 20 in. apart and delivering 20 gallons per acre at 24 psi. On August 22 (1/2 milk line), disease severity in each plot was assessed on a plot basis as an estimate of percent leaf area diseased. On October 19, all four rows of each plot were harvested with a John Deere 9450 combine fitted with an Avery Weigh-Tronix weigh scale and Shivvers 5010 moisture meter. All data were subjected to analysis of variance and means were compared at the 0.1 significance level using Fisher's protected least significant difference (LSD) test.

Results and Discussion

Below normal precipitation throughout the growing season meant very little disease was observed in the trial. Mean yield of the control was 236.1 bushels per acre, which was similar to yields in 2020. Yields of the fungicide treatments ranged from 246.1 to 258.1.

Table 1. Effect of fungicide and timing of fungicide applications on northern leaf blight and yield of corn, Armstrong.

Fungicide product, rate/ac., application timing[z]	Yield (bu./ac.)[x]
1. Non-treated Control 1	244.6
2. Headline AMP, 10 fl. oz., V12	252.5
3. Veltyma, 7 fl. oz., V12	246.1
4. Trivapro, 13.7 fl. oz., V12	248.2
5. Delaro Complete, 8 fl. oz., V12	249.6
6. Lucento, 5 fl. oz., V12	251.3
7. Miravis Neo, 13.7 fl. oz., V12	255.2
8. Topguard EQ, 5 fl. oz., V12	251.3
9. Non-treated Control 2	227.6
10. Headline AMP, 10 fl. oz., R1	250.7
11. Veltyma, 7 fl. oz., R1	258.1
12. Trivapro, 13.7 fl. oz., R1	247.2
13. Delaro Complete, 8 fl. oz., R1	248.3
14. Lucento, 5 fl. oz., R1	259.4
15. Miravis Neo, 13.7 fl. oz., R1	248.8
16. Topguard EQ, 5 fl. oz., R1	248.1
P-value	0.4038

[v]12=12-leaf stage, R1=silking.
[y]Corrected to 15.0% moisture content.
No effect of fungicide on yield was detected (P = 0.4038).