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Soybean rust outlook - June 30

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Abstract

During this past week, we have seen an increase of soybean rust reported in Florida and adjacent states. The disease was found in sentinel plots located in Florida and southeastern Alabama. The disease also was found in another Florida county on kudzu plants. Although the disease has been found in two other states besides Florida, the new findings are around the Florida Panhandle. The increased activities were predicted by computer models during the last two weeks; more findings are predicted because the weather has been suitable for soybean rust development there.

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Soybean rust outlook—June 30

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Rust update. During this past week, we have seen an increase of soybean rust reported in Florida and adjacent states. The disease was found in sentinel plots located in Florida and southeastern Alabama. The disease also was found in another Florida county on kudzu plants. Although the disease has been found in two other states besides Florida, the new findings are around the Florida Panhandle. The increased activities were predicted by computer models during the last two weeks; more findings are predicted because the weather has been suitable for soybean rust development there. In Iowa, scouting has been conducted this past week in sentinel plots and no rust has been found. Most of our sentinel plots are now at the flowering stage.

Outlook. Computer models show that the environmental conditions from June 10 to July 10 are very favorable for soybean rust development in Florida and southern Georgia and favorable in Alabama and most of Georgia. Areas of northern Florida, southern Georgia, and southern Alabama are more likely to receive spores from known soybean rust spore production areas in Florida and the southern corner of Georgia. The risk of spore movement to other states increases and the combined climatic favorability maps using observed and forecasted weather for the next 15 days shows a high probability of rust occurrence for Florida and southern regions of Georgia, Alabama, part of Mississippi, and part of southeastern Louisiana.

Northern regions. We conducted computer simulations on spore movement with historical weather data (Figure 1). During early July, spores can be transported to western Kentucky, southern Mississippi, and southeastern Louisiana if a large number of spores are produced in southeastern Alabama during this period. If soybean rust fungus establishes itself and produces large spores before August in these regions, dispersal of spores to Iowa and other states in the North Central Region could happen. It is critical to observe July weather to determine the establishment of soybean rust and dispersal potential in the southern states.

For the northern states, the climatic favorability for the period from the past 15 days to 15 days into the future is variable among the regions. The chance to have soybean rust in Iowa and surrounding states (excluding areas of southern Missouri and southern Illinois) before August is very low. States in the east such as Ohio and Indiana may see the disease earlier than Iowa if the disease is detected in northeastern Arkansas or southwestern Kentucky during the first two weeks of July. If the rust is not found in regions mentioned above before mid-July, we would anticipate a much later first detection in Iowa. At this point, increased scouting efforts may be needed to detect the early arrival of soybean rust spores and infection.
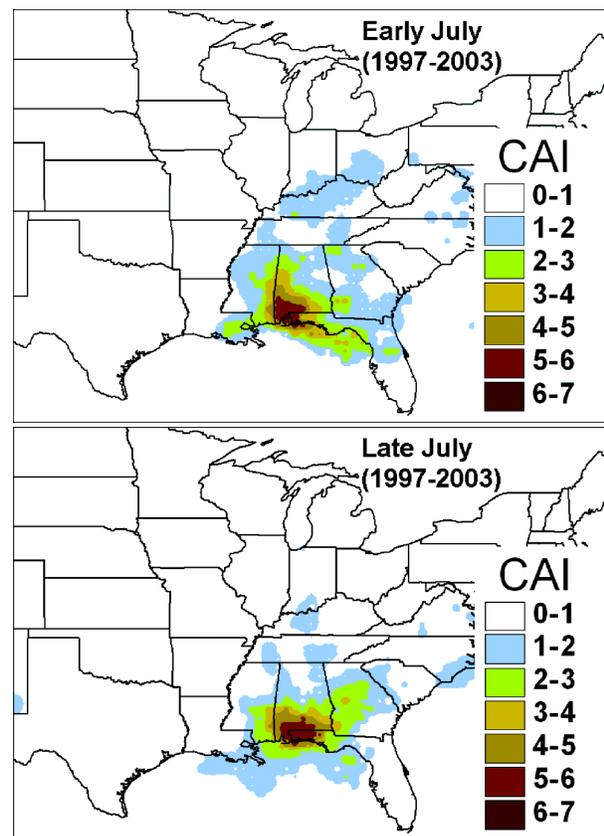
Figure 1. Computer simulations of historical weather data (1997–2003) for potential deposition areas for soybean rust spores produced from southeastern Alabama if a large amount of spores is produced there. The upper map is for the first half of July and the lower map is for the second half of July. The CAI represents a qualitative index (0–7) for possibility of spore deposition.

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