

Induced genetic variability and divergence through physical and chemical mutagens in M_3 generation of green gram (*Vigna radiata* L. Wilczek)

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ABSTRACT : An experiment was carried out to evaluate mutant population for variability and divergence in M_3 generation during *kharif* 2009. Higher magnitude of phenotypic coefficient of variation (PCV), as well as genotypic coefficient of variation (GCV), high heritability coupled with high genetic advance as per cent of mean, were recorded for number of clusters per plant, number of primary branches, seed yield per plant and number of pods per plants, suggesting additive gene effects and selection may be effective for these characters for yield improvement. Fifty mutant lines along with parent, formed eight clusters where cluster VII emerged as the largest one comprising 10 mutant lines and the cluster VIII as the smallest one containing three mutant lines. The maximum inter-cluster distance was observed between clusters I and VIII, suggesting that the selection of parents for hybridization from the diverse clusters in order to get a broad spectrum of variability. Estimation of genetic divergence among mutant lines in M_3 generation has immense bearing on identifying potential mutant lines, which may produce a broad spectrum of variability with transgressive segregants following hybridization.

Key Words: Green gram (*Vigna radiata* L.), variability, genetic divergence, inter-cluster distance.