

# THERE'S AN APP FOR THAT! OR THERE WILL BE!

*It's the 21st century, and it's time to use technology to make the most of our fields.*

Knowing what works on your farm is priceless. Most farmers, however, only get 30-40 tries per field over their lifetime to figure out the most profitable methods. With the millions of combinations of seed, soil, weather, and management practices, getting it right is a science. In fact, that's called data science, a new and exciting field with the potential to help you become more profitable.

Our goal is to develop a new online cropping system optimization decision tool that combines the factors of soil, seed, weather, planting date, seeding rate, chemical inputs, and soybean prices that will help you make decisions to make you more profitable.

Here's an example of why a decision tool can be so useful. If we just look at planting date, we can see a difference of almost 9 bu/ac based on when you plant (Figure 1). However, averages can be deceiving, and we all know that there's a lot more to profitable soybeans than just planting early. In reality, we are just as likely to end up losing 25 bu/ac in yield due to all the different combinations in factors as we are to gain that 9 bu/ac (Figure 1).

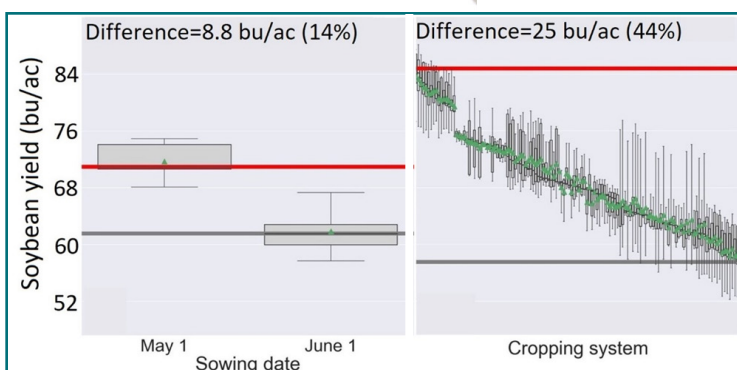
Our team is looking to harness the power of data to help you navigate those millions of possibilities. Through creating large datasets that take as much information as you are willing to give us, data scientists can create algorithms that will then tell you what is most likely to work in a given scenario. We aren't looking for anyone's secrets, we just want to harness the power of big data to increase profit for soybean farmers across the country.

Our group is entering our 8th year of using farmer data and soybean checkoff dollars (NCSRP funded) to do this. We first began with the Benchmarking Soybean Production Systems in the North Central US project, where we collected data from over 8,000 farm fields and more than 600,000 acres of soybean production across the North Central Region. This allowed us to create the beginnings of a model that could predict soybean yield and profit based on management. Next, we tested that model through our Boots on the Ground: Validation of benchmarking process through an integrated on-farm partnership project from 2019 to 2021. We documented that the improved management practices based on our model increased both yield and profit.

Now we are fine-tuning the model based on specific field conditions. We are taking weather data, satellite imagery, and yield monitor data, and combining

it all with information about seed, soil, and management to help you know what will work specifically for you. This is what we call the "Data Driven Knowledge Project."

**Figure 1.** Soybean yield difference between May 1 versus June 1 planting date and yield variability in each of the 128 cropping systems (64 systems with May 1 and 64 systems with June 1 planting dates across 5 years = 640 year-specific yields.).



## Why do we need your help?

The more data we have from a large variety of scenarios, the more accurate the model we can create. We need to know what happens in the real world, not just in plots on a research farm, to help account for all the variables. This is what we're asking from you:

- ▶ Provide field management, pricing, and yield data from two or more of your farm fields via an online survey.
- ▶ Share the survey with a friend or on social media. Our goal is over 1,000 fields, so the more the merrier!
- ▶ That's it!

We'll add soil, weather, and satellite image data to your survey answers and crunch the numbers to improve the precision of our recommendations. Our program is 100% completely confidential and protected. In this project alone, we have an 8 year track record of security for farmer data.

## What's in it for you?

You get early access to the app! Once you upload your data from a minimum of two fields, you will receive a coupon to access Agroptimizer® ([www.agroptimizer.com](http://www.agroptimizer.com)), the management optimization tool in development. This web-based application will allow you to drop a pin in a field and enter what you think you're likely to do and compare it to what the data says is optimal. You can see how it works [here](#) and see real world results based on this tool [here](#). We encourage you to test it out by splitting a field to compare your current practices with the recommendation and see the results!

## Is your data safe and secure?

Your data is protected and encrypted behind a university firewall. Access is limited to our team, similar to our efforts in previous projects. You can trust that our team's experience over the past 8 years provides evidence of our commitment to data security and integrity!

*"Our farm has been involved with this project for the past 8 years. Anywhere from supplying data, to running field validation trials on our farm, to making whole farm changes based on what we learned. I am excited about the new precision aspect and what this means for our farm in the future."*

Suzanne Shirbroun,  
Iowa soybean farmer

## Ready to go?

Scan the barcode to take the survey! .....

**For any questions regarding the project, data security or data use,** please contact Dr. Shawn P. Conley at [spconley@wisc.edu](mailto:spconley@wisc.edu)

**For any specific questions regarding the survey tool,** please contact your state specialist below:

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