ANDRE DE BORJA REIS – SOYBEAN RESEARCH PROFILE

Farmer Blog



Andre de Borja Reis, assistant professor, soybean farming systems, University of Missouri; State Extension Specialist on soybean agronomy

Why did you decide to pursue a career that includes soybean research?
Since I was a child, I've been intrigued by nature relations. I like to observe nature and try to understand the natural process. As I grew older and became more educated, I realized that agronomy would be where I could understand the environmental processes and help improve how we manage and use environmental resources for food, fiber and shelter. Studying agronomy, I began to understand that in order to produce food, we have to change the environment and that may imply altering our environmental footprint. I learned about soybean's ability to fix nitrogen from the atmosphere, a process that otherwise would be energy-demanding in the industrial form. I thought that soybean was a wonderful crop. With soybeans, I could develop a career around this agricultural product with a lower environmental footprint.

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?
My research group is heavily focused on closing the gap between yield potential and actual yield. Missouri's state soybean average is lower than some neighboring states due to weather and distinct soil attributes, but there are also opportunities to improve cropping practices. I want to help farmers choose better planting dates and varieties, adjusting populations and row spacing for improved yields.

How has the soybean checkoff enhanced your ability to find answers to production problems for farmers?
The soybean checkoff is critical. It is the only group interested in trying to solve problems that the farmer has today. Other agencies or groups look at the farmer in different ways; many are trying to solve future issues or problems that society perceives because of

agricultural production. The soybean checkoff is paying attention to those pressing issues and they are invested in solving current, day-to-day problems.

That's what I'm trying to do as well. If we don't have robust farming operations, we can't expect the environmental services from crop production. And that means better use of current resources, helping farmers to make informed decisions, and decreasing the use of inputs. I greatly depend on the checkoff to help me with my projects.

Within your area of expertise, what are top two or three recommendations you'd offer farmers to improve their management practices?
From an agronomy perspective, planting and the decisions made around planting, are the most important in the whole cropping season or farming operation. Weed, fungicide, nematode, and insecticide management are all important, but they don't change the yield potential. Planting is the only thing that really defines yield potential.

After that, it's a battle of managing losses. So selecting the right variety or cultivar, adjusting the population, adjusting row spacing and planting date — those are what farmers should be considering. Today, farmers are dealing with so many other things that these decisions could get overlooked. There is no yield increase, or no yield potential increase, by applying crop protection measures, or biologicals or foliar fertilizers. The only thing they can do is protect the yield set by planting.

Within your area of expertise, what do you consider to be critical research needs that can impact farmers in the future?
We need to decrease the uncertainty of farmer decisions. When a farmer decides to plant a particular cultivar in a field under certain conditions, the decision is often based on the performance of that cultivar in trials conducted under environmental conditions similar to their farm. However, the assumption of similarity is rarely met, and it is hard to predict whether the cultivar of choice will be able to provide maximum yield.

We need more information in order to make a better decisions. And that means developing more powerful models that can account for a large number of variables. We need to apply or develop tools that can help farmers decrease uncertainties around their decisions to protect yield.

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This website is funded by the soybean checkoff

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