



FACULTY OF AGRICULTURAL SCIENCES AND ALLIED INDUSTRIES

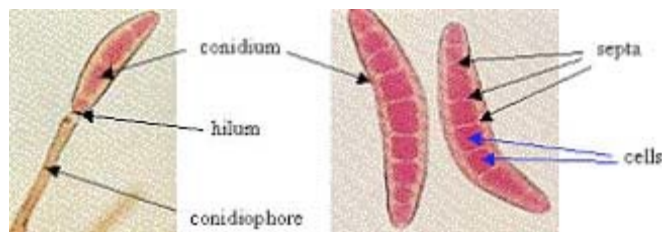
DISEASES OF FIELD CROPS PPA - 301

LECTURE 02

NAME OF DISEASE - BROWN SPOT –

Pathogen *Helminthosporium oryzae*

Bipolaris oryzae produces brown septate mycelium. **Conidiophores** arise singly or in small groups. They are geniculate, brown in colour. **Conidia** are usually curved with a bulged center and tapered ends. They are pale to golden brown in colour and are 6-14 septate. The perfect stage of the fungus is *C. miyabeanus*.

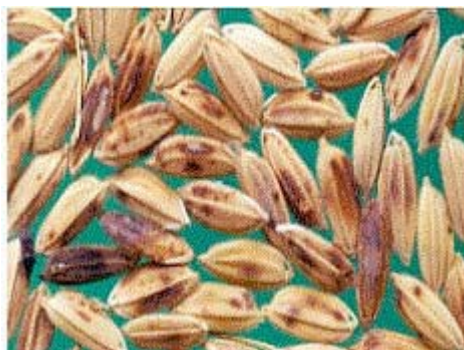


Symptoms

The fungus attacks the crop from seedling to milky stage in main field. Symptoms appear as minute spots on the coleoptile, leaf blade, leaf sheath, and glume, being most prominent on the leaf blade and glumes.



Leaf symptoms



Glume infection

The spots become cylindrical or oval, dark brown with **yellow halo** later becoming circular. Several spots coalesce and the leaf dries up. The seedlings die and affected nurseries

can be often recognised from a distance by scorched appearance. Dark brown or black spots also

appear on glumes leading to grain discoloration. It causes failure of seed germination, seedling

mortality and reduces the grain quality and weight

Favourable Conditions

Temperature of 25-30°C with relative humidity above 80 per cent are highly favourable.

Excess of nitrogen aggravates the disease severity.

Disease Cycle

Infected seeds and stubbles are the most common source of primary infection. The fungus also survives on collateral hosts like *Leersia hexandra* and *Echinochloa colonum*. The brown spot fungus is normally present in areas with a long history of rice culture. Airborne spores that are capable of causing infection are produced in infested debris and older lesions.

Management

Field sanitation-removal of **collateral hosts** and infected debris from the field.

Use of slow release nitrogenous fertilizers is advisable.

Grow tolerant varieties *viz.*, Co44 and Bhavani.

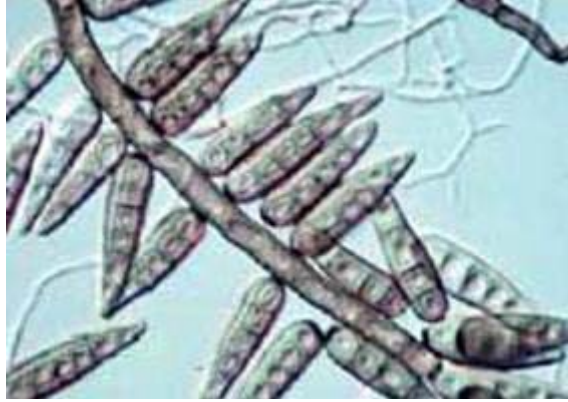
Use disease free seeds.

Treat the seeds with **Thiram** or **Captan** at 4 g/kg. Spray the nursery with **Edifenphos** 40

ml or **Mancozeb** 80 g for 20 cent nursery.

Spray the crop in the main field with **Edifenphos** 500 ml or **Mancozeb** 2 kg/ha when

grade reaches 3. If needed repeat after 15 days.



Coidia and Conidiophore

