Holcus Leaf Spot of Corn

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Importance

Holcus leaf spot, a bacterial disease, can be seen sporadically in Kentucky cornfields, and it is challenging to diagnose. This publication describes the disease symptoms, conditions that favor disease, and how to distinguish holcus spot from herbicide injury that can mimic this disease.

Symptoms

Symptoms of holcus leaf spot are characterized by round, discrete lesions that are initially pale yellow to white and then enlarge and turn gray to brown or tan. Lesions have a water-soaked halo, and on certain hybrids, the margin of the lesion may appear brown or purple (Figure 1). Occasionally, lesions will coalesce into larger irregular shaped lesions that have a dry appearance. Lesions are typically distributed from the center to the tips of leaves (Figure 2). Symptoms appear prior to pollination.

Look-alike Symptoms

One of the challenges to diagnosing holcus leaf spot is that the disease symptoms can be confused with exposure to off-target movement of contact-type herbicides. Paraquat is one example of a broad-spectrum contact herbicide, meaning that it has efficacy on all plant species and only affects the parts

Figure 1. Holcus leaf spot lesions.

Figure 2. Holcus leaf spot symptoms typically occur in the middle of the leaf and towards the leaf tip.
Figure 3. Paraquat herbicide injury symptoms can resemble holcus leaf spot.

of the plant that are contacted by the spray solution. Paraquat burns leaf tissue, often resulting in white to yellow spots surrounded by a brown halo (Figure 3).

Therefore, to distinguish between paraquat injury and holcus leaf spot, farmers should observe symptom patterns in a field. In a paraquat drift event, or with other contact-type herbicides, injury should be evident on other plants present in ditches, road banks, fence rows, and other vegetation between the site where the herbicide was applied and the corn field in question.

Visual symptoms from paraquat or other contact herbicide injury within the affected field also should appear in a gradient of severity from the edge of the field moving inward. The highest density of symptomatic plants should be observed closest to the field where the herbicide was applied, and symptoms will be less noticeable further away from the application site.

If symptoms do not follow a gradient across the field, and plants surrounding the field are not affected, the visual symptoms observed may be holcus leaf spot. Typically, disease severity on plants with holcus leaf spot will vary across the field and on a plant.

Cause & Disease Development

The bacterium that causes holcus leaf spot (*Pseudomonas syringae* pv. *syringae*), can survive in crop residue and in alternative hosts, such as wheat, sorghum, and grassy weed species. Wet weather prior to tasseling can cause bacteria to splash onto leaves and begin the infection process. Consequently, symptoms usually are observed after spring rain events. Wind, hail, and other factors that injure the plant also can create entry points for the bacterium into the plant, but holcus leaf spot can develop even in the absence of wounds. The disease is not known to spread from infected leaves to healthy leaves.

Disease Management

Holcus leaf spot is not known to reduce yield. Although the disease may cause concern based on symptom appearance, no in-season treatment is available or necessary. Fungicide applications will not protect leaves against this bacterial disease.

Additional Resources

- Extension Plant Pathology Publications
http://plantpathology.ca.uky.edu/extension/publications

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