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Don't Stop Now!

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Don't Stop Now!

Abstract

Now is not the time to stop scouting. It may not be pleasant out there (think pollen and hot), but the weather the past couple of weeks has been favorable for gray leaf spot development. Gray leaf spot development is favored by mean daily temperatures between 72 F and 85 F, and high humidity (higher than 90%). I have had several reports this past week of fields in which the gray leaf spot has developed up to the ear leaf. Northern leaf blight development has also been progressing in several fields in central Iowa.

I have been scouting my field plots the past couple of days and also have noticed that gray leaf spot and northern leaf blight have developed rapidly in the past two weeks. One thing I noted was disease severity was hybrid specific. I have several hybrids in my plots, but only one or two may be at threshold for a fungicide application (disease present on the third leaf below the ear leaf or higher). The affected hybrids always are rated more susceptible to disease.

Keywords

Plant Pathology and Microbiology

Disciplines

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Don't Stop Now!

By Alison Robertson, Department of Plant Pathology and Microbiology

Now is not the time to stop scouting. It may not be pleasant out there (think pollen and hot), but the weather the past couple of weeks has been favorable for gray leaf spot development. Gray leaf spot development is favored by mean daily temperatures between 72 F and 85 F, and high humidity (higher than 90%). I have had several reports this past week of fields in which the gray leaf spot has developed up to the ear leaf. Northern leaf blight development has also been progressing in several fields in central Iowa.

I have been scouting my field plots the past couple of days and also have noticed that gray leaf spot and northern leaf blight have developed rapidly in the past two weeks. One thing I noted was disease severity was hybrid specific. I have several hybrids in my plots, but only one or two may be at threshold for a fungicide application (disease present on the third leaf below the ear leaf or higher). The affected hybrids always are rated more susceptible to disease.

Can a fungicide application be made after brown silk?

Yes. Most of the fungicides used on corn (Headline®, Headline AMP®, Stratego YLD® and Quilt Xcel®) have a pre-harvest interval of 7 days (Headline®) or 30 days (other products), which means in theory, a product could be applied up to R5 (dent). We have some data from 2007 through 2009 for foliar applications after R2 (blister; around brown silk), which is summarized in Table 1. Although the yield response with an R3/R4 application of fungicide was not as high as the other timings, there was low disease pressure in these trials. In general, [yield responses to a fungicide application are greater when disease is present in the field.](#)

Table 1. Effect of application timing on the mean yield response of corn to a fungicide in Iowa

	VT	R1	R2	R3/R4
Mean yield response (bu/A)	4.12	4.21	4.17	0.64
Number of observations	86	277	148	14

Data from small plot and on-farm trials conducted by Iowa State faculty and staff, and on-farm trials conducted by Iowa Soybean Association On-Farm Network.

If disease occurs after brown silk, would a fungicide protect yield?

Good question. There are few data I am aware of. Consider that:

- The reproductive growth period in corn (VT to R6) typically lasts

approximately 64-65 days.

- Dry matter accumulation starts at R2 and rapidly increases through approximately R5.75 (3/4 milk line).
- And 55 percent of dry matter accumulating after R5 (Abendroth et al, 2011).

If the disease threshold is met at R3 or R4, could a fungicide application protect yield, bearing in mind dry matter accumulation is 20 to 30 percent complete?

Harkin and Arkrige (2009) evaluated one (R4), two (R4 and R3), three (R2, R3 and R4) and four (VT, R2, R3 and R4) applications of Headline® on two hybrids in double crop corn in Alabama. On one hybrid, northern leaf blight was predominant, while on the second hybrid southern rust was predominant. A single application of Headline at R4 significantly reduced rust severity and, although yield was higher (95.8 bu/acre), it was not significantly different at the 5 percent level from the unsprayed check (88.7 bu/acre). Two, three and four applications reduced rust severity and resulted in higher yields (104.9-119.1 bu/acre). Similarly, with northern leaf blight, a single application of Headline at R4 reduced disease but multiple applications were more effective. Yields did not differ between treatments.

These data suggest that a fungicide application after R2 will slow disease development, although this may not always result in an increase in yield. However, reducing leaf disease could reduce stalk rot severity and therefore contribute to standability.

Sources

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