PRACTICE-2
TO STUDY ABOUT DISEASES OF SUGARCANE

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Identification of Sugarcane Disease in field Condition

Red rot of sugarcane
Causal organism: *Colletotrichum falcatum*
Smut of Mango
Causal organism: *Ustilago scitaminea*
Procedure of slide preparation

• Place a drop of fluid (Cotton blue or Lactophenol) in the center of the **slide**.

• Position sample (Thickness of 5mm) on liquid, using **tweezers**.

• At an angle, place one side of the cover slip against the **slide** making contact with outer edge of the liquid drop.

• Lower the cover slowly, avoiding air bubbles.

• Remove excess water with the paper towel.
Identify the conidia and spore Conidia of Colletotrichum falcatum
Identify characteristic of pathogen

- The fungus produces thin, hyaline, septate, profusely branched hyphae containing oil droplets.

- The fungus produces black, minute velvetty acervuli with long, rigid bristle like, septate pointed setae on the surface of rind, leaf midrib and sometimes in the pith region.

- Conidiophores are closely packed inside the acervulus, which are short, hyaline and single celled measure about 20×8μ.
The conidia are single celled, hyaline, falcate, granular and guttulate measure about 16-48×4-8μ.

- The perfect stage of the fungus produces large number of globose and dark brown to black perithecia with a papillate ostiole. Asci are clavate, unitunicate and eight spored.

- Large number of hyaline, septate, filiform paraphyses is also present among asci.

- Ascospores are ellipsoid or fusoid, hyaline, straight or slightly curved and unicellular.
Identify the conidia and spore

Smut spore
Identify characteristic of pathogen

The fungal hyphae are primarily intercellular and produce tiny black **teliospores**.

- **The thin** membrane which covers the smut whip represents the host epidermis.
- The smut spores are light brown in colour, spherical and echinulate.