

## Correlation Studies in open Pollinated Seedlings of *Jasminum auriculatum* Vahl.\*

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Four hundred open pollinated two year old seedlings drawn from the five clones of *Jasminum auriculatum* Vahl viz., Short Point, Short Round, Parimullai, Long Point and Long Round, were utilised to study the association of economic traits with yield and corolla tube length. The number of primary laterals and the length of style had a positive association with yield. The weight of flower buds, length of internode and number of days taken for flowering established a direct relationship with the corolla tube length.

Jasmine flowers occupy important position in the commercial floriculture of the country. But this crop has received little attention in the field of genetic improvement. The inherent nature of heterozygosity present in jasmine could be exploited through selection in large open pollinated seedling populations. With this background in view, a large population of open pollinated seedlings of jasmines was studied for various characters and their association with yield and corolla tube length.

### MATERIAL AND METHODS

The experiment was conducted at the Faculty of Horticulture, Tamil Nadu Agricultural University, Coimbatore from 1973-76. For the study, 400 open pollinated seedlings drawn from five clones of *Jasminum auriculatum* Vahl, viz., Short Point, Short Round, Parimullai, Long Point and Long Round, were utilised. Observation on the follow-

ing characters were recorded on two year old seedlings.

*Internodal Length* : number of primary laterals, number of days taken for first flowering, weight of flower buds, length of corolla tube, length of flower tube, diameter of flower bud and length of style. Simple correlations among the characters were worked out as per the procedure suggested by Panse and Sukhatme (1957).

### RESULTS AND DISCUSSION

The number of primary laterals showed a highly positive relationship with yield (Table I). The length of style had a highly significant positive association with yield. Highly significant positive associations were established for length of flower bud, diameter of flower bud, number of days taken for first flowering and weight of flower buds with length of corolla tube (Table II).

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TABLE-I: Association of Characters with Yield of Flower Buds

Character	Correlation coefficients	Regression equation
Number of primary laterals	0.2493**	373.1436+2.714X
Length of style	0.3451**	467.11+83.47X

\*\*Significant at 1% level

TABLE-II: Association of Characters with Length of Corolla Tube

Characters	Correlation coefficients	Regression equation
Internodal length	0.1247*	0.921 +0.0423X
Number of days taken for flowering	0.1935**	1.0047+0.0034X
Weight of flower buds	0.2143**	0.5431+0.1743X
Length of flower bud	0.4364**	0.5674+1.2435X
Diameter of flower bud	0.2484**	2.4310+0.9676X

\* Significant at 5% level

\*\* Significant at 1% level

The study of quantitative traits for their association with yield and other character is of paramount importance in any selection programme. The sign and magnitude of correlation based on genotypic factors help in enhancing the rate of selection response. The present study indicated that the number of primary laterals ( $r=0.249$ ) and length of style ( $r=0.345$ ) are positively and significantly associated with flower yield predicting the role of these characters in selection for flower yield. The results further showed that the length of flower bud ( $r=0.436$ ), diameter of flower bud ( $r=0.248$ ), weight of flower buds ( $r=0.0214$ ), internodal length ( $r=0.125$ )

and number of days taken for flowering ( $r=0.197$ ) have direct and significant relationship with length of corolla tube which influences the flower value. Similar results have been reported by Shanmugam *et. al.* (1972) in chrysanthemum.

## REFERENCES

- PANSE, V. G. and P. V. SUKHATME, 1957. *Statistical Methods for Agricultural workers*. I. C. A. R. Publication, New Delhi.
- SHANMUGHAM, A., S. MUTHUSWAMY and N. SRINIVASAN, 1972. Interrelationship between yield and certain growth and floral attributes in two chrysanthemum (*Chrysanthemum indicum* Linn.) varieties. *S. Indian Hort.* 20: 85-86.

TABLE III. Range of variability in characters in the seedling populations

Clones	Yield (g)	No. of days taken for flowering	No. of primary laterals	wt. of flower buds (g)	Length of corolla tube (cm)	Length of flower bud (cm)	Diameter of flower bud (cm)
Short Point	28-936	22-63	31-226	2.8-6.6	0.90-1.67	0.59-1.10	0.30-0.52
Short Round	56-1426	27-67	35-258	3.4-7.4	1.04-1.76	0.64-1.09	0.34-0.59
Perimuttal	68-1127	26-67	43-299	3.4-6.6	0.87-1.72	0.54-1.12	0.25-0.48
Long Point	105-1351	15-72	79-299	3.2-7.3	1.01-1.73	0.59-1.09	0.31-0.54
Long Round	50-1357	28-72	18-309	3.2-7.3	1.18-1.84	0.67-1.12	0.32-0.54