



USDA Discovery Award Recognizes Rice Research

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The U.S. Department of Agriculture is conferring one of its highest research awards this week upon UC Davis rice geneticist Pamela Ronald and two other scientists, in recognition of their work on developing new rice varieties that can withstand flooding.



Pam Ronald

The Discovery Award, which recognizes outstanding researchers who address key agricultural problems of national, regional and multistate importance, will be presented Dec. 5 at UC Riverside by Gale A. Buchanan, the USDA's undersecretary for research, education and economics. The award will be given to Ronald; UC Riverside genetics professor Julia Bailey-Serres; and David J. Mackill, a researcher formerly of UC Davis and now at the International Rice Research Institute in the Philippines.

Ronald's group isolated the rice genomic region that carries the submergence tolerance trait and demonstrated that one of the 13 genes in the region, called Sub1a, confers submergence tolerance. Mackill's team used this information to precisely transfer Sub1a into popular high-yielding rice varieties of countries in South and Southeast Asia.

"Dave Mackill led the breeding work and Julia Bailey-Serres, who joined the project in 2002, is leading the work to understand how regulation of the ERF genes control the plant's complex response to submergence stress," Ronald said.

The new rice varieties recently passed field tests in Bangladesh and India, and will be made available within two years to smallholder farmers in flood-prone areas whose crop yields are often destroyed by seasonal rains.

"In Bangladesh and India, four million tons of rice are lost to flooding every year, which is enough rice to feed 30 million people for one year," Ronald said.

The USDA funding of the Rice Sub1 Project began in the mid-1990s with two grants to Ronald and Mackill totaling nearly \$490,000. Subsequently, three other USDA grants were awarded to Bailey-Serres and Ronald, bringing the total of USDA funding to the research team to nearly \$1.45 million. Bailey-Serres is the lead recipient of the award.

This will be the second time in a row that USDA's Discovery Award is presented to a UC Davis scientist. The 2007 Discovery Award went to plant sciences professor Jorge Dubcovsky, in recognition of his genetics research focused on enhancing the nutritional value of wheat.

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