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RESEARCH ARTICLE

Genetic variability, correlation and path analysis in wheat (*Triticum aestivum* L.)

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SUMMARY

A study was conducted at Agricultural Research Farm, R.B.S. College, Bichpuri, Agra (U.P.) during *Rabi* season 2007-08. Range, CV, genotypic, phenotypic and environment variance, genotypic and phenotypic co-efficient of variation, heritability, genetic advance, correlation co-efficient and path analysis were performed for yield and its contributing characters in 27 wheat genotypes. Analysis of variance for significant differences was among the all characters except, number of effective tillers per plant and spike length. A broad range of variation was observed for grain yield per ha^{-1}, plant height at maturity and number of grain per spike. Phenotypic variance value for most characters was closer than the corresponding genotypic variance value showing little environment effect on the expression of these characters. The estimated value of broad sense heritability was found between 50.10 per cent (Spike length) and 97.20 per cent (grain yield ha^{-1}). Heritability values were determined as 85.60 per cent, 74.80 per cent, 90.10 per cent, 96.40 per cent, 69.40 per cent, 88.10 per cent, 96.30 per cent, and 87.90 per cent, for number of effective tillers per plant, initiation of spike, days to maturity, plant height at maturity, number of spikelet's per spike, 1000 grain weight, number of grain per spike and grain yield per plant, respectively. High heritability coupled with high genetic advance as per cent over mean was observed for grain yield ha^{-1} , plant height at maturity, number of grain per spike and days to maturity suggesting selection for these traits would give good responses. Grain yield ha^{-1} showed significant positive genotypic and phenotypic correlation with grain yield per plant (rg=0.454, rp= 0.442) and spike length (rg=0.536). Grain yield ha^{-1} (0.938, 0.502) had highest positive direct effect on grain yield per plant followed by 1000 grain weight (0.490, 0.336). It is suggested that these characters can be considered as selection criteria in improving the grain yield.

Key Words : Genetic variability, Heritability, Genetic advance, Correlation, Path analysis, *Triticum aestivum* L.

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