



Morpho-physiological characterization of chickpea (*Cicer arietinum* L.) genotypes

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Abstract : Thirty two chickpea genotypes were evaluated in RBD with two replications at Mahatma Phule Krishi Vidyapeeth, Rahuri, dist. Ahmednagar (M.S.) during *Rabi*, 2009 for Morpho-physiological characterization. The observations on different plant characters such as morphological, physiological, dry matter accumulation and partitioning, phenological and generative growth and sink capacity were recorded. Partitioning of total dry matter between the vegetative and reproductive plant parts played an important role in determining processes. Studies on leaf area revealed a good indicator for increasing photosynthetic efficiency of plant. The photosynthetic rate, transpiration rate and stomatal conductance were highest at 50 per cent flowering and decreased after 15 days of 50 per cent flowering. The highest yield was recorded by the genotypes, Digvijay, Vijay, ICC-13219, ICC-15868, ICC-1579 and ICC-4593. The most important yield attributes were pod number per plant, grain number per pod and 100 seed weight. These appeared to be the most important characters to determine sink capacity. These genotypes exhibited appropriate behaviour for dry matter production and its distribution in component parts of plant, rate of protosynthesis, transpiration, stomatal conductance and water use efficiency. Therefore, it can be concluded that the significant variation in yield could be seen in different genotypes due to their differential behaviour in respect of growth, development, phenology, dry matter production potential and translocation of photosynthates from source to sink. In high yielding genotypes the photosynthetic rate, number of pods per plant, seeds per pod, yield per plant, harvest index etc. were observed to be the major yield contributing characters.

Key Words : Morpho-physiological traits, Physiological parameters, Generative growth, Sink capacity

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