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Will Goss’s Wilt be the “Disease of the Year” in 2011

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Abstract
Reports of Goss’s wilt have been coming in hard and fast this past week. The disease appears to be widespread north of I-80. Despite the hot, dry weather, the disease has progressed rapidly in the field.

Keywords
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Will Goss’s Wilt be the “Disease of the Year” in 2011

By Alison Robertson, Department of Plant Pathology and Microbiology

Reports of Goss’s wilt have been coming in hard and fast this past week. The disease appears to be widespread north of I-80. Despite the hot, dry weather, the disease has progressed rapidly in the field.

We have been visiting a field near Gilbert and collecting data on the disease. The photos below show the severity of the disease when we first visited the field on July 21 (Fig 1), and on a return visit on Aug. 2 (Fig 2). They were taken in approximately the same place in the field. Across the majority of the field (approximately 95 percent), every plant shows characteristic leaf blight symptoms of the disease (Fig 3). In the headlands, which are bordered by trees, incidence of the disease (percent of plants with symptoms) is as low as 10 percent. Scattered throughout the field are isolated wilted dead plants (less than 1 percent incidence; Fig 4). We will be monitoring disease progress in this field collecting data to calculate yield loss estimates.

With grain prices so high, it’s difficult to watch a disease come in and rob yield. Not surprisingly, growers are looking for anything to protect yield potential. I am aware of three products that grower’s are trying, and have had questions regarding their efficacy against Goss’s wilt.

**Procidic** is advertised as a broad spectrum fungicide and bactericide. The active ingredient is citric acid. There is no published data that I am aware for Procidic. Plant Disease Management Reports contains reports on the effect of citric acid on fungal pathogens of horticultural crops, but has no reports of results against bacterial diseases, and no reports on corn. Procidic is labeled for use in Iowa to control Goss’s wilt. The field we are monitoring in Gilbert has had an application of Procidic, as well as an earlier application of Stratego YLD®. We plan to monitor the effect of both products on Goss’s disease development and general plant health.

Another product that has been suggested for use to manage Goss’s wilt is Kocide®. Since this product is not labeled for use on corn to manage Goss’s, it should not be used. Korus et al. (2010) evaluated Kocide® 3000 and Headline® for Goss’s wilt control on two hybrids (one susceptible and one resistant) in Nebraska in 2009. The trial was inoculated with the Goss’s wilt bacterium at growth stage V6/V7. Treatments were applied six days before inoculation, four hours after inoculation or 24 hours after inoculation. Goss’s wilt disease was slightly reduced on a susceptible hybrid with an application of Kocide 24 hours after inoculation, but no differences in yield were detected between this treatment and the untreated, inoculated control. On the resistant hybrid, no treatment differences were detected.

A third product I have heard about that some growers are trying is also a copper-based product called Intercept. There is very little information available on this product. Apparently it has been used successfully to control...
citrus canker in Florida. Citrus canker is also caused by a bacterium. There were also some fields in Iowa that were sprayed with this product in 2010. There is no published information available on the efficacy of Intercept against Goss’s wilt or citrus canker. I am aware of a couple of fields that have been sprayed in Iowa, and I will be evaluating those fields for the product’s efficacy.

I encourage anyone who tries either of these products to leave one, preferably more, unsprayed strips in the field and meticulously monitor disease development and collect yield data. The check strips should be left in areas of the field that are representative of the entire field.

Management of Goss’s in 2012

The bacterium that causes Goss’s wilt, *Clavibacter michiganensis subsp. nebraskensis*, survives in infested crop residue. Therefore recommended management practices include growing resistant hybrids, crop rotation and residue management. Continuous corn production together with minimum tillage practices have in part contributed to the epidemic of Goss’s wilt we are witnessing in 2011. Other factors include susceptible germplasm and stormy weather.

Figure 1: Goss’s wilt when we first visited the field 21 July, 2011.
Figure 2: Goss’s wilt severity had greatly increased by 2 August, 2011.

Figure 3: Typical leaf blight symptoms of Goss’s wilt
Figure 4: A wilted plant surrounded by plants with Goss's leaf blight symptoms

References

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