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Late movement of soybean rust

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Late movement of soybean rust

Abstract

After a hot, dry summer with very little movement, soybean rust made a late push both up the East Coast and into the Ohio River Valley. After the dust settled from the excitement in October, rust was reported in 159 new counties, including seven new states (Arkansas, Illinois, Indiana, Kentucky, Missouri, Tennessee, and Virginia). Soybean rust season totals to date are 230 counties in 15 states on soybean and 262 counties total (including kudzu). Last year at this time, there were only 130 counties in seven states positive for soybean rust. No rust was found in Iowa despite extensive scouting efforts by Iowa State University Extension, including two tests with ELISA kits before the first hard freeze.

Keywords

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Disciplines

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Plant Diseases

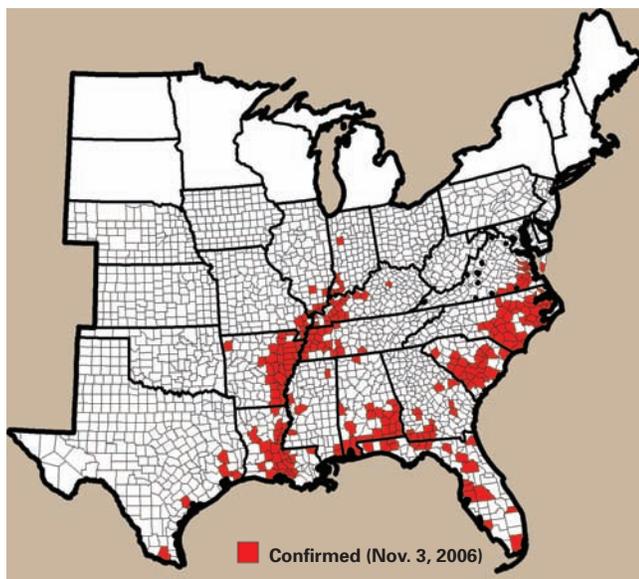
Late movement of soybean rust

by Daren Mueller, Department of Plant Pathology

After a hot, dry summer with very little movement, soybean rust made a late push both up the East Coast and into the Ohio River Valley. After the dust settled from the excitement in October, rust was reported in 159 new counties, including seven new states (Arkansas, Illinois, Indiana, Kentucky, Missouri, Tennessee, and Virginia). Soybean rust season totals to date are 230 counties in 15 states on soybean and 262 counties total (including kudzu). Last year at this time, there were only 130 counties in seven states positive for soybean rust. No rust was found in Iowa despite extensive scouting efforts by ISU Extension, including two tests with ELISA kits before the first hard freeze.



Rust on soybean leaves. (Tristan Mueller)



Asian soybean rust, 2006

So, what can we learn from these late-season findings? First, remember that these late findings will have no bearing on this season, or even the chances of rust arriving in Iowa next season. The soybean rust pathogen needs green tissue to survive. After severe frosts, which we have more than enough of in Iowa, soybean rust cannot survive after host plant tissue dies back. In other words, wherever there is a hard freeze, there will be a completely clean slate in regard to the chances of soybean rust the next year.

Probably the most important aspect of this late-season movement is the information that epidemiologists were able to collect. These findings are valuable as far as modeling for soybean rust and predicting movement in subsequent years. Also, the rapid movement of rust is a good reminder that soybean rust can move very quickly during favorable weather conditions.

Greg Shaner, plant pathologist from Purdue University, stated, “The rust in Indiana, as well as all the rust found to the southwest of us, probably arose from dispersal of spores from southern Louisiana in late September. These late infections will have no effect on soybean yields, but they do clearly illustrate that if there is a source of rust in the lower Mississippi Valley earlier in the season, this could be a source of infection over a large area.”

X. B. Yang, an expert on soybean rust at ISU, has emphasized the importance of soybean rust becoming established in Texas, Louisiana, and Mississippi. If it overwinters in the Mississippi Delta or moves to this region from Florida or Georgia early in the year, rust could become a much bigger threat to Midwestern soybean growers. The movement of rust this past month gives us a good example, thankfully with no consequences, of how rust can push into the Midwest if inoculum builds up in the wrong places.

Daren Mueller is an extension plant pathologist with the Iowa State University Corn and Soybean Initiative and the Pest Management and the Environment Program.