Lect. 5

Powdery Mildew (*Erysiphe graminis* f.sp. *tritici)*
Host: Wheat
Erysiphe graminis* f.sp. *hordei
Host: Barley

Symptoms:

- White or gray- brown powdery or cottony patches of mycelium on the upper surface of lower leaves.
- Small, brown - black spots (cleistothecia) are visible.
- Yellowing is usually visible on the undersides of leaves opposite the powdery patches.

Conditions:

Disease development is favored by
- high plant populations
- high humidity
- 18 – 22 °C

Inoculum Survival: Infected crop residues.
- mycelium
- cleistothecia

Inoculum Dispersal: Airborne spores.

Importance:

- Yield losses can be high (up to 20%) and early control can be very important.

Management:

1- crop rotations.
2- resistant cultivars.
3- destruction of residues.
4- proper fertilization.
5- foliar fungicides.

Disease: Spot blotch (Foot Rot)

Pathogen: *Bipolaris sorokiniana*
Hosts: wheat & barley

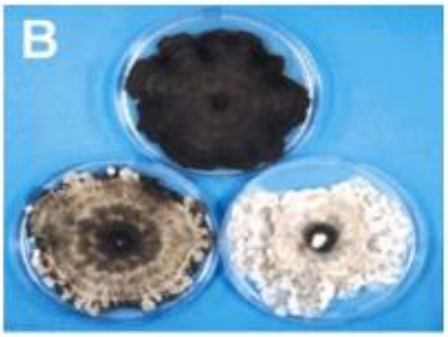
Symptoms:

- Seedborne infection can result in seedling death.
- Stem base rotting and poorly filled ears (A)

Common root rot (B)
black point on seeds(C) (compare with healthy grains in (D).

Conidia on stem

Conidia



Fungus growth on Petri dishes

Environmental conditions:

The pathogen has a worldwide distribution, but is particularly important and aggressive under conditions of high relative humidity and temperature associated with imbalanced soil fertility

Importance:

- One of the most serious foliar disease for both crops (wheat and barley) in warmer growing areas.
- Causes significant yield losses, up to 70%.

Inoculum: Survival

The fungus is both soil and seedborne.

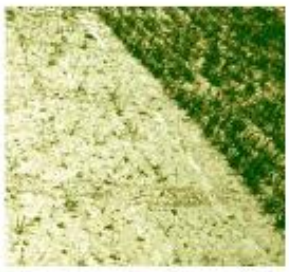
Control:

1- cultural practice
2- crop rotation
3- seed treatment
4- foliar fungicide
5- disease resistant varieties

Disease Name:
Fusarium Seedling Blight
Fusarium Crown Rot
Fusarium Head Blight (FHB)
Pathogen: Fungus *Fusarium* (*F. culmorum, F. graminearum* and *F. avenaceum).*



Symptoms:
1-Seedlings are killed before emergence.
2-Seedlings are stunted and yellow, brown crown, roots or lower stem.
3- Lesions are variable in shape and size.
4- In older plants cause a reduction in the number or size of tillers that mature prematurely with white and shriveled heads.







Inoculum Survival: on debris in soil, seed.

Inoculum Dispersal: Soilborne and seedborne spores.

Control:

- Crop rotations.
- Use foliar fungicides.
- Seed treatments.

T.A.