The LSU AgCenter has recently released two new rice varieties that should give a boost to Louisiana rice production. Both of these varieties contain the gene for resistance to imidazolinone (imi) herbicides, which will allow them to be used with the Clearfield production system. The Clearfield system is based on technology developed from research conducted at the Rice Research Station beginning in the 1990s. This technology allows for the chemical control of red (weedy) rice in a rice production field, which was not possible prior to the introduction of Clearfield rice. Red rice is a noxious weed in rice production and is a close genetic relative of commercial rice, actually belonging to the same taxonomic species (*Oryza sativa*) as cultivated rice. Because they are so closely related, it is extremely difficult to develop a herbicide that will kill red rice without injuring commercial rice if used in the same field. Through mutation breeding, rice lines were developed that were resistant to the imi herbicides. Since these mutants were developed, rice breeders at the station have developed and released 11 Clearfield varieties that contain the resistance gene and can be used with the Clearfield system.

Clearfield technology has dramatically improved the yield as well as quality of the rice produced on many Louisiana rice fields and has been widely used by Louisiana rice producers, accounting for more than 60 percent of the 2015 Louisiana rice acreage. However, the rice breeding program is continually working to develop new, superior Clearfield varieties to improve the viability of the Louisiana rice industry. These two new varieties should do just that because they both have shown improved performance over current Clearfield varieties.

CL153 is a semidwarf, early-maturing long-grain Clearfield variety with excellent grain yield, good grain quality and very good resistance to blast disease. In multiyear, multilocation testing, CL153 has shown per acre average yields within 200 pounds of CL151, which has the highest yield potential among current Clearfield pureline varieties. However, CL151 is very susceptible to blast disease, which is common in Louisiana rice production in some years. CL153 has good resistance to blast disease. The new variety also has better overall grain appearance and better resistance to lodging than CL151. Compared to CL111, the most widely grown Clearfield pureline variety, CL153 has shown an approximate 500-pound-per-acre yield advantage, as well as superior blast resistance. The length of the growing season for varieties is especially important in southwest Louisiana where second crop production is a crucial part of the rice-growing system. CL153 is similar in maturity to CL151 and about four days later than CL111, which gives it a good growing cycle for the region. All of these varieties are similar in plant height, but CL153 has shown somewhat better resistance to lodging than CL151. The new variety, while showing good resistance to blast disease, is susceptible to sheath blight and moderately susceptible to bacterial panicle blight, Cercospora and straighthead. CL153 was selected from the cross 9502008-A/AR-1188/COCODRIE/3/CFX 26/9702128/4/CHENIERE, which was made at the Rice Research Station in 2011. The line was developed from the bulk of a single F₃ line (13P1442) made at the Puerto Rico winter nursery in 2013. CL153 has typical long-grain cooking quality and grain cereal chemistry characteristics.
CL272 is the other new release. This variety is a semidwarf, early-maturing medium-grain Clearfield experimental rice line with excellent grain yield and good grain quality. CL272 has averaged an approximate 300-pound yield per acre advantage over CL271, the current highest yield potential Clearfield medium-grain. The new variety also has much better grain quality than CL271, which should provide a significant advantage for the Louisiana rice milling industry and medium-grain end users. CL272 and CL271 are very similar in maturity, plant height, lodging susceptibility and disease resistance to the major Louisiana rice diseases. The new variety has typical medium-grain cooking quality, grain dimensions and cereal chemistry characteristics. CL272 was selected from the cross Neptune/Bengal/CL161, which was made at the Rice Research Station in 2009. The variety was developed from the bulk of a single F3 line (11-38915) made at the Rice Research Station in 2011.

Both of these varieties were developed in a relatively short period of time – six and a half years for CL271 and four and a half years for CL 153, both from cross to release. This was only possible through extensive use of the breeding program’s winter nursery facility near Lajas, Puerto Rico. Both varieties were grown in foundation seed production fields at the Rice Research Station in 2015. In 2016, acreage seeded to the two new varieties will be devoted primarily to registered and certified seed production. Certified seed of both should be readily available in 2017.

Sheath blight is the most important disease of rice in the southern United States. The causal fungus is Rhizoctonia solani. Losses range from 1 percent to 25 percent, depending on inoculum pressure, environmental conditions, host resistance and cultural management. High humidity and moderate temperatures favor the disease. High seeding rates and high doses of nitrogen increase canopy thickness and increase humidity, resulting in increased disease. The pathogen survives in the soil as sclerotia, in infected straw or on alternate hosts. It is present in most rice fields. Severity is proportional to number of sclerotia and infected debris in the soil. Infection occurs at the point of contact, usually around the water line, and mycelium penetrates the plant, normally starting at the tillering or internode elongation growth stages.

Lesions, which are 1-3 centimeters in size, initially appear on the sheath. They are oval or ellipsoidal, dark green to gray in color and appear water-soaked (see picture). Lesions usually have a brown border around them, with resistant plants having a wider and darker border than susceptible cultivars. When the plant produces this resistant response, the mycelium grows out of the tissue and over the resistance reaction and causes a new secondary infection. This process gives the disease its characteristic appearance of a snakeskin-banding pattern (see picture). Lesions on the leaves are more irregular and have a banded coloration with dark green, brown and yellow-orange coloration. Large oval spots on the sheath and irregular spots on the leaf blades characterize the disease. Leaves that become infected usually die and turn tan.

Sclerotia are the survival structures of the fungus. They are irregular-bean-shaped, 4-5 millimeters in size, and formed on the surface of the leaves and sheaths. When initially formed, they are white but turn dark brown to black and fall off easily. The sclerotia can survive several years in the soil. Sheath blight, although a soilborne pathogen, can develop rapidly under favorable environmental conditions without a secondary wind-spread spore stage.

Sheath blight can be controlled by a combination of practices. Some commercial cultivars have partial resistance. Avoiding excessive stands and nitrogen fertilizer, without sacrificing yield potential, will reduce incidence of this disease. Applying fungicides is often necessary when economically advisable. Rice must be scouted to determine if a treatment threshold has been exceeded. Specific fungicide treatment recommendations are based on either percent positive tillers infected or percent positive stops. This threshold is adjusted for the susceptibility of the cultivar. With very susceptible and susceptible cultivars, 5-10 percent of the tillers infected, or 35 percent positive stops, indicate that a fungicide is necessary. A moderately susceptible cultivar requires 10-15 percent infected tillers or 50 percent positive stops to justify a fungicide treatment. In the past, two fungicide treatments were necessary to reduce sheath blight. But with the advent of more effective strobilurin fungicides and economic constraints that limit the number of applications, a single application approach is usually used. Unfortunately, because of wide use of the strobilurin fungicides, resistance in the fungal pathogen has developed and is spreading. Alternate mode-of-action fungicides need to be used to control these resistant populations and postpone resistance development in fields where it is not present. Examples of these fungicides are Sercadis and Elegia (Convoy). See your LSU AgCenter extension agent for current fungicide recommendations.
RECOMMENDED RICE VARIETIES FOR LOUISIANA IN 2016

Each year rice scientists meet at the H. Rouse Caffey Rice Research Station to discuss the previous year’s rice variety research and make decisions on which varieties are recommended for the coming year. This information is compiled into the “Rice Varieties and Management Tips” publication. The 2016 publication is still at press, but it will be available soon at parish extension offices and on the rice webpage at: www.lsuagcenter.com/en/communications/publications/Publications+Catalog/Crops+and+Livestock/Rice/Rice+Varieties+and+Management+Tips.htm?wbc_purpose=Basic&WBCMODE=PresentationUnpublished

In 2016, there will be five conventional long grains recommended for statewide production – Catahoula, Cheniere, Cocodrie, Mermentau and Roy J. The first four all have semidwarf plant types and are fairly similar in maturity. These four varieties typically will average between 35-38 inches in height at maturity and will range from 120-125 days from emergence to harvest maturity with a March to mid-April planting date. Roy J is a conventional-height variety released from Arkansas. It averages about 4-5 inches taller than the semidwarfs and is four to five days later in maturity. All of these varieties have good yield potential and milling quality. In addition, they all have shown good potential to produce a ratoon (second) crop. Catahoula, Cheniere and Mermentau are rated as susceptible to sheath blight, Cocodrie is rated very susceptible, and Roy J is rated moderately resistant to sheath blight. Cheniere and Cocodrie are rated moderately susceptible to blast disease, while Mermentau and Roy J are rated susceptible and Catahoula is rated moderately resistant.

Two conventional medium-grain varieties are recommended this year. Caffey and Jupiter are both short-stature lines averaging 34-38 inches in height at maturity. Both varieties have excellent yield potential and good milling quality. Ratoon crop production is possible with these varieties but typically is not as consistent as observed with most long grains. Caffey is rated resistant to blast, while Jupiter is rated susceptible. Both are rated moderately susceptible to sheath blight.

There are three Clearfield long grains recommended for production this year (CL111, CL151 and CL152). CL111 was the most widely grown rice variety in Louisiana in 2015. Of the three varieties, CL151 has historically shown the highest yield potential followed by CL111 then CL152. CL151 is very susceptible to blast and should only be grown when a fungicide is used to manage the disease. CL111 moderately susceptible and CL152 is susceptible to blast. CL151 and CL152 are rated susceptible to sheath blight, while CL111 is rated very susceptible. CL111 and CL152 consistently have shown superior grain quality when compared with CL151. CL152 has the best resistance to lodging among these three varieties, while CL111 is the earliest maturing, averaging three to four days earlier. All three lines have very good ratoon crop potential.

CL271 is the lone Clearfield medium grain currently recommended. This variety has good first and ratoon crop yield potential and excellent grain quality. CL271 is moderately resistant to blast and moderately susceptible to sheath blight.

Two varieties with cooking, aroma and grain quality characteristics similar to imported Thai jasmine – Jazzman and Jazzman-2 – will be recommended in 2016. Jazzman is three to five days later in maturity and 4-6 inches taller at maturity than Jazzman 2. Jazzman also has somewhat higher yield potential, but Jazzman-2 displays better grain quality, aroma and lodging resistance. Both of these varieties will normally show acceptable milling quality numbers. Jazzman is rated resistant to blast while Jazzman-2 is rated moderately resistant. Jazzman is rated moderately susceptible to sheath blight, while Jazzman-2 is rated susceptible. Jazzman-2 is very susceptible to bacterial panicle blight.

Cont. pg. 4

The 2016 Rice Technical Working Group (RTWG) meeting will be March 1-4 at the Moody Gardens Hotel and Convention Center, 7 Hope Blvd, Galveston, Texas. The RTWG functions according to an informal memorandum of agreement among the State Agricultural Experiment Stations and the Agricultural Extension Services of Arkansas, California, Florida, Louisiana, Mississippi, Missouri and Texas, and various agencies of the U.S. Department of Agriculture. Membership includes personnel in these and other cooperating public agencies and participating industry groups actively engaged in rice research and extension.

Since 1960, research scientists from the U.S. rice industry and from international agencies have participated in the biennial meetings. The RTWG is an organization that provides a platform for rice scientists to meet periodically and exchange information. While most participants are from the United States, the meeting is also attended by rice scientists from numerous foreign countries. The meeting will have concurrent speaker sessions, as well as a number of poster presentations. The concurrent sessions are typically broken down into the following subject areas: breeding, genetics and cytogenetics; rice culture; economics and marketing; plant protection (insects and diseases); post harvest quality, utilization and nutrition and weed control and growth regulation. While the participants at this meeting are primarily scientists, a growing number of innovative rice farmers and consultants have attended the meetings in recent years to obtain information on the latest technology, as well as have an opportunity to interact with rice scientists from around the world. Additional information on the 2016 RTWG can be found at www.rtwg.net.

Dr. Steve Linscombe
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Hybrid rice lines have been re-inserted into our trials at the Rice Station and across the state for the past three years. As you know, only rice lines that have three or more years in our testing program will make the recommended list. This year, one conventional hybrid long grain and two Clearfield hybrid long grains are recommended in Louisiana. XL753 is the conventional hybrid. It has excellent first and second crop potential. It is rated as susceptible to lodging, resistant to blast and moderately resistant to sheath blight. CLXL745 and CLXL729 are the recommended Clearfield hybrid long-grains. Both have shown excellent first crop and second crop potential. Both are susceptible to lodging and resistant to blast. CLXL729 is rated as moderately susceptible to sheath blight, while CLXL745 is rated as moderately resistant.

**RECOMMENDED RICE VARIETIES FOR LOUISIANA IN 2016**

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**Long Grain**

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**Clearfield Long Grain**

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**Clearfield Medium Grain**

*Mean is the average of 14 yield trials conducted over the 3 year period. Mean is not the average of the three years (2013-2015) since there were different numbers of trials each year.*
2016 Projected Rice Costs and Returns & Rice Cash Flow Model

Each January, two rice production farm management decision aids are developed by the LSU AgCenter to assist rice producers in making crop production plans and evaluating the economic implications of those production plans for the coming year. One report is a set of projected rice production costs for the coming year regarding alternative rice production technology systems. The other is a spreadsheet-based decision aid which can be used by producers to project farm-level net economic returns from rice production based on projected rice yields, market prices, input prices and machinery costs.

Rice producers are annually faced with critical farm management decisions that impact the economic net returns of their farming operations. Planning is the most fundamental and important function of farm management. The need for accurate and reliable costs and returns information is crucial if sound production decisions are to be made. The projected costs and returns report present estimates of projected rice production costs for the coming year using current input prices and machinery costs. Net returns above specified costs are presented for a range of relevant rough rice market prices and harvest yields. Rice crop enterprise budgets are included for water-planted and drill-planted systems as well as for production of conventional, Clearfield and hybrid varieties.

The Projected 2016 Rice Farm Cash Flow Model was developed to assist producers in planning for the 2016 crop year. The model is an Excel spreadsheet which allows rice producers to enter projected acreage, yield, market price and production cost data for 2016. They can then estimate net returns above variable production costs and easily evaluate the impact of changing percent of base planted on net returns. The primary purpose of the model is to evaluate the impact on net returns above variable production costs for alternative rice rental arrangements and percent of base acreage planted. This model does include the Price Loss Coverage (PLC) Program option in the 2014 Farm Bill and automatically calculates the PLC payment rate based on the national marketing year average rice price entered. The model also includes entry cells for whole farm fixed expenses to estimate projected returns from rice production over all costs. Five worksheets are included to estimate rice cash flow on five different land tracts. Worksheets can be copied to accommodate additional land tracts if needed.

The development of these rice production planning decision aids are supported annually by checkoff funds from the Louisiana Rice Research Board. These two rice farm management decision aids are available on the LSU AgCenter Rice web page at www.lsuagcenter.com/en/crops_livestock/crops/rice/economics/.

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To access Projected Rice Farm Cash Flow Model click here
Seed treatments for the management of insect pests in rice have been available for almost a decade in Louisiana, and the great majority of rice growers in Louisiana now use insecticidal seed treatments in one or more of their fields every year. Seed treatment insecticides offer many advantages, notably ease of use. Using seed treatments is, however, not without drawbacks. Seed treatments are generally more expensive than foliar insecticides, and, moreover, the decision to use seed treatments must be made before a grower knows if his fields will be infested with pests, so there is a risk that a farmer’s investment in a seed treatment will be wasted.

Data gathered by the Entomology Project over the past decade suggests the decision to use a seed treatment is more often than not a justifiable one in southwest Louisiana. Sampling of commercial rice fields in Louisiana from 2008 to 2011 revealed that, depending on the year, between 65 percent and 100 percent of fields not treated with insecticides harbored populations of rice water weevils exceeding three larvae per core sample, a density that translates to a $10 to $15 loss per acre. In fact, the average density of rice water weevils in untreated fields across the four years of the study was about 11 larvae per core sample, a density which causes yield losses between 5 percent and 10 percent. Furthermore, many of these fields were also infested with other insect pests that are at least partly controlled by seed treatments, like stem borers. Thus, although no insecticide should be used indiscriminately, solid data indicate that insect pest problems in Louisiana rice fields are typically severe enough to warrant use of prophylactic seed treatments.

Once the decision has been made to use a seed treatment, the next decision is which of the three available insecticidal seed treatments (Dermacor X-100, CruiserMaxx and NipsitInside) to use. In deciding which of the three products to use, at least four important considerations must be balanced. The first consideration is the effectiveness of the seed treatments against the primary target pest, the rice water weevil. A decade of side-by-side evaluations have shown that Dermacor X-100 provides superior control of rice water weevil larvae; control of rice water weevils provided by the other two seed treatments is good, but not as good as that provided by Dermacor X-100. The second consideration is the different spectra of insecticidal activities possessed by the three seed treatments against sporadic insect pests. Dermacor X-100 helps control sporadic lepidopteran pests such as stem borers and fall armyworms, while the neonicotionid seed treatments (NipsitInside and CruiserMaxx) have activity against colaspis beetles and early-season sucking insects such as chinch bugs and aphids. The third consideration is the level of infestation risk faced by a given field. These risks can be difficult to assess, but a few guidelines are helpful: Fields that have historically suffered large infestations of rice water weevils are at higher risk for future infestations; fields planted with soybeans the previous field season are at higher risk for colaspis infestations; fields in areas where the Mexican rice borer has established are at higher risk for infestations by stem borers; and late planting, low seeding rates, high rates of N fertilization, and water seeding are all risk factors for severe pest infestations. The final consideration is cost. The costs of using seed treatments vary with several factors, but Dermacor X-100 is generally more expensive than CruiserMaxx or NipsitInside.

For further information or advice on using seed treatments against insect pests in rice, contact your LSU AgCenter parish extension agent or Mike Stout (mstout@agcenter.lsu.edu).
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Research partially funded by the Louisiana Rice Research Board
Research partially funded by USDA-NIFA

Focus

Valerie Dartez

If you call the H. Rouse Caffey Rice Research Station, chances are you will first talk with Valerie Dartez.

She started working as an administrative coordinator at the station in March 2014.

“She is the voice and face of the station. She answers most incoming calls and is the first person to greet visitors,” said Dr. Steve Linscombe, station director.

“She does a very good job with these responsibilities and leaves a very favorable impression of the station on callers and visitors.”

Valerie grew up in Indian Bayou and graduated from North Vermilion High School in 2003. She attended the University of Louisiana at Lafayette and graduated with a bachelor’s degree in biology education.

Valerie taught science at J.H. William Middle School in Abbeville for five years and biology for two years at Abbeville High School.

Her teaching skills have been useful in her current job, which includes answering the phone. She also edits the annual report for station faculty and maintains inventory records.

She enjoys working with her fellow employees at the station. “I really like the people,” she said. “They’re great.”

Linscombe said she quickly became an asset to the station. “Valerie is an outstanding employee and a joy to work with. She is dedicated, intelligent and has excellent work ethics.”

Valerie said staying organized is a priority. “Everything has its place, and I always have a plan.”

She is the mother of a 4-month-old boy, Lane. Her husband, Schuyler Dartez, is a wildlife biologist at the White Lake Wetlands Conservation Area.

When she’s not at work, Valerie enjoys spending time with her family, horseback riding and painting.

Bruce Schultz
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