

Correlation and path coefficient analysis in fig (*Ficus carica* L.)

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ABSTRACT

The 90 genotypes of fig belonging to Goglevadi village of Pune district (M.S.) were studied for twelve characters. There was less difference between genotypic and phenotypic correlation. Total weight of fruit plant⁻¹ showed significant positive correlation with plant height, spread, volume, weight of fruit, TSS, acidity, reducing sugar, number of fruits plant⁻¹ and negatively correlation with days to 1st harvest. Path analysis indicates that the spread (E to W), reducing sugar, non-reducing sugar, total sugar, number of fruits plant⁻¹ at phenotypic level and reducing sugar, non-reducing sugar, total sugar, number of fruits plant⁻¹, days to 1st harvest, height, TSS and acidity exerted maximum direct effects on total fruit weight at genotypic level. It indicates the importance of these traits while selecting genotypes for improvement in yield of *Ficus carica* L.

Key words : Correlation, Path analysis, Fig.

INTRODUCTION

India's total area under fig cultivation is about 1000 ha of which 400 ha is in Maharashtra, concentrated in the adjoining areas of Pune and Aurangabad. The total mineral content in fig is two or four times that of most other fresh fruits. In Maharashtra, it is seen that there is a considerable scope for improvement in various characters of economic importance. As fig crop is heterozygous in its genetic constitution which makes it to have more variation and modification in size of tree, fruit, colour, shape and taste.

The knowledge of differences in economically important plant characters and their correlation with each other would be of great help in correct selection of genotypes for improvement. However, the correlation coefficient dose not gives any indication about comparative magnitude of contribution made by component characters. Therefore, the genotypic path coefficient analysis as outlined by Dewey and Lu (1959) was carried out to find the direct and indirect effects of yield components on their correlation with grain yield.

MATERIALS AND METHODS

Through intensive survey, orchard located at Goglevadi village Tal. Haveli, District Pune were selected for the present investigation. It consists of 90 plants of fig cv. *Poona fig*, comprised of vegetatively propagated

fig genotypes. The detailed observations for various characters of these 90 plants were recorded for different quantitative and qualitative characters viz. total weight of fruit plant⁻¹, plant height, spread, volume, weight of fruit, TSS, acidity, reducing sugar, number of fruits plant⁻¹ days to 1st harvest, polar diameter and length of pedicel. The analysis of variance was done as per the method suggested by Panse and Sukhatme (1967). The correlation coefficients were calculated according to Johnson *et al.* (1955), while path coefficients were obtained by following method of Dewey and Lu (1959).

RESULTS AND DISCUSSION

The phenotypic and genotypic correlation coefficient for all possible combinations among twelve characters were estimated and presented in Table 1. The total weight of fruits plant⁻¹ had highly significant positive correlation with at both phenotypic and genotypic levels for height, spread, volume, weight of fruit, T.S.S., acidity, reducing sugar and negatively associated with days to 1st harvest.

The height was significantly and positively correlated with spread, volume, TSS, reducing sugar, total sugar, total weight of fruit plants⁻¹. With days to 1st harvest it associated negative direction. TSS content was positively associated with height, spread, volume, acidity, total weight of fruits plant⁻¹.

Direct and indirect effects were calculated both at phenotypic and genotypic levels, considering total fruit weight as dependent characters and are presented in Table 2. It is observed from Table 2 that spread (E to W),

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