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Effectiveness of Foliar Fungicides by Timing on Hybrid Corn

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Effectiveness of Foliar Fungicides by Timing on Hybrid Corn

Abstract

Fungicides were rarely used on hybrid corn prior to 2007, however, in the past few years some farmers have made fungicides a regular input in their crop production, particularly as the value of grain has increased. Fungicides are recommended for foliar disease management to protect yield potential. There have also been reports of increased yields in the absence of disease. A number of fungicides are registered for use on corn. The objectives of this project were to evaluate the yield response of hybrid corn to foliar fungicide application at various timings.

Keywords

RFR A1147, Plant Pathology and Microbiology

Disciplines

Agricultural Science | Agriculture | Plant Pathology

Effectiveness of Foliar Fungicides by Timing on Hybrid Corn

RFR-A1147

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Introduction

Fungicides were rarely used on hybrid corn prior to 2007, however, in the past few years some farmers have made fungicides a regular input in their crop production, particularly as the value of grain has increased. Fungicides are recommended for foliar disease management to protect yield potential. There have also been reports of increased yields in the absence of disease. A number of fungicides are registered for use on corn. The objectives of this project were to evaluate the yield response of hybrid corn to foliar fungicide application at various timings.

Materials and Methods

Foliar fungicides were each applied to hybrid corn Pioneer P0115XR at either growth stage V5, R1, or R2 (blister), or at V5 followed by a second application at R1. Products applied at V5 were Headline (6 oz/acre), Quadris (6 oz/acre), and Stratego YLD (4 oz/acre), while Headline AMP (10 oz/acre), Quilt Xcel (14 oz/acre), and Stratego YLD (4 oz/acre)

were applied at R1 or R2. The experimental design was a randomized complete block design. Each plot was 8 rows wide (30-in. row spacing) by 44 ft long. Corn was planted with a 7000 series John Deere 8-row planter calibrated to plant @ 35,600 seeds/acre on corn following corn. Fungicides were applied with a hand boom at V5 on June 11 and on July 14 (R1) and July 26 (R2). Spray solutions were applied in a volume of 13 gal/acre. On September 2, some lodging due to strong winds and heavy rain occurred in the trial. No disease assessments were made in each plot, but disease pressure was low. The middle four rows of each plot were harvested with a Case IH 1660 combine on October 12.

Results and Discussion

All fungicide treatments yielded numerically more than the unsprayed check, but only those treatments that included R1 applications yielded significantly more than the untreated check. Fungicide treatments had little effect on grain moisture.

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

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Table 1. Effect of fungicide and timing of fungicide applications on yield and harvest moisture of corn at Sutherland.

Treatments	Yield^a	Harvest moisture
Check	191.0	14.68
Headline 6 oz V5	201.5	14.50
Headline AMP 10 oz R1	209.2	14.63
Headline 6 oz V5 + Headline AMP 10 oz R1	207.1	14.85
Headline AMP 10 oz R2	202.0	14.53
Stratego YLD 4 oz V5	199.6	14.38
Stratego YLD 4 oz R1	207.1	14.38
Stratego YLD 4 oz V5 + Stratego YLD 4 oz R1	202.7	14.50
Stratego YLD 4 oz R2	199.6	14.55
Quadris 6 oz V5	203.5	14.40
Quilt Xcel 14 oz R1	203.1	14.75
Quilt Xcel 14 oz V5 + Quilt Xcel 14 oz R1	211.1	14.48
Quilt Xcel 14 oz R2	200.9	14.55
LSD (0.1) ^b	12.0	0.42
CV %	4.1	2.00

^aBushels/acre at 15.5 percent moisture.

^bUnprotected Fisher's LSD test.