

GENETIC STUDIES IN SNAKEGOURD (*TRICHOSANTHES ANGUINAL*)

Information on genetic variability and its heritable components is very much limited in snakegourd (*Trichosanthes anguina* L.). Hence, an effort was made to assess the existing variability and to determine the heritable components of the overall variability with the help of suitable genetic parameters such as coefficient of variation, heritability and genetic advance.

Thirty-four genotypes of snakegourd from different sources were evaluated in randomized block design with two replications during Kharif 1995 at the College of Agriculture, Trivandrum adopting the package of practices recommendations of the Kerala Agricultural University! Four plants from each entry and each replication, selected at random provided the material for evaluation of 12 characters. Analysis of variance for

RBD was done as per Panse and Sukhatme (1967). Coefficient of variation, heritability and genetic advance were also estimated for all the characters.

All the traits exhibited significant differences, which was substantiated by the estimates of genotypic and phenotypic variances (Table 1). The values of pcv and gcv were almost equal for all the characters, which indicated that these characters are least influenced by the environment and are under the control of the genotype itself. In general, the gcv were lower ranging from 10.34 to 36.40 per cent while the pcv ranged from 10.73 to 37.31. High pcv and gcv were observed for mean fruit weight, number of seeds per fruit, fruit yield per plant and fruit length, which are in conformity with the findings of Joseph (1978), Varghese (1991) and Varghese and Rajan (1993).

Table 1. Genetic parameters with respect to various characters

Character	Variance		Co-efficient of variation		Heritability (%)	Genetic advance, (%)
	Phenotypic	Genotypic	pcv	gcv		
Days to first male flower	78.66	6.13	25.96	25.54	96.79	51.76
Days to first female flower	128.20	127.44	22.34	12.27	99.40	45.74
Days to first fruit harvest	153.84	153.13	20.16	20.11	99.54	41.33
Fruits per plant	8.55	7.81	23.16	21.76	88.30	42.12
Mean fruit weight (g)	123150	117094	37.31	36.40	95.08	73.11
Fruit yield per plant (kg)	10.68	8.64	30.42	27.34	80.87	50.67
Fruit length (cm)	484.80	456.24	29.74	28.55	94.11	57.65
Fruit girth (cm)	12.10	10.20	15.88	14.58	84.30	27.57
Flesh thickness (cm)	0.011	0.009	11.53	10.34	80.39	19.10
Seeds per fruit	469.97	452.36	31.31	30.72	96.25	62.08
100-seed weight (g)	12.73	11.95	14.17	13.73	93.86	27.40
Crop duration (days)	154.61	149.20	10.73	10.54	96.50	21.33

The heritability estimates in broad sense were high for all the characters, indicating that substantial improvement can be made using standard selection criteria. Similar results were obtained by Singh *et al.* (1992) in pointed-gourd and Varalakshmi *et al.* (1995) in ridgegourd. Heritability estimates in conjunction with the estimates of genetic advance are more useful in selecting superior genotypes. High heritability along with high genetic advance was observed for mean fruit weight, seeds per fruit, fruit length, days to

first male flower and fruit yield per plant indicating the presence of additive gene action. This is in conformity with the findings of Varghese (1991) and Varghese and Rajan (1993) in snakegourd and Varalakshmi *et al.* (1995) in ridgegourd.

The high values of variability, heritability and genetic advance expressed by the characters indicate that the genotypes could be evaluated in multi-location trials and selected as straight introductions for these characters or used as

parents in the hybridization programme for further improvement.

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