Holcus Leaf Spot in Corn

- Holcus leaf spot is a bacterial disease that generally enters corn plants through wounds caused by thunderstorms, high winds, or hail.
- It is important to carefully identify Holcus leaf spot as symptoms may also resemble other fungal diseases or herbicide injury.
- Although plants may exhibit symptoms, yield potential is rarely affected.

Background

Holcus leaf spot is a corn pathogen caused by the bacterium Pseudomonas syringae pv. syringae. This pathogen overwinters in a variety of hosts that include both monocot and dicot species. Incidence of the disease typically occurs earlier in the growing season after heavy winds or thunderstorms. Hail and damage from blowing soil can create plant wounds that enable disease transmission. Plant injury is not required for disease transmission, as Holcus leaf spot may also enter natural plant openings like stomata (transpiration openings). Extended wet weather and warm temperatures can also increase the appearance of symptoms, but new leaves typically are not affected.

Identification

Symptoms of Holcus leaf spot begin as dark green lesions with water-soaked margins near the tips of lower corn leaves, and progress into round or oval-shaped light brown to white spots around 1/8- to 1/4-inch in diameter. Reddish brown margins can form around the lesions, surrounded by yellow halos (Figure 1). Lesions can expand and merge with streaks of necrotic tissue, eventually drying out and having a papery texture.

Careful identification is important as Holcus leaf spot can be mistaken as paraquat drift damage due to similar symptomology on both the corn crop and several species of surrounding weed hosts. Holcus leaf spot may also be mistaken for a fungal disease like eyespot, which also has round spots with a brown border and yellow halo (Figure 2). However, eyespot lesions are considerably smaller and more numerous than those of Holcus leaf spot as shown when comparing Figures 1 and 2. Misdiagnosing a bacterial disease as a fungal disease can lead to unnecessary fungicide application.

Crop Impact

Holcus leaf spot is generally superficial, and does not negatively impact corn yield potential. Management of weedy hosts and tillage may help reduce overwintering of the pathogen in crop residue, but only when it is practical to do so. There are no in-season management options for Holcus leaf spot. It is important to carefully distinguish between Holcus leaf spot, which does not require treatment, and a possible fungal disease which may benefit from a fungicide application.

Sources

2 Robertson, A. 2004 Holcus leaf spot being found on corn. Iowa State University. IC-492(14). http://www.ipm.iastate.edu/.
Web sources verified 06/15/16. 160614094527