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Variability and frequency distribution studies in F_2 population of two crosses of rice (*Oryza sativa* L.)

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An investigation was carried out at ZARS, VC Farm, Mandya during 2011-2012 to study the frequency distribution and variability produced in two F_2 populations of rice *viz.*,'IR 64 × BPHR-1' and 'Jaya × BPHR-1' for grain yield and its seven component characters. The F_2 populations of both the crosses showed high PCV and GCV values coupled with high heritability and high genetic advance as per cent of mean for total tillers per plant, productive tillers per plant, grains per panicle and grain yield per plant. Skewness and kurtosis indicated dominance based complementary gene interaction involving large number of genes having decreasing effect in the inheritance of total tillers per plant, days to panicle emergence, productive tillers per plant, grains per panicle and grain yield in both the crosses and for 1000-grain weight in 'Jaya × BPHR-1'. However, duplicate interaction was noticed for panicle length in both the crosses; while, 1000-grain weight showed complete ambi-directional epistasis in the cross 'IR 64 × BPHR-1'.Contrary to this, plant height exhibited dominance based complete interaction for few segregating genes with majority of them having decreasing effect.

Key words : Frequency distribution, Gene interaction, F_2 population, PCV, GCV

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