



Dr. Chuck Wilson, Dr. Rick Cartwright, Dr. Bob Scott and Scott Stiles

June 17, 2010

No. 2010 – 8R

INTRODUCTION – The Arkansas Rice Newsletter is published periodically to provide updates, alerts and recommendations for rice production in Arkansas. If you know of someone who would like to be added to the e-mail list, please send an e-mail to: cwilson@uaex.edu.

I have set up a blog to distribute information in addition to the newsletter. If you are interested, you can visit the blog at <http://arkansasrice.blogspot.com>

CROP CONDITION AND PROGRESS – The weather this spring has allowed rice to be planted across most of the state at record pace. As of June 13, all of the rice has emerged. This compares to 99% last week and 95% this time last year. Our planting progress has proceeded about 2-3 weeks ahead of the five-year average and a month ahead of last year. As of June 13, 19% of the crop is reported to be in excellent condition, 51% good, 26% fair, and 4% poor.

Average temperatures were above normal ranging from 3 degrees above normal at Conway and Hot Springs to 7 degrees above normal at several locations for the week ending June 13. The temperatures ranged from a low of 56 degrees at Calico Rock to a high of 99 degrees at Stuttgart and Keiser. This completes three straight weeks and four of the last five weeks with temperatures significantly above normal. In addition to early planting, the warm temperatures have allowed the crop to progress much quicker. Rainfall for the week ending June 13 ranged from none at several locations to a high of 3.23 inches at Dardanelle. Overall, soil moisture supplies were 2% very short, 28% short, 60% adequate, and 10% surplus.

While some rice is just emerging, the early rice is at early boot stage. Keep a close watch for rice blast and do the best you can to keep susceptible varieties flooded. Leaf blast has been reported in rice counties from North to South.

Very early estimates suggest that CL 151 is the most widely planted variety so far (about 23% of the acreage). The next most widely planted varieties are Rice Tec CL XL 745 (18%), Wells (16%), and Jupiter (12%). These numbers are preliminary and may change as we get more information available.

DON'T FORGET TO ENROLL LATE FIELDS IN THE RICE DD50 PROGRAM

– Early fields should be scouted carefully as midseason approaches. The warmer temperatures have caused the crop to progress quicker than predicted by the Rice DD50 Program in some cases. As the later rice emerges, be sure to enroll those fields in the Arkansas Rice DD50 Program. Five new varieties have been added to the program for 2010. The program can be accessed through the county extension office or online at: <http://dd50.uaex.edu/dd50Logon.asp>. In order to enroll, you need the variety name, the emergence date, and the number of acres. The program will predict the timing of approximately 27 different production practices. This allows growers and consultants to be more efficient in scouting the crop and more timely with treatments. On-time decisions can often be the difference between success and failure. It is also important to the industry to enroll these fields. The data helps the mills prepare for harvest while it also serves to estimate the important varieties across the state.

RICE DISEASE UPDATE – BLAST IN ARKANSAS 2010

Rick Cartwright, Fleet Lee and Chuck Wilson

After the worst blast year in at least 20 years in 2009, blast is again being reported in Arkansas. As of June 15, we have received reports of leaf blast in Ashley, Desha, Lincoln, Jefferson, Arkansas, Monroe, Prairie, Lonoke, White, Woodruff, Cross, St. Francis, Lee, Poinsett, Jackson, Lawrence and Randolph counties from county extension agents, rice consultants and growers. Affected varieties, in

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order of frequency, include CL 151 (very susceptible); Francis (very susceptible); Jupiter (susceptible); and Wells (susceptible) – so far.



Blast disease is caused by the fungus *Pyricularia oryzae*. It survives year-to-year on infested seed (A) and in infested crop residue (B). After the widespread damage in so many fields last year, and with our increasing tendency to plant rice after rice and use no-till systems, it is not surprising that we are having a lot of leaf blast already this year. It is also likely that blast survived more than normal on



seed, although we usually minimize seedborne transmission these days by:

- Planting certified seed. (Which is grown to minimize disease and use fungicides to protect yield and seed quality – compared to the days when we kept our own seed from all kinds of fields.);

- Using fungicide seed treatments which can help disinfest rice seed of the blast fungus (especially if rates of Dynasty fungicide at $\frac{3}{4}$ fl oz per cwt and above is used, and Apron XL or Allegiance do not affect blast but Maxim or Trilex does); and
- Drilling or covering rice seed well, or water seeding – covered seed minimizes blast moving from the seed to the seedling while seed laying on top of soil results in transmission.

Since the blast fungus can reproduce so fast, it only takes a few infected seedlings under the right weather conditions to increase the disease across the field to affect yield at heading.

Under the right conditions, which include moderate temperatures; frequent rainfall; long dew periods (the fungal spores need free water and a few hours to infect plant tissue); frequent cloudy weather; and “upland” conditions (that is, rice that is growing without a deep flood, or in soils with inconsistent or intermittent flooding, or in furrow-irrigated fields, or pivot irrigated fields etc) the fungus can increase



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rapidly on leaves and collars across a field planted to a susceptible variety. Rice growing in deep floods (greater than 4 inch water depth) is more resistant to blast than rice growing in less well watered conditions. Under favorable conditions, leaf lesions increase so rapidly that the foliage starts to “burn down” in spots, sometimes looking like a contact herbicide (C) (D) (E).

Lesions on the leaf are usually longer than they are wide, with pointed ends, like a long football (F) with a reddish brown border and light-colored center. However, lesions can vary greatly on different kinds of rice (G) (H) and on highly susceptible varieties like the California



medium grains in the past can develop so rapidly and extensively that entire areas of leaves are blighted in a few days (I). Lesions are also where the fungus sporulates, in the light-colored center, and early in the morning the lesions will appear gray and “downy” or “fuzzy” with so many spores (G). Dry, but fresh lesions can be put in a zip-top bag with a moist paper towel for 24-48 hours to stimulate sporulation (J). This is useful for confirmation of blast, which is done by observing the distinctive bowling pin-shaped spores (K), best seen under a compound microscope at 100-400X using the “tape-mount” method, or alternatively the “scrape” method.



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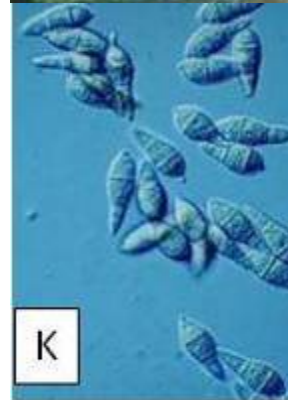
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infected nodes turns them gray to gray-black. Infected collars can result in infection of the developing panicle as it emerges from the flag leaf boot and collar, while infected nodes can result in lodging in rare cases.



The blast fungus also infects the collars of susceptible rice plants (L) and the nodes (M) of the stem during booting and heading. Sporulation on

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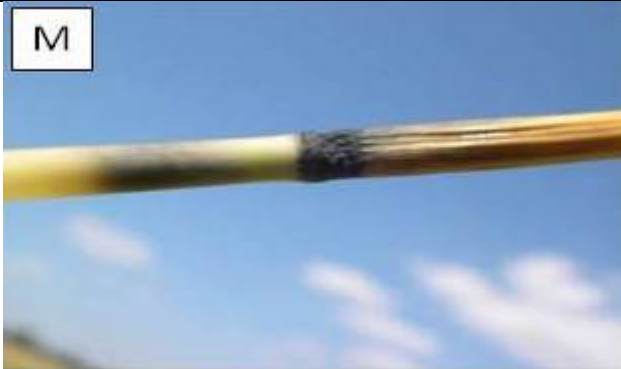
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The most dangerous phase of rice blast disease is the “neck blast” phase, when the fungus infects the base of the panicle or the so-called sub-panicle node. Entire fields of susceptible varieties were destroyed by this phase in 2009, when rainy conditions allowed the fungus to develop rapidly (N) (O) (P) (Q). This phase resulted in yields as low as 35 bushels per acre in some fields last year, and head rice quality in the 30s. This phase can occur without obvious leaf blast in the field, since the leaf blast phase tends to occur in June and then disappear somewhat in July and early August. It is also believed that spores may move from other fields into susceptible ones, with spores catching on the flag leaves and washing to the base of the leaves or blowing onto developing heads to start infections.



Neck blast is difficult to control, and often each field requires a number of observations and judgment calls to manage the disease effectively. Every field tends to react differently.

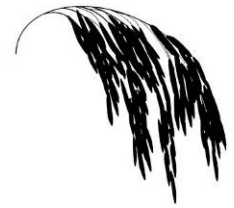


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The first line of defense is to plant a resistant variety in fields with a history of blast. You can see the difference resistance makes in images (R) and (S). In fields where blast has a strong history, resistance may make the difference between a decent crop and no crop, as seen last year. There are situations where blast cannot be controlled, even with fungicides, if the variety is too susceptible – as we saw years ago when we tried to grow some of the California medium grains here. And last year, even with two applications of fungicide, we observed some fields of CL 151 and Francis with yields below 50 bu per acre. While resistance is a good line of defense, often the highest-yielding varieties are susceptible to blast, so this is what we tend to grow on most acres. Hybrid rice varieties are an exception, because they combine high yield with high disease resistance, the best of both worlds, but their high seed cost prevents them from being universally adopted. And it turns out that highly resistant rice varieties and hybrids tend to be grown in situations that strongly favor blast, like furrow-irrigated or pivot-irrigated or sandy fields. The rice blast fungus can adapt to varieties with resistance, so planting resistant varieties in fields not suited to rice production or using irrigation systems designed for “dryland” crops will eventually result in a race of the fungus that can infect resistant varieties and hybrids. We had reports of blast on hybrids last year and none were confirmed, but we are trying to monitor furrow-irrigated, sandy and pivot-irrigated hybrid fields from now on, as we strongly suspect the fungus is in the process of adapting.

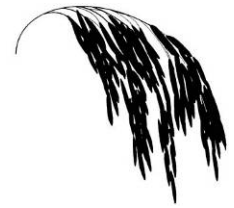
The next most important management option is flood management. Shallow floods, intermittent floods, furrow-irrigated and pivot-irrigated rice systems strongly favor neck blast development (T). Last year, most of the damaged fields had water management problems in spite of excessive rainfall. On farms where irrigation water is limited, then rice acreage should be limited to what the system can handle, in the sense of maintaining rice paddies with a 4-inch flood (minimum). When leaf blast is observed, or in fields with a history of blast, a deep flood should be established and maintained throughout the growing season to minimize blast. Research has shown that a deep, consistent flood can be worth a fungicide application on a susceptible variety. If you cannot maintain a deep flood on a field, then the field should be planted with a resistant variety.

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The final management option for blast during the growing season is the use of fungicides. Modern fungicides for blast management are strobilurins, and much more effective than older fungicides at preventing the disease. Unfortunately, they are not curative so they must be applied before infection occurs to be most effective. Research has shown repeatedly that the most economical fungicide management program is the use of two applications of Quadris or Gem fungicide, the first at boot split (U) and the next about a week later as the first heads are about $\frac{3}{4}$ of the way out of the boot (V), but with the bases still down in the boot. These two applications provide the most protection of the emerging panicles for the money, and more applications have not typically resulted in more protection or money. All research was conducted with highly susceptible varieties, so the two “shot” approach would most likely be used on CL 151 or Francis, in fields that favor neck blast, but is also a likely recommendation on some fields of Jupiter and Wells, where blast is developing strongly. The newer fungicides Stratego, Quilt and Quilt Xcel are combinations of strobilurin and triazole fungicides, and their current labels allow them to be used as the boot split applications, followed by Quadris or Gem.



The use of fungicides to manage blast under the many field conditions of Arkansas means that there will be a lot of “judgment call” cases, and there is no substitute for experience in many situations. For example, our research has repeatedly shown that in

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most cases it does not pay to spray for leaf blast, but to simply pump up the field and wait to apply fungicides to prevent neck blast at heading. However, there are instances in fields with strong blast history, tree line burndowns, etc., where we have sprayed these burndown areas to prevent extensive foliar damage and to reduce continued spore buildup and dispersal. This is rare, in our experience, and while we do not recommend treating routinely for leaf blast, experienced county agents and consultants may treat burndown regions rarely.

The environment also influences fungicide judgment calls. For example, fields with uniform or widespread leaf blast and erratic flood management planted to CL 151 or Francis means that we would almost always recommend two applications of the fungicide at the higher rates. In addition, fields with a strong history of blast and planted to a susceptible or very susceptible variety should budget two applications of fungicide.

Fields with lower levels of leaf blast, or none, and no strong history of blast may mean more limited measures. Depending on the level of scouting and experience of the advisor, fields at lower risk may either not be sprayed, sprayed one time (if so it is better to spray when heads are about 30–50% emerged, splitting the two application timing difference) or sprayed with somewhat less fungicide per application. Fields planted to varieties like Wells, which is susceptible but not as much as CL 151 or Francis, are easier to manage in general and may either not need a fungicide if well watered, or may require one application or two at lower rates. These are all judgment calls and will depend on the experience of the county agent or consultant.

What about new varieties like CL 261? We have limited experience with this new Clearfield medium grain, but blast has been showing up on it in Louisiana. We need to watch it closely and report any blast so we can determine if it is more susceptible than we thought for our conditions.

We would appreciate samples of neck blast from affected fields later this summer. Collect 20 infected panicles, place in a paper – NOT PLASTIC – bag or envelope and mail to the Plant Health Clinic in Lonoke or in Fayetteville to the attention of Rick Cartwright. We need the variety, field location, fungicide used, level of damage, and your name and phone number in case we have questions. This survey would help us keep up with the blast fungus and whether it is changing. Currently, we believe the fungus is adapting to our resistant varieties being grown and to our fungicides. Remember that we really only have one mode of action fungicide registered for use against blast, and that is effective. Both Quadris and Gem (parts of Stratego, Quilt and Quilt Xcel) are strobilurins, so if the fungus adapts to one, it will be resistant to both. We have no backup plan for fungicides in U.S. rice once the fungus becomes resistant.

Good luck.

HERBICIDE INJURY UPDATE

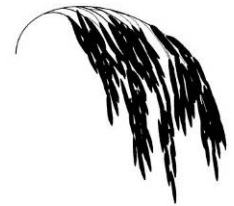
I have looked at a couple of fields that have experienced Permit injury similar to what we have seen in the past. The common symptoms include bright, distinctive yellowing about seven days after flooding similar to what would be expected with sulfur deficiency; some stunted growth, but not always severe, typically occurs on silt loam soils with high soil pH, and normally recovers within about two weeks. The yellowing is similar to what is observed with clorimuron (Classic, Canopy XL) carryover into rice. The yellow color also resembles Newpath injury. All of the compounds are similar and have similar modes of action. Plant tissue analysis normally suggests that the plant nutrient status is normal (i.e. nothing is deficient). A few years ago, we were able to observe the injury in sprayed and unsprayed areas of a field. This allowed us to verify our suspicions.

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The green rice in the above photo is an area that was not sprayed and obviously resulted in no rice injury but also no nutsedge control. While the rice seems to be severely affected, little or no yield loss has been observed in the fields where this has occurred.



While this may explain the yellowing in some fields, there are other problems that may be occurring. I am aware of a couple of fields in the past that have similar symptoms, and Permit was not applied to the fields.



Draining the fields has been a common practice to get the field to recover. Various fertilizers have also been used, with ammonium sulfate being most common. While the fertilizer is only going to correct nutrient deficiencies that may result from the rice being stressed, the nitrogen may help encourage the crop to recover more quickly.

RICE MARKET UPDATE (Scott Stiles)

USDA June Supply/Demand: Lower Carryout Forecast

Last Thursday the USDA released its June supply/demand forecasts. For 2009/10, USDA lowered its import forecast by 1 million cwt and increased its domestic use forecast by 1 million cwt, lowering its all rice carryout by 2 million cwt from last month to 28.4 million cwt. Most of the change was in the medium/short grain class.

For 2010/11, the U.S. rice production projection was unchanged at a record 244.0 million cwt. USDA lowered its all rice import forecast by 1 million cwt, increased its domestic use forecast by 1 million cwt, and increased long grain exports by 2 million cwt. Total use for 2010/11 is projected to be a record 248.0 million cwt. Combined with the lower beginning stocks, the net result was a 6-million-cwt decrease in USDA's 2010/11 carryout stocks from last month to 45.4 million cwt, down 6 million or 12

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percent from a month ago, but up 17 million or 60 percent from 2009/10.

USDA left its season average farm price forecast for 2009/10 unchanged, but lowered its forecast for 2010/11 by 20 cents per cwt. The 2010/11 all rice price range is projected at \$10.95 to \$11.95 per cwt. The 2010/11 long-grain U.S. season-average farm price is projected at \$9.75 to \$10.75 per cwt, down 25 cents per cwt on each end of the range. The combined medium- and short-grain price is projected at \$14.50 to \$15.50 per cwt, unchanged from a month ago. Prices for both classes of rice are projected to be well below 2009/10 levels, mainly due to large domestic and global supplies and lower Asian prices.

At the world level, USDA made no significant changes, lowering its 2010/11 production forecast slightly from last month by 0.3 MMT to still a record 459.4 MMT.

Global consumption is also projected at a record 452.8 million tons. World ending stocks are now forecast at 96.3 MMT, up 6.6 million or about 7 percent from 2009/10.

USDA Supply / Demand Estimates for U.S. Rice			
		Rice (million cwt.)	
		2010/11	2010/11
		May	June
Planted Acreage (million)		3.41	3.41
Yield (lbs.)		7,202	7,202
	• Beginning Stocks	30.4	28.4
	• Production	244	244
Total Supply		296.4	293.4
	• Domestic Use	138	139
	• Exports	107	109

Total Use	245	248
Ending Stocks (All Rice)	51.4	45.4
• Long Grain	28.3	25.3
• Medium/Short	20.7	17.7
Avg. Farm Price (All Rice)	\$11.15-\$12.15	\$10.95-\$11.95
• Long Grain	\$10-\$11	\$9.75-\$10.75
• Medium/Short	\$14.50-\$15.50	\$14.50-\$15.50

Source: USDA-WASDE, June 2010.

Other Rice Market News:

[USDA-ERS June 2010 Rice Outlook](#)

[Drought threatens Thailand's rice crop](#)

[Thai Rice Cancellations, Delays May Slow as Prices Stabilize](#)

RICE RESEARCH VERIFICATION PROGRAM UPDATE:

General Information: Most of the verification fields are now flooded. Some are of the fields are waiting on the fertilizer application.

Stewart Runsick – Northern Fields

Clay County (CL XL 745) – The second Newpath application plus Strada was applied. Urea (270 lbs/acre) was applied and the field is flooded.

Cross County (CL 142 AR) – The mid-season nitrogen application (100 lbs/acre of urea) was applied this week. Leaf blast is present in the field. The rice looks excellent.

Greene County (CL 151) – The mid-season nitrogen application was applied (100 lbs/acre of urea) this week. Everything looks good.

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Jackson County (CL XL 745) – Urea (260 lbs/acre) was applied last week. Rainfall delayed the application. The rice is at ¼ inch joint movement.

Lawrence County (CL 142 AR) – Urea was applied at a rate of 230 lbs/acre. The field has been flooded for two weeks. Everything looks good.

Lonoke County (Cheniere) – This field has suffered injury from another herbicide. The field was drained and the rice is recovering. Facet (.5 lbs/acre) and Urea (100 lbs/acre) were applied and the field is now flooded. The rice is near ½ inch internode elongation.

Mississippi County (CL XL 745) – The field was sprayed with Newpath and then a separate application of Ricestar for sprangletop control. Urea was applied at 300 lbs/acre. The field is flooded and looks good.

Poinsett County (Truman) (Wells) – The field was drained last week for straight head control. Mid-season nitrogen was applied (125 lbs/acre of urea) and the field is flooded. Leaf blast is present in the field.

Poinsett County (Harrisburg) (CL 151) – Urea (230 lbs/acre) was applied. Mid-season nitrogen is scheduled for Monday.

Prairie County (Jupiter) – Mid-season nitrogen is scheduled for Wednesday.

Randolph County (Wells) – The field is flooded and looks good. The mid-season nitrogen application is scheduled.

White County (CL XL 745) – Urea was applied last week and the field is flooded. The rice is at green ring. 2.4-D will be applied on 15 acres for jointvetch.

Ralph Mazzanti – Southern Fields 6-14-10

Arkansas County (CL XL 729) – Internode elongation is now at 1 inch. Coffeebean are starting to show up around edges of the field on the levees. Ducksalad are coming on in the bar ditches. The field received .15-inch rainfall. The field looks good.

Ashley County (CL XL 729) – The levees have been sprayed around the edge of the field that the airplane missed. The joint movement is at ½ inch. The field has received .4 inch rainfall. The field looks good and is uniform.

Chicot County (CL XL 729) – Internode elongation is at ¼ inch. The field is clean and looks excellent.

Clark County (CL 151) – The field looks excellent. Midseason nitrogen Urea has been applied at 100 lbs/acre. The field received 1.8 inches of rain.

Desha County (CL 151) – Irrigation issues are starting to show up, with 5-6 patties needing water. Midseason fertilizer is scheduled to go out. Joint movement is from green ring to ¼ inch.

Drew County (Jupiter) – The field's second herbicide application has now been delayed three weeks. The watering issues have been resolved. The levees have barnyardgrass and signalgrass. The east side of the field has grass also. Clincher at 15 oz/acre plus 1 qt/acre oil has been recommended. The field received .4 inch of rainfall.

Jefferson County (CL XL 745) – The field is clean and uniform. Internode elongation is at ½ inch.

Lafayette County (CL XL 745) – The field has been sprayed. The pre-flood fertilizer rate of 300 lbs/acre was scheduled to go out. The ground fertilizer applicator has broken down. An airplane will be called in for application.

UPCOMING EVENTS

Crops Field Day – Southeast Research and Extension Center – Rohwer, Ark. – July 29. Contact: Larry Earnest (870-644-3101)

Pine Tree Biofuels Field Day – Pine Tree Branch Experiment Station – Pine Tree, Ark. – Aug. 5. Contact: Roger Eason (870-633-5767)

Randolph/Lawrence County Field Tour – Pocahontas, Ark. – Aug. 6. Contact: Herb Ginn (870-759-1659)

Rice Field Day – Rice Research and Extension Center – Stuttgart, Ark. – Aug. 11. Contact: Dr. Chris Deren (870-673-2661)

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Other Field Days

LSU Rice Field Day – Rice Research Station –
Crowley, La. – July 1, 2010

Progeny Rice and Soybean Field Day – Wynne, Ark.
– July 22, 2010

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The authors greatly appreciate the feedback and contributions of all growers, county agents, consultants and other rice industry people.

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