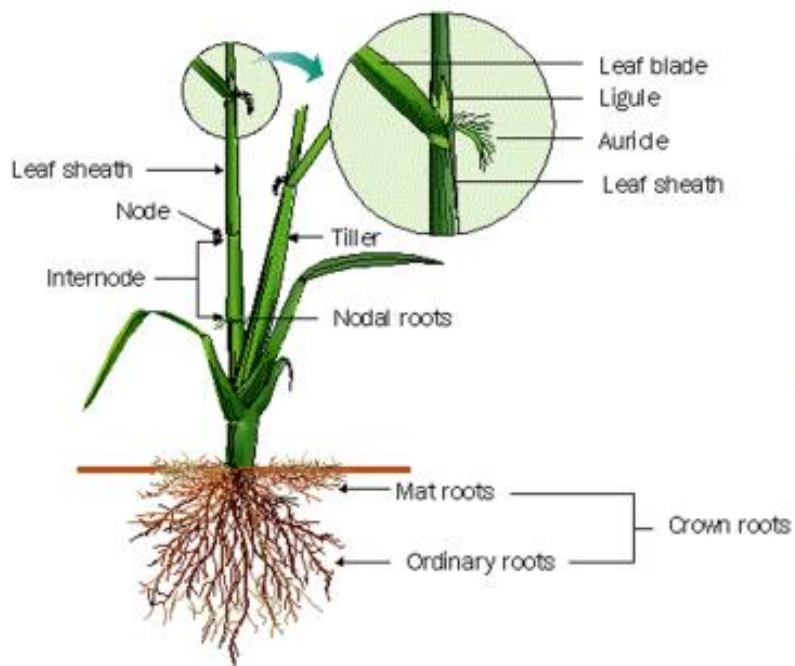


Rice diseases



Panicle

Seedling Blight

Seedling blight (damping off):

- . Is a disease complex caused by several seed and soil-borne fungi, including species of;
- Pythium
- Fusarium
- Rhizoctonia
- Sclerotium

Distribution:

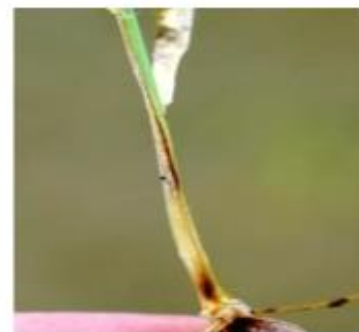
Present in all rice growing areas.

Symptoms:

- Seedlings are weakened or killed by the fungi (A).
- Blighted seedlings die soon after emergence.
- Those that survive generally lack vigor, are yellow or pale green and spotted (B).



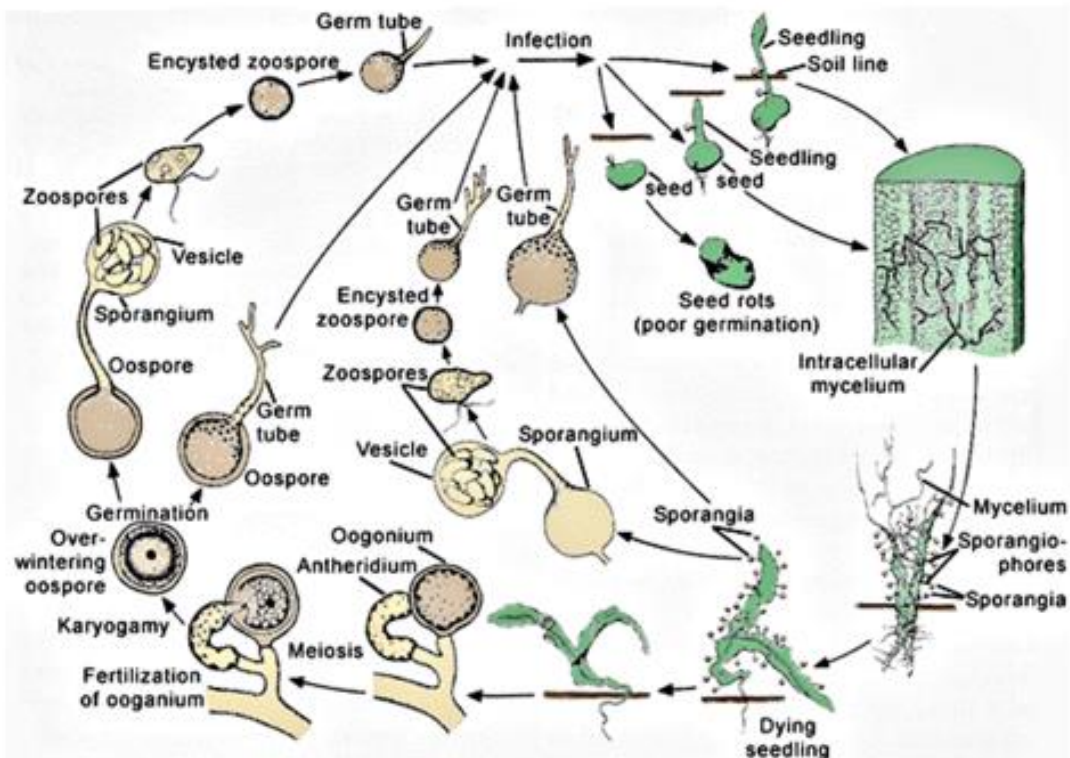
(A) Blighted rice seedlings



(B) Spots on rice seedling



Soil-borne fungi in the genus *Pythium* attack and kill seedlings from germination to about the three-leaf stage of growth. This disease is most common in *water-seeded rice*.



Disease cycle of damping-off and seed decay caused by *Pythium* sp. (adapted from Agrios).

Environmental conditions:

Environmental conditions are important in disease development.

Cold, wet weather is most favorable to disease development.

Important factors:

The severity and incidence of seedling blight depend on three factors:

- Percentage of the seed infested by seed-borne fungi.
- Soil temperature.
- Soil moisture content.

Control:

- Fungicide seed treatment.
- Cultural methods;
 - Planting date.
 - Shallow seeding.

Treatment of the seed with a fungicide is recommended to improve or ensure stands. Proper cultural methods for rice production, such as proper planting date or shallow seeding of early-planted rice, will reduce the damage from seedling blight fungi.

Brown Spot: Fungus: *Bipolaris oryzae*
Sexual stage: *Cochliobolus miyabeanus*

Symptoms:

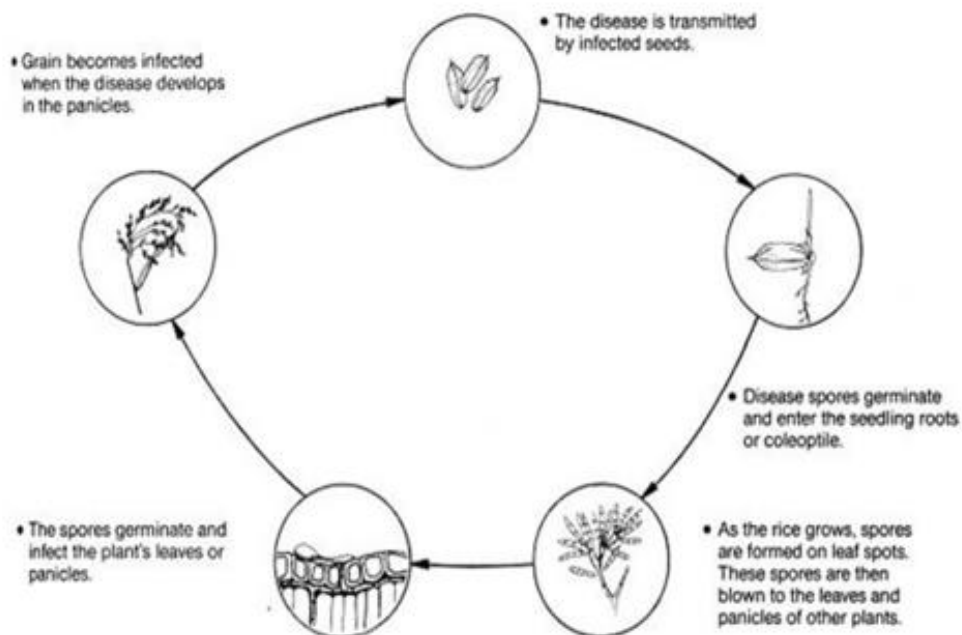
- diseased seeds show poor germination.
- Symptoms appears on all parts of rice plant as dark brown, oval spot.
- The grains are shriveled and discolored.



(brown spot on leaves and seeds)



grains are shriveled and discolored



Favorable conditions

- Heavy continuous rain.
- Deep sowing of seeds favor high seedling infection.
- Nitrogen and potash deficiency favors the disease intensity.
- High temperature and moisture in a cloudy weather favor quick spread of the disease in the field.

Importance:

- The disease is very common in rice growing area especially where rice is under stress.
- Depending upon disease severity, losses may vary from slight to 75%

Survival:

- Is soil and seed borne

Management Practices:

- Cultural practices
 - Seed treatment.
 - Spray with fungicides
 - Sow less susceptible varieties.
-
- Maintain good growing conditions through proper fertilizer, land leveling (flattening), good soil preparation, remove debris and other cultural practices.
 - Use recommended seed protectant fungicides to reduce inoculum.
 - All varieties are susceptible but some more than others

Narrow brown leaf spot:Fungus: *Cercospora oryzae*

Symptoms:

- Long reddish- brown lesions
- lesions may occur on leaf sheaths.
- Under very favorable conditions lesions can expand across veins and leaves may be killed.



Distribution:

Wide spread

Importance:

In terms of yield loss, only occasional severe epidemics are known; and generally, has no significant economic implication.

Occurrence

- The disease usually occurs in potassium deficient soils, and in areas with temperature ranging from 25–28°C.
- It appears during the late growth stages of the rice crop, starting at heading stage.
- Plants are most susceptible during panicle initiation onwards, and damage becomes more severe as plants approach maturity

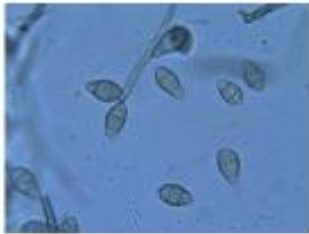
Control:

- Resistance varieties.
- Keep fields clean.
- Use balanced nutrients, make sure that adequate potassium is used
- Fungicide spray at booting to heading stages.
- Remove weeds and weedy rice in the field and nearby areas.

Rotten neck blast (*Pyricularia oryzae*)

Symptoms:

- Node and surrounding area at base of panicle discolored brown.
- Panicle branches and stems of florets gray-brown, florets do not all fill and turn gray.
- Stem of panicle shrivels and may break.



Importance:

Heavy (up to 75%) yield losses have been reported in many rice growing countries.

For example 75, 50 and 40 percent grain loss may occur in India , Philippines and Nigeria.

Control:

For the management of rice blast disease include :

- planting of resistant cultivars
- application of fungicides.
- manipulation of planting times.
- fertilizers and irrigations .

Crown Rot (foot rot)
Erwinia chrysanthemi

Symptoms:

- Soft rot of crown area extending into lower internode.
- Stinking odor of soft rot.
- Tillers dying one at a time.
- Roots dying and turning black.



T.A.