**R**esearch **P**aper

# Correlation and path analysis in garden pea (*Pisum sativum* L. var. Hortense)

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**ABSTRACT :** An experiment was carried out at experimental farm of Department of Horticulture, Janta P.G. College, Bakewar, Etawah during the year 2007-08. Genotypic and phenotypic correlation coefficients and path coefficient analysis were carried out in garden pea using twenty five diverse genotypes for thirteen quantitative characters. In general, magnitudes of genotypic correlation coefficient were higher than their corresponding phenotypic correlation coefficient, suggesting, a strong inherent relationship in different pair of characters. Analysis of variance indicated highly significant difference was observed in the genotypes for all the characters under study. Green pod yield/plant had positively and highly significant with plant height, days to 1st flower emergence, days to 50 per cent flower emergence, days to 1st pod set, days to maturity of edible green pod, number of primary branches/plant, number of seeds/pod and number of pods/plant at phenotypic and genotypic level, respectively, while pod width at genotypic level only. This indicated that these characters could be considered as criteria for selecting high yielding genotypes of pea.

**KEY WORDS :** Garden pea, *Pisum sativum* L. var. Hortense, Correlation, Path analysis

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**P**ea is an important vegetable crop grown throughout India for its tender and immature seeds which is used as vegetable. It is grown as winter vegetable in the plains of north India. The protein concentration of peas ranges from 15.50-39.70per cent (Davies *et al.*, 1985). Large proportion of peas is processed (canned, frozen or dehydrated) for consumption in off season. The understanding of association of characters is of prime importance in developing an efficient breeding programme. The correlation studies provide information about association between any two characters. The path coefficient analysis provides the partioning of correlation coefficients into direct and indirect effects giving the relative importance of each of the causal factors. The present study was undertaken in order to find out the interrelationships among different characters and the direct and indirect contributions of these characters towards yield.

## RESEARCH METHODS

An experiment was carried out at experiment field of Department of Horticulture, Janta P.G. College, Bakewar,

Etawah during the year 2007-08 to evaluate twenty five diverse genotypes of pea germplasms. The experiment was laid out in Complete Randomized Design (CRD) with three replications. Observations were recorded from ten randomly selected plants of each genotypes in each replication for thirteen characters *viz.,* plant height (cm), days to 1st flower emergence, days to 50per cent flower emergence, days to 1st pod setting, days to maturity of edible green pod, number of primary branches/plant, pod length (cm), pod width (cm), number of seeds/pod, number of pods/plant, 100-seed weight (g), shelling percentages (%) and green pod yield/plant (g). All the recommended agronomic package of practices were performed to get the healthy crop stand. Mean values of ten plants were used for statistical analysis. For calculating, the genotypic and phenotypic correlation coefficients for all possible combination the formula suggested by Johnson *et al.* (1955) and Hanson *et al.* (1956) were adopted. Path co-efficient analysis was done following the formula of Dewey and Lu (1959).