

DISEASE ALERT:

Bacterial leaf streak of corn

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Photo credit Tamra Jackson-Ziems, University of Nebraska



Figure 1. Bacterial leaf streak of corn. Note long, narrow, elongated brown lesions with wavy margins.

Background:

Bacterial leaf streak of corn (BLS), caused by the bacterium *Xanthomonas vasicola* pv. *vasculorum* (Xvv), was confirmed for the first time in the United States in 2016. Previously, the disease has only been reported from South Africa, causing disease in sugarcane, sorghum, and corn. The disease has been reported as a minor disease on corn with minimal impact on production.

Surveys now indicate BLS is present in nine states including Nebraska, Colorado, Kansas, Iowa, Illinois, Minnesota, South Dakota, Texas, and Oklahoma. The disease **has not been reported** in Wyoming as of this writing based on Wyoming Department of Agriculture surveys conducted in the summer of 2016. The USDA Animal and Plant Inspection Service (APHIS) does not consider this disease to be of quarantine significance and will be treated like any other bacterial disease of corn.

Disease Symptoms:

BLS symptoms are limited to foliage, causing narrow, elongated lesions (less than 1 inch to several inches long) between leaf veins with wavy edges (Figure 1). Field (dent), sweet, and popcorn can be affected. Lesions can be brown, orange, or tan. Lesion development typically starts on the lower leaves and has been observed as early as corn growth stage V1 in the greenhouse and V7 in the field. Under severe disease conditions, lesions can expand to large, necrotic areas and spread to upper leaves. Disease increase appears to coincide with high winds and rain or sprinkler irrigation.

Symptoms of BLS can be confused with abiotic issues like nitrogen burn. Symptoms may also resemble other diseases such as gray leaf spot (GLS), a common fungal disease. GLS lesion edges are straight compared to the wavy edges characteristic of BLS. A key diagnostic feature is that when backlit, BLS lesions are translucent compared to the more opaque GLS lesions (Figure 2). Goss's wilt, another bacterial disease of corn found in Wyoming, typically has longer and broader lesions and frequently will have characteristic "freckles" in the necrotic lesions.

Disease Cycle and Management:

There is limited biological information about this disease and its potential impact on corn production. The origin of the disease in the U.S. is not known, nor are the mechanisms by which it has so extensively spread. BLS was first detected in Nebraska in 2014 but not positively identified until 2016. It is presumed Xvv bacteria persist in infected crop debris and are splash-dispersed onto healthy tissue. Evidence suggests the bacterium does not require plant injury to get into the plant. Research is underway in the region to see if the bacterium is seedborne, how long it can survive in crop residue, yield impacts, and the dispersal method. As with other corn foliar diseases, BLS has been observed to be most common in corn grown in a continuous, minimum till, overhead irrigation production system. However, the disease also has been detected in furrow-irrigated fields and in non-irrigated fields in a corn-soybean rotation. Observations from hybrid demonstration trials suggest differences in susceptibility to BLS. Similar to Goss's blight, hybrid resistance will likely be the cornerstone of a management program. Since the disease is bacterial, fungicides will have no impact on this disease, and there are no other effective chemical controls.

Until more is known about this disease, growers are advised to manage BLS like other corn bacterial diseases. This includes sanitation practices to remove infected residue from equipment before entering clean fields and use of crop rotation and/or residue management to reduce pathogen inoculum. Neither of these practices will eradicate the disease. Since BLS symptoms can be confused with other corn foliar diseases, especially GLS, it is essential suspect samples be sent to your local plant disease diagnostic clinic for proper diagnosis. Information for submitting samples to the University of Wyoming Plant Clinic are at <http://wyoextension.org/plantclinic/>

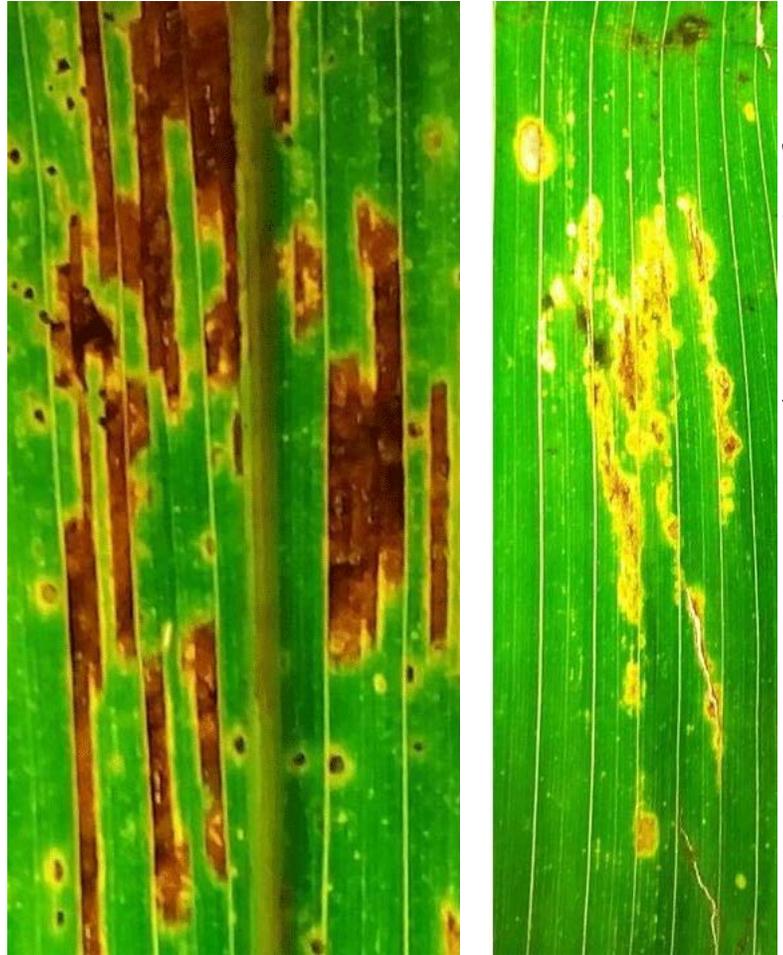


Photo credit: Doug Jardine, Kansas State University

Figure 2. *Gray leaf spot lesions rectangular with straight margins are opaque when backlit (left) compared to the more translucent bacterial streak lesions (right).*

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