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## Early Season Diseases Showing Up in Corn and Soybean Fields

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# Early Season Diseases Showing Up in Corn and Soybean Fields

## **Abstract**

The widespread rain that has occurred across Iowa has been favorable for the development of early season disease in both corn and soybean. In corn, symptoms of anthracnose leaf blight (Figure 1) are common in corn-following corn fields. A very low prevalence of eyespot and common rust have also been seen in ISU fungicide trials. In soybean, brown spot (Figure 2) and bacterial blight (Figure 3) symptoms are becoming common.

## **Keywords**

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## Early Season Diseases Showing Up in Corn and Soybean Fields

By Alison Robertson, Department of Plant Pathology

The widespread rain that has occurred across Iowa has been favorable for the development of early season disease in both corn and soybean. In corn, symptoms of anthracnose leaf blight (Figure 1) are common in corn-following corn fields. A very low prevalence of eyespot and common rust have also been seen in ISU fungicide trials. In soybean, brown spot (Figure 2) and bacterial blight (Figure 3) symptoms are becoming common.

Rain favors the dispersal of fungal pathogens that survive in infested crop residue. The anthracnose leaf blight pathogen produces spores in a jelly-like substance on the surface of infested crop residue. Rain splashes the spores onto the lower leaves on corn plants where infection occurs. The fungus survives in infested surface crop residue for approximately 10 months. Thus, anthracnose leaf blight is usually very common in no- or reduced-tillage corn-following-corn (CC) fields, but it is rarely seen in corn-following-soybean fields (CSB). In 2008, in a rotation field trial in southeast Iowa, the mean incidence of anthracnose leaf blight in CC plots was 97.3 percent, while in CSB, the incidence was 0 percent. In this same trial, mean anthracnose stalk rot severity was 1.65 and 1.85 (using the U. Illinois 0-5 system where 0 is healthy and 5 is lodged) in CC and CSB plots, respectively. Thus, there was a poor relationship between anthracnose leaf blight and anthracnose stalk rot.



**Figure 1. Symptoms of anthracnose leaf blight**

Brown spot occurs on the bottom most leaves of soybean plants. Severity of the disease increases with increasing periods of leaf wetness. Brown spot lesions are small, irregular-shaped and dark brown. Adjacent lesions often grow together and form larger blotches. Infected leaves quickly turn "banana"

yellow and drop.



**Figure 2. Brown spot symptoms**

Bacterial blight occurs on the upper leaves of the canopy. Rain favors infection of bacterial pathogens because bacteria do not produce the necessary enzymes to directly infect plant tissue, thus they rely on wounding (bruising, tearing) caused by rain and wind, to allow them entry to the host plant and enable infection to occur. Bacterial blight lesions are angular with reddish-brown centers and water-soaked margins surrounded by "lemon" yellow halos. Lesions often grow together to produce large, irregularly shaped dead areas, which fall out, causing the leaves to appear tattered.



**Figure 3. Symptoms of bacterial blight**

From a management perspective, all of these diseases cause little if any yield loss. There are no chemicals available that can be used to control bacterial diseases. Although, most registered fungicides are labeled for anthracnose leaf blight and brown spot, the lower leaves of the crop that are impacted by these diseases contribute little to yield. Furthermore, the rapidly growing corn plan will outgrow anthracnose leaf blight infection within the next week or so. In very wet years, brown spot may develop into the mid canopy of soybean plants and a fungicide application at around R3 may protect yield.

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