

# SOYBEAN RUST FUNGICIDE DECISION GUIDELINES (revised 6/2007)

Crop Stage	<b>SOYBEAN RUST STATUS</b> (Risk determined by national, regional and local activity and disease forecasts)					
	<b>RUST ABSENT</b>			<b>RUST PRESENT</b>		
	<b>SOYBEAN RUST RISK<sup>a</sup></b>			<b>Barely detectable in lower canopy<sup>b</sup></b>		<b>Easy to detect in mid to upper canopy</b>
	<b>LOW</b>	<b>MODERATE</b>	<b>HIGH</b>	<b>1<sup>st</sup> Application</b>	<b>2<sup>nd</sup> Application (if needed)</b>	<b>Yield benefit from fungicide application is uncertain.<sup>d</sup></b>  <b>Check with local extension specialists for specific guidelines.</b>
Vegetative (stages before flowering)	<b>FUNGICIDE APPLICATION NOT RECOMMENDED FOR SOYBEAN RUST CONTROL</b>			<b>Premix, Tank-mix, Co-pack</b>	<b>Triazole</b>  <b>or</b> <b>Premix<sup>c</sup>, Tank-mix, Co-pack</b>	
R1 (beginning of flowering) through R5 (beginning seed)	<b>Do not spray</b>	<b>Strobilurin</b>	<b>Premix, Tank-mix, Co-pack</b>			
		<b>Triazole</b>	<b>Triazole</b>			
R6 (full seed) to R8 (full maturity)	<b>Generally, fungicide application not recommended.</b> Yield responses beyond R6 are uncertain and many fungicide labels specify that applications be made prior to R6. Check with local extension specialists for specific state/province recommendations.					

<sup>a</sup> Determine risk by staying current with information from Extension specialists, trusted industry, and/or crop consultants for the region and state. View the Soybean Rust PIPE website ([www.sbrusa.net](http://www.sbrusa.net)) frequently for updates.

<sup>b</sup> Soybean rust incidence less than 10%.

<sup>c</sup> Premix, tank-mix, or co-pack fungicide should contain the full rate of the triazole fungicide component.

<sup>d</sup> Application of a fungicide at this level of disease may protect newly emerging leaves, but may not result in a yield benefit. Check with local extension specialists for specific state/province recommendations.

## **SOYBEAN RUST FUNGICIDE DECISION GUIDELINES** (revised 6/2007)

These guidelines were developed by the NCERA 208 Soybean Rust Committee with the help of Land Grant University soybean pathologists. These general guidelines were developed for the United States and Canada, and any state or province-specific guidelines that have been developed should be followed first.

For many of the soybean production regions in North America, the decision to make fungicide applications for management of soybean rust is based on risk. Several factors are involved in the risk of soybean rust moving into an area: incidence and severity of rust in areas to the south, wind patterns that can move the spores of the soybean rust fungus over long distances, regional and local weather, and growth stage of the soybean crop. To determine the risk level of a specific state or province, check with local extension specialists and the “state commentary” on the PIPE website ([www.sbrusa.net](http://www.sbrusa.net)). An example of a **low risk** situation is the 2006 soybean rust situation, in which dry conditions in the Gulf Coast states prevented build-up of soybean rust spores early enough to impact the crop in the northern U.S. and Canada. An example of a **moderate risk** situation is a scenario in which soybean rust has been found on soybean in a neighboring state or region, but has not yet been detected in your area. Another example of a **moderate risk** situation is if soybean rust has built up to significant levels in one or more southern states and the long range forecast is for storm fronts to pass through those areas in the next two weeks, and weather is predicted to be suitable for soybean rust in your area. An example of a **high risk** situation is when soybean rust has been identified in a sentinel plot, commercial soybean field, or kudzu patch in your state or province, and weather conditions are predicted to favor rust development.

Fungicides available for management of soybean rust have different properties that allow them to protect against and control soybean rust. Although all fungicides work best if applied prior to disease onset, some fungicides may also have some “post-infection” properties (a.k.a. “curative” or “kick-back” properties). The most effective fungicide classes currently available for soybean rust management are the strobilurin (QoI – quinone outside inhibiting, a.k.a Group 11) and the triazole (DMI – demethylation inhibiting, a.k.a Group 3) fungicides. In general, the triazole fungicides have better movement within the soybean plant and have better “post-

infection” properties than the strobilurin fungicides. Strobilurin fungicides tend to have longer residual activity than triazole fungicides, and may provide better control of other foliar and stem diseases of soybean. Some pre-mix and co-pack products are available that contain both a strobilurin and a triazole fungicide, and strobilurin and triazole fungicides can be tank-mixed as well.

## **VEGETATIVE GROWTH STAGES**

Current data indicate that fungicide applications are not needed in the early vegetative growth stages for soybean rust control. Applying a fungicide just prior to soybean flowering (R1) may be prudent if disease risk is high. This is especially true for late-planted crops and/or very late-maturing varieties that may develop a large canopy before flowering.

## **R1 (BEGINNING OF FLOWERING) THROUGH R5 (BEGINNING SEED) REPRODUCTIVE STAGES**

Soybean rust develops most rapidly during soybean reproductive growth stages. The first fungicide application should be made before rust has appeared on more than 10% of the leaflets in the canopy. At an incidence this low, each rusted leaflet may have only one or very few pustules, and the disease will be difficult to detect without careful scouting. An application of a fungicide when the level of disease is greater than 10% incidence may protect newly emerging leaves, but may not result in a yield benefit. Prior to applying fungicide to a given field, the field should be checked for the presence and level of rust in the field as well as other foliar and stem diseases. If other foliar and/or stem diseases are present, then some adjustment of fungicide mix may be needed. Check with local extension specialists for specific state/province recommendations at this level of disease and for presence of other foliar diseases in the area. In some areas, multiple applications may be needed, depending upon at what growth stage the disease is first detected and subsequent environmental conditions. Consecutive applications of stand-alone strobilurin or triazole fungicides should not be made, due to the concern of fungicide resistance developing in the soybean rust pathogen. Refer to fungicide labels for specific directions and restrictions.

## **R6 (FULL SEED) AND LATER**

The benefits of applying a fungicide at late growth stages are uncertain. In addition, many fungicides have preharvest interval restrictions that do not

allow applications past R6. Refer to fungicide labels for specific directions and restrictions, and check with local extension specialists for specific state/province recommendations.