

Alabama Soybean Board Research Report

Monitoring Soybean Sentinel Plots for Early Detection of Soybean Rust

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The soybean sentinel plot program was established with additional support from the USDA. The sentinel plot system was set up in 35 States in the U.S and was used for early detection of Asian soybean rust. A soybean sentinel plots was a 50 x 50 ft plot of soybeans planted approximately two weeks prior to the standard planting date for an area. In 2006, we typically planted two different maturity groups side-by-side at each sentinel location. In some instances a second planting was made about one month after the initial planting date so that the period for which we could scout for soybean rust would be extended over the season. Twenty soybean sentinel plots were established around the State in 2006. Ten plots were planted on Auburn University Research Stations while another 10 were set up in commercial soybean fields. In addition, 15 kudzu patch sentinel plots were also identified and monitored. Scouting of selected commercial soybean fields and random kudzu patches were also undertaken.

Soybean sentinel plots were monitored once every two weeks from the first true leaf stage through bloom and then once a week through harvest. Kudzu patches were monitored from leaf emergence through a killing frost. Approximately 50 leaves were collected from each soybean sentinel plot and express-mailed to the Plant Diagnostic Laboratory in Auburn for evaluation. Positive samples were reported on the Auburn University Hotline and on the USDA Soybean Rust Information page. Information obtained from the sentinel plot system was used to support the USDA National Soybean Rust Information web site (SBRUSA.NET) and the Auburn University Soybean Rust Hotline (1-800-446-0388).

By mid December, soybean rust was detected in 26 counties in Alabama. This included 5 soybean sentinel plots, 8 commercial soybean fields, and 24 random kudzu patches. The system allowed for early detection of the disease and gave growers some lead-time to determine if a fungicide application was necessary for their operations.