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LOUISIANA RICE NOTES

Drs. Dustin Harrell & Don Groth

July 5, 2016 **No. 2016-07**

High Night Time Temperatures

High nighttime temperatures and high humidity are always concerning when rice is flowering. The potential for Bacterial Panicle Blight (BPB) is greatly increased when nighttime temperatures exceed 80°F coupled with high humidity when rice is flowering. Generally, if the predicted nighttime low temperature does not fall below 75°F, then you can expect that a considerable amount of the night will have temperatures at or above 80°F. For example, this morning when I was driving to work at 7 a.m., the temperature was already 86°F! Because BPB is a bacterial pathogen none of our fungicides will have an effect on it. Our best defence against BPB is to choose a planting date that will typically flower before the excessively high nigh time temperatures (plant early) and choose a variety that has good resistance to BPB. BPB can be identified by the characteristic tan to brown lesions on the grains with green panicle branches. Another negative effect of high nighttime temperatures is grain sterility, or blanking of the grains, which ultimately decreases our rice yields. As you can see from the forecast here in Crowley, the nighttime low is only 78 – 79°F everyday this week! I believe that our crop this year so far has a pretty good yield potential even with all the challenges that we have had this year (wet conditions, flooding, submerged rice, wet during fertilizer and herbicide application timings, South American rice miner, increased rice water weevil, etc.). I am not predicting record yields by any means but the overall crop looks good. We will just have to wait and see if the current weather conditions will have an effect on our crop this year.

DAY	HIGH/LOW	DESCRIPTION	PRECIP
TODAY Jul 5	93°F/79°F	Partly Cloudy	20%
WED Jul 6	93°/78°	Partly Cloudy	20%
THU Jul 7	94°/78°	Mostly Sunny	10%
FRI Jul 8	94°/78°	Partly Cloudy	20%
SAT Jul 9	94°/78°	Scattered Thunderstorms	40%
SUN Jul 10	93°/78°	PM Thunderstorms	60%

Figure 1. Five day forecast for Crowley, LA. (The Weather Channel).

Bacterial Panicle Blight Biology

Bacterial panicle blight is caused by the bacterium Burkholderia glumae (Pseudomonas glumae Kurita & Tabei) in the United States. The disease occurs worldwide and is referred to as bacterial grain rot in Japan. The bacterium is seedborne and soil borne and can cause a seedling blight. The bacteria appear to survive on the plant as an epiphytic population on the foliage and follow the canopy up. This population infects the grain at flowering and causes grain abortion and grain rotting soon after pollination. Sheath rotting has also been reported. Yield loss estimates vary from a trace to 50% for both yield and quality. Initial symptoms of grain infection appear as a gray discoloration of the glumes, which then turns tan. Infected grains can be unevenly distributed on the panicle. In severe

Figure 2. Rice panicle with Bacterial Panicle Blight.

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infections, all of the seeds can be damaged. Diagnosis is difficult because other causes of seed infection and sterility produce similar symptoms and mask panicle blight symptoms, especially after lesion maturity. Key diagnostic characteristics are that the stem stays green up to the seed and the presence of a partially filled grain with a fertilized embryo that aborts after fertilization. A suberized layer develops between the stem and seed and reduces nutrient flow. Daytime temperatures above 95°F and nighttime temperatures with extended periods above 80°F favor the disease. The disease usually develops in a circular pattern in the field with severely affected plants in the center and less affected plants around the edge. Infected heads can be confused with straighthead because of their upright stature. No parrot beaks are present.

Seed treatments have shown some activity in reducing seedborne pathogen populations and subsequent head disease. Foliar sprays of antibacterial compounds also show some promise, but none are labeled nor recommended. Some cultivars appear to be more resistant than others.

Drain Timing

Drain timing is not an exact science, but we do have some guidelines that you can follow to help you estimate drain timing. We use changes in the color of the panicle to help us determine drain timing. Evaluations of panicle grain color should be based on the average of the field and not just the edges of the field. Generally, the edges of the field will be more mature than the interior of the field. For clay soils we recommend that the average of the panicles sampled need to have straw-colored grains from the tip of the panicle to half-way down the panicle. For silt loam soils we recommend that the representative panicle sample have straw-colored grains from the tip of the panicle to ¾ of the way down. In general, this equates to approximately two weeks for silt loam soils and three weeks for clay soils. The optimum grain moisture at harvest for rice to maximize grain quality and harvest efficiency is 22% to 18%.

Figure 3. Panicles on left shows the optimum drain timing for a silt loam soil (2/3 of panicle grains are straw colored), while the panicles on the right shows the optimum drain timing for clay soils (1/2 of panicle grains are straw colored).

Maximizing Ratoon Crop Potential

As we near harvest, I thought it would be a good idea to review some ratoon crop best management practices. The second (ratoon) rice crop has become an integral part of southwest Louisiana commercial rice production. The ratoon crop will generally yield approximately one-third of that

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realized in the main crop. Although, ratoon yields are much less than that of the first crop, there is a definite economical advantage of growing the ratoon crop. It is economically productive because the input costs for producing the ratoon crop are kept at a minimal. Generally, the only costs associated with growing a ratoon crop are nitrogen (N) fertilizer, irrigation, harvesting and grain drying. While growing a ratoon crop is economically favorable to a producer, having a successful ratoon crop is not guaranteed every year. Although traditional weather patterns in the southern rice-growing region give us the opportunity to grow a ratoon crop, it is often weather that dictates the ultimate success of the endeavor. We cannot control the weather; however, there are several management strategies and decisions that we can use to improve our probability of success.

Figure 4. Ratoon rice stubble that has been reduced to 8-inches showing regrowth coming from the crown node.

The first management decision begins before the main crop is even planted and that is to select an early-maturing rice variety with a high ratoon potential. The second management decision is truly the "go" or "no-go" decision on attempting a ratoon crop. This decision should be made with information gathered from the main crop including an evaluation of disease pressure prior to harvest, the stubble conditions after harvesting, and the date of harvest. Harvesting the first crop prior to August 15 will generally give the ratoon crop enough days of warm weather to grow. There have been many seasons in the past when a main crop harvested after August 15 produced excellent ratoon yields; however, these were in years with mild fall temperatures and late first frosts. Unfortunately, there is no way of determining if this year will be one of those years. The earlier the main crop is harvested, the better the probability of success with the ratoon crop. We must also remember that all management practices we apply toward the main crop will have a bearing on the ratoon crop. For example, less than optimum weed and disease control will not only reduce yield in the main crop but will also be detrimental to the ratoon crop. A clean first crop will improve second crop yield potential. Another example would be harvesting a main crop in muddy soil conditions. This will certainly lead to increased rutting of the field and reduced ratoon yields in the rutted areas. There are even times when we may want to make the decision not to grow a ratoon crop at all. For example, high disease pressure will almost certainly spell disaster in the ratoon crop. You also might want to consider not growing a ratoon crop in fields with a heavy infestation of red rice. Take the measures to control the red rice problem now before it becomes more of a problem in future crops.

The final major decision is to determine whether or not to use a stubble management practice. Stubble management practices such as harvesting at a lower than normal harvest height, reducing the stubble height by post-harvest flail mowing, or bush hogging to around 8 inches, and rolling the stubble have all shown a yield benefit in studies conducted at the Rice Station in most years. The yield benefit can be up to several barrels per acre in some years.

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However, both harvesting the main crop at a lower than normal platform height, flail mowing, bush hogging, and rolling the stubble will delay the maturity of the ratoon crop approximately two weeks. So, if the main crop is harvested at a later than optimum date, further delaying the ratoon maturity by using one of these stubble management practices may not be the best decision. Interest in using a fungicide application in the ratoon crop has gained interest over the past several years. In a recent study at the Rice Station, application of a fungicide four weeks after harvest (coinciding with the first ratoon panicle emergence) did not reduce Cercospora incidence in the ratoon crop. On the other hand, lowering the ratoon stubble height by either flail mowing, bush hogging, or harvesting lower did reduce Cercospora incidence.

The next true management decision is when and how much N fertilizer to use. Our past ratoon N studies have shown that 90 pounds of N applied on a dry soil just after the main crop is harvested and immediately followed by a very shallow flood is the best management strategy in almost every study across all varieties and hybrids. If you make a decision to attempt a ratoon crop when the main crop was harvested after August 15, you will need to reduce the N rate. This will reduce the time to maturity of the ratoon crop and also reduce your investment in the ratoon crop. Nitrogen fertilizer should be used with caution if the first crop is harvested after September 1 because the N fertilizer will delay maturity and increase the potential of cooler temperatures prior to grainfill.

Rice Text Message Group

If you have not joined the rice text message group, please take the time to do so. This is a great way to get critical rice-related news very quickly as it occurs. In addition, rice meeting and other reminders are often sent out via text. To join, simply send a text message to this phone number: **81010** with this message: **@larice**.

Remember, you can keep in touch with what is going on in the Louisiana rice industry by using:

Louisiana Rice
@LouisianaRice

LSU AgCenter H. Rouse Caffey Rice Research Station

Louisiana Crops Website @ www.louisianacrops.com

LSU AgCenter Official Website @ www.lsuagcenter.com

Additional Information

Louisiana Rice Notes is published periodically to provide timely information and recommendations for rice production in Louisiana. If you would like to be added to this email list, please send your request to dharrell@agcenter.lsu.edu.

This information will also be posted to the LSU AgCenter website where additional rice information can be found. Please visit www.LSUAgCenter.com.

Upcomming

July 6	St. Landry Field Crop Tour, Palmetto, LA.
July 13	Northeast Louisiana Rice Field Day, Oak Ridge, LA.

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