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MORPHOLOGICAL AND AGRONOMIC RESPONSE TO DROUGHT STRESS OF CHICKPEA (*CICER ARIETINUM* L.) GENOTYPES UNDER RAINFED CONDITIONS

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Abstract

A field experiment was conducted to study morphological, yield and yield parameters in chickpea genotypes under rainfed conditions. The experiment was laid out having 16 chickpea genotypes representing both groups of cultivated species *viz*., *desi* and *kabuli*, with varying degree of drought tolerance. The results revealed significant differences among the genotypes studied with respect to specific leaf area (SLA), leaf area index (LAI), leaf area duration (LAD), flowering, dry matter production, grain yield and yield parameters. The genotype BG-1092 recorded significantly higher yield (1599 kg/ha), which was followed by ICC-4958 (1279 kg/ha). The lower yields were obtained by ICC-10943 (546 kg/ha) and ICC-10420 (560 kg/ha). Similarly, yield components were significantly higher in BG-1092 and ICC-4958 compared to other genotypes. The lower yielding genotypes, ICC-10943 and ICC-10420 recorded lower values of different morphological and yield parameters. Correlation between grain yield and other parameters indicated significant positive correlation of yield with number of pods per plant (r = 0.94), test weight (r = 0.73), dry matter accumulation in pods (r = 0.98), SLA (r = 0.92), LAI (r = 0.98) and LAD (r = 0.98). Number of seeds per pod (r = -0.15), days to flower initiation (r = -0.18) and days to 50 per cent flowering (r = -0.25) were negatively correlated with grain yield but were non-significant.

Key words : Chickpea, Dry matter, Grain yield, Harvest index, Leaf area index.