

Genetic variability in green fruited brinjal

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ABSTRACT

Highly significant differences were observed among the 23 diverse brinjal genotypes for different characters. The highest genotypic coefficient of variation as well as phenotypic coefficient of variation was observed for number of fruits per cluster. Almost all the characters exhibited high heritability except the trait yield per hectare which recorded moderate heritability (46.15% to 98.87%). Highest genetic advance was also observed for the character number of fruits per cluster. It ranged from 16.76% to 84.93% for all the characters.

Key words : Variability, Heritability, Genetic advance, Brinjal.

Brinjal is one of the most important and popular vegetable crop grown throughout the year all over the country. Being primary centre of origin, India has accumulated wide range of variability in this crop. In spite of large number of varieties available in India, only a few are promising. This fact draws the attention of plant breeder for its improvement. Genetic variability plays an important role in a crop in selecting the best genotypes for making rapid improvement in yield and other desirable characters as well as to select the potential parent for hybridization programmes. Heritability is an index for calculating the relative influence of environment on expression of genotypes. It becomes very difficult to judge how much of the variability is heritable and how much is non-heritable. Therefore, the present investigation was carried out to study the genetic variability for thirteen quantitative traits in green fruited brinjal.

MATERIALS AND METHODS

The experiment was conducted at Main Garden, University Department of Horticulture, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola, during *kharif* season of the year 2006-07 with 23 brinjal genotypes. Experiment was laid out in randomized block design (RBD) with three replications. Seedlings were transplanted at a spacing of 60 cm between rows and 60 cm between the plants. All the recommended cultural practices were followed under irrigated conditions. The observations were recorded on ten randomly selected plants per replication for each genotype on thirteen

important characters. The analysis of variance were carried out as suggested by Panse and Sukhatme (1954). Phenotypic and genotypic coefficients of variation were obtained by the method suggested by Burton (1952). Heritability in broad sense and expected genetic advance were estimated as per the formulae described by Allard (1960) and Johnson *et al.* (1955), respectively.

RESULTS AND DISCUSSION

The extent of variability present in the brinjal genotypes was measured in terms of range, mean, phenotypic coefficient of variation (PCV), genotypic coefficient of variation (GCV), heritability (broad sense) and expected genetic advance as per cent over mean (Table 1). All the genotypes differed significantly with respect to different characters studied. A wide range of variation was observed in all the characters. Plant height varied from 46.80 (AKLB-2) to 68.53 cm (Mahabeej BRJ-92), plant spread from 53.66 (Mahabeej BRJ-39) to 79.96 cm (Bhandara local), number of primary branches from 2.73 (AKLB-2) to 4.66 (AKLB-17 and 19), number of secondary branches from 12.46 (AKLB-2) to 29.06 (Bhandara Local), days to first flowering from 45.00 (Mahabeej BRJ-59) to 86.33 days (Mahabeej BRJ-91), number of fruits per cluster from 1.33 (AKLB-3) to 4.40 (AKLB-23), days to first fruit harvest from 79.67 (AKLB-20) to 112 days (Mahabeej BRJ-91), fruit index from 19.230 (Mahabeej BRJ-39) to 52.927 cm² (AKLB-20), average fruit weight ranged from 40.33 (Mahabeej BRJ-39) to 123.37 g (AKLB-20), number of fruits per plant from 8.87 (AKLB-3) to 22.17 fruits (Mahabeej BRJ-39), number of marketable fruits per plant from 7.16 (AKLB-3) to 18.06 fruits (Mahabeej BRJ-39), yield per plant from