

[Subscribe to Crop News](#)

Archives

[2015](#)[2014](#)[2013](#)[2012](#)[2011](#)[2010](#)[2009](#)[2008](#)[Previous Years](#)

ISU Crop Resources

[Extension Field Agronomists](#)[Crop & Soils Info](#)[Pesticide Applicator Training](#)[Agronomy Extension](#)[Entomology Extension](#)[Plant Pathology Extension](#)[Ag and Biosystems Engineering Extension](#)[Agribusiness Education Program](#)[Iowa Grain Quality Initiative](#)[College of Agriculture and Life Sciences](#)[ISU Extension](#)

Integrated Crop Management NEWS

-  PRINT STORY
-  EMAIL STORY
-  ADD TO DELICIOUS
-  ATOM FEED
-  FOLLOW ON TWITTER

Unusual Foliar Diseases Showing up in Iowa Corn

By Alison Robertson, Department of Plant Pathology

Over the past week I have received emails, phone calls and samples of two leaf spots that occur in Iowa from time to time, Holcus leaf spot and Physoderma brown spot.

HOLCUS LEAF SPOT

Holcus leaf spot is caused by the bacterium *Pseudomonas syringae*. Symptoms are light tan (sometimes almost white), round to oval spots, which may appear water soaked at the margins or have a light brown border occur on the lower leaves (Figure 1 and 2).

The spots are initially about one-fourth inch in diameter, but often grow larger and coalesce into irregular spots and streaks of dead tissue. Later the lesions dry out, turn light brown, and have a papery texture.



Figure 1. Light tan, round to oval spots characteristic of Holcus leaf spot. Alison Robertson.



Figure 2. Close-up of Holcus leaf spot showing the light brown border.
Alison Robertson.

Similar diseases. Holcus spot is often confused with eyespot, a fungal disease caused by *Aureobasidium zeae*. Eyespot lesions are much smaller (approximately one-eighth to one-fourth inch in diameter), very round spots with a yellow halo, distinct brown border and light colored center that appears translucent when the leaf is held up to the light (Figure 3). Holcus spot symptoms also can resemble chemical injury to leaves.



Figure 3. Characteristic symptoms of eyespot. Alison Robertson.

Favorable conditions. Warm (75-85 degrees Fahrenheit), wet, windy conditions early in the season favor infection and the development of Holcus leaf spot. Symptoms often appear suddenly after a heavy rain, but then do not spread to new leaves. Corn is most susceptible prior to tasseling.

Management . Holcus leaf spot is mostly cosmetic and does not result in yield loss. Fungicides are not effective against this bacterial disease.

PHYSODERMA BROWN SPOT

Physoderma brown spot is caused by *Physoderma maydis*, an organism which is closely related to the oomycetes (such as Pythium and the crazy top pathogen).

Numerous very small (approximately one-fourth inch in diameter) round to oval spots that are yellowish to brown in color usually occur in broad bands across the leaf (Figure 4). Dark purplish to black oval spots also occur on the midrib of the leaf. Symptoms may also occur on the stalk, leaf sheath and husks.



Figure 4. Bands of numerous small yellow to orange-brown spots across the leaf lamina and dark purplish spots on the midrib are characteristic symptoms of Physoderma brown spot. Alison Robertson.

Similar Diseases. Physoderma brown spot is often misdiagnosed as eyespot (Figure 3) or southern rust (Figure 5). The spots of Physoderma do not have the light colored center that is associated with eyespot. As for southern rust, it is probably too early in the growing season to be seeing this disease. Southern rust usually occurs mid- to late- August in Iowa when temperatures are much warmer. Furthermore, the pustules of southern rust produce thousands of orange spores that can be wiped off the upper leaf surface with your finger.



Figure 5. Pustules of southern rust occur on the upper leaf surface and produce numerous orange-red spores that can be easily wiped off. Alison Robertson.

Favorable conditions. The zoospores of *P. maydis* infect leaf tissue when free water collects in the whorl and temperatures are between 70-85 degrees Fahrenheit, thus resulting in the bands of infected and non-infected leaf tissue.

Management. The pathogen survives in infested crop residue and soil for up to 3 years thus the disease is more common in corn following corn fields particularly if a lot of crop residue remains on the soil surface. Corn plants are most susceptible 50-60 days after germination and become more resistant to infection with age. Only Headline® lists Physoderma leaf spot on the label; however infections in Iowa are usually not severe enough to warrant a fungicide application.

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

This article was published originally on 7/19/2008. The information contained within the article may or may not be up to date depending on when you are accessing the information.

Links to this material are strongly encouraged. This article may be republished without further permission if it is published as written and includes credit to the author, Integrated Crop Management News and Iowa State University Extension. Prior permission from the author is required if this article is republished in any other manner.