

Identifying Goss's Wilt In Corn – More Than Just Immunostrips

DR. CARL A. BRADLEY



URBANA, ILL.

Although Goss's wilt has not yet been detected in any corn samples submitted to the University of Illinois Plant Clinic this year, the disease may be present in the state, especially in fields that had severe Goss's wilt in 2011 that were planted to corn again. Goss's wilt, a bacterial disease of corn caused by the bacterium *Clavibacter michiganensis* subsp. *nebraskensis* (Cmn), was detected in several Illinois counties last season.

Identification of Goss's wilt may require a multistep approach, especially for those who are not too familiar with the disease:

1. Evaluate affected leaves to determine whether the symptoms and signs match those of Goss's wilt. Leaf lesions will have a wavy margin, and there will be some water-soaking. Dark spots inside the lesions (often referred to as "freckles") also should be present. The affected areas of leaves may also have a shiny appearance, the result of exudates of the bacterium on the leaf surface. Exudates sometimes resemble sticky spots of maple syrup.

Have a plant diagnostic lab evaluate affected

leaves for bacterial streaming (ooze). A laboratory such as the U of I Plant Clinic (web.extension.illinois.edu/plantclinic) will do this test, in which affected leaf tissues are cut and placed on a drop of water on a microscope slide and checked for bacterial streaming. Its presence indicates that the affected leaves have a bacterial infection.

An immunostrip test may be conducted to determine if the Cmn bacterium is present in the leaves that were positive for Goss's wilt symptoms and bacterial streaming. This test is available from Agdia (Elkhart, Indiana), but it is designed specifically to detect bacterial canker in tomato, which is caused by a similar, but different, bacterium – *Clavibacter michiganensis* subsp. *michiganensis*. The immunostrip test will also react to other species of *Clavibacter*, including Cmn (the Goss's wilt bacterium). False positives are very possible when this is the only step used to identify Goss's wilt. For accurate Goss's wilt identification, it is extremely important that you complete steps 1 (do symptoms match?) and 2 (is bacterial streaming present?).

△

DR. CARL A. BRADLEY: Associate Professor of Plant Pathology and Extension Specialist, University of Illinois



Symptoms of Goss's wilt on a corn leaf. Note the wavy margins of the lesion, water-soaking, and dark "freckles."