



FACULTY OF AGRICULTURAL SCIENCES AND ALLIED INDUSTRIES

**DISEASES OF FIELD&HORTICULTURAL CROPS&
Management 1 PPA - 312**

LECTURE 06

1. NAME OF DISEASE – PHOMOPSIS BLIGHT/ FRUIT ROT

Pathogen-Phomopsis vexans (P.S: Diaporthe vexans)

- The disease is severe in tropical and sub-tropical areas of the world. In India, it was reported in 1935 in Gujarat.
- The pathogen attacks foliage and fruits, but the latter phase is more destructive.

Symptoms

- The plants are attacked at all stages of growth, producing damping-off symptoms in nurseries and collar rot on young plants
- On leaves, circular to irregular, clearly defined grayish brown spots having light centers appear. The diseased leaves become yellowish in colour and may drop off. Several black pycnidia can be seen on older spots
- The lesions on stem are dark brown, round to oval and have grayish centers where pycnidia develop. At the base of the stem, the fungus causes characteristic constrictions leading to canker development and toppling of plants
- On fruits, small pale sunken spots showing concentric rings appear which on enlargement cover entire fruit surface. These spots become watery leading to soft rot phase of the disease. A large number of dot like pycnidia also develop on such spots
- The infection of fruit through calyx leads to development of dry rot and fruits appear black and mummified



Soft watery mass



Watery decay

Survival and spread

- **Primary:** Pathogen is seed borne and also survives in plant debris as mycelium and pycnidia
- **Secondary:** Conidia dispersed through rain splashes, irrigation water, agricultural tools and insects

Favourable conditions

- High relative humidity coupled with higher temperatures favour disease development.
- Maximum disease development takes place at about 26 degree C under wet weather conditions

Management

- Procuring seeds from healthy fruits followed by seed treatment with thiophanate methyl at 1g/kg seed or hot water treatment of seed at 50 degree C for 30 minutes
- Practicing crop rotation and summer ploughings helps in reducing initial inoculum
- Removal and destruction of diseased crop debris
- Spray twice with thiophanate methyl or carbendazim@0.1% at 20 days interval
- Resistant variety: Florida Beauty. *Solanum gilo*, *S. macrocarpa* and *S. integrifolium* are wild resistance donors

2. NAME OF DISEASE – SCLEROTINIA BLIGHT

Pathogen – Sclerotia sclerotiorum

- The disease is caused by *Sclerotinia sclerotiorum* (Lib.) De Bary.
- It is a serious disease of brinjal
- Besides brinjal, it also infects tomato, potato, pea, chick pea and lentil .
- The damage to brinjal is mainly through partial or complete wilting of the plant. Occasionally, the fungus may attack the seedlings in nursery.

Symptoms

- The infection may occur at any part of the foliage, mainly the stem or branches.
- At the point of infection, a dry and discoloured spot develops.
- It gradually girdles the entire stem and also progresses up and down.
- As a result of tissue necrosis, the portion of the plant beyond the point of infection wilts.

Factors responsible for disease

- High soil moisture coupled with temperatures range of 16 to 21oC is favourable for disease development.
- In the absence of the host, the fungus subsist in the form of sclerotia in soil or affected plant debris.

Management

- Immediately after harvest, the affected plants and debris should be collected and burnt.

- Deep summer ploughing should be given in such a way that surface soil is buried deep.
- Rotation of cropping pattern with crops like beet root, onion, maize, paddy and gingelly eliminate the fungal inoculum in the field.
- Spraying Mancozeb 75 % WP @ 3 g per litre or Carbandazim 50% WP @ 2 g per litre controls the disease.