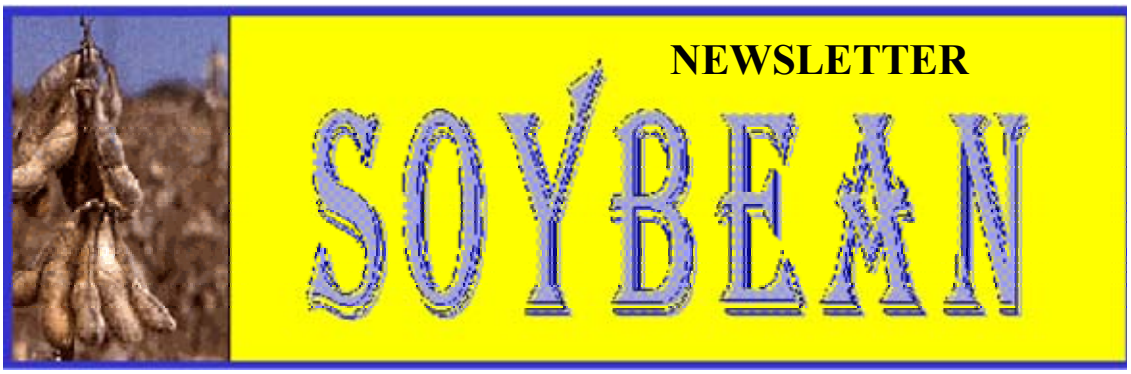
The University of Georgia
Cooperative Extension Service
College of Agricultural and Environmental Sciences



May 4, 2005 http://www.griffin.uga.edu/caes/soybeans

SOYBEAN RUST FOUND IN SEMINOLE COUNTY (*Kemerait, Brock, and Jost*) Soybean rust was confirmed on volunteer soybean plants found growing in Seminole County near Donalsonville on Wednesday, 27 April 2005 at the University of Georgia's Plant Disease Diagnostic Lab in Tifton. The diagnosis was made based upon microscopic assessment of pustules and spores found on the sample submitted by Rome Ethredge, ANR agent in Seminole County. The pustules and spores, while not prolific on the leaves, were consistent enough with those of *Phakopsora pachyrhizi*, the Asiatic soybean rust pathogen, to lead diagnostician Jason Brock and Extension pathologist Bob Kemerait to notify the Georgia Department of Agriculture with their findings. Samples were then submitted to the USDA in Beltsville, Maryland for further verification. To date (1 May 2005), scientists with the USDA have not been able to verify the diagnosis made in Tifton, as they have not found similar diagnostic structures. In an assessment of a second set of fresh soybean plants submitted to the Diagnostic Lab by Rome Ethredge from same site of volunteer soybeans, we found additional pustules and spores. Due to the strong similarity of these spores to those of soybean rust, we believe that growers in the state must assume that the disease is already here and be prepared to protect their crop with fungicides as it reaches first bloom.

NOTE: On Monday, 2 May, scientists with the USDA in Beltsville, MD concurred with diagnosis of soybean rust on soybean plants from Seminole County based upon images of spores taken on 1 May in Tifton. The question and answers below were written prior to this announcement.

Question 1: If you really did find Asiatic soybean rust on volunteer soybeans, why can't the USDA also find it?

Answer 1: This is an excellent question, and one that has caused me to a lot of worry about our diagnosis in Tifton. The best answer I can give is that the pustules and spores that we have found have been few and far between. The best look at spores that I have seen occurred on Sunday, 1 May, after searching for about 45 minutes. Unless I had been really convinced they were there, it would have been easy to think I had misdiagnosed the problem in the first place.

Question 2: Does the USDA say soybean rust is not present in Georgia?

Answer 2: Not at all. The experts with the USDA in Beltsville, Maryland simply point out that they have not found soybean rust on the samples that we have submitted and are concerned that perhaps Jason Brock and I misdiagnosed the problem.

Question 3: Could you be wrong about the diagnosis?

Answer 3: Sure, we could be wrong. However, based upon our experience in disease diagnosis, we feel that the signs and symptoms we are seeing are the early infection and spore production of soybean rust. If anyone can show us that our interpretation of the pustules and spores is incorrect, we will readily amend or diagnosis.

Question 4: Why not wait until the USDA has more time to evaluate samples before announcing the presence of rust?

Answer 4: Once again, an excellent question. Basically, Jason Brock and I are convinced that the symptoms we are seeing are more likely soybean rust than anything else. We also believe, based upon the importance of the disease and its explosive nature once it becomes established, that it is best to let growers know of our findings as soon as possible rather to risk waiting until the disease becomes even more established. Again, if we felt unsure of our diagnosis, we would wait for further evidence.

Question 5: How do you think the soybean rust moved to Seminole County this year?

Answer 5: The rust was found on volunteer plants growing in a field that was infected last year as well. However, we do not believe that the spores were able to survive the winter due to lack of fresh leaf material and freezing temperatures. In my opinion, the most likely route to Seminole County was the movement of spores from some area, such as central Florida, where the disease was able to survive the winter. In fact, models developed by the USDA suggest that spore deposition has already occurred this year over much of south Georgia.

Question 6: Have you found soybean rust anywhere else in Georgia in 2005?

Answer 6: Not with any certainty. We have found structures and spores on kudzu growing in Seminole County that appear suspicious to us. We have sent this sample for further analysis with the USDA and they have thus far not been able to confirm our suspicion. Also, in a

preliminary screening of volunteer soybeans collected in Terrell County we found spores similar to those from Seminole County. However the number of spores was so small that unless we find more in the coming days, we will not diagnose rust on these samples.

Question 7: Have you looked for the soybean rust in places other than Seminole and Terrell Counties?

Answer 7: Yes we have, the "we" including county agents within the Cooperative Extension Service and faculty members in the Department of Crop and Soil Sciences and the Department of Plant Pathology. Dr. Phil Jost and Dr. Dan Phillips have been working to establish soybean "sentinel" plots around the state and thus far we have not found them to be infected.

Question 8: Assuming your diagnosis of soybean rust is correct, how will this impact growers in Georgia in 2005?

Answer 8: First, I now believe that it will be nearly impossible for growers to find the earliest stages of rust in their fields. Diagnosis for us in Tifton has been at best difficult and often agonizing. Because rust is now in the state and is difficult to detect early on, I believe that growers must be prepared to apply effective fungicides at first bloom, unless we do not find any spread of this disease in the future.

The second major concern is with regards to how early the disease has appeared in the state in 2005. While we believed it would appear sometime, we had hoped that it would appear much later in the season. As of now, we will need to watch the crop the entire season.

Question 9: With the finding of Asiatic soybean rust in Seminole County, how do you feel growers should respond with fungicides this season?

Answer 9: I would recommend the steps below.

A. Growers should anticipate the need to spray their crop by first bloom. As there is the likelihood that infection will have occurred by then and may be difficult to detect, growers should plan to apply a triazole fungicide for its curative activity. Tank-mixing a triazole fungicide with a protectant strobilurin will help to extend protective window on the order of one week (for example 2 weeks with a triazole alone, 3 weeks with the triazole/strobilurin mix).
B. Growers should plan to make a second fungicide application two-to-three weeks after the first application. This should be either a triazole or a triazole/strobilurin tank-mix.
C. When it comes to triazoles, it seems that tebuconazole (Folicur), tetraconazole (Domark), and myclobutanil (Laredo) will have better efficacy than propiconazole (Tilt, Bumper, or PropiMax).
D. Triazole/strobilurin tank-mixes/co-packs that should be available to growers include Headline SBR (Headline + Folicur), Quilt (Tilt + Quadris), and Stratego (Tilt + Trifloxystrobin).
E. Chlorothalonil products will less effective at controlling rust that triazoles or strobilurins; however they are less expensive. Some growers may choose to use chlorothalonil

application when already making a "trip across the field" for example when applying boron or dimilin.

Question 10: Will Georgia apply for additional Section 18's for new fungicides to control Soybean rust?

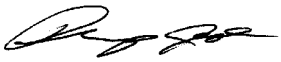
Answer 10: Currently, Quadris, Headline, chlorothalonil, Stratego, Quilt, Bumper, PropiMax, Tilt, Domark, Folicur, and Laredo should be available for soybean growers in Georgia, or at least very quickly. There are other products, such as Headline SBR and additional triazoles that will benefit the growers and Section 18's will be requested as soon as possible.

MORE ON SENTINEL PLOTS (*Jost*) At this time all sentinel plots have been planted across the state. These plots along with volunteer plants (as long as they exist), kudzu and other hosts will be monitored to evaluate the spread of the disease. As of May 3, no other detections of rust were noted across the state in these plots or on kudzu.

You can keep track of the monitoring program for the entire United States at the following web site, http://www.sbrusa.net/.

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

Edited by: **Philip H. Jost**, Extension Agronomist-Cotton & Soybeans



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