

Effectiveness of Foliar Fungicides by Timing on Northern Leaf Blight on Hybrid Corn in Southwest Iowa

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Introduction

Fungicide use on hybrid corn has increased considerably, primarily due to reports of increased yields, even in the absence of disease and higher corn prices. A number of fungicides are registered for use on corn. The objectives of this project were to 1) assess the effect of timing of application of fungicides on disease, 2) evaluate the yield response of hybrid corn to foliar fungicide application, and 3) discern differences, if any, between fungicide products.

Materials and Methods

The corn hybrid Wyffels 6626, resistant to race 0 of *Setosphaeria turcica*, the fungus that causes northern corn leaf blight (NCLB), was planted following soybeans in a minimum tillage system on May 9, 2014. The experimental design was a randomized complete block design and each plot was 4 rows wide (30-in. row spacing) by 44 ft long. All plots were bordered by four rows on either

side, and 6-ft alleys were cut between replications at V4. Fungicides were applied at either V6 (June 11), at R1 (July 17), or at both growth stages (Table 1). On September 8 (1/4 milk line), disease severity in the upper canopy (ear leaf and above) of each plot was assessed. Disease severity was an estimate of percent leaf area diseased. All four rows of each plot were harvested with a small plot combine on October 21. 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

The 2014 growing season was predominantly cool and wet with above average rainfall in June, August, and September. NCLB was observed in the trial. Disease severity in the two non-sprayed controls was 10.5 and 9.3 percent. No effect of an application of fungicide at V6 on NCLB severity was detected, except for Priaxor (3 oz/A) ($P < 0.1$). An application of fungicide at R1 significantly reduced NCLB severity. Double applications of fungicide (at V5 and R1) were not different from the single application at R1. No evidence of an effect of fungicide on yield was detected.

Table 1. Effect of fungicide and timing of fungicide applications on northern leaf blight and common rust severity, yield, and harvest moisture of corn at Lewis, Iowa in 2014.

Treatment, rate/A, application timing^z	Northern corn leaf blight severity (%)^y	Yield (bu/A)^x
Control 1	10.5	205.7
Priaxor (3 oz/A) @ V5	5.3	209.7
Priaxor (3 oz/A) @ V5 + Headline AMP (10 oz/A) @ R1	4.3	207.6
Headline AMP (10 oz/A) @ R1	4	202.8
Stratego YLD (3 oz/A) @ V5	8	210.8
Stratego (2 oz/A) @ V5 + Stratego YLD (4 oz/A) @ R1	7.5	210.2
Stratego YLD (4 oz/A) @ R1	7.5	219.2
Quilt Xcel (10.5 oz/A) @ R1	3.3	223.3
Aproach (3 oz/A) @ V5+ Aproach (6 oz/A) @ V5	8	219.8
Aproach (6 oz/A) @ V5	8	217.2
Fortix (5 oz/A) @ V5	9.3	219.4
Fortix (5 oz/A) @ V5 + Fortix (5 oz/A) @ R1	5	207.0
Fortix (5 oz/A) @ R1	5.5	216.7
Custodia (6 oz/A) @ V5	10.8	218.4
Custodia (12.8 oz/A) @ R1	4.3	222.8
Control 2	9.5	197.3
LSD (0.01)	3.74	NA
P-value	0.0276	0.3648

^zV6, 6-leaf stage; R1, silking.

^yPercent upper canopy (ear leaf and above) diseased at ¼ milk line (Sept. 8).

^xCorrected to 15.5 percent moisture content.