New Rice Variety, Roy J, Stands Tall And Produces High Yield

FAYETTEVILLE, ARK.

'Roy J,' a new, very high yielding rice variety developed by the University of Arkansas Division of Agriculture, earned its shot at the seed bins of Arkansas rice growers in part by standing tall through the windiest of weather in field tests over the past five years.

Chuck Wilson, rice agronomist with the Division of Agriculture's Cooperative Extension Service, said the straw strength of Roy J "is the best I have ever seen." He added that in field tests, "I have only seen one or two plots lodge. This is in spite of two hurricanes we had in 2008."

Professor Karen Moldenhauer discusses the rice breeding program during a field day at the University of Arkansas Division of Agriculture's Rice Research and Extension Center near Stuttgart. Improved high-yielding varieties developed by the Division of Agriculture have helped producers steadily increase yields by over 57 percent over the past 20 years.

Breeder seed plots of 'Roy J' at the Rice Research and Extension Center planted April 8 and pictured Nov. 19.

A mid-season, long-grain variety, Roy J also has excellent yield potential and good milling yield, said rice breeder Karen Moldenhauer, professor of crop, soil, and environmental sciences and holder of the Rice Industry Chair for Variety Development.

Foundation Seed of Roy J was available to seed growers for the production of registered seed in 2010. The variety was named in honor of the late Roy J. Smith, who was a weed scientist with the USDA Agricultural Research Service based at the Division of Agriculture's Rice Research and Extension Center near Stuttgart for nearly 38 years.

Moldenhauer and fellow breeder James Gibbons coordinate a breeding program based at the Stuttgart center, which is supported by the Arkansas Rice Research and Promotion Board. They and other scientists screen experimental breeding lines for the genetic traits required for profitable production of high quality rice. Roy J rose to the level that will make it competitive with existing varieties.

"We are confident that many growers will be pleased with the excellent straw strength of Roy J, which makes it highly resistant to lodging, and its very high grain yield potential," Moldenhauer said.

Roy J was put through its paces as breeding line RU0801076, selected from the progeny from a cross made in the year 2000 to combine desired genes from 12 parent lines. Moldenhauer and Gibbons plant seeds from 200 to 300 crosses they make each year and select a few standouts from the resulting progeny plants.

Screening of selections continues over a period of years in the greenhouse and field plots, a winter nursery in Puerto Rico and in the laboratory for DNA markers to narrow the field to just a few breeding lines worthy of entry alongside current varieties in state and regional field trials.

"Yields of Roy J have consistently ranked among the highest in the Arkansas Rice Performance Trials (ARPT) compared to varieties currently grown in Arkansas," Moldenhauer said. In 12 ARPT tests (2007-2009), Roy J, Taggart, Francis, Wells, Cybonnet, Cocodrie and Drew averaged yields of 192, 179, 179, 178, 157, 153, and 159 bushels per acre, respectively.

The Uniform Regional Rice Nursery (URRN) conducted in Arkansas, Louisiana, Mississippi, Missouri and Texas by the USDA Agricultural Research Service and state breeding programs provides additional data on yield and milling.

In the URRN for 2008-2009, Roy J had an average grain yield of 207 bushels per acre, which compared favorably with Taggart, Francis, Wells, Cybonnet and Cocodrie, at 214, 190, 196, 188 and 193 bushels per acre, respectively.

Milling yields of Roy J in the state and regional trials were also comparable to the varieties currently grown in Arkansas. Roy J was similar to the widely planted Francis, Wells and LaGrue varieties in disease resistance or susceptibility in state and regional trials.

The Rice Research and Extension Center, Stuttgart maintains breeder and foundation seed of Roy J. The Division of Agriculture is applying for Plant Variety Protection and a utility patent for Roy J. Δ

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