



Effect of Foliar Fungicide Use on Soybean Yield

Soybean yields can be affected by many factors throughout the growing season including management decisions and disease. Headline® fungicide has been shown to be effective against several common foliar diseases of soybean, with treatment resulting in increased soybean yield. Research was conducted at the Monmouth Learning Center to assess the soybean yield response to the use of Headline fungicide and the impact that management decisions such as planting date and tillage may have on yield.

Study Guidelines

Two trials were conducted in 2010 at the Monmouth Learning Center near Monmouth, IL to evaluate the yield impact of foliar fungicide use, planting date, and tillage. Two soybean varieties were used in both trials: a maturity group 3.0 Genuity® Roundup Ready 2 Yield® variety and a maturity group 3.5 Genuity® Roundup Ready 2 Yield® variety. Trials were treated with a pre-emergence application of Valor® XLT at 3 oz/acre and post-emergence Roundup PowerMAX® at 22 oz/acre. Headline® fungicide was applied in both studies at the R3 growth stage at 9 oz/acre plus non-ionic surfactant at 0.25% volume NIS/volume mix.

The first trial was planted in a corn-soybean rotation on May 5. A conventional tillage system (Fall: chisel plow; Spring: soil finisher) and strip tillage were used.

The second trial was planted in a corn-soybean rotation with conventional tillage (Fall: chisel plow; Spring: soil finisher). Soybeans were planted at an early planting date (April 19) and a late planting date (May 28).

Results and Conclusions

Foliar fungal disease pressure was low this year with sudden death syndrome (SDS) being the predominant disease late in the season. Incidence and severity of SDS is not mitigated by the application of foliar fungicides such as Headline.

In the first trial, a greater yield response to the application of Headline fungicide was observed in the strip tillage system compared to the conventional tillage system (Figure 1). This may be because more plant residue and disease inoculum is left on the soil surface with strip tillage. Therefore, disease pressure may have been greater in the strip tillage plots compared to the conventional tillage plots. Across both tillage practices, soybeans treated with Headline had a yield advantage over untreated soybeans (Figure 2).

In the second trial, early planted soybeans yielded better than late planted soybeans regardless of whether or not Headline was applied (Figures 3 and 4). This supports previous studies by

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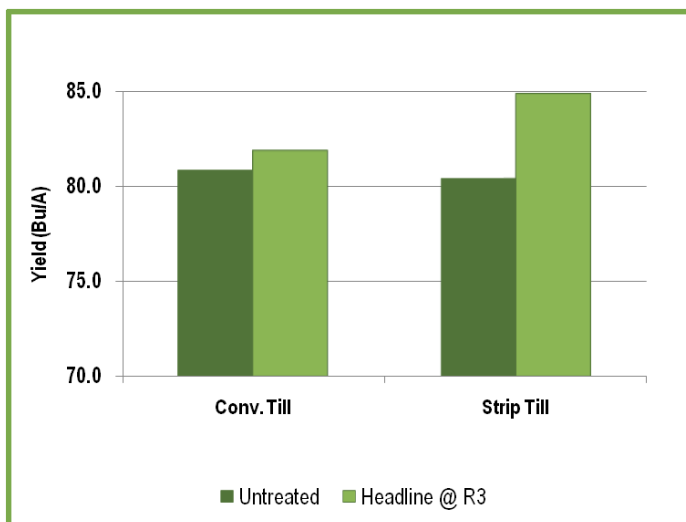


Figure 1. Effect of tillage and foliar fungicide use on yield. Average yield across two soybean varieties in conventional tillage and strip tillage systems.

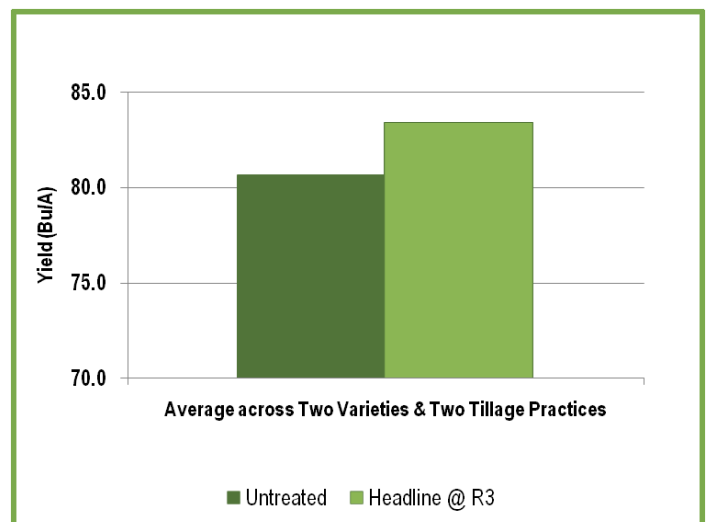


Figure 2. Effect of foliar fungicide use on yield. Average yield across two soybean varieties and two tillage systems.

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Monsanto and universities promoting early planting of soybeans to help maximize yield potential. Across both maturity groups, early planted soybeans with a Headline® fungicide application at R3 had a yield advantage of 9.6 bu/a over late planted soybeans with a fungicide application (Figure 5). When no fungicide was applied, early planted soybeans had a yield advantage of 5.7 bu/a over late planted soybeans. Early planted soybeans had a greater yield response to foliar fungicide than late planted soybeans. This is consistent with data collected in previous years at the Monmouth Learning Center. This could be due in part to disease pressure differences related to planting date. Fungal disease present on early planted soybeans have more time to produce secondary inoculum and complete secondary disease cycles, thus increasing the disease pressure experienced by plants throughout the season.

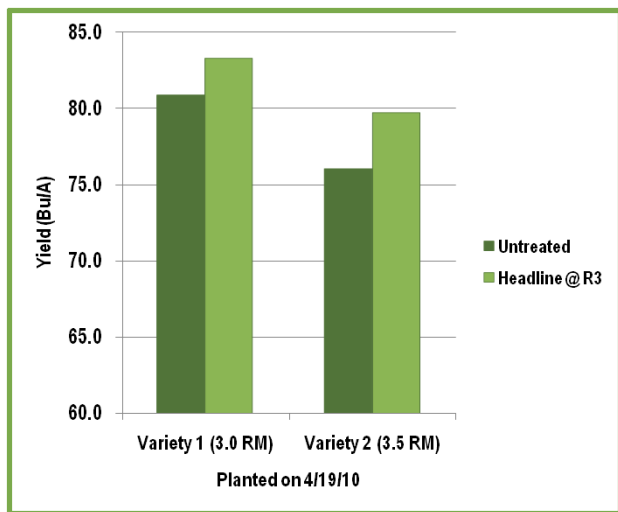


Figure 3. Effect of foliar fungicide use on yield in early planted soybeans.

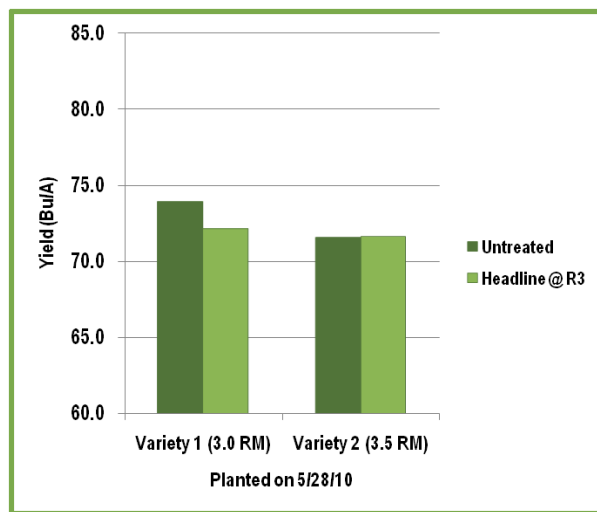


Figure 4. Effect of foliar fungicide use on yield in late planted soybean.

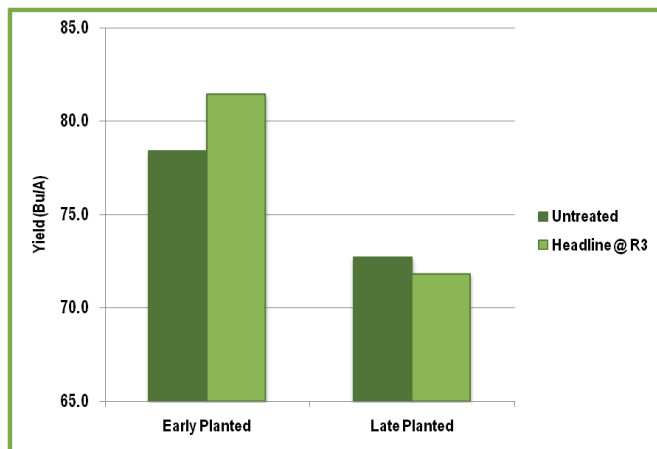


Figure 5. Effect of planting date and fungicide use on yield. Average yield across two soybean maturity groups.

The information discussed in this report is from a single site, non-replicated, one-year demonstration. This informational piece is designed to report the results of this demonstration and is not intended to infer any confirmed trends. Please use this information accordingly.

Monmouth, IL, 2010. Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible.

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