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Leaf Blight or Chenthal Disease of Small Cardamom

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Leaf blight of cardamom, popularly known as Chenthal was first reported from Vandanmedu village of Idukki district in Kerala. The disease is widely distributed in all the cardamom growing regions of South India. The disease mainly affects foliage nnd by destroying the effective photosynthetic aren, it adversely affects fruit set and capsule weight. Chenthal results in a yield reduction of 7-13% in Mysore type of cardamom.

Introduction

Disease Name : Cardamom Leaf Blight

Causal Organism: *Colletotrichum gloeosporioides*

Cardamom is an aromatic spice from the ginger family, known as the "Queen of Spices," native to the Western Ghats of India. A spice made from the dried fruits (capsules) of several plants in the genera *Elettaria* and *Amomum*

Culinary uses

- **Flavor:** Known for its strong, sweet, and pungent aroma, used in both savory and sweet cooking.
- **Applications:** Found in a variety of foods, confectioneries, beverages, and liquors.

Types

- **Green cardamom:** The most common type, used in most recipes.
- **Black cardamom:** Has larger, darker pods and a smokier flavor, often used in savory dishes.
- **White cardamom:** Typically green cardamom that has been bleached, losing much of its flavor and aroma.

Symptoms of Cardamom Leaf Blight

- Elongated, water soaked lesions of varying size appear on the upper surface of the leaf.
- The spots becomes brown to dark with pale yellow hole. Leaves wither and pseudo stem wilts.
- New shoots which develop are reduced in size. Flowers fail to develop.
- The inflorescence dry up stating from tip downwards. The affected garden shows burnt appearance.

Figure 1 Symptoms of Leaf Blight or Chenthal Disease of Cardamom

Pathogen Character

Teliomorph state (sexual): *Glomerella cingulata*

The sexual stage of *Colletotrichum gloeosporioides* is *Glomerella cingulata*, which forms black perithecia containing 8-spored asci and ellipsoid hyaline ascospores, contributing to pathogen genetic diversity and long-term survival in infected plant debris.

Anamorph state (Asexual): *Colletotrichum gloeosporioides*

The mycelium of *Colletotrichum gloeosporioides* is septate, hyaline and smooth-walled, becoming pale to dark grey as the culture ages, and shows rapid growth on potato dextrose agar (PDA). The fungus produces cylindrical to oblong hyaline conidia, measuring approximately 10–16 × 4–6 µm, which are formed in mucilaginous orange to pinkish masses. Conidiophores are short, simple and hyaline. The pathogen also forms dark brown, thick-walled appressoria that are clavate to irregular in shape and play an essential role in direct host penetration. Acervuli are dark and erumpent on infected tissues and bear prominent black setae

Mode of Spread and Survival

Pathogens are spread by water splash and air currents. They can also be seed-borne survival: They can survive in soil on dead plant debris as a saprophyte, and some species can also exist as harmless endophytes within healthy plants.

Favorable Condition

They are most abundant in tropical and subtropical regions and thrive in warm, humid environments, with optimal growth often occurring around (28°C).

Management Practices

CULTURAL CONTROL:

- Destroy blight affected portions and plant debris during May i.e., before the onset of monsoon.
- Intensity of the disease can be reduced by providing adequate shade in the plantations.
- Maintain optimum shade levels by allowing upto 40-60% filtered light.
- Removal and destruction of affected leaves

BIOLOGICAL CONTROL

- The leaf blight pathogen of cardamom survives mainly on the infected leaves in the soil.
- Application of Trichoderma spp. possessing superior antagonistic potential could possibly reduce inoculum level of the Pathogen.
- Extracts of different plant species tested showed varied antifungal potentials. Extracts of Solanum torvum, Smgrum and Azadirachta indica showed more than 50% inhibition of fungal mycelial growth.

CHEMICAL CONTROL

- Three sprays with carbendazim 0.1% (or) Mancozeb 0.2% (or) copper oxychloride 0.25% at 30 days interval
- As a prophylactic measure, spray Bordeaux mixture (I%) @ 500 mL or I L /plant before the commencement of monsoon.
- Adequate care should be taken to ensure that the entire foliar portion is covered with the spray solution

References

1. Govindaraju, R., *et al*. (1996). *Colletotrichum gloeosporioides* as the causal agent of Chenthal disease in cardamom.
2. Darshana, C. N. & Jashmi, K. C. (2013). *Preliminary evaluation of cardamom accessions against leaf blight/Chenthal disease*. *Indian Phytopathology, 66(1), 112–113.* This is the study you already have; it deals with screening cardamom accessions against the disease.