

LOUISIANA RICE NOTES

Dr. Dustin Harrell & Don Groth

April 20, 2018

No. 2018-03

Cool Weather Slows Rice Development

Most of the rice in southwest Louisiana went into the ground during a two-week interval when we had warmer weather and dry soil. When most of that rice emerged in mid-March, the weather conditions became cool and slowed crop development down considerably. Normally, after about a 4-week period after emergence, the rice will generally reach that 5th-leaf to first-tiller stage of development and we are ready to establish the permanent flood. However, for most of our mid-March emerged rice, that is not the case this year. Most of the mid-March emerged rice is stalled at that 3-leaf stage of development.

Similarly, the rice that emerged the first of March is stalled at or just before tillering. With the extended cold temperatures, we are just not getting the heat units we need to for the rice to develop at a rate we are used to this time of year.

Rice growth and development can be estimated by looking at the accumulated heat units after emergence. The number of heat units accumulated each day above 50 degrees F (with adequate soil moisture and no other limiting factors) can be used to estimate rice growth and development. These heat units are often referred to DD50 heat units, which is the backbone of the DD50 program. DD50 heat units can be calculated by getting the average daily temperature and subtracting 50.

$$DD50 = \left[\frac{(\text{daily high temperature} + \text{daily low temperature})}{2} \right] - 50$$

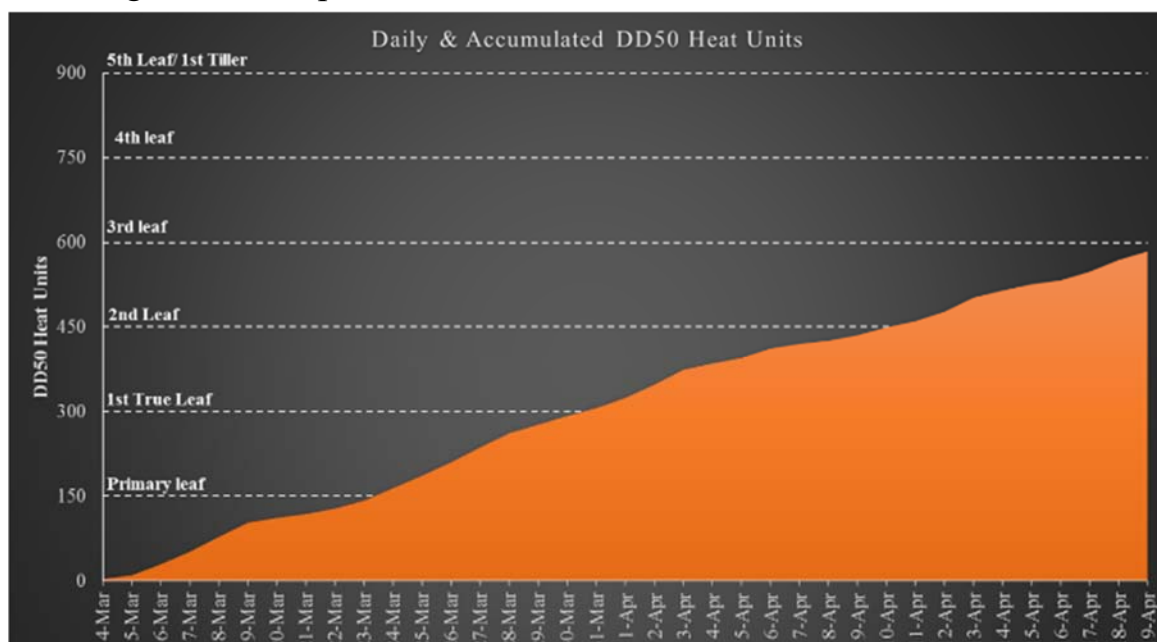


Figure 1. Accumulated DD50 heat units for rice that emerged on March 14 in Crowley, Louisiana in 2018.

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In general, it takes between 75 to 175 heat units for each subsequent leaf to emerge during the seedling stages of rice development. This is variety dependent of course however, we can estimate that on average it takes about 150 heat units between the emergence of each leaf. Using this criteria, you can see in Figure 1 that this year most of our mid-March emerged rice is around that 3rd leaf stage of development when normally we would be near tillering. I would estimate that we are about 300 heat units behind normal crop development this year.

Another thing we are seeing this year from our late February and early March planted rice are plants that are beginning to tiller that are very short in stature. In figure 2, you can see that this rice plant is already tillering and the overall stature of the plant is only around 4 inches tall. This phenomenon is present everywhere in south Louisiana this year and it most definitely related to the extended cool weather conditions. It has been seen in multiple varieties and hybrids as well. This in itself is not a yield limiting concern in rice. In fact, one grower told me that he seems to remember in years with cold early season conditions generally correspond to the higher yielding years. I have heard the same thing



from growers speaking about dry years. Let's hope that this holds true for 2018 as well!

One concern of the short stature plants is the establishment of the flood. With short plants and high winds, water can stack up and submerge these short plants. Generally, rice will quickly stretch and grow out of submerged situations however, and with the

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cool temperatures this may be a much slower process this year. With warmer conditions moving back into the forecast for late next week we should be fine moving forward.

Loyant Herbicide Recommendations



There are a lot of questions coming in to Dr. Webster over the last few days on the use of Loyant herbicide. So, I thought I would take a few minutes and reiterate some of the recommendations that Dr. Webster focused on during the winter meetings and clear up some misconceptions about the herbicide. First, Loyant does not have any residual activity. It does seem to have extended control of duck salad if it is applied into the water, but that is it. Rice is safe to apply Loyant at the 2-leaf stage of development at a rate of 1 pint per acre with a half pint per acre MSO. A maximum yearly application is not to exceed 2 pints per acre. Loyant needs water, so you want to establish the flood within 3 days after application.

If you are applying it in a currently flooded field, you want to lower the water to expose 70-80% of the weeds to get good coverage. You can begin to increase the water level after about 3 hours after application.

Loyant is a unique herbicide for a couple of reasons. First, it is an auxin herbicide like 2,4-D and Grandstand, and second, it controls several broadleaves, sedges and several grasses (when small) like broadleaf signal grass, jungle rice and Amazon sprangletop.

You should be aware of a couple of things, however, before using Loyant. It can cause significant damage to rice when applied on rice grown on cut ground. Rice will generally “onion leaf” in this type of situation. Although Loyant controls many broadleaves, Texas weed is not controlled. Soybeans however are sensitive so be careful of drift.

Channeled Apple Snail Damage

The channeled apple snail is an invasive species of snail that has recently found its way into southwest Louisiana waterways. Flooding rice with surface water from waterways containing the snail can

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Figure 2. Channeled apple snail and eggmass found in mature rice.

introduce it into rice fields. The snail has been shown to be a serious problem for some crawfish operations; however, the species has yet to cause serious damage to a local rice crop. But the population of the snail seems to be growing exponentially each year. The snail feeds on vegetation and this holds the potential for thinning rice stands.

I had the opportunity to visit Argentina a couple of months ago and learned how local farmers are controlling the pest in rice fields

and how to identify damage from the snail. Damage from the snail on a rice plant can be



Figure 3. Damage on mature rice from channeled apple snail feeding.

easily identified by the diagonal feeding or clipping of the rice as shown in Figure 3. There are no labeled chemicals for controlling the snail. So the major control method used is delaying the flood of the rice until after tillering when the rice can outgrow the feeding of the snail. With our delayed flood rice production system the feeding of the snail should not be a problem. However, I am worried about water-seeded rice that may use surface irrigation waters and the potential effects of the snail. If you water seeded rice and have a snail problem, please

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let me know. Other potential problems of the snail in rice production is the burrowing of the snails in areas near moving water like drains and overflows. They will weaken levees and may cause farmers to have to walk and fix levees more often. More detailed information on the channeled apple snail can be found in this *Rice Farming* article

(<https://bit.ly/2qMNHL1>) and this AgCenter article (<https://bit.ly/2ErTfnV>).

Seed and Seedling blights of Rice

Seed and seedling blight, or damping off, is a disease complex caused by several seed-borne and soil-borne fungi, including species of *Cochiobolus*, *Curvularia*, *Fusarium*, *Rhizoctonia* and *Sclerotium*. Typically, the rice seedlings are weakened or killed by the fungi. Environmental conditions are important in disease development. Cold, wet weather is most favorable to disease development. This is because seedlings normally outgrow these fungi during good growing conditions and become fairly immune to the disease once they become large enough, usually after the three-leaf stage.

Seedling blight causes rice stands to be spotty, irregular and thin. Fungi enter the young seedlings and either kill or injure them.

Blighted seedlings that emerge from the soil die soon after emergence. Those that survive generally lack vigor, are yellow or pale green and do not compete well with healthy seedlings.

Severity and incidence of seedling blight depend on three factors: (1) percentage of the seed infested by seedborne fungi, (2) soil temperature and (3) soil moisture content. Seedling blight is more severe on rice that has been seeded early when the soil is usually cold and damp. The disadvantages of early seeding can be partially overcome by seeding at a shallow depth. Conditions that tend to delay seedling emergence favor seedling blight. Some blight fungi that affect rice seedlings at the time of germination can be reduced by treating the seed with fungicides.

Treatment of the seed with a fungicide is recommended to improve or ensure stands. Various fungicides can reduce the amount of seedborne inoculum and protect the emerging seedling from infection by seed and soil borne

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pathogens.

Unfortunately these fungicides wash away from the seed or break down over time and do not provide long-term protection. Proper cultural methods for rice production, such as proper planting date or shallow seeding of early-planted rice, will reduce



the damage from seedling blight fungi.

Gibberellic acid seed treatments will also reduce seedling diseases by helping the seedling outgrow the pathogens.

How Good of a Rice Consultant Are You?

I was walking a rice field recently and came across a field that had large circular areas of damage in the field. Figure 4 illustrates the damage I saw. The rice was

stunted and very sickly. It looked very similar to rice that is grown to a recently land leveled area where a large amount of the top soil was removed (deep cut area) and serious nutrient problems exist. However this is not the case here. Do you think you can figure out what happened here? I'll give you one clue...this rice field is in Argentina. The answer can be found on the last page of the newsletter.

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Upcomming

May 30	Southwest Louisiana Rice Field Day, Iowa
May 31	Evangeline Parish Rice Field Day, Mamou
June 13	Acadia Parish/South Farm Field Day, Crowley
June 27	LSU AgCenter H. Rouse Caffey Rice Research Station Field Day, Crowley
July 18	Northeast Louisiana Rice & Soybean Field Day, Morehouse Parish



Louisiana Rice
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LSU AgCenter H. Rouse
Caffey Rice Research
Station

Louisiana Crops
Website @
www.louisianacrops.com

LSU AgCenter Official
Website @
www.lsuagcenter.com

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.

Additional Information

Louisiana Rice Notes is published periodically to provide timely information and recommendations for

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Answer

If you guessed bedding damage from capybaras, a rodent similar to nutria, then you are correct. At least we don't have this problem animal in Louisiana!