

Package of practices for Cinnamon Cultivation



- Later the entire leaf is affected and disease spread to the stem causing die back.

Control measures

- Pruning of affected branches and spraying of Bordeaux mixture 1% is recommended for control of the disease.

Black Sooty Mold

Casual organism: *Capnodium* spp. and *Stenella* spp.

Symptoms

- Black sooty mold is a fungal disease frequently observed in cinnamon plants cultivated in shaded environments.
- Blackish growth on the lower surface of the leaf due to sooty mold fungus is the characteristic symptom of the disease.
- It manifests as white, gray, or black spots on the leaf surface, although it does not cause economic harm to the crop.
- The fungal growth is found only to the surface and no penetration into the leaf tissues has been observed.



Control measures

- Remove shading in the field to reduce the conditions favorable for fungal growth.

Seedling blight: *Diplodia* sp.

- It occurs in seedling at the nursery stage.
- The fungus causes light brown patches which girdling the stem causes mortality of the seedlings.

Grey blight: *Pestalotia palmarum*

- The small brown spots which turn grey surrounded by a brown boarder.
- Seedling blight and grey blight can be spraying with 1% Bordeaux mixture.

Harvesting & Post Harvest Processing

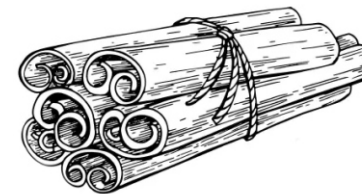
- Cinnamon trees typically grow to a height of 10 to 15 meters. However, they can be maintained in a bush form by periodically coppicing when the plants are 2 years old.

- Cut the trunk 12 cm above ground level during June and July.
- After coppicing, the stump is covered with soil to promote the development of side shoots.
- This process can be repeated for every shoot that arises from the main stem in the following seasons, with the first coppicing taking place in the 4th or 5th year after planting.
- The timing of harvesting and peeling the bark is a critical skill for obtaining high-quality bark.
- Fully developed shoots, with a diameter of 1.5 to 3.0 cm, should be harvested during the rainy season to ensure good quality and high yield.
- A test cut is made to determine whether the shoots are ready for peeling; if the bark easily separates from the wood, it is suitable for peeling.
- When harvesting, the stems are cut close to ground level, and the leaves and terminal shoots are removed. The harvested shoots are then bundled and transported to the peeling sheds.
- The harvested shoots are cut into straight pieces measuring between 1.0 and 1.2 meters in length, followed by scraping and peeling.
- Peeling is performed using a specially designed knife with a small, rounded end and a projection on one side to assist in removing the bark.
- Initially, the rough outer bark is scraped off, and the scraped areas are polished with a brass or aluminum rod to make peeling easier.
- The peelings are collected and allowed to dry overnight, then dried in the shade for one day. After that, they should be dried in direct sunlight for 3 to 4 days.
- As the bark dries, it contracts and takes on the shape of quills. Smaller quills are then inserted into larger ones to create compound quills.
- The quills of cinnamon are graded from the finest to the coarse, with the finest grade denoted as 00000 and the coarsest as 0.



Yield

- Quills of 60-120 kg first crop 3-4 year after planting and whereas grown up plants 10-11 years yield about 75 kg of quillings and featherings.
- About the 4 kg bark oil can be obtained from 1 ha cinnamon plantations.



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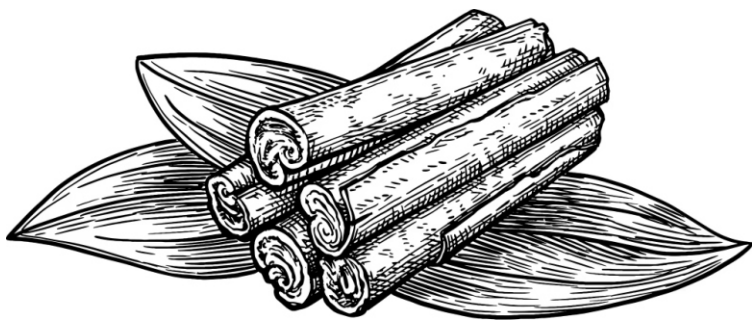
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Cinnamon

Introduction

Cinnamon commonly known as True Cinnamon or Ceylon Cinnamon. It is an evergreen tree that can grow over 10 meters tall; however, in commercial cultivation, it is typically maintained as a bush through frequent coppicing. The bark and leaves of cinnamon have been used as spices in culinary preparations since ancient times. In India, the major states cultivating cinnamon include Kerala, Tamil Nadu, Karnataka, Goa, Himachal Pradesh, and Imphal. There is a significant demand for cinnamon bark, leaves, and their value-added products in both domestic and international markets. Goa, known as a "Spice Hub," has excellent conditions for cultivating various spices, including cinnamon.

Soil & Climate

Cinnamon is a hardy plant and it can thrive in a wide variety of soil and climatic conditions. The soils should be well-drained, sandy, or loamy, with a high organic matter content is suitable for cultivation. Tree requires a hot and tropical humid climate. The tree is mostly grown as a rainfed crop, so 200-250 cm well-distributed annual rainfall is ideal for its cultivation.

Varieties

- Nithyashree
- Navashree
- Konkan Tej
- Konkan Tejpatta
- YCD-1
- PPI © 1
- Sugandhini
- RRL (B) C-6
- Goa Dalchini1



Goa Dalchini - 1

- The young leaves are red and mature to a deep green color.
- Leaf measures approximately 13.42 cm in length and 6.2 cm in width.
- The flowering season occurs from December to January, and the flowers are creamy or light yellow in color.
- The bark is light brown and has a recovery rate of 39.8%.
- It contains 2.66% bark oil and 3.1% leaf oil, and is known for its high cinnamaldehyde content.
- The tree produces 275 to 325 g of dry bark per plant.

Cultivation

Propagation

- Generally, Cinnamon is propagated through seed, cuttings and air layering.
- Cinnamon is generally propagated using seeds.
- The optimal time for sowing seeds is from June to July.
- Seeds can be sown in a sand bed or in polythene bags filled with a propagation mix made of sand, cattle manure, and soil in a 2:2:1 ratio.
- Germination usually occurs within 15 to 20 days, and it is important to provide frequent irrigation to maintain adequate moisture levels.
- Seedlings are kept in the nursery for up to six months, during which shade should be provided.
- Once the seedlings are well-established and ready, they can be transplanted to the main field.
- For cuttings, use semi-hardwood pieces that are about 10 cm long and contain 2-3 leaves are should be used.
- To improve the rooting percentage, treat the cuttings with a 2000 ppm IBA solution.
- Rooting typically occurs within 45 to 60 days, at which point well-rooted cuttings should be transplanted into polyethylene bags with potting media, kept in shade, and watered regularly.
- Air layering is the most successful method for propagating cinnamon.
- The best time for air layering is during the months



of July and September, and it usually takes about 40 to 60 days to root.

- Air layers treated with IBA tend to produce more roots.
- Sphagnum moss is a better rooting medium compared to sand and sawdust.

Land preparation and planting

- The land should be cleared and ploughed before planting cinnamon.
- About 50 cm x 50 cm x 50 cm pits are dug out in a spacing of 3m x 3m and filled with compost and topsoil.
- The planting should be done in the months of June and July for better establishment during the monsoon season.
- The well-rooted cuttings or layers of 3-4 are planted in each pit.
- The partial shade and irrigations are provided for the initial years for good growth and development.



Cultural operations

- Weeding should be done twice in a year, during June and July, and again in October and November.
- For the first year, it is recommended to apply approximately 20 g of nitrogen (N), 18 g of phosphorus pentoxide (P2O5), and 25g of potassium oxide (K2O) per plant.
- Gradually, the fertilizer dosage can increase to 200g of N, 180g of P2O5, and 200g of K2O for plantations that are 10 years old and above.
- Fertilizers should be applied in two split doses, once in May-June and again in September-October.
- Additionally, mulching with 20 kilograms of green leaves is advised, as it helps conserve soil moisture during the summer months.
- It is also recommended to apply 25 kilograms of well-rotted farmyard manure (FYM) in May-June.

Pest

Cinnamon butterfly: *Chilasa clytia*

Symptoms

- Cinnamon butterfly is the most serious pest in young plantations and also in the nursery stages after the rainy season.

- The larvae feed on the tender and slightly mature leaves; in severe cases, all the leaves are defoliated, leaving only mid-ribs and portions of the leaves.

Control measures

- Spraying quinalphos @0.05% on the tender and mature leaves could control this pest.



Leaf miner: *Conopomorpha civica*

Symptoms

- It is commonly found in the monsoon season in nursery plants and severely affects them.
- The larvae fed on the upper and lower epidermis of leaves, showing linear mines that cause blister-like patches.
- In severe infestation, infected leaves crinkle and mined areas dry up, causing large holes in the leaves.

Control measures

- Spraying of quinalphos 0.05% during the emergence of new flushes is effective in preventing this pest infestation.

Diseases

Leaf spot and die back

Casual organism: *Colletotrichum gloeosporoides*

Symptoms

- Small deep brown specks on the leaves which later coalesce to form irregular patches.
- In severe infestation the affected portions are shed off causing shot holes on the leaves.

