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RESEARCH ARTICLE :

Combining ability and gene action for grain yield and nutritional traits in barnyard millet (*Echinochloa frumentacea* (Roxb.) Link)

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SUMMARY : Twenty four cross combinations from six lines with four testers were studied along with parents for combining ability and gene action in barnyard millet. The SCA variance was greater in magnitude than GCA variance for all the six characters studied indicates the predominance of non additive gene action. Amongst the ten parental lines, ACM 10-145, CO 1, CO 2, ACM 12, PMK 331 and PMK 332 were the best general combiners for grain yield along with nutritional traits. Out of 24 cross combinations, CO 2 x ACM 12, ACM 12-110 x PMK 331, CO 1 x PMK 331 and ACM 10-145 x ACM 12 were adjudged as the best specific combiners for nutritional traits along with grain yield. This result gives an idea that heterosis could be exploited in self pollinated crops like barnyard millet. However, male sterile system have to be identified as reported in foxtail millet to exploit heterosis. At present, recombination breeding followed by selection may be useful for improve these nutritional traits in barnyard millet.

KEY WORDS :
Barnyard millet, combining ability, Gene action, Nutritional traits

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