Know Your Spots as Foliar Diseases Show up in Corn

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Abstract
Several foliar diseases are being reported in corn at this time, and it is important to be able to differentiate between the various leaf spots because management options will vary. Some leaf spots are caused by bacteria and therefore cannot be managed with a foliar fungicide. Development of other leaf spots will slow considerably in the extreme hot temperatures we are currently having. However, there are some leaf spots that favor these hot, humid conditions and, depending on disease pressure and hybrid susceptibility, management with a foliar fungicide may be warranted.

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Know Your Spots as Foliar Diseases Show up in Corn

By Alison Robertson, Department of Plant Pathology

Several foliar diseases are being reported in corn at this time, and it is important to be able to differentiate between the various leaf spots because management options will vary. Some leaf spots are caused by bacteria and therefore cannot be managed with a foliar fungicide. Development of other leaf spots will slow considerably in the extreme hot temperatures we are currently having. However, there are some leaf spots that favor these hot, humid conditions and, depending on disease pressure and hybrid susceptibility, management with a foliar fungicide may be warranted.

Common rust
There have been numerous reports of common rust across Iowa. While some reports have indicated higher common rust pressure than previous years, most reports indicate that disease pressure is “as per usual”.

Common rust development is favored by moderate temperatures thus the current hot temperatures should slow common rust development down significantly.

Gray leaf spot
A few gray leaf spot (GLS) lesions can now be found in the lower part of the crop canopy. Lesions of GLS are light, tan and rectangular in shape because the lesion’s width is limited by the leaf veins (Photo 1). The lesions expand lengthways (1/4 inch to 2 inches) and become gray in color.

Photo 1. Rectangular shaped-lesions characteristic of early gray leaf spot.

Most reports received this growing season specify that GLS lesions can be found on the fifth or sixth leaf below the ear leaf, although there are some
reports of GLS occurring as high as the third leaf below the ear leaf. Hot (75 to 95 degree Fahrenheit), very humid (90 percent humidity for 12 hours or more) conditions favor GLS development.

Current disease management recommendations advise if a susceptible hybrid is being grown, GLS can be found on the third leaf below the ear leaf of 50 percent or more of the plants in the field, and the hot, humid conditions continue, a fungicide application may be warranted.

**Northern leaf blight and Stewart's disease**
Northern leaf blight has also been reported in eastern Iowa. Some hybrids being grown seem particularly susceptible to the disease. Lesions of northern leaf blight are large (1 to 6 inches in length), cigar-shaped and tan in color (Photo 2).

![Photo 2. Northern leaf blight - large, tan, cigar-shaped lesions.](image)

Northern leaf blight lesions are very similar to those of Stewart's disease which are caused by a bacterium vectored by the corn flea beetle. Lesions of Stewart's may also be somewhat cigar-shaped, but the margins of the lesion are wavy, and the lesion tails off down a vein (Photo 3). Often times a flea beetle feeding scar is evident in the lesion.

![Photo 3. Stewart's disease - lesions tail off down a vein.](image)

**Southern rust**
Southern rust has recently been reported in Nebraska. *UNL Crop Watch, August 1, 2008.* Southern rust caused considerable yield loss in Nebraska in the 2006 growing season. Growers in southwestern Iowa are advised to begin scouting their fields every few days.

Southern rust can develop very rapidly when conditions are hot, humid and
wet, and a timely fungicide application can protect up to 30 percent of yield.
Unfortunately, southern rust can be easily confused with common rust
although there are a few subtle characteristics that can be used to distinguish
southern from common rust as discussed in an early integrated Crop
Management newsletter article, Is that Common Rust or Southern Rust
Showing up in Iowa Corn Fields.

Alison Robertson is an assistant professor of plant pathology with research
and extension responsibilities in field crop diseases.

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