

Heterosis and Combining Ability Studies by Line x Tester Analysis in Pigeonpea (*Cajanus cajan* (L.) Millsp.)

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ABSTRACT

In a line x tester study significant heterosis over check variety LRG-30 was exhibited by the crosses viz., ICPL-15225 x ICPL-8863, LRG-41 x ICPL-87119 and LRG-41 x PRG-158 for seed yield and its attributing traits i.e., pods per plant, seeds per pod, pod length and 100-seed weight. The total genetic variation was found due to non-additive type of gene action for all characters. GCA effects revealed that among the lines ICPL-15225 and LRG-41, while in testers ICPL-87119 and ICPL-8863 can be considered as good general combiners for most of the traits. The hybrid combinations viz., ICPL-15225 x ICPL-8863, LRG-41 x PRG-158 and ICPL-15225 x ICPL-87119 exhibited significant *sca* effects coupled with high *per se* performance for yield and yield attributes. These cross combinations can be potentially utilized in future breeding programmes.

Key words : Combining ability, Heterosis, Pigeonpea.