

BETWEEN THE ROWS

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GOSS'S BACTERIAL WILT HYBRID RATING UPDATE

ISSUE: 10

GOSS'S BACTERIAL WILT RATING UPDATE

Goss's wilt has received some recognition this past growing season in areas where we don't traditionally see it. This disease was identified in Nebraska about 40 years ago and is typically a sporadic Western Corn Belt disease.

Disease Development and Symptoms

Most corn diseases of economic importance are caused by fungal pathogens, not bacteria. Fungal pathogens easily spread by air borne spores that require moisture on leaves for initial infection and continued development. The infection by Goss's wilt, a bacterial disease, is mainly through injury to the leaves caused by heavy winds, rain, hail or sand blasting. The disease bacterium is present in the soil and crop residue and is not moved to other fields easily. Splashing of the crop residue onto the injured areas can begin the infection. The ideal temperature for disease development lies between 72 and 80 degrees. Hot, dry conditions can impede disease development. 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.

Symptoms of the leaf phase of Goss's wilt are easily confused with drought stress, leaf scorch, and other leaf diseases like Stewarts wilt, northern 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.

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.

Agronomic Options

If the disease is present, there are no practical control options. Some agronomic practices like crop rotation or tillage to bury crop residue can reduce the likelihood of an infection the next season. Fungicide applications will not control this disease.

If the disease has been confirmed in a field and corn is to be planted the following year, using the highest-rated hybrid available as well as the agronomic practices described above can reduce the risk of this disease returning. For this disease to be present it had to be in the field last year and some leaf or plant damage needs to occur to create an opening for infection to start. Remember this disease does not spread like fungal diseases and is usually isolated and sporadic in occurrence.



Close up of Goss's bacterial wilt on a corn leaf.

Below is an updated list of hybrid ratings provided by Wyffels research. Not all hybrids are rated due to the sporadic nature of this disease. Ratings are difficult to obtain when the disease is not present. These ratings may be a helpful guide when planting corn in a field confirmed to have Goss's wilt the previous year.



Another look at Goss's bacterial wilt on on corn leaves.

UPDATED GOSS'S BACTERIAL WILT HYBRID TOLERANCE RATINGS

W1831	5	W3730	7	W5641	5	W7071	7
W1940	6	W4179	7	W6261	6	W7147	8
W1941	6	W5051	6	W6267	6	W7250	8
W1953	5	W5077	8	W6440	8	W7251	8
W2680	5	W5150	5	W6526	8	W8430	7
W2681	5	W5155	5	W6870	9	W8437	7
W2751	6	W5159	5	W6871	9	W8680	8
W2757	6	W5280	5	W6876	9	W8681	8
W2849	8	W5281	5	W6878	9	W9121	4
W3625	8	W5560	7	W6927	6	W9128	4
W3629	8	W5640	5				

1 = very susceptible, 9 = very tolerant