

Illinois

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THE 2023

➡ SOYBEAN SUMMIT ISSUE



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CONTENTS

FEBRUARY 2023 Volume 3 Issue 4

6 A Tale of Two Certified Crop Advisors

Hear from John Pike and Jeanette Porter, ISA's 2022 IL SoyAdvisor award winners, to learn more about the management and best practice advice they have for Illinois Field & Bean readers.

14 Rooting for You

The power of collaboration is the overarching theme from one of this year's Soybean Summit keynote presenters, Dr. Rachel Vann. She highlights the collaborative research efforts of multiple state soybean checkoff and Extension organizations.

18 Science for Success Panel

Meet the panel of three Extension experts from across the U.S.

22 Back to the Biological Future

In this feature we introduce you to Dr. Vitor Rampazzo Favoretto, the new Disease and Pest Team Coordinator at the University of Illinois Soybean Innovation Lab.

26 Head of the Class

A new addition to the Soybean Summit, undergraduate students, graduate students, and postdocs from across Illinois presented research posters.

DEPARTMENTS

4 FROM THE BOARDROOM WITH BRADY HOLST

5 CEO'S MESSAGE

10 GROWTH BY ASSOCIATION

12 EDITOR'S MESSAGE



Visit us online at
www.ilsoy.org/magazine/illinois-field-bean.



COVER: Welcome to the Soybean Summit: All Star Edition! This special issue sets the stage for the 2023 Soybean Summit, rolling out a rich lineup of industry leading experts and hot topics ranging from the latest agronomic insights, sustainable production and agribusiness management advice, along with actionable recommendations to improve sustainability and boost farm profitability.



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FROM THE BOARDROOM



BRADY HOLST |
UTILIZATION COMMITTEE CHAIR | ILLINOIS
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Welcome to the 2023 Soybean Summit: All Star Edition!

Somebody once told me one of the most difficult aspects of farming is how quickly the business can change. From agronomy to agribusiness management, there seems to be constant improvements available for the taking. With so much to do, keeping up with all these changes can be difficult. Welcome to the 2023 Soybean Summit: All Star Edition, where all these updates were shared so we can hit the ground running in 2023.

The Illinois Soybean Association's agronomy team led the event to showcase the best educational resources available. The agronomy team has grown significantly since last year's Soybean Summit, and their diverse backgrounds and areas of expertise in the agronomy field were showcased by the range of topics and format of this year's event. These "All Stars" break the mold of typical agronomy teams by engaging farmers, students, and researchers year-round through checkoff funded projects to keep Illinois first in soybean production and sustainability. This team goes beyond the field to engage the entire soy value chain including government stakeholders, trade groups, and other industries.

These wide-ranging engagements were demonstrated in the lineup at the 2023 Soybean Summit. The two keynote speakers are well respected assistant professors of crop sciences who discussed their research from different soybean areas in the U.S.

Dr. Andrew Margenot, from the University of Illinois at Urbana-Champaign, presented on phosphorus and carbon management. He also shared the ultimate goal of efficient use of nutrients for crop productivity and how that can result in other benefits for farming systems. His research to benchmark interrelated soil, water, and climate quality outcomes of soybean production were also a part of his keynote address.

Dr. Rachel Vann, from North Carolina State University, was also a keynote speaker. Her discussion covered best management practices for pest suppression and how multidisciplinary cover cropping is related. Foliar fertilizers, sulfur fertilization, nitrogen fixation under various fertility regimes, and biological seed treatments were also discussed, which was discovered through checkoff-funded research projects from across the U.S.

New to this year's event, graduate and undergraduate students from around the state submitted poster displays on their soybean-related research. It was a great opportunity to see what is on the horizon for soybean uses, management practices, and more.

The 2023 Soybean Summit was far from the typical winter agronomic meeting you're used to, and we could all use a little change. I hope you, like me, will successfully hit the ground running after learning the latest updates on soybean production and research from this year's lineup of experts.

Illinois
Field & Bean

Setting the Pace

When analyzing the success of an organization, sometimes you have to remind yourself that it's a marathon, not a sprint. But boy, have we gained some ground over the past few months here at the Illinois Soybean Association.

Our teams are rapidly expanding to a high-quality, high-touch service model, bringing fantastic expertise in-house, resulting in more value back to the pockets of checkoff-paying farmers. One of those areas, in particular, is ISA's agronomy team.

With an all-star staff of Certified Crop Advisers, agronomists, conservation experts and more, ISA's agronomic efforts are focused on bringing you all the information you need to ensure profitability and increase yields.

This staff is equipped to bring you agronomic insights through events such as our 2023 Soybean Summit: All Stars Edition and the Better Beans Series. This winter, these events convened key industry experts and local resources together to support growers in their efforts to hit higher yields, improve profitability and grow better beans.

Year after year, we find these learning opportunities to be beneficial to growers across the state, and we were grateful to see so many of you there. Throughout the pages of this issue, you'll have the opportunity to review some of the speakers and topics in the lineup at this year's events. You can check out all of the great information shared at any time at [ILSoyAdvisor.com](https://ilsoyadvisor.com).

Earlier this month, we received numerous applications from qualified agronomists across the state for our 2023 Soy Envoy program. From March to October, Soy Envoys contribute actionable information, advice, and in-season agronomy updates via the [ILSoyAdvisor](https://ilsoyadvisor.com) blog. These individuals will support Illinois soybean farmers in their goals of increasing yields and profits while minimizing environmental impact.

But our agronomic offerings don't end there. Your ISA agronomy team is bolstering efforts to promote and provide relevant information and results from checkoff-funded research. In fact, you'll soon be able to find a research hub on [ILSoyAdvisor.com](https://ilsoyadvisor.com) with information regarding those projects and the researchers behind them.

Additionally, regular updates from the team can be sent straight to your inbox with events and deadlines you need to know to ensure your farming operation continues to be successful. With just a few clicks, you can subscribe to those emails at [ILSoyAdvisor.com](https://ilsoyadvisor.com) today. And be sure to stay tuned for regular crop progress reports and upcoming information regarding field days across the state throughout the growing season.

Looking back to the start of our marathon, we're proud of how far we've come and of Illinois' growers for setting an ambitious pace out in the field.



JOHN LUMPE | CEO |
ILLINOIS SOYBEAN ASSOCIATION



A Tale of Two Certified Crop Advisors

By Betsy Osman

In a state that leads the country – even the world – in soybean production, it can seem a near-impossible task to pick the best from the best; to highlight the work of a select number of individuals, bringing attention to their successful perspectives, practices, and the routine excellence that weaves throughout their long careers. As the idiom goes, Illinois' agricultural leaders are their own best competition.

But we love a challenge.

Recently, Illinois Field & Bean Magazine sat down with

this year's ILSoyAdvisor award winners, John Pike, who was awarded the Soybean Master Advisor Award, and Janette Porter, who was awarded the Dave Rahe Excellence in Soils Consulting Award, to learn more about the *why* behind the *how* they've each become leading Certified Crop Advisors, shifting Illinois farmers full-throttle into a more successful, more profitable future.

Meet John

I work as an independent research agronomist and consultant, operating from my home

farm in Marion, Illinois. I coordinate on-farm nitrogen trials in southern Illinois for the Illinois Fertilizer and Chemical Association, and collaborate with researchers at the University of Illinois and SIUC on projects related to water quality and cover crops, which are funded by the Illinois Nutrient Research and Education Council (NREC) and ISA. I also conduct small plot experimental research to evaluate nitrogen stabilizers and new fertilizer products for industry clients, in addition to a variety of cover crop research and education programs.

The trajectory of my professional career has been very much unplanned, but has proven to be a rewarding journey of self-discovery. As I neared the end of college, I interviewed for a variety of jobs but never felt like the right fit was on the table. I graduated in May of 1990 without a job, but I had farming to do, so I wasn't really in a rush. One day while picking up a load of seed at FS, a sales manager I knew asked if I had found a job yet. I remember thinking he seemed more concerned about me having a job than I was and told me to ex-



ISA Board Chairman, Steve Pitstick, congratulates John Pike at the ISA Impact Awards banquet on November 29, 2022.



ISA Board Chairman, Steve Pitstick, congratulates Janette Porter at the ISA Impact Awards banquet on November 29, 2022.

pect a call in the next few days. Sure enough, a central Illinois Growmark recruiter called and told me he was looking for someone in Piatt County. I didn't even know where Piatt County was, but I found a map, went for an interview, and was offered a job on the spot.

I knew from the start I wasn't going to move too far away from home. But I could never have imagined that I would graduate school to become a college agronomy instructor, a research agronomist for the University of Illinois, or that I would be given the opportunity to speak at conferences and meetings across the Midwest. But all of that happened, and over the course of my unplanned career, I've had the honor to meet and work with some truly incredible people. Those relationships are the best part of my experience in the ag industry.

The best advice I could give to anyone just starting in this field is to show up early, pay attention and never pass up an opportunity to do a little extra to make sure the job gets done, regardless of any title you may achieve in your career.

My best management tips for Illinois growers are to pay as much attention to the soil as the inputs purchased to grow the crop. With the amount of technology available in a bag or a piece of equipment, it is easy to lose focus on the basics.

Also, utilize equipment technology to test something new each year, but do it right. I see many growers compare a product or practice in a 10 to 20-acre block to the remainder of the field. As common as autosteer and yield monitors are now, we can make multiple, smaller comparisons, maybe alternating

passes, and get much better data for our efforts.

And finally, utilize soybean management to make cover crops work in corn. Early planted soybeans can allow for earlier cover crop seeding to get it right for corn the following season.

The number one practice I would like to see more growers adopt is more cover crops and less tillage.

Water quality research shows that utilizing cover crops and reducing tillage are the best strategies for reducing nutrient loss. In-field nutrient management strategies can help to increase returns on fertilizer investments. There is no single silver-bullet strategy to make cover crops work on every acre, but there are good and proven strategies to get good results on the majority of acres, especially when paired with strip-till.

Meet Janette

I was born and raised on a family farm in Pike County, Illinois. Growing up, I always wanted to be a veterinarian. In high school, I took as many agriculture classes as possible and was involved in FFA. My agriculture teacher, Mr. Jones, asked me one day why I wanted to be a vet and I said it was because I wanted to work with animals. He told me if I wanted to be a vet, because I liked to pet kittens, I was interested for the wrong reasons. Then we began discussing soils, and that sparked my interest. I started college thinking I would work for the NRCS and become a resource conservationist. I did an internship with the NRCS-MLRA office in Carbon-

(A Tale of Two Certified Crop Advisors, page 8)

A Tale of Two Certified Crop Advisors

(continued from page 7)

dale, Illinois while attending SIU. After graduation, I was offered a job with the NRCS in Iowa. I didn't want to move to Iowa, so I prayed about it and ultimately turned the job down. I accepted a part-time position with Bradshaw Custom Pumping, where I am still employed. There I am involved with GPS coordinating and sending out as-applied maps and nutrient analyses to clients from their manure applications.

One of my college friends attended a career fair in southwest Illinois and gave my number to an agricultural consulting company representative. He called me and offered me an internship, but I needed a job most. I began working for him the following year, managing the Pike County area until he sold the business. Upon the sale of the business, Dave Rahe and I were considering how to move forward with our future. Dave always kept things simple and to the point. I remember he sent me an email that said we'd do better as partners, rather than starting our own companies. RPM Soils, LLC was formed February 10 of 2016.

RPM Soils' mission is to interact with our clients to provide sound agronomic recommendations for the productive management of their soils using technical data collected from soil sampling, tissue sampling, and observations from the field to help make crop production decisions. We do this by soil sampling using management zones that are created by going out into fields and mapping out different characteristics such as soil types, topography, and water movement through the field. The five factors of soil formation are considered when making our maps. Once the samples are back from the lab, we sit down with our clients and go over our recommendations and provide independent advice to our farmers. We are

an independent company and do not sell any inputs.

Dave passed away suddenly in April of 2020, a great loss that was felt by the entire industry. Dave was a great mentor and friend, and he did all he could to pass on his infinite wisdom about the soil. He knew more about soil than anyone I have ever met. Truck rides with him were spent discussing soils, agronomy, and mostly life. Currently, I am working on forming relationships with Dave's clients to keep the business moving forward. I have also been working on a lot of tissue testing, along with pulling soil samples to better fine-tune my ideal nutrient ranges. I've been using the soil health tool along with standard soil testing to define where I want to see those nutrient levels with the hope to be able to better use this tool.

I would like to see growers using soil sampling more frequently to make more informed decisions. Not only is this more economical considering today's input prices, but it is also more environmentally friendly. I'd like to see growers using the 4R management strategies with their inputs: the Right Source, Right Rate, Right Time, Right Place. Using these strategies is not only good for growers' wallets, but also for the land, too.

My advice to someone looking to get started in this career is to have grit. It takes a lot of it, some days. You might often hear "no" when you're getting started; don't let that deter you. If you get overwhelmed, keep doing the next right thing. Find a person or group that you can rely on to share not only your career frustrations but personal frustrations. Take care of your mental health.

Today, Dave continues to be my inspiration. I like to think his legacy continues through me. He was the man who planted the tree without the expectation of sitting under its shade. His passing left a big hole in my heart, but I know I am better because of his influence and friendship.

I hope one day, someone will say the same about me.

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As the push for sustainable farming practices grows, an increasing number of companies are asking farmers to adopt new practices to mitigate greenhouse gas emissions, reduce soil erosion and conserve water. However, implementing these practices can sometimes come at a cost. That's why the Illinois Soybean Association (ISA) checkoff program invests in programs to support the profitable adoption of sustainable farming practices – to help Illinois farmers protect the environment and their bottom line.

Jointly funded by ISA and IL Corn, Precision Conservation Management (PCM) is a farmer service program created to assist farmers in the evaluation of on-farm conservation practices. Farmers enrolled in PCM programs work with regional specialists to understand the costs and benefits of adopting new conservation practices for the unique farm business.

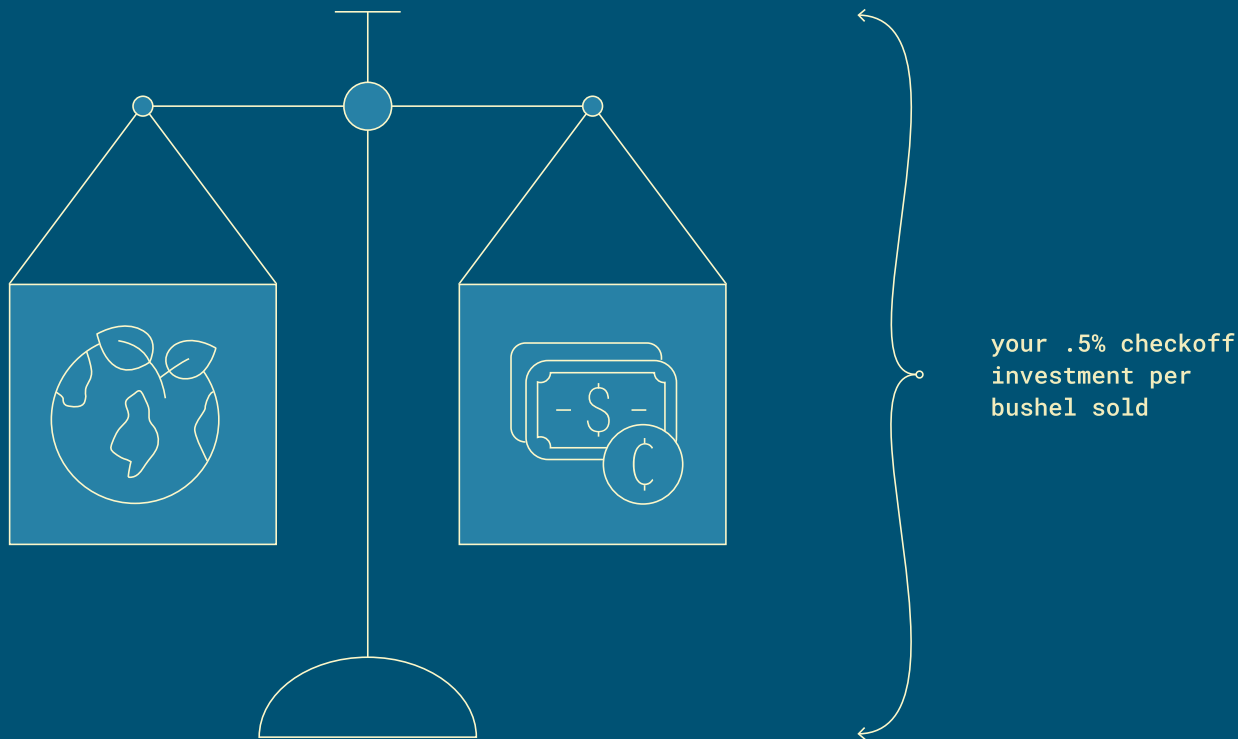
In 2021, more than 125,000 acres of Illinois farmland were enrolled in nitrogen management programs. Illinois farmers also participated in reduced tillage and cover crop programs, enrolling more than 118,000 and 36,000 acres respectively. The environmental outcomes of these 2021 programs included loss reductions of:

- 578,550 pounds of nitrate-nitrogen
- 84,040 pounds of phosphorus
- 124,875 tons of sediment

Currently, there are 28 Illinois counties with PCM programs designed to impact all corn and soybean farmers in the state. By joining PCM, farmers agree to make their aggregated, anonymized data available to other farmers across Illinois and the Midwest to benefit their own family farms. This aggregated data gives all Illinois farmers an opportunity to understand and manage the risks associated with adopting new conservation practices, benefiting the environment and farm profitability.

To learn more about PCM and its findings, visit precisionconservation.org.

Making the economics of sustainability pay off.



In 2021, Illinois farmers enrolled more than 125,000 acres of farmland in Precision Conservation Management (PCM) nitrogen management programs, reducing nitrate-nitrogen loss by 578,000 pounds.

Your half percent per bushel checkoff contribution goes in part to fund PCM programs in Illinois. Jointly funded by Illinois Soybean Association and IL Corn, PCM is a farmer service program designed to help you understand and manage risks associated with adopting new conservation practices on your farm. Ultimately, PCM integrates conservation practices and financial data to help you make sound management decisions that benefit both the environment and your bottom line.

For more information on your investment, visit ilsoy.org.

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Your Progress, Our Priority



ABIGAIL PETERSON | DIRECTOR OF AGRONOMY |
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As the new year begins, so does the excitement for the next growing season. Every year provides an opportunity to learn something new and challenges oneself to have the best crop yet, whether it's your fifth crop or your fortieth. The agronomy team at the Illinois Soybean Association (ISA) was excited to bring together state agronomists and scientists at our agronomic events this winter to get your questions answered and inspire new ideas. The Soybean Summit and Better Beans Series opened the doors to all farmers and agricultural professionals to learn advanced crop management information and the latest Illinois agronomic research findings.

Farmers attended these events in-person or virtually and heard updates from the ISA agronomy team, including exciting collaborations, projects, outreach, and research to come in 2023. Your ISA agronomy team is here to provide farmers with the support they need to achieve a quality, high-performing crop management system. Our priorities rely on learning how advanced soybean management systems protect and improve soil productivity and water quality. We want to promote, research, and drive soybean education. Having farmer engagement to voice needs and concerns is important to us.

At this year's Soybean Summit, our lineup of All Star experts covered topics such as precision agriculture, specialty soybeans, conservation and carbon markets, checkoff-funded research, and so much more. You can review the recording from the event at ilsoyadvisor.com.

Our second keynote presentation highlighted the power of collaboration. Dr. Rachel Vann, assistant professor and North Carolina State Extension Soybean Specialist, discussed how collaboration has been key to amplifying resources and delivering soybean

best management practices in North Carolina and nationally. You can read all about it on page 14.

It's important to our team to represent the state of Illinois regionally through the Better Beans series. This year's locations were set in Bloomington, Quincy, and Carbondale. Each event addressed regional agronomic needs in IPM and management across the state; therefore, these events allowed farmers to attend meetings geared specifically to areas of unique concern to them.

As the ISA agronomy team has grown; the passion to bring Illinois farmers the best agronomic tools to help in the field has multiplied in strength. Our team is excited for this next growing season to work alongside farmers, researchers, and agronomists to provide the best agronomic resources available. We hope to see you at future events throughout the year and to stay engaged with our field activities throughout the growing season.



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RACHEL PEABODY | EDITOR |
ILLINOIS SOYBEAN ASSOCIATION

One More Thing

Winter is always a busy hive of activity at the Illinois Soybean Association. These early months in the year are where we meet you in our different agronomic classrooms across the state at our beloved Better Beans series, and Soybean Summit which we took to Champaign for the second time. These events are among our favorite of checkoff funded initiatives because they allow us to get out and see so many of you – the 43,000 Illinois soybean farmers we're proud to serve.

As busy as these winter months get, and as many I's to dot and T's to cross that our event calendar may require, there's one more important matter to recognize. Our event sponsors, who join us each year in bringing our agronomic education to locations near you, work hand-in-hand with us to make it all happen. This year, we'd like to thank: the Association of Illinois Soil and Water Conservation Districts, BASF, Beck's Hybrids, Brandt, Busey Bank, FMC, IL Corn, the Illinois Nutrient Research & Education Council, the Missouri Soybean Merchandising Council, the North Central Soybean Research Program, the Soybean Research Information Network, Stoller USA, and the United Soybean Board.

These event partners join us as part of ISA's corporate partner program which enables us to partner with agribusiness and other associations to provide valuable information and opportunities to Illinois soybean farmers. Corporate partners help us extend the reach of our checkoff and membership programs, and add depth to our programming. We're grateful for the different industry relationships we have,

and for partners who value the opportunity in connecting with our farmers.

So in short, to our wonderful partners: we thank you.

As for the rest of this February issue you're reading, I hope these pages set the stage for what's happening at our winter line-up of events, featuring the 'All Stars' of industry leading experts covering all of the hot topics in agronomy, sustainable production and on-farm profitability. As you're on the road this month to hopefully join us in person, I hope you get the chance to meet our ISA agronomy team, also featured within these pages, and talk to them about what topics you'd like to see covered next.

On behalf of all of us at ISA, we look forward to seeing you soon.



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Rooting for You

By Claire Weinzierl

The power of collaboration is the overarching theme of one of this year's Soybean Summit keynote presentations.

Dr. Rachel Vann, an Assistant Professor, and Soybean Extension Specialist for North Carolina State University was one of this year's keynote speakers. Growing up in Geneseo, Illinois, a farming community in Henry County, Vann was exposed to agriculture at a young age through 4-H. She pursued her agricultural interests at the University of Illinois where she studied natural resources and environmental science.

"I feel that I was very well prepared leaving the University

of Illinois both academically and with undergraduate research experience to go on and do agricultural research and extension effectively," says Vann.

So, after graduation, she did just that. Vann made her way to North Carolina State University where she earned her doctoral degree in crop management and now provides leadership for the NC State Soybean Extension Program, which focuses on providing soybean stakeholders across North Carolina with agronomic information that will aid in maximizing soybean yields and protecting quality. Additionally, Vann serves as the NC Plant Sciences Initiative Platform Director for Extension, Outreach, and Engagement and is the lead PI for the United Soybean

Board-supported Science for Success project.

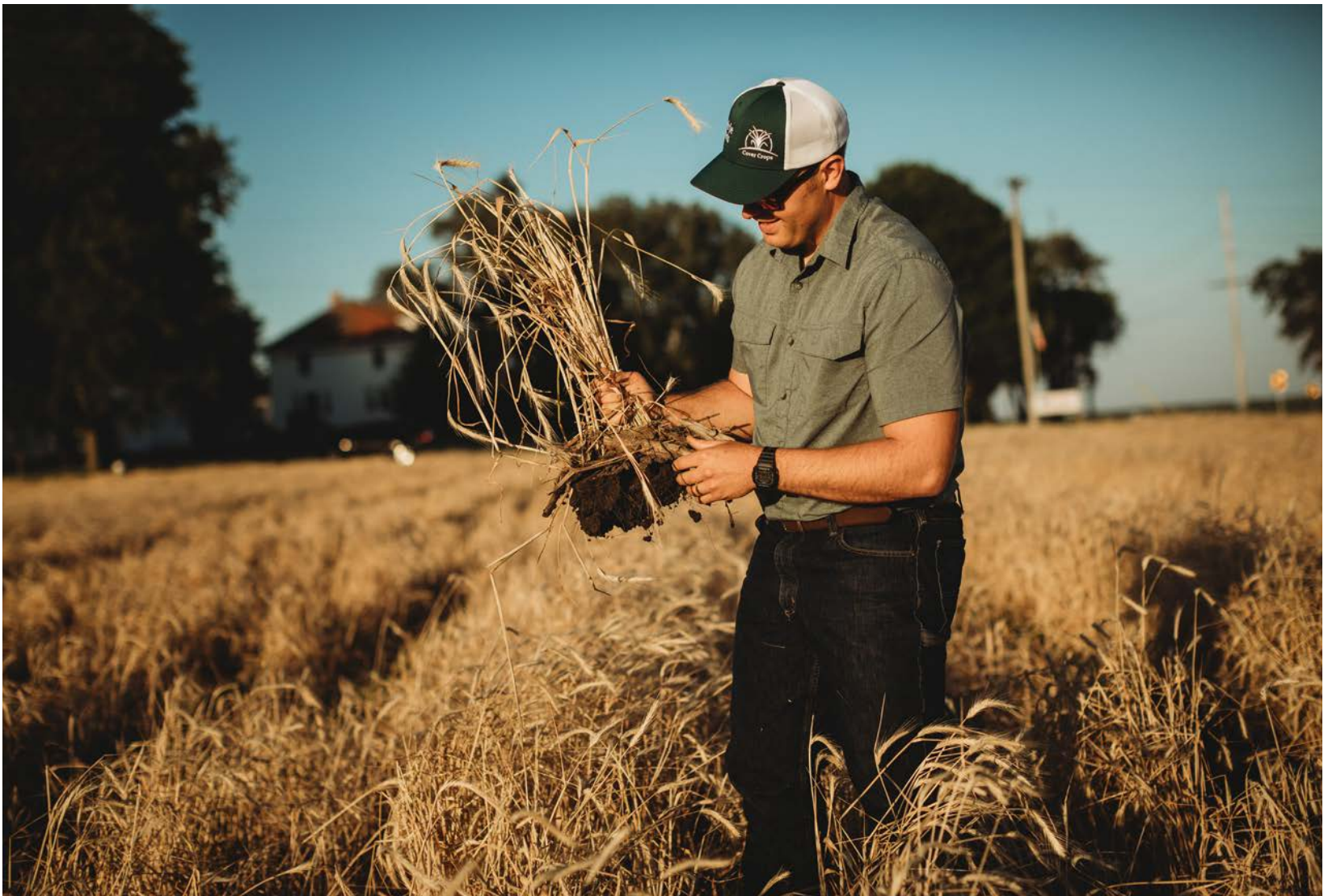
In her keynote, 'Collaboratively Delivering Soybean Best Management Practices,' Vann provided several examples of the power of collaboration for accelerating the pace and relevancy by which best management practices can be delivered to U.S. soybean farmers. The first example is from an updated generation of planting best management practices that have resulted from the strong relationship between NC State University and the NC Soybean Producers Association. This has resulted in core foundational recommendations across the diverse planting dates in the state and the considerable movement of the RMA replant coverage date for soybeans in North Carolina, a high priority

for growers in the state when she started as the NC State Soybean Extension Specialist.

Another example of collaboration highlighted a multidisciplinary cover crop project helping to deliver short-term agronomic and pest-suppressive benefits for soybean production in North Carolina as a result of cover crop use. Instead of focusing on one aspect of cover crop benefits, this project brings together researchers from diverse backgrounds to co-drive management recommendations to maximize short-term benefits and minimize negative pest implications.

"Taking an interdisciplinary research approach to solve

(Rooting for You, page 16)



As demands of the soybean industry change, the Science for Success team collaboratively uses applied research combined with historical results to adapt best management practices to future challenges.

Rooting for You

(continued from page 15)

some of our bigger challenges is going to be critical," says Vann. "You have to have everybody at the table, from agronomists to entomologists, pathologists, and nematologists, working together to provide practical solutions."

"One of the things that I'm really passionate about is using cover crops to maximize both short- and long-term benefits to crop rotation and soybean production," says Vann. "One of the areas we're really investigating more in North Carolina is the implication of pest dynamics from cover crop use; how can we use cover crop mulches to reduce foliar diseases, insect pressure, and nematode pressure?"

"We're also looking into the role of brassica cover crops in suppressing problematic nematodes and at more precision cover cropping, and how to pro-

vide those short-term benefits for soybean production from cover crop use."

Vann also stresses that whether in Illinois or North Carolina, growers should select the right cover crop species and the right variety within the species to maximize desired benefits.

"Pay close attention to your end goals when utilizing cover crops. Numerous short-term goals haven't historically been emphasized that can be gained from using cover crops," says Vann. "And to maximize those benefits, we have to pay very close attention to species selection, even adaptability of varieties within a species and also the management of the cover crops."

The final example Vann discussed centered on the Science for Success project, which brings together Soybean Extension personnel from across the U.S. who collaboratively deliver best management practices to U.S. soybean farmers through common research protocol execution

across the U.S. and an effective summary of QSSB-supported research. Best management practices highlighted included foliar fertilizers, sulfur fertilization, nitrogen fixation under various fertility regimes, and biological seed treatments.

The Science for Success partnership brings together 17 Extension specialists from land-grant institutions across the country, representing more than 80 percent of U.S. soybean acres. These specialists contribute their state-gleaned knowledge and research results to the program. As the demands of the soybean industry change, the Science for Success team collaboratively uses applied research combined with historical results to adapt best management practices to future challenges.

"Science for Success has rapidly catalyzed our ability to deliver best management practices to U.S. soybean farmers by facilitating rapid capture of many

environments of data in a short period," Vann said. "It is a truly excellent way to minimize overlap and maximize the input of check-off investments."

As an active soybean specialist in North Carolina with an agricultural background in Illinois, Vann emphasizes the most important advice she can give soybean growers right now is to rely on data-driven strategies from unbiased entities to make management decisions.

"Profit margins can be tight depending on where you're at and your situation. And I think every input matters. So, using data-driven recommendations is critical," says Vann. And taking a collaborative approach to generating best management practices ensures the most robust management practices can be delivered to the grower.

In case you missed it, you can find out more about the information covered at this year's Soybean Summit on ILSoyAdvisor.com.

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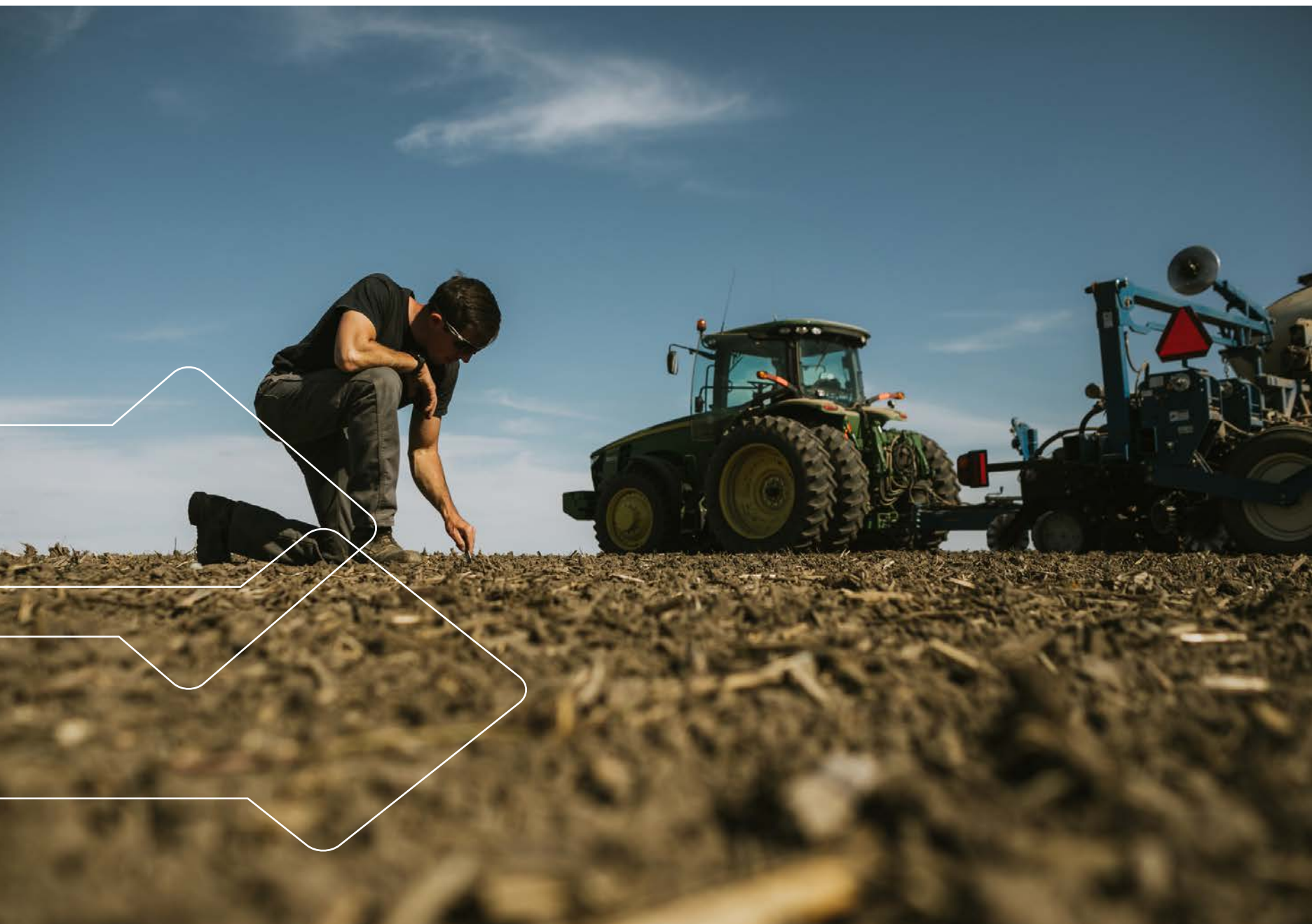


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One of this year's Soybean Summit panels featured three of the 17 Extension specialists from across the U.S. that make up the Science for Success program, funded by the United Soybean Board (USB).

Science for Success Panel

By Brynna Sentel

This year's Soybean Summit is appropriately branded the 'All Star Edition' in the spirit of bringing together the best team possible to educate farmers on best management practices.

The 2023 event featured a panel of Extension specialists from North Carolina, Ohio, and Illinois. These experts are

just three of the 17 specialists that make up the Science for Success program which was created in 2019.

These 17 specialists represent more than 80 percent of U.S. soybean acres and use state and national funding to support research on both national and local levels.

As the demands of the soybean industry change,

this team collaboratively uses proven research combined with historic results to adapt best management practices to future challenges.

At the 2023 Soybean Summit, the panel presented on collaboratively delivering soybean best management practices to U.S. soybean farmers through common research protocol execution across the U.S. and an

effective summary of previous QSSB-supported research.

Best management practices that were highlighted included foliar fertilizers, sulfur fertilization, N-fixation under various fertility regimes, and biological seed treatments.

The panel featured Dr. Rachel Vann, Assistant Professor, Soybean Extension Specialist, Platform Director, Extension

Outreach and Engagement, NC Plant Sciences Initiative, Crop and Soil Sciences with North Carolina State University, Dr. Laura Lindsey, Associate Professor, Agronomic Systems, Soybean and Small Grain Production with The Ohio State University, and Dr. Giovanni Preza Fontes, Assistant Professor, Crop Sciences with University of Illinois, Urbana-Champaign.

"We were happy to welcome members of the Science for Success team to Soybean Summit," says Jennifer Jones, Research Agronomist for the Illinois Soybean Association. "This great collaboration among U.S. Soybean Extension Specialists increases the strength around soybean research nationwide, and our farmers got to hear first-hand about some of the work Science for Success is accomplishing."



Vann, of Geneseo, Illinois provides leadership for the NC State Soybean Extension Program focused on providing soybean stakeholders across North Carolina with agronomic information that will aid in maximizing soybean yields.

Additionally, she serves as the NC Plant Sciences Initiative Platform Director for Extension, Outreach, and Engagement and the lead PI for the national USB-supported Science for Success project. Vann received her undergraduate degree from the University of Illinois Urbana-Champaign.

Lindsey, of rural Ohio, is the soybean and small grain extension state specialist. The goal of her research and extension program is to maximize crop yield while maintaining economic and environmental sustainability.

Lindsey is currently researching soybean and Ohio wheat performance tests, cultural practices (planting date, seeding rates, cover crops), and specialty small grains (winter malting barley, hybrid rye, and more niche small grains).

She received her doctoral degree in Crop and Soil Sciences from Michigan State University and bachelor's and master's degrees in Soil Science from Ohio State.



Fontes, of Mato Grosso, Brazil, received his bachelor's degree in Agronomy from the Federal University of Mato Grosso. He also has degrees in Agronomy and Crop Sciences from Kansas State and the University of Illinois, primarily working with cover crops and nitrogen fertilizer management in different cropping systems.

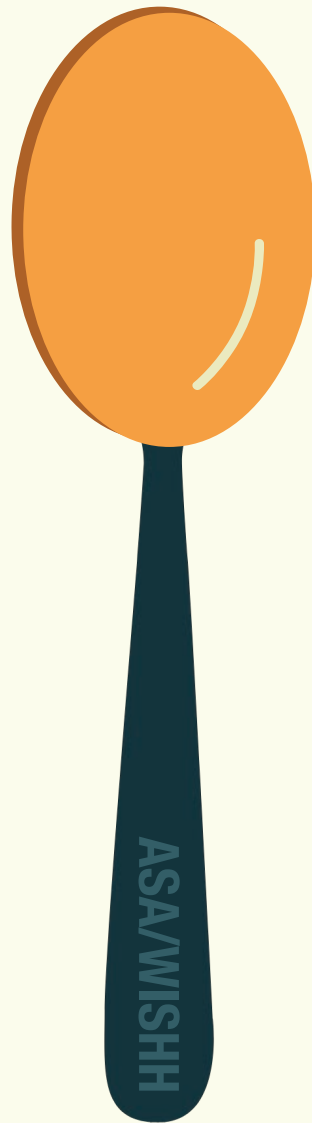
His approach is to conduct applied research to identify management practices that increase grain yield and nutrient use efficiency while reducing environmental impacts.



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African soybean farmers, the Soybean Innovation Lab, and agronomists were hosted by one of our partners, Good Nature Agro, to discuss soybean management and challenges. Picture from Kasenengwa, Zambia, dated November 2022.

Back to the Biological Future

From Illinois Fields Into Africa

By DeAnna Thomas

Met Dr. Vitor Rampazzo Favoretto, the new Disease and Pest Team Coordinator at the University of Illinois Soybean Innovation Lab.

Dr. Favoretto is a former Dr. Fred Below Crop Sciences researcher at the University of

Illinois, where he studied biologicals. During his graduate years, he performed extensive research on the role of sulfur nutrition and new technologies to enhance biological fixation on soybeans as the pathway to increasing grain yield and nutritional quality simultaneously while summariz-

ing a six-year study on soybean varieties to identify characteristics of high-yield and high-protein varieties.

Dr. Favoretto has agronomic and crop production experience in Brazil, the United States, and Africa. He is a soybean production enthusiast and enjoys

producing his short video series, the #ShotsofScience, to share his findings in the corn belt and now in Africa.

Illinois Soybean Association's Outreach Agronomist, Stephanie Porter, recently visited with Dr. Favoretto to talk about biologicals and how they can benefit

22 February 2023

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Illinois soybean farmers, as well as his new role and work with African farmers.

Stephanie Porter (SP): As farmers in Illinois begin to gear up for the 2023 growing season, one of the hot buzzwords we're hearing is biologicals. Let's start with the basics: Can you share what biologicals are and how they work in the plant?

Dr. Vitor Favoretto (VF): My colleagues Dr. Connor Sible, Dr. Juliann Seabur, and Dr. Fred Below published a tremendously detailed definition last June in their white paper entitled *Plant Biostimulants: A Categorical Review, Their Implications for Row Crop Production and Relation to Soil Health Indicators*.

"Plant biostimulants are specialty products used to increase crop production and are quickly becoming common in the agricultural seed and chemical marketplace. Unlike traditional crop inputs, such as fertilizers or pesticides, biostimulants are unique because a single product may have multiple avenues for influencing crop growth and development based on timing and application placement." Sible et al., 2022

SP: What are the different types of biological products?

VF: There are many ways we can divide the available biostimulant products. For soybeans, I would like to highlight five different types based on Dr. Sible's classification: Seaweed Extracts

and Hormones, Organic Carbon Sources (Fulvic and Humic acids, along with Biochar), Plant Nutrition Microorganisms (Nitrogen-fixing; Phosphorus (and Potassium) solubilizing microorganisms), Beneficial Microbes (involved in plant health or stress mitigation), and Enzymes.

SP: How can you tailor the biological product technology to have higher yields?

VF: Each type of biological product acts differently in the plant depending on the biostimulant and when it is applied to soybean. For example, when applied as a seed treatment, seaweed extract helps in the early stages of plant development, increasing the root system.

However, it can also be beneficial to boost soybean yield when applied at mid-vegetative stages (V5), with other benefits, like drought resistance, also being reported.

Differently, we have the soybean inoculant with *Bradyrhizobium japonicum*, a bacteria that supplement nitrogen to soybean (and form the nodules on the roots).

However, during my studies with the Crop Physiology Laboratory and the scientific literature, the translation of the inoculant addition to higher soybean yields depended on the method and time of application,

(Back to the Biological Future, page 24)



LEFT: This corn field is 'intruding' here as an example of how African farmers in some areas plant in ridges. Given that rain comes in seasons, these ridges are needed in some areas to avoid flooding and crop loss. Picture from Chitedze, Malawi, dated July 2022. **RIGHT:** The African tropical climate results in highly-weathered soils low in organic matter. To increase soil fertility, progressive farmers do rotation, conservation tillage, and even Syntropic agriculture (multiple crops at the same time to optimize growth and development). Picture from Lisungwi Estate, Malawi, dated July 2022.

Back to the Biological Future

(continued from page 23)

the environment, and the variety.

SP: Why are biological products not a "one size fits all?"

VF: Each biostimulant is unique, just like humans. Like parents, each company, their product is unique. However, when candidates are selected for a job, their skillset and potential to fulfill their responsibilities are considered. So, if we think of higher soybean yields as a job to be done, we need to choose the biostimulant that will provide us with what we need now for our reality.

Therefore, like an HR representative, if you choose the right team, your company will thrive, but if some pieces need to be found, you will have challenges in the future. So, that is why there is NOT a "one size fits all" biostimulant, and each product should be selected thinking about optimizing your operations based on your needs.

Out of Illinois fields into Africa.

SP: You recently accepted a new role that combines your years of research and experience to help African farmers achieve soybean success. Tell us more about that.

VF: After five years of re-searching how to increase soybean yields and protein, which included the role of biostimulants on soybeans with the Crop Physiology Lab, I accepted the challenge at the Soybean Innovation Laboratory to be the Disease and Pest Team Coordinator in the mission to achieve the sustainability of the soybean value chain in Africa.

SP: How are you using your experiences to help African farmers to achieve soybean success and avoid yield loss?

VF: We are committed to helping African farmers increase yields in their soybean cultivation. Still, we go beyond the harvest and create innovations to impact



The happiness of an agronomist and his passion: soybean! These golden seeds are capable of changing lives around the world. Picture from Chipata, Zambia, dated November of 2022.

other sectors where soybean is involved.

We develop, with African processors, soybean protein mixes to be incorporated into school meals, fighting malnutrition, and helping children to maximize their learning process. African women are significant players in the field of labor. With our mechanization efforts, our laboratory focuses on helping empower those women to assume higher management positions, thanks to the power of soybean!

SP: How are you helping the laboratory to achieve the sustainability of the soybean value chain?

VF: In my current role, I shifted gears. Instead of trying to increase soybean yields, I help avoid yield loss by diseases and pests, helping more than 190 collaborators from around 15 countries in Africa with their disease and pest identification and management.

I also work with USDA scientists to identify new threats to soybean production. However, with my experience with soybean production, this new role also allows me to travel to Africa,

educate farmers, and discuss research while connecting with people to expand the soybean

horizon because together, we are stronger for soybean success.



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For the first time, undergraduate and graduate students, as well as postdocs from across Illinois, were invited to submit and present research posters at the 2023 Soybean Summit.

Head of the Class

By Olivia Key

At this year's Soybean Summit, undergraduate and graduate students, as well as postdocs, from across Illinois, were invited to submit and present research posters for the first time at the event held in Champaign, Illinois, on February 2. Students conducting research on soybeans in Illinois were eligible to compete.

The annual ILSoyAdvisor Soybean Summit, funded by the Illinois Soybean Association checkoff program, brings Illinois growers the opportunity to gain agronomic information and insights from leading soybean experts. The 2023 Soybean Summit: All Stars Edition featured topics such as yield-increasing practices with precision, pest management, understanding biological products, the future of conservation and nutrient management, navigation of the carbon space, value-added with high-yield soybean opportunities, "Science for Success" participants, and exclusive farmer panels.

Danillo Gomes Leite, a Plant Pathology doctoral student at Southern Illinois University Carbondale (SIUC), submitted his research that covers stem diseases of soybeans in Illinois and the identification of the prevalent causing pathogens.

Danillo began conducting his research on soybean stem diseases and the pathogens that cause them due to the lack of research available on the topic. He hopes to develop management practices that target stem diseases. He says, "When we think about the major impacts diseases have on our crops, substantial research has been conducted on the canopy or the root system, and often the health of the stem is ignored. There are several devastating diseases of soybean stems and this lack of research can lead to future yield losses."

To gain information on the prevalent stem diseases impacting Illinois soybeans, Danillo developed a sampling protocol to be shared with farmers. "Infected plant samples were

sent to SIUC from fifty locations across the state. Pathogens are isolated from diseased plants, and identified by using molecular techniques. When completed, this work will give us a better idea of the incidence and distribution of soybean stem pathogens in Illinois and the association of these diseases with different production practices," he says.

While the research is not yet completed, Danillo and his team have already discovered information about seemingly prominent fungi that attack soybean stems. "We have found different fungi attacking soybean stems from areas across Illinois. Our research will lead to a greater knowledge of what is occurring and could lead to disease management options for producers," he says.

Danillo studies Plant Pathology at SIUC and plans to work in research or start his own company after he earns his doctoral degree. Prior to attending SIUC, he received a degree in Agronomy En-

gineering at Universidade Federal Rural da Amazonia, Brazil, as well as a degree in Plant Protection at Universidade Federal de Viçosa, Brazil. Along with his studies, he has also been working for Corteva Agriscience for the past three years.

While this is his first time conducting research on Illinois soybeans, he has extensive experience studying soybeans, corn, pasture, biologicals, and plant viruses in Brazil.

"No one in my family has obtained a doctoral degree, and the fact that I did represents a big commitment for my family and me. I made a promise to myself to become a scientist. I like what I do as I have been always curious about things, and so being on the path of research is the perfect way to challenge myself," says Danillo.

To learn more about the 2023 Soybean Summit: All Stars Edition and the first Student Research Poster Competition, go to <https://www.ilsoyadvisor.com/events/soybean-summit/>.



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