



January
Highlights from the Dale Bumpers National Rice Research Center
Stuttgart, AR

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1. Recently Accepted Publications

Anticipated Product: Plants with resistance to diseases.

Jia, Y. and McClung, A. 2016. First report of multiple races of rice blast fungus *Magnaporthe oryzae* in Puerto Rico. Plant Disease <http://dx.doi.org/10.1094/PDIS-12-15-1391-PDN>. posted 01/19/2016.

The rice nursery located in the Lajas Valley, in the southwestern corner of Puerto Rico, has been used by rice breeders to produce one to two extra generations per year. In the present study, rice blast fungus was identified from rice panicles harvested in Puerto Rico in April 2015. A total of 28 isolates were purified, and 20 of which were determined to belong to 4 races of rice blast, IB1, IB17, IB49 and IB53. Further pathogenicity and molecular analysis revealed that these races were highly similar to races commonly found in the USA mainland. Rice varieties which possess the major *Pi-ta* blast resistance gene cluster will be useful for preventing infections from these isolates. Thus, we demonstrate that the Puerto Rico winter nursery serves rice breeders by offering an opportunity to select for blast resistance as well as other agronomic traits. In addition, as some commercial production of rice is being re-established on the island, our study suggests that the *Pi-ta* gene cluster found in several southern USA rice cultivars, like Katy, will be effective for blast control in Puerto Rico.

2. New Significant Research Collaborations

International

USA

3. New Awarded Grants

4. Technology Transfer

a. Formal Events:

To Non-research stakeholders





To Research Community

January 26, 2016. Drs. McClung and Chen of the DBNRRC scientists participated in the annual US rice breeders meeting at the Texas AgriLife Research Center in Beaumont, TX, and presented the results of genetic markers for disease, agronomic and grain quality traits for the Uniform Regional Rice Nursery samples.

On January 26, 2016, DB NRRC transferred 882 rice blast isolates collected from rice fields of the Southern USA from 2006 to 2014 to the USDA National Center for Genetic Resources Preservation in Ft. Collins, CO. Previously, 630 isolates from historical blast fungus collected from the rice fields of USA from 1959 to 2005 were deposited at the same location. Together, a total of 1512 rice blast isolates have been preserved for use by the researcher community by DB NRRC. These blast isolates are critical genetic resources for studying genetic changes in the rice blast fungus due to changing climate and production systems, and for identifying means to control this disease. The collection, isolation and transfer of these isolates was supported in part by the Agriculture and Food Research Initiative Competitive Grant no. 2013-68004-20378 from the USDA National Institute of Food and Agriculture

b. Informal Contacts:

c. New MTAs

d. Germplasm Exchanged:

During January, 180 rice accessions from the Genetics Stocks *Oryza* (GSOR) collection were distributed to researchers in the US, Austria, Belgium, and Turkey.

5. Educational Outreach

6. Awards/Honors

