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RESEARCH PAPER

Correlation and path co-efficient analyses in F_2 generation for fruit yield and its attributes in okra [*Abelmoschus esculentus* (L.) Moench]

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Abstract : The present investigation was conducted with F_2 generation of three crosses at fields of Department of Genetics and Plant Breeding, University of Agricultural Sciences, GKVK, Bangalore during summer season 2011. The present investigation revealed that the magnitudes of fruit yield was positively and significantly correlated with fruit weight, fruit length in respect to F_2 generation of C-I, fruit weight and days to flowering in C-II and fruit weight and primary branches in C-III. This indicated that the fruit yield could be improved through indirect selection of these traits in okra. The fruit weight exerted maximum direct effect on fruit yield per plant in all the crosses. In view of positive significant association and maximum direct effect on fruit yield, the trait; fruit weight establishes a conclusive effectiveness of selection.

Key Words : Okra, Correlation co-efficient, Path co-efficient, F_2 generation

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INTRODUCTION

Okra [*Abelmoschus esculentus* (L.) Moench, 2n=130] which is also known as gumbo, lady's finger and bhendi is an annual, often cross pollinated crop of the family Malvaceae. Okra is normally cultivated during summer and rainy seasons and is specially valued for its tender and delicious fruits. It is an important vegetable crop of the tropics and subtropics of the world and has found its place in India since time immemorial. Almost all parts of the okra are economical. The tender fruits of okra are the good source of iodine, iron, calcium and also vitamin C. In addition to fruits, dry seed of okra contains 18-20 per cent oil (Martin and Rhodes, 1983) and 20-23 per cent crude protein (Berry, 1998). The oil is used in soap and cosmetic industry as *Vanaspati* while, the protein is used for fortified feed preparation. The crushed seed is fed to cattle, which is reported to have improved milk production and the fibre is utilized in jute, textile and paper industry. Roasted and grinded seed is used as a coffee substitute.

The correlation measures the mutual relationship between different traits of a plant, it helps to access the best yield contributing traits. Path analysis deals with a close system of variables that are linearly related. It specifies the causes and generally measures their relative importance. Path analysis spilt the correlation co-efficient into the measures of direct and indirect effect and determines direct and indirect contribution to the various characters towards the yield.

MATERIALS AND METHODS

The experimental material in the present study consisted five contrasting parents lines *viz.*, Pusa sawani, Arka Anamika, Pusa A-4, Sel -7 and Sel -10. Three crosses were developed by mating the contrasting parents *viz.*, Pusa sawani × Arka anamika (C-I), Sel-7 × Pusa A-4 (C-II) and Sel-7 x Sel-10 (C-III). The F_1 progeny of these three crosses was raised during *Kharif*

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