

## Study on variation and selection parameters in ragi genotypes (*Eleusine coracana* Gaertn.)

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### ABSTRACT

A study was undertaken to estimate the genetic variability and selection parameters heritability and genetic advance for yield and yield contributing characters in finger millet. The study based on 65 genotypes received from ICRISAT Hyderabad including 5 checks revealed that highly significant genotypic and phenotypic variability exist in the crop with respect to characters days to 50% flowering, plant height, basal number of tillers, flag leaf length, flag leaf sheath length, peduncle length, exertion length, inflorescence length, longest finger length, peduncle branch number, 1000 grain weight and yield. The highest heritability and genetic advance observed in case of yield and plant height indicated that the character might be under control of additive genes. The higher heritability was also observed in respect of number of basal tillers, plant height and flag leaf sheath length, and longest finger. Therefore, weight age should be given on these traits selection programme of genotypes for substantial yield improvement of finger millet.

**Key words :** *Eleusine coracana* Gaertn, Selection parameter, Variability, Correlation coefficient, Path analysis

### INTRODUCTION

Wide range of variability was present in finger millet genotypes (*Eleusine coracana* Gaertn) under study and PCV and GCV were high for yield. The genetic information in any crop improvement depends upon the extend of genetic variability present. Generally economic characters are greatly influenced by environment and become very much difficult to assess the magnitude of genetic/ heritable variability in these characters from phenotypic observations alone. Methods have been developed to partition total phenotypic variability into genetic and environmental components of variance. The present study was undertaken to estimate the genetic variability for yield and economic characters in ragi because meager genetic improvement has been done so far.

### MATERIALS AND METHODS

Sixty five genotypes received from ICRISAT, Hyderabad with five checks were grown in Randomized Block Design with three replications at All India co-coordinated Small Millets Improvement Project, Zonal Agril. Research Station Shenda Park, Kolhapur. Each entry was grown in one-meter row with spacing of 30 cm between the rows and 10 cm within the plants. All the recommended package of practices was followed. Five randomly selected plants from each genotypes in each replication were used to record observations on days to 50 per cent flowering [FLG], plant height [PLHT] (cm),

basal number of tiller [BT], flag leaf blade length (cm) [FLBL], flag leaf blade width (cm) [FLBW], flag leaf sheath length (cm) [FLSL], peduncle length (cm) [PEDELEN], exertion (cm) [EXER], inflorescence length (cm) [INFL], Inflorescence width (cm) [INFLW], length of longest Finger (cm) [LLF], width of longest finger (cm) [WFL], panicle branch number [PBN], 1000 grain weight (gram) and grain yield<sup>1</sup>/plot [YIELD]. The mean of five plants was subjected to statistical analysis; data were statistically analyzed to estimate phenotypic and genotypic co-efficient of variation as suggested by Burton (1952). Phenotypic and genotypic co-relation by Panse and Sukhatme, (1961). Heritability by Allard (1960) along with path co-efficient as suggested by Dewey and Lu (1959).

### RESULTS AND DISCUSSION

Variation among genotypes with respect to all most all the traits length of main panicle was highly significant. This is also evident from the high range shown by genotypes with respect to various characters (Table 1). Analysis of variance showed that the genotypes differed significantly among themselves for all traits studied indicating presence of wide range of variability in the genotypes. Days to 50 per cent flowering ranged from 70 days to 96, days plant height ranged from 61 to 106 cm, basal tiller number ranged from 2-6. There was also wide range in yield and yield contributing characters. The range between 1000 grain weight and yield<sup>1</sup>/plot was 1.21-2.81 and 26-542g per plot, respectively.

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