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IMPROVEMENT OF TRADITIONAL RICE LANDRACES OF CHHATTISGARH (INDIA) THROUGH RADIATION INDUCED MUTAGENESIS

Chhattisgarh state of India is dominated by tribal peoples and known as 'Rice Bowl of India' due to its rich heritage in rice biodiversity. More than 23,500 rice germplasm lines are being conserved and maintained at Indira Gandhi Krishi Vishwavidyalaya (IGKV), Raipur (Chhattisgarh). A total of 300 aromatic fine grain/short slender grains rice varieties with high nutritive value and good grain quality were selected for improvement by reducing height and maturity duration. These rice varieties are very common and famous among the farmers of Chhattisgarh. Mutation breeding activity in rice started during 2013 at IGKV, Raipur (CG). During this period, a total of 23 rice varieties were irradiated with gamma and electron beam. Physical mutagens (Gamma and electron beam) were used to irradiate the 23 rice varieties with 250Gy and 300Gy at Bhabha Atomic Research Centre (BARC), Mumbai (MH) and Raja Ramanna Centre for Advanced Technology, Indore (MP). Field screening and mutation breeding activities were carried out at IGKV, Raipur. A mutagenized population of 23 rice landraces/farmers' varieties are being maintained at different generations (M2 to M8) at field. A total of 12 rice mutants viz., 'Dubraj'(Trombay Chhattisgarh Dubraj Mutant-1, Trombay Chhattisgarh Dubraj Mutant-2, Trombay Chhattisgarh Dubraj Mutant-4), 'Jawaphool'(Raipur Trombay Rice-31, Raipur Trombay Rice-17, Raipur Trombay Rice-18), 'Safri-17'(Raipur Trombay Rice-602, Raipur Trombay Rice-603, Raipur Trombay Rice-605,), 'Luchai'(Raipur Trombay Rice-501), 'Tilkormel'(Raipur Trombay Rice-204), 'MTU1010'(Raipur Trombay Rice-110) and 'Sonagathi'(Raipur Trombay Rice-702,) were developed with early to mid-late maturity with reduced plant height. These mutants are being evaluated in the state and national yield trials for release in Chhattisgarh state as well as in India.

Country or International Organization

India

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Track Classification: Enhancing agricultural biodiversity through new mutation induction techniques