MAIZE DISEASES I

Common Smut
Fungus: *Ustilago maydis*
Dari

**Pathogen/Disease description:** The fungus infects corn ears through the silks and produces swollen light green growths that later turn white and break open to reveal black masses of spores when mature. Infections can also occur through wounds on stalks and leaves. The fungus survives on crop debris.

**Cultural control:** Use a resistant cultivar if needed. Many maize cultivars are resistant.

**Chemical control:** Fungicides are not needed.
Head Smut
Fungus: *Sphacelotheca reiliana*
Dari

Pathogen/Disease description: The fungus overwinters in the soil, infects seedlings and grows systemically throughout the plant. Symptoms appear as tassels and ears are formed. The fungus replaces normal structures with structures containing smut spores. If the tassel is infected all ears will also be infected. Leaf like structures may grow out of the infected tassel. The fungus survives on crop debris. Nitrogen deficiency, low soil moisture and temperatures of 21-28 °C favor the disease.

Cultural control: Use a resistant cultivar if available.

Chemical control: Fungicide seed treatments have been effective. Foliar fungicides are not effective since the fungus is inside the plant.
MAIZE DISEASES III

Gibberella ear rot
Fungus: *Gibberella zeae*
Dari

Pathogen/Disease description: Gibberella infections typically start at the tip of the ear and produce a pink to red fungus growth moving toward the base of the ear. It is found worldwide but is more common and severe in cool, humid areas. The fungus overwinters in crop debris, especially on the soil surface. *Gibberella zeae* and *Fusarium graminearum* produce two mycotoxins – vomitoxin (or DON) and zearalenone. Both have detrimental effects on livestock.

Cultural control: Use a resistant cultivar if available.

Chemical control: None
Aspergillus ear rots
Fungus: *Aspergillus flavus, A. parasiticus*
Dari

**Pathogen/Disease description:** Aspergillus infections may be scattered on the ear and appear as green or gray-green fungal growth. Infections often follow damage by insects or hail. The problem is more severe in drought stressed corn. The fungus produces aflatoxin in hot, dry conditions, which harms livestock and poultry. Infected ears produce a greenish-gold fluorescence when viewed with a black light at wavelength 365 nm.

**Cultural control:** Use a resistant cultivar if available. Irrigate if possible to reduce plant stress.

**Chemical control:** None
Diplodia ear rot
Fungus: *Stenocarpella maydis*

Pathogen/Disease description: Diplodia ear rot symptoms often start at the base of the ear but may appear on any part. The fungus produces a white growth between kernels which later appears gray with black pycnidia (spore producing structures). The fungus overwinters in corn stalks from the previous season and spreads to new plants by splashing water. Bird injury and insect damage allow more infections.

Cultural control: Use a resistant cultivar if available. Plow under old crop residue each fall to reduce disease levels.

Chemical control: None
Southern Corn Rust
Fungus: *Puccinia polysora*
Dari

**Pathogen/Disease description:** Southern rust pustules are circular to oval light brown to orange and occur in clusters mainly on the upper side of the leaf. Southern rust pustules have a yellow halo surrounding the pustules when the leaf is held against light. (igrow.org). Heavily infected leaves die prematurely. Spores are spread by wind. The disease is favored by warm, humid conditions.

**Cultural control:** Use a resistant cultivar if available.

**Chemical control:** Fungicides are effective but unlikely to be cost effective.
Common Corn Rust
Fungus: *Puccinia sorghi*
Dari

**Pathogen/Disease description:** This disease is common wherever corn is grown. Pustules develop randomly on both leaf surfaces. Spore pustules are cinnamon brown but later turn brownish black. The fungus may infect nearby *Oxalis spp.* plants. Infection is favored by high humidity and temperatures of 16-25 C.

**Cultural control:** Use a resistant cultivar if available.

**Chemical control:** Fungicides are effective but unlikely to be cost effective.