Foliar Diseases of Corn

Timely scouting and disease identification in corn is an important step in crop management. Multiple diseases may be present on a corn plant at the same time, which can make disease diagnosis very difficult. Therefore, laboratory culturing and microscopic examination may be required to accurately identify a leaf disease.

**Anthracnose Leaf Blight**
Lesions first appear on the youngest leaves and are oval to irregular-shaped and water soaked, often with yellow to reddish-brown borders. Small, black hair-like structures (setae) may sometimes be visible in the middle of lesions. Heavily infected leaves can wither and die. This disease thrives in warm, humid weather. The same fungal pathogen is also responsible for stalk rot; however, the presence of leaf blight does not indicate that stalk rot will be a problem later in the season.

**Eyespot**
Lesions are translucent, small (less than 1/4 inch), and circular, surrounded by yellow to purple margins that produce a halo effect. Lesions typically occur on leaves early or late in the season, and can also infect leaf sheaths and husks. This disease is favored by cool, moist weather.

**Goss’s Wilt**
Seedlings can be systemically infected, causing them to wilt and die. Vascular bundles may be discolored. Later-season infections are more common, and produce dull gray-green to necrotic lesions with irregular margins. Small, water-soaked “freckles” appear within developing lesions and at the margins of developing lesions. Bacterial droplets may ooze from infected tissues early in the morning leaving a shellac-like shiny appearance when dried. Plant injury can increase infection.

**Stewart’s Bacterial Wilt**
Symptoms of Stewart’s wilt or Stewart’s disease are long, green-gray, water-soaked lesions that roughly follow leaf veins with wavy margins. Systemically-infected plants may be stunted and showing signs of wilt, which can lead to plant death during the seedling stage. The leaf blight phase is more common and appears after tasseling. Leaves are streaked with gray-green to yellow-green lesions, typically found with the presence of a flea beetle (the primary vector) feeding scar toward the base of the streak. Streaks are long and irregular, turning tan as the tissue dies.

**Physoderma Brown Spot**
Small yellow spots appear first at the base of the leaf. These spots become brown and combine to form chocolate-brown to reddish irregular blotches, sometimes as bands of infection across leaf blades. Leaf sheaths, husks, tassels, stalks, and leaves may exhibit symptoms late in the season. Infected stalks may break at a node. This fungus is favored by warm, wet weather.
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Northern Corn Leaf Blight
Symptoms of infection by this fungus include lesions that are long (up to 6 inches) and cigar-shaped, gray-green in color and eventually become tan-brown. Infection begins first on lower leaves and moves up the plant. Lesions may form in bands across leaves as a result of an infection in the whorl. The disease is favored by high humidity and moderate temperatures. Under humid conditions, lesions may have a dark, fuzzy appearance because the fungus is sporulating on dead tissue.

Southern Corn Leaf Blight
Small, elongated (up to 1-inch long), parallel-sided lesions that are tan with brownish borders are typical, although symptoms vary considerably on different corn products, often requiring microscopic examination of the fungal structures to confirm diagnoses. This blight primarily attacks leaves, and will overwinter in corn residue. The disease favors high humidity and warm temperatures.

Common Rust
Small, cinnamon-brown, powdery, circular-to-elongated pustules occur on upper and lower leaf surfaces, often in bands across leaves. As infections mature, pustules become surrounded by necrotic tissues. In contrast, pustules of southern corn rust are orange-colored and occur primarily on the upper leaf surface. Rust pustules rupture the leaf surface (epidermis) and powdery rust spores can be rubbed off. Pustules become dark brown to black late in the growing season. The fungus is favored by moderate to cool temperatures and high humidity. The fungus does not overwinter in the Corn Belt, but arrives each season from crops grown in Mexico, the Caribbean, and the southern United States.

Southern Rust
Small, circular, orange-colored pustules occur on upper surfaces, leaf sheaths, and husk leaves. Pustules often are very dense in areas of infected tissues. Pustules break the leaf surface (epidermis) less frequently than common rust. This organism is favored by warm, humid weather. Under severe infection, pustules are common on leaf sheaths and husk leaves.

Gray Leaf Spot
Gray to tan, rectangular lesions on leaves, leaf sheaths, or husks. Spots are opaque and long (up to 2 inches). Lower leaves are infected first, usually not until after silking. Lesions may have a gray, downy appearance on the underside of leaves where the fungus sporulates. The organism thrives in extended periods of warm, overcast days and high humidity. Gray leaf spot has become more prevalent with increased use of reduced tillage and continuous corn.

Management
Regular and timely scouting is important to help reduce corn disease outbreaks. Much of a corn plant’s energy from photosynthesis is produced by the leaves directly surrounding the primary ear, so it is important to protect those leaves from foliar diseases. Fungicide applications made throughout the corn canopy prior to the spread of a disease can help increase yield potential when environmental conditions may cause high disease pressure. Fields containing foliar diseases should also be scouted for stalk health, since the reduction in photosynthesis can cause later problems in corn plants, such as stalk lodging. Identification of foliar diseases can help determine the need for changes in management practices such as tillage, crop rotation, and the selection of more resistant corn products to help reduce incidence of disease next season.

Sources:

Performance may vary, from location to location and from year to year, as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on the grower’s fields. ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. 140706080202 070318TAM

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