Pest Information Platform for Extension and Education (PIPE)

Julie Golod
Penn State
2005 Soybean Rust Information System

USDA Links
APHIS-PPO Soybean Rust Site
CSREES Web site
National Plant Diagnostic Network site
Return to: USDA SBR website
USDA Position on Spore

National Map Commentary (updated: 10/24/05)
Alabama has reported 10 new counties as positive: Chamber, Randolph, Clay, Marshall, Cherokee, DeKalb, Etowah, Russell, Bullock, and Barbour counties (see state commentary for more details). There are also new county finds in Duval county, Florida and Evans county, Georgia. Pickens County in South Carolina is the farthest north location and Horry county SC is the farthest east location where soybean rust has been found in 2005. Pearl River County in Mississippi is the furthest west that rust has been found in 2005. Alabama now has 26 counties.
Add Other Pests:
Soybean Aphid

Add
Management Tools, such as-
Good Farming Practices
Documentation Tool

Rename the Site to PIPE
The 2006 PIPE

National Soybean Rust Commentary (updated: 10/26/06)
Arkansas reported a find in Faulkner County. Other finds reported today are from Indiana in Pike County and from North Carolina in Granville County. Currently rust has been found infecting this year’s soybeans in 203 different counties in 15 states: AL, AR, FL, GA, IL, IN, KY, LA, MO, MS, NC, SC, TN, TX, and VA. Including reports on kudzu, there is a total of 227 counties in 15 states with rust this year including 16 in Alabama; 18 in Florida; 21 in South Carolina; 24 in Louisiana; 15 in Georgia; 4 in Texas and Missouri; 6 in Mississippi; 30 in North Carolina; 16 in Kentucky; 8 in...
WHAT IS PIPE

An online, real-time information delivery system that has three main components:

- Monitoring
- Data Management, Modeling, Mapping
- Education and Extension, including IPM and Risk Management Tools
PIPE

Password Protected Website Features

• Data Entry
• Detailed Monitoring Maps
• Special Reports
• Model Products for Soybean Rust
• Specialist Tools
PIPE

Public Website Features

• Observation Maps
• Soybean Rust Alerts
• Soybean Rust Chronology
• Soybean Rust Forecast
• Commentaries/State Update Map
• Management Toolbox
• Additional Links
Providing Monitoring Data Into the PIPE System
Data Entry – On Line Option
Data Entry – Excel Option

Select a observation excel (*.xls) file to download.

Location Setup Form
Standard/Pre-detection Form
Soybean Aphid Only Form

<table>
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Unknown Zone
Data Entry – PDA Option
Data Entry – Other Methods

- NAPIS
- NPDN
- Industry transfers
Soybean rust has been found in Escambia, Hamilton, and Taylor Counties in Florida, as well as in Indiana. Currently, rust has been found in 230 different counties in 15 states: AL, AR, FL, GA, IL, IN, KY, LA, MS, MO, NC, SC, TN, TX, and VA. Including reports in Indiana, there is a total of 266 counties in 15 states with rust this year including 23 in Alabama, 24 in Florida, 21 in South Carolina, 24 in Louisiana, 15 in Georgia, 7 in Texas, 5 in Missouri, 43 in North Carolina, 33 in Kentucky, 3 in Illinois, 6 in Indiana, 19 in Tennessee, 20 in Alabama, and 17 in Virginia. Please consult your state commentary for more detailed information about conditions in your state.
Modeling Products

Soybean Rust Research Forecast (issued: 2006-09-22)

Current Conditions:
High pressure continues to dominate much of the East Coast, keeping conditions mainly sunny, reasonable and pleasant. On the other hand, low pressure controls most of the Midwest, making conditions cloudy, warm and damp. As this area of high pressure continues to push off into the Atlantic, expect the area of low pressure to approach the rest of the East, in particular the Middle Atlantic. This disturbance covers the Midwest with clouds and generates widespread showers and thunderstorms with some areas receiving periods of heavy downpours and strong storms. Southwesterly flow from the right side of the low hangs over Texas, Louisiana, Mississippi, and scattered regions in the rest of the South. These winds...
Sentinel Plots and Model Predictions
Communicating Monitoring and Management Information to Growers

Specialist Tools

Please select a tool from the menu above.
Populating the Public Observation Map
This is an automated alert generated by the USDA Soybean Rust website. This alert informs you of new information for 2006 about soybean rust that has been made available on the website.

Map: SB Rust Observation
Alabama - Elmore set to Confirmed on 2006-11-08

For more information, please visit http://www.sbrusa.net

Please do not respond to this email. This is an unmonitored mail box.

This e-mail is never sent unsolicited. You have received this USDA Soybean Rust Alert because you subscribed to it or someone forwarded it to you.

If you do not wish to receive these email alerts, please unsubscribe by following this link:
http://www.sbrusa.net/cgi-bin/sbr/alert_signup.cgi?unsubscribe=5ce4d0a53757161c6c75bce80d930ad8
Providing Public Commentary

Missouri Commentary

Crop Growth Stage  Last Modified: 10/17/06 04:11 PM
According to the October 15 Missouri Agricultural Statistics Service Report, 96% of the soybeans are dropping leaves or beyond, with 85% mature, slightly ahead of last year and a few days ahead of normal. The soybean harvest is 50% complete, 2 days ahead of last year and 3 days ahead of the normal date.

Observation and Outlook - Insect  Last Modified: 09/29/06 10:20 AM
Missouri is participating in the Soybean Aphid Sentinel Plot Program for the 2006 season. Twenty-five sentinel plots were distributed throughout the soybean production areas of the state. Many of these have been discontinued for the 2006 season because of advanced stage of growth of the soybean aphid.

Observation and Outlook - Disease  Last Modified: 10/17/06 04:11 PM
Missouri is participating in the Soybean Rust Sentinel Plot Program for the 2006 season. Twenty-five sentinel plots were distributed throughout the soybean production areas of the state. Many of these have been discontinued for the 2006 season because of advanced stage of growth of the soybean rust.

Scouting and Management - Insect  Last Modified: 08/31/06 05:59 PM
Soybean aphid infestations have been reported from sentinel plots and producer fields in northeast Missouri at this time.

Scouting and Management - Disease  Last Modified: 10/17/06 04:11 PM
Although most fields across the state of Missouri are dropping leaves and harvest is well underway, there are still some fields with green foliage on plants. Scouting these fields for soybean rust may be of interest but it is not here in the greater St. Louis area this year.

Save Changes
Crop Growth Stage

According to the October 15 Missouri Agricultural Statistics Service Report, 96% of the soybeans are dropping leaves or beyond, with 83% mature, slightly ahead of last year and a few days ahead of normal. The soybean harvest is 56% complete, 3 days ahead of last year and 1 week ahead of the 5-year average of 42%.

Most of the original sentinel plots are turning color and dropping leaves so scouting has been discontinued. In some counties monitoring is continuing on later planted fields or fields that still contain areas of plants with green foliage. With a forecast for temperatures in the low 30s for most of the state towards the end of the week of October 9, sentinel plot scouts were asked to make one last survey for any fields with green plants and to send in any suspicious samples from plants with remaining green leaves.

Observation and Outlook - Disease

Missouri is participating in the Soybean Rust Sentinel Plot Program for the 2006 season. Twenty-five sentinel plots were distributed throughout the soybean production areas of the state. Many of these have been discontinued for the 2006 season because of advanced stage of growth of plants in the plots.

Samples are being submitted from a few remaining original sentinel plots on a regular basis. Also, some scouts are monitoring later planted fields in their counties or any fields that still have green leaves on plants in the field.

Dr. Allen Wrather found one soybean rust pustule on one of 50 soybean leaflets collected from a commercial field in New Madrid County on October 13. Most of the field was mature but some plants with green leaves were located close to a security light at the edge of the field. On October 17, Dr. Wrather confirmed soybean in the Peninscot County sentinel plot. Again, most of the plants in the plot were defoliated but he was able to find rust on several plants that still had green leaves. These are the only two positive reports thus far for the 2006 season in Missouri. At this point in the season soybean rust would not impact yield and management strategies are not necessary.

With frosts in much of the state the end of the week of October 9-13 and harvest moving along rapidly, the possibility of further detections is decreasing rapidly.

There has been a flurry of reports of soybean rust from numerous locations in Illinois, Kentucky, Florida, Georgia, North Carolina, South Carolina, Mississippi, Alabama and Louisiana. Soybean rust has been found in sentinel plots, research trials and commercial fields. Most of the commercial fields are close enough to harvest that yield should not be impacted. Disease incidence and severity in research trials in several states is high enough that good results from fungicide trials, yield loss trials, etc. should be available this fall.
Good Farming Practices Documentation Tool  Instructions  Report Date: October 18, 2006

Disclaimer: Use of this documentation tool is strictly voluntary. Information entered by you is not retained on this system and may only be printed or saved on your system in a PDF format. RMA does not control or guarantee the accuracy, relevance, timeliness, or completeness of this information. Neither RMA nor any of its employees makes any warranty, express or implied, including the warranties of fitness for a particular purpose, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of this tool.

First time users are strongly encouraged to read the instructions prior to using this documentation tool.

Preparer Name
Grower Name
State *  Missouri
County *  Camden
Farm Description
Field ID(s)
Crop *  Soybeans
Crop Stage *  R4 - Full Pod

* = Required

Missouri Scouting and Management Commentary

**Soybean Rust**

- October 17, 2006: Although most fields across the state of Missouri are dropping leaves and harvest is well underway, there are still some fields with green foliage on plants. Scouting these fields for soybean rust may be of interest but it is too late in the season for fungicide applications. No management actions for soybean rust are necessary at this time.
- October 15, 2006: Although most fields across the state of Missouri are dropping leaves and harvest is well underway, there are still some fields with green foliage on plants. Scouting these fields for soybean rust may be of interest but it is too late in the season for fungicide applications. No management actions for soybean rust are necessary at this time.
- October 13, 2006: Although most fields across the state of Missouri are turning color and dropping leaves there are still some fields with green foliage on plants. Scouting these fields for soybean rust may be of interest but it is too late in the season for fungicide applications. No management actions for soybean rust are necessary.
Soybean Rust Guidelines

Soybean rust symptoms are most prevalent, and increase most rapidly, during crop reproductive growth stages if conditions are favorable for rust development. Base the need for a fungicide application prior to R3 on reports of rust occurrence in sentinel plots from other states and in particular its occurrence in Mississippi. An application of a strobilurin fungicide at R3-4 growth stage in the absence of rust in the area will provide protection from rust while increasing yield by preventing late season disease. If rust is present at the R3-4 growth stage, we recommend a strobilurin/bisulfolane mix. Sequential applications of either strobilurins or bisulfolanes alone should never be made due to resistance concerns. Refer to fungicide labels for specific directions and restrictions.

R6 and Later
Spraying at late growth stages is not recommended due to lack of yield response. However, any foliage losses whether it is from rust, other diseases, or to R7 can impact yield. In addition, many fungicides have days to harvest (preharvest intervals) or growth stage restrictions. Refer to fungicide labels for specific directions and restrictions.

NOTE: Base the need for protecting soybeans from rust with a fungicide on new releases from extension specialist and agents. A need for a fungicide application will be based on what is happening in overwintering areas on rust development, reports on wind direction and movement, environmental conditions in Mississippi, scouting activities in sentinel plots, and SMART fields throughout Mississippi, and reports from other states in the Southeast.
**Mississippi guidelines for managing Soybean Rust** (Taken from Mississippi guidelines, Updated: 05/26/06 12:22 PM)

Soybean rust symptoms are most prevalent, and increase most rapidly, during crop reproductive growth stages if conditions are favorable for rust development. Base the need for a fungicide application prior to R3 on reports of rust occurrence in sentinel plots from

**Mississippi guidelines for managing Soybean Aphid** (Taken from National guidelines, Updated: 05/01/06 09:57 AM)

- During the period when the soybean crop is reproductive (i.e. flowering) in the R1 to R5 growth stages, an insecticide application may be necessary when 250 or more aphids occur per plant and approximately 80% of the field is infested and populations are

**Other information sources for making crop management decisions**

**Management Activities**

Action taken on 2006 Nov 23

After checking boxes, use space below for additional explanation, if desired.

- In accordance with the above guidelines and commentary for Soybean Rust
- In accordance with the above guidelines and commentary for Soybean Aphid
- In accordance with the above guidelines and commentary for other pests
- Actions taken other than above guidelines and commentary (document source and provide explanation below)
Soybean Rust Tactics

Rust NOT detected in field, vicinity, or sentinel plots. Soybeans have NOT reached R3 growth stage.

**OPTION 1: Do Nothing.**

**OPTION 2: Preventative Spray Program as outlined below:**

<table>
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<th>1st Application</th>
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<th>3rd Application</th>
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<td>At flowering, R1 to R2 growth stage, some Triazoles provide good residual activity and are likely more economical than strobilurins at this growth stage. Yield responses to strobilurins and triazoles applied prior to R3 have been limited in the absence of rust. Indeterminate soybeans will have significant vegetative growth remaining at this stage. Determinates will have already produced most of their vegetative growth. Therefore, strobilurins may be more beneficial on determinates at this growth stage (not documented).</td>
<td>14 – 21 days later. Refer to specific product labels for suggested spray interval. Should coincide with R3-R4 growth stages. Strobilurin-based programs used at this timing increase the likelihood of yield increases due to control of diseases other than rust. Triazoles will control rust but are generally less effective on other diseases.</td>
<td>Only if rust persists and pod fill is not complete. Refer to specific product labels for suggested spray interval. Late applications may improve seed quality and protect against weathering events. Check preharvest intervals.</td>
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<table>
<thead>
<tr>
<th>A. Triazole: Can be used before or after initial infection and signs of disease.</th>
<th>A. Strobilurin: ONLY if rust has still NOT been detected.</th>
<th>A. Triazole:</th>
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<td>B. Strobilurin – Triazole Mixture: Can be used before or after initial infection and signs of disease.</td>
<td>B. Strobilurin – Triazole Mixture:</td>
<td>B. Strobilurin – Triazole Mixture:</td>
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<td>C. Triazole: Can be used before or after initial infection and signs of disease.</td>
<td>C. Triazole: Use different triazole than used in previous sprays.</td>
<td>C. Strobilurin: ONLY if rust has still NOT been detected.</td>
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Summary

Monitoring Information is collected by variety of scouts, and data is entered into the PIPE restricted website directly or transferred from other systems; these observations are used to validate the model – in turn model information helps in monitoring and risk assessment- the observational and model information is then interpreted by specialists and disseminated to the public using the PIPE public website as maps, commentary, and management recommendations.
2007 PIPE

Continue to improve and expand the functionality of the system

Expand to Include Other Host/Pest Combinations, such as Legume Viruses

Other Legume Pests

Lepidoptera PIPE- proposed
THANK YOU FOR YOUR TIME

Special Thanks to:
Scott Isard – Penn State
Joe Russo – ZedX, Inc.
Matt Dedmon – ZedX, Inc.
All the extension plant pathologists and entomologists, scouts, and diagnosticians who make PIPE possible