THE UNIVERSITY OF ARIZONA
Cooperative Extension

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Goss's Bacterial Wilt and Leaf Blight of Corn

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Small, dark green water-soaked spots ("freckles")

Shiny bacterial exudate on leaf surface

INTRODUCTION: Goss's bacterial wilt and leaf blight (Goss's wilt) was first recorded in Nebraska in the late 1960s and is now distributed widely in most states throughout the Corn Belt. The disease was first detected on field corn in southeastern Arizona in 2018. The disease affects all corn types, in particular susceptible hybrids. When cool, wet conditions favorable to infection prevail early in the season (65-85°F and free surface water), highly susceptible hybrids may be subject to significant yield loss due to this disease.

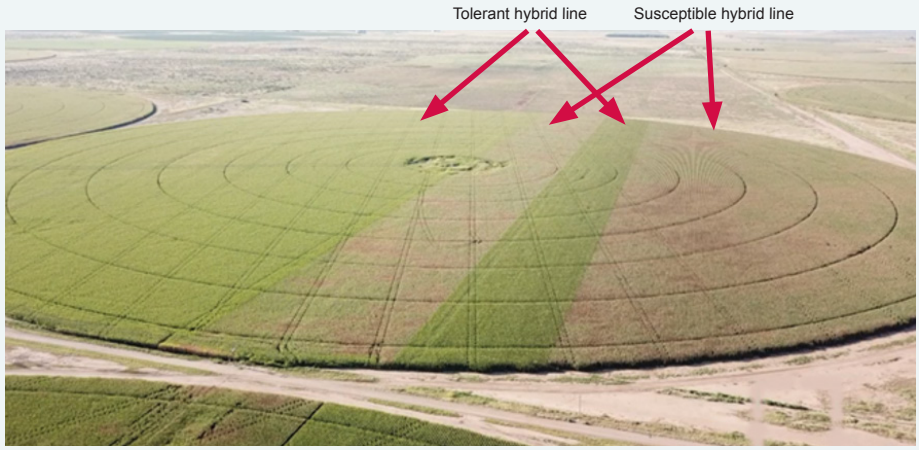
PATHOGEN: *Clavibacter michiganensis* subsp. *nebraskensis* (bacterium)

HOST RANGE: Grassy weed species, including annual ryegrass, Johnson grass, sudan grass, crabgrass, foxtail, shattercane, barnyardgrass, and others.

SPREAD: Long distance by contaminated seeds at low rates (less than 2%); short distance or locally by wind-blown infected crop residue or rain/irrigation water splashes. Bacteria overwinter in infected residue of corn or other weed host plants and enter plants through open wounds on the plant.

SYMPTOMS AND DIAGNOSIS: The disease appears as either leaf blight (commonly observed) or vascular wilt (less common). Leaf blight symptoms include long, water-soaked streaks/lesions with wavy margins, dark green "freckles" within the streaks, shiny appearance (bacteria exudate), extensive leaf necrosis and canopy death. Systemic wilt symptoms include orange to brown or black discoloration in the vascular bundles.

SYMPTOMS CAN BE CONFUSED WITH: Drought stress, nutrient deficiency, Stewart's wilt. A laboratory testing via microscopy, culture isolation, and serology is required for definitive diagnosis. Symptomatic leaves should be collected



Aerial view of fields planted with susceptible and tolerant hybrids with striking differences in the extent of blighted leaf area

Discolored vascular tissue

Leaf blight starting from upper canopy

Severe Goss's wilt symptoms with death of plants

and wrapped in a dry paper towel, placed in a plastic bag, and shipped OVERNIGHT to the University of Arizona's Extension Plant Pathology Laboratory in Tucson. All submissions should be accompanied by completed Plant Disease Diagnostic **Form**.

MANAGEMENT: 1) plant tolerant hybrids; 2) reduce corn residue by tillage and rotation with non-host crop such as alfalfa, cotton, and wheat; 3) manage weed populations. Fungicide sprays are not effective in controlling this disease.

REFERENCES:

Jackson, T.A., Harveson, R.M. and Vidaver, A.K. 2007. Goss's Bacterial Wilt and leaf blight of Corn. University of Nebraska Extension publication G1675

Langemeier, C.B., Robertson, A.E., Wang, D., Jackson-Ziems, T.A., Kruger, G.R. 2017. Factors affecting the development and severity of Goss's Bacterial wilt and leaf blight of corn, caused by *Clavibacter michiganensis* subsp. *nebraskensis*. Plant Disease. 101: 54-61

Schuster, M.L. 1975. Leaf freckles and wilt of corn incited by *Corynebacterium nebraskense* Schuster, Hoff, Mandel, Lazar 1972. Agricultural Experiment Station, IANR University Nebraska-Lincoln Research Bulletin 270.

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