



Research Paper

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Genetic variability in brinjal (*Solanum melongena* L.)

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ABSTRACT : Highly significant differences were observed among the 20 diverse brinjal genotypes for different characters. Average fruit weight showed the highest phenotypic and genotypic coefficient of variation closely followed by yield per plant. The lowest values were recorded for days to first flowering followed by days to first picking. The heritability estimates were high (above 85%) for all the characters. The maximum heritability was observed for number of fruits per plant and average fruit weight. The genetic advance as percentage of mean was high for average fruit weight, yield per plant, number of fruits per plant and number of leaves per plant. High GCV and heritability coupled with high genetic advance was observed for yield per plant and followed by number of fruits per plant indicating that they are governed by additive genes and could be effectively improved through selection.

KEY WORDS : Variability, Heritability, Genetic advance, Brinjal

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Brinjal or egg plant (*Solanum melongena* L.) is worldwide known as aubergine or guinea squash and is one of the most important vegetable crops grown in India. Based upon its highest production potential and availability of the produce to consumers, it is also termed as poor man's vegetable. The unripe fruit is primarily used as cooked vegetable for the preparation of various dishes in different region of the world. It has got much potential as raw material in pickle making the dehydration industries and fruits have got medicinal properties, particularly, white brinjal is said to be good for diabetic patients (Choudhary, 1996) and has also been recommended as an excellent remedy for those suffering from liver complaints (Chauhan, 1981). In India, brinjal is cultivated in an area of about 5.50 lakh hectares with the annual production of 8.2 lakh tonnes (Dhas and Srivastava, 2010). In Rajasthan, the area is estimated around 0.055 lakh hectares with an annual production of 0.23 lakh tonnes (Anonymous, 2005). India being one of the primary centre of its origin (Thompson and Kelly, 1957) has accumulated wide range of variability in brinjal. For crop improvement, the genetic variability plays an important role in a selecting the best genotypes for making rapid improvement in yield and other desirable characters as well as to select the potential parent for hybridization programmers. Heritability is an index

for calculating the relative influence of environment on expression of genotypes. It becomes very different 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 variability, heritability and genetic advance for ten important characters in brinjal.

RESEARCH METHODS

The experiment was carried out at Horticulture Farm, Department of Horticulture, S.K.N. College of Agriculture, Jobner during *Kharif* season of 2007-08 with 20 brinjal genotypes. The experiment was laid out in Randomized Block Design (RBD) with three replication. Thirty days old seedlings were transplanted at a spacing of 75 cm between rows and 60 cm between the plants in the first week of August. All the recommended cultural practices were followed under irrigated conditions. The observations were recorded on five randomly selected plants per replication for each genotype on ten important characters as given in Table 1. The analyses of variance were carried out as suggesting by Panse and Sukhatme (1995). The genotypic and phenotypic coefficients of variations (GCV and PCV) were obtained the method suggested by Burton and De Vane (1953). Heritability in broad sense and genetic advance (GA) were estimated as per the