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Genetic variability, correlations and path co-efficient analysis in okra [*Abelmoschus esculentus* (L.) Moench]

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SUMMARY

The present study was undertaken on 41 genotypes of okra to assess the genotypic and phenotypic variability, heritability, genetic advance and to determine the nature of association among different yield attributes and their direct and indirect contribution towards yield. Phenotypic co-efficient of variability was higher than the genotypic ones. GCV and PCV were of higher magnitude for fruit yield per plant followed by number of fruits per plant, node at which first flower appear, plant height and fruit weight. Heritability estimates were of high magnitude for fruit length, total fruit yield per plant indicating major role of genotype with less environmental influence. The magnitudinal difference between PCV and GCV estimate was maximum for node at which first flower appear and number of fruits per plant suggesting influence of environment on these traits. Total fruit yield per plant was significantly and positively correlated with number of fruits per plant, fruit weight and plant height. Path co-efficient study revealed that number of fruits per plant had maximum direct contribution towards total yield followed by fruit weight, plant height and days to first flowering. These important traits may be viewed in selection programme for the further improvement of Okra.

Key words : Genetic variability, Path co-efficient, Correlations, Okra

Okra (*Abelmoschus esculentus* L. Moench) is an important vegetable crop grown for its tender green pods, throughout India, Africa, Turkey and other neighboring countries. It is a potential export earner and provides high returns to the farmers.

A successful breeding programme depends upon the extent of genetic variability present in the available germplasm. The knowledge on magnitude of variability and heritability is important to make on effective breeding strategy and ascertain the scope of its improvement. Further the estimation of genetic advance help in deducing the genetic facts.

Information regarding association of characters like growth, earliness, quality yield and its component characters is very useful for plant breeder in developing commercial variety of hybrid.

Hence, an attempt has been made in the present investigation to study the extent of genetic variability, association of different traits, direct and indirect effects of characters based on *per se* performance.

MATERIALS AND METHODS

The experimental material consisted of 41 genotypes of okra collected from different sources were evaluated in randomized block design with three replications at experimental farm of Botany, College of Agriculture, Parbhani during *kharif*, 2007.

Observations were recorded on days to first flowering, node at which first flower appear, days to first picking, number of fruits per plant, fruit length, fruit weight, plant height and total yield per plant each replication on five random competitive plants.

The data collected was subjected to analyse the variability as suggested by Panse and Sukhatme (1985).

Correlation co-efficients were computed by the method suggested by Johnson *et al.* (1955). Path co-efficient analysis was estimated by the method described by Deway and Lu (1959).

RESULTS AND DISCUSSION

Analysis of variance revealed highly significant variation among genotypes for all the characters studied (Table 1).

It was observed that the GCV and PCV were of high magnitude for fruit yield per plant followed by number of fruits per plant, fruit length, node at which first flower appear, plant height and fruit weight (Table 2).

The magnitude of PCV was higher than GCV for all the traits, suggesting the role of environmental variance. The characters *viz.*, days to first flowering and days to first picking exhibited very low GCV and PCV estimates suggesting the narrow range of variation for these traits.

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