

New R&D center to advance rice research in Japan

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Singapore: The agriculture ministry of Japan will set up a center to develop rice strains, using genetic studies, that are flavorful but disease-resistant varieties, to meet local needs. Though, conventional methods to develop new varieties take around 12 years on an average, it is possible to develop such varieties in four-to-five years by adopting DNA marker selective breeding method.

"We have entered a stage of putting rice genes to practical use, rather than merely conducting research on them," a ministry official told Japanese daily *Asahi Shimbun*. Development of such rice varieties starts with growing a significant number of crossbred strains, which after harvest are sampled for researchers to understand the properties of a new variety.

A strain under development is also crossbred with original varieties repeatedly to eliminate unwanted characteristics that are retained during crossbreeding. However, DNA marker selective breeding enables researchers to analyze the genetic code of crossbred strains and identify those that inherited only useful genes, which can further be cultivated. The program refers to past research on rice genes, such as the Japan-led international rice genome sequencing completed in 2004.

The government has already spent \$500 million (50 billion Yen) by March 2013, and identified 140 genes, like those that can make rice more resistant to cold weather or produce more grains. The breeding support center will make improvements on varieties submitted by farming regions and return those incorporating genes that meet specific local needs.

The new center will also analyze genes of local specialty rice in each prefecture. The agriculture ministry says 13 prefectures have already expressed their intention to seek help from the center, says the report published in *Asahi Shimbun*.