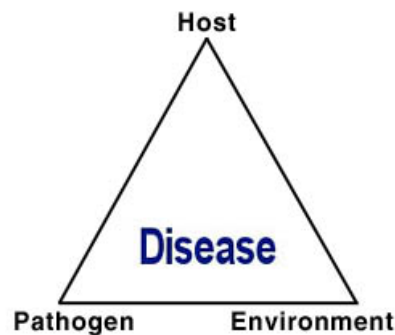


Soybean Rust Update: September 19, 2013

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Now that Asian soybean rust (SBR) has been confirmed in Suffolk, VA, growers in the state need to make some management decisions in regard to whether or not to spray fungicides for control of the disease. There are two approaches that can be taken at this point: 1) avoid risk and spray or 2) wait and see. Unfortunately, it is not clear which is the correct approach. Several factors need to be taken into consideration when deciding how to react to the presence of SBR in the Virginia. These factors are best summed up by what plant pathologists refer to as the “plant disease triangle” which is a visual representation (in the shape of a triangle) of the interaction between the pathogen, crop host, and environment. In the case of SBR, we must consider 1) how widespread the soybean rust fungus is in Virginia (**pathogen**), 2) the maturity of the soybean crop (**host**), and 3) the current weather conditions (**environment**).

PLANT DISEASE TRIANGLE



PATHOGEN

On September 17, 2013 the soybean rust fungus (*Phakopsora pachyrhizi*) was observed and confirmed on soybean leaves collected from one of the sentinel plots at the Tidewater AREC in Suffolk, VA. The soybeans were not showing symptoms of infection and it was only after incubating leaflets in a moist chamber for over a week and looking at hundreds of soybean leaflets under a microscope that I observed a few soybean rust pustules/spores. Extension agents have been scouting fields and sending us soybean leaves for analysis over the past several weeks, and thus far Brunswick, Chesapeake, Lunenburg, Mecklenburg Westmoreland, Middlesex, Prince George, Amelia, and Powhatan counties have been negative for SBR (though this does not exclude the presence of the fungus at very low levels). Today my field technician is scouting several counties in the area, and he will bring back soybean leaves to the lab so we can check for the presence of the fungus. This, along with additional samples from Extension Agents, should give us a better idea of how widespread the fungus is in the state. However, just because the fungus is at a low frequency and symptoms are not visible does not necessarily mean fungicide sprays are unwarranted.

CROP HOST

A critical factor to take into consideration for SBR management is the maturity of the soybean crop. Once soybean reaches R6, risk of yield loss due to SBR is minimal and fungicide sprays are no longer needed. However, growers with soybeans that have not yet reached the R6 stage should consider spraying fungicides for control of SBR (triazole or pre-mix fungicide). David Holshouser, the soybean specialist at the Tidewater AREC, has recommended that soybean within 100 miles of Suffolk that has not yet reached R6 be sprayed. This is particularly relevant for late-maturing/double-cropped soybean. A few recommended fungicide products are listed in Table 1 below.

ENVIRONMENT

The Plant Pathology program at the Tidewater AREC is currently working on a weather-based advisory for soybean rust, and we are tracking when conditions are conducive to disease development. Favorable conditions include daily average temperatures between 65 and 78°F **and** moisture provided by periods of relative humidity greater than 95% for 10 or more hours per day. The last day in September favorable for disease development was September 9 and the current cool, dry conditions minimize the risk of SBR infection.

By the time SBR is widespread and weather conditions are conducive to the disease, most of the soybean crop in the state may be beyond R6 and no longer at risk. However, soybean rust did show up several weeks earlier this year than in 2012, and some soybean was planted later than usual. Of course no one can predict the future and there is always a certain degree of risk in all aspects of crop production. Hopefully this information and the updates to follow will help growers with decisions regarding management of soybean rust.

FUNGICIDES FOR MANAGEMENT OF SOYBEAN RUST

Triazole or pre-mix fungicides are recommended for control of Asian soybean rust (SBR). Triazoles have some curative properties whereas fungicides with a strobilurin mode-of-action are protective in their activity and have little effect on established infections. Fungicide applications should be made prior to disease onset and when conditions are conducive for disease. Timing of fungicide sprays should be based on regional advisories or at the first sign of rust in the immediate area. Fungicides should be applied when soybeans are between R3 and R6 stages of development. If disease pressure is high, multiple applications may be necessary. Some products labeled for control of SBR in soybean are listed below. Always consult pesticide labels prior to use. Information presented on the label takes precedence over the guidelines and information provided here.

Table 1. Fungicides for control of Asian Soybean Rust.

Fungicide trade name	Fungicide common name	Fungicide class	Production rate per acre	Remarks
Quilt Xcel	azoxystrobin + propiconazole	strobilurin + triazole	14.0-21.0 fl oz	More than one application may be needed. Do not apply more than 1.5 lb of azoxystrobin per season. May be applied up to growth stage R6 (full seed). PHI = 30 days.
Quadris TOP	azoxystrobin + difenoconazole	strobilurin + triazole	8.0-14.0 fl oz	Apply on a 7-10 day schedule making no more than 2 sequential applications before alternating to a fungicide with a different mode of action. PHI = 14 days.
Stratego YLD	trifloxystrobin + prothioconazole	strobilurin + triazole	4.0-4.65 fl oz	Apply at early flowering or prior to disease onset and make a second application 10 to 21 days later if conditions are favorable for disease. PHI = 21 days.
Priaxor	pyraclostrobin + fluxapyroxad	strobilurin + carboxamide	4.0-8.0 fl oz	Apply prior to disease onset or when pods begin to form (R3). A second application may be applied 10- to 14 days later if conditions are favorable for disease. PHI = 21 days.
Domark	tetraconazole	triazole	4.0-5.0 fl oz	Repeat application after 15 to 21 days if disease pressure is heavy. Do not exceed 2 applications or 10 fl oz per acre per year. Do not apply after R5.
Approach	picoxystrobin	strobilurin	6.0-12.0 fl oz	Apply prior to disease development and repeat if necessary after 7 to 14 days. Do not exceed 2 applications before switching to a fungicide with a different mode of action. PHI = 14 days.