**R**ESEARCH **P**APER

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## Variability, heritability and genetic advance for yield and yield attributing characters in different local rice (*Oryza Sativa* L.) cultivars

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A field experiment was conducted to study the extent of genetic variability in yield and yield attributing traits under irrigated conditions. Genetic parameters of variability and heritability of 13 characters were studied in 100 genotypes of local rice. Co-efficients of variation were high for number of productive tillers per plant, grain yield per plant, number of tiller per plant, panicle number, plant height, panicle length, test weight, number of spikelet per panicle. The maximum genotypic co-efficient of variability and phenotypic co-efficient of variability were observed for test weight, number of productive tillers per plant, number of spikelet per panicle, amylase per cent and grain yield/plant (g). High heritability coupled with high genetic advance as per cent of mean were observed for days to 50 per cent flowering, test weight, number of spikelet fertility, protein per cent and grain yield/plant (g) will be useful for further breeding programme. Indicated the possibility of yield and quality improvement through adoption of selection procedures.

Key words : Rice, Variability, Quality, Yield

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## INTRODUCTION

Variation is the basis of plant breeding. As success of any crop improvement programme largely depends on the magnitude and range of variability on the available genetic stock. A Land race plays an important role in the local food security and sustainable development in agriculture (Tang et al., 2002). A critical estimate of genetic variability is a prerequisite for initiating appropriate breeding procedures in crop improvement programmes. Hence, it becomes necessary to spilt over-all variability into its heritable and non-heritable components with the help of certain genetic parameters, which may enable the breeders to plan a proper breeding programme. Therefore, the progress of a population mainly depends upon the amount and magnitude to genotypic variability present in the population. Information of genetic variability among growth as well as yield components in rice has been reported by many workers (Vaithiyalingan and Nadarajan, 2007).

One important constraint is less adoptability of newly introduced varieties. In the light if this, existence of sufficient variability especially in local cultivars is considered as prime requirement in the breeding programmes. Estimation of genetic variability present in the germplasm of a crop is prerequisite for making any effective breeding program (Allard, 1960). The development of high yielding long duration rice varieties using javanica shows great potential still remaining unutilized in germplasm (Siddiq, 1989). Keeping in view, the importance of variability in breeding programmes, the present study was undertaken to determine the extent of variability in yield and yield attributing traits of local rice cultivars under irrigated condition.

## **Research Methodology**

The experimental material consisted of 100 local rice genotypes. The experiment was carried out at Agricultural college farm, Navile, Shimoga. The experiment was laid out in a 10 x 10 Simple Lattice Design with two replications which consisted of 100 local genotypes during *Kharif* 2010. Thirty days old seedlings were transplanted at the rate of one seedling per hill with a spacing of 30 x 20 cm. Recommended