

## Selection criteria for increased yield in okra (*Abelmoschus esculentus*(L) Moench)

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### SUMMARY

Sixty-four genotypes of Okra (*A. esculentus*) were evaluated for productivity related traits. Phenotypic coefficients of variability were higher than the corresponding genotypic ones. The fruit yield per plant had highly positive association with fruit length, tapering length, plant height, fruit per plant, width of the fruit whereas days to first flower and first fruiting node length were negatively correlated with fruit yield per plant. Therefore, the positively associated characters could be used for increased yield by selecting early flowering types.

Key words : Okra, Production, Correlation, Coefficient.

Estimates of genetic association along with the phenotypic correlations not only display a clear picture of the extent of inherent association but also indicate how much of phenotypically expressed correlation is influenced by environment. Analysis of the various yield contributing characters and their relationship is necessary for developing reliable selection criteria. Hence, a study was conducted to find out the association of yield contributing characters with seed yield.

### MATERIALS AND METHODS

Sixty-four genotypes of okra were grown in a randomized block design with three replications at the Research Farm at Allahabad Agriculture Institute, Allahabad. The soil of experimental field was sandy loam with low organic carbon and little alkaline in nature. The seed was sown during second fortnight of July by adopting spacing 60x30cm in 3m long rows. The recommended packages of practices were followed. Observations were recorded on ten quantitative characters i.e. days to first flower, first fruiting node length, plant height, number of the branches per plant, number of the nodes per plant, length of the fruit, width of the fruit, tapering length, number of the fruits per plant and fruit yield per plant. The mean values of the selected plants were used for statistical analysis. The genotypic and phenotypic correlations were worked out among different characters according to Searle (1961).

### RESULTS AND DISCUSSION

In the present investigation inter-character correlation coefficients were estimated at phenotypic and genotypic levels. The genotypic correlations were, in general, higher than their corresponding phenotypic correlations (table). This was due to the modified effects of environment on character association at genetic level (Nandapuri et al., 1973). The fruit yield per plant had highly positive association

with fruit length, tapering length, plant height, fruits per plant, width of the fruit and significant association with branches per plant, while number of nodes per plant showed positive but non significant correlation at phenotypic level. Same observation were recorded by Patel and Dalal (1978), Das and Misra (1995) and Dhankhar and Dhankhar, (2002)

It was noted that days to first flower and first fruiting node length were negatively correlated with fruit yield per plant. These results are in conformity with Patel and Dalal (1994) and Kolra & Rastogi (1978). The negative correlation was very much obvious, because selecting early flowering type and lower fruiting height will produce more number of fruits. Number of fruits per plant exhibited positive and significant association with fruit yield, tapering length, plant height, width of the fruit and branches per plant. Tapering length was positively correlated with fruit length, fruit width, plant height and branches per plant but negative correlation with first fruiting node length. Width of the fruit expressed positive association with length of the fruit like earlier report of Reddi *et al* (1985). Fruit length expressed positive association with plant height and branches per plant. Branches per plant showed negative relationship with first fruiting node length. Number of nodes exhibited positive association with plant height, which was much expected, as also reported by Chandra *et al* (1996). First fruiting node length revealed significant positive association with days to first flower. Singh and Singh (1982) revived the correlation in okra in detail and pointed out that when other characters are held constant increase in plant height and shorter inter nodal distance will increase fruit yield. They further emphasized that since only one fruit is borne in one axils in okra, the earliest fruiting node at the shorter distance (inter node) will be helpful in increasing number of fruits per plant, one of the main yield component. Thus the present investigation indicated that higher yield to be correlated with length of the fruit, Tapering length, plant height, fruits per plant, width of the fruit and branches per plant and could be improved by selecting early flowering type.

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