



Genetic variability in okra [*Abelmoschus esculentus* (L.) Moench]

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ABSTRACT

The variability studied among 75 genotypes indicated the presence of high variation for all 17 characters studied. The highest genotypic coefficient of variation (GCV) as well as phenotypic coefficient of variation (PCV) was observed for incidence of yellow vein mosaic virus. The maximum difference between GCV and PVC was noted for inter nodal length. Character plant height exhibited high heritability (broad sense) percentage. Highest genetic advance was recorded for yellow vein mosaic virus while lowest for fruit diameter.

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Key words : Okra, Variability, Heritability, Genetic advance

Okra also known as *Bhindi* or lady's finger or gumbo originated in tropical and subtropical Africa is an annual, seed propagated vegetable crop. It has 45.28 lakh metric tonnes of production from an area of 4.3 lakh hectare (Anonymous, 2009). Most of the cultivated varieties of okra are amphidiploid with $2n=130$. The range of *Abelmoschus coccineus* ($2n=38$) to *Abelmoschus manihot*, Guinean type ($2n=185-198$) was reported (Jambhale and Nerkar, 1986). Such huge presence of variability offers scope for the crop improvement. Selection of high yielding genotype is the pre-requisite for a successful breeding programme. The Study of parameters of genetic variability viz., GCV, PCV, heritability (b.s.), genetic advance helps for proper genotype selection. Therefore, the present investigation was carried out to study the genetic variability for seventeen traits in Okra.

MATERIALS AND METHODS

The present investigation was conducted at research farm of All India Coordinated Vegetable Improvement Project, department of Horticulture, Mahatma Phule Krishi Vidyapeeth, Rahuri during summer 2009 with 75 diverse okra genotypes. The experiment was laid out in randomized block design with two replications. The recommended spacing of 60 x 30 cm was maintained. All the recommended cultural practices were followed under

irrigated conditions. The observations were recorded on five randomly selected plants per replication of each genotype for seventeen characters. The analysis of variance was carried out as suggested by Panse and Sukhatme (1967). The genotypic and phenotypic coefficient of variation were estimated by the method suggested by Burton and De Vane (1953). Heritability in broad sense and genetic advance were estimated as per formulae estimated by Burton and De Vane (1953) and Johnson *et al.* (1955), respectively.

RESULTS AND DISCUSSION

The extent of variability recorded in 75 diverse okra genotypes was measured in terms of range, mean, phenotypic coefficient of variation (PCV), genotypic coefficient of variation (GCV), heritability (broad sense) and genetic advance as a percentage of mean (Table 1). Highly significant differences were recorded for all the characters studied. A wide range of variation was observed for all the characters. Days to 50 per cent flowering varied from 41.0 (G-20) to 54.5 (G-6 and G-7), plant height from 34.60 (G-46) to 96.80 cm (G-8), stem diameter at base from 0.64 (G-4) to 2.33 cm (G-62), internodal length from 6.98 (G-38) to 19.52 cm (G-55), No. of branches per plant from 1.80 (G-46) to 5.70 (G-4), No. of flowering nodes on main stem from 3.80 (G-2 and G-3) to 7.30 (G-34), node at which first flower appears