

# Gene Action And Combining Ability For Yield And Its Components In Sesame

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## ABSTRACT

Combining ability was carried out through line x tester analysis for yield and yield attributing traits in sesame. The predominance of *sca* variance for all the traits suggested that dominant and epistatic gene actions were important for controlling these traits. Significant differences among line x tester for plant height, number of capsules per plant, number of seeds per capsule and seed yield per plant indicating the magnitude of non additive variance. The lines, Chandana and JCS-596 were recorded highly significant *gca* effect for seed yield and contributing characters *viz.*, number of capsules per plant, number of seeds per capsule and 1000 seed weight. Among the testers, KMR-74 and Swetha showed high *gca* effect for number of capsules per plant and seed yield per plant. The crosses NIC-8392 x Swetha, Malabaricum x KMR-74, Chandana x Swetha, Rajeswari x KMR-24, JCS-596 x KMR-74, G.Til-3 x KMR-24 and RT-127 x KMR-74 exhibited significant *sca* effect for seed yield per plant. In addition to grain yield per plant, crosses such as RT-127 x KMR-74, NIC-8392 x Swetha and Chandana x Swetha also had significant and positive *sca* effect for different traits such as number of capsules per plant, capsule length, number of seeds per capsule and 1000 seed weight. It was concluded that both additive and non additive gene actions were important in controlling various characters. The best combiners, Chandana, JCS-596, KMR-74 and Swetha could be utilized as parents in future breeding programmes. The crosses NIC-8392 x Swetha, Malabaricum x KMR-74, Chandana x Swetha, Rajeswari x KMR-24 and JCS-596 x KMR-74 could be used for exploitation of heterosis for seed yield and its components.

**Key words :** Combining ability, Gene action, Line x tester, Sesame.