

RESEARCH ARTICLE

Genetic variability and association studies for grain yield and yield related traits in rice (*Oryza sativa* L.)

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SUMMARY

In this study correlation, path co-efficient analysis, genetic variability, heritability and genetic advance over mean were studied in 100 germplasm lines evaluated along with 4 checks in augmented Block Design at Agriculture Research Station, Mugad, University of Agricultural Sciences, Dharwad during *Kharif* 2020. Analysis of variance showed significant difference among the treatments at 5% probability level. There is a significant correlation observed in a positive direction for grain yield and panicle length. A significantly positive correlation was observed for panicles per square meter with days to 50% flowering and panicle length. Panicle length (0.38) followed by days to 50% flowering (0.15) and 1000 grain weight (0.08) manifested positive direct effects on grain yield while the negative direct effect on yield was shown by panicles per square meter (-0.026). High GCV was observed for grain yield (58.07) while high PCV was observed for grain yield (29.65) and 1000 grain weight (21.54). Heritability for the traits ranged from 60.88% (days to 50% flowering) to 94.76% (grain yield) with high heritability observed for all the five traits studied. High genetic advance over mean was observed for grain yield (116.62) followed by 1000 grain weight (33.29) while medium genetic advance over mean was observed for other traits studied. Although 1000 grain weight showed positive and non-significant correlation the trait manifested a positive direct effect on yield coupled with high PCV, heritability, medium GCV and genetic advance over mean while grain yield itself manifested high variability, heritability, genetic advance over mean and medium GCV suggesting indirect selection for yield via 1000 grain weight and direct selection of superior lines in the germplasm for grain yield will contribute for crop improvement.

Key Words : Association studies, Grain yield, Yield related traits, Rice

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