Heterosis and line x tester analysis of combining ability in kharif sorghum with special reference to grain mold (*Sorghum bicolor* (L.) Moench)

Ambika More, H V Kalpande, R L Aundhekar, S K Chavan, V S Patil and S S Jangampalli
Vasantrao Naik Marathwada Agricultural University, India

Present investigation was involved 83 genotypes (9 lines, 7 testers, 63 hybrid and 4 checks) for heterosis and GCA and SCA estimation considered for the development of high yielding and grain mold tolerance cultivars by using line x tester mating system were sown in randomized block design with two replications. Among the hybrid PMS 37A x RS 29 recorded maximum grain yield with heterosis over the mid parent, better parent and standard check respectively. This cross found to be superior in terms of days to maturity, plant height and grain yield. It was followed by PMS 29 x KR 200, PMS 9A x KR 191, PMS 6A x KR 199 and PMS 28A x KR 192. The components of variances due to general combining ability (GCA) and specific combining ability (SCA) revealed that variances due to specific combining ability were larger than general combining ability for all the characters except dry fodder yield plant-1, indicating the predominance of non additive gene action. Group mean indicate that crosses involving PMS 37A, PMS 28A and PMS 29A as female and KR 199, C 43 and RS 29 as males exhibited higher grain yield. In relation to grain mold attributes the crosses involving PMS 7A, PMS 8A and PMS 9A as females and KR 199, KR 192 and IB 12 as males exhibited the higher values for almost all the attributes.

**Keywords:** Sorghum, relative heterosis, GCA, SCA, line x tester analysis.