

# Corn Diseases



## **Common Rust** *(Puccinia sorghi)*



## Symptoms:

- Initial symptoms are chlorotic flecks on leaf surfaces.
- Flecks develop into oval to elongate reddish brown powdery pustules (urediniospores) on leaf surfaces.
- Spores break through the leaf epidermis.
- Pustules become dark in color later in the season as (teliospores).



## Risk factors:

- Disease is favored by high relative humidity (>95%) and cool temperatures (16°C to 24°C).
- If environmental conditions are favorable, new urediniospores can be produced every 7 to 8 days after initial infection.

## Management:

- Plant early to avoid high spore levels of the fungus later in the season.
- Plant resistant hybrids.
- Apply fungicides

# Common smut

Pathogen: Fungus- *Ustilago maydis*

**HOSTS: Maize (*Zea mays*),**



## Symptoms:

- Large galls - primarily on stalks or ears, but may be on leaves.
- Galls are covered with white or greenish-white tissue.
- **Interior** will darken and turn to a powdery, black mass of spores.
- Galls on the leaves usually remain small, hard and dry.



Group: Basidiomycota  
Genus species: *Ustilago zeae* (Beckm.) ▲  
Unger



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It is present in nearly all countries where corn is grown

### **Infection:**

The plant may be infected at any time in the early stages of its development.

more common on the ears

### **Dispersal:**

The smut spores are blown long distances by the wind.

### **Environmental conditions:**

- Hot dry seasons **are favorable for the growth of the fungus.**
- High temperature **usually is favorable** for the germination of the spores.
- The spores, **however**, must have water collected in the leaf blades, and other parts of the corn to permit the required amount of growth for penetrating the tissue.

### **Management:**

- Use resistant varieties.
- Avoid injury **of roots, stalks, and leaves during cultivation.**
- Deep plow diseased corn stalks to bury surviving spores.
- Apply fungicides
- application of insecticides when insect populations are high.

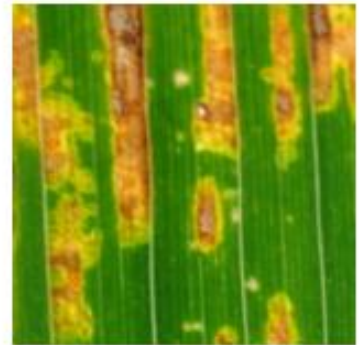
# Corn Leaf Blight

Pathogen: Fungus. *Bipolaris maydis*



## Symptoms:

- Common lesions are elongated, tan lesions between veins on leaves.
- First on lower leaves, tan, lesions that have brown borders on leaves.



## **Conditions:**

Favored by extended warm, wet, humid weather, minimum tillage, continuous corn.

## **Inoculum Survival:**

Infected crop residue (leaves, leaf sheaths).

## **Inoculum Dispersal:**

Airborne spores.

## **Management:**

- Resistant cultivars.
- Foliar fungicides
- Plow under infected residue

## Fusarium Ear Rot *Fusarium moniliforme*

Occurs in all areas where maize is grown



### Symptoms:

- Symptoms vary depending on the maize genotype, environment and disease severity.
- Individual or groups of infected kernels are usually spread randomly on the whole ear and they appear as whitish and pink kernels (**Photo 2**).
- Fungal growth is frequently found on the tip of the ear as a result of stalk borer damage (**Photo 3**).
- Symptoms also occur where seed coats are broken
- In severe cases, the whole ear may be whitish on and between kernels.



## **Environmental conditions:**

most severe under hot, dry weather conditions that occur after flowering.

## **Survival:**

- Survive in maize stalks as hyphae
- The soil borne hyphae
- The fungus also produces airborne spores from previous crop residue.

## **Infection:**

- Infect both through contaminated seed,
- As well as through airborne spores.

## **Control:**

- Less susceptible cultivars
- Agricultural practices
- control of ear feeding insects
- avoiding excessive plant populations
- maintaining adequate levels of nitrogen and other essential growth nutrients
- crop rotation
- Seed treatment