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RESEARCH PAPER

# Correlation and path co-efficient studies in pumpkin (*Cucucrbita* moschata Dutch. Ex. Poir.)

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**Abstract :** Correlation and path analysis studies were carried out on 19 growth paremeters, *viz.*, earliness, yield and quality traits in 57 genotypes of pumpkin (*Cucurbita* spp.). There was the highest significant positive association of fruit yield per vine with average fruit weight followed by vine length, number of leaves per vine, number of seeds per fruit, length of fruit, fruit cavity size, leaf size, hundred seed weight, fruit flesh thickness, number of primary branches per vine, total soluble solids, number of fruits per vine and circumference of fruit. But only number of fruits per vine and average fruit weight had high positive direct effect indicating their true positive and significant association with yield.

**Key Words :** Cucurbits, Pumpkin, Correlation, Total soluble solids, Earliness, Flesh thickness

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## INTRODUCTION

Pumpkin (*Cucucrbita* moschata Dutch. Ex. Poir.) is an important cucurbitaceous vegetable, grown under wide range of agro- climatic conditions all over the world. High productivity, low cost of production, good storability, long period of availability, better transport qualities, excellent response to forcing and comparatively high content of carotene (a precursor of vitamin A) in fruits, have enhanced the importance of this crop. Variability studies provide information on the extent of improvement in different characters, but they do not throw light on the extent and nature of relationship existing between various characters. Therefore, for rational approach towards the improvement of yield, selection has to be made for the components of yield, since there may not be genes for yield *perse*, but only for various yield components (Grafius, 1959). Genetic correlations between two characters arise because of linkage, pleiotrophy or developmentally induced functional relationship (Harland, 1939). In path co-efficient analysis, the correlation co-efficients of the component character are partitioned into direct and indirect effects. Hence, it has greater significance and could be effectively utilized in formulating an effective selection scheme. Hence, knowledge of association between the traits can greatly help in avoiding inversely related compensation effects during selection. Therefore, in the present investigation, correlation and path analysis in pumpkin was carried out during 2009-2010 involving 57 pumpkin genotypes.

## MATERIALS AND METHODS

The investigation comprised of fifty seven genotypes of pumpkin laid out in a Randomized Block Design with two replications during the year 2009-10 with row to row distance of 2 m and plant to plant distance of 0.9 m. The recommended agronomic and plant protection measures were adopted in raising good crop. Observations for nineteen growth, earliness, yield and quality parameters as listed in Table 1 were recorded on three plants of each genotype in each replication and means of these observations in each case were subjected to statistical analysis. Genotypic and phenotypic correlation co-efficients were estimated as

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