

# BETWEEN THE ROWS

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GOSS'S BACTERIAL WILT

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## CURRENT CROP SITUATION

Over the past few years, Goss's bacterial wilt has spread across several Midwestern states. When this disease was identified in Nebraska 40 years ago, it appeared to be merely a sporadic Western Corn Belt disease. However, recent confirmations span as far East as Indiana.

Goss's wilt is caused by bacteria named *Clavibacter michiganensis* subsp. *nebraskensis*. It can be a persistent and serious disease of dent, food-grade, sweet, and popcorn. The infection by the bacteria is mainly through injury to the leaves caused by heavy winds, rain, hail or sand blasting. The ideal temperature for disease lies between 72 and 80 degrees Fahrenheit, and any plant part may serve as an infection site. Hot, dry conditions can impede disease development. The disease overwinters on crop residue, and infection occurs when rain splashes soil and crop residue onto injured leaves. Other hosts of the disease include green foxtail, barnyard grass, and shattercane. Weed control can also play a role in reducing inoculum and disease development.

The symptoms of the leaf phase can be easily confused with other leaf diseases like stewart's wilt, northern corn leaf blight, or anthracnose leaf blight. Corn plants with Goss's bacterial wilt exhibit long, large tan lesions in the centers or on the edges of leaf blades. The margins of these lesions may have a water-soaked appearance. Black flecks (freckles) can be observed within the lesion. These flecks can be large and cannot be rubbed off. Because it is a bacterial disease, bacterial ooze may be observed on the leaf surface, especially if the leaf is wet. Dried bacterial ooze is shiny and may be observed in direct sunlight. In dry conditions, the symptoms are easily confused with drought stress, leaf scorch or other leaf diseases.

If a susceptible hybrid is infected, the disease can systemically infect the stalk and cause a plant to exhibit drought stress symptoms like wilting or premature death. The leaf phase does not always cause the stalk infection and wilt phase.

This disease cannot be controlled by a fungicide application, and if the disease is present, there are no practical control options. Agronomic practices that can reduce the likelihood of an infection the next season include the following:

1. Crop rotation
2. Tillage to bury crop residue
3. Hybrid selection

When selecting hybrids to be planted following an infected field, use the highest-rated hybrid available as well as crop rotation and tillage, as described above.

In our marketing area this year, this disease could be present in some of the fields where it was present last year, where the corn crop residue was present on the soil surface, and where leaf injury occurred during the early part of the growing season.



Pictured above: Close-up of Goss's bacterial wilt on a corn leaf.

Due to the sporadic nature of Goss's wilt, ratings are difficult to obtain unless the disease is present and leaf injury occurs to initiate infection. Not all hybrids are rated, and additions will be made as this season progresses.



Pictured above: Another look at Goss's effect on corn leaves.

The following are preliminary ratings for Goss's bacterial wilt, with a higher rating indicating greater tolerance to the disease:

## PRELIMINARY GOSS RATINGS

<b>W1831</b>	<b>5</b>	<b>W5051</b>	<b>6</b>	<b>W6878</b>	<b>8</b>
<b>W1941</b>	<b>6</b>	<b>W5281</b>	<b>4</b>	<b>W7071</b>	<b>7</b>
<b>W1953</b>	<b>5</b>	<b>W5641</b>	<b>5</b>	<b>W7251</b>	<b>8</b>
<b>W2329</b>	<b>6</b>	<b>W6261</b>	<b>6</b>	<b>W8681</b>	<b>8</b>
<b>W2681</b>	<b>5</b>	<b>W6526</b>	<b>8</b>	<b>W9121</b>	<b>4</b>
<b>W2751</b>	<b>7</b>	<b>W6871</b>	<b>8</b>		