

## RESEARCH PAPER

ADVANCE RESEARCH JOURNAL OF  
**C R P**  
**IMPROVEMENT**  
Volume 7 | Issue 1 | June, 2016 | 148-150  
••••• e ISSN-2231-640X

DOI:  
10.15740/HAS/ARJCI/7.1/148-150  
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# Genetic variability studies in nutritional improvement in finger millet [*Eleusine coracana* (L.) Gaertn]

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**ABSTRACT :** Finger millet [*Eleusine coracana* (L.) Gaertn] or *Ragi* is an important food crop in Africa and south Asia. Finger millet is commonly called as “nutritious millet” as the grains are nutritiously superior to many cereals providing fair amount of protein, minerals, calcium and vitamins in abundance to the people. The protein of finger millet is considered to be biologically complete” as in the case of milk. Combining ability studies are useful in classifying the parental lines in terms of their hybrid performance. It also helps in identifying the parents suitable for hybridization programme and deciding suitable breeding methodology. The line x tester analysis is one, which helps to find out combining ability of parents for yield and yield attributes.

**KEY WORDS :** Finger millet, Nutritious millet, Combining ability, Molecular markers

**How to cite this paper :** Savitha, P. and Kumari, A. Nirmala (2016). Genetic variability studies in nutritional improvement in finger millet [*Eleusine coracana* (L.) Gaertn]. *Adv. Res. J. Crop Improv.*, 7 (1) : 148-150, DOI : 10.15740/HAS/ARJCI/7.1/148-150.

**Paper History :** Received : 28.12.2015; Revised : 27.04.2016; Accepted : 23.05.2016

*Ragi* is considered as one of India's best dry land crops and most of it is produced without supplemental water. The plant is both adaptable and resilient, survives on lateritic soils, withstands some salinity and has a few serious diseases or pests. India only a very small fraction of the total available germplasm collection has been used in the national breeding programmes (Ramakrishna *et al.*, 1996). The project coordination cell on small millets in India has an exhaustive collection more than 6000 accessions representing the entire global distribution of finger millet. Other major collections are held by International Institutions such as ICRISAT in India (5000 accessions), the National Farming Research Station in Kenya (1500 accessions), the Gene Bank in Kenya (1000 accessions), the Plant Genetic Resource Centre in Ethiopia (1000 accessions) and the University of Georgia in USA (1500

accessions). A number of non-governmental organizations such as Green Foundation in India also maintain finger millet collections (Ramakrishna *et al.*, 1996). In recent years, crop improvement programme includes the molecular analysis for the reliability.

### RESEARCH PROCEDURE

Seven lines *viz.*, CO (Ra)14, RAU 8, PES 110, VR 708, GPU 28, GPU 48 and OEB 259 were crossed with three testers *viz.*, PR 202, KM 252 and K 7 of diverse genetic architecture in a line x tester mating design resulting in twenty one hybrids. All the twenty one hybrids along with their parents and a check CO (Ra)14 were included in a Randomized Complete Block Design. The characters studied for yield and yield attributing traits were, days to 50 per cent flowering, plant height, number