

A lush green tea plantation with rows of tea bushes stretching into the distance under a bright sky. The tea leaves are vibrant green and densely packed.

DISEASES OF FIELD AND HORTICULTURAL CROPS – I

SESSION 29-30

COLACASIA, TEA & COFFEE DISEASES

PHTOPHTHORA BLIGHT OF COLACASIA

❖ *Phytophthora colacasiae*

❖ Symptoms

1. Initially, small, dark brown flecks or light brown spots on the upper leaf surface near margins
2. The spots enlarge rapidly, becoming circular, zonate, and purplish brown to brown in color
3. Spots increase in size they coalesce and quickly destroy the leaf .
4. Producing a “shot-hole” appearance.
5. Dead leaves often hang on their long petioles like flags



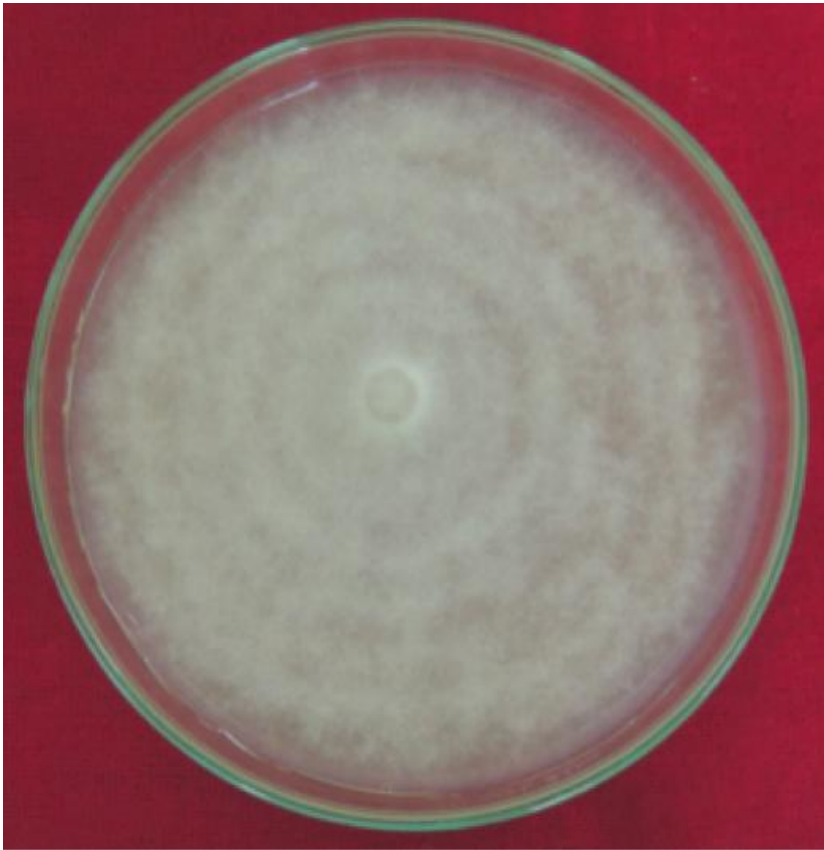
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Etiology

- ❖ Chromista>Oomycota>Oomycetes>Perenosporales>Perenosporacea
- ❖ Hyphae - Coenocytic, Cellulosic cell wall
- ❖ Sporangia, Oospores



❖ Disease cycle

- ✓ Primary inoculum - Oospores and dormant mycelia in soil/ crop debris/ Rhizomes
- ✓ Secondary spread - Zoospores

❖ Favourable Conditions

- ✓ $T \sim 25\text{ }^{\circ}\text{C}$; $\text{RH} > 90\%$
- ✓ Cloudy weather with light rains
- ✓ Water logging
- ✓ Young plants are more susceptible

❖ Management

1. Field sanitation
2. Crop rotation
3. Ensure drainage
4. Deep summer ploughing
5. Green manuring and application of Neem cake @ 2.5t/ha
6. Soil application of *Trichoderma* enriched FYM (5t/ Ha)
7. Foliar spray :
 - i) Metalxyl MZ- 0.2%

Blister Blight of Tea

❖ *Exobasidium vexans*

❖ Symptoms

1. In nursery infection, seedlings are stunted with many thin stems instead of a single stalk
2. Repeated attacks cause **death of seedlings**
3. Initially oily, yellowish, translucent spots appear on the tender leaf and turn to deep **red shiny blisters**
4. The circular spot gradually enlarges to 3 to 13mm diameter, **bulged on the under surface** of the leaf with a concave trough like **depression on the upper surface**
5. Leaves become curled and distorted
6. First flush of 2-3 young leaves are attacked and the young shoots and buds are killed
7. Mature leaf is less affected
8. Succulent leaves and **green shoots of newly pruned tea are most susceptible**



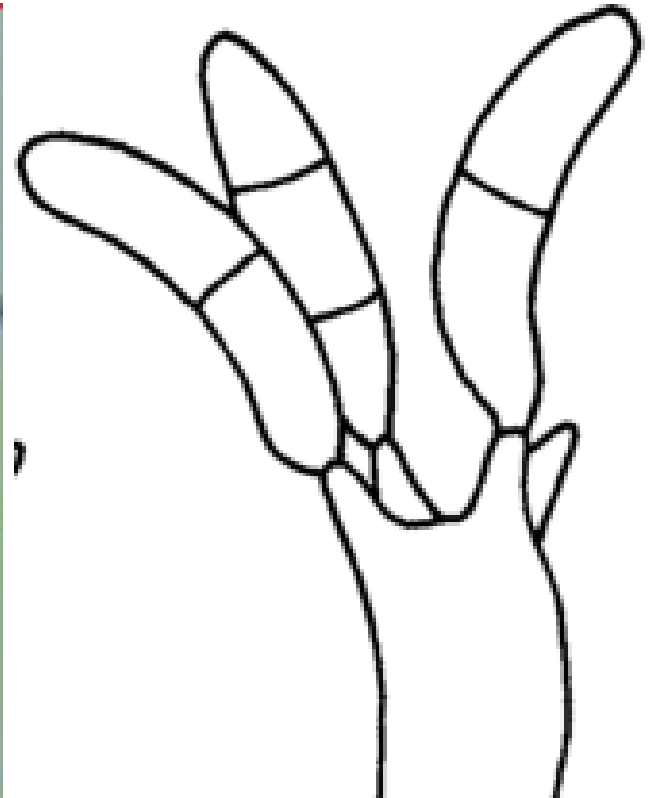




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Etiology

- ❖ Hyphae - Septate
- ❖ Spores - Basidiospores



❖ Disease cycle

- ❖ **Primary infection** – Infected trees
- ❖ **Secondary infection** – Basidiospores

❖ Favourable Conditions

- ✓ Relative humidity $> 83\%$ for 7 to 10 days favours disease
- ✓ Temperature $\sim 25^{\circ}\text{C}$
- ✓ Bushes in low, moist and shady localities suffer more
- ✓ Pruned trees with new flush is highly susceptible

❖ Management

1. Use disease free planting materials
2. Shade regulations
3. Seedlings should be protected in nursery by weekly sprays of [COC@0.3%](#)
4. Spray, a mixture of **210 g COC + 210 g Nickel chloride** per ha at 5 days intervals from June-September and 11 day intervals in October-November

Coffee Rust

❖ *Hemileia vastatrix*

❖ Symptoms

1. Small, **pale yellow spots on the upper surfaces** of the leaves usually around the margins
2. Later masses of **orange uredospores appear on the under surfaces**
3. The centers of the spots eventually dry and turn brown, while the margins of the lesions continue to expand and produce uredospores
4. The infected leaves drop prematurely, leaving long expanses of **twigs devoid of leaves**
5. The damage to the plant is severe when it affects **the young flush**, causing defoliation and considerable reduction in yield



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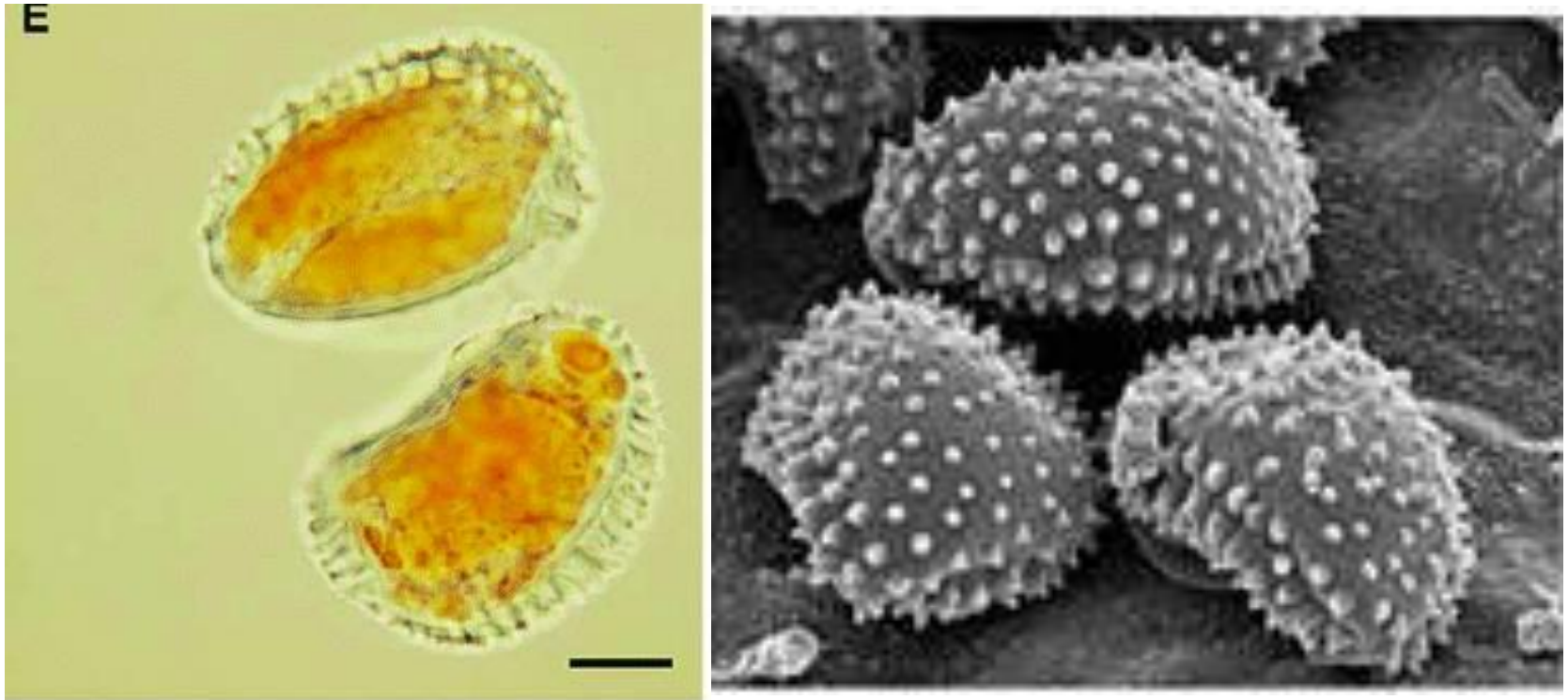
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Etiology

- ❖ Hyphae - Septate
- ❖ Spores – Uredospore (Reniform) and Teliospores (Turnip shaped)



❖ Disease cycle

- ❖ **Primary infection** – Infected trees/Fallen leaves
- ❖ **Secondary infection** – Uredospores

❖ Favourable Conditions

- ✓ Frequent rains with high humidity
- ✓ Severe from July to December

❖ Management

1. Use disease free planting materials
2. Collect diseased leaves and destroy
3. Spray the bushes once with BM@0.5% or COC@0.25% and subsequently 2-3 times during monsoon
4. Spray [Triadimefon@0.05%](#)