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RESEARCH PAPER

Studies on variability, heritability and genetic advance analysis in rice (*Oryza sativa* L.) under submergence

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Abstract : The present experiment was conducted with 26 rice genotypes under submergence and normal conditions. Based on eleven characters namely, days to first flowering, plant height, number of tillers per plant, number of panicles per plant, panicle length, 1000 grain weight, photosynthetic rate, stomatal conductance, intercellular CO_2 conc., transpiration rate and grain yield per plant, studies on variability, heritability and genetic advance were made both in submergence and normal conditions. The characters of major contributors in normal condition were number of panicles per plant, number of tillers per plant, intercellular CO_2 Conc. and stomatal conductance. In case of submergence condition the major contributors were number of panicles per plant and 1000 grain weight. High heritability along with high genetic advance as per cent of mean was observed for number of panicles per plant, photosynthetic rate and grain yield per plant in normal and submergence conditions which indicate that these traits are governed by additive gene action. Added, low heritability along with high genetic advance as per cent of mean was observed for intercellular CO_2 Conc. in both normal and submergence conditions. Since genetic per cent of mean was high for both cases, the expected progress under selection could be obtained in the next generation itself and selection of such characters cases might be effective.

Key Words : Variability, Heritability, Genetic advance analysis, Rice, Submergence

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