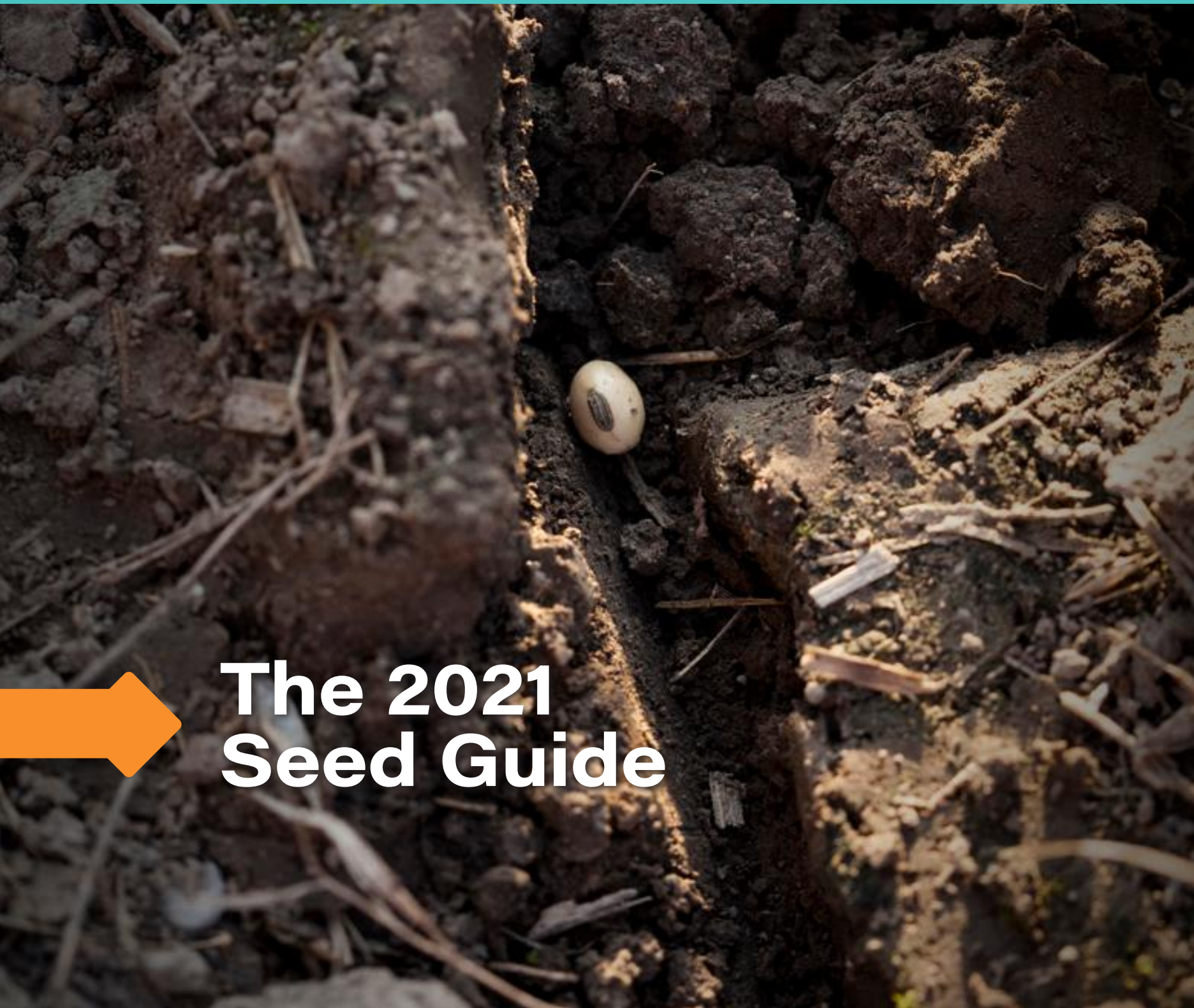


AUGUST 2021

**Illinois**

**Field & Bean**

A PUBLICATION OF THE ILLINOIS SOYBEAN ASSOCIATION



**The 2021  
Seed Guide**





# HELPING YOU DELIVER ON DEMAND

*Whether it's improving soybean meal to outperform the competition or promoting the sustainability of U.S. soy, the soy checkoff has been working behind the scenes to help farmers satisfy their customers' needs. We're looking inside the bean, beyond the bushel and around the world to keep preference for U.S. soy strong. And for U.S. soybean farmers like you, the impact is invaluable.*

*See more ways the soy checkoff is maximizing profit opportunities for farmers at [unitedsoybean.org](http://unitedsoybean.org)*







# CONTENTS

AUGUST 2021

Volume 1 Issue 8

## 6 The Secret's in the Seed

Identifying genes for useful traits helps breeders develop improved varieties.

## 10 Every Farmer has a Story

Meet former NFL player and Illinois soybean farmer, Cody White.

## 17 Strong Starts Need Stronger Treatments

Farmers make an investment in higher yields when they use seed treatments.

## 19 Seed Savvy

Farmers have a lot of variables to consider when making their seed purchases, and tips from this salesperson can help.

## 20 Every Seed has Potential

Proven agronomic practices for nurturing a seed to its fullest potential.

## 22 2021 Illinois Soybean Association Research Summary

ISA is converging science, research, and technology to make meaningful outputs from data-driven inputs and your checkoff dollars.

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## DEPARTMENTS

4 FROM THE BOARDROOM WITH DOUG SCHROEDER

5 CEO'S MESSAGE

12 EDITOR'S MESSAGE



Visit us online at [www.ilsoy.org/magazine/illinois-field-bean](http://www.ilsoy.org/magazine/illinois-field-bean).



**COVER:** It's seed buying time on the farm and this need-to-know resource for Illinois soybean farmers has the scoop you need. Find the latest product offerings and agronomic considerations as it relates to seed in this issue of Illinois Field & Bean.

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## FROM THE BOARDROOM

# Down the Road



**DOUG SCHROEDER** | Outgoing Chairman |  
Illinois Soybean Association

Back in the days when circus shows would travel from town to town by train, there was an expression the workers would use when it came time to pack up “The Big Top” and depart for the next show in the next city. Instead of saying goodbye or wishing for each other’s safe travel, they’d simply say, “See you down the road.” It was an assurance that workers’ paths would cross again, and that for Big Top friends-turned-family, goodbyes are never final.

As I prepare to step down as Chairman of the ISA Board of Directors and take stock of all that we’ve created together, I feel such a sense of pride and achievement. We’ve built something of meaning and value in ISA — something indelible that will extend beyond board terms and office walls.

One of our greatest accomplishments over the last few years was to hire a search firm that made us really consider what we wanted and where we wanted to go. They listened to what we had to say. They helped us to identify not only that we were hungry for new leadership, but that we needed to create a new system for synergistic relationships.

In John Lumpe, we found not only a leader who would inspire our staff and our thinking, but a leader who was able to mend relationships in places that had grown worn and weary and cultivate new relationships in places where he saw opportunity. John has built bridges, earned confidence, and created efficiencies to grow alliances for collaboration and resource-sharing. He consistently comes from a place of “Yes” and has empowered the ISA board and staff to think bigger and include everyone.

I’m proud that as a board, we developed a new strategic direction that puts our farmers at the center of our work, our programs, and our messaging. We developed a Government Relations committee that was charged with drafting critical legislative house and senate bills around biodiesel and was sponsored by an inner-city representative from Chicago.

Today we are working to deliver what farmers expect from us, and what they deserve in their check-off program.

I’m proud that we developed a new administrative infrastructure, moving more work in-house as opposed to outsourcing our work to third-party contractors. Not only has this model proven to be more effective and to better support our growth as an organization, it has resulted in major cost savings. We have stepped up to the great climate debate by hiring skilled, highly-qualified professionals whose expertise is informing our approach to environmentally-responsible farming practices.

As an organization, we navigated a trade war together. We navigated a global pandemic together. And despite extraordinary times and unprecedented circumstances, the work did not stop. Our farmers did not stop. ISA did not stop.

Looking ahead, I have enormous faith in our incoming Chairman, our board, and our staff. This organization is buzzing with bright minds, incredible talent, and raw passion. I would urge you to continue to challenge each other and ask yourselves, “What more can we do? Where will we go from here? How will we grow from here?” Don’t be afraid to ask questions and ask for help.

But the single piece of advice I would give to the board is simply this: be kind. Be kind to the staff who works so hard and cares so deeply for this organization. Be kind to each other. Be kind to those with whom you engage on a daily basis. Kindness certainly isn’t novel, or news-worthy, or poetic, but it’s what the world needs. It’s a homegrown, renewable, sustainable resource.

And finally to you, my friends-turned-family, I’d like to thank you for allowing me the opportunity to serve you these many years.

I’ll be seeing you down the road.



# Summer, Seeds, and Stories

I love a summer evening. Cricket chirps while I'm on the front porch, or the last sun rays of the day when I'm on the lake with my family – to me, summer is the best kind of warm perfection. On many a summer evening, it's an optimistic moment to slow my breath and reflect on the week's comings and goings.

As I lead an organization that works every day on behalf of farmers, the hardest working people I know, I see a lot of parallels between your days and mine. Work, collaborations, projects, and progress – it's all part of the gig. I bet many of you end your days the same way – reflecting on all that's happened, and all that's yet to be done.

In your hands today, you hold Illinois Field & Bean: The 2021 Seed Guide, and it's exactly those parallels between your job and mine detailed out in these pages. As farmers, you invest in your fields. And my work? I make sure we are running an organization that invests in its farmers. Both of us are presented with opportunities every day to make better decisions for our farms or organizations. These opportunities are the very seeds we must cultivate to continue our work and to make it better in the future.

Seeds are amazing – small, seemingly lifeless, yet capable of generating new growth and real transformation. Although planting seeds is necessary for growth, that act alone does not ensure a successful yield. Actual growth takes patience and knowledge born from experience, and it depends on the interaction of many factors.

When choosing seeds, our farmers are required to make choices today that will ultimately impact yields tomorrow. Farmers must prioritize, strategize, and make confident choices about what offers the greatest return on their investment.

As your CEO, I know a little something about that.

ISA is perpetually considering long-term, sustainable solutions that offer the greatest return on our efforts. As an organization, we don't have the luxury of resting on today's successes, but need to constantly consider what's next. We are watching the world closely to be where we need to be, capitalizing on opportunities before they arrive, and always working to stay relevant. Your ISA leaders work 'round the clock to keep Illinois leverage sharp as we compete globally in trade markets, protein trends, and conversations happening around sustainability.

Buying seed is a big investment our farmers make every year. But ensuring the future viability of the soybean industry is an investment ISA makes every day.

As you flip through these pages, I hope you find new insights, information, and inspiration to support your seed buying decisions. You'll hear from innovative seed companies who have been in the business for generations. You'll read about the fascinating work happening in breeding at the Soybean Genetics and Breeding Program at the University of Illinois. As our "Every Farmer has a Story" guest feature, you'll meet a former NFL player who speaks both football and farming.

I'm especially proud of the Research Summary included in this issue that tells the story of how ISA is converging science, research, and technology to make meaningful outputs from data-driven inputs, and provide the most hopeful return for Illinois farmers on all of those seeds you plant.

But if I could make just one recommendation:

Read this issue on a warm summer evening, sitting outside where the light is just right, and where moments of optimistic reflection are easy to come by.



JOHN LUMPE | CEO | Illinois Soybean Association







# The Secret's in the Seed

Identifying genes for useful traits helps breeders develop improved varieties.

Research on plots at the University of Illinois, like the ones pictured above, has been instrumental in gaining knowledge on crop rotations, soil nutrient depletion, and much more.

By Betsy Osman

**B**reeding soybeans and continuing a lineage in seed is not a quick-n-easy sprint. It's a painstaking, meticulous marathon, and an exclusive preserve of true experts who are as long on patience as they are on knowledge and science savvy. Soybean seed breeders have acquired high-level cultivation skills and mastered the essential techniques that transform fields of dreams to fields of realized yield.

So what's the secret to successful soybean seed development?

Today, seed breeders have access to more information and tools than ever. For example, the widespread use of DNA sequenc-

ing gives plant breeders huge troves of data about useful genes. By determining what genes give rise to which useful traits, seed breeders can develop new crop varieties faster and with better accuracy.

Better tools pave the way for better decisions, and rapidly-developing technology delivers streaming insights on the environment and goodness-of-field-fit.

"Technology is constantly impacting the plant breeding process, but fundamentally, breeders develop varieties by making crosses to generate new genetic diversity. From this diversity, they develop and test new experimental lines to identify which are genetically superior, and these are

released as new varieties," says Brian Diers, Professor and Chair of Soybean Genetics and Breeding at the University of Illinois. "New technology such as genetic markers allow breeders to now predict what varieties should be crossed and what new lines have the best agronomic potential. However, this new technology is no substitute for needing to grow high-quality field tests over many locations. Only after these field tests show that a new variety is superior will it be released."

According to Diers, breeders need to consider the genetics of the seed, for example the yield potential and disease resistance of the varieties, but also how well the seed has been treated, meaning whether it will produce

a vigorous stand. This means that farmers should look for varieties that have high agronomic potential and show outstanding yield, quality, and disease resistance, and have excellent rates of germination.

Today's seed industry is collecting more data on experimental lines to increase the efficiency of the breeding process. For example, breeders are using drones to image their experimental lines and use genetic markers or sequence data to learn about the DNA of these lines. This can result in the collection of an overwhelming amount of data, which is referred to as big data. Researchers are learning how to use these data effectively in breeding programs.





Troy Cary, a technician with the University of Illinois soybean breeding program; dumping seed is Seda Ozer, a graduate student.

Diers' breeding program is currently developing seed varieties with high-quality oil, which boasts greater than 80 percent oleic acid and less than 3 percent linolenic acid. The oil from these varieties is very stable and can increase the market share of soybean oil for food and industrial uses. Varieties with this quality will be marketed under the SOYLEIC™ brand, and now that Diers' program is developing high yielding varieties with this trait, the market for Illinois grown soybeans stands to benefit enormously.

So what should Illinois soy farmers be asking their seed companies?

"I would look for performance results that show the varieties are superior to what they are already growing," says Diers. "It's important to also consider other traits, as varieties should have good protein and oil content, and disease and pest resistance. Resistance to soybean cyst nematodes (SCN) is important in selecting varieties, as the nematodes are present in most fields in Illinois. Something that growers should

consider is the source of SCN resistance, as most varieties have resistance from PI 88788, and SCN is becoming more able to overcome resistance from this source. There are varieties available with alternative sources of resistance, and they should be used in rotation with varieties with PI 88788 resistance."

Diers encourages farmers to constantly evaluate new genetics to identify if there are new varieties on the market that can produce more profit for their farm, whether that's through growing varieties that have the highest yield potential or from varieties that may not yield as well but have value added traits that offer a premium price.

When asked to share what "secrets" seed breeders store up their scientific sleeves, Diers laughs, "Well I can't share their secrets as they'd no longer be industry secrets. But I do like to tell this analogy: Breeding new varieties is like searching for a needle in a haystack. Breeders can develop literally hundreds of thousands of new experimental lines annually, and the breed-



Researchers at the University of Illinois spend time in the field making crosses. Traditional soybean crossing involves taking the pollen from a flower on one plant and pollinating the stigma of a flower on another plant.

ers' job is to identify which of these have the best genetics and should be released as a new variety. To do this efficiently and effectively requires teams of experts who will test the DNA of the lines, evaluate lines in field tests, evaluate disease resistance and seed composition, and then analyze and make sense of all of the collected data."

So while the secrets behind successful soybean breeding are kept safe, Illinois soy farmers can rest assured that their high yield potentials are, too.



Brian Diers, Professor of Plant Breeding at the University of Illinois in Urbana-Champaign.





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# *Thank you*

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## to Our Corporate Partners

ISA proudly supports the 43,000 soybean farmers of Illinois. But we don't do it alone. In 2021, the organizations listed below partnered with us to help create new opportunities for Illinois soybeans around the world in areas such as advocacy, trade and exports, animal agriculture, sustainability efforts, biodiesel and more. It's our mission to help Illinois farmers operate in a profitable, sustainable way that increases ROI on their checkoff dollars, and our corporate partners help make that possible. Because when farmers win, we all do.



Visit [ILsoy.org](http://ILsoy.org) to learn more about ISA and our work to support Illinois soybean farmers.



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# Every Farmer has a Story

## Meet former NFL player and Illinois soybean farmer, Cody White.

By Betsy Osman

Cody White picked up a football for the first time when he was seven years old. It didn't take long for him to fall in love with the sport, an affinity that would change the trajectory of his life.

White went on to play high school football at Normal Community West in Normal, Illinois, and was eventually recruited by a number of college athletic programs. He was offered a scholarship to Illinois State University (ISU), where he began as a tight end, and would eventually move up to play as tackle on the offensive line.

It was during his two years in the tackle position at ISU that he began to attract notice from NFL teams. Shortly after his college graduation, White signed an undrafted free agent contract with the Houston Texans in the 2012 draft. He played guard and center for four years, and after sustaining

several injuries, finally retired his football jersey following the 2015 season.

But in some ways, that was only the beginning for Cody White.

After sunsetting his football career, White moved to Maroa, Illinois, to begin a full-time farming career alongside his father-in-law. White also began working with Crop-Tech Consulting, and eventually became a seed representative for Wyffels Hybrids.

"I've been a Wyffels Hybrids seed rep for five years now," says White. "My father-in-law had been planting Wyffels seeds for years and heard they were looking for a new rep in our area. I'm grateful they took a chance on me. I knew this would be a good way to help subsidize my family's start to farming. Because I didn't grow up in this area, I hoped this role would provide the opportunity to get to know the local farming community."

Continues White, "Wyffels has been an outstanding company to work for, alongside some really outstanding, mission-driven people. It's still a family-owned seed company, and my role gives me the chance to be part of farmers' experiences. I feel I have a small hand in their success, and that means something to me."

In early 2021, White agreed to participate in the Illinois Soybean Association (ISA) checkoff campaign, #SoyFromIllinois, designed to grow better appreciation and greater community support of soybean production and soybean farmers in the state of Illinois. The campaign engages key decision makers and community members throughout the state, emblazoning the message that Illinois soybean production impacts daily living in ways that often go unnoticed.

"The 43,000 soybean farmers in Illinois work hard to

continually deliver a sustainable and reliable product year after year that directly supports the U.S. in ways most people would be surprised to learn," says Rachel Peabody, ISA Director of Communications. "We created this campaign because we're excited to celebrate those stories and to grow awareness of our farmers' impact and soy's enormous potential. We're moving once below-the-radar efforts up above the fold."

According to Peabody, the #SoyFromIllinois campaign also hopes to influence new opportunities for soybean farmers and new avenues for Illinois soy in the marketplace, directly impacting farmer profitability in the long run.

White can be seen in a TV commercial, playing football on turf that is made using soy ingredients. "I was honored to be asked to participate in the #SoyFromIllinois campaign, and to help promote the efforts



Left: In the 2012 draft, White signed as an undrafted free agent contract with the Houston Texans, where he played guard and center for four years. Right: Cody and his wife of seven years, Mallory, have three children, Brooks, left, Blakey, right, and 6-month-old Baylor, who is not pictured.



of soybean farmers across the state. It's time people knew more about the power of soy, and all the products soybean farmers help to produce."

Continues White, "Football took me all over the place and allowed me to meet people from very different walks of life. It was always interesting to hear outsiders' perspectives on farmers and agriculture. Whenever the opportunity came up, I'd use it to talk about ag production, uses for crops, and how much the country depends on Illinois farmers."

Today, White and his wife, Mallory, have three children, ranging in ages from six months to five years old. Mallory is Head Volleyball Coach at Maroa-Forsyth High School. And though White maintains his own acreage, he and his

father-in-law continue to work together and share equipment.

When asked if he misses the game, White pauses and softens, "I do. I loved football. It taught me some tough, but meaningful lessons about life. There are a lot of similarities between football and farming - the hardship, the game planning, the dedication to perfecting your craft, the in-game adjustments. Every time I stepped onto the football field, I felt called to a challenge. Every year when it's time to produce a crop, I'm called for a different kind of challenge."

Though he may forever miss his time on the playing field, Cody White will tell you that being an Illinois farmer is his greatest accomplishment.

"The Illinois ag community is a hardworking, resilient,



**White maintains his own soybean acreage in Maroa while continuing to work with his father-in-law and oldest children, Brooks and Blakey.**

loving group of people. Those are characteristics I strive for. When times are demanding, Illinois farmers get it done. When a neighbor needs a hand, Illinois farmers are there

to deliver. It's a humble culture, but it's an inspiring one, too."

Some heroes make touchdowns. Some heroes make the turf.

Superheroes make both.



**After sunsetting his professional football career of four years with the Houston Texans, White returned to Illinois and settled in Maroa with his wife, Mallory.**



# Getting it Right



RACHEL PEABODY | Editor | Illinois Soybean Association

I cut my teeth working in agriculture by representing seed brands across the country. Time and again I would hear farmers say – “it starts with the seed.” Talk about one important decision you’ve got to get right, year after year.

You pick the seed, you buy the seed, you plant the seed, you grow the seed, you harvest the seed. If only it were that simple.

We know that as you read this August issue, it’s likely you are thinking ahead about your seed purchases for the 2022 growing season, and we know it’s complicated business. What traits will you choose? What varieties will give you the best protection against Sudden Death Syndrome (SDS) or Soybean Cyst Nematode (SCN)? What varieties have performed well on your acres in the past? Will you plant any varieties that enable you to get the extra premium?

There’s a lot of decisions in front of you this time of year, and we know you’ve got to get it right.

We put together our inaugural issue of the Illinois Field & Bean: The 2021 Seed Guide to be an extra resource as you navigate those seed decisions on your farm this year. We’ve got some great reads for you this month, and we’ve talked to soybean breeders, seed company owners, ISA’s CCA Soy Envoys, and farm managers to name just a few. We’ve enjoyed digging in on all facets of the seed decision topic – from seed treatments, to row spacing, to performance data – and I’m happy to report there’s some great resources available to you in this August issue.

Agronomic resources and providing Illinois farmers with actionable advice they can use on the farm and in their field are something we take pride in as we manage your checkoff investments. You can find more content like you see in this issue 365 days a year online at [ilsoyadvisor.com](http://ilsoyadvisor.com).

At ISA, we know you’ve got to get it right each season, and we’re always here with the resources and information you need to guide those important decisions. See an area where we could do more to provide better support and recommendations? Let us know. Your farmer input is how we continually make our program offerings better, and we welcome your suggestions.

Let’s get it right together. Send me an email today at [ilsoy@ilsoy.org](mailto:ilsoy@ilsoy.org).





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ONE KEY PARTNER IS BAIRD SEED COMPANY



Founded in 1933, Baird Seed Company is a third-generation, family-owned company that sells strictly non-GMO seed. They focus on providing high-performing soybean seed that can help farmers pursue premium opportunities and get the greatest return on their investment.

*"We offer our farmers affordable, quality, non-GMO options in maturity groups 1-5, with premium contract opportunities in mind," says Curt Haynes, general manager for sales and production at Baird Seed Company. "And our non-GMO beans are averaging 76 and 78 bushels per acre in two and three-year trials."*

Baird Seed Company started promoting specialty soybean contract opportunities around 2017, bringing Haynes on in 2018 to expand the program, and it grew exponentially from there.

*"We asked ourselves why a farmer should pay trait fees, when a non-GMO variety might offer a better return on investment," says Haynes. "So, we focused on bringing farmers and end users a non-GMO bean that performs, and now we have contracts for those beans in Decatur and Tuscola, along with Illinois and Mississippi River barge elevators."*

WHAT'S ON THE HORIZON FOR BAIRD SEED COMPANY

One of the many exciting things currently in development at Baird Seed Company is a line of non-GMO, high protein soybeans. These beans run at 44.3 percent protein and have a clear hilum - great for the tofu and soy milk markets. In trials, these soybeans have been

showing average yields of more than 67 bushels per acre - impressive for a non-GMO specialty bean. Samples of these beans are currently out with manufacturers, developing the program further so that farmers can pursue contract options next year. This year, there are 350 acres of these beans in production, with some headed to customers and some to be held for next year's seed.

Also in the pipeline are non-GMO, high-oleic, low-linolenic soybean varieties. While these soybeans are probably still two years out from commercial availability, they represent Baird's commitment to providing the right seed for farmers who want to pursue premium contracts.

*"When we talk about non-GMO, people don't necessarily think 'cutting edge,'" says Haynes. "But if farmers take on specialty contracts and the soybeans don't perform, it kills the program; so, having the high-performing specialty soybeans at an affordable price is a significant value to the customer."*

OVERCOMING BARRIERS TO SPECIALTY SOYBEANS

One of the biggest barriers to specialty contracts is the changes in production. For example, with non-GMO seed, farmers often wonder about making changes to their weed control practices. But Haynes says many of their farmers and dealers are finding that while the weed control plan may vary, the cost is often about the same.

*"It's really about helping people understand the resources available and letting them get more comfortable with a non-GMO product. And we want that comfort to extend to processors and barge loaders and so on."*

According to Haynes, the key is to show farmers the opportunity. From there, it's getting them to plant specialty soybeans, like the results, place an order again, and maybe try something new. It's not always an easy sell to start with, but that changes once customers start to see the value.

*"Why wouldn't you grow non-GMO? There are contracts probably 30-50 miles down the road, willing to pay up to \$2.40 a bushel premium for basically the same things you were doing before - how could you not take it?"*

JOIN THE SOYBEAN PREMIUM CLUB TODAY

Baird Seed Company and their non-GMO seed is just one of the many companies waiting to partner with farmers to help them get the greatest return on their soybean investment.

Soybeanpremiums.org lets buyers post their available programs and connects them with the growers who want to take advantage of the premiums available for a variety of specialty beans.



For more information on premium opportunities available in your area, check out [Soybeanpremiums.org](http://Soybeanpremiums.org).





Remington Seeds

[www.remingtonseeds.com](http://www.remingtonseeds.com)



Remington Seeds would like to say **“Thank You”** to all Illinois Soybean Growers, especially those that have allowed us to work alongside them to achieve our common goal of producing the highest quality seed possible. We appreciate all your efforts and look forward to our continued partnership!

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# Strong Starts Need Stronger Treatments

Farmers make an investment in higher yields when they use seed treatments.

By Claire Weinzierl

**W**hen it comes to starting off the growing season strong, seed treatments are key. According to Dale Ireland, they are one of the most important inputs for higher yield.

Ireland, Technical Product Lead of Seedcare for Syngenta, says that growers can plant a great seed such as a fantastic hybrid or variety, but if it's planted with an inadequate or no seed treatment, a good deal of yield may be lost within the first few weeks of the growing season due to loss of plant stand.

"The biggest benefit of using a seed treatment is a greater number of more robust, healthy plants at establishment," says Ireland. "More seeds germinate, more seeds grow off. Three to four weeks after planting, growers will have a healthier, more vigorous plant stand more often when using a seed treatment."

Soybean growers want as many established, healthy plants for the number of seeds they put into the ground. As Ireland puts it, no grower would rather have only 80 percent of what they plant become established. They know they may never achieve 100 percent, but as much as seed costs today as a major input item, the greater number of healthy plants that a grower can achieve in any given year and any given environment,

the better. As growers plant earlier and earlier, seed treatments help ensure a stronger, more vigorous plant stand sooner in the growing season.

In Ireland's several decades of experience across the agriculture industry, including holding a PhD in crop physiology, he finds that seed treatments are one of the least understood inputs growers use.

"If you walk onto any farm, they either have red tractors or green tractors. They either drive Chevy trucks or Ford trucks. They have a brand they like and there's a reason why they like it," says Ireland. "Many times, with soybeans especially, the decision is whether they treat their beans or not, not which treatment is used."

Whether they treat their soybeans or not, growers often trust someone else for guidance in decision-making, whether it be their retailer or seed purveyor.

According to Ireland, growers often know what weed problems they have and know what herbicide program they want to use, but it's not often the same situation when it comes to seed treatments.

"They give herbicide programs more consideration and thought, whereas with seed treatments, I would argue that there is every bit as much complexity," contends Ireland. "In my opinion, in a given soybean seed treatment, there's usually three to six active ingredients. Most customers probably

couldn't name one of them but with an herbicide program, they could. They depend on someone else to make that decision."

So how can a seed treatment work together with various varieties to benefit yield?

For instance, if you look at Sudden Death Syndrome (SDS) or nematodes, there are different ratings based on the genetic package that is in your soybean. Some genetic packages are very resistant to SDS, while others are relatively weak. Likewise, most genetic packages have nematode resistance, but there are some that don't; however, there are different sources of soybean cyst nematode resistance. Both of these instances are good examples of varietal traits selected for by breeders.

There are also seed treatments that help with those particular pests; agronomists typically recommend utilizing all the tools in your toolbox to manage these challenges. Some of those tools include using crop rotation, seed treatment, and genetically resistant varieties.

When it comes to achieving higher yield and combatting diseases, seed treatments are just another tool in the grower's toolbox.

Ireland advises to not depend on only one tool and to be sure to rotate those tools.

We all know that growers have a budget of what they can spend

per acre to put into their soybean crop. This budget includes land prices, fertilizer, an herbicide program, tillage costs, planting costs, harvest costs, and more. When the banker or financial adviser says the budget needs to be cut, oftentimes seed treatments are the first to go.

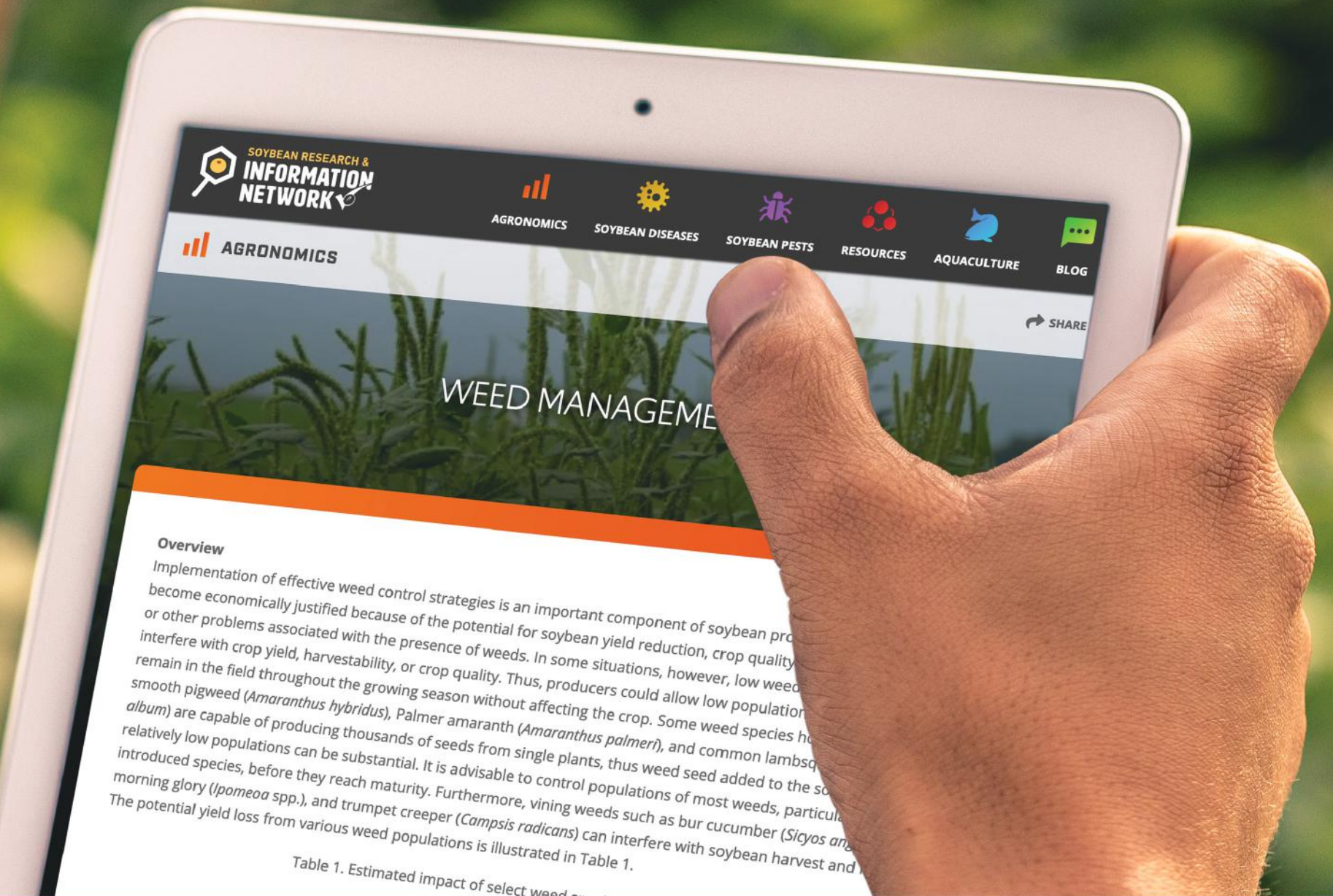
"When you think about all the other money that's been invested in the land and fertility, and seed treatment has been eliminated or cut back, all those other inputs may not return the investment because early plant stand or plant health may be lost," says Ireland.

## Building Blocks of Seed Treatments

- **Fungicides** – protects against seed and seedling early season disease. Specialized fungicide treatments that protect against Sudden Death Syndrome (SDS) are also available but are often more expensive.
- **Insecticides** – protects against above ground and below ground early season insect pests.
- **Nematicides** – protects against nematodes early in the growing season.

When considering a seed treatment, you can decide what combination of building blocks would best suit your farm's needs. Generally, any fungicide package will have at least two, if not three or four, fungicides included. One insecticide and maybe one nematicide is also often typical.





# ONE LESS THING TO WORRY ABOUT.

Herbicide-resistant weeds cost soybean farmers time and money, impacting profitability. Fortunately, your state soybean checkoff is on the job with research projects to help you adopt the best management practices to preserve crop-protection technologies and enhance the overall sustainability of your soybean crop. To find out more about weed management, visit us at:

**[soybeanresearchinfo.com](http://soybeanresearchinfo.com)**

Funded by the soybean checkoff



CHECKOFF & MEMBERSHIP PROGRAMS



# Seed Savvy

Soybean producers should take time to not only check on crops once in the field, but also prepare questions for their seed salesperson before they arrive on the farm.

## Farmers have a lot of variables to consider when making their seed purchases, and tips from this salesperson can help.

By Rachel Peabody

*What three questions should you ask your seed salesperson this fall? We talked to Molly Holthaus, Agronomy Sales at The Equity in Pana, Ill., to get the scoop. Molly works with farmers in the south central Illinois region to find the best seed products and trait packages that suit her customers' farms.*

**E**specially this time of year, The Equity's Molly Holthaus is always on the phone, or on-farm with customers. Seed decision time is an incredibly important part of both a farmer's, and ag retailer's job, and there's always much to consider before purchasing your farm's most important input.

We asked Holthaus what the three most important topics are that a farmer should be talking to their salesperson about this fall. She states: traits, management, and performance data.

### Traits

"Most of my customers are considering what's the best option for their farm when it comes to herbicide-resistant soybean trait platforms," Holthaus says. "While it's great to have options – it can

be overwhelming. Do they go with Xtend®, LibertyLink®, or Enlist™? Do they go without? Thinking about the herbicide trait package is usually my first step in finding the right soybean product for a farmer."

Holthaus also likes to help her customers to consider what their neighbor is planting on their soybean acres.

"Knowing your neighboring soybean fields and what trait they are running for the season could be a really important contributing factor to your own success. You'll both be better off selecting compatible traits that will reduce your likelihood of unwanted off-target sprays," she says.

After the trait is selected, then it becomes an exercise of looking at what varieties will yield, and what defensive traits you might need to combat any particular issues you may have.

"Think of all the traits available and match them to your needs. Know that your needs will vary from field to field and understand that your seed selections across the farm should reflect that. Work with your sales team to create a good crop plan for your farm," she says.

### Management

"It's likely each farmer already has a way they like to manage their acres, and it's important that your soybean seed varieties complement that," she says.

Factors like soil health, soil type, environmental conditions, row spacing, seed treatment plans, and past field history are all important management factors that ultimately impact the varieties you should select.

"Review the recommended management practices with your salesman before you purchase. Know going into the planting season that you've picked the right products that will prove to be a natural fit for how you manage your acres," she says.

Particularly as it relates to seed treatments, Holthaus cites that knowing your seed treatment preferences is one of the most common management practices she advises on these days.

"Seed treatments do pay, and we are seeing more and more customers moving towards seed treatments every year. Whether it's in the bag or something you are having custom blended, the varieties you choose should consider your seed treatment management plans."



Molly Holthaus, Agronomy Sales at The Equity in Pana, Ill.

### Performance Data

Like they say – history is often the best teacher.

Plot data and performance history on the varieties you select should be required reading this time of year.

"Work with your seed dealer to understand how varieties have performed in your area on acres similar to yours. It's very likely they've got plot data from in-field research trials that considers how those products have performed in different soils with different management conditions," she says.

She also recommends leaning on all of the different technical resources you have available.

"For example, The Equity has a GO SMART team that analyzes the latest seed technology and makes recommendations that I can take to my customers' acres so they can maximize profitability," she says.





LEFT: From the time a seed is planted, it has a role to play in producing a high-quality product for the farmer to harvest and sell at market. RIGHT: Jason Haegele, Agronomy Manager for WinField United and ISA CCA Soy Envoy, provides insight into some proven agronomic practices for farmers looking to nurture their crops for higher yields and greater soil and plant health all year long.

# Every Seed has Potential

Proven agronomic practices for nurturing a seed to its fullest potential.

By Jill Parrent

**A**t this time of year, farmers are already preparing for the next planting season, understanding what worked this year and what improvements can be made for the future. Each seed that is planted has a role to play in producing a high-quality and high quantity product for the farmer to harvest and sell at market.

From planting in the uncertain weather of spring, to the summer stages and all the way to harvest, each season has small steps that must be taken to ensure crops are growing to their highest potential. Even though each stage will not be visible, it's important in understanding and acknowledging that each moment a seed is in the ground matters.

Jason Haegele, Agronomy Manager for WinField United and ISA CCA Soy Envoy, provides insight into some proven agronomic practices for farmers looking to nurture their crops for higher yields and greater soil and plant health from the time the seed is planted to the time the crop is harvested. These strategies will assist the plants in developing at roughly the same pace with the same resources, allowing each plant to reach its fullest potential.

Haegele recommends to always be in contact with your agronomist, as it is vital to the

success of your crop. Agronomists are able to pinpoint concerns before they become a reality, while also recognizing the positive work that can continue for farmers to produce a high-yielding crop.

## Spring

In the spring, Haegele explains that having a strategy and planning ahead are crucial aspects of ensuring crops can grow at the best rate to produce high yielding soybeans. Haegele explains, "In the last few years, seed treatment options for soybeans have grown rapidly, and staying up to date on the accessible alternatives will assist in growing better soybeans." Farmers are seeing the benefits of these options.

Farmers who have higher yields are intentionally planning for a higher yield and seeing what that crop is going to need while looking into the correct fertilizers. These include phosphorus, identifying the need for nitrogen, and realizing fertilizer needs prior to the recognition that they are necessary.

Planting soybeans early is becoming more relevant each year, with farmers wanting to put their seeds in the ground earlier than the year before. Planting early can reward

the soybean with capturing the potential of a full growing season, but balances a risk for establishing a stand in cool, wet conditions during those spring dates, increasing instances of seedling diseases or reduced stands. As farmers look to planting, uniformity of planting is crucial. Planting the seeds at consistent soil depth and seed spacing is essential to get the plants out of the ground in the fall as efficiently as possible.

## Summer

Once the summer heat arrives, recognizing that soybeans and corn are completely different crops is vital for farmers. The development of both of these crops plays a large role in how we manage them. As soybeans continue to grow, and their leaves, flowers, and pods develop, there is an ongoing opportunity to manage the crop each season. Looking to key moments for nutrient application, fungicide usage, and the number of applications needed per season can vary. Fungicides are commonly accompanied by an insecticide to avoid plants damage at crucial stages of development. Biologically, plant growth regulators must be observed to ensure they are taken care of efficiently.

The summer months involve heat and humidity in Illinois, with the potential for an abundance of rainfall or drought. These weather-related events are an every year risk farmers must be aware of, and taking into account what each threat entails allows farmers to prepare for not only the current year, but the next.

## Fall

When cooler weather comes, the last reproductive stages of the soybean will be completed, and plants will soon be ready for harvest. Even at this stage, farmers can still consider steps to reach a better yield for their plants. Like corn, when moisture is higher, some farmers avoid harvesting for fear of being docked prices at the elevator. Haegele advises that perhaps harvesting soybeans earlier than expected, but as timely as possible, can be to the advantage of a farmer. Early harvest can prevent shattering of the soybeans in the field before they are harvested. Though this can be of concern, perhaps it is exactly what farmers need to consider next year.

While there is no complete answer to farming and the best ways to increase yield, small changes could alter the soybean life, growth, and yield of each plant.



# COMPANY SPOTLIGHT

## Why should Illinois soybean farmers use your product/service?

We're the seed partner who listens, demonstrated through our portfolios of Gold Series™ Soybeans and Game-changing Corn and backed by our service promise to do whatever it takes. Everything we offer is an answer to what we've heard from farmers.

## How is your company continuing to innovate to bring the best products and services to farmers?

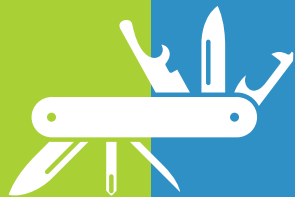
With an annual R&D investment of more than \$1.4 billion, we act on our learnings in the field to bring greater speed, power and precision to the development of new products and technologies at our expert-packed U.S. research centers. From HI-Edit™ and Stalk Crusher™ for corn to our Seed-to-Seed trait introgression process for soybeans, we continuously innovate to put farmers' yield potential first.

## What new products or services are on the horizon that farmers should know about?

Our new Golden Harvest® Gold Series™ Soybean portfolio has 34 exclusive varieties for the upcoming year, featuring in-demand Enlist E3® soybeans and XtendFlex® soybeans. Our Game-changing Corn portfolio also has high-performing hybrids fit to every farmer's needs.



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2021

Illinois  
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# RESEARCH Summary

"With the ever-changing physical and socioeconomic environment, farmers face new challenges every day that require comprehensive research to maintain and increase yield for the ever-growing population. ISA is dedicated to pushing scientific boundaries, unleashing new data-informed insights, and pioneering new roads ahead."

- Michael Gill, ISA Director of Conservation Agriculture

## Global Responsibility; Local Reliability

*ISA is converging science, research, and technology to make meaningful outputs from data-driven inputs.*

Research, science, and technology help us solve today's problems and anticipate tomorrow's challenges. Innovations born from research help to ensure that this season will be better than the last. As part of our strategic plan, ISA funds holistic research projects that offer the potential to leverage data in new dimensions, respond to global challenges in modern agriculture, and provide the most hopeful return for Illinois soybean farmers.



# How Long Do Insecticide Applications Provide Effective Control of Soybean Pests?

## Project Description and Background:

In Illinois, insecticides are often applied during a specific soybean growth stage with little information on the actual insect populations present. These applications are often added to a fungicide or other crop protection application with the reasoning that the material will prevent subsequent pest infestations; however, infestations of one pest species or another might occur at different times throughout the growing season, and the residual activity of these materials is often poorly understood. Residual activity of insecticides can vary depending on several factors, including the particular insecticide material used, the susceptibility of the insect species to the material, and weather conditions. Understanding the nature of residual activity provided is essential to making an effective control decision.

**"We would often hear, 'I sprayed Brand X insecticide but months later, I'm dealing with a pest problem. Did I use the wrong product? Did I spray too early?' We wanted to arm Illinois farmers with more information about which type of pest management system they need, when to apply, and how long they can expect to have subsequent control from that product. We set out to provide farmers a longer window of protection from pests."**

- Dr. Nick Seiter, Research Assistant Professor and Faculty Extension Specialist at the University of Illinois

This research project was designed to equip producers to time insecticide applications more effectively, ultimately improving their return on investment for these inputs. Proper timing of an insecticide application optimizes its effectiveness, reducing the likelihood that a follow-up application is needed. Avoiding unnecessary or ineffective insecticide applications is key both to environmental sustainability and to preventing unnecessary exposure to target pests. The ultimate goal of this project was to provide improved management recommendations to Illinois soybean producers, crop consultants, and other agricultural stakeholders who influence pest management decisions.

Continuing these experiments over multiple years was critical to reflect seasonal variability caused by changes in weather conditions and insect pest abundance, and to obtain this information on multiple insecticides and target pests. Researchers conducted pilot experiments over the last two years to (1) develop preliminary information on the residual activity provided by insecticides for control of bean leaf beetle and (2) to refine methods that can be used for this and other insect pests. During the 2020 growing season (under the first year of funding from ISA) we conducted four combined field and laboratory experiments targeting multiple pest species; we conducted four more of these experiments in 2021 and, if approved, we will conduct a final year of testing in 2022.



## Using Multispectral Platforms To Manage Soybean Cyst Nematode

### Project Description and Background:

The soybean cyst nematode (SCN) is the most important soybean pathogen in the United States with three billion dollars annual losses, exceeding the total losses of the next seven soybean yield-robbing pathogens combined. While there are management options available for this pathogen, the ever-adapting nature of SCN populations in production fields puts extensive pressure on available management tools, such as the use of soybean varieties resistant to SCN. Thus, the proper management of SCN requires the adoption of an integrated approach using a multitude of control measures for efficient and sustainable management of this pest.

This research project was designed to develop a UAS-based artificial intelligence (AI) toolkit to detect SCN related stresses of soybean. This project focused on developing a UAS-based remote sensing predictive modeling tool to determine SCN population densities and their impact on soybean health.

The tool was intended to be useful in assessing the efficiency of pesticides, resistant varieties cultural control practices, and other new approaches to manage SCN and to identify the optimal conditions for their deployment. The development of this toolkit increased our ability to manage SCN by being more precise in our deployment of management tools in production fields. This project helped ISA advance the research on plant health monitoring algorithms and tools that can remotely assess SCN infestation levels and predict their effect on plant health and yield.

**"We set out to build a software tool kit that would allow for drone flights and imagery analysis to give a real-time assessment of plant stress and nematode infestation levels. We envisioned this tool being used for detection and for a more straightforward evaluation of how SCN populations respond in-season to management options like resistant varieties, seed treatments, non-host rotation, cover crops, etc."**

- Jason Bond, Professor of Plant Pathology at Southern Illinois University Carbondale, Director of Illinois Soybean Center



# Comprehensive Evaluation of Phosphorus Best Management Practices for Soybean to Increase Nutrient Use Efficiency, Profitability, and Water Quality

## Project Description and Background:

This project was developed to increase the sustainability of Illinois soy and improve soybean growers' profitability by addressing economically effective usage of phosphorus with co-benefits to water quality.

*"This project was born to help us gain fundamental information on the sustainability of soy in Illinois by addressing economically-efficient, environmentally-sustainable usage of phosphorus. Our collaborative work with ISA will help promote water quality improvement by developing evidence-based practices for nutrient loss mitigation."*

- Andrew Margenot, Assistant Professor of Soil Science at the University of Illinois

The work evaluated best management practices for timing, placement, source and rate to ensure efficient and thus economic usage for soybean growers. Updating the management – specifically for soybean, and specific to the distinct soil-climate conditions of Central-North vs Southern Illinois– we were able to identify options to increase the profitable use of inputs while reducing off-field nitrogen and losses.

This work was designed to provide updated and evidence-based recommendations on management options for soybean growers in regions of Illinois. The source, rate, timing and placements were all evaluated. Field-based evaluation of timing and placement to increase soybean use efficiency of these inputs, and adding source options to growers' management toolbox, improved agronomic, economic and environmental outcomes of Illinois soybean production. By quantifying these benefits to water quality, this project will ultimately position our state's soybean growers at the forefront of environmental stewardship as active contributors to water quality improvement.



## Red Crown Rot Distribution and Seed Treatment Efficacy In Illinois

### Project Description and Background:

Red crown rot is a soilborne fungal disease that is new to Illinois. Where it has been detected, significant yield reductions were recorded, and management information for our producers is lacking.

The confirmation of red crown rot in Illinois is problematic for several reasons. This disease is new in the state, and we do not yet understand how similar or different it may be to populations we've seen in other geographic locations. There are no fungicides or fungicide seed treatments labeled for red crown rot in soybeans, and there are no resistant varieties for managing this disease. And because the disease produces symptoms similar to other, more well-known diseases such as SDS, it is possible that RCR has been misdiagnosed in recent years and poses a larger threat than we think.

It was therefore essential that ISA assume a role in working to address management and educational gaps, before the disease potentially establishes itself in other areas. In the second year of the project funding, this research was designed to help maintain productivity and profitability of soybean producers in Illinois. ISA recognized that losses need to be minimized, and that producers need to know what practices work, in order to maximize the impacts of inputs and productivity. Working to address this issue in small, digestible parts, armed ISA with a reputable set of data and tools to help avoid future losses.

*"Our research on red crown rot was important to Illinois farmers because it helped us determine if this emerging disease in Illinois is spreading in the state and will provide management options to those farmers that have this problem in their fields."* - Glen Hartman, Research Plant Pathologist with USDA-ARS and a Professor at the University of Illinois





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"This approach to collaborative research is so effective because of the information and resource sharing that happens between states. Pests don't care about state lines, and together, we cover a very large geographic area and a wide gambit of issues that challenge today's growers. The more bright minds we're able to bring together, the better our results will be. The better our results, the greater the benefits for Illinois farmers." - Nick Harre, ISA board director and member of the ISA Utilization Committee

### ISA Involvement with NCRSP

Illinois Soybean Association partners with North Central Soybean Research Program (NCRSP) on a yearly basis in a collaborative effort between Soybean Associations, Universities and Extensions in ND, SD, NE, KS, MN, IA, MO, WI, IL, IN, MI, OH and PA to better understand and manage plant stressors that reduce soybean yield and farmer profitability.

Current projects underway funded in FY21 included the understanding SCN resistance to resistant varieties at the SCN genetic level, uncovering crop management practices not currently used to a wide scale that consistently increase yield, evaluation of non-chemical, non-tillage means of weed control, insect management & crop profitability,

emerging pest monitoring of soybean gall midge, development of yield and composition tools for breeders at large, and SCN management awareness and preservation of popular resistant varieties.

Each fiscal year, new research proposals are reviewed by board members from each state for interstate problems and questions that need answering as they relate to soybeans as a crop. Board members examine research proposals for redundancy of research already completed or currently underway within the coalition's area, their fit to regional importance with respects to diseases, insects, production practices and the furthering of genetic gains.



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