

GENETIC VARIABILITY, CORRELATION AND PATH COEFFICIENT ANALYSIS IN BRINJAL (*SOLANUM MELONGENA*) GENOTYPES

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ABSTRACT: Twenty one diverse genotypes of brinjal were obtained from Indian Institute of Vegetable Research, Varanasi. A wide range of variation was found for all the characters except number of fruits cluster⁻¹. PCV were higher than genotypic coefficients of variability GCV for all the characters. Estimates of heritability (h^2 bs) ranged from (66.88%) for days to flowering to (98.29%) for fruit weight. GA in per cent of mean ranged from (2.95%) for days to (50%) flowering to (67.19%) for fruit weight. High heritability coupled with high genetic advance was observed for fruit weight, fruit girth and fruit length. Moderate heritability coupled with low genetic advance was observed for days to 50% and days to flowering. Genotypic correlations were higher than phenotypic ones in magnitude for all the characters. The character which showed negative association at genotypic level also showed negative association at phenotypic level. Fruit weight showed highly significant and positive correlation with fruit girth at both genotypic and phenotypic levels, respectively. Days to 50% flowering showed highly significant and positive correlation with days to flowering at genotypic and phenotypic levels, respectively. Number of fruits cluster⁻¹ exhibited significant and negative correlation with days to 50% flowering at genotypic level only. Path coefficient analysis revealed that fruit girth and fruit length at both genotypic and phenotypic levels and number of fruits cluster⁻¹ at genotypic level only had exerted maximum direct effect on fruit weight. Plant height, days to 50% flowering, number of cluster plant⁻¹ and number of fruits plant⁻¹ exhibited negative direct effect on fruit weight at both genotypic and phenotypic levels. High estimates of genotypic and phenotypic coefficient of variation, heritability and expected genetic advance indicated that additive gene effects were more important than non-additive gene effects for fruit weight, fruit girth and fruit length, thus selection would be more effective for the genetic improvement of brinjal.

Keywords: *Brinjal, correlation, path coefficient, genetic variability, yield*

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