Richland Parish

Ag Newsletter: Spring 2010

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Rust Diseases in Wheat

Rusts are fungal diseases that can negatively impact wheat yields in Louisiana. Leaf and stripe rust are the most common forms in the state with occasional incidences of stem rust, which is not as prevalent in the state.

Factors that can increase the incidence of rust include environmental conditions, planting in poorly drained fields, planting susceptible varieties and cultural practices. Wheat varieties with resistance to these pathogens are available and should be a consideration when selecting varieties. Cultural practices that promote lush growth and extend leaf wetness periods should be avoided. Excessive seeding and nitrogen rates are common practices that lead to these conditions.

Stripe rusts develops best in late winter and early spring when nighttime temperatures range from 40 to 60 degrees F and 6 to 8 hours of leaf wetness, but can continue to develop when temperatures are near freezing. There is also research showing evidence that some strains of the stripe rust pathogen can continue to develop when temperatures exceed 60 degrees F. If stripe rust infects early in the season before flag leaf emergence, an early fungicide may be warranted. Early infections on seedlings often occur as small clusters, but as the plant grows, the yellow-orange pustules appear along leaf veins that form lines or stripes.

Leaf rust develops in the spring with warmer temperatures. It develops best when nighttime temperatures range from 60 to 80 degrees F and plants are exposed to 6 to 8 hours of leaf wetness. Leaf rust is characterized by small pin-point pustules on the upper leaf surface usually found on the lower foliage. Pustules are deep orange to dark red that occur randomly on the leaf.

Scouting should begin in early winter through late boot stage/early head emergence, especially with varieties susceptible to rusts. It is critical to protect the flag leaf once it has emerged. Even when planting resistant varieties, it is prudent to perform random scouting to ensure the flag leaf is protected. History has proven that resistant varieties eventually become susceptible to new strains of fungal pathogens.

Fungicides are available that adequately control rusts with proper selection, timing and rates. LSU AgCenter research has shown fungicides effective for managing stripe rust include the strobilurins (Quadris, Headline), propiconazoles (Tilt, Propimax) or combination products (Quilt, Stratego, Twinline). To optimize effective control with strobilurins, a preventative application should be made before stripe rust is evident. This would normally occur between jointing and flag leaf emergence especially with susceptible varieties.

Leaf rust can be controlled with a strobilurin, propiconazole or combination product. Applications (susceptible varieties) would normally occur with flag leaf emergence through heading. Check fungicide labels to ensure compliance with cut-off dates for late applications.

This table is not an exclusive list of fungicides but indicates some that should be commercially available.

Fungicide Effectiveness		
	Stripe rust	**Leaf rust**
Quadris	E	E
Headline	E	E
Twinline	E	E
Quilt	E	E
Stratego	E	E
Caramba	E	E
Propimax	VG	VG

E=Excellent VG=Very Good

Poultry Litter & Moisture Percentage

The use of poultry litter as a source of fertilizer has become more prevalent on farms in Richland Parish. It is important to remember to get an analysis periodically to not only know the concentrations of nitrogen (N), phosphorus (P), and potassium (K), but also the moisture content of the litter. Moisture content may vary from 15% or lower to 30% or higher, which will have a significant impact on the amount of actual, N, P and K per ton of litter. Simple calculations can be done to determine actual N, P and K applied based on moisture percentage.

Example at 30% moisture: .30 x 2000 lbs (1 ton) = 600 lbs of moisture per ton. 2000 lbs – 600 lbs moisture = 1400 lbs of actual litter per ton. This reduces the amount of N, P and K by 30% per ton, a substantial amount. If the analysis indicates 0.3% N, 0.25% P and 0.25% K at 30% moisture, the amount of N, P & K would be calculated as follows: .03 x 1400 = 42 lbs N; .025 x 1400 = 35 lbs P and .025 x 1400 = 35 lbs K per acre for each ton applied. To compensate for moisture content, the amount of litter applied per acre would need to be increased to obtain higher levels of nutrients.

Moisture percentage will change over time with litter that is stored or stockpiled, especially if not covered and is exposed to the rain and sun. Moisture samples should be re-taken in these situations to ensure the desired amount of nutrients is being applied.

2010 Calendar of Events

April 26, 2010
Wheat Field Day
Macon Ridge Research Station
Winnsboro, LA
Time: 8:30 a.m. – Noon

June 17, 2010
Northeast Research State Field Day
St. Joseph, LA
Registration: 7:30 a.m.
Information: 318-766-3769

July 1, 2010
Rice Research Station Field Day
Crowley, LA
Time: 7:30 a.m.

August 24, 2010
Sweet Potato Research Station Field Day
Chase, LA
Time: 8:00 a.m. – Noon
Information: Dr. Tara Smith at 318-435-2155