

4th International Conference on

# PLANT SCIENCE

March 28-29, 2024 | Webinar

## Genetic variability and stability of Desi chickpea (*Cicer arietinum* L.) genotypes under late sown terminal heat stress conditions

Chetariya C P

Lovely Professional University, India

Given the global climate change and frequent episodes of high temperature, globally legume crops including chickpea are receiving serious challenge of yield loss across the globe. Therefore, to sustain chickpea production breeders exploiting existing germplasm resources which can withstand drastically happening and fluctuating abiotic stresses like terminal heat and draught. A wide range of genetic variability for various phenological traits and yield related traits were recorded in 71 chickpea genotypes during normal and late or terminal heat stress sown conditions.

The analysis of variance for all the environments revealed highly significant differences among the mean square due to genotypes for all the characters. The range of variation was comparatively wider in late sown condition than in normal sown conditions. The differences between phenotypic and genotypic coefficient of variation (PCV and GCV) were not substantial. High heritability coupled with high/moderate genetic advance expressed as percentage

of mean were exhibited by hundred seed weight, seed yield/plant, number of pods/plants, plant height, reproductive phase duration, number of primary branches/plant and days to 50 % flowering under normal as well as late planting. So, these traits can be used as selection indices to improve seed yield in high temperature sown condition as well as timely sown condition.

The pooled analysis of variance over dates of sowing (environments) were computed following Eberhart and Russell (1966) model. Genotype x environment interactions was highly significant for most of the characters except no. of primary branches/plant when tested against error mean square. G x E (linear) component was significant and higher than non-linear component for days to 50 % flowering, days to maturity, number of pods/plants, hundred seed weight and seed yield per plant. From the present study, five genotypes viz., ICC 14778, GJG 6, ICC 6579, ICC 8950 and ICC 10945 were highly stable for seed yield across the environments.

### Biography

Dr. Chetariya Chana P. is an Assistant Professor of Genetics and Plant Breeding at School of Agriculture, Lovely Professional University, Phagwara, Punjab. He holds B. Sc. (Hons.) Agriculture, M.Sc. (Agri.) and Ph.D. in the subject of Genetics and Plant Breeding working respectively on genetic diversity of bottle gourd and heat tolerance in Desi chickpea at Junagadh Agricultural University, Junagadh, Gujarat, India. He has an experience of working on various roles like Senior Research Fellow (SRF), Assistant Seed Certification Officer (ASCO), GSSCA, Junagadh- 2 Years. He has published 27 research papers, 01 Book, 02 Book chapters, 03 conference papers, 02 review articles and 02 popular articles in high impact factor journals of national and international repute. He has presented 03 articles at various international conferences. He has guided 6 M.Sc. students and 4 on going under him. He is currently working on development of resilient varieties of legumes and minor millets for food security, sustainable agriculture and farmers welfare.