

2012

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Recommended Citation

Robertson, Alison E.; Shriver, John M.; and Rueber, David, "Effectiveness of Foliar Fungicides by Timing on Hybrid Corn" (2012). *Iowa State Research Farm Progress Reports*. 153.
http://lib.dr.iastate.edu/farms_reports/153

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Effectiveness of Foliar Fungicides by Timing on Hybrid Corn

Abstract

Fungicide use on hybrid corn has increased considerably in the past four growing seasons 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 standability, 2) evaluate the yield response of hybrid corn to foliar fungicide application, and 3) to discern differences, if any, between fungicide products.

Keywords

RFR A1191, Plant Pathology

Disciplines

Agricultural Science | Agriculture | Plant Pathology

Effectiveness of Foliar Fungicides by Timing on Hybrid Corn

RFR-A1191

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Introduction

Fungicide use on hybrid corn has increased considerably in the past four growing seasons 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 standability, 2) evaluate the yield response of hybrid corn to foliar fungicide application, and 3) to discern differences, if any, between fungicide products.

Materials and Methods

Headline (6 oz/acre), Headline AMP (10 oz/acre), Quadris (6 oz), Quilt Xcel (14 oz/acre), and Stratego YLD (4 oz/acre) were each applied to hybrid corn GH 8211 at either one of three growth stages V6, R1, and R2 (blister) or at V6 followed by a second application at R1 (Table 1). The experimental

design was a randomized plot design. Each plot was 4 rows wide (30-in. row spacing) by 63 ft long. Corn was planted May 8 with a 7000 series John Deere 8-row planter calibrated to plant 35,000 seeds/acre on corn following corn. Fungicides were applied with either a 10 ft hand boom at 20 gpa at V6 on June 13 or a Hagie high clearance sprayer at 15 gpa on July 22 (R1) and August 4 (R2). Spray solutions were applied in a volume of 15 gallons/acre. At growth stage R5.5 (dent) stalk rot severity was assessed on five consecutive plants per plot by splitting the stalks below the ear and estimating stalk rot severity using the University of Illinois scale. All four rows of each plot were harvested with a John Deere 4400 combine on October 4.

Results and Discussion

No stalk rot occurred in the trial. Yields ranged from 176.7 to 199.6 bushels/acre, however there was no evidence of an effect of fungicide treatment on yield ($P < 0.1$) (Table 1).

Studies on the efficacy of foliar fungicide timing for disease management and yield response are expected to continue in 2012.

Table 1. Effect of fungicide and timing of fungicide applications on stalk rot severity, yield, and harvest moisture of corn at Kanawha, Iowa.

Treatments	Yield^a	Harvest moisture
Check 1	184.9	0.18
Headline 6 oz V6	194.8	0.18
Headline AMP 10 oz R1	184.2	0.18
Headline 6 oz V6 + Headline AMP 10 oz R1	196.1	0.19
Headline AMP 10 oz R2	188.8	0.19
Stratego YLD 4 oz V6	192.1	0.18
Stratego YLD 4 oz R1	189.2	0.18
Stratego YLD 4 oz V6 + Stratego YLD 4 oz R1	199.6	0.18
Stratego YLD 4 oz R2	181.7	0.19
Quadris 6 oz V6	181.4	0.18
Quilt Xcel 14 oz R1	190.3	0.19
Quadris 6 oz V6+ Quilt Xcel 14 oz R1	180.8	0.18
Quilt Xcel 14 oz R2	176.7	0.19
LSD _{0.05}	NS	0.0063
C.V. (%)	7.72	2.39

^aBushels/acre at 15.5 percent moisture.