ABSTRACT: An experiment was conducted to estimate the combining ability using three females [Cytoplasmic-Genetic Male Sterile (CGMS) Lines], 18 males (testers) and their 54 hybrids developed through line x tester mating design in three diverse seasons (environments). Result of analysis of variance for means revealed significant differences for all the twelve characters. Combining ability analysis over environments revealed importance of both additive and non-additive components. Close agreement between GCA and per se performance of parents was observed for most of the characters studied. Combination having high per se performance also had high SCA effects and involved at least one good general combining parent. The female parents 28A and 86A and among male parents, KR 125, KR 191, KR 196, PMSC-43, GJ 38, GSF 5 and CSV 21F were good general combiners for grain yield and its component traits. While considering the SCA effects and per se value, 10 hybrids were best for grain yield and component characters. All these hybrids were combination of parents having either good x good or good x poor GCA for grain yield.

KEY WORDS: Combining ability, Line x tester, Sorghum, Sorghum bicolor


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