

What should I do about **Soybean Rust** (*Phakopsora spp.*)?

What is Soybean Rust?

- Soybean rust is a fungal disease of many plants, including soybeans, snap beans, dry beans, cowpeas and kudzu. It is spread primarily by wind-borne spores and has caused serious crop losses in other parts of the world.
- Soybean rust is caused by two fungal species, *Phakopsora pachyrhizi*, an aggressive pathogen, and *Phakopsora meibomia*, a weak pathogen. **It is not possible to tell the difference by looking, it must be sent to the laboratory.**
- The disease was first discovered in the United States on November 10, 2004 in Louisiana, and was subsequently found in eight states in 2004: Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, Missouri and South Carolina. It was probably blown in by Hurricane Ivan.
- Soybean Rust appears to have overwintered in 2005 in southern Florida and has been found on kudzu in 4 counties in Florida this spring. It has also been found on volunteer soybeans in Georgia (as of 5/10/05). Scouting continues throughout the south and southeastern part of the U.S. on kudzu and volunteer soybean.
- Soybean Rust **can be managed.**

How can I manage Soybean Rust?

- **Know the growth stages of soybeans.** The window for spraying is between R1 and R6 (flowering to pod set). However, the disease can appear at any stage.
- **Know the symptoms.** Soybean Rust begins as very small tan to brown lesions on the undersides of the first leaves on plants nearing the flowering stage (R1). Chlorosis, or yellowing, of infected leaves progresses, but is not usually obvious until the infection is well advanced and has spread to the upper leaves.
- **Know when soybean rust is in the region.** Watch rust development south and west of Maryland.
- **Monitor.** Early detection is critical. You will not see soybean rust from the truck. Check plants in several areas of each field in the late vegetative stages, looking throughout the canopy and at the undersides of the lower leaves for lesions. Start with early-planted fields of early maturing varieties, low lying fields with prolonged dew periods and fields with early canopy closure. Keep looking. Also check any kudzu in the area.
- **Submit suspect samples to the laboratory.** The basic protocol includes: collect 10-20 leaves, place them between dry paper towels to keep them flat, place in a sealed zip lock plastic bag, keep cool (refrigerate), record the date, host plant, your name, collection location within the field, county, state and nearest road intersection. Deliver to the laboratory as soon as possible.

- **Plan ahead.** Know what you will do if soybean rust is found. This disease can move quickly under the right conditions. It may be too late in one week, if you are not prepared to act.

Determine:

- **When**, and if, it is economical to spray. If soybean rust does not arrive until after the R5 growth stage, yield losses will be minimal. Hold off spraying as long as possible. Wait until R3-R4 if there is no infection.
- **What** fungicides are available and when they should be applied. Some are protectants and should be used before infection (Bravo Weatherstik, Echo, Quadris, Headline), while others are recommended once infection has occurred (Tilt, PropiMax, Bumper, Folicur, Laredo, Stratego [all Section 18- Quarantine Exemption- 2 application limit] and Domark [Section 18- 1 application limit])
- **If** you have the proper spray equipment to ensure good coverage, targeting the lower leaves in the canopy.
- **How** you will manage fungicide resistance.
- **If** you purchased Crop Insurance. If soybean rust is found in your area, you should be prepared to spray. Be sure to document what you have done to manage the disease.

For more information:

Maryland Department of Agriculture: <http://www.mda.state.md.us/>

[More Efficacy Studies from the National Pest Management Center.](http://www.ipmcenters.org/NewsAlerts/soybeanrust/)
<http://www.ipmcenters.org/NewsAlerts/soybeanrust/>

Soybean Rust Section 18 Quarantine Exemption request
<http://plantsci.sdstate.edu/draperm/SoybeanRustSection18/>

Soybean Rust Maps: www.sbrusa.net

Using Foliar Fungicides to Manage Soybean Rust: <http://www.oardc.ohio-state.edu/SoyRust/index.htm>

USDA's Soybean Rust Website: www.usda.gov/soybeanrust/

APHIS Soybean Rust Website: http://www.aphis.usda.gov/ppq/ep/soybean_rust/

Prepared by: Pamela B. King, Extension Agent, Agriculture & Natural Resources
Reviewed by: Dr. Arvydas Grybauskas, Extension Specialist-Diseases of Field Crops
Sandra Sardanelli, Maryland IPM Program Coordinator