

Scientific Cultivation of Large Cardamom (*Amomum subulatum* R.) in Tirap district of Arunachal Pradesh

**Abhimanyu Chaturvedi^{1#},
S.K. Chaturvedi², T.S.
Mishra³ and P.P. Tripathi⁴**

^{1#}SMS (Horticulture), K.V.K.
Tirap- Deomali, Arunachal
Pradesh

²SMS (Horticulture), K.V.K.
Lower Subansiri- Yachuli,
Arunachal Pradesh

³SMS (Horticulture), K.V.K.
West Kameng- Dirang,
Arunachal Pradesh

⁴SMS (Plant Protection), K.V.K.
East Kameng- Seppa, Arunachal
Pradesh



Open Access

*Corresponding Author

Abhimanyu Chaturvedi*

Available online at

www.sunshineagriculture.vitalbiotech.org

Article History

Received: 12. 06.2022

Revised: 24. 06.2022

Accepted: 28. 06.2022

This article is published under the terms of the [Creative Commons Attribution License 4.0](https://creativecommons.org/licenses/by/4.0/).

INTRODUCTION

Large cardamom is the world's most ancient spice crop; native of Sikkim and spread from here to other north-eastern states of India as well as neighboring countries- Nepal and Bhutan. The large cardamom is a shade loving plant (Sciophyte) and is better grow under humid and cold conditions at an altitude of 900 m to 2000 m MSL, 3000-3500 mm rainfall for 200 days/year and within a temperature range of 10 °C to 30 °C .

The large cardamom is mainly uses as a spice for culinary purpose from ancient era in Indian subcontinent. It contains 2-3% essential oil, used for different Ayurvedic medicinal purposes- eg. Possesses carnative, stomatic, diuretic and cardiac stimulant properties and also for throat and respiratory trouble.

The large cardamom is relatively new crop in Tirap district, introduced within last two decades. However it has a great potential due to suitable climatic conditions and wide spreading rapidly due to acceptance by the farmers. It's growing in about 520 ha area in the district, at present. From traditionally small scale farming by locals; this has become transited into commercial farming, owing to low volume high values characteristics of the crop.

Popular varieties –

1. **Ramsey:** It is well suited for high altitude (1515 msl) and grow well even on steep slopes. Its tillers colour maroons and narrow leaves. Plant robust, 1.5 to 2 m height, with large no of tillers. Flowering starts in May and ready for harvest upto October – November. The capsules are smaller in size with 25-40 seeds.
2. **Ramla:** Plants are vigorous like ramsey, with 1.5 to 2 m height. Tillers colour like ramsey but leaves are broad and long, capsules are dark pinkish colour with 30- 40 seeds. Its cultivation is mainly in high altitudes of Sikkim. Flowering start to May and harvesting upto October.

3. **Sawney:** Wide range of adaptation, suitable to medium (975- 1515 msl) and high (>1515 msl) altitude areas. Plant are robust, 1.5 to 2 m height, leaves are oval and broad. Its tillers colour maroonish. Capsules are bigger and broad, 35-50 seeds. Flowering starts from March to May and harvesting from Sept- October.
4. **Varlangey:** It is suitable for mied to high altitude areas (>1515 msl). Its yield is exceptionally higher at higher altitudes. Average plant height, robust in nature, narrow leaves with waving margins. The productive tiller and spike ratio is very high compare to all varieties. Capsules are bold with 50-70 no of seeds. Flowering starts during may and harvesting upto November.
5. **Seremna:** This is growing in small pockets of west Sikkim at low altitudes. The average plant height with green colored tillers and the leaves are mostly drooping type; hence named as “Seremna”. On an average 2-3 spike/productive tiller with average 10 capsules in each spike and 65-70 seed/capsule recorded.

The most successful and popular method of its planting by Rhizome (sucker) planting because this is easy so has become popular in everywhere of its cultivation. This method has advantages for having uniformity and true to parent characteristics in plant population. The suckers should have high yield record i.e. >800 Kg/ha yield for at least 3 consecutive year.

For plantation, the land should be free from weeds, ploughed well/digged well. The 30 cm x 30cm x 30 cm sized pits with a spacing of 5 foot are suitable. The pits should be digged at least 5 days before for solarization, then filled with a mixture of top soil and 2-3 kg manure and filled upto last week of May.

Planting time is Monsoon season- May to July month. To obtain a god yield,

supply of proper nutrient is the vital factor. A well rotten manure/cow dung @ 5-6 kg/plant should be applied in basin of the plant during April & October months.

Large cardamom is a water loving plant, which can't survive water stress during its 1st year of plantation. So, watering should be done @ 10 days intervals during dry conditions. In different studies, it has reported higher productivity with watering/irrigation as compared not irrigated crop. So, its need of moment to conserve water in heavy rainfall areas by making Jalkund. The organic mulching also plays a significant role in large cardamom production. So, different types of leaves can be uses for such purpose.

Being Sciophyte plant, it needed 50% shade for better growth, development and yield. During the earlier years, it has observed that maximum farmers were not following shade management. But due to continuous effort of Krishi Vigyan Kendra – Tirap, now a day's maximum farmers following shade management practice. Actually shade management prevent over exposing of leave by direct sun light thus yellowing and withering of leaves prevent. And yield also improves. But important thing that over shading (>50 %) must be avoided because this prevents plant growth, development and production.

The weeding is also an important factor for efficient intake of soil moisture and nutrients to the plants. The manual weeding should be followed. The uprooted weeds and their leaves can be uses around cardamom plant as a mulch to prevent soil moisture as well as soil physical properties.

The large cardamom also suffers with different diseases and pests; specially viral diseases- Chirkey & Foorkey. The aphids responsible for transmission of these diseases. Leaf caterpillars, white grubs, stem borers are the major insect's damage to this crop. Removal of infected plants from field, proper weeding, sanitation etc majors should be follow to minimize these problems.

The proper time of harvesting is when the capsules color turning red to brown. At this indication, the bearing tillers should be cut at

the height of 30 cm from ground and it left upto 10-15 days for full maturity of capsules.



One year old crop of Large cardamom



Flowering and capsule formation in Large cardamom