Gene Action and Combining ability Studies for Yield and Yield Attributes in Single Cross Hybrids of Maize (*Zea mays* L.)

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ABSTRACT

The studies on gene action and combining ability using ten inbreds for grain yield and its components in maize through diallel analysis revealed that the components due to *sca* variance ($ó^2$*sca*) were higher than *gca* variance ($ó^2$*gca*) in all the characters and also the ratio $ó^2$*gca* to $ó^2$*sca* was less than unity, which indicated the preponderance of non-additve gene action in controlling the expression of all most all the traits. Based on both *per se* and *gca* effects, the genotypes BML 7, BML 6 and CM 211 among parental lines were identified as good general combiners for yield and other yield related components *i.e* plant height, ear length, ear girth, number of kernel rows per ear, number of kernels per row, 100-kernel weight. High *per se* performance and significant *sca* effects were exhibited by two hybrids *viz.,* CM 133 × BML 7 and CM 131 × BML 6 which could be exploited in the heterosis breeding programmes.

Key words : Gene action, General combining ability, Maize, Specific combining ability.p