

Combining Ability Analysis of Quantitative Traits in Chickpea (*Cicer arietinum* L.)

V Jayalakshmi and A Trivikrama Reddy

Regional Agricultural Research Station, Nandyal – 518 502, India

ABSTRACT

Three lines and six testers were utilized for combining ability analysis in chickpea to generate information on nature of gene action and to identify potential general and specific combiners for important quantitative traits during *rabi* 2008. Higher estimates variance components due to *gca* for plant height and harvest index and those due to *sca* variance for number of pods were obtained. Both *gca* and *sca* components were of equal magnitude for root length, number branches, 100 seed weight, seed yield and biomass indicating the role of additive and non-additive gene action in the inheritance of various quantitative traits in chickpea. JAKI-9218, JG-74 and WR-315 were good general combiners for seed yield and other traits. Two promising crosses NBeG 1 X WR 315 and JAKI-9218 X ICC 12479 with significant *sca* effects were identified for further exploitation. To harness different gene effects, diallel selective mating or biparental mating followed by pedigree method of selection may be followed to recover desirable transgressive segregants for yield and other attributes in the breeding material studied.

Key words : Chickpea, Combining ability, Gene action, Line x Tester analysis