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Special Dates of Interest:

- Dec. 5-7, 2021 – USA Rice Outlook Conference, New Orleans, LA
- June 29, 2022 – H. Rouse Caffey Rice Research Station Annual Field Day, Crowley, LA

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Rice Researchers Highlight Variety Development, Growing Methods at 112th Annual Field Day

More than 400 rice producers and industry insiders gathered for the first post-pandemic field day at the LSU AgCenter H. Rouse Caffey Rice Research Station on June 30.

Following a virtual field day in 2020, this year's in-person event featured a field tour highlighting new developments in rice varieties, pest management and growing practices.

"We have had a great turnout for our first post-pandemic LSU AgCenter rice field day," said Dustin Harrell, resident coordinator of the Rice Research Station. "We can once again give our rice growers and rice industry professionals an in-person look at our collaborative research efforts to create new varieties and best management practices for a thriving and sustainable rice crop here in Louisiana."

For more than a century, rice growers have heard from researchers on how to produce a thriving crop at this annual event.

"We saw today some fabulous research from the staff and faculty at the Rice Research Station," said Richard Fontenot, chairman of the Louisiana Rice Research Board and Evangeline Parish farmer. "We shared some of the research that we're doing with the breeding program because we are looking at different varieties. A lot of our challenges,

as we move forward today, is to offer what our customers and consumers want in Louisiana, in the United States and around the world."

Faculty and staff at the station work year-round developing new varieties and growing techniques that are used across the state and beyond to produce an abundant and sustainable crop.

Adam Famoso, AgCenter rice breeder, talked about a new rice variety called PVL03 that has many positive characteristics, including resistance to blast disease.

"Our growers don't get paid on how resistant a line is, but they're paid on yield and quality," Famoso said. "And disease is a major factor in determining what a given field or variety is going to do in terms of yield and quality."

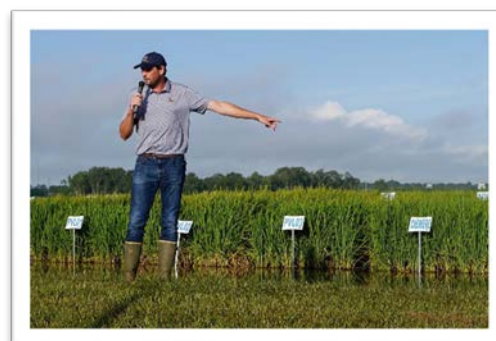


Figure 1. Dr. Adam Famoso talking about different rice varieties and potential varieties in front of a demonstration field.

Harrell told participants of the field tours about growing rice using furrow irrigation, a practice that is growing in popularity.

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“It’s basically growing rice in upland conditions,” Harrell said. “We’re actually digging furrows and then we’re irrigating down those furrows with poly-pipe. Furrow-irrigated rice is really taking off in Arkansas and Mississippi and also in northeast Louisiana.”

Harrell said this new growing method — also known as row rice — helps conserve water, fuel and manpower when compared to producing a crop with traditional growing methods. To attempt to overcome some of the challenges farmers may face with row rice, Harrell and his staff have implemented field trials to further examine nitrogen fertilization practices.



Figure 2. Dr. Dustin Harrell explaining the benefits and challenges of a new growing method - row rice.

Mike Strain, commissioner of the Louisiana Department of Agriculture and Forestry, touted strong economic numbers for the nation’s agriculture sector. He said the U.S. economy regressed about 2.5% while the agricultural economy grew 4.6% within the past year.

“We are making more exports, so it’s driving our numbers,” Strain told the group. “We’ve seen over the last 18 months an increase in the value of our commodities by almost 60 percent.”

To outline some of the inner workings of the international rice trade, Betsy Ward, CEO of the USA Rice Federation, addressed the crowd. She detailed some of the challenges that her organization is working to overcome in the global rice market — including political unrest in Haiti that could lead to food shortages in that nation and a record rice crop in Colombia that is creating export losses for the U.S. rice industry.

“Whether it’s trade wars, multiple hurricanes or the pandemic, we certainly are cognizant of the challenges that you are facing,” Ward said. “It’s been a really trying couple of years, but the fact that we are all here gives me optimism for our rice industry and for our whole country.”

Though obstacles such as the tumultuous 2020 Atlantic hurricane season and the COVID-19 pandemic may have challenged the nation’s agriculture sector, the AgCenter remains dedicated to continuing the vital research conducted at the Rice Research Station and other facilities, said LSU AgCenter Vice President for Agriculture Bill Richardson.

“We continue your research in spite of some very, very difficult circumstances,” Richardson said. “We try to pay close attention to the needs of the rice industry. We want to make sure we move toward the future and provide you the quality of programs that you need to have.”

Richardson added that the rice farmers of Louisiana have funneled more than \$40 million into research conducted at the Rice Research Station.



Figure 3. Dr. Bill Richardson addressing attendees.

Other speakers at the event included state Rep. Clay Schexnayder, speaker of the Louisiana House of Representatives; Kurt Guidry, LSU AgCenter Southwest Region director; Kevin Norton, former assistant chief of the U.S. Department of Agriculture Natural Resources Conservation Service; and Mike Salassi, LSU AgCenter associate vice president.

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H. Rouse Caffey Rice Research Station: A Rich History of Research and Variety Development

Editor's Note: The following is an excerpt of an article originally published in the [Spring 2021 issue of Louisiana Agriculture magazine](#). See this story and much more by visiting the [Louisiana Agriculture web site](#).

Rice production in southwest Louisiana began in earnest during the early 1880s. The rice industry rapidly increased in the region in the years that followed. From 1896 to 1909, rice acreage in southwest Louisiana expanded from 148,000 to 370,000 acres with average rice yields ranging from a low of 855 pounds per acre in 1896 to a high of 1,642 pounds per acre in 1908. Rice industry leaders in the region recognized the importance of rice to southwest Louisiana and began to take measures to ensure the sustainability of the rice industry. The leaders knew that if the rice industry was to maintain a foothold in the region, experimentation and incorporation of improved rice cultivars and agriculture practices would be essential.

In 1908, Louisiana legislators passed a bill authorizing the State Board of Agriculture to establish a rice experiment station in southwest Louisiana. The U.S. Department of Agriculture, also interested in increasing research into rice, joined with the Louisiana Agricultural Experiment Station to establish the rice research facility. While the experiment station and the USDA agreed on the division of work each would do, the state of Louisiana couldn't reach a decision on funding until they could determine what support the rice industry would provide.

Louisiana Gov. J.Y. Sanders appointed a committee, including Experiment Station Director W.R. Dodson, to advise and act on the project. Community interest in the project was high across the region. Eleven different sites with financing for the station were offered by the towns of Crowley, Jennings and Lake Charles — with Crowley coming out on top. The Police Jury of Acadia Parish appropriated \$3,000 for the purchase of a 60-acre farm with a five-room house, while the citizens of Crowley and the surrounding vicinity provided \$3,500 for the construction of necessary buildings and improvements.

The Rice Research Station was established on April 1, 1909, with a mission to:

- Test the introduced varieties of rice for earliness of maturity, quality and yielding power in order to discover and produce varieties better than those being grown.
- Determine the methods of cultivation, including irrigation and drainage, that may increase the yield and quality of grain, control weeds and maintain the fertility of the soil.



An early picture of the original office of the Rice Station around 1909. Provided by Dustin Harrell



First laboratory building and the barn in 1911. Photo provided by Dustin Harrell



A field day at the Rice Research Station. Photo provided by Dustin Harrell

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Thirty-one individually leveed fields, each precisely 1-acre square, were constructed for experiments during the first year. Trials included a date of planting, water depth, rotational, seeding rate, seed quality, row spacing, tillage and variety. Most trials used the popular varieties of the time — Honduras, Carolina Gold and Japan. The Japan rice was a variety called Kiushu, which Seaman A. Knapp of the USDA, who is credited with establishing demonstration farms for teaching science-based techniques, brought back from Japan in 1898.

The Category 3 Grand Isle Hurricane of 1909 reduced yield and lodged rice that first year; however, many of the trials were still salvageable. A foundational system of harvesting certain varieties was put into place to obtain “pure and sound” seed. The harvested panicles were labeled and stacked alone or placed indoors, threshed by hand, sacked and labeled. This was the beginning of the Rice Station’s seed program.

As the industry expanded, so too did the problems that farmers encountered. As such, the demand for research also increased. Expansion was needed to provide additional land for research and seed production. In December of 1930, LSU purchased 51 acres adjoining the original tract to bring the total acreage of the station to 111 acres.

The first variety released from the Rice Station was Colusa in 1917. This variety was obtained from a selection by C.E. Chambliss and J.M. Jenkins from a Chinese variety that was introduced from Italy in 1909. The variety was not widely grown in Louisiana, but it did become an important variety in California. S.L. Wright, a private breeder in Crowley, made a selection from Japanese rice being grown near Jennings in 1907. This selection became the variety Blue Rose, which was released commercially in 1911. Blue Rose was the dominant rice variety being grown in the United States for more than 25 years. The Rice Station released a total of eight varieties from 1917 to 1932; however, it was difficult for a new variety to take away acres from Blue Rose during that time. Growers were anxious to grow higher yielding varieties with improved agronomics, but rice buyers and millers discouraged the change.

The Rice Research Station was heavily cropped for the first 30 to 40 years. Yields were frequently becoming lower each year, and increased weed, disease and insect pressure was observed. Red rice was especially problematic. Some of the increased pressure could be

attributed to the rapid shift of harvesting methods from binders and threshing machines to combines and rice driers. Airplane seeding, fertilizing and spraying also created new avenues of research. In addition, active interest in seed certification presented the station with the mission of producing and maintaining a supply of pure foundation seed for Louisiana rice growers.



This photo is from a collection of historic photos at the H. Rouse Caffey Rice Research Station in Crowley. Taken in 1909, it is most likely a display created by personnel at the then Rice Experiment Station for a local fair, showing the varieties of rice available. Provided by Dustin Harrell

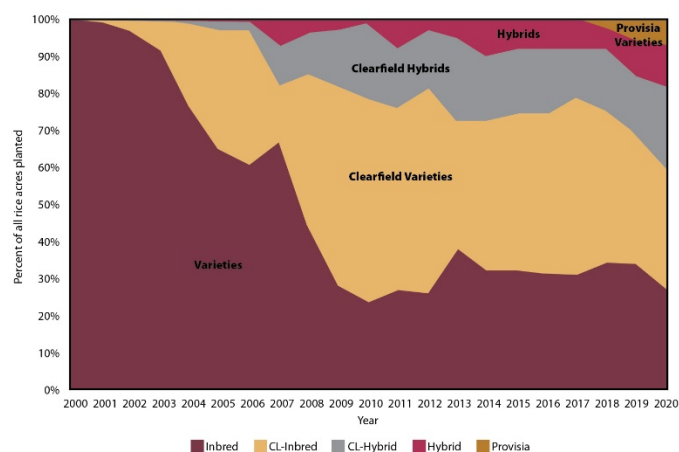


Figure 1. Rice seed technology used from 2000 to 2020 in Louisiana.

Click [here](#) to continue reading more on the rich history and the latest developments at the H. Rouse Caffey Rice Research Station in Louisiana Agriculture magazine.

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Rice Breeding Guarantees Sustainability and Profitability for the Louisiana Rice Industry

Editor's Note: The following is an excerpt of an article originally published in the [Spring 2021 issue of Louisiana Agriculture magazine](#). See this story and much more by visiting the [Louisiana Agriculture web site](#).

The aim of the LSU AgCenter rice breeding program is to improve the sustainability and profitability of the rice industry. The program focuses on all the market classes of rice grown in Louisiana — long-grain, medium-grain and specialty aromatic varieties. In addition to market classes defined by grain type, there are three different herbicide-resistant classes: conventional, Clearfield and Provisia.

Herbicide-resistant varieties are a crucial tool for rice growers to control weeds, allowing for more sustainable agronomic practices, such as no-till and reduced water needs. All of the herbicide-resistant rice varieties grown in the United States are non-GMO and have been developed with conventional breeding approaches. The first herbicide-resistant rice, the Clearfield production system, developed at the H. Rouse Caffey Rice Research Station, was released in the early 2000s, and still widely used. The Provisia rice production system, the second herbicide-resistant rice, was developed by BASF. The LSU AgCenter has released the first three Provisia varieties, starting in the mid-2010s. These systems help prolong the utility of these technologies and provide growers options for their specific operations.

The key traits the breeding program focuses on improving include: yield, milling quality, grain quality, disease resistance, early maturity and standability/lodging resistance. The development of new rice varieties is a continuous process and typically takes seven to eight years. The first step is the selection of rice lines to use as parents for crossing to develop a new breeding population. The goal is to select the best parents with the most desirable attributes to combine and then select progeny that are better than either parent.

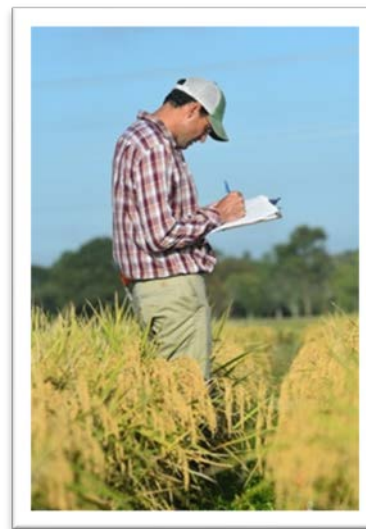
Each spring, the breeding program crosses 70-80 lines and makes 400-500 new crosses in the greenhouse. These resulting populations are immediately planted into the greenhouse, where every plant has its leaf sampled to be tested with DNA markers to ensure the cross was successful. This first generation after the cross is called the F1 generation. Once the population and cross are confirmed, the plants are hand-transplanted into the field

for self-pollination. The self-pollination of these F1 plants gives rise to the F2 generation, for which some populations are sent to the winter breeding nursery in Lajas, Puerto Rico, and some are advanced over the winter in the greenhouse. Populations that are advanced in the greenhouse are often selected via DNA marker-assisted selection, in which each individual plant can be tested for the presence of desirable genes for disease resistance, grain quality or herbicide tolerance.

In the second year of the breeding process, the F3 generation of each population is grown in the field at the Rice Research Station as 100-200 unique rows and evaluated visually for maturity, plant height/appearance and grain size/shape. At this stage, some populations are completely discarded, but most are advanced with 50-100 individual plants being selected and hand-harvested to be advanced to the F4 generation. The F4 generation is typically grown during the third year of the breeding process, and individual lines are selected and hand-harvested to be evaluated for grain quality.

In an average year, the breeding program selects, hand-harvests and evaluates 5,000 individual rows for grain appearance and shape. Based on the grain length, width and chalk values, approximately 2,500 new experimental lines are advanced into the preliminary yield trial.

Click [here](#) to continue reading the intricate details of rice variety development at the H. Rouse Caffey Rice Research Station in Louisiana Agriculture magazine.



Adam Famoso is a rice breeder at the H. Rouse Caffey Rice Research Station, Crowley, LA.

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Adam Famoso, in a greenhouse at the H. Rouse Caffey Rice Research Station, consults with Susan McCouch, a geneticist specializing in rice at Cornell University in New York, as part of the AgCenter rice breeding program. Photo by Bruce Schultz



Rick Zaunbrecher, research associate at the H. Rouse Caffey Rice Research Station, is “rouging” a foundation seed field. Rouging is a critical component of foundation seed production and involves scouting fields to identify and physically remove off-type plants. Photo by Valerie Dartez



Three AgCenter employees are picking panicles from rice plants in a field at the winter breeding nursery in Lajas, Puerto Rico. Left to right are Paola Mosquera, a Ph.D. student working with Jim Oard, professor in the School of Plant, Environmental and Soil Sciences; Brijesh Angira, assistant professor; and Brady Williams, research farm specialist. Photo by Adam Famoso



Brijesh Angira, assistant professor and rice breeder, uses marker-assisted technology in the development of new rice varieties. He is in a lab at the H. Rouse Caffey Rice Research Station, Crowley, Louisiana. Photo by Bruce Schultz

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Louisiana Rice Research Board Recognizes LSU AgCenter Communications Specialist for Years of Service



At the semi-annual meeting of the Louisiana Rice Research Board held on June 30 at the H. Rouse Caffey Rice Research Station, members recognized recently retired LSU AgCenter associate communications specialist Bruce Schultz, Ph.D., (left) for his years of dedicated service to the Louisiana rice industry. As a public relations consultant for the Rice Research Board, Schultz closely followed and publicized the Board's varied actions. "Bruce has been really efficient at strengthening what we do and putting it on paper and

putting it in print," said Richard Fontenot, (right) chairman of the Louisiana Rice Research Board. Schultz's affiliation with the Louisiana Rice Research Board lasted for 17 years. Fontenot presented a plaque to Schultz on behalf of the board that reads, "In recognition and appreciation of outstanding and dedicated service to the Louisiana rice industry." Prior to his retirement, Schultz was domiciled at the H. Rouse Caffey Rice Research Station. (Photo by Derek Albert)

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Focus

Derek Albert

Derek Albert has spent nearly two decades reading and researching LSU AgCenter publications as a member of several Acadiana-area news media outlets. Now, as the LSU AgCenter Southwest Region assistant communications specialist, Albert helps to compose those same articles that proved to be so useful.

Albert has found the perfect amalgamation of agriculture and news coverage working with the AgCenter. Born into the fourth generation of a sugarcane farming family in St. Martin Parish, he says he learned the importance of agriculture as part of the local and state economy. Living and working on the family farm fed his interest in Louisiana agriculture. But his appreciation for agriculture did not hinder his chosen career path to be a journalist—rather it nurtured it.

Early during his high school career, Albert was hired at his hometown newspaper The Teche News where he began editing and writing the paper's farm and garden feature stories. After high school, Albert continued his tenure at the weekly publication but also enrolled at the University of Louisiana at Lafayette where he earned a bachelor's degree in mass communications with a minor in renewable resources. During his time as a college student, he began working as a staff writer for the Crowley-based Louisiana Farm & Ranch Magazine where he continues as a contributing writer and photographer.

In 2012, Albert was chosen as a member of the LSU AgCenter's Agricultural Leadership Development program. Through this program, he said he learned some of the valuable intricacies of the AgCenter and the agricultural economy as a whole.

His professional career continued with tenures as an on-air news reporter and producer for KPEL-FM, and as

a producer for NEWS15 television, both located in Lafayette.

Following the retirement of Bruce Shultz, Albert was hired as a member of the AgCenter's Communications Department. He covers AgCenter events and projects throughout Louisiana's southwest region. He works to promote the research and developments conducted at the Rice Research Station and other AgCenter facilities.

Albert lives in Lafayette with his wife Desiree and their children David and Jolie. When not working, he enjoys playing the guitar and making music with friends and family.



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The LSU AgCenter H. Rouse Caffey Rice Research Station is on Facebook. The page provides timely updates on research conducted at the station as well as other useful information. The page can be accessed at the link below. Simply go to the page and click on LIKE. Updates will then be posted to your Facebook newsfeed. If you are not currently a user of Facebook, signing up is easy and free.

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