

## Association of yield attributes among quantitative characters of cardamom (*Elettaria cardamomum* Maton)

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### Abstract

The correlation between quantitative characters of cardamom (*Elettaria cardamomum*) on number of capsules per plant and fresh weight of capsules per plant was estimated. The number of capsules per plant had significant positive correlation with total number of tillers, bearing tillers and total panicles per plant, and fresh weight of capsules had significant positive correlation with number of tillers per plant and number of panicles per plant.

**Key words :** cardamom, *Elettaria cardamomum*, yield attributes.

A wide range of variability exists in cardamom (*Elettaria cardamomum* Maton) which offers good scope for improvement of the crop. Various growth and yield parameters of cardamom, when identified and analysed for correlation can aid in its genetic improvement and increasing productivity (Madhusoodhanan *et al.* 1999). The expression of complex characters such as number of capsules per plant and weight of capsules per plant depends upon a number of component attributes. Knowledge of correlation between yield and other plant characters is helpful in selection of suitable elite plant types. In studies reported earlier, the four most important characters directly contributing to yield in cardamom were number of tillers/panicles per plant, number of panicles per tiller, number of racemes per panicle and number of capsules per raceme (Sudharshan *et al.* 1989). The present investigation was undertaken to assess the correlation of yield attributing characters with number of capsules per plant and weight of capsules per plant in 16 accessions of cardamom.

The experiment was conducted at Indian Institute of Spices Research, Cardamom Research Station, Appangala (Karnataka, India) in an Randomized Block Design with two replications. Among the 16 entries (lines), 15 lines namely, S. 1271-2, S. 1272-

5, S. 1286-87, AS 7/12, AS 6/13, CL. 688, CL. 731, CL. 779, CL. 781, CL. 671, CL. 730 and CL. 776 were obtained from Regional Research Station, Mudigere. The local Malabar type was used as control. The trial was planted with a spacing of 2 m x 2 m in a low-lying area. Each treatment plot had 10 experimental plants surrounded by guard rows. Observations were recorded for number of tillers per plant, number of bearing tillers per plant, number of panicles per plant, height of the plant and yield characters namely, number of capsules per plant and weight of capsules per plant. Simple correlation coefficient was computed as per the procedure described by Panse & Sukhatme (1961).

The number of tillers per plant, number of bearing tillers per plant and number of panicles per plant showed positive and significant correlation with number of capsules per plant (Table 1). However, the correlation between plant height with number of capsules per plant was not significant. In brinjal too the correlation between plant height and number of fruits was not significant (Ponnuswami & Irulappan 1994).

The total number of tillers per plant and number of bearing tillers per plant had a significant and positive correlation with fresh weight of capsules

**Table 1.** Association of yield with growth characters in cardamom

Character	Correlation coefficient ( <i>r</i> )	
	No. of capsules	Wt. of capsules
Total no. of tillers per plant	0.8048**	0.7886**
No. of bearing tillers per plant	0.4974**	0.4609
No. of bearing panicles per plant	0.5869**	0.5458*
Height of plant	0.3057	0.2352

per plant (Table 1). Gopal *et al.* (1989) also reported similar results in cardamom. Number of bearing tillers per plant and height of the plant were positively correlated with fresh weight of capsules per plant but were not significant.

The present study revealed that the yield contributing character of number of capsules per plant can be increased by increasing the number of tillers which will in turn result in sufficient number of

bearing tillers and panicles by resorting to selection and evaluation of elite cardamom lines.

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