SOYBEAN RESEARCH PRINCIPAL INVESTIGATOR – BRIAN LEIB

Farmer Blog

Brian Leib, Professor of Biosystems Engineering, University of Tennessee

Why did you decide to pursue a career that includes soybean research?
I am interested in how to manage things, and my career has focused on irrigation research. When I moved to Tennessee, my research focused on the crops with irrigation investments, which includes soybean, corn and cotton. I find the challenges of adjusting irrigation for soybeans and other crops every year based on rain, crop growth stage and more very interesting.

What research topic have you completed in the past or are working on now that could have or has had the most significant impact on soybean production?
Irrigation is easier to manage in areas where it never rains. But in regions like Tennessee, where it can be very wet or very dry, managing irrigation to work around rainfall is tricky. Farmers don't want to hurt their crop with not enough water, but they also don't want to waste money pumping water when it isn't needed. My work on "managed-depletion irrigation" focuses on understanding the water table and crop water requirements, aiming to help farmers find that balance.

How has the soybean checkoff enhanced your ability to find answers to production problems for farmers?
My role is 100% extension, and the soy checkoff provides funds that can be invested in research to explore the questions and challenges farmers have. This research provides information I can share with farmers, and it allows for preliminary research that can be leveraged into other grants.

Within your area of expertise, what are the top two or three general recommendations you would offer farmers to improve their management practices?

- *Farmers should know their soils and how much water they hold. Then, they can pay attention to soil moisture to know when crops need water. Soil moisture sensors help, but they can also monitor rainfall and crop growth.*
- *Soybeans can wait a bit for irrigation and get water when it matters most, which is usually at the reproductive growth stage R5. There may be exceptions to this timing, which is why it is important to monitor soil moisture.*

Within your area of expertise, what do you consider to be critical soybean research needs that can impact the profitability of farmers in the future?
I believe farmers would benefit from more research to understand the interaction between irrigation, drainage and the water table in their fields. This will help them manage both wet periods and dry periods. Future research should also explore how all the data farmers gather from their fields can support variable rate irrigation. They would also benefit from research on how best to gather data — comparing remote sensing from aerial images to ground equipment, and how that data can work together and perhaps cover more area.

SRIN articles:

Water Table Data May Help Manage Drainage

SOYBEAN RESEARCH & INFORMATION NETWORK

This website is funded by the soybean checkoff