

Updated Soybean Disease Calendars for MG IV and MG V Soybean

One of the biggest questions I receive each year has to do with whether or not a specific disease is present on soybean at a specific growth stage. Most, and I say most since this is a statement that can differ from year-to-year or location-to-location, soybean diseases occur at particular times of the year or at a particular growth stage. More often than not the presence of a specific disease will depend on planting date, especially since over the past few years frogeye leaf spot has been observed earlier in the season than in years past. In other cases, and regardless of planting date, the environment exerts the greatest impact as to whether or not a particular disease occurs, for example when seed rot results because of weeks of wet weather that either precede physiological maturity or delay harvest. One of the best examples of this situation is soybean rust. In those years when the environment has tended to be hot and extremely dry (2010 and 2011) the disease is almost nonexistent. However, in a year when the environment was cooler and much wetter (2009) soybean rust was detected statewide.

Moreover, winter temperatures in 2010 and 2011 were cooler than normal in areas of the southern U.S. where the disease has previously overwintered on kudzu, specifically in FL, GA, and LA. When a lack of an inoculum source to our south results from colder winter temperatures this suggests it will require a longer period of time for soybean rust to build up to levels where it can cause a problem.



The second most important factor as related to disease has to do with the previous crop. Fields with no history of soybean will not be as likely to have diseases that occur as a result of inoculum present in the field. In fact, most of the diseases on the attached disease calendars are caused by inoculum present on soybean crop residue in the field from previous seasons. The only real exceptions are the seedling diseases that are caused by fungi that are ubiquitous wherever soybean is grown and soybean rust. Spores that cause soybean rust have to be blown into our production area from a source of overwintering inoculum. In addition, one other disease, red crown rot, has a limited geographic distribution in MS having only been detected in eight counties, mostly in east MS. The presence of red crown rot has been attributed to equipment or soil movement from areas of Louisiana where the disease is more widespread.

Briefly, the attached tables present the disease information for each maturity group (IV or V) based on the most widely used planting date. Presence of a particular disease at a given growth stage or calendar date will depend on planting date, whether or not a field has a prior history of soybean (e.g., *Septoria brown spot*), the environment, and cultural practices implemented in the field. A disease calendar for MG III soybean would be similar to the MG IV calendar while a disease calendar for MG VI soybean would be similar to the MG V soybean situation. Also, keep in mind diseases such as those caused by seed rotting organisms (i.e. several species of *Phomopsis*) are typically more problematic when harvest is delayed and extended periods of wet weather occur at or around physiological maturity (R8).

By no means are the attached calendars an exhaustive list of ALL of the soybean diseases encountered throughout our production system. The diseases included should be considered to be some of the more common and recognizable diseases regardless of location within MS. One thing to note, taproot decline (TRD) has been added to

both calendars as this disease has been observed to be more widespread throughout the MS soybean production system.

The arrows to the side of several of the diseases indicate the likely period of infection that is generally required for symptoms to be expressed as well as the period whereby the disease could continue to be an issue (e.g., anthracnose, charcoal rot, stem canker).

TWA—updated 4/4/2016

Soybean stage	Mar	Apr	May	Jun	Jul	Aug	Sep
Seed Diseases	Pythium decay						
Seedling Diseases	Non-lethal Pythium Rhizoctonia						
Early-season disease		Phytophthora rot Septoria brown spot					
Late vegetative		Bacterial: blight and pustule Septoria brown spot		Taproot decline			
Early reproductive/ Late reproductive				Aerial blight Bacterial blight and pustule Downy mildew Frogeye leaf spot (FLS)		Soybean rust ^x	
Late reproductive	Arrows to the left of the box indicate infection period; the box and arrows to the right of the box indicate possible symptom expression.			Charcoal rot		Anthracnose	
				Cercospora blight			
				Diaporthe pod and stem blight			
				Late-season Phytophthora			
						Phomopsis/Diaporthe seed decay ^z	
				Red crown rot			
				Soybean rust			
				Stem canker			
				Sudden death syndrome			
				Target spot			
Bean pod mottle virus							
Vein necrosis virus							
Soybean mosaic virus							
Taproot decline							
Nematodes: reniform, root knot, soybean cyst							

Group V Soybean Disease Calendar

TWA—updated 4/4/2015

Soybean stage	Apr	May	Jun	Jul	Aug	Sep	Oct
Seed Diseases	Pythium decay Rhizoctonia Non-lethal Pythium						
Seedling Diseases							
Early season disease		Phytophthora rot Septoria brown spot					
Late vegetative		Bacterial: blight and pustule Septoria brown spot Taproot decline					
Early reproductive/ Late reproductive			Aerial blight Bacterial: blight and pustule Downy mildew Frogeye leaf spot Soybean rust				
Late reproductive	<div> <div>←</div> <div>Charcoal rot</div> <div>→</div> </div> <div> <div>←</div> <div>Anthracnose</div> <div>→</div> </div>						
	<div> <div>←</div> <div> Cercospora blight Diaporthe pod and stem blight Late-season Phytophthora Phomopsis/Diaporthe seed decay Red crown rot Septoria brown spot Soybean rust Stem canker Sudden death syndrome Target spot <i>Bean pod mottle virus</i> <i>Vein necrosis virus</i> <i>Soybean mosaic virus</i> Taproot decline </div> <div>→</div> </div>						
	Nematodes: reniform, root knot, soybean cyst						

Arrows to the left of the box indicate infection period; the box and arrows to the right of the box indicate possible symptom expression.