

**Summary  
of the  
Technical Science Working Group  
on  
Soybean Rust (SBR) – Teleconference #8  
Held on December 3, 2004**

- A. Welcome and Introductions
- B. Range of SBR in United States
- C. ARS Workshop on SBR Research Needs
- D. Diagnostics
- E. Surveillance
- F. Exemption for SBR Research
- G. Quarantine Exemption (Section 18) for SBR on Specialty Legumes

**Web resource on soybean rust:**

USDA/APHIS website – [http://www.aphis.usda.gov/ppq/ep/soybean\\_rust/](http://www.aphis.usda.gov/ppq/ep/soybean_rust/)  
IPM Centers website – <http://www.ipmcenters.org/NewsAlerts/soybeanrust/>

- A. Welcome and Introductions – by Matt Royer, USDA/APHIS, Washington, DC
- B. Range of Soybean Rust in United States – presented by Matt Royer, USDA/APHIS, Riverdale, MD

Soybean rust was first identified in the continental United States in Baton Rouge, Louisiana on November 10, 2004. Since that time SBR has been identified on soybeans by PCR in nine states: LA, MS, FL, AR, TN, SC, GA, AL, and MO. SBR has also been positively identified by PCR on kudzu in Florida and Georgia. The specific locations of the positives and can be viewed on the APHIS website listed above.

- C. ARS Workshop on Soybean Rust Research Needs – presented by Rick Bennett, USDA/ARS, Beltsville, MD

The Agricultural Research Service (ARS) held a workshop on December 1 and 2 to plan a national strategic plan for soybean rust research. This is clearly a high profile disease in urgent need of research directed toward disease management. A major portion of the workshop involved breakout groups that discussed specific strategies to perform needed research on pathogen biology, host resistance, host biology, disease management, and predictive models.

The workshop was planned in the spring of this year, well before the entrance of soybean rust into the continental United States, but was very timely considering recent circumstances. A document containing the conclusions of the conference is planned.

- D. Diagnostics – presented by Matt Royer, USDA/APHIS, Riverdale, MD

State regulatory officials, growers, extension agents, and others are very interested in quick detection of SBR in order to effectively manage the disease. In this regard, APHIS will be allowing States to conduct their own diagnostics as they deem necessary **after APHIS confirms the first detection on a host in a State.**

APHIS has been working closely with stakeholders for several years to prepare for the arrival of SBR. A number of diagnosticians with the National Plant Diagnostic Network and State departments of agriculture have been trained to morphologically identify *P. pachyrhizi* and they have trained first responders. A few scientists have been trained to use real-time PCR to identify *P. pachyrhizi* and differentiate it from the morphologically similar but less aggressive *Phakopsora meibomia*. The latter species has not been found in the continental US and therefore any *Phakopsora* species on soybean in the US is highly likely to be *P. pachyrhizi*. Ultimately, the soybean grower may not care to know if the soybean rust symptoms are caused by one or both of the *Phakopsora* species. States should decide whether identifications, after the initial PPQ-confirmed state/host records, are based on morphology, or morphology followed by real-time PCR.

**Responsibilities for Identifying *Phakopsora pachyrhizi***

<b>Issue</b>	<b>State</b>	<b>APHIS-PPQ</b>	<b>Outcome</b>
First observation of SBR-like symptoms in a <b><u>State</u></b>	State sends sample to diagnostic lab. If the lab believes it may be SBR, a sample is sent to PPQ.	PPQ NIS (M. Palm or J. McKemy) examines morphologically. If <i>Phakopsora</i> , then a subsample is sent to CPHST (L. Levy) for real-time PCR.	New <u>State</u> record if confirmed positive by PPQ. State enters record into NAPIS.
First observation of SBR-like symptoms on a <b><u>host</u></b> not previously reported in a State	State sends sample to diagnostic lab. If the lab believes it may be SBR, a sample is sent to PPQ.	PPQ NIS (M. Palm or J. McKemy) examines morphologically. If <i>Phakopsora</i> , then a subsample is sent to CPHST (L. Levy) for real-time PCR.	New <u>State*Host</u> record if confirmed positive by PPQ. State enters record into NAPIS.
First observation of SBR-like symptoms in a <b><u>county</u></b> from a State where SBR has already been confirmed by PPQ	State sends sample to diagnostic lab. Identification may be based on morphology, or both morphology and PCR.	N/A. <b><u>DO NOT SEND TO PPQ</u></b>	New <u>county</u> record. State enters record into NAPIS.

A complete listing of SBR hosts is available in the Strategic Plan for soybean rust that is available on the APHIS website at: [http://www.aphis.usda.gov/ppq/ep/soybean\\_rust](http://www.aphis.usda.gov/ppq/ep/soybean_rust). Select the third bullet labeled Strategic Plan and look on page 12. USDA has also developed a listing of cultivated crop plants that are affected by SBR. This is a subset of the above list with some details specific to each crop. This secondary list will be shared, upon request, by contacting Kent Smith at [ksmith@ars.usda.gov](mailto:ksmith@ars.usda.gov).

**E. Surveillance** – presented by Matt Royer, USDA/APHIS, Riverdale, MD

Soybean growers have asked for a sentinel warning system that will help them decide when to commence spraying fungicides. They need a website that will present comprehensive, credible, and

real-time information on SBR occurrences. USDA is facilitating the development of a “coordinated framework” to meet this need for a near real-time, web-based reporting system that tells farmers where SBR has and has not been detected. Participants involved in designing this framework are USDA, ASA, USB, ASTA, and other academic and industry partners. USDA realizes it does not have all the resources required for such a comprehensive system, and intends to help itself and its stakeholders leverage their resources toward a common goal. The system will be coupled with a predictive system that will inform growers where the pathogen of SBR is expected to appear next and what the chances are for infection. USDA/APHIS will take leadership by facilitating discussions to design this national system. Funding and infrastructure are TBD.

A committee of scientists, headed by Roger Magarey of APHIS-PPQ-CPSHT, NCSU, and Coanne O’Hern, National Survey Coordinator, Pest Detection and Management Programs, has been formed to study this need. A document will be provided well in advance of next spring so growers and surveillance cooperators will know what to expect. Help is being sought from international experts that are experienced with the design and maintenance of SBR sentinel systems.

#### F. Exemption for Research on Soybean Rust – presented by Mike Firko, USDA/APHIS, Riverdale, MD

Interested stakeholders can seek an exemption to conduct research with soybean rust. *Phakopsora pachyrhizi* (the causal agent of soybean rust) falls under regulations for select agents that prohibit the possession, use, or transfer of this plant pathogen. Without an exemption, one has seven days following the positive identification of a select agent to destroy or transfer that agent to an authorized entity.

The entrance of *P. pachyrhizi* into the continental U.S. created an agricultural emergency on November 10, 2004. This exemption allows one to hold the pathogen of soybean rust for more than seven days or to conduct research that involves manipulation of this select agent.

A request for exemption must be in writing and contain all of the reasons the individual believes the exemption is necessary. Forward all requests to: Dr. Richard Dunkle, Agricultural Select Agent Program, 4700 River Road Unit 2, Riverdale MD 20737, 301-734-5960 (phone), and 301-734-3652 (fax). View the letter outlining these instructions at:

[http://www.aphis.usda.gov/programs/ag\\_selectagent/ag\\_bioterr\\_announcements.html](http://www.aphis.usda.gov/programs/ag_selectagent/ag_bioterr_announcements.html)

#### G. Quarantine Exemption (Section 18) for SBR on Specialty Legumes – presented by Kent Smith, USDA/ARS/OPMP, Washington, DC

A teleconference was held on November 23 between USDA and the states to decide the proper course of action to request Quarantine Exemptions for SBR on specialty leguminous crops. Several southern states pointed out that they face an immediate threat because leguminous crops are actively being grown in their states.

Triazoles are recognized as one of if not the most effective chemistry for management of SBR. A first step in this process is to extend the label for myclobutanil on snap beans to other leguminous crops. Because the same triazoles may already be approved for use on soybeans, and soybeans represent extensive acreage, it is feared that the supply requirements of soybeans could have a cascading effect

on the availability of triazoles to specialty leguminous crops. For this reason, several triazoles are needed for specialty leguminous crops, as they are now available for soybeans. Other chemistries may be requested.

Allen Straw of the University of Tennessee has offered to take the lead in developing a template similar to South Dakota's and Minnesota's for SBR on soybeans. Other work group members have offered their assistance. These include Robin Rosenbaum of the Michigan Dept of Ag, Dennis Howard of the Florida Dept of Ag, and Cary Hamilton of the New Mexico Dept of Ag. Kent Smith and Teung Chin of the USDA Office of Pest Management will also assist.