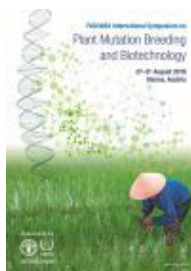


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RICE BREEDING IN NEW EXTREME ASIAN REGION, MONGOLIA

Mongolia is one of the biggest regions of East Asia and its unique and extreme dry and cold climate conditions have been severe constraints for rice cultivation. Rice cultivation was first attempted in 1992 among local farmers, but has been unsuccessful. There is a deep interest and attempts are made to cultivate rice in Mongolia among farmers. Therefore, the Institute of Plant and Agricultural Sciences began investigations on rice cultivation in 2013. Two major experiments were conducted under the project: 1. identification of growable rice variety, and 2. rice mutation breeding. Under the first experiment, a selection of 209 rice varieties were tested during 2013-2018. Among studied varieties Nanatsuboshi, Hoshinoyume, Kendao 9, Kendao 27, Longjing 27, Longjing 48, Longjing 48, Wir 2040, Hokkaido varieties produced grain 0.55-1.01 ton/ha and were of interest. The maturation period of these varieties was 90-105 days after transplanting and 130-145 days after seedling. Rice mutation breeding using M3 generations of Hoshinoyume (100 Gy gamma-ray) and M2 generations of Nanatsuboshi (150 Gy gamma-ray) started in 2016 and advanced to M4 generation (40 panicles and 15 rows selected). In the case of mutant generations of Hoshinoyume, 108 panicles and 36 rows were selected for 2018 evaluation. Several mutant plants of Hoshinoyume and Nanatsuboshi mature 1-6 days earlier than wild types and showed 2 times higher yield than wild types (grain weight in per plant). Rice mutation breeding in Mongolia may allow the expansion of rice cultivation to include Mongolian conditions.

Country or International Organization

Mongolia

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