

B.Sc. Third Year, Semester - V

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Plant Pathology Unit-2

8) Plant Diseases on Trees

a) Cercospora on *Albizia* fruits



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7) Plant Diseases on Trees

a) **Cercospora** on *Albizia* fruits

Causal Organism: *Cercospora albizae*

Host: *Albizia lebbbeck*

. Classification

- Division- Mycota
- Sub Division- Eumycotina
- Class- Ascomycetes
- Sub Class- Dothiodeomycetes
- Order- Capnodiales
- Family- Mycospherellaceae
- Genus- *Cercospora*
- Species- *albizae*

Distribution

Albizia lebbbeck is used in pathway farming system in Africa and India and is under trial in Thailand. Lowry et. al. (1994) highlighted the fact that in northern Australia the species, as well as providing stock feed directly, appears to enhance pasture production and quality, probably due to shading and related improved soil moisture status and fertility from litter breakdown . The shade is also a benefit in animal production in the dry tropics.

Symptoms:



It causes grey, circular shot hole lesions. Spots are circular, 1-3 mm in diameter, white center and dark purple to brown margin.

Causal organism and disease cycle:

Albizia lebbek fruit spot caused by *Cercospora albiziae*.

Conidiophores 2-8 in a spreading fascicle, pale to very pale olivaceous brown, paler and narrower towards the apex, septate, not branched, geniculate, subtruncate at the apex, 30-140 x 4-6.5 micrometer, conidial scars thickened conspicuously. Conidia hyaline, acicular to obclavate, straight to mildly curved, indistinctly multiseptate, acute at the apex, truncate at the base with a thickened hilum, 25- 150 x 3.5- 7 micrometer.

Disease cycle- *Cercospora* survives only as long as infected fruit debris is present, however, it is a poor soil competitor. The debris on the soil surface is a cause for primary inoculation that infects the incoming for the next season. Conidia (asexual spores) are produced by *Cercospora* in the debris through wind dispersal or rain. The conidia are disseminated and eventually infect new legumes of *Albizia*.

In order for the pathogen to actually infect the host, high relative humidity and moisture (dew) on the leaves are necessary for inoculation. Primary inoculation occurs on lower region of younger legumes, where conidia germinate and penetrate through stomata via a flattened hyphal organ, an appressorium. *Cercospora* is a typical in that its conidia can grow and survive for days before penetration, unlike most spores that need to penetrate within hours to ensure survival. Once infection occurs, the conidia are produced in these lower regions. Assuming favorable weather conditions, these conidia serve as secondary inoculums for upper leaf region. Additionally, wind and heavy rains tend to disperse the conidia during many secondary cycles to other parts of the field causing more secondary cycles of infection.

Control measures:

- **Seedling and saplings may be dug out or removed by hand pulling while larger trees may be cut and the stumps treated with herbicide.**

Thank you