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RESEARCH PAPER

Assessment of genetic diversity of chickpea (*Cicer arietinum* L.) genotypes using D^2 statistics

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Abstract : The present investigation consists of 35 genotypes of chickpea including one check, these genotypes were obtained from ICAR – Indian Institute of Pulses Research, Kanpur, U.P. The experiment was conducted during *Rabi,* 2020 at Department of Genetics and Plant Breeding, Sam Higginbottom University of Agriculture, Technology and sciences, Prayagraj (Allahabad), in RBD having three replications. The data was recorded on 13 characters to study the variability, heritability, genetic advance, genetic advance per cent mean and genetic divergence. Analysis of variance revealed that there was considerable genetic variability in the available germplasm for all the characters studied. Per se performance for grain yield and its components depicted that genotypes Phule-4-5, was found best followed by RVG-202, ICC-244263, NEC-799, JG-24 and PUSA-362(Check). A close perusal of variability co-efficients revealed that the difference between GCV and PCV was indicated little influence of environment on the expression of the characters studied. High estimates of GCV and PCV were recorded for seed yield per plant, seed weight, no of seeds per plant, no of pods per plant, biological yield per plant, no. of seeds per pod and harvest index. High heritability in conjunction with high genetic advance as per cent of mean was observed for No. of seeds per plant, Seed weight, no of primary branches per plant, no of seeds per pod, seed yield per plant, no of pods per plant, biological yield per plant. Divergence analysis revealed that highest inter cluster distance (140.42) was found between clusters I and II indicates that there is ample scope for selection of better parents.

Key Words : Chickpea, Genetic divergence, Genetic variability, Mahalnobis D^2 statistics

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