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Soybean Yield Response to Headline Fungicide Applications

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Soybean Yield Response to Headline Fungicide Applications

Abstract

In November 2004, Asian soybean rust was confirmed in the continental United States. Iowa farmers were concerned that this disease would infect locally grown soybeans; therefore, many purchased fungicides to ensure their availability if needed. BASF Corporation agronomists have reported that applications of Headline fungicide improve general soybean plant health and ultimately improve yields. Local farmers wanted to know if an application of Headline fungicide would improve plant health and yields in our area. This study was started to investigate yield responses of soybeans to Headline fungicide.

Disciplines

Agricultural Science | Agriculture

Soybean Yield Response to Headline Fungicide Applications

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Introduction

In November 2004, Asian soybean rust was confirmed in the continental United States. Iowa farmers were concerned that this disease would infect locally grown soybeans; therefore, many purchased fungicides to ensure their availability if needed. BASF Corporation agronomists have reported that applications of Headline fungicide improve general soybean plant health and ultimately improve yields. Local farmers wanted to know if an application of Headline fungicide would improve plant health and yields in our area. This study was started to investigate yield responses of soybeans to Headline fungicide.

Materials and Methods

The experiment used a randomized complete block design. Each plot was an eight-row strip that ran the entire length of the small bulk field. Row spacing was 30 in. Each plot was 20 ft × approximately 540 ft. Treatments were replicated three times in this experiment. Treatments were: 1) 6.5 oz/acre of Headline fungicide applied at growth stage R1; 2) 6.5 oz/acre of Headline fungicide applied at growth stage R3; and 3) an untreated check. The R1 fungicide applications were applied on July 6. The R3 fungicide applications were applied on August 1. Spray applications were made by operating one side of the spray boom over the plot area and applying fungicide to seven rows. Two rows were left between each plot to allow the tractor to drive in this area while applying

the treatments. The plots were scouted for diseases two times during the season. The plots were monitored for differences in maturity according to leaf color change and leaf drop. Visual ratings were made on September 22. The center five rows were harvested using a JD 4400 combine. Grain from each plot was weighed and yields were calculated.

Results and Discussion

Low levels of brown spot and very low levels of Cercospora leaf blight were noted when the plots were scouted; however, there did not appear to be a difference among treatments. Plots sprayed on August 1 at growth stage R3 retained their leaves for approximately one week longer than the other plots. The plots sprayed on July 6 at growth stage R1 and the untreated plots lost their leaves and matured at the same time.

The difference between the plots sprayed at R3 and the untreated check was 4.3 bushels /acre. This was a significant difference. The plots sprayed at growth stage R1 did not yield statistically more than the untreated check. In this trial it was beneficial to apply Headline fungicide at growth stage R3. No benefit was derived by applying fungicide at growth stage R1 in the absence of soybean rust or other diseases controlled by Headline fungicide.

Acknowledgments

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Table 1. Yield response to applications of Headline fungicide.

Treatment	Yield (bu/acre)
Sprayed at R3	56.1 a
Sprayed at R1	53.5 ab
Untreated check	51.8 b ¹

LSD_{0.05} = 3.3 bushels.

¹Groups with the same letter are not significantly different from one another.