



## RESEARCH PAPER

# Assessment of genetic variability and trait association for yield and its components in bi-parental early segregating generation of maize

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**Abstract :** The present investigation was carried out to understand the co-efficients of variation, heritability, genetic advance, correlation co-efficient and path analysis in  $F_2$  population of maize. The study comprised of 303  $F_2$  progeny plants, parents and  $F_1$  of the cross, CM 111 × DHKN 509 evaluated under un-replicated trial during *Rabi* 2020-21. The observations were recorded for ten traits viz., days to tasseling, days to silking, anthesis-silking interval, plant height, ear height, ear girth, number of kernels per row, pith weight, shelling per cent and grain yield per plant in all the  $F_2$  progeny plants and ten plants each from parents and  $F_1$  and noticed wide variation among the traits studied in the  $F_2$  population. The extent of phenotypic and co-efficient of variation was higher than genotypic co-efficient of variation for all the traits studied. High PCV and GCV was recorded for anthesis-silking interval, number of kernels per row, pith weight and grain yield per plant. High heritability coupled with high genetic advance over mean were observed for anthesis-silking interval, number of kernels per row, pith weight and grain yield per plant suggesting that these traits are governed by additive gene action and can be improved through simple selection. Positive and significant association with grain yield was recorded with number of kernels per row, pith weight, cob girth and shelling per cent. Days to tasseling and anthesis-silking interval exhibited highest direct positive effect on grain yield per plant followed by pith weight and shelling per cent indicating the effectiveness of direct selection, whereas direct negative effects were recorded by days to silking and ear height indicating the effectiveness of indirect selection.

**Key Words :** Maize, GCV, PCV, Heritability, Genetic advance, Correlation, Path analysis

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