



Arkansas Rice Update

Dr. Jarrod Hardke, Dr. Nick Bateman, Dr. Gus Lorenz, Dr. Ben Thrash, & Dr. Yeshi Wamishe
 July 31, 2020 No. 2020-19

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Crop Progress

“I know to you it might sound strange, but I wish it would rain.” It seems as though everyone was depending on getting at least some rainfall this week, while most got nothing. Unfortunately, that may mean we’re behind on rice and soybean irrigation as most planned on getting anywhere from 2-6” of rainfall. Luckily, very mild temperatures over the next week should make catching up a little easier.

To go along with the mild daytime temperatures in the 80s, we’re looking at nights in the 60s. That is prime weather for making some high-quality rice with much of the state’s rice currently heading.

We do have our first reports this week of fields being drained. These are some of the select few earliest planted fields in the state, but we’ll soon start picking up steam. At this point, based on DD50 enrollment it looks as though the majority of rice harvest won’t get rolling until September (**Table 1**). Not surprising with how late the crop went in and overall mild conditions throughout the summer.

Table 1. Percent of acres reaching 20% grain moisture by week (based on fields in DD50).

Week	Percent of Acres
Aug 10 to Aug 16	0.8%
Aug 17 to Aug 23	6.4%
Aug 24 to Aug 30	27.9%
Aug 31 to Sept 6	36.1%
Sept 7 to Sept 13	19.6%
Sept 14 to Sept 20	5.2%
Sept 21 to Sept 27	2.9%

Fig. 1. Early rice field starting to mature.



Defoliation in Reproductive Rice

We have been getting calls and seeing fall armyworms showing up in rice in the past few weeks. Most of the calls we are getting is for rice that is starting to joint, but we are also catching some falls sweeping for rice stink bug in heading rice. Rice yields can be impacted pretty severely if large amounts of defoliation occur at this time.

We have conducted defoliation studies over the past three years looking at different levels of defoliation at multiple growth stages and planting dates. Based on this work, defoliation occurring at green ring can be a major concern. For April planted rice, we start seeing large amounts of yield losses occurring around 66% defoliation. May and June planted rice are much more sensitive to defoliation at green ring. Both of these planting dates start significantly losing yield at 33% defoliation.

Major heading delays are associated with defoliation at green ring as well, ranging from 9 days to 30 days (**Table 2**). This can cause major headaches with harvest and overall management of the crop. We do not suggest spraying armyworms if rice is heading unless severe defoliation or head clipping occurs.

Table 2. Yield and days in delayed heading caused by defoliation at green ring.

% Defoliation	Yield [†]			Delay in Heading [‡]		
	April	May	June	April	May	June
0	100	100	100	0	0	0
33	97	75	91	9	14	16
66	83	46	71	12	18	23
100	48	12	34	15	25	30

[†] Yield as percent of control (0% defoliation); [‡] Days.

If seed was over treated with a diamide (Fortenza or Dermacor), the rice will most likely still be protected from armyworm feeding at green ring. If

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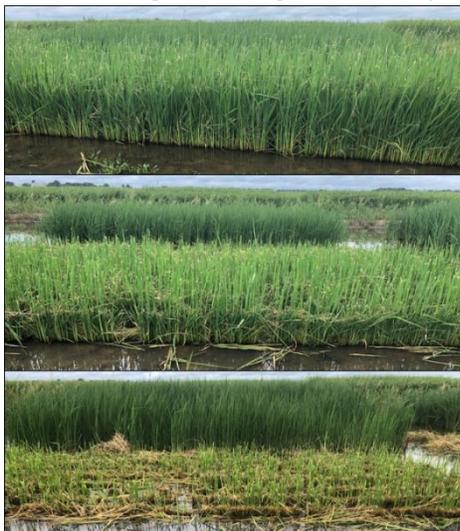
you do feel the need to make a foliar application for armyworms, Lambda-cyhalothrin (Warrior II, Lambda-Cy, Silencer, Kendo, etc.) works fine and will provide adequate control.

Odds are we are going to see more fields of late rice experiencing armyworm pressure this year. Late planted rice does not have the yield potential nor the time to recover from defoliation compared to early planted rice but can still tolerate up to 33% defoliation. Be aware that if an application that is not warranted is made, it has the potential to make rice stink bugs worse by killing beneficial insects present in the field. Let's be smart with our money, and only spray if the defoliation is getting severe.

Fig. 2. Fall armyworm in rice at green ring.



Fig. 3. Defoliation of 33% (top), 66% (middle), 100% (bottom) at green ring after 3 days.



Disease Update

Leaf blast: so far mild. This season rice leaf blast has been reported only from 7 counties in Arkansas – Randolph, Prairie, Woodruff, Monroe, Faulkner, Jefferson, and Arkansas on Titan, Jupiter, Diamond, CLL15, and PVL01.

Now, it appears late to scout for leaf blast. Through years, we have observed varieties with severe neck blast without showing detectable level of leaf blast. Therefore, if you know your variety is susceptible planted in a field with a history, it is wise to maintain the recommended flood depth of at least 4 inches to be on the safe side.

In addition to the susceptibility of your variety and history of your field, it is important to consider the field management with nitrogen fertilization and weather conditions related to dew periods before making decision for fungicides. Although the blast pathogen is highly adaptable, it is better favored by lower temperatures than needed for sheath blight. It is a bit windy these days. Wind lowers moisture retention on the leaves, however, if it is slow, it can carry blast spores across the field and to neighboring rice fields. Fungicides are not recommended for leaf blast unless plants start dying.

Late season blast: The greater concern should be more on protecting the late season blast that may affect different parts of the rice plant. When the leaf collars are affected it is called collar blast. Likewise, based on infection site there is node blast, neck blast, and panicle blast. Collar blast can dry the whole blade, node blast can make the plant to break off from affected node, neck blast blanks the panicles and panicle blast partially kills the panicle. They are all bad. However, nothing compares to neck blast that may cause near 100% grain yield loss. **You need to bring all the possible factors that may**

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favor the disease and then make an educated decision to apply protective fungicides

Two applications are recommended. The 1st application can be made between late boot to 10% of the heads spiking out from the boot while all necks are in the boot (**Fig. 4 left**). The 2nd application should go out 7 to 10 days after the 1st application, when 50% to 70% of the panicles protrude from the boot but all necks are still in the boot (**Fig. 4 right**). In all cases, the timing is in reference to the developmental stage of the majority of tillers, at least 50%. Although not recommended, a one-time fungicide application can be done if **timed right** and as long as water is maintained deep to at least 4 inches. In such a situation, the correct timing ranges when panicles pushed out 30% to 50% from the boot while all necks in the boot. Once heads are completely out of boot, it is too late (**Fig. 5**). You may ask the following questions:

1. Is 50% heading the same as 50% head out?

No, they are not the same. A 50% heading stage refers to when 50% of the rice stems have their panicles beginning to emerge above the flag leaf collar. A 50% head out refers to the time when half portion of individual panicles show from the boot.

2. Why do we need to go for 2 applications while 1 application is possible?

The simple logic behind two applications is to primarily protect panicles from the main tillers with the first application while at the same time reducing the inoculum before the 2nd application which is meant to protect panicles from the secondary tillers. Imagine the yield loss if only primary tillers or only secondary tillers are protected. This is why blast-prone rice needs protection with two applications and why timing is crucial in blast protection.

Fig. 4. Fungicide application timing for blast. Left: late boot to 10% heads spiking out of boot for 1st application; Right: necks still in the boot for 2nd application.



Fig. 5. Heads and necks are completely out of boot: too late for blast suppression.



Sheath blight: Sheath blight is not overwhelming but is still creeping up in fields with dense canopy and excessive nitrogen even during the week where weather appeared to slow it down. We are seeing more sheath blight in furrow-irrigated rice

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on the upper side of fields that are stressed by water shortage. We have also observed field spots with grass weeds to have more of the disease. Continue to scout for sheath blight. As long as the upper three leaves are clean, effect on yield is minimal (**Fig. 4**).

Kernel smut and False smut: Fungicide application decisions for kernel and false smut are often based on field history, varietal susceptibility and your cultural management strategies, particularly pre-flood nitrogen fertilization. Under favorable conditions most rice cultivars including hybrid rice are susceptible. From our field observations through years, fungicides applied with adequate volumes of water (at least 5 GPA) render good canopy coverage and better protection.

Stand-alone fungicides such as Tilt, Bumper, or Propimax; or combination (premix) fungicides such as Quilt Xcel, and Amistar Top can be used. A minimum of 6 fl oz/acre Tilt (or equivalent) **between early to mid-boot stage** is the recommended timing (**Fig 5**). The more delayed, the less the efficacy of the fungicides. Please go to [growth stages and fungicides](#) for a video presentation.

Fig. 3. Optimum time to protect rice from kernel and false smuts. See flag leaf started to appear. The more delayed, less efficacy from fungicides.



Narrow brown leaf spot: In the last few years, *Cercospora* narrow brown leaf spot was seen severe in some rice fields late in the season. Boot application with Propiconazole is recommended in other states where the disease prevails often.

Bacterial panicle blight: We do not hear much about it in recent years. However, since the inoculum can build up in seeds, it is advisable to scout for the disease to avoid using infected seeds in next season's planting. In particular, seed growers are recommended to scout for the disease.

Rice Stink Bugs, So Good So Far

Rice stink bugs have been relatively quiet so far this year. We are still seeing a large amount of RSB, although mainly nymphs, on turn rows feeding on native grasses. We have heard of a handful of fields that were either right at threshold or slightly above and were treated, but this has been the minority. While our earliest rice may not be hit hard by RSB like we see in most years, our later planted rice will most likely deal with high RSB pressure.

When sampling for RSB, time of day and sweeping technique is critical. RSB become very flighty and in some cases will leave rice fields during the heat of the day. The best times to sample for RSB are from daylight until 11:00 am as well as 5:00 pm until sunset. They will be higher in the canopy and are not as prone to fly during these time periods. If sampling must be done during the day, be aware you may only be catching 60% of the RSB that are actually present.

Sweeping technique is a major factor in monitoring RSB populations. We have changed our recommendation on how to sweep for RSB from doing 180-degree sweeps to 6-foot sweeps. A 6-foot sweep is easier and more consistent than a 180-

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degree sweep. When sweeping heading rice, it is important to keep the sweep net level with the top of the canopy where the heads are present. Move at a brisk pace with multiple steps in between sweeps. When counting RSB, we combine both nymphs and adults for a total count.

The current threshold for RSB in Arkansas is 5 RSB per 10 sweeps during the first two weeks of heading and 10 per 10 sweeps during the second two weeks of heading. The first threshold is to protect from yield loss while the second threshold is to protect growers from peck. We have reevaluated this threshold for RSB extensively over the past 5 years. We started this work when surrounding states lowered their early season thresholds. Our work suggests that our current threshold is correct.

Multiple products are labeled for control of RSB. Our recommendation is to use the cheapest Lambda-cyhalothrin product that growers can find. Other products like Tenchu (dinotefuran), Sevin (Carbaryl), and Malathion do provide control of RSB, but it does come at a major increase in cost to the grower. Applications should only be made once threshold level RSB are present in the field. Over the past several years, we have heard about insecticide applications going out with a fungicide application when the rice is booting. We have done several studies exploring this timing, and we see no benefit

at this timing. In most cases this can increase RSB numbers by eliminating natural enemies in the field. Applications can be terminated at 60% hard dough (straw colored kernels). Our work shows that after 60% hard dough no more yield loss or peck can be caused by RSB.

Additional Information

Arkansas Rice Updates are published periodically to provide timely information and recommendations for rice production in Arkansas. If you would like to be added to this email list, please send your request to rice@uaex.edu.

This information will also be posted to the Arkansas Row Crops blog (<http://www.arkansas-crops.com/>) where additional information from Extension specialists can be found.

More information on rice production, including access to all publications and reports, can be found at <http://www.uaex.edu/rice>.

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