FARM JOURNAL

FIELD DAYS™

HONE FOLIAR FUNGICIDE ROI

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Farm Journal Test Plots:
3 Questions To Fine-Tune Your Foliar Fungicide ROI

For the past five years, the Farm Journal Test Plot program has studied fungicide use. While initial research focused on addressing disease pressure, Farm Journal Field Agronomists Missy Bauer and Ken Ferrie are also taking a closer look at how to get the most out of the fungicide dollar.

In 2019, foliar fungicide use in the Michigan test plots increased yield by 3.47 bu. to 4.7 bu. per acre versus the control. The average four plot locations in southern Michigan was 4.23 bu. per acre. Over the course of five years (2015 to 2019) that average increased to 4.91 bu. per acre (with a range of 5.9 bu. per acre in 2015 to 2019's average).

To help farmers maximize their foliar fungicide investment, Bauer sought to answer three questions in 2019.

PHOTO: B&M CROP CONSULTING

Farm Journal Field Agronomist Missy Bauer joined the Farm Journal Test Plots in January 2010. She works closely with farmers in Michigan, Ohio and Indiana.

Q. DOES FUNGICIDE PAY ON LATE-PLANTED SOYBEANS?

A. In 2019, Bauer planted soybeans on April 25 and May 28 to compare how early- versus later-planted soybeans respond to a foliar fungicide application.

The soybeans with fungicide planted in late April yielded 4 bu. per acre more compared with the control with no fungicide (63 bu. versus 59 bu.). In the late-planted soybeans, the response increased to 4.7 bu. per acre compared with the control with no fungicide (57.9 bu. versus 53.3 bu.).

"Extending the grain fill period by keeping plants greener longer was even more important in the late-planted soybeans," Bauer says.

Q. DOES TIMING MATTER?

A. The industry standard for fungicide application timing is typically the R3 growth stage, if no major disease pressure has been detected to that point. At the R3 stage, the plant is beginning to pod and one of the four uppermost nodes has a pod that's 3/16" long. Knowing the primary yield response to fungicide use stems from an increase in seed size, Bauer wanted to evaluate if a later application would be more economical. In 2019, she compared the traditional R3 timing to R5 as well as a double pass (R3 and R5 applications). At R5, the seed is ⅛" long in the pod at one of the four uppermost nodes on the main stem.

"First-year results found a 1-bu.-per-acre gain with the R5 timing versus R3," Bauer says. "There was no added benefit from a double pass."

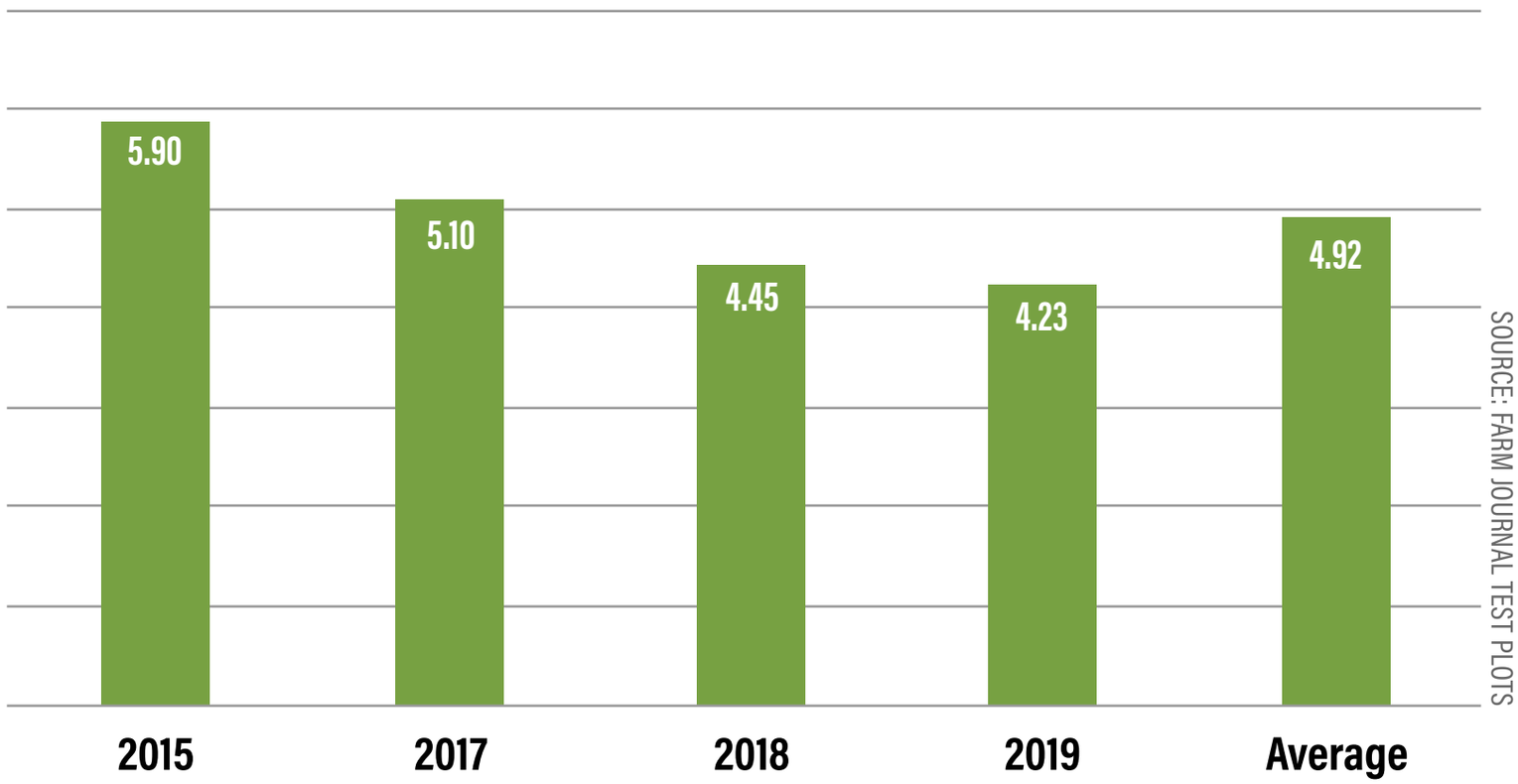
PHOTO: B&M CROP CONSULTING

Q. DOES PRODUCT TYPE MATTER?

A. The Farm Journal Test Plots have been testing old versus new fungicide chemistry. The new chemistry contains new active ingredients or more modes of action. The 2019 test plots used: Revytek, a three-mode of action product from BASF; Trivapro, a three-mode of action product from Syngenta; and a new three-mode of action product coming in 2020 also from Bayer.

Bauer will continue to evaluate fungicide response to early- versus late-planted soybeans in 2020 as well as continue her timing and product type research.

HOW FOLIAR FUNGICIDE USE STACKS UP TO THE CONTROL



Eleven plot locations in Michigan and 23 treatment comparisons resulted in an average 4.92 bu. per acre gain and net return of $29.72 per acre for fungicide use.

Foliar Fungicide Boosts Soybean Yield Two Ways

1. KEEPS PLANTS GREENER LONGER

"From our observations, using a foliar fungicide keeps the plants greener longer and extends the grain-fill period. In essence, it makes our shorter-season varieties act like a longer-season soybean," Bauer explains.

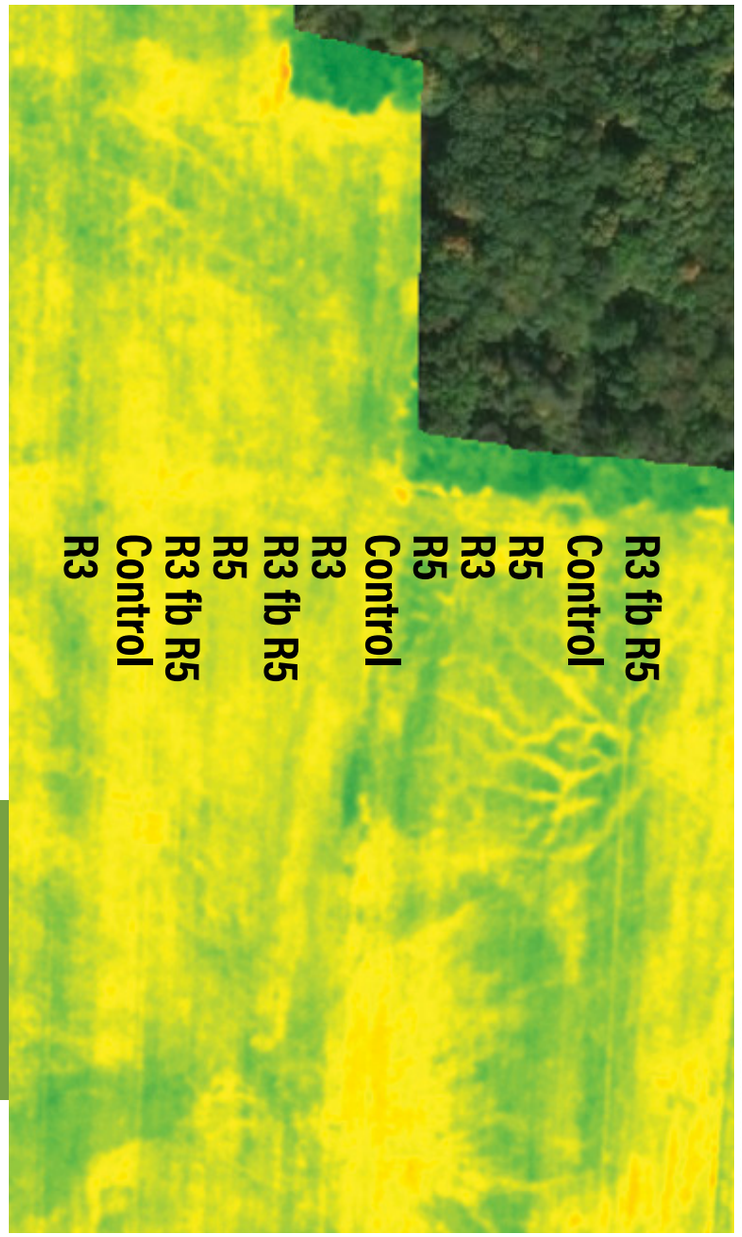


PHOTO: AEROVIRONMENT

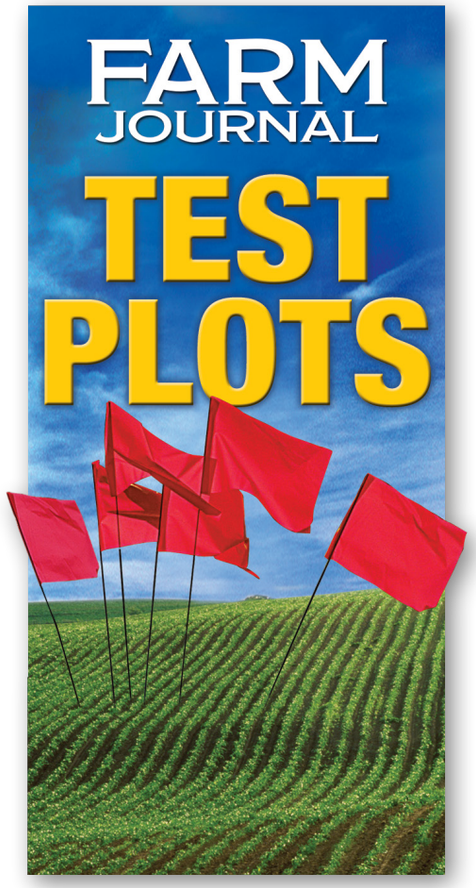
An AeroVironment drone sent up Sept. 18 captured this NDVI image that shows how fungicide keeps plants greener longer.

2. INCREASES SEED SIZE

Bauer evaluated the main yield components (pods, seeds per pod and seed size) to determine where the yield response to foliar fungicide originates. There was little to no difference in pods and seeds per pod, however fungicide use did increase seed size.

Based on 2018 research, when a foliar fungicide was applied, soybeans averaged 2,816 seeds per pound versus the control at 2,957 seeds per pound, which means the seeds were smaller in size in the control.

In 2018, the seeds harvested from the control were smaller than the seeds from the plants that received a fungicide application. The difference in seed size alone is equal to an increase of 4.1 bu. per acre.



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FARM JOURNAL TEST PLOTS PLEDGE

You can count on our test plots to be con-ducted on real farms with real equipment using a high-touch set of protocols. The information will be completely independent and actionable. Our hands will always be in the dirt researching the production practices and technology that are best for you.

Click the plus button above to learn about additional research from the Farm Journal Test Plots.
AgWeb.com/FJ-test-plots