

RESEARCH ARTICLE

Genetic studies in pearl millet (*Pennisetum glaucum* L.)

■ S. B. Borgaonkar, J. E. Jahagirdar, D. K. Patil and H. V. Kalpande

SUMMARY

The present investigation on “Studies on heterosis for yield and its components in pearl millet (*Pennisetum glaucum* L.)” was conducted during *Kharif*-2020, at Department of Agriculture Botany, Vasant Rao Naik Krishi Vidyapeeth, Parbhani, National Agricultural Research Project, Aurangabad and College of Agriculture, Golegaon. The experimental material included in the present study comprised of five females (lines) and twelve restorers (testers) and sixty crosses. The experimental material was evaluated for twelve characters *viz*; days to 50% flowering, days to maturity, earhead length (cm), earhead girth (cm), number of nodes per plant, plant height (cm), total number of tillers per plant, number of effective tillers per plant, Fe content (ppm), Zn content (ppm), grain yield per plant (g) and grain yield per hectare (kg). The hybrids 02888A x 15006R, 02333A x 15006R, 00444A x 15351R, 99111A x 15020R and 99111A x 15713R exhibited high mean values for grain yield per plant and highly significant specific combining ability effects and wider adaptation across the environments. These hybrids could be utilized to exploit heterosis for grain yield. The hybrids 00444A x 15351R, 99111A x 15020R, 00111A x 15713R and 02888A x 15392R were found early for days to maturity. The hybrids 02888A x 15006R, 00444A x 15351R and 02333A x 15351R were found to contain high Fe content, whereas 99111A x 15020R, 02333A x 15351R and 02333A x 15020R had high Zn content.

Key Words : Combining ability, Good general combiner, Average general combiner

How to cite this article : Borgaonkar, S.B., Jahagirdar, J. E., Patil, D.K. and Kalpande, H.V. (2023). Genetic studies in pearl millet (*Pennisetum glaucum* L.). *Internat. J. Plant Sci.*, 18 (1): 25-33, DOI: 10.15740/HAS/IJPS/18.1/25-33, Copyright@ 2023:Hind Agricultural Society.

Article chronicle : Received : 19.09.2022; Revised : 11.11.2022; Accepted : 15.12.22

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India is a major pearl millet producing country with 43.3 per cent of the world's area and 42 per cent of world's production. It is mainly cultivated in the states of Rajasthan, Maharashtra, Gujarat, Madhya Pradesh, Karnataka, Andhra Pradesh, Uttar Pradesh and Tamil Nadu on a total area of 7.41 million hectares with the production of 10.3 million tones and national average productivity of 1391 kg/ha. While in Maharashtra, it is grown on an area of 6.37 lakh hectares with an annual production of 8.16 lakh tonnes. The state average