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Goss's Wilt and Northern Corn Leaf Blight Showing Up in Iowa

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Abstract

This past week I have received several more reports of Goss's wilt. Reports of the disease come from south of Highway 3, North of I-80 and east of I-35. For the most part, it seems that the disease is occurring in random fields; however this past week I visited a 200 acre field in Boone County in which many of the plants were infected. Many of the plants had extensive leaf blight occurring on the top two to three leaves of the canopy (Figure 1). Most of the lesions occurred around holes made by hail.

Keywords

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Goss's Wilt and Northern Corn Leaf Blight Showing Up in Iowa

By Alison Robertson, Department of Plant Pathology

Goss's wilt

This past week I have received several more reports of Goss's wilt. Reports of the disease come from south of Highway 3, North of I-80 and east of I-35. For the most part, it seems that the disease is occurring in random fields; however this past week I visited a 200 acre field in Boone County in which many of the plants were infected. Many of the plants had extensive leaf blight occurring on the top two to three leaves of the canopy (Figure 1). Most of the lesions occurred around holes made by hail.

Goss's wilt lesions are large, have wavy margins and are brown, yellow, gray in color. They may be elliptical or V-shaped and usually extend down a leaf vein (Figure 2). The tissue neighboring the lesion is water soaked. It is common for the bacteria that cause this disease to ooze out onto the leaf surface, so the lesions often have a shiny appearance. Most characteristic though, are the dark green "freckles" that occur within the lesion (Figure 3). In the Plant Disease and Insect Clinic, we check for "streaming" to diagnose a bacterial disease. I did this in a glass of water in my office (Figure 4).

Goss's wilt disease can progress rapidly under the right conditions (warm 80 degree F and wet) resulting in extensive leaf blight and death of the canopy.

Since this is a bacterial disease, a fungicide application will not control the disease. The pathogen is able to survive in infested surface crop residue for 10 months. The recommended management practices include rotation to a non-host crop, any type of tillage that buries the infested residue and helps with decomposition, and tolerant hybrids.

An [excellent review of this disease](#) is available from University of Nebraska, Lincoln.



Figure1. Leaf blight symptoms of Goss's wilt



Figure2. Characteristic lesions of Goss's wilt



Figure3. Characteristic freckling seen on Goss's wilt lesion



Figure 4. Oozing caused by Goss's wilt

Northern Corn Leaf Blight

Northern corn leaf blight (NCLB) is also making an appearance. This disease could be mistaken for Goss's wilt because it also causes large elliptical lesions on corn leaves. Since Northern corn leaf blight is caused by a fungal pathogen, *Exserohilum (Helminthosporium) turcicum*, a fungicide could be used to manage this disease.

Northern corn leaf blight lesions are elliptical or cigar-shaped, gray-green to tan in color, with a distinct margin between the infected and healthy tissue (Figure 5). Under high humidity they look "dirty" due to large numbers of spores produced on the surface of the lesion (Figure 6).

Infection is favored by cool (65-80 degree F), wet conditions. Free water needs to be present on the leaf surface for 6-18 hours for infection to occur. Lesions develop within 7-12 days.

Yield losses of over 30 percent have been reported if the disease is present on the upper leaves of the plant at the silking. Losses are minimal if disease development is delayed until dent stage. Like other foliar pathogens, Northern corn leaf blight predisposes corn to stalk rot.

Hybrids with resistance to NCLB are available so check with your seed dealer. Rotation to soybean or alfalfa can be beneficial as well since the pathogen survives in infested crop debris. What about now? A fungicide application may be an option; however, there are no tried and tested thresholds available. Thus far I have heard of only one field in which several lesions were present on the ear leaf. Before making the call on a fungicide application, be sure to scout to determine disease pressure in the field. Then consider hybrid susceptibility to disease, current and predicted weather conditions, previous cropping history and economics (cost of fungicide plus application, price of grain, drying costs, standability).



Figure 5. Cigar-shaped lesions of northern corn leaf blight (Credit G. Coates)

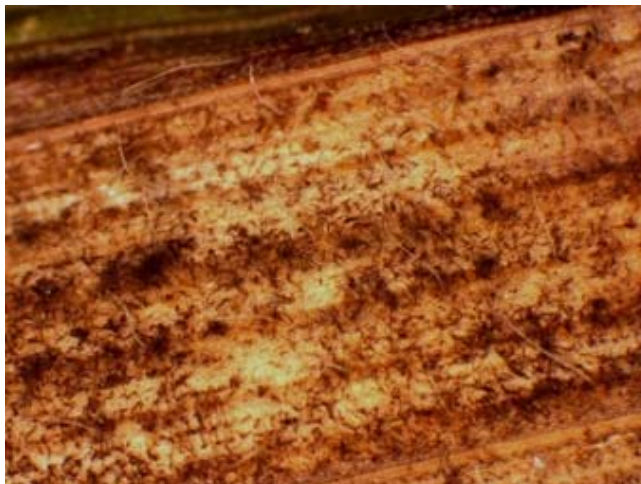


Figure 6. Sporulation on the surface of a northern corn leaf blight lesions

Alison Robertson is an assistant professor of plant pathology with research and extension responsibilities in field crop diseases. Robertson may be reached at (515) 294-6708 or by email at alisonr@iastate.edu.

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