

Occurrence of Soybean Rust in Mississippi: An Update in 2006



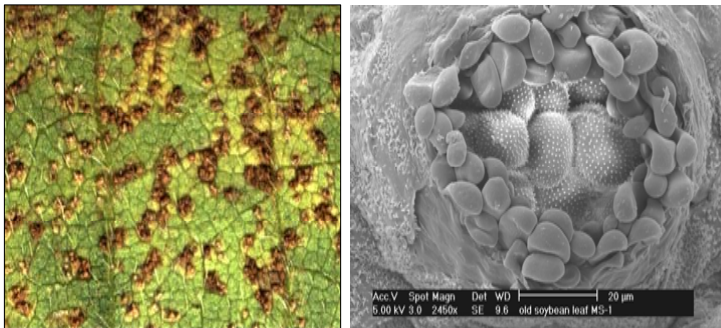
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Introduction

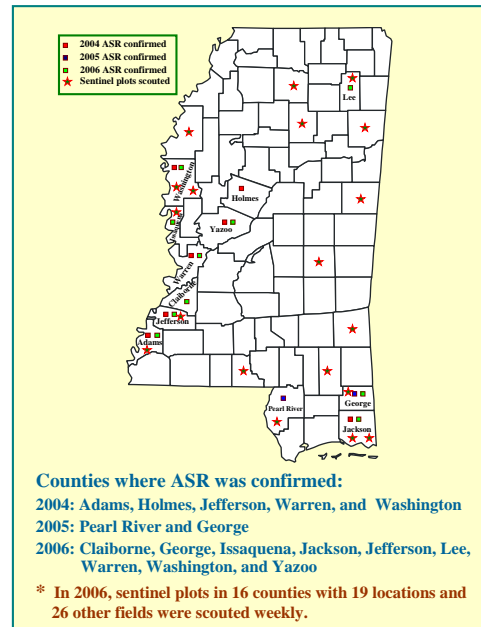
Asian soybean rust (ASR) caused by *Phakopsora pachyrhizi* Sydow is one of the most destructive diseases of soybean. It has been known in Asia since at least 1902. ASR was first observed in the continental United States on November 6, 2004 in a field near Baton Rouge, Louisiana. Mississippi was also one of the first states to identify ASR in 2004. Information about the geographic distribution and seasonal appearance of ASR will help us to develop effective disease control strategies.

ASR identification

Microscopic observations



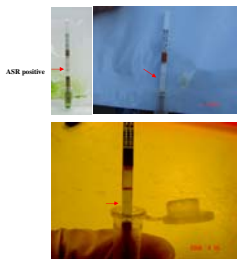
Occurrence of ASR in Mississippi



Summary

- The first detection of ASR in Mississippi on soybean was in Adams County on November 16, 2004, and later that month, ASR was found in four other Mississippi counties.
- In July 2005, ASR was found in two counties.
- In 2006, ASR was first observed on August 1. At that time, soybeans in southwestern Mississippi were mostly in reproductive growth stage R5 so fungicide application was recommended to prevent yield loss. However, in the major soybean growing areas in northeastern Mississippi and the Delta, the extremely hot and dry conditions were unfavorable for rust development.
- As of November 2006, ASR was found in nine counties in 20 locations.
- Purification of ASR isolates using soybean seedlings and detached leaves are underway for characterization of isolates, and for preparing inocula for evaluation of soybean resistance.

Enzyme-linked immunosorbent assay using the QuickStix kit



Molecular identification



Phakopsora pachyrhizi DNA from affected leaf samples was detected and confirmed by polymerase chain reactions using specific primer set (Ppm1 /Ppa2) for *P. pachyrhizi* (Lane 2 to 9). None of the samples were amplified with the primers (Ppm1/Pme2) for *P. meibomia* (Lane 12 to 20). Lane 1 was the 100 bp ladder; lanes 10 and 11 were the negative control without sample DNA in the PCR reactions.

Scouting for ASR in Mississippi



Acknowledgments

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