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Genetic Variabilitv in Coriander (*Coriandrum sativum L.*)

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Sixty coriander types from the germplasm types maintained at the Faculty of Horticulture, the Tamil Nadu Agricultural University, Coimbatore, were utilized for this study to assess the extent of genetic variability present in the population. The characters studied were plant height, number of primary branches, number of secondary branches, number of umbels per plant, number of umbellets per umbel, number of seeds per umbel and yield per plant offer scope for efficient selection and for formulating selection indices.

Coriander is one of the important spice crops of Tamil Nadu. Studies on the variability in coriander are limited. The efficiency of selectian depends mainly on the extent of genetic variability in a population. Joshi *et al.* (1967) found varietal differences for plant height. Jain and Dubey (1972) reported genetic coefficient of variation of 15.93 per cent for plant height and 42.72 per cent for seeds per central umbel. In the presant investigation an attempt has been made to gain an insight into the magnitude of genetic variability available in coriander through biometrical methods.

MATERIAL AND METHODS

Sixty coriander types from the germplasm collection maintained at the Faculty of Horticulture, The Tamil Nadu Agricultural University, Coimbatore, were utilised for recording observations on plant height, number of primary branches, number of secondary branches number of umbels per plant, number of umbellets per umbel, number of seeds per umbel and yield per plant. The crop was grown during winter 1977—'78 in a randomised block design with two replications. Five plants were selected randomly in each replication for recording observations. The genetic co-efficient of variability and pheno typic co-efficient of variability were calculated as per the methods suggested by Burton (1952). Heritability in broad sense was worked out as suggested by Lush (1940). Analysis of variance was done as per the method of Panse and Sukhatme (1967). The genotypic and phenotypic variances were estimated according to Johnson *et al.* (1955).

RESULTS AND DISCUSSION

The results of the analysis are presented in the Table. The analysis of variance indicated significant varietal differences for all the characters studied Among the seven characters, the variability was high for plant height and number of umbels per plant. The variability was low and significant for number of umbellets per umbel.

The estimated data on genetic parameters for different attributes reve-

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TABLE Genetic Variability for Metric Traits in Coriander

Character	Range	Mean	Genotypic variance	Phenotypic variance	Genotypic coefficient of variation	Phenotypic coefficient	Heritability (%)	Genetic advance (% of mean)
Plant height (cm)	31.8—63.8	38.6	642.97	874.67**	408.00	476.00	73.51	116.01
Number of Primary branches	2.5—10.6	4.2	6.27	9.43**	122.16	150.14	66.48	100.24
Number of secondary branches	6.7—18.7	8.1	42.68	61.73**	229.55	276.06	69.14	138.15
Number of umbels/ plant	16.1—84.7	28.7	390.63	507.82**	382.50	436.11	76.92	133.75
Number of umbellets/ umbel	2.9— 8.8	4.1	3.15	4.30**	87.60	104.84	73.20	76.34
Number of seeds/ Umbel	6.7—21.2	14.6	102.50	140.80**	264.96	360.54	72.80	121.18
Yield/plant (g)	0.98— 8.76	3.5	24.75	29.15**	265.95	288.58	84.93	212.57

** Significant at 1 per cent probability

aled that the genotypic and phenotypic variances were high for plant height and number of umbels per plant indicating wide variability. Higher variability in these traits was also reported by Joshi *et al*. (1967). The genetic coefficient of variation expressed as percentage of mean indicated that all characters exhibited larger variability that can be ascribed to genotype.

The genetic co-efficient of variation does not offer full scope to estimate the variation that is heritable and therefore estimation of heritability becomes necessary. In the present study high heritability estimates were recorded by all the characters ranging from 66.48 per cent for number of primary branches to 84 93 per cent for yield per plant.

Heritability indicates the effectiveness with which the selection of genotype could be based on the phenotypic performance (Johnson *et al*. 1955) and therefore, does not indicate a greater genetic gain. the results of the present study have clearly indicated that despite high heritability, the genetic advance was low for number of umbellets per umbel as compared to other trait indicating the role of non-additive gene effects for these traits (Panse and Sukhatme, 1967). For all other characters, the genetic advances as percentage of mean were more than heritability for plant height, number of primary branches, number of secondary branches, number of umbels per plant, number of seeds per umbel and yield per plant. Similar results were reported by

Rajendran (1978) in coriander. Among these traits the number of secondary branches, number of umbels per plant and yield per plant offer scope for an efficient selection, indicating the usefulness of these traits for formulating selection indices.

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