

Genetic analysis of Exotic and Indigenous Rice (*Oryza sativa* L.) Germplasm for Yield and Quality Traits

Mukesh Kumar Sharma, Sanjay Kumar Singh*, Lokesh Gour, G.K. Koutu and D.K. Mishra

Department of Plant Breeding & Genetics Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur (M.P.), 482004 (India)
E-mail: *sanjayivr@gmail.com

Abstract—Genetic variability is the prerequisite for the improvement of any crop regarding yield and quality. To improve the breeding traits a total of 78 exogenous and 32 indigenous germplasm of rice were characterized for seventeen qualitative and twenty five quantitative traits.

Germplasm of rice showed sufficient variation among the lines for the traits under study. Maximum variability was recorded for number of spikelet per panicle and minimum for grain breadth. The values of PCV for all the traits under study were found more than GCV. High phenotypic and genotypic coefficient of variation was recorded for panicle weight per plant. Majority of characters showed high heritability coupled with high genetic advance. Path coefficient analysis revealed that the highest positive direct effect on grain yield per plant was observed for average panicle weight followed by panicle index, harvest index, number of filled spikelet per panicle, plant height, number of productive tillers per plant, hulling % and 1000 grain weight.

On the basis of morphological characterization and quantitative analysis varieties - IR 09N516, IR 71700-247-1-1-2-3, IRRI 104, CT 17130-M-1-2-5-2-2-M, IRRI 123, TME 80518, IR 09N532, R 321, PR 27843-PJ27-2B-9-3-2, RI 1812084-8-1-1, ZH-1, IR-02A127 and IR 10N270 were found excellent for phenotypic acceptability, vigour, panicle exertion, yield and tolerance to lodging.