

RESEARCH PAPER

ADVANCE RESEARCH JOURNAL OF
C R P
IMPROVEMENT
Volume 7 | Issue 1 | June, 2016 | 116-120
••••• e ISSN-2231-640X

DOI:
10.15740/HAS/ARJCI/7.1/116-120
Visit us: www.researchjournal.co.in

Gene action studies over different environments in sorghum [*Sorghum bicolor* (L.) Moench]

■ B.H. KALE AND R.T. DESAI¹

AUTHORS' INFO

Associated Co-author :

¹Department of Genetics and Plant Breeding, N.M. College of Agriculture, Navsari Agricultural University, NAVSARI (GUJARAT) INDIA

Author for correspondence:

B.H. KALE

Department of Genetics and Plant Breeding, N.M. College of Agriculture, Navsari Agricultural University, NAVSARI (GUJARAT) INDIA
Email: bhushan.kale@nau.in

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*

How to cite this paper : Kale, B.H. and Desai, R.T. (2016). Gene action studies over different environments in sorghum [*Sorghum bicolor* (L.) Moench]. *Adv. Res. J. Crop Improv.*, 7 (1) : 116-120, DOI : 10.15740/HAS/ARJCI/7.1/116-120.

Paper History : Received : 20.02.2016; Revised : 20.04.2016; Accepted : 17.05.2016