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H. Rouse Caffey Rice Research Station News

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1909-2021
58 released varieties

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Special Dates of Interest:

- June 29, 2022 – H. Rouse Caffey Rice Research Station Annual Field Day, Crowley, LA

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New Rice Varieties from the LSU AgCenter

The H. Rouse Caffey Rice Research Station has four new long-grain rice varieties planned for release over the next two years. A new Provisia variety, PVL03, will be commercially available to producers in 2022. PVL03 will be offered through Horizon Ag and offers several improvements over the previous Provisia varieties. Significant yield advantages were observed in 2021 of PVL03 over PVL02 across dozens of trials across the south. In additional to offering superior control of red rice and grassy weeds, PVL03 has demonstrated very competitive yield potential with other conventional and Clearfield varieties on the market. In addition, PVL03 does not appear to be prone to lodging and offers significantly improved grain size and disease resistance compared to PVL01 and PVL02.

Two new conventional long-grain varieties have been approved for release, with a goal of seed being commercially available in 2023. The first variety will be named "Avant" and was previously referred to as LA19-2212. Avant has demonstrated consistent yield improvements over Cheniere over the last four years. In the 2021 Date of Planting test, Avant demonstrated an overall average yield advantage of 10-15% over CL153 and Cheniere. Avant is also very early in days to heading, with an average of 7 days earlier than Cheniere and 3 days earlier than CL111. Plot data on ratoon potential appears favorable and on par or better than the existing varieties on the market. Two acres of breeder seed was harvested in Puerto Rico in January 2022 and is currently being shipped to the Rice Station.

Figure 1. Image of milled rice samples of PVL03 and Addi Jo.

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This project was partially supported by USDA National Institute of Food and Agriculture and the Louisiana Rice Research Board.

The second conventional variety will be named "Addi Jo" and was previously referred to as LA20-2126. This variety was bred to contain high levels of amylose, which produces a unique cereal chemistry that is desired by some processors and consumers. High amylose rice is preferred for parboiling and other processing, and feedback from these users has been very favorable. High amylose rice also cooks with a non-sticky texture, which is highly preferred by some of the major rice export markets in Latin America. The cooking properties and grain appearance of Addi Jo has received very positive feedback from many of the rice importers in Latin America. The yield of this variety is competitive with our existing varieties and has been equal to or better than Cheniere over the last three years. It has an excellent grain appearance and offers very strong blast resistance due to the presence of the Pita gene.

A new Clearfield long-grain line (LA19-2026) has been identified for release with a target commercial release of 2024. This line will be marketed by Horizon Ag, likely as CLL19. It has demonstrated excellent yield potential over the last three years of multi-location testing and has consistently been the top yielding semidwarf CL variety across trials. In addition, it has very good milling yields, blast resistance, and lodging tolerance. A 10-acre foundation seed field will be planted at the HRCRRS in 2022 and seed production is planned for 2023.

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Economics of 2022 Rice Production

Highlighting the outlook for the 2022 rice production year is the significantly higher production costs facing producers. Since January 2021, the costs for fertilizer and fuel have increased dramatically. Based on USDA information, the price of urea fertilizer increased by nearly 102 percent from the beginning of January 2021 to the start of February 2022. Similarly, the price of di-ammonium phosphate (DAP) has increased by nearly 63 percent during that same time period while potash has increased by nearly 117 percent. Farm diesel prices have also seen similar increases with USDA reporting average prices in January 2021 in the lower $2.00 per gallon range to prices being reported in February 2022 in the low to mid $3.00 per gallon range.

While fertilizer and fuel costs highlight the increases in production costs, there has been an increase in the costs of other input prices as well. While perhaps not to the extent of the increases seen in fertilizer and fuel, general inflationary pressures along with production shortages and other supply issues have been cited as reasons for the price increases of other input items like pesticides and seed. For example, reported shortages of both glyphosate and glufosinate have not resulted in significantly higher prices but also bring uncertainty about the ability to source these products. Unfortunately, the general market consensus seems to be that, while prices may level out in 2022, there is really no expectation at this time for a significant downturn in input prices. As such, producers will have to plan and manage their operations with these higher production costs.

Looking at LSU AgCenter Enterprise Budget projections for 2022, rice production shows that higher input costs are expected to result in per acre variable production cost that are from 20 percent to nearly 34 percent above levels in 2021 (See Table 1). With the significantly higher production costs, return margins for rice production would project to be significantly lower in 2022 without a similar increase in rice commodity prices. The outlook for rice prices in any given year is often a function of planted acres and overall prospects for demand. In early December at the USA Rice Outlook Conference, most of the major rice producing states were projecting flat to slightly higher acres in 2022. Arkansas projections were for as much as an 8 percent acreage increase in 2022 and California projections called for higher acreage on improved water prospects. Based on the general sentiment that rice acres would go up in 2022, it would be difficult to suggest higher rice prices to a level that would significantly offset the higher production costs. While general inflationary pressures and spillover impacts from higher prices of other commodities may likely support rice prices, there would likely need to be significant improvement in overall rice demand. While domestic demand remains strong, export demand continues to lag previous year's levels and would need to

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Table 1. Comparison of Estimated Per Acre Variable Costs for Different Rice Production Systems.

Production System	2021 Estimate	2022 Estimate	Percent Change
Conventional Variety – Water Seeded – Southwest Louisiana	$497.21	$650.76	30.88%
Conventional Variety – Drill Seeded – Southwest Louisiana	$450.73	$603.25	33.84%
Conventional Variety – Drill Seeded – Northeast Louisiana	$418.78	$550.50	31.45%
Clearfield Variety – Water Seeded – Southwest Louisiana	$539.53	$715.86	32.68%
Clearfield Variety – Drill Seeded – Southwest Louisiana	$503.90	$672.71	33.50%
Clearfield Variety – Drill Seeded – Northeast Louisiana	$472.08	$618.85	31.09%
Hybrid Variety – Drill Seeded – Southwest Louisiana	$658.68	$791.29	20.13%
Average Across All Systems	$505.84	$657.61	30.00%

see significant improvement to push rice prices significantly higher in the face of higher acreage and production expectations.

The one unknown with the acreage projections at the Rice Outlook Conference in December 2021 was how input prices and prices of competing commodities would change over the next couple of months and potentially influence planting decisions. Prices for fuel and fertilizer have increased from early December 2021 to now, and we have experienced significant increases in new crop prices for commodities such as soybeans and cotton. From December 7, 2021, to February 7, 2022, new crop futures prices for soybeans and cotton have increased by 15 percent and 16 percent, respectfully. During that same time, new crop rice futures prices have increased by less than 5 percent, and year-over-year, increases in prices for soybeans, cotton, and corn have increased by between 20 and 30 percent while rice prices have seen markedly lower improvements. The higher input costs along with the higher improvement in prices of other commodities may influence acreage decisions that are different than the ones projected at the Outlook Conference. Also, with reports of supply shortages for certain inputs, the availability of inputs in addition to the higher costs could also influence final acreage decisions. This does not necessarily mean, however, that we will see significantly lower rice acres in 2022 or that rice acres will decrease at all from 2021 levels. In many production areas, the ability to shift from rice production to alternative crops is very limited, while in other areas, yield potential is such that rice continues to be a viable option for producers despite higher production costs and the potential for relatively flat rice prices.

So, with input prices not expected to see significant declines in 2022 and with an outlook for prices suggesting either flat or only slightly higher rice prices, how can rice producers manage this situation? Certainly, if rice prices only see marginal improvements, return margins will be pressured in 2022. Producers will need to put more emphasis on the optimal use and timing of inputs in their operation to ensure greatest efficiency. However, producers need to take care as to only focus on reducing input use and, therefore, total input costs. Reducing input use below needed or required levels could negatively impact overall production levels to a point where overall profitability is reduced. For example, the LSU AgCenter Enterprise budgets assume that 130 units of nitrogen, 40 units of phosphorus, and 60 units of potash would be applied to rice. If a producer were to reduce each one of those rates by 30 percent, at current projected fertilizer prices and $14.80 per hundredweight or $24 per barrel rice prices, this would only be a profitable approach if rice yields fell by less than roughly 2.2 barrels per acre or 356 pounds per acre. Any reduction in yields beyond those levels would result in lower overall profitability. So, the approach to managing these types of conditions should not be an automatic reduction in input use but one that utilizes inputs only at needed levels and takes care to use and apply those inputs in the most efficient and effective manner possible to provide the greatest positive impact.

While there may be some areas where producers may be able to find marginal cost savings, it is certain the total production costs will be higher in 2022. Fortunately, as long as producers can project average or above average production levels, there still projects positive returns above variable production costs (See Table 2). At rice prices at $14.80 per hundredweight or $24 per barrel and 2021 state average yields of roughly 6,900 pounds or 42.6 barrels, positive returns above variable production costs are still projected at the 2022 projected variable production costs in the $650 to $700 per acre. And while there seems to be little hope for lower input costs, there is some outside potential and hope for marginally higher rice prices from current levels that would help to improve these current projections.

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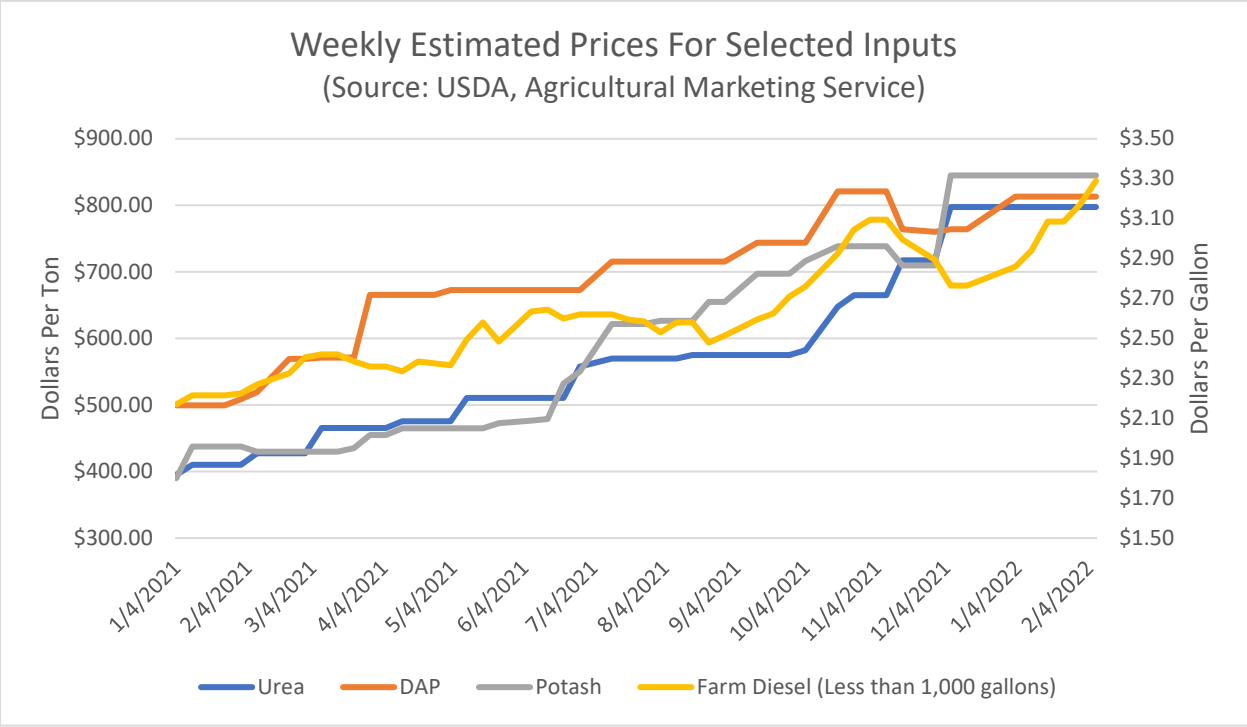
Table 2. Estimated Returns Above Variable Costs for 2022 Rice Production at Various Production and Costs Scenarios (Assumes Rice Price of $14.80 per hundredweight or $24.00 per barrel and a 20 percent land rent share).

Yield Pounds (barrels)	Cost Per Acre $550	Cost Per Acre $600	Cost Per Acre $650	Cost Per Acre $700	Cost Per Acre $750	Cost Per Acre $800	Cost Per Acre $850	Cost Per Acre $900	Cost Per Acre $950
4,000 (19.8)	($76)	($126)	($176)	($226)	($276)	($326)	($376)	($426)	($476)
4,500 (22.2)	($17)	($67)	($117)	($167)	($217)	($267)	($317)	($367)	($417)
5,000 (24.7)	$42	($8)	($58)	($108)	($158)	($208)	($258)	($308)	($358)
5,500 (27.2)	$101	$51	$1	($49)	($99)	($149)	($199)	($249)	($299)
6,000 (29.6)	$160	$110	$60	$10	($40)	($90)	($140)	($190)	($240)
6,500 (32.1)	$220	$170	$120	$70	$20	($30)	($80)	($130)	($180)
7,000 (34.6)	$279	$229	$179	$129	$79	$29	($21)	($71)	($121)
7,500 (37.0)	$338	$288	$238	$188	$138	$88	$38	($12)	($62)
8,000 (39.5)	$397	$347	$297	$247	$197	$147	$97	$47	($3)
8,500 (42.0)	$456	$406	$356	$306	$256	$206	$156	$106	$56
9,000 (44.4)	$516	$466	$416	$366	$316	$266	$216	$166	$116
9,500 (46.9)	$575	$525	$475	$425	$375	$325	$275	$225	$175
10,000 (49.4)	$634	$584	$534	$484	$434	$384	$334	$284	$234



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Insecticidal Seed Treatment Combinations

Chemical seed treatments have become an important part of crop production in the U.S. in recent years. There are often so many products available that farmers are faced with complex decisions on what treatments will be best for their operations. Rice producers can select from four different insecticidal seed treatments in addition to numerous fungicidal seed treatments, micro-nutrients, and growth-promoting treatments. Because of rising input costs associated with fuel, fertilizer, and herbicides anticipated for the 2022 growing season, farmers may be reluctant to spend money on seed treatments before the crop has even been planted. For Louisiana rice producers, however, insecticidal protection against the rice water weevil is a must to prevent severe yield losses.

Fortunately, the available products are all effective against the rice water weevil in addition to a suite of other pests. The registered seed treatments are two diamide insecticides: Dermacor X-100 (chlorantraniliprole) and Fortenza (cyantraniliprole), as well as two neonicotinoids: Cruiser 5FS (thiamethoxam) and NipsIt Inside (clothianidin). Dermacor X-100 is the most effective at controlling rice water weevil and also is the only product that controls rice stem borers. Cruiser and NipsIt both have activity against thrips, aphids, chinch bugs, and colaspis in addition to rice water weevil. The neonicotinoid products, however, provide only partial control of rice water weevil when used alone, and some yield loss is likely. If these products are used in regions with historically damaging weevil infestations, it is recommended that they be applied together with either Fortenza or Dermacor X-100. In fact, the use of multiple seed treatments is justified in many cases.

Recent evidence suggests the use of multiple insecticidal seed treatments is economical despite the added cost. Results from a three-year study at the Rice Research Station revealed economic returns to be greatest on treatments containing either Dermacor X-100 or Fortenza together with one of the neonicotinoid treatments. While the improved returns were consistent, revenue was only slightly improved over the use of Dermacor X-100 alone. Further, this study was done at only a single location and returns may be reduced in regions with lower pest populations. Although it looks like 2022 will be a tough year to spend extra money on multiple seed treatments, there is a good chance you'll recover your investment with the added protection against insects. More information about insecticidal seed treatments can be found in the 2022 Rice Varieties and Management Tips

(https://www.lsuagcenter.com/articles/page1637269982655).

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Focus

Colby LeJeune

Colby LeJeune started his position as Research Associate Specialist with the Rice Station's Breeding program in January 2021. Before starting his position, Colby was a student at Tulane University with a dual major in linguistics and geology. His linguistics studies focused mostly on Cajun French/Creole while his geology studies focused mostly on landforms (geomorphology). He graduated from Tulane in 2020 and moved straight into his position here at the station. While his educational experiences may not seem like the typical path to his current position, Colby's background and previous experiences with the station have made this a successful transition.

A native of Iota, Louisiana, Colby was familiar with rice farming and the importance of the rice industry in the area. His grandparents farmed rice and his parents were involved with farming earlier in their lives, so he grew up with an appreciation of rice farming. That background and his experiences as a student worker all led to his interest in the position. "I started the job right out of college, but I was a student worker here in the breeding program during my last two summers of college," he said. "It was fun and thankfully I got to stick around."

Colby's responsibilities in the breeding program focus on taking hundreds of pairs of different rice varieties and crossing them, which starts the long process of developing new varieties for the rice industry. In addition, he works with planting, growing, managing, and harvesting all the experimental variety lines being grown in the greenhouses as part of the overall breeding program. "Colby oversees our greenhouse and crossing activities and activities associated with grain quality analysis," said Dr. Adam Famoso, Rice Breeder at the Rice Station. "These activities have become more of an integral part of the breeding program and Colby's contributions are critical to the success of the program."

Through his experiences here at the station, Colby says he has learned a lot. "I've learned a lot about plant breeding but also about rice farming in general and other things from talking and working with knowledgeable and hardworking people from other projects on the station," he said. When asked about the most enjoyable aspects of his position, Colby said, "Being able to work with great people, especially during harvest time when everyone is working together. I also like working with and familiarizing myself with the different rice plants."

In his off time, Colby enjoys hiking, hunting, and just spending time outdoors. He says he enjoys looking at, studying, and finding plants and reading up on anything he finds interesting. "Learning about and restoring Louisiana prairies and wetlands is a big free time sink for me at the moment," he says.

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Focus

Blaise Frey

Coming from a family with deep roots in farming and having worked with his father and uncle farming rice, soybeans, and crawfish, working at the Rice Research Station seems like a natural fit for Blaise Frey. After graduating from LSU-Alexandria with a bachelor's degree in Business, Blaise began work as a Research Associate Specialist in the Rice Station's Breeding program in January 2021. A native of Iota and a graduate of Iota High School, the position at the station seemed like a perfect fit for his interest and background. "Blaise is a key contributor in the breeding program, especially with all of the field components," said Dr. Adam Famoso, Rice Breeder at the station. "His background and experience, coupled with his strong work ethic, make him an ideal fit for his position."

His role at the station along with his willingness to help has allowed Blaise to experience many aspects of the Breeding program. His responsibilities and roles have focused on various aspects of the rice production process, including planting progeny rows, water management, and harvesting yield plots. He also has the responsibility of managing the F1 nursery, which is the first generation of new varieties being developed in the breeding lab. He has also traveled to Puerto Rico to assist with the harvest of the winter nursery which plays a huge role in the variety development process. "Blaise is always willing to do what is needed to get the job done, this includes many late days and weekends operating the combine during harvest," says Dr. Famoso.

Working at the Rice Station allows Blaise an opportunity to do what he enjoys doing, which is being involved in production agriculture. That opportunity along with the teamwork and camaraderie within the Breeding program and the station has made his time here enjoyable. "I really enjoy farming and the team at the Rice Station works well together," said Blaise. "We are like a big family.

In his off time, Blaise enjoys hunting, fishing, and watching sports. He also spends time competing in rodeos and calf roping on the weekends.

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