



**Southwest
Region**



Rice Research Station News

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Salvage Treatments and Controlling Late Emerging Weeds in Rice

Salvage treatments are like death and taxes; they occur on a regular basis. No one should start the growing season planning for a late-season, or salvage treatment. It is much easier to control weeds early in the growing season when they are small and actively growing. But on many occasions, late-season applications cannot be avoided. Following is some information to help guide producers through these late-season applications.

I rarely recommend growers use a reduced rate herbicide program or recommend increasing a herbicide rate to the higher end of the labeled rate. Reduced rate programs are useful but oftentimes cost more money because more applications are needed throughout the growing season. The new herbicides labeled in the past few years are not as rate reactive as older herbicides; therefore, increasing the rate may not increase weed control, but it will increase the costs.



A salvage herbicide application is needed

It is important to know the weed spectrum history in a given field. Weed spectrums normally do not drastically change from one year to the next. It is a good idea to have records of weeds present in a field from year to year. If a problem occurred in a field one year, the following year a herbicide program can be selected to manage that problem early and not let it develop into a major problem. The best late-season weed control is a preventative early-season herbicide program the next growing season.

Cultural practices can also help in controlling weeds before they become a problem and, in many cases, may be more economical. Start the season with a clean, well-prepared seedbed. This can be accomplished by tillage or by

an effective stale seedbed burndown program. If planting stale seedbed, the first application of a burndown herbicide should be four to six weeks before planting and may require a second application near planting. Plant the correct amount of seed as recommended by the LSU AgCenter to establish a uniform rice stand to out-compete the weeds for water, nutrients and sun. A uniform stand can be effective in controlling weeds, such as duckweed and perennial grasses. Surface irrigations should be used as needed to prevent drought stress in weeds if one plans to apply herbicides postemergence and establish the permanent flood as soon as the rice is large enough to survive in the water.

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Special Dates of Interest:

Rice Research Station Field Day

**Wednesday, July 2, 2008
Crowley (Morning)**

Evangeline Rice Field Day

**Tuesday, May 20, 2008
(Morning)**

Jeff Davis Rice Field Day

**Tuesday, July 8, 2008
(Morning)**

Vermilion Rice Field Day

**Tuesday, July 8, 2008
(Afternoon)**

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Breeding for Improved Jasmine Type Rice Lines - Potential for LA2125

The demand for Jasmine-type aromatic rice, which makes up about 80 percent of U.S. rice imports, has rapidly increased over the past decade. Currently, only Jasmine 85, an improved *indica* variety developed at the International Rice Research Institute in Philippines and released in Texas, is planted in the U.S. It is grown on limited acreage because of its inferior aroma and grayish grain appearance. Development of an improved Jasmine-type variety with similar specialty characteristics (aroma, texture and flavor) to those imports and with competitive grain and milling yields while adapted to the southern U.S. environment, will help the rice industry access a fast-growing and high-value domestic market.

Since its initiation in 1992, the specialty rice breeding program at the Rice Research Station has been committed to the development of improved aromatic rice varieties adapted to Louisiana environmental conditions, with competitive grain and milling yield and superior specialty characteristics that match those of imported rice. From the initial crosses between elite U.S. long-grain genotypes and traditional Thai Jasmine varieties, numerous breeding lines have been selected

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Salvage Treatments and Controlling Late Emerging Weeds in Rice Cont.

All herbicides should be applied early in the growing season at the correct application timing and at the correct application rate. In these economically strapped times, it is tempting to wait to apply 2,4-D for the cost effectiveness of this herbicide. This is a viable option and one I often recommend; however, if adverse weather conditions occur, as was the case in 2004, the short 2,4-D application window may be missed. The application window for 2,4-D is from mid to late-tillering to half-inch internode. If this short window is missed, there are few options available to the producer and the cost of the products increases substantially. The weed control 2,4-D provides is excellent. By delaying application, however, rice yield loss because of weed competition has already occurred. The use of 2,4-D can aid in harvest efficiency by controlling broadleaf weeds at mid-season and preventing them from getting larger as the season progresses.

Most herbicides have a window of application from emergence to late-tillering or panicle initiation. Permit is a herbicide that can be applied up to 48 days before harvest; however, Permit is not as effective on large broadleaf weeds compared with an early season application. Storm and Ultra Blazer are labeled up to the early boot stage of rice, but weed size is important when applying these herbicides late season. The grass herbicides are labeled up to late-tillering for Ricestar HT and 60 days before harvest for Clincher. Clincher has been successful at controlling grass weeds late season; however, it can be inconsistent if it is relied on to control large grasses. When applying Clincher or Ricestar HT late season, do not apply them if the weeds are under drought stress. I recommend a shallow flood at the time of application to obtain adequate control.



Timely herbicide application will maximize yields and prevent weed escapes

With the development of Clearfield rice, it was recognized during the first growing season that late-emerging red rice or red rice missed with the first two applications of Newpath could be a problem. With this in mind, Beyond herbicide was labeled for use as a late-season application. To obtain the best weed control program in Clearfield rice, Beyond should only be applied after two applications of Newpath. On Clearfield rice varieties the application window for Beyond is four-leaf rice to panicle initiation plus 14 days. On hybrid lines the latest the herbicide can be applied is at panicle initiation because injury and a delay in heading may occur. Beyond should only be used in a total program and should not be used as the primary herbicide in a Clearfield system.

Late-season weed control can be achieved, but it is oftentimes expensive and inconsistent. Research at the LSU AgCenter Rice Research Station has shown that weed control in the first three to four weeks after emergence is the most important time to achieve increased yields and prevent late-season weed problems.

Dr. Eric Webster
ewebster@agcenter.lsu.edu

Breeding for Improved Jasmine Type Rice Lines - Potential for LA2125 Cont.

with improved spikelet fertility, short stature, less photoperiod sensitivity, and some of the important specialty characteristics. Since 2002, stepwise intercrossing and recurrent selection among these lines has been carried out to combine and enhance all specialty characteristics as well as to improve seed setting and to incorporate high grain and milling yield and disease resistance into aromatic lines. All these efforts have led to the development of the Jasmine-type line LA2125 and other advanced breeding lines that possess cooking quality attributes approaching those of imported aromatic rices, while having good yield potential and milling quality.

LA2125 was developed from a cross (made in 1996) between a Chinese aromatic line (96a-8) and the Arkansas variety, Ahrent. LA2125 has typical jasmine rice cooking quality, which includes a 2-AP (the chemical for aroma) content of 597 ng/g, amylose content of 14.8%, alkali spread value of 6.1, translucent slender grains, and the characteristic of cooking sweet, glossy and soft. LA2125 has high grain yield potential and very good milling yields. The average yield of LA2125 in 34 multi-location in- and out-state trials was 6,954 lbs/A, compared with 7,565 and 6,756 lbs/A for Cheniere and Cypress, respectively. In those trials, the head rice yield of LA2125 was 63.1%, compared with 63.5% and 64.5% for Cheniere and Cypress, respectively. LA2125 has similar maturity, height and lodging tolerance as Wells. Limited data also suggests that LA2125 has improved resistance to sheath blight and blast over conventional varieties such as Cypress and Cocodrie. In contrast to Jasmine 85, LA2125 has smooth leaves, sheaths, hulls and no dormancy. A foundation seed production field of LA2125 has been planted at the Rice Research Station in 2008 for potential release.



LA 2125

Jasmine 85



Field shot LA 2125

Dr. Xueyan Sha
xsha@agcenter.lsu.edu



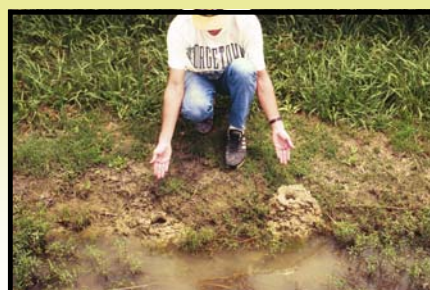
Levee Renovation in Crawfish Aquaculture



Whether one produces crawfish in the same field over consecutive seasons or under an annual field rotation approach, levee repair or renovation is usually necessary at some point. Stocking (or “seeding”) of brood crawfish, when necessary, is best carried out only after levee renovation projects that involve a majority of the pond’s levee area. This is because the levees often serve as the main site for burrows. Interrupting burrows while occupied can affect crawfish survival and reproduction.



Levee renovation
by a
rice-field
levee plow



Crawfish burrows
constructed
on a levee
near the
water's edge

Crawfish cannot effectively construct their burrows under water, especially during the warmer months. Levees are often the only available high ground for burrowing during the peak periods (late April through June) while the pond or rice crop is still flooded. When crawfish become mature in the spring and have mated, the female will seek to burrow shortly thereafter at or near the water's edge. Therefore, major levee renovation that occurs after crawfish have burrowed into the levees can negatively impact crawfish yields the following season, especially if the levees are the primary source of burrowing area for the pond. Research at the Rice Research Station has determined that typical rice levee renovation practices can significantly affect broodstock emergence.

Crawfish burrows in pond levees at the Rice Research Station were identified, marked and mapped (using a triangular process of precise measurements from metal stakes placed outside the limits of the levees). This occurred before pond draw-down over two seasons. Half of the levees were renovated by the standard practice of plowing down the existing levee crown and then pulling a rice field levee plow over the existing levee base in two passes. This practice typically destroys the top 6 to 12 inches of the burrow and deposits an additional 6 to 12 inches of fill (soil), yielding a total of about 12 to 24 inches of loose soil over the remaining intact portion of the burrow. Mapped and flagged burrows were monitored after flood-up, and successful emergence was noted.

Emergence from nondisturbed burrows was greater for Year 2, possibly because of higher rainfall totals. On average, emergence was reduced by 22 percent by the levee renovations (Table 1). Soil compaction, heavier soils or a greater degree of fill on top of the remaining burrows may act to decrease the percentage of crawfish emerging from renovated burrows even further. Such practices of levee renovation after the primary burrowing period may be even more critical for new ponds or ponds previously fallow because, typically, lower numbers of broodstock are available for reproduction in newly stocked ponds.

Therefore, if it is necessary to renovate a majority of a pond's levee area following peak burrowing, restocking may be needed. However, this may not be possible or feasible if the renovation occurs late in the season or during the summer. It is preferable to complete any levee renovation well in advance of the prime burrowing period of late April through June. If this is not possible, one alternative might be to renovate half of the levee area of a pond in one year and the remainder in another year. This would leave at least some portion of the total levee area undisturbed.

Table 1. Percentage reduction in observed crawfish emergence from pond levee renovation.

Year	Rainfall Total ¹ (and frequency)	Levee Treatment	No. of Burrows	% Emergence	% Reduction
Year 1	9.5 inches (13 events)	Non-Reconstructed	170	55.3	31.3
		Reconstructed	137	35.0	
Year 2	21.5 inches (19 events)	Non-Reconstructed	289	69.6	13.1
		Reconstructed	253	60.5	

¹ Monitoring period and rainfall data was for 10 weeks in Year 1 and 15 weeks in Year 2.



Rice blog begins again, two fields featured

An LSU AgCenter blog that features rice farming in Southwest Louisiana has begun its second year. Two fields are being followed.

One is a commercial rice field near Lake Arthur being grown by farmer Ronnie "Blue" Zaunbrecher. The 39-acre field is in the LSU AgCenter Rice Verification Program under the direction of Dr. Johnny Saichuk, LSU AgCenter rice specialist.

"Ronnie is an excellent farmer who takes a lot of pride in raising a crop," Saichuk said.

The field was water-seeded with Cheniere at the rate of 120 pounds per acre on March 19.

In addition, the blog will include a 21.25-acre field at the LSU AgCenter Rice Research Station near Crowley. A webcam will show continuous progression of the field that has been drill-seeded with the new long-grain variety Catahoula at the rate of 42 pounds an acre on March 25.

Last year, the blog followed a 10-acre rice field at the Rice Station. It is fallow this year.

Dr. Steve Linscombe, Rice Station Director, said the blog is a good teaching tool to show how rice is grown.

"Farmers will also get details on how problems are being addressed on the two fields," Linscombe said.

[View the blog and webcam.](#)



21 acres at the LSU AgCenter Rice Research Station being flushed



Lake Arthur farmer Ronnie "Blue" Zaunbrecher, at left, County Agent Eddie Eskew and Kim Landry, extension associate with the Rice Verification Program, walk Zaunbrecher's field, one of two being followed for this year's LSU AgCenter rice blog.

Bruce Schultz
bschultz@agcenter.lsu.edu

Effective and Cost Efficient Fungicide Use for Multiple Diseases

Rice diseases pose a major threat to rice production. The two most important fungal diseases, sheath blight and blast, cause significant yield and quality reductions that cost farmers millions of dollars each year. Diseases caused by the fungus *Cercospora* have also become major problems in recent years. Bacterial panicle blight is also a major rice disease, but fungicides have no activity against this disease. Disease resistance is the best control option, but often, it is not available. Cultural control can reduce disease development, but usually involves reducing inputs – especially nitrogen and seeding rates, which can limit yield. As a result, rice farmers often rely on fungicides to control diseases. Several rice fungicides are available, but timing is critical for maximum return.

Fungicide timing, rate and efficiency trials have been conducted at the LSU AgCenter Rice Research Station and in Louisiana grower fields for a number of years. Fungicides were applied at either seven days after panicle differentiation, 2-4 inch boot, 50%-70% heading (heads emerging from the boot but not completely emerged), or 5, 10 or 15 days

after heading. Varieties selected were susceptible to sheath blight, blast or *Cercospora* and were managed to favor disease, i.e. inoculated, fertilized with high N rates, planted late and planted in high disease pressure fields.

The studies demonstrated that fungicide timing was important in sheath blight, blast and *Cercospora* control. Boot stage appeared to be the best timing for *Cercospora* and sheath blight control. Earlier applications were not as effective or higher rates were needed to provide season-long control. Heading applications were effective. However, this allowed more sheath blight spread up the plant, and one in two years *Cercospora* control was weak.

Blast control was best when fungicides were applied at heading. Post-heading applications lost effectiveness when delayed by as little as five days after heading for both sheath blight and blast. Fungicides also differed in their effectiveness against different diseases. Propiconazole was most effective against *Cercospora* but was weak against sheath blight and had no activity against blast when used



Effective and Cost Efficient Fungicide Use for Multiple Diseases Cont.

alone. Azoxystrobin-containing fungicides were more effective against sheath blight than trifloxystrobin-containing fungicides. But trifloxystrobin fungicides were more effective against blast.

Effective fungicide use must be based on the presence of damaging disease in a field and when it starts to develop. This is determined by knowing the varietal susceptibility, field disease history, weather conditions in your area, and most importantly by scouting for disease in the field multiple times during the growing season. If sheath blight and *Cercospora* are present in a field, boot applications would be best. Earlier applications would only be advisable if sheath blight started earlier and was causing significant damage before the boot growth stage. If blast is present, delaying fungicide application to heading would be best because blast can be more damaging than other diseases, and heading applications can be effective against sheath blight. Most importantly, fungicides must be applied no later than by when 50%-70% of heads have emerged to maximize disease control and yields. Remember, if there is little or no disease, there is little or no loss.



Severe sheath blight damage



Control of severe *Cercospora* (Left) with Tilt (Right)

Dr. Don Groth

dgroth@agcenter.lsu.edu

Acadia

Jeff Davis

Evangeline

Vermilion

Richland



Off - Station Rice Research Work

Off-station trials are an integral part of the research efforts of Rice Research Station scientists. These trials are conducted in cooperation with rice growers who provide land, seedbed preparation, and water, as well as great patience in dealing with some of the special requirements of research studies.

These off-station sites are located throughout the rice-growing regions of the state. In 2008, these off-station trials will be conducted at four locations in southwest Louisiana: Jimmy Hoppe's farm south of Fenton in Jeff Davis Parish, Kent Lounsberry's farm south of Lake Arthur in western Vermilion Parish, Kody and Larry Beiber's farm west of Mamou in Evangeline Parish, and R&Z Farms (Keith Rockett, Dwayne and Doug Zaunbrecher) east of Mowata in Acadia Parish. In addition, two locations will be planted in Richland Parish in north Louisiana, Elliot Colvin's farm north of Rayville and Woodland Plantation southeast of Monroe. These sites are normally between 2 and 6 acres.

These sites are treated as miniature research stations. All the planting, agronomic management, data collection and harvesting at these sites are conducted basically the same as these efforts at the Rice Station. Typical areas of research conducted at these off-station sites include variety and experimental line evaluation, fertility and agronomic studies, as well as disease, insect and weed control work. The data generated at these sites highly complement that from the Rice Research Station and are invaluable in making recommendations such as those found in the [Rice Varieties and Management Tips](#) publication, which is published annually.

These off-station sites are also invaluable to our overall research efforts. One good example is in new variety development. Typically, all of the early generation selection and advancement, as well as preliminary yield testing of breeding lines, are

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Off - Station Rice Research Work Cont.

conducted either at the Rice Station or at the winter nursery facility in Puerto Rico. However, as lines move into advanced testing before potential release, these off-station testing sites provide excellent information on the stability of these lines. Stability refers to the ability of lines to perform consistently over a number of different environments, which are provided by the different soil types and disease pressure regimes, as well as general growing conditions at these various sites. We have had a number of experimental lines through the years that looked good in tests here on the station. However, evaluating these same lines at the off-station sites allowed us to discover inherent characteristics that warranted a decision not to release. On the other hand, consistent superior performance over locations and years by a potential release can corroborate data produced at the Rice Station and help justify a variety release.

Dr. Steve Linscombe
slinscombe@agcenter.lsu.edu

Pest of the Quarter

Blast

Blast disease is caused by the fungus *Pyricularia grisea*. Blast can be

found from the seedling stage to near maturity. The leaf blast phase occurs between the seedling and late tillering stages. Leaf spots start as small and are white, gray or blue-tinged. They enlarge quickly under moist conditions to either diamond-shaped spots or linear lesions with pointed ends, with gray or white centers and narrow brown borders. Leaves and whole plants often die under severe conditions.

Rotten neck symptoms appear at the base of the panicle, starting at the node. The tissue turns brown to chocolate brown and shrivels, causing the stem to snap and lodge. If the panicle does not fall off, it may turn white to gray, or the florets that do not fill will turn gray. Panicle branches and stems of florets also have gray-brown lesions.

Scouting for blast should begin early in the season during the vegetative phase and continue through to heading. Leaf blast will usually appear in high areas of the field where the flood has been lost or is shallow. As part of management, the flood must be maintained. Areas of heavy nitrogen fertilization and edges of the fields are also potential sites.

If leaf blast is present in the field or has been reported in the same general area, and if the variety is susceptible, fungicidal applications are advisable to reduce rotten neck blast. Fungicide timing is critical. When 50 percent to 70 percent of the heads have begun to emerge, application should be made. Fungicide applications before or after this growth stage will not provide good control of this disease.

Dr. Don Groth
dgroth@agcenter.lsu.edu

Dr. Clayton Hollier
chollier@agcenter.lsu.edu



Leaf Blast



Rottenneck Blast

Rice Researchers Receive Recognition

Three LSU AgCenter rice researchers received recognition at the recent Rice Technical Working Group meeting held in San Diego.

Dr. Chuck Rush, rice pathologist in the Department of Plant Pathology and Crop Physiology and Dr. Richard Dunand a rice physiologist who recently retired from the Rice Research Station, each received the RTWG Distinguished Service Award.

Dr. Groth, rice pathologist at the Rice Research Station, received the Distinguished Rice Research and Education Award. This award is the most prestigious that is presented at the biennial meeting of this international society of rice scientists.



Dr. Chuck Rush



Dr. Richard Dunand



Dr. Don Groth



**Rice Research Station****1373 Caffey Road
Rayne, LA 70578**

Phone: 337-788-7531

Fax: 337-788-7553

E-mail:

slinscombe@agcenter.lsu.edu[www.lsuagcenter.com/en/
our_offices/
research_stations/Rice/](http://www.lsuagcenter.com/en/our_offices/research_stations/Rice/)*This newsletter is
produced by:**Karen Bearb**Bruce Schultz**Don Groth**Darlene Regan**Steve Linscombe**Linda Benedict**Frankie Gould*

Focus on Research Associates

James Leonards has worked at the LSU AgCenter Rice Research Station for more than 10 years.

In the summer of 1994, he was an intern while attending the University of Southwestern Louisiana, majoring in agribusiness.

He graduated that year and started working full-time at the station in 1995, working in the rice breeding program under Dr. Steve Linscombe. Roughly four years later, he went to work for G&H Seed Co. in quality control in Kaplan and later Crowley.

In 2002, he returned to the Rice Research Station, where he started working for Dr. Pat Bollich and later Dr. Jason Bond. He now works for Dr. Dustin Harrell.

Leonards and Harrell, an agronomist, work on projects involving rotational crops and fertility.

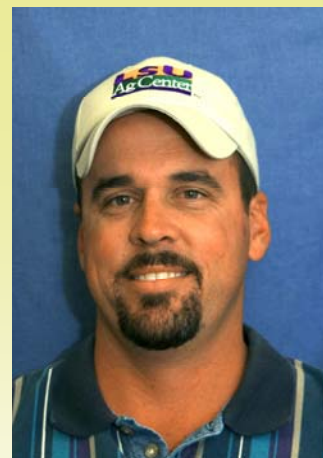
Leonards attended Notre Dame High School. He grew up on a farm in a farming community. He remembers first driving a tractor at age 12.

He thought as a young boy, he would be a farmer like his dad, Dennis Leonards, but once he started working at the Rice Station, he enjoyed research. Part of that enjoyment comes from the satisfaction of knowing his work will benefit agriculture.

"I'm hoping I can make a difference and contribute a little bit to help the farmers."

Agriculture runs through the Leonards lineage. One grandfather farmed, and the other was a cattle buyer, he said. He has two brothers who farm, Bubba and Donald Leonards. A younger brother, Robert Leonards, works for BASF.

Leonards said he enjoys working at the station. "It's a good place to work with good people."



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The LSU Agricultural Center is a statewide campus of the LSU System and provides equal opportunities in programs and employment.