

# Estimation of Genetic Variability, Heritability and Genetic Advance in Advanced Breeding Lines of Sesame (*Sesamum indicum* L.) in *Kharif*

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Sesame is described as “queen of oil seeds” because of its high oil content ranging from 34-63 per cent (Uzun and Cagiran, 2008), protein (18-25%), vitamin (A, B1, B2, E and niacin), calcium, phosphorus, oxalic acid and excellent qualities of the seed oil and meal (Prasad, 2002). Sesame seed oil has long shelf life due to the presence of lignans (sesamin and sesamol), which has remarkable antioxidant function, resisting oxidation. As a matter of fact, 100 g of seed provide as much as 600 calories of energy. The crop is cultivated either as a pure stand or as a mixed crop with groundnut, millets, cotton and sugarcane. Despite its nutritional value and medicinal importance, average productivity of this important oil seed crop of India is 342 kg of seed/ha, which is far below the average productivity of China (1487 kg/ha) and Egypt (1333 kg/ha) (FAO, 2013). Although sesame is widely used for different purposes, the productivity in Indian subcontinent has been miserably low. Selection for high yielding types with wider adaptability shall help in increasing the production both locally and globally. But the performance of crop is affected by such factors as climatic, nutrients, water availability, inter and intra specific competitions, pest and diseases, as well as socio-cultural and socioeconomic factors. The logical way to start any breeding programme is to assess the existing genetic variability, because, the assessment of variability forms the basis of any crop improvement program. It is necessary to study variability in respect of quantitative characters with reference to genetic parameters such as genotypic and, phenotypic variances, heritability (broad sense) and genetic advance. It is essential to partition the overall variability into heritable and nonheritable components with the help of genotypic coefficient of variation, heritability and genetic advance. In the present study, variability parameters were observed in twenty four advanced varietal lines with three checks were grown during *kharif* 2017 at Regional Agricultural Research station, AICRP (Sesame plant Breeding), Polasa, Jagtial, Telangana state. High genotypic coefficient of variability and phenotypic coefficient of variability was observed for number of branches per plant. High heritability along with high genetic advance as per cent of mean was observed for number of branches per plant, number of capsules per plant and seed yield per plant. Indicating that selection of these characters would be effective for further breeding. Two entries, JCS 3889 (731 kg/ha) and JCS 3287 (722 kg/ha) found numerically highest superior yield over check YLM 66 (627 kg/ha). These entries will be further evaluated in *kharif* for recommendation during *kharif*.