

ANALYSIS OF VARIABILITY FOR ECONOMICALLY IMPORTANT TRAITS IN CHICKPEA (*CICER ARIETINUM L.*)

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ABSTRACT

Chickpea is the premier pulse crop of India grown on about 8.25 million ha. area with a production of 7.05 million tones, which accounts for 75% of the world chickpea production. In Karnataka, the area under chickpea is around 6.50 lakh ha. with a production of 3.1 lakh tonnes at an average productivity of 620kg/ha. However, the overall production and productivity of the country is much lower than the other countries. The success of chickpea improvement programme largely depends on the wealth of the genetic resources and are the most valuable and essential basic raw material to meet the current and future needs in chickpea crop improvement programme. The present investigation consisted of one hundred and seventy nine chickpea genotypes were evaluated for genetic variability in qualitative and quantitative traits of economic importance in simple lattice design with two replications. Analysis of data revealed that the genotypes exhibited highly significant differences for days to 50 % flowering, plant height (cm), number of primary branches, number of pods per plant, days to maturity, 100 seed weight (g), harvest index and grain yield per plant(g). A considerable variation between genotypes for qualitative traits such as early plant vigour, growth habit, seed colour, seed shape and testa texture was also recorded. The grain yield showed highly significant positive association with number of pods per plant, harvest index, number of primary branches, plant height, and number of seeds per pod at phenotypic level. However, days to maturity was negatively correlated with grain yield. Genetic variability for plant height, number of primary branches, number of pods per plant and 100 seed weight respectively ranged from 23.2–49.6 cm, 1.8–5.6, 12.4–66.4 and 9.0–30.0. Whereas grain yield per plant varied from 1.7–30.0g, and harvest index ranged from 0.02–0.46 while the variation for days to flowering was in the range of 44.0–76.0 and 89.0–114.0 for days to maturity. The variation revealed in this study would be exploited in breeding programs aimed at development of high yielding genotypes.

KEYWORDS: Chickpea *Cicer arietinum L.*, Environmental Variability, Fertilizing Crops