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Assessment of variability and drought parameters in F2-3 Progenis of cross between ICC13124 And WR-315 in Chickpea (Cicer arietinum L.)

Shivakumar M.S, P. M. Salimath and Suma S. Biradar
Department of Genetics and Plant Breeding,University of Agricultural Science,, India.

Among the pulses, chickpea (Cicer arietinum L.) is the third leading grain legume in the world and first in the South Asia. Majority of chickpea crop growing area falls under semiarid tropic (SAT) region of the world. The crop faces terminal drought, as seed filling takes place under increasing temperature and decreasing soil moisture. With the objective of isolating best drought tolerant lines from segregating generation, we screened 575 F2 derived F3 progenies from the cross between ICC 13124 and WR 315 of chickpea under drought stress and irrigated condition. ICC 13124 is a drought tolerant parent and WR-315 drought susceptible parent. 575 F2 derived F3 progenies were evaluated for separately for yield components and drought tolerance. Assessment was done for variability, heritability, Genetic Advance over mean (GAM) and drought parameters like Tolerance to Drought Stress (TDS), Mean Productivity (MP), Drought Susceptibility Index (DSI) and Drought Tolerance Efficiency (DTE). Among the nine quantitative characters studied it was noticed that seed yield per plant showed highest reduction of 35.10 per cent. Under drought situation the coefficient of variability was very low for days to fifty per cent flowering, moderate for traits like plant height and test weight. For most of the productivity related traits like plant height, number of branches, number of pods and seeds per plant, hundred seed weight and seed yield high heritability coupled with high GAM was observed. The lines 389 and 491 were observed as the best tolerant line to drought stress environment under the field condition with respect to both yield and drought parameters.

Biography

Shivakumar M S Ph.D scholar in Department of genetics and plant breeding, UAS, Bangalore. He received his M.Sc (Agri) in Genetics and Plant Breeding from University of Agricultural Sciences, Dharwad, Karnataka, India. He has published 4 research articles in national journals, 2 abstract and 1 review paper in national conference and few are in pipeline of publication in international journals. Research interest- Breeding for stress resistance in crop

shivakumarms.gpb@gmail.com