

MAIZE DISEASES

DOWNY MILDEW



1. Sorghum downy mildew - Peronosclerospora sorghi



2. Philippine downy mildew - Peronosclerospora philippinensis



3. Crazy top - *Sclerophthora macrospora*



Symptoms

- The most characteristic symptom is the development of chlorotic streaks on the leaves.
- Plants exhibit a stunted and bushy appearance due to shortening of the internodes.
- White downy growth is seen on the lower surface of leaf.
- Downy growth also occurs on bracts of green unopened male flowers in the tassel.

Favourable Conditions

- Low temperature (21-33°C)
- High relative humidity (90 per cent) and drizzling.
- Young plants are highly susceptible.

Management

- Treat the seeds with metalaxyl at 6g/kg.
- Spray the crop with Metalaxyl + Mancozeb @ 1kg on 20th day after sowing.
- Grow resistant varieties and hybrids viz. CO1, COH1 and COH2.

4. LEAF BLIGHT (*Helminthosporium maydis*)

Symptoms

- The fungus affects the crop at young stage. Small yellowish round to oval spots are seen on the leaves.
- The spots gradually increase in area into bigger elliptical spots and are straw to grayish brown in the centre with dark brown margins.
- The spots coalesce giving blighted appearance. The surface is covered with olive green velvety masses of conidia and conidiophores.



Favourable Conditions

- Optimum temperature for the germination of conidia is 8 to 27°C provided with freewater on the leaf.
- Infection takes place early in the wet season.

Management

- Treat the seeds with Captan or Thiram at 4 g/kg.
- Spray Mancozeb 2 kg or captan 1 kg/ha.

5. Rust - *Puccinia sorghi*



Symptoms

- Circular to oval, elongated cinnamon-brown powdery pustules are scattered over both surface of the leaves.
- When plant matures, the pustules become brown to black owing to the replacement of red uredospores by black teliospores.

Favourable Conditions

- Cool temperature and high relative humidity.

Management

- Remove the alternate hosts.
- Spray Mancozeb at 2 kg/ha

6. Head smut - *Sphacelotheca reiliana*

Symptoms

- Symptoms are usually noticed on the cob and tassel.
- Large smut sori replace the tassel and the ear.
- Sometimes the tassel is partially or wholly converted into smut sorus.
- The smutted plants are stunted produce little yield and remain greener than that of the rest of the plants.



Favourable Conditions

- Low temperature favours more infection and this fungus also infects the sorghum

Management

- Treat the seeds with Captan or Thiram at 4 g/kg.

7. Charcoal rot - *Macrophomina phaseolina* (*Rhizoctonia bataticola*)

Symptoms

- The stalk of the infected plants can be recognized by grayish streak.
- The pith becomes shredded and grayish black minute sclerotia develop on the vascular bundles.
- Shredding of the interior of the stalk often causes stalks to break in the region of the crown. The crown region of the infected plant becomes dark in colour.
- Shredding of root bark and disintegration of root system are the common features.



Favourable Conditions

- High temperature and low soil moisture (drought)

Management

- Long crop rotation with crops that are not natural host of the fungus.
- Irrigate the crops at the time of earhead emergence to maturity.
- Treat the seeds with Carbendazim or Captan at 2 g/kg.

Minor Diseases

8. Bacterial Stalk rot - *Erwinia dissolvens*



Symptoms

- The basal internodes develop soft rot and give a water-soaked appearance. A mild sweet fermenting odour accompanies such rotting.
- Leaves some time show signs of wilting and affected plants topple down in few days. Ears and shank may also show rot.
- They fail to develop further and the ears hang down simply from the plant

9. Mosaic - *Maize mosaic potyvirus*



Symptoms

- Symptoms appear as chlorotic spots, which gradually turn into stripes covering entire leaf blade.
- Chlorotic stripes and spots can also develop on leaf sheaths, stalks and husks

10. Brown spot - *Physoderma maydis*

Water-soaked lesions, which are oval, later turn into light green and finally brown.

