

3-26-2007

## Questions (and answers) about soybean rust

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### Recommended Citation

Mueller, Daren S., "Questions (and answers) about soybean rust" (2007). *Integrated Crop Management News*. 1117.  
<http://lib.dr.iastate.edu/cropnews/1117>

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### **Abstract**

The risk of soybean rust for Iowa still looms on the horizon and growers are encouraged to remain cautious. In the last issue of the ICM newsletter, we [summarized what happened in 2007](#) and [reviewed some of the research being done in the United States](#) in an effort to understand rust disease development. This article reviews some current questions producers might have.

### **Keywords**

Plant Pathology

### **Disciplines**

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## Questions (and answers) about soybean rust

*by Daren Mueller, Department of Plant Pathology*

The risk of soybean rust for Iowa still looms on the horizon and growers are encouraged to remain cautious. In the last issue of the ICM newsletter, we [summarized what happened in 2007](#) and reviewed some of the research being done in the United States in an effort to understand rust disease development. This article reviews some current questions producers might have.

### Where has soybean rust survived this winter?

Several cold fronts moved deep into the southern states this past winter. The first cold snap was near the end of December. Yet, several soybean rust reports popped up in early January in Alabama, Georgia, and Florida. In January and February, a couple more killing frosts pushed as far south as Tampa, Florida. The green tissue in the kudzu overwintering sites for soybean rust in Alabama, Georgia, and northern Florida were killed off, but some infected kudzu still remains in Florida.



*ISU Extension field crops specialists Mark Licht and Kyle Jensen discuss soybean rust with Tristan Mueller in Quincy, Florida. (Daren Mueller)*

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In Louisiana and Mississippi, cold fronts (less than 20 °F in some cases) extended all the way to the coastline. Kudzu did not survive in these states, and no rust has been reported.

Soybean rust was reported on soybean in Hildago County, Texas, in a 25-acre field that was harvested in December. A handful of plants remaining that were less mature than the main crop and had not been combined and numerous volunteers at the V3 and V4 growth stage were still present in February and infected with soybean rust. This field has been destroyed. However, this field was cultivated and planted to corn around March 1, so there are no known reports of soybean rust in Texas.

The frost-free date for much of Florida is March 15, so killing frosts are most likely over for Florida and much of the South.

## **Hardly any hurricanes in 2006, yet more rust--why?**

Remember that for disease to develop there needs to be a susceptible host, the pathogen, and the right environment. Even if spores were transferred from the hurricane activity, they still need to land on soybean plants at the right growth stage with periods of extended leaf wetness.

If you look at the distribution of soybean rust in 2006 and compare it to the 2005 season, this provides more evidence that soybean rust movement is not reliant on hurricanes. It is possible that some year in the future, conditions will be favorable to produce a hurricane that will disperse rust spores at a time that favors disease development. But, with the movement of rust in October 2006, it is evident that hurricanes are not needed for widespread movement of spores and disease development. Despite the historic 2005 hurricane season, soybean rust was found in twice as many counties in the United States in 2006.

## **Do the Envirologix QuickStix kits work for soybean rust detection?**

Yes. These kits were used across the United States this past year, and many of the reports were positive. The QuickStix kit costs approximately \$4 to \$5 per strip. One comment from those using these kits was that at times the "positive" response was hard to read because the "positive" red line was difficult to see; however, many users did not have problems with this.

This past year, people scouting sentinel plots across the United States discovered that incubating samples will increase accuracy in detection. So, many who used the QuickStix kits still brought plant samples back to the lab and incubated, no matter the results of the kits.

In Iowa, 120 soybean leaf samples were collected from September 25-28 and were tested for soybean rust using the QuickStix kits. These samples were collected from 12 counties within Iowa and represented late-planted soybean between R1 and R4-5 growth stages. Out of the 120 sampled soybean leaves, none of the samples tested positive for soybean rust. These soybean leaves did have other foliar diseases, including brown spot, bacterial blight, Cercospora leaf blight, frog-eye leaf spot, downy mildew and viruslike symptoms, indicating that no false positives were observed. The approximate time to complete testing of these samples was six hours. Furthermore, there was no evidence that the test did not work properly, as the test control band was found on every sample.

Special thanks to Paul Esker for the QuickStix information for Iowa.

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

This article originally appeared on pages 68-69 of the IC-498 (3) -- March 26, 2007 issue.

Updated 03/27/2007 - 2:27pm

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