Tips for Diagnosing Goss's Wilt and Leaf Blight

Alison E. Robertson
Iowa State University, alisonr@iastate.edu

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Abstract
In the past 5 years, Goss's wilt and leaf blight has become increasingly prevalent in Iowa. This growing season, the disease has already been reported from several fields. Consequently many agronomists and scouts have been checking fields and some agronomists have been making use of the immunostrip test from AgDia.

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Tips for Diagnosing Goss's Wilt and Leaf Blight

By Alison Robertson, Department of Plant Pathology and Microbiology

In the past 5 years, Goss’s wilt and leaf blight has become increasingly prevalent in Iowa. This growing season, the disease has already been reported from several fields. Consequently many agronomists and scouts have been checking fields and some agronomists have been making use of the immunostrip test from AgDia.

What symptoms should you be looking for?

Freckles! Dark spots that resemble freckles and occur in the outside edge of a developing lesion are the most characteristic symptom of Goss’s (Figure 1).
Figure 1. Freckles are diagnostic for Goss's wilt and leaf blight.

If you see freckles, you can be confident you’re looking at this disease. Freckles may be confused with black colonies of saprophytic fungi that colonize dead leaf tissue. A neat trick we have learned is that if you hold a suspected lesion to the light, freckles appear transparent (Figure 2), while colonies of saprophytic fungi are dark (Figure 3). On systemically infected wilted plants, freckles are also evident on the leaves.

Figure 2. When backlit, freckles appear transparent.
Other characteristics of Goss’s leaf blight are very large red to grey lesions that usually start from the leaf tip or leaf margins and extend down the leaf (Figure 4). The lesions are usually a blend of dead tissue, grey-green water soaked tissue and yellowed tissue. You may also notice the lesions are sticky and have shiny patches on the surface. This is the Goss’s bacterium that has oozed out of the diseased tissue and dried on the surface of the leaf.

What if I get a positive with an immunostrip test?

The immunostrip test is a useful test to confirm Goss’s, but it must be used carefully. The test does give false positives. We know, for example, that purple leaf sheath (Figure 5) will give a positive with the strip test from AgDia. Purple blotches on the leaf sheath of corn plants are not disease, but are caused by saprophytic organisms feeding on dust, pollen, etc., that has collected behind the leaf sheath.
Figure 5. Characteristic symptoms of purple leaf sheath.

**Other tips**

Other evidence to consider for a positive Goss’s diagnosis in addition to the leaf symptoms and the immunostrip test include:

- Hybrid – Is the hybrid rated susceptible to Goss’s?
- Field – Does the field have a history of Goss’s? Was corn grown in the field in the previous year and is surface residue present?
- Weather – Has severe weather occurred in the area within the past few weeks?

As with all diseases, correct diagnosis is important to enable appropriate management practices to be followed. For Goss’s, tolerant hybrids is by far the best management tool we have at present. There are numerous foliar applied products being marketed for Goss’s management. Several field trials are being done here in Iowa, and also neighboring states, to evaluate the efficacy of these products.

*Alison Robertson is an associate professor of plant pathology and microbiology with extension and research responsibilities. You can reach her at 515-294-6708 or e-mail alisonr@iastate.edu.*

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