



RESEARCH PAPER

Genetic diversity studies for yield attributing characters in chickpea (*Cicer arietinum* L.) germplasm and their clusters

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Abstract : Genetic diversity is a prerequisite for undertaking any crop breeding programme for the development of high yielding crop varieties to enhance the national food production for the food security. Protein is an important component in the human diet, which is obtained for the vegetarian people from the pulses. Chickpea is an important source of protein for the Indian and African population. Therefore, breeding for high yielding chickpea varieties is a continuous process whose success is dependent on the availability of genetic diversity in the chickpea germplasm. In the present studies forty one genotypes of chickpeas were grouped into twelve clusters. The cluster I was with the highest number of genotypes (23) followed by cluster IV (09), II, III, V, VI, VII, VIII, IX, X, XI and XII which had only 1 genotype in each cluster, respectively. The intra cluster distance (D₂) ranges from 68.72 to 90.06 while the inter cluster distance (D₂) ranges from 49.00 to 1217.31. The maximum inter-cluster distance (D₂ = 1217.31) was observed between cluster VI and cluster XII followed by cluster XII and VIII (D₂ = 1069.94), cluster VI and cluster X (D₂ = 962.24) and cluster V and cluster VI (D₂ = 919.90). It was observed that, seed yield per plant (42.20%) contributed highest for divergence followed by plant height (16.83%), 100 seed weight (16.34%), days to maturity (6.83%), number of pods per plant (5.37%), number of primary branches (4.51%), number of secondary branches per plant (3.05%), harvest index (2.20%), number of seeds per pod (2.07%) and days to 50% flowering (0.61%).

Key Words : Chickpea, Genetic-diversity, Yield attributing characters, Clusters

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