Evaluation of Fungicide Spray Programs for Control of Asian Soybean Rust in Alabama

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INTRODUCTION
Asian Soybean Rust (ASR), caused by the fungus *Phakopsora pachyrhiza*, has been a recurring problem for soybean growers in Baldwin County. Baldwin County is located along the Gulf Coast in southwest Alabama. Most growers in this area have adopted a fungicide spray program that consists of two fungicide applications applied at the R2 and R4-5 growth stages. Because of the many fungicides available to growers, this study was initiated to determine how various fungicide spray programs would perform under the relatively high ASR pressure found in this area.

METHODS
The trial was conducted in 2006 at the Gulf Coast Research and Extension Center in Fairhope, Alabama. The experiment was planted on 1 June with the variety DP 7870RR. Thirteen sequential fungicide spray programs and an unsprayed control were evaluated. Plots consisted of four 25 ft long rows and a row spacing of 38 in. Plots were arranged in a randomized complete block design with four replications. Fungicide treatments were applied as a foliar spray on 28 July (at R2 growth stage) and repeated 21 days later on 15 August (at R4-5) in 24 gpa of water using a Lee Spider high clearance sprayer with Turbodrop TDXL 10002 flat fan nozzles on 15 in centers at 60 psi. Severity of ASR was evaluated periodically and yield was determined at harvest.

RESULTS
1) All fungicide programs significantly reduced severity of ASR and increased yields compared to the unsprayed control.
2) Headline SBR-Headline SBR, Headline SBR-Folicur, Headline SBR-Laredo, Headline SBR-Topguard, Quilt-Topguard and Stratego-Topguard programs reduced ASR severity compared to the Quilt-Quilt, Stratego-Folicur, Quilt-Folicur and Quilt-Laredo programs on 9 October (the final rating date).
3) The Stratego-Topguard program had a significantly higher yield compared to the Stratego-Stratego, Quilt-Quilt and Stratego-Laredo programs. There were no significant differences in yield among the other programs.
4) Among premix only programs, the Headline SBR program had higher yields and reduced ASR severity compared to the Quilt or Stratego programs.
5) Programs with Headline SBR applied at R2 (and followed by either Quilt or Stratego at R5) had higher yields and reduced ASR severity compared to programs with Quilt or Stratego applied at R2.
6) Programs with Headline SBR, Quilt or Stratego applied at R2 followed by Topguard at R5 had higher yields and reduced ASR severity compared to programs with Folicur or Laredo applied at R5.
7) Programs with Topguard applied at R5 controlled ASR for a longer period of time then other programs evaluated.

CONCLUSIONS
Growers along the Gulf Coast of Alabama and in other parts of the southeast may need to follow a two-fungicide spray program to control ASR in some years. This study suggests that there can be significant differences in the relative effectiveness of a program based on products used and the sequence they are applied. Factors such as recent weather conditions, proximity to sources of ASR, cost of available products, and estimate of a crop's yield potential need all be considered when determining what fungicide program to select.