Early-season leaf diseases on corn

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Abstract
The cool weather is still limiting the speed of corn growth, but it won't be long before the plants begin putting leaves out quickly. That's when problems that cause leaf symptoms will first be noticed, including those caused by diseases. There are three leaf diseases that tend to appear early in the season: holcus spot, anthracnose leaf blight, and eyespot.

Keywords
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Early-season leaf diseases on corn

The cool weather is still limiting the speed of corn growth, but it won't be long before the plants begin putting leaves out quickly. That's when problems that cause leaf symptoms will first be noticed, including those caused by diseases. There are three leaf diseases that tend to appear early in the season: holcus spot, anthracnose leaf blight, and eyespot.

Holcus spot is caused by the bacterium *Pseudomonas syringae*. Symptoms of holcus spot are light tan (sometimes almost white) round or oval spots on the lower leaves, initially about 1/4 inch in diameter, but sometimes growing larger and coalescing into irregular spots and streaks of dead tissue. The spots may appear water-soaked at the margins or have a light brown border. Holcus spot symptoms can resemble chemical injury to leaves, similar to paraquat injury. Although the disease is caused by a bacterium, fungi can sometimes be seen producing spores on these lesions. These fungi are secondary invaders such as *Alternaria* that grow on the already-dead leaf tissue. Holcus spot is not known to cause economic damage in dent corn, but the disease can look serious when spots are numerous (see photo). The bacteria survive in plant residue and splash onto leaves where infection takes place after a heavy rainfall. Symptoms often appear suddenly after a heavy rain, but then do not spread to new leaves. Early in the season if plants are not growing vigorously, they can look very poor with leaf damage due to wind, blowing soil, cold temperatures, or holcus spot. But as the weather improves and the plants put on new leaves, these problems will likely disappear. There are no practical management tactics for holcus spot, mainly because of its lack of economic impact. However, it is important not to mistake this disease for a fungal leaf disease. I am aware of instances where unnecessary (and ineffective) fungicide applications have been made against holcus spot.

Anthracnose leaf blight is caused by the fungus *Colletotrichum graminicola*, and it is
usually one of the first leaf diseases to appear. It can also cause lesions on the stems of seedlings, especially if they have been hail-damaged. The fungus survives in crop residue and is splashed onto the leaves. Anthracnose is definitely more severe where corn follows corn. Symptoms are brown, oval, or elliptical spots (up to approximately 1/2 inch in length) with a dark brown or purplish border, often surrounded by a yellowed zone (see photo). There may be black speckles within the dead tissue. Sometimes the symptoms are limited to the leaf margins. Anthracnose can cause significant damage to very young plants and contribute to postemergence stand loss, but this disease requires warmer weather than what we have experienced so far. As the temperature goes up, look for this disease in your fields.

Eyespot causes small, round spots with a brown border surrounded by a yellow halo.

Eyespot also can appear early in the season. This disease is caused by the fungus *Aureobasidium zeae*. Symptoms are small round spots approximately 1/8 inch in diameter with a brown border and a yellow halo (see photo). Eyespot can be confused with holcus spot, but holcus spots are all different sizes, very pale, and may or may not have a brown border. Eyespot is capable of causing significant yield losses if it starts early and continues to develop throughout the season. In seed corn production, fungicides applications are sometimes warranted for control of eyespot.

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