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Soybean Rust Reaches Iowa

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Soybean Rust Reaches Iowa

Abstract

During the 2005 and 2006 growing seasons, soybean rust was not a threat for Iowa soybean growers. This year was a different story, as soybean rust was established fairly early in the season in Texas and Louisiana creating the potential for soybean rust to get to Iowa during the growing season. Soybean rust was not found while soybean plants were in a vulnerable stage; however, soybean rust was found in Iowa on September 25, 2007. Since the initial find, soybean rust was confirmed in 13 additional counties.

Keywords

Plant Pathology

Disciplines

Agricultural Science | Agriculture | Plant Pathology

Soybean Rust Reaches Iowa

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Introduction

During the 2005 and 2006 growing seasons, soybean rust was not a threat for Iowa soybean growers. This year was a different story, as soybean rust was established fairly early in the season in Texas and Louisiana creating the potential for soybean rust to get to Iowa during the growing season. Soybean rust was not found while soybean plants were in a vulnerable stage; however, soybean rust was found in Iowa on September 25, 2007. Since the initial find, soybean rust was confirmed in 13 additional counties.

In 2005 and 2006, soybean rust was limited to the far Southeast U.S. until late in the season for various reasons, including limited overwintering sites and drought conditions preventing the movement of rust. This season started out similarly as soybean rust was found in only five counties in Florida after a recordbreaking frost knocked back kudzu growth in early April. However, on May 8, soybean rust was detected in a kudzu patch west of New Orleans in New Iberia, LA. This was 53 days ahead of the 2006 first find of soybean rust in Louisiana. Then in early June, soybean rust was first reported in Texas. So where did the inoculum come from that infected plants in Louisiana and Texas? Predictive models suggest that inoculum probably did not come from Florida but instead from somewhere in Central America. Jicama or yam bean was found infected with soybean rust in central Mexico. We don't know if this was the source of inoculum, but this does prove that soybean rust was in Mexico, giving *Phakopsora pachyrhizi* another overwintering source.

As soybean rust spread in Louisiana, Texas, and Oklahoma, the chances of soybean rust getting

to Iowa increased dramatically. In August, temperatures were very high throughout the Midwest, including in Oklahoma (northern most rust find at that time), Kansas and Missouri (two states between rust and Iowa), and Iowa. The hot temperatures may have slowed the movement of rust northward by limiting the spore production in the source areas as well as killing many of the spores during transport. Like 2006, when the temperatures started cooling and the day length shortened, soybean rust made a push northward, including Iowa.

Materials and Methods

Sentinel plots continue to be an important tool for early detection of soybean rust in many states, including Iowa. A key advantage for sentinel plots is the commitment of Iowa State University staff to carefully scout these plots in hopes of identifying soybean rust very early in its establishment. In 2007, 20 sentinel plots were established across the state, many on research and demonstration farms. These plots were scouted biweekly or weekly throughout the season.

Results and Discussion

Finding the first infected leaf in Iowa was significant (Figure 1). Because of the potential impact on soybean production, soybean rust has garnered far more attention than other soybean pests. Thankfully, the first find in Iowa was well after any management was needed. What was different about this season compared with the 2005 or 2006 season? The biggest change was the early-in-the-season establishment of soybean rust in Louisiana and Texas.

Acknowledgements

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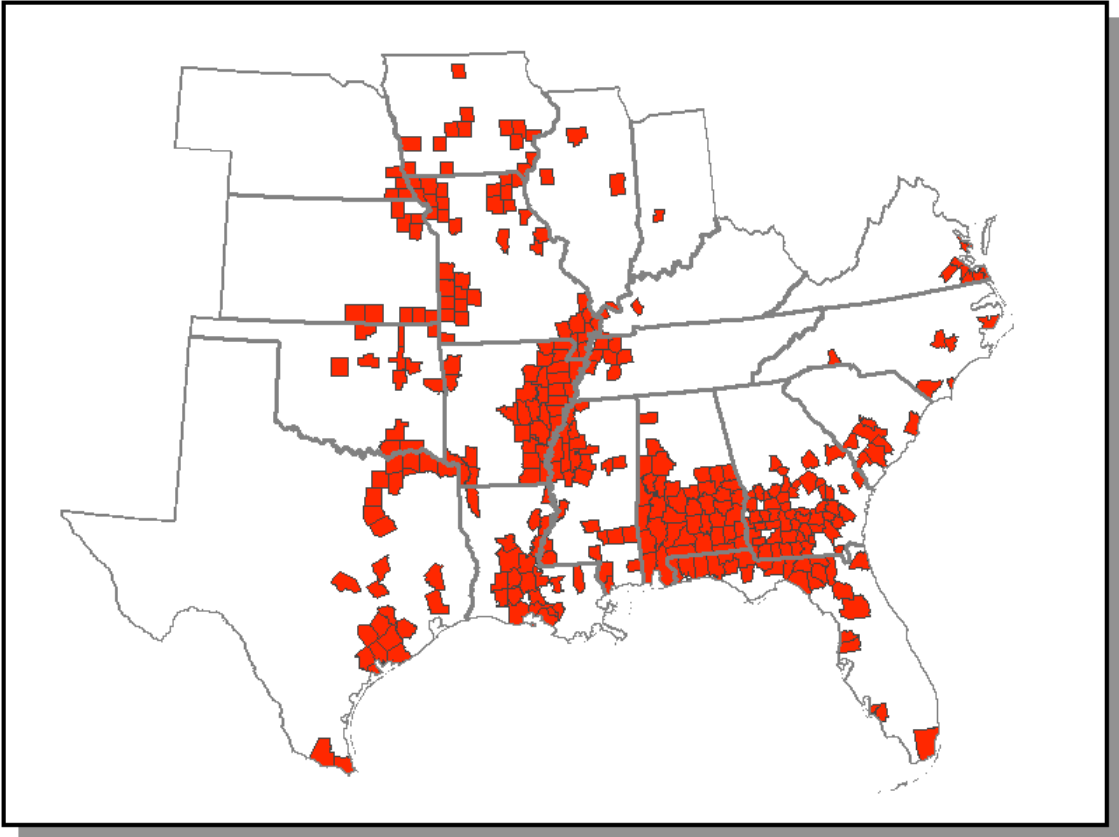


Figure 1. Distribution of soybean rust in the United States in 2007.