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## Soybean rust update -- May 2007

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### **Abstract**

The outbreak risk of rust diseases in the northern production regions has been associated with the level of overwintering in Gulf Coast regions. This relationship also may be applicable to soybean rust. This year's soybean rust was found overwintering in Georgia and four Gulf Coast states: Florida, Alabama, Louisiana, and Texas. In Florida, the level of disease from over-wintering areas has been reduced because of the dry spring conditions. In Texas, the field where infected soybean was found was plowed and planted with corn.

### **Keywords**

Plant Pathology

### **Disciplines**

Agricultural Science | Agriculture | Plant Pathology

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## Soybean rust update -- May 2007

*by X. B. Yang, Department of Plant Pathology*

The outbreak risk of rust diseases in the northern production regions has been associated with the level of overwintering in Gulf Coast regions. This relationship also may be applicable to soybean rust. This year's soybean rust was found overwintering in Georgia and four Gulf Coast states: Florida, Alabama, Louisiana, and Texas. In Florida, the level of disease from over-wintering areas has been reduced because of the dry spring conditions. In Texas, the field where infected soybean was found was plowed and planted with corn.

In Louisiana, however, plant pathologists report finding the disease on kudzu plants in a town west of New Orleans. The detection date was 53 days earlier than last year. Because Louisiana is in a route suitable for the northward spread of this disease as indicated by the spread of this disease last year, this finding has been considered significant. If an outbreak develops from this early occurrence before the end of June in Louisiana, the risk of soybean rust will be quite different from the last two years. In the last two growing seasons, the weather was dry and the disease moved slowly in the Mississippi Basin.

Early occurrence of the disease in the South means early arrival of the spores to northern states. Arrival of soybean rust spores early in the growing season in the northern soybean production regions does not necessarily result in disease outbreaks. Last year, spores of soybean rust fungus were found as early as June in northern soybean production regions. Interestingly, the spores found early last year were not accountable with the computer model predictions that were made with known sources from the southeastern region and Florida. Plant pathologists were questioning where these spores were from. One possibility was from undetected regions in the continental United States. The finding in Louisiana this spring may provide a clue to answer the question.

To have an outbreak of this disease in Iowa, we must have a large amount of spores arrive as early July and have abundant rainfall in the month of July or August. Currently, the amount of disease in Louisiana is below an outbreak level. To meet the first condition, further development before the end of June in the southern region from Kentucky to Louisiana is critical. Outbreaks in Louisiana for the period before the end of June are critical to produce sufficiently large amounts of spores to blow to upper states such as Arkansas and Kentucky. After June, regions in the Gulf Coast are too hot for disease to occur.

As for the second condition, the climate outlook is on our side so far. The climate outlook

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from the National Oceanic and Atmospheric Administration predicts normal precipitation for July and August.

Studies on data from China and Brazil show that 12 days of rain in a month are needed for an outbreak severe enough to cause yield losses. The normal rain days in July or August in Iowa are about eight days. Since we are still learning about the disease after it entered the continental United States in 2004, a surprise could happen. Monitoring the developments in the southern region and subsequent northward movement from the South will help avoid a surprise.

*X. B. Yang is a professor of plant pathology with research and extension responsibilities in soybean diseases.*

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