EVALUATING THE RESPONSE TO FUNGICIDE IN DIFFERENT TILLAGE SYSTEMS

TRIAL OVERVIEW

- Fungicide application to corn is a relatively common practice in Illinois.
- Low commodity prices are calling the return on investment (ROI) for a fungicide application into question.
- Different tillage systems may provide different environments that are more or less preferable to disease development.

RESEARCH OBJECTIVE

- This trial was established to evaluate the yield response to fungicide in different tillage systems.

Location	Soil	Previous Crop	Tillage Type	Planting Date	Harvest Date	Potential Yield/Acre	Planting Rate/Acre
Monmouth, IL	Silt Loam	Corn	Various	04/24/2017	09/29/2017	240 bu/acre	36,000 seeds/acre

SITE NOTES:

- A large land block was divided into three different tillage zones:
  - Vertical Tillage
  - Strip Tillage
  - Conventional Tillage
- Within each of the three tillage zones, two corn products were planted:
  - 108 Day RM SmartStax® RIB Complete® Corn Blend
  - 114 Day RM SmartStax® RIB Complete® Corn Blend
- Each product had treatments consisting of an untreated check and an application of a foliar fungicide that contained strobilurin and triazole active ingredients (A.I.). There were two replications of all treatments. The fungicide was applied at the R1 growth stage.

UNDERSTANDING THE RESULTS

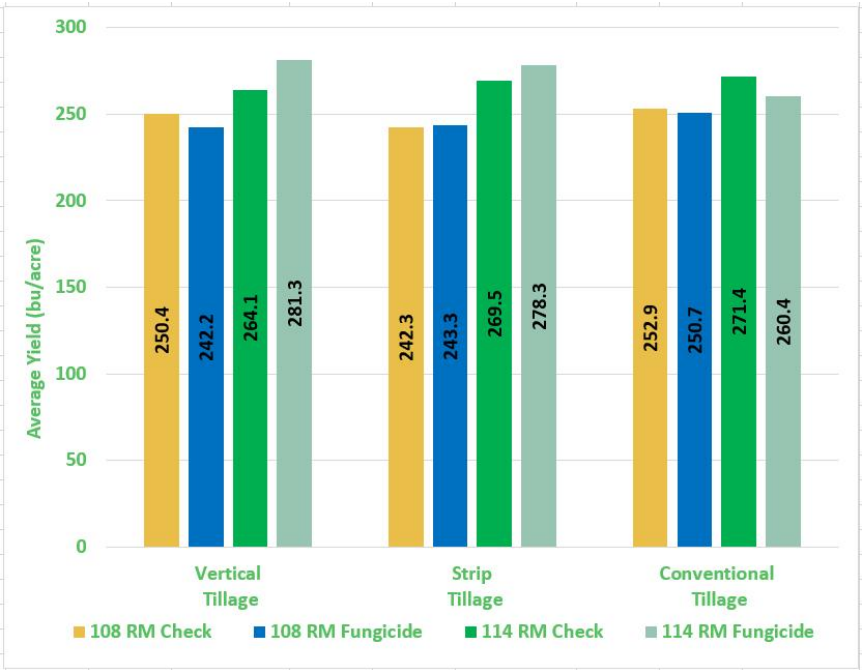

Figure 1. Average yield response (bu/acre) for fungicide application to three tillage systems at Monmouth, Illinois (2017, 2 Replications).

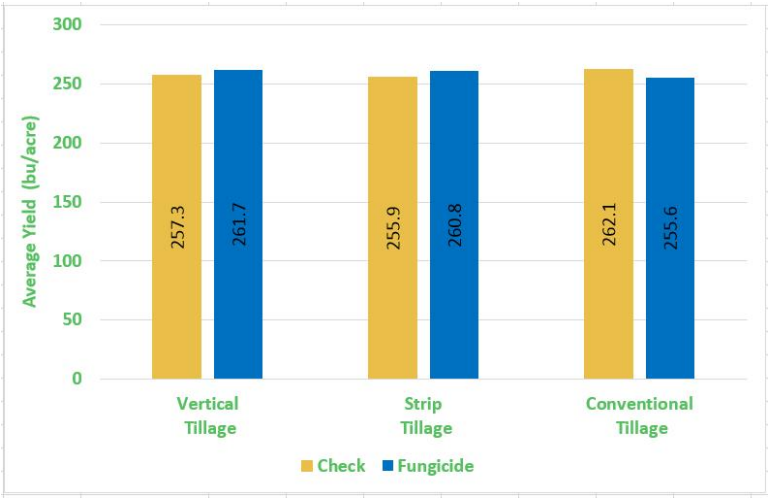

Figure 2. Average yield response (bu/acre) of a fungicide application on two corn products and three tillage systems at Monmouth, Illinois (2017, 2 Replications).

Figure 3. Gray leaf spot, Monmouth, Illinois - 2017.

- Disease incidence was low; however, the disease symptoms that appeared were generally very late in the season and likely had little to no impact on yield.
- No differences in symptomology were seen between the treated and untreated plots.
- Because of these factors, no discernible differences or trends were observed in the final yield results (Figures 1 and 2).
- Three factors are required for disease development: a pathogen, a susceptible host, and favorable environmental conditions.
- In 2017, the cool, dry conditions in July and August likely held disease pressure to a minimum at the Monsanto Learning Center at Monmouth, IL. An example is the minimal number of gray leaf spot lesions found on corn leaves (Figure 3).

WHAT DOES THIS MEAN FOR YOUR FARM?

- Various methods for preventing disease development in corn include planting resistant genetics, crop rotation, and good residue management practices.
- A good scouting program is crucial to identify whether a disease is a problem in any given field.
- If all three factors for disease development are present, a fungicide application may help protect yield potential.