

## Studies on panicle and capsule characters in elite clones of cardamom (*Elettaria cardamomum* Maton)

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### ABSTRACT

Twelve cardamom clones with higher yields were assessed for panicle and capsule characters. Length of the panicle and number of nodes per panicle were more in local check compared to selections. Total number of capsules per panicle and wet weight of capsules per panicle were high in clones compared to local check. Clones had bold capsules with short internodes compared to local check. Sparse number of capsules per node were distributed all along the panicle length in local check, whereas more number of capsules per node was observed in first 10 nodes from base in selections, which had compact panicles. Compact panicles with more number of capsules per node influenced the yielding ability of clones. Length of the panicle, total number of capsules per panicle and wet weight of capsules per panicle were positively correlated with the dry capsule yield per plant.

**Key words:** Cardamom, correlation studies, panicle length, internode number, yield related characters.

### INTRODUCTION

The total production of cardamom has remained stagnant for the past one decade due to non-availability of high yielding varieties suited for different agro-climatic situations (Korikanthimath, 3; Madhusoodanan, 5). An attempt was therefore made, to identify high yielding clones. Twelve elite clones were assessed for panicle and capsule characters to elucidate the factors that contribute to higher yield. Such an information is not available in this crop, which is although very useful for crop improvement. Hence, a field study was undertaken to assess the impact of panicle and capsule characters on the performance of selected elite cardamom clones of Malabar type.

### MATERIALS AND METHODS

With the extensive survey in cardamom plantations of Coorg region, more than hundred clones were collected and assessed for yield during the year 1993-94 in a preliminary trial. Twelve clones were selected based on yield and quality parameters (Korikanthimath, 4) and were used in the present study after raising a population through clonal propagation. A local clone was selected as check. Clones were planted in a plot of size (1.8 m x 1.6 m) in a randomised block design with four replications, in each clone 50 panicles were observed for panicle length (cm), number of nodes/panicle, number of capsules in each node from base towards tip, total number of capsules per panicle and fresh (wet) weight (g) of capsules per panicle. The means are presented in table 1. In each clone, 100 capsules were assessed for length (mm) and breadth (mm). Means of internodal length of each entry is

presented in table 2. Correlation of different characters were also calculated.

### RESULTS AND DISCUSSION

Length of the panicle was maximum in local check and it ranged from 37 cm in Sel. 6 to 58 cm in Sel. 4 and Sel. 12 among the selected clones (Table 1). Length of the panicle had no positive correlation with yield as the internodal length and number of nodes are the characters, which determine the number of capsules (Korikanthimath, 4). All the clones had the shorter panicle length compared to local check. Number of nodes per panicle was maximum in local check and Sel. 1 and was minimum in Sel. 6. Number of nodes did not vary to a great extent and hence it did not influence the differential yielding ability of clones. First ten nodes from base had the maximum number of capsules per node in majority of selected clones, while in local check the number of capsules per node was found distributed all along the panicle length. Total number of capsules per panicle was maximum in Sel. 9 followed by Sel. 7, Sel. 4 and Sel. 3 and was the minimum in local check and Sel. 11.

Wet weight of capsules per panicle was the maximum in Sel. 9 followed by Sel. 7 and Sel. 4 and was minimum in local check. Total number of capsules and wet weight of capsules per panicle are the important characters, which directly contribute for yield per plant (George *et al.*, 1; Gopal *et al.*, 2; Korikanthimath, 4; Sudharshan *et al.*, 6). This was found true in the present study also, where Sel. 9 and Sel. 7 were found superior with respect to number of capsules per node, number of capsules per plant, wet weight of capsules in g per plant and dry capsule yield, respectively. The local check recorded only 2.73

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