IN VITRO PROPAGATION OF CARDAMOM (ELETTRIA CARDAMOMUM MOTON)

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Cardamom is an important spice among export crops in Sri Lanka. Using tissue culture techniques, cardamom can be propagated in large quantities within a short period to overcome the scarcity of planting materials.

Newly emerged suckers of field grown variety "VAZUKKA" were used to investigate; a) the best surface sterilization method of explant, b) the suitable part of the plant and its size for successful in-vitro establishment, and c) the appropriate culture medium and the best growth regulator combination for shoot multiplication. Seed germination and seedling multiplication under in-vitro condition have also been studied.

Results from these experiments revealed that the suitable length of the sucker for establishment in-vitro varied from 2.5 to 10 cm. The rate of proliferation was two fold higher in large suckers (10 - 15 cm) than that of small suckers (2.5 - 4 cm). The most suitable sterilization method for cardamom suckers was with 10% chlorox bleach (Sodium hypochloride) for 20 minutes. This showed the average contamination rate as low as 6.6%.

Number of axillary buds produced from a single sucker varied with the size of the explant. Suckers of 2.5 cm produced an average of 0.22 buds while 10 - 15 cm size suckers produced 0.44 buds in 8 weeks. Multiplication rate and the growth rate were greater in MS medium than in WPN medium. The Maximum of 2.4 bud production was achieved using the combination of 2 mg/l BAP and 0.1 mg/l NAA during 12 week period.

Seed germination only occurred in WPN medium after three months of sowing in culture. However, when seedlings were transferred to MS medium supplemented with 2 mg/l BAP and 0.1 mg/l NAA, average number of 25 seedlings from one seedling were produced in five months.