

HORTICULTURE

PACKAGE OF PRACTICES FOR CULTIVATION OF LONG PEPPER



Long pepper

Recent years have seen a major spurt in the demand of medicinal plants not only within the country but also for its export. More and more number of farmers are entering into this most potential sector. The National Research Centre for Medicinal and Aromatic Plants (NRCMAP), Anand has developed package of practices for cultivation of Long pepper.

Long pepper, *Piper longum* (Linn.) used in the Indian System of Medicine is the dried unripe fruit (known as spike in trade). It is used for treatment of cold, cough, bronchitis, asthma, fever, muscular pains, insomnia, epilepsy, diarrhoea, dysentery, leprosy, etc. Roots and thicker basal stem portion of the plant are also presently used in many Ayurvedic preparations. A large quantity of long pepper is imported by India from Malaysia, Indonesia, Singapore and Sri Lanka. It is cultivated as a commercial crop widely in areas having high rainfall, high humidity and moderate temperature of about 15–35°C like West Bengal, Assam, Meghalaya, Maharashtra (Akola region), Orissa, Andhra Pradesh (Vishakhapatnam area), Uttar Pradesh, Tamil Nadu (Anaimalai Hills), and Kerala.

CLIMATE

It is cultivated in high rainfall areas of Assam and Meghalaya without any supplemental irrigation and as irrigated crop in other parts. Since it is a shallow rooted crop it requires high humidity and frequent irrigation. The plant should be grown under partial shade for good growth. Thus, it can be successfully cultivated as an intercrop in irrigated coconut and areca nut gardens. It is highly sensitive to drought and also waterlogging conditions.

SOIL

The crop thrives well on a variety of soils. Light porous well drained soil rich in organic content is most suited for its cultivation.

LAND PREPARATION

The field should be prepared with two to three ploughings, followed by one or two harrowings and leveling. Considering the slope of the fields, provide drainage for excess water. The crop can not survive under water logging conditions.

PLANTING MATERIAL

Long pepper is propagated vegetatively by rooted vine cuttings. It is recommended to take three-nodded cuttings from any part of the stem to serve as planting material. Rooting takes about 15–20 days after planting. Cuttings can be directly planted in the field or after induced rooting in the nursery, before finally transplanting in the field.

PLANTING TIME

Plant on the onset of monsoon during May-June. About 60 × 60 cm spacing can be maintained between row to row and plant to plant. If plants are to be raised first in nursery, the best time for nursery raising would be one month earlier to actual planting.

VARIETIES

Grow variety “Viswam” as intercrop. The plant attains about 72 cm height and has prolonged flowering phase. It bears stout, short, and thick spikes, which are dark green when mature, having dry matter content of about 20%. This variety gives economic yield for about 240–270 days in a year, and the spikes contain about 2.83% alkaloid.

MANURING

In the first year, apply about 20 ton per hectare FYM at the time of land preparation. In the subsequent years, apply FYM before the onset of monsoon. No chemical fertilizers are recommended for use.

INTERCULTURAL OPERATIONS

During first year weeding may be undertaken as and when necessary. Generally two to three weeding are sufficient. Once the crop grows and covers the field, no serious problems of weeding are faced.

IRRIGATION

Ensure irrigation during summer months. Irrigate once or twice in a week depending upon the water holding capacity of the soil. Even during

the monsoon period, if there is a failure of rains for quite some time, apply irrigation. As irrigated crop, spike production continues even in summer months.

PLANT PROTECTION

Phytophthora leaf, stem rot, and anthracnose are important diseases of long pepper. Spray 0.5 per cent Bordeaux mixture at fortnightly intervals and carry out soil drenching of 1% Bordeaux mixture at monthly interval to reduce the losses caused by these diseases. Application of 0.25% Neem seed kernel extract as spray or any other Neem based insecticides is effective to control mealy bugs and *Helopeltis theivora* damaging tender foliage.

HARVESTING AND DRYING

Vines start fruiting six month after planting. The female spikes take about two months to mature from its inception. A full grown mature spike should be harvested before ripening. In Kerala, three to four pickings can be taken depending upon the maturity of spikes. Harvest spikes when these are blackish green in colour. Yield of dry spikes in first year is about 400 kg/ha and upto 1, 000 kg/ha in the third year. After third year yield declines and after fifth year gradually becomes uneconomical. Besides spikes, thicker roots and basal stem portions should also be cut and dried before crop is abandoned, as these are used as important drug constituents in the Ayurvedic and Unani systems of medicine. On an average 500 kg roots are obtainable per hectare. Dry the harvested spikes in the sun for 4–5 days. Green spike to dry spike ratio is about 5 : 1. Dried spikes should be stored in moisture proof container. The produce should not be stored more than a year.

CHEMICAL COMPOSITION

Fruits contain volatile oil, resin, piperine (4–5%) and a terpenoid substance. Roots contain piperlongumine as major alkaloids in addition to piperine.

ECONOMICS

The crop gives a net profit of about Rs 25,000–75,000 per hectare from second year of planting. At the terminal year, the profitability increases due to extra income from the dried roots and stem sold as piplamul.

Caution: Cultivation of medicinal plants is undertaken by first assuring its market. The growers may like to establish buy back arrangements to minimize the risk of distress selling.

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