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Studies on gene action and combining ability for yield and its attributing character in mungbean (*Vigna radiata* L.)

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ABSTRACT : A diallel fashion technique was employed in which eight genotypically diverse lines of mungbean [*Vigna radiata* (L.) Wilczek] were crossed among themselves in all possible combinations excluding reciprocals were subjected to combining ability analysis. Combining ability analysis conducted that the mean squares due to general combining ability and specific combining ability were highly significant for almost all the traits indicating importance of both additive as well as non-additive gene effects involved in the expression of all the traits. However, the variances due to general combining ability were lower than specific combining ability for plant height, number of branches per plant, pods per plant, pod length, number of seeds per pod, seed yield per plant, 100-seed weight, dry matter yield and harvest index thus on the basis of ratio of s^2gca and s^2sca results pointing out the preponderance of non-additive gene effects for the traits studied. The general combining ability effects revealed that GJM-1006, GJM-1008 and GM-4 were the good general combiners for seed yield and also good general combiners for most of the traits and parent GM-4 is poor combiner for days to 80% maturity. The crosses viz., GJM-1007 x GM-4, GJM-1006 x GM-4, GJM-1006 x GJM-1007 were found to be good in respect of sca effects for grain yield per plant. These cross hybrids could be utilized for further use in breeding programme for improvement in yield and quality of mungbean.

Key Words: Mungbean, GCA, SCA, diallel analysis, yield.