



**Dale Bumpers National Rice Research Center  
USDA-ARS  
Stuttgart, Arkansas**



**APRIL 2023**

## **MONTHLY RESEARCH HIGHLIGHTS**

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- **Technology Transfer**
  - ✓ **Interactions with the Research Community**

Rice cultivars from around the world can be grouped into five broad gene pool categories based upon their genetic fingerprint. Dr. Anna McClung, Research Geneticist, provided this information to Dr. Flavio Breseghello at the Brazilian Agricultural Research Corporation (EMBRAPA) on the USDA rice Core collection which consists of over 1700 global rice varieties that have been extensively characterized both for important plant traits and with genetic markers.

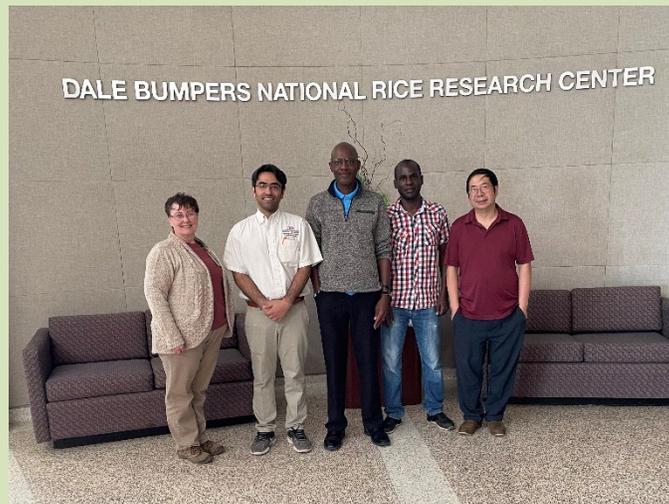
On April 6, 2023, Dr. Shannon Pinson and Mr. Jace Everette provided to Ms. Juno Nanyen Chou, Cereal Chemist at Nutrien Ag Solutions, El Campo, TX, information on how to obtain seed with which to produce in Texas her own supply of grains from four rice varieties used as laboratory standards in determining amylose content in rice grain samples. Also provided (April 17) were grain samples of pre-determined amylose content, which will allow Dr. Chou to accurately determine the amylose content in her newly produced standards.

On April 14, 2023, Dr. Shannon Pinson and Mr. Jace Everette hosted Ms. Joyce Fitzpatrick, Cereal Chemistry technician at Riceland Foods, Inc., Stuttgart, AR who visited the DBNRRC to obtain specific information on proper operation of an Auto Analyzer machine to determine percentage amylose in rice grain samples. Grain samples of four rice varieties with known amylose content were also provided to Ms. Fitzpatrick so she can properly calibrate Riceland's Auto Analyzer machine.

On April 19, 2023, Drs. Shannon Pinson and Anna McClung shared knowledge on rice varietal and grain quality differences and their impact on brewing quality with Dr. Scott Lafontaine and Mr. Bernardo Pontes Guimaraes (doctoral candidate), in the Agricultural, Food and Life Sciences Department at the University of AR, Fayetteville.

On April 20, 2023, Drs. Yulin Jia, Shannon Pinson, Jai Rohila, Jeremy Edwards and Georgia Eizenga along with Mr. Jace Everette met in Stuttgart, AR with Dr. Griffiths

Atungulu, Director of the University of Arkansas Rice Processing Program at the University of AR, and with Drs. Mahfuzur Rahman and Kaushik Luthra, professors in the Grain Processing & Post-Harvest Systems' Engineering Department of Food Science at the Univ. of AR, Fayetteville, AR, for the purpose of sharing knowledge on grain quality attributes desired by the US rice industry, and how they are affected by both variety and environment. Also in attendance were Drs. Alton Johnston, Xueyen Sha, Paul Counce and Mr. Courland Hemphill from the University of AR Rice Research and Extension Center, Stuttgart, AR. After the meeting, Dr. Shannon Pinson gave Drs. Atungulu and Luthra a tour of the DBNRRC.



### ✓ **Rice Germplasm Distributed**

During the month of April, 81 rice genetic stocks were shipped to researchers in Belgium, Canada, Switzerland, and the United States.

The Breeding and Genetics program, under the direction of Dr. Anna McClung, provided seed of diverse rice cultivars for several stakeholders this month including: seven specialty varieties to a foundation seed program in Arkansas, 10 tropical japonica varieties to Clemson University for evaluating for salinity tolerance, three specialty varieties to a rice producer in Maryland, and five specialty varieties to a grower cooperative based in Louisiana.

### • **Stakeholder Interactions**

Dr. Anna McClung provided information on April 4, 2023, to a grower in Guatemala on cultural management practices for some specialty rice varieties.

On April 5, 2023, Dr. Anna McClung provided information and research contacts for a southern grower interested in wild rice.

- **Education and Outreach**

Dr. Anna McClung was recently interviewed for an on-line news article regarding ARS research to develop rice varieties that save water resources in rice production. The article, published April 7, 2023, discussed the impacts of drought in rice production areas across the country. <https://ambrook.com/research/sustainability/california-rice-water-scarcity-sacramento-valley>

The Employee Engagement Committee planned an Earth Day event for Stuttgart and Little Rock locations. Our event included a presentation from Jackie Johnson with Lauren's Garden Nursery. She spoke on gardening and growing fruit trees in our area. We had several different vegetable and fruit plants to choose from to take home. And some were lucky to win one of our bird feeders as a door prize. Employees enjoyed a lunch from Corky's BBQ for our awards program. Three Environmental Excellence Awards were presented for work on recycling activities as part of the awards presentations after lunch. We had a very good turn out with an attendance of 47 people.



**Take Our Children to Work Day** is an educational program where traditionally parents are encouraged to bring their children to the physical workplace. This activity creates opportunities for children to explore the workforce and the diverse mix of future career opportunities. By introducing children to careers at USDA, we can help cultivate their public service motivation and inspire our next generation of leaders in agriculture and society. Several families participated in this year's Take Our Children to Work Day at DBNRRC (April 27, 2023). Employees showed their children their workplaces and labs and had them shadow some of their daily tasks. Alex Humphries took his sons around the facility, showed them tools that are used for maintenance, and went out to see the rice fields. Heather Box and her daughter took water samples (including controls), looked under the microscope for comparison, and pipetted tiny amounts onto slides for examination, they looked at the book louse (lice), and watered the greenhouse. Jonathan Moser's son helped prepare and ship a GSOR rice seed order, watered, and checked for emergence of newly planted rice seeds in

the greenhouse, was shown gas sampling equipment, went to the field to check for emergence of recently planted rice, and checked on the weather stations.



- **New Research Grants**

Dr. Yulin Jia received the 2023 National Plant Disease Recovery System award titled ‘Risk assessment of emerging diseases caused by *Pantoea* spp. on rice, peanut, and corn in the USA’. The objective is to investigate distribution, relatedness and pathogenicity of *Pantoea* in rice, corn, and peanut. Arkansas, Texas, and Oklahoma teamed up with several universities and ARS labs in these states.

**See the web version of all DBNRRC research highlights at:**

<https://www.ars.usda.gov/southeast-area/stuttgart-ar/dale-bumpers-national-rice-research-center/docs/monthly-research-highlights/>