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Summary: Foliar Fungicide on Corn in Iowa (2007 – 2009)

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Abstract
Data from corn fungicide small plot trials conducted by Iowa State University faculty and staff, and on-farm trials conducted by the Iowa Soybean Association On-Farm Network, the ISU Corn and Soybean Initiative and the ISU Northwest On-Farm research program were recently collated and summarized.

Keywords
Plant Pathology

Disciplines
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Summary: Foliar Fungicide on Corn in Iowa (2007 – 2009)

By Daren Mueller and Alison Robertson, Department of Plant Pathology

Data from corn fungicide small plot trials conducted by Iowa State University faculty and staff, and on-farm trials conducted by the Iowa Soybean Association On-Farm Network, the ISU Corn and Soybean Initiative and the ISU Northwest On-Farm research program were recently collated and summarized:

- For the total 574 observations, the overall mean yield response was 4.04 bu/A.
- Yield response of small plot trials (173 observations) was 4.39 bu/A, compared with 3.89 bu/A for on-farm strip trials (401 observations).
- The mean yield response in all years was similar: 3.42 bu/A (2007), 3.83 bu/A (2008) and 3.72 bu/A (2009).
- The mean yield response was higher in corn-following corn trials compared with corn-following soybean trials (4.54 bu/A vs 3.96 bu/A).
- Applications at VT, R1 or R2 resulted in the highest mean yield response (4.12 bu/A, 4.21 bu/A and 4.17 bu/A, respectively).
- Greater yield responses occurred with fungicides that contained a strobilurin alone (4.57 bu/A) compared with fungicides that contained a premix of a strobilurin and a triazole (2.85 bu/A). (Side comment: It will be interesting to see if the trend continues, since the newer premixes contain roughly equivalent amounts of strobilurin active as the strobilurin alone fungicides.)
- Mean yield response was greatest when disease severity in a field at R5 was high. If disease severity on the ear leaf at R5 was <5 percent, mean yield response was 4.83 bu/A, however, when disease severity on the ear leaf at R5 was >5 percent, the mean yield response was 9.46 bu/A.
- Based on the price of corn of $3.72 and $24 product + application, the breakeven yield response is 6.45 bu/A

Considerations for 2010

Before applying a fungicide to corn, do some homework. Consider the price of corn, price of product plus application and drying costs. Consider hybrid susceptibility and the disease history of the field. Scout fields to determine disease pressure. Look on the leaves of the plant below the ear leaf. If you see several spots, and you are growing a susceptible hybrid, you may want to consider spraying a fungicide.

This warm growing season has led to rapid growth and development of corn in Iowa. There are fields of corn across the states that are tasseling. From a disease perspective, nothing is too unusual. Eyespot has again been reported in northwest and north central Iowa, the odd gray leaf spot lesion has been observed on the lower leaves on corn in eastern Iowa and common rust is out there – you just need to look for it. In most years in Iowa, leaf diseases of corn start to increase rapidly toward the end of July. Bearing in mind that the effective period of a foliar fungicide is 14-21 days, this begs the
question: should we be fueling the crop dusters now, or should we wait a couple of weeks before applying a fungicide? Unfortunately, we don’t have enough data to answer that question at the moment. Foliar fungicide trials at Nashua (2007 through 2009) showed that yield response was greatest when a fungicide was applied the last week of July/first week of August. In 2008 and 2009, this corresponded to growth stage R1, but in 2007, the corn tasseled early, and the R2 application resulted in the greatest yield response.

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