

Analysis of genetic variability for yield and its components in sesame (*Sesamum indicum* L.)

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SUMMARY

One hundred and twenty four F_4 families of sesame derived from straight and reciprocal crosses made between E-8 (commercial cultivar) and Tamil Nadu Local (land race) were evaluated during *Kharif*, 2010 to assess genetic variability, heritability (broad sense) and genetic advance for ten quantitative characters. Analysis of variance revealed highly significant difference among the F_4 families for days to 50 per cent flowering, days to maturity, plant height, number of branches per plant, number of capsules per plant, distance from ground to first capsule and number of seeds per capsule. High GCV and PCV were observed for branches per plant, capsules per plant and seed yield per plant. High heritability coupled with high genetic advance as per cent mean was observed for plant height, branches per plant, capsules per plant, capsule length, distance from ground to first capsule, seeds per capsule, 1000 seed weight and seed yield per plant.

Key Words : Sesame, F_4 families, Genetic variability, Heritability, Genetic advance

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Sesame (*Sesamum indicum* L.) is one of the important indigenous oilseed crops. It is mostly grown for its seed. Sesame seed is highly nutritive (oil 50%, protein 25%) and its oil contains an anti-oxidant called sesamol which imparts to it a high degree of resistance against oxidative rancidity (Ashri, 1989). Globally, China and India are the major sesame producers.

In any crop, existence of variability is essential for resistance to biotic and abiotic factors as well for wider adaptability. Selection is also effective when there is sufficient genetic variability among the individuals of a population. Thus, the knowledge on the amount of variation and its heritable

portion present in the source population is pre-requisite for any successful breeding programme aimed at improving yield and other characters. During this study, an attempt was made to compute the proportion of genotypic variability, heritability in broad sense as well as genetic advance with respect to ten quantitative characters.

MATERIALS AND METHODS

One hundred and twenty four F_4 families of sesame derived from straight and reciprocal crosses made between E-8 (a white seeded, an agronomically superior cultivar) and Tamil Nadu Local (a brown seeded land race; TNL) were evaluated along with eight checks in augmented design during *Kharif*-2010 at University of Agricultural Sciences, Raichur, Karnataka. Of one hundred and twenty four F_4 families, one hundred and three families were from straight cross (E-8 x TNL) and twenty one families were from reciprocal cross (TNL x E-8). Observations on ten quantitative characters *viz.*, days to 50 per cent flowering, days to maturity, plant height, number of branches per plant, number of capsules per plant, capsule

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