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## RESEARCH PAPER

# Genetic variability and trait association studies in Indian mustard (*Brassica juncea*)

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**Abstract :** Thirty six Indian mustard genotypes were evaluated to estimate variability, heritability and genetic advance in yield and yield components at Anand Agricultural University (Gujarat). The experiment was conducted using a Randomized Complete Block Design with three replications. Significant genotypic variability among the test genotypes was observed for all traits studied. Higher values of phenotypic co-efficients of variation and genotypic co-efficients of variation were observed for number of secondary branches per plant, number of siliqua per plant and yield per plant indicating the existence of higher magnitude of variability among the test genotypes for effective selection in respect of the above characters. Higher heritability estimates values were recorded for number of siliqua per plant, yield per plant, number of seeds per siliqua, length of main branch, days to 50 per cent flowering, 1000 seed weight, number of secondary branches, Siliqua length, protein content and plant height, indicating these traits were less influenced by environmental factors and selection for them is fairly easy. Higher values of expected genetic advance as per cent of mean was recorded for yield per plant, number of siliqua per plant, number of secondary branches, number of seeds per siliqua, length of main branch, siliqua length, and 1000 seed weight, indicating that selection would be more useful to improve these traits. High heritability values coupled with high genetic advance was observed in case of number of siliqua per plant, plant height, length of main branch and yield per plant, indicating that selection for these traits would be effective in Indian mustard improvement. Inter-character association studies were also conducted. The characters which showed positive significant genotypic and phenotypic correlation with yield were plant height, length of main branch and number of siliqua per plant. These characters are playing important role in indirect selection for yield.

**Key Words :** Heritability, Indian mustard, Genetic advance, Genotypic variation, Phenotypic variation, Tomato, Yield

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