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College of Agricultural and Environmental Sciences



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<http://www.griffin.uga.edu/caes/soybeans>

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MANAGEMENT OF ASIATIC SOYBEAN RUST IN GEORGIA (Kemerait, Jost, and Brock) Asiatic soybean rust was found for the first time in the continental United States and in Georgia in November, 2004. A subsequent survey of the soybean production area in Georgia led to the identification of the disease across the Coastal Plain from Seminole County in the southwest to Effingham County on the eastern edge of the state. Asiatic soybean rust was also identified in Oconee County south of Athens and in Spalding County on the experiment station at Griffin. Surveys were not conducted in the northwest production area (Polk-Bartow-Floyd-Chatooga-Gordon Counties) so it is not known if the disease was present there. Below are a series of notes in the forms of “Questions and Answers” to provide information for the 2005 season.

Question 1: Did the soybean rust survive the winter in Georgia?

Answer 1: While we cannot be absolutely sure, we in the Extension Service are quite sure that the soybean rust DID NOT OVERWINTER or survive in Georgia this season. We feel confident because a) freezing temperatures killed back the host plants (soybean volunteers, kudzu, etc.), b) rust spores can only survive 5-6 weeks without a LIVING host, and c) apparently, rust spores do not survive hard freezes.

Question 2: Since Asiatic soybean rust did not survive in Georgia over the winter, what does this mean that our growers are safe for 2005?

Answer 2: Absolutely not! Because we do not believe the rust is presently in Georgia, the disease will need to be introduced into the state again in 2005. However, by some estimates, the rust spores may be carried in wind and storms as much as 300 miles per day. Thus, it will be quite easy for the rust to move back into and across Georgia.

Question 3: Do we know where the soybean rust may be surviving at this time (early March)?

Answer 3: The presence of Asiatic soybean rust surviving on kudzu was confirmed on 28 February 2005 from kudzu growing in Pasco County, north of Tampa, Florida. This is approximately 200 miles south of the Georgia border. Theoretically, the disease could move from that point to our state in a single day IF the environmental conditions were perfect for transport and there was some living host available (e.g. weeds or crops).

Question 4: How will growers in Georgia know when the disease enters the state?

Answer 4: County agents, growers, and consultants are STRONGLY encouraged to begin watching kudzu as it begins to revive after the winter freezes. New foliage should be monitored for the development of small brown-red pustules. Soybean sentinel plots will be planted at multiple locations across the state in March. These plots will be monitored weekly (and perhaps more often) after emergence for the presence of rust. If and when the rust is found, agents and growers will be notified immediately.

Question 5: How should growers and agents best scout the soybeans?

Answer 5: Scouting should begin as soon as there are true leaves in the field. Initial symptoms are small tan or reddish colored lesions. These lesions are difficult to detect, but are best seen by backlighting the leaves against the sky or another light source. Lesions are quickly followed by the formation of small pustules on the UNDERSIDE of the leaves. These pustules are best observed using a 10X hand lens.

Question 6: What should I do if I find a suspicious sample on kudzu or soybean?

Answer 6: Contact your local county agent to help with the identification. If it appears to be soybean rust, or there is uncertainty, the sample should be immediately mailed to the UGA Plant Disease Diagnostic Lab at 15 RDC Road, Tifton, GA, 31793.

Question 7: Because soybean rust is so close to our state already, do we need to begin spraying fungicides immediately after true leaves form on our 2005 soybean crop?

Answer 7: Unlike peanuts, most soybean growers in Georgia will not be able to afford more than two fungicide applications in the entire 2005 season. Therefore, growers should not start to spray for rust until the crop approaches FIRST BLOOM or in later vegetative growth stages, even though the rust may appear earlier. Data from other parts of the world indicate that fungicides applied prior to first bloom or of questionable value. The ideal time to make the first fungicide application would be when the crop reaches reproductive growth AND the risk of infection is high, but has not occurred yet. (Easier said than done!) Because this is our first season to manage this disease in the United States, there are still many questions to be answered. More information will become available as the season progresses.

Question 8: Are the soybean plants more susceptible to rust at later growth stages?

Answer 8: The soybean plant is susceptible to rust at ALL growth stages. However, protection seems to be more critical during reproductive growth.

Question 9: What fungicides are available to control soybean rust?

Answer 9: Headline, Quadris, Echo, and Bravo are currently fully labeled for use in management of soybean rust. Section 18 special use requests have been submitted for Georgia to the EPA for propiconazole (Tilt, Bumper, PropiMax), tebuconazole (Folicur), tetraconazole (Domark), myclobutanil (Laredo), propiconazole + trifloxystrobin (Stratego) and propiconazole + azoxystrobin (Quilt). Rates are presented in Table 1.

Question 10: Are all of these fungicides equally effective?

Answer 10: No they are not. The strobilurins (Quadris and Headline) and chlorothalonil (Bravo and Echo) are considered primarily protectants and should be in place BEFORE infection occurs. The triazoles (Folicur, Domark, Laredo, PropiMax, Tilt, and Bumper) have more systemic activity than the other fungicides and thus have some LIMITED curative activity. My perception is that Folicur, Domark and Laredo may have more activity than Tilt, PropiMax, or Bumper.

Question 11: Can you give me a suggested fungicide program?

Answer 11: Remember, fungicide programs are continually developing in 2005. However, here is a start.

Scenario I: Rust has not been found in your field, but has been found within 300 miles and weather conditions are favorable for disease spread. Suggestion: Make your first fungicide application with a strobilurin (Quadris or Headline) or with a combination product (Quilt or Stratego). Wait 14 days and consider the weather and further spread of the disease. If infection is likely, apply a second spray (a triazole like those above). If weather is unfavorable, hold off the next application until environmental conditions favor disease spread.

Scenario II: You scout your soybeans and find lesions on 1-10 leaves out of 100 picked from the lower canopy in various parts of the field. You should begin spraying immediately with a triazole fungicide, especially Folicur, Laredo, or Domark. Return to the field 14 days later, unless the weather is hot and dry, and apply a combination product (Stratego or Quilt) or another triazole fungicide. If weather is hot and dry and the beans are not irrigated, apply the second fungicide in anticipation of a rain even.

NOTE: No fungicides are needed to protect the crop AFTER the R6 growth stage as the pods begin to mature. Therefore, if the rust appears later in the season, a single fungicide application may be effective.

Question 12: How much will a fungicide program cost?

Answer 12: Count on \$20-\$35 for a two-spray program, though it could be a bit cheaper.

Question 13: How can I get more information?

Answer 13: You can contact your local county Extension Office, Dr. Bob Kemerait and Mr. Jason Brock at (229) 386-7495 or e-mail at Kemerait@uga.edu, and Dr. Phil Jost at pjost@uga.edu. There are also many excellent sites on the Internet. In particular, http://www.aphis.usda.gov/ppq/ep/soybean_rust/index.html offers a lot of information and links to the UGA-NCSU-Clemson-VA Tech web site.

Table 1. Fungicides for use on Asiatic soybean rust in Georgia.

Product	PHI	Rate/A
Bravo/Echo	42 days	16-36 fl oz
Tilt/PropiMax/Bumper	28 days	4-8 fl oz
Domark	21 days	10-13 fl oz
Laredo	28 days	4-8 fl oz
Quadris	14 days	6.2-15.4 fl oz
Headline	21 days	6-12 fl oz
Quilt	21 days	14-20 fl oz
Stratego	21 days	5.5-10 fl oz
Folicur	21 days	3-4 fl oz

HOW CAN WE AFFORD TO GROW SOYBEANS WITH THE THREAT OF RUST? (*Jost and Shumaker*) Those who have been watching the market have probably noted that soybeans have been making a pretty good rally the past couple days. Prior to late last week beans were trading in the low- to mid-\$5 range on a November contract. At that price level, assuming a 30 bu/A yield on dryland beans it proved to be nearly economically impossible to apply fungicides at 20 to \$30/A. For some growers this price rally may change the perspective somewhat. The key though is taking advantage of the \$6 plus prices. This is often the time of the year when prices tend to be at their highest. Thus if you could afford to grow beans when prices were around \$5.50 (without budgeting in fungicides), this rally may be the money you were looking for to pay for those sprays.

WHAT SHOULD I DO DIFFERENTLY AGRONOMICALLY WITH THE THREAT OF RUST? (*Jost*) The biggest difference in producing a crop with the threat of rust is the absolute necessity for scouting. In the past beans had the “advantage” of being both easy and cheap to grow. Rust changes both of these. They are no longer “easy”. They will have to be scouted, the key to controlling this disease is detecting and treating it prior to the time you can see the symptoms from the truck. If you see this disease as you drive by the field it is too late.

Other than that, the best way to grow beans this year is do what works for you. There are no resistant varieties, increased fertility will not help, and it trying to “beat” the disease with early planting of early varieties is a guessing game. In a nutshell, do what has worked in the past. Do not make a wholesale change in your production practices to combat a disease that we are not certain how to manage at this point.

Your local County Extension Agent is a source of more information on these subjects

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