Alpinia calcarata

The Healing Crop for Shaded Farms



Regional-cum-Facilitation Centre (Southern Region)

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INTRODUCTION



Alpinia calcarata, commonly known as Snap Ginger or Lesser Galangal (trade name), Dumparastramu (Telugu), Rasna (Kannada), Chittaratha or Aratha (Malayalam), Chitrarathai (Tamil) is a perennial medicinal herb belonging to the ginger family Zingiberaceae. The plant grows from aromatic underground rhizomes and produces leafy shoots reaching up to 1–1.5 m in height. It bears long, narrow green leaves arranged alternately along the stem and produces attractive white flowers with reddish markings. In traditional medicine, the rhizomes of Alpinia calcarata are highly valued for treating coughs, colds, asthma, rheumatic joint pains, stomach aches, swelling, and bacterial infections. Overall, they help clear airways, boost digestion, protect against cellular damage, and improve general health. Beyond direct therapeutic use, the plant holds significant commercial potential. Driven by rising demand from the pharmaceutical and wellness sectors, the rhizomes are increasingly processed into essential oils and standardized, value-added formulations. Consequently, it is emerging as a highly strategic and profitable crop for commercial medicinal plant cultivators.

AGRO-TECHNIQUES

Alpinia calcarata is a highly shade-tolerant crop. It thrives in tropical climates with temperatures between 13°C and 36°C and an average annual rainfall of 1,600 mm, making it suitable for hilly areas up to 1,400 meters in altitude. It grows best in well-drained, organic-rich sandy or red loamy soils and serves as an excellent intercrop for mature rubber, arecanut and coconut plantations.



Propagation is primarily carried out using freshly harvested rhizomes, which are cut into small pieces containing two to three viable buds each. Planting one hectare of land requires approximately 1,300 kg of fresh rhizomes. Alternatively, the plant can be propagated using young shoots attached to a rhizome base, or through tissue culture when large-scale production is needed.



Before planting, the field must be ploughed thoroughly and enriched with compost or well-decomposed farmyard manure. The rhizome pieces are planted in small pits on raised beds and immediately covered with dry leaf mulch to conserve soil moisture and support early growth. The recommended spacing is 40 × 30 cm for fertile soils, whereas a closer spacing of 30 × 20 cm is preferred for low-fertility areas.

As the crop matures, regular weeding and light earthing-up are necessary to maintain plant health. Irrigation is essential during prolonged dry spells—especially in the crucial initial growth stages—and applying organic manures and biofertilizers will further boost the overall yield. Fortunately, Alpinia calcarata is a hardy crop that rarely suffers from major infestations. If stem borers and leaf-eating caterpillars do appear, they can be effectively controlled by spraying a 2.5% neem seed kernel suspension. In highly humid conditions, leaf blight might occasionally occur, but it can be easily managed with a 1% Bordeaux mixture spray.

HARVESTING AND POST-HARVEST MANAGEMENT



While the crop can be harvested as early as 18 months after planting, waiting 36 to 42 months is ideal for maximizing both rhizome yield and quality. The harvesting process begins when the plant's leaves start turning yellow and drying. Because the rhizomes spread extensively underground, the aerial shoots must be removed first before carefully digging out the rhizomes and roots to avoid damage.



Once harvested, the rhizomes are thoroughly cleaned of soil and debris, cut into 5 cm pieces, and dried in sunlight or a well-ventilated area for three to five days. Reducing the moisture content to around 10% is essential to prevent fungal contamination and preserve the plant's valuable medicinal properties.

For safe storage, the dried material should be kept in moisture-free containers or poly-lined gunny bags. Depending on market demand, the crop can be sold as raw dried material or further processed into powders, herbal formulations, and extracts. Additionally, the rhizomes and roots are highly valued for essential oil extraction via steam distillation; processing fresh rhizomes for three to five hours yields about 0.22% essential oil, whereas the dry weight recovery rate reaches approximately 0.93%.

ECONOMICS OF CULTIVATION

Driven by strong market demand, Alpinia calcarata is a highly profitable medicinal crop that offers excellent economic returns. Under optimal cultivation practices, a one-hectare plantation yields approximately 4,000 kg of dry rhizomes. With an estimated cultivation cost of Rs. 3.45 lakh and a gross income of Rs.6.40 lakh, growers can expect a net profit of nearly Rs. 2.95 lakh per hectare. This translates to a favorable benefit-cost ratio of 1.9, underscoring the crop's strong commercial viability for organized farming.





NMPB-RCFC (SOUTHERN REGION)

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