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Effect of Fungicide on Soybean Growth and Yield

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Abstract

In response to rising input costs and narrowing profit margins, soybean [*Glycine max* (L.) Merr.] producers are continually looking for ways to increase soybean yield. One approach being promoted is the use of foliar fungicides, for both foliar pathogen control and nonfungicidal plant physiological effects. The objective of this field experiment was to evaluate a strobilurin and a triazole alone or in combination on soybean in the absence of foliar diseases to determine the potential effect on soybean growth and yield. The experiment was conducted in Iowa at one location in 2005 and two locations in 2006 with four soybean cultivars. Triazole (tebuconazole), a curative fungicide and strobilurin (pyraclostrobin), a preventative fungicide, were applied alone and in combination at growth stages R1, R3, and R5. Low levels of foliar diseases were observed. Seed yield for the control treatment averaged 4308 kg ha^{-1} across all sites. Foliar fungicides did not affect soybean seed yield. Few differences were observed among the treatments in soybean growth and yield components. Total biomass was 10% greater with the pyraclostrobin applied at R3 compared with the control, and was a result of increased stem weight. In this study, fungicides applied in the absence of foliar disease did not produce nonfungicidal physiological effect or associated yield improvement. It was concluded that environmental conditions and assessment of disease levels should be used as a guide for foliar fungicide application on soybean.

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