

July 2021

Illinois **Field & Bean**

A PUBLICATION OF THE ILLINOIS SOYBEAN ASSOCIATION

**Source of Nature:
The Sustainability and
Conservation Issue**






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COVER: Illinois soybean farmers have been practicing on-farm sustainability for years. That momentum continues each year as new production practices are implemented and as farmers look at continuous improvement across their acres.

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FROM THE BOARDROOM



NICK HARRE | ISA District 17 Director

Defining sustainability

Sustainability is one of those terms that, if you asked 100 people for its definition, you'd get 100 different answers. And they'd all be correct.

For most people, sustainability centers around environmental concerns and society's needs. It holds hands with conservation, efficiencies and systems, naturally-occurring solutions, and holistic approaches. Sustainability doesn't look to dominate nature, but allows it to unfold by its own design.

For farmers, the idea of sustainable farming goes beyond the environment and concerns itself with solutions that will potentially improve tomorrow's way of doing business. Certainly being good stewards of the land is important, but in addition to ensuring adequate waterflow, soil nourishment, and effective technological adoption, there's a professional aspect that feeds a farmer's sustainability.

We can't be content with the wins of today. We have to know our efforts will ripple into the next generation.

The Illinois Soybean Association Checkoff works to educate farmers on sustainable business strategy and succession planning, to provide resources, and to scale sustainable agriculture practices in a farmer-centric and outcomes-driven manner. The Soil and Water Outcomes Fund is a new partnership between ISA and other groups to catalyze farmer adoption of conservation practices that generate verifiable carbon reductions and water quality improvements. Early this year, the Soil and Water Outcomes Fund expanded into Illinois starting in Bureau, DeKalb, DuPage, Grundy, Kane, Kendall, Lake, LaSalle, Lee, McHenry, and Will counties, targeting 20,000 acres of new conservation practice adoption.

Other ISA resources are being used to promote conservation and sustainable agriculture endeavors to minimize energy use at all levels of production and to support communities through localized systems. Critical research projects funded by the checkoff all work together to increase the sustainability of Illinois soy, to improve soybean growers' profitability, and to ensure an optimistic future for farming. Just as sustainable farming provides a holistic approach to growing our product, ISA is providing a holistic approach to growing our people.

If you asked 100 Illinois soy farmers which ISA effort is adding the most value to the industry, you'd probably get 100 different answers. And they'd all be correct.

The power of two

Later this summer, I'll attend my first Farm Progress Show as CEO of the Illinois Soybean Association. I'm excited because I know it's a point of pride for Illinois farmers and agribusiness to host it every other year in Progress City, USA. What makes me even more excited about this upcoming show is that ISA and IL Corn are back under one roof again — and we are looking forward to showing you all the things we can do when we work together. Opportunity abounds when we team up, and the future is bright for Illinois farmers when we harness "the power of two" — our event theme for the 2021 Farm Progress Show.

One of those collaborative success stories we'll have on display is the Precision Conservation Management (PCM) program. Our two organizations have teamed up to research on-farm conservation practices and the financial implications of their adoption. You can read more about it on page 26.

ISA represents PCM's greatest expansion opportunity to date and is a natural extension of the core values our two organizations represent. Collaborative partnerships like this one are increasing conservation adoption across Illinois, reaching more farmers when we work towards common goals together.

ISA is committed to making on-farm conservation a key initiative. From PCM to carbon programs to cover crops, we will be talking about it all in the pages of Illinois Field & Bean - not only in this conservation and sustainability focused issue, but in future editions to come.

Over the past 16 months, I've had the ability to meet many Illinois farmers and see first-hand that good stewardship and best practices are things we all care about on every acre from North to South and East to West. Illinois corn and soybean farmers are leading the way in showing that we can grow more bushels on less land with fewer resources.

I invite you to come join ISA and IL Corn at the Farm Progress Show on August 31, September 1-2 in Decatur, Ill. Come see our PCM program on display, along with a host of our other shared priorities. Come help us celebrate "the power of two" and the potential that exists when your state corn and soybean checkoffs are committed to working for the good of Illinois farmers, together.



JOHN LUMPE | CEO | Illinois Soybean Association



A photograph of a farmer wearing a grey jacket, blue jeans, and a black cap, kneeling in a brown, tilled field. The farmer is using a small tool to work the soil. In the background, there is a white barn with a red roof under a clear blue sky. The title 'Growing a Carbon Program' is overlaid in large white text on the bottom left of the image.

Growing a Carbon Program

Illinois Sustainable Ag Partnership is working to bring clarity to a complex situation.

Farmers can sequester carbon by implementing practices such as no-till or reduced tillage, cover crops, crop rotation, and buffer strips.

By Claire Weinzierl

It seems as if we're hearing about new carbon market programs left and right these days. The myriad viewpoints can be confusing, so much so that farmers can become bewildered with unanswered questions as to which opportunity is the best option for their operation.

Last year, the need for clarity for these carbon programs was recognized by several organi-

zations, including the Illinois Sustainable Ag Partnership (ISAP), who stepped up to help answer lingering questions.

ISAP, a partnership between several organizations established in 2017, released its Carbon Farming in Illinois Factsheet in September 2020 that was fully developed by its Science Advisory Committee. The fact sheet, which can be found at ilsustainableag.org, serves to introduce farmers to financial opportunities available

for implementing practices that reduce greenhouse gas emissions, summarizing minimum requirements and payments from traditional financial assistance programs side-by-side with market-based approaches.

Upon its release, the fact sheet garnered a lot of attention, including that of conservation organizations in neighboring states who were struggling with the topics as well. Around the same time, many companies offering

carbon programs approached ISAP and other organizations seeking opportunities to share their programs with farmers. ISAP rallied together 24 organizations covering Illinois, Wisconsin, Indiana, and Ohio, and collaborated to bring information from four very prominent markets, Indigo Ag, Nori, Ecosystem Services Market Consortium, and the Soil and Water Outcomes Fund, to farmers using their combined network.



"We wanted more than a standard commercial spiel," says Jean Brokish, ISAP Coordinator and American Farmland Trust Program Manager. "We wanted to create transparency and get everyone on the same page. We asked ourselves, how can we help farmers compare market opportunities and evaluate which ones make the most sense? We structured the presentations around a hypothetical Midwestern farmer, making sure that the panel developed their presentations in a way that made sense to farmers. Half of the webinar time was used to answer questions, all of which were developed based on questions received through the registration process and during the webinar itself."

ISAP and partners successfully brought in over 1,700 registrations and 1,000 attendees for the Farming for the Future forum in February 2021, which can be viewed on ilsustainableag.org.

"The webinar's attendance really demonstrated that there is so much interest and need for this information," adds Brokish.

The February event was just a taste of what farmers and professionals in the agricultural industry can learn from four more webinars happening this summer. The Farming for the Future Ecosystem Market Summer Series, two of which were held on June 22 and 24, and the remaining two occurring on July 13 and 15, explores multiple ecosystem services market opportunities for Midwest farmers. The series provides farmers and their advisors with practical and straightforward information on innovative market incentives.

The summer webinar series, all being held from 11 a.m. to 12:30 p.m. CDT, features programs available from input providers such as Bayer, Corteva, and Nutrien; explores

innovative markets and data platforms available from CIBO, Farmers Business Network, and Land O'Lakes; examines market opportunities through the lens of grain buyers and consumer packaged goods companies with Cargill, General Mills, and PepsiCo; and investigates water quality markets and additional potential revenue streams for ecosystem services.

"In the July 13 session, presenters will explain how carbon markets fit into bigger picture sustainability goals and touch on the rising trend of consumer demand and interest in sustainable products. Some think this has been a recent trend due to the change in the administration, but I believe this is actually something that has been trending up for many years just based on consumer interest in these types of sustainable products," says Brokish. "The July 15 session will look similarly at things beyond carbon such as water quality markets and biodiversity markets, and presenters will walk through what other opportunities exist out there on the horizon that farmers should be thinking about."

If you were unable to join for

the June webinars or have not yet registered for the July webinars, don't fret, you can still register and find all recordings at ilsustainableag.org.

Questions to ask when considering a carbon program:

"One thing to keep in mind are payment terms and penalties," says Brokish. "If you're signing up to capture carbon based on practice adoption, and for some reason you can't get the practice in because of weather or some other unforeseen event, you need to know what penalties there may be."

Brokish adds that it's also important to understand the long-term implications.

"Farmers need to make sure they know whether it's just carbon they're dealing with or if there are other rights involved – are water quality credits also going with them, are you also giving up the opportunity to participate in federal programs, for how many years are you bound by the terms of the agreement? Understand what you're selling, read the fine print of the contract, and be sure to have an attorney that has your best interest in mind go over the contract as well."

Looking ahead, Brokish adds that ISAP hopes to develop a decision tree, following the summer webinar series, for farmers to use when making carbon market program decisions.

"We are developing a reference document that compares multiple market opportunities that will be available to farmers later this summer to serve as a tool when making decisions based on what they grow and how it's grown, and to help them understand which market type would be best for their farm," says Brokish. "We also plan to include the more traditional cost-share programs such as the Environmental Quality Incentives Program (EQIP) and the Conservation Stewardship Program (CSP) in the decision tree. We don't want to lose sight of these programs as they pose less risk than private markets and may be the best option for some farmers."

Complementing the decision tree, ISAP also plans to develop and provide tools for other organizations and farm advisors in the form of a standard slide deck packed with materials and information to share with their audiences.

The American Soybean Association (ASA) recently provided a snapshot for crop producers of the carbon market landscape as of April 2021. ASA also recommended that farmers ask the following questions when speaking with carbon market representatives:

- How much is this going to cost?
- Am I required to implement any conservation practices or meet any conservation baselines to qualify?
- Do I own my project and/or any credits issued to it? What, exactly, is being purchased?
- Am I giving away my private farm operating data, and what can the aggregator, registry operator, or market administrator do with it?
- Who sets the prices my credits sell for?
- If a buyer pays \$50 per ton for my credits, how much do I receive out of the amount paid? How fast and how do I get paid?
- Do I have to keep reporting farm operating data after the aggregator or credit buyers stop paying for credits? If so, for how long?

- What is my recourse if something goes wrong?
- What happens to my obligations and payments if the company exits the carbon market or goes bankrupt?
- Am I contractually bound to specific soil treatment, cropping, and/or livestock management practice, or not?
- Does a lien attach to my property?
- What is the company's motivation?
- Are there strings attached? Is exclusivity required? Can I still participate in government conservation programs on the same acres?
- How transparent is the process? How flexible?
- Are there force majeure clauses? What happens if weather forces the use of tillage or prevents a cover crop from being planted?
- How will I be affected if the company revises its program?
- Will I be responsible to return any of the payments if the projected levels of sequestration are not attained?



“The Good Fight”

Transportation efficiencies. Carbon emissions reductions. Clean energy. Healthy communities.

What do these initiatives have in common?

Us, the Illinois Soybean Growers (ISG), and our network of advocates who are committed to sustainability, innovation, and collaboration in the public policy arena. We remain at the front of the weathered battle lines, working together to protect Illinois farms and farmers, the patina of generations gone by, and the promise of generations yet to come.

Your soy leaders at the national and state levels are craning their necks above the status quo to implement several new programs, policies, and technologies, each of which can contribute in additive fashion to reducing carbon emissions while providing community health benefits as well. Science and research tell us that farmers can play a pivotal role in capturing carbon and sequestering it in the soil, thus reducing greenhouse gas emissions. To be successful, we must use our resources wisely to promote public policies that incentivize farmers to utilize the most sustainable farming practices for their individual farms.

ISG believes that farmers who take care of their land, year in and year out, should have the final say on what practices they want to opt into. They know their land best; they care about their land most.

We continue to advocate for positive action on biodiesel. On both the state and federal levels, several climate proposals have been brought to the table by stakeholders across the political spectrum. We are working with intention to ensure that any omnibus climate bill promotes the use of biodiesel for one uncomplicated reason — it is the most eco-friendly fuel available for large engines and vehicles.

But for my money? I believe that the solution to real climate change is rooted in the same principal by which our country was founded. Democracy. Whatever our backgrounds, we’re all united by a commitment to making our voices heard as we call for a healthy climate future. Everything we bring to the fight must originate from a place of respect, empathy, authenticity, and a hunger for change that rages louder than the temptation to idle complacency. Focusing on shared values rather than partisan divides, we will continue to earn trust with community leaders, federally-elected officials, and Congress.

Growing relationships, demonstrating local support, and promoting climate solutions that have appeal across the political spectrum will move our leaders towards action that will support sustainable farms and promote healthy communities. They will have no choice but to hear our battle cry.

Because at the end of the day, “The Good Fight” is the one that we fight together.



MIKE LEVIN | Senior Director of Government Affairs |
Illinois Soybean Association



How We Ship Matters

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Establishing a strong container market in Illinois has helped build a preference for Illinois soy among international buyers, since containers preserve product quality in an efficient, cost effective manner. More loading sites means additional market opportunities, leading to a strengthened basis and price premiums as great as .10-.15 cents over basis for Illinois farmers. From market to market, we know those cents add up. That's why we're working with companies throughout the value chain to establish more container loading sites throughout the state, ensuring more delivery options and price incentives are available near you this summer.

Visit ILSoy.org/TradeandExports

To learn more about how you can take advantage of the benefits of container shipments.



Every farmer has a story

Meet Jayne Kindred: She's No "Plain Jayne."

By Betsy Osman

Jayne Kindred has only ever known life on a farm. Her parents farmed in Minier, Illinois where they had a farrow-to-finish hog operation, raised feeder calves, and grew corn and beans.

"My dad had no sons, only two daughters, so I became his right hand," recalls Jayne. "I think even from a young age, I sensed his need for my help and felt a duty-bound sense of responsibility for the work that needed to be done."

In the evenings, Jayne would help with the daily care of the hogs.

"I would feed and water, clean out crates, and tend to the piglets," she says. "In the summer, I'd walk beans, and I always loved mowing the yard. It's not that my help was demanded, and it wasn't even a chore that

had been assigned. The yard was my responsibility. I did the work that needed to be done."

Jayne fondly remembers the family garden that would provide enough vegetables to be canned and enjoyed through the long winter months. But of all her childhood from-the-farm memories, it was going to the market with her father that she loved most of all.

"When our cattle left for the marketplace, my dad would go with them to the Chicago Stockyards and watch them sell," she says. "And every once in a while, he'd take me with him."

She continues, "He would sit me up on one of the tall corner posts, and I'd be able to see for what seemed like miles. The buyers would come by on horses and bid on cattle. After they were sold, my dad would go in to collect the check, and then we'd go home. As a child, it always

felt like such an adventure."

Having only ever known the life of a farmer, it wasn't altogether a surprise that Jayne would eventually meet and marry a farmer of her own.

"I knew I'd one day marry a farmer," she says with a laugh. "I've always felt that was the way it was meant to be."

And marry a farmer she did. In 1975, Ron and Jayne Kindred were married and soon after had a son, Jay.

As the only person in her family to have gone to college, Jayne received a full-tuition scholarship to study elementary education, and in 1977 she began teaching. She spent more than 32 years in the classroom teaching second, third, and fourth graders, and making small, daily differences for every child she encountered.

"I dearly loved reading aloud to my students," she says. "Reading picture books and all

different types of chapter books was among my greatest joys."

But if you ask Jayne her favorite part of teaching?

"Watching children succeed has been one of the greatest rewards of my life," she says with a smile. I love seeing them be brave enough to tackle a skill or subject that they thought they couldn't do, and then watching them accomplish it. I'd hear a child say, 'But I can't write,' and then with a little bit of encouragement, practice, and patience, that child would begin to write. You'd actually witness that child change his mind about himself. He could do it. He could write. That was incredibly rewarding."

When Jayne eventually retired from teaching, she became full-time support staff to her husband, Ron, and their son, Jay, who both manage their farm in Atlanta, Illinois. Today, she drives the grain cart in the fall, mows in



Young Jayne on her parents farm in Minier, Illinois where they had a farrow-to-finish hog operation, raised feeder calves, and grew corn and beans.

the summer, and enjoys helping with special projects.

"And, most importantly, she feeds us," laughs Ron.

But not long after retiring from her teaching career, Jayne realized that farming alone was not enough to fuel her nurturing spirit. She needed another creative outlet.

"When I retired, I had nothing to do in the evenings. I had grown accustomed to doing projects for my classroom, and without a classroom to provide for, I knew I needed to find something useful."

A neighbor living down the road had an embroidery shop and offered sewing classes. Jayne enrolled in a beginning quilt class. Later she became a member of the quilt guild that met at the shop to make quilts for wounded soldiers and

veterans who had successfully navigated through the court system.

Today, Jayne has helped to create over 100 quilts for U.S. soldiers.

"I remember so well the time we presented a quilt to a female soldier who had been severely injured during a roadside bombing. Past experience had taught me that soldiers receiving our quilts were well-trained and often stoic – they'd thank us and then tuck the quilt under their arm. But this particular soldier, whom I'll always remember, cried when we gave her a quilt. It was such a human response. That's why we do the work that we do."

When you first meet Jayne Kindred, she will tell you two things about herself: that she spells her name with a "y" and



Pictured with Jayne, her husband and ISA Board Director, Ron Kindred, and their son, Jay.

that her life has been unremarkable. She's not someone who lives for the spotlight, and she would rather talk about the weather than talk about herself.

But if you look out over the years and miles and lives where Jayne Kindred has been, you cannot miss her remarkable fingerprints.



At the Kindred Farm in Atlanta, Illinois, Jayne drives the grain cart in the fall, mows in the summer, and enjoys helping with special projects.



Innovation Grows Here

Illinois farmers focus on sustainability and innovation.

By Jill Parrent

Illinois farmers are some of the most innovative, intuitive, current individuals. Because of this, the Illinois Soybean Association (ISA) is proud to partner with the Illinois Farm Families (IFF) program. IFF is designed to bridge the gap in introducing the people of the state to Illinois farmers and the ones who raise and grow the foods we eat every day. Focusing on the Chicagoland area parents, IFF works to develop conversations, share knowledge, and provide positive ideas about the importance of agriculture.

The combined partnerships of the Illinois Beef Association,

Illinois Corn Marketing Board, Illinois Farm Bureau, Illinois Pork Producers, ISA, and Midwest Dairy are organizations working together to ensure Illinoisans know where their food comes from and how it is produced.

Because of the vast knowledge Illinois farmers possess, this spring IFF showcased farmers from around the state in a short film series focused on innovation and sustainable farming practices called *Innovation Grows Here*. The 10 short films highlight how innovation has enlightened people about leaving the land better than before. Subjects emphasized include biofuels, pollinators, bioplastics, milk's small

carbon footprint, raising pigs, and the importance of weather. These are all important topics to today's world, highlighting how farmers are bringing about changes in agriculture to influence the world for tomorrow.

One of these stories includes Jeff Jarboe, a corn and soybean farmer from Loda, Illinois. Jarboe, a generational farmer, has been focused on how he can improve the earth for the next generation of farmers. Being the best steward of the land means better soil for the future, especially for his grandchildren who may have an interest in taking over the family farm in the future. In the three-minute video, we learn about who Jarboe is and what he is doing

to help create soils better than the year before, including carbon sequestration.

Farmers can have a positive impact on climate change by doing multiple things, but two main two popular recommendations are:

1. Reducing the amount of carbon lost to the atmosphere by tilling the ground less.
2. Adding even more plants to take additional carbon dioxide out of the air.

Jarboe states an important trait of all farmers: "Farmers naturally want to take care of their ground."

Because farmers rely on the same soil year after year turned generation to generation, they must protect their land for the

future. Scientific evidence connects climate change to rising levels of carbon dioxide in our atmosphere. Because of this, farmers must really look to ways that can lower the carbon dioxide they are putting out — crops help with this. For every acre, there are approximately 140,000 soybean plants, and each one pulls in carbon to put back in the soil. By simply farming each year and putting seeds in the ground, Jarboe has the ability to reduce greenhouse gases.

Soil has the ability to store two to three times more carbon than our atmosphere, allowing farmers to be the perfect transporters in helping the environment by doing their every day routine with critical thinking and care for the land.

The Midwest is special for more than one reason. NASA data shows that the Midwest's growing crops have more

photosynthetic activity than anywhere else on earth. With Illinois as one of the highest corn and top soybean producing states in the nation, the state's farmers are celebrating as they help the earth.

By tilling less, Jarboe can put more carbon into the soil. His no-till method includes leaving the previous year's soybean residue and planting directly over it into the soil. The no-till method improves overall soil health by adding more organic plant matter and saves Jarboe trips across the field with equipment, lowering his emissions and keeping the carbon in the soil.

"Because farmers care for 75 percent of the land in Illinois, that's a big opportunity and a big positive for all of us," Jarboe states.

These short films are full of information for everyone, presented in an informative,



Jeff Jarboe's farm is continually making progress to be more sustainable by utilizing carbon sequestration.

educational, and emotional manner, allowing the viewer to leave with a greater understanding of how farmers are working and preparing the earth for generations to come.

To watch all of IFF's *Innovation Grows Here* videos, visit [**youtube.com/IllinoisFarmFamilies**](https://youtube.com/IllinoisFarmFamilies).

Visit Illinois Farm Families at [**watchusgrow.org**](https://watchusgrow.org).



Jeff Jarboe, a corn and soybean farmer from Loda, Ill., was featured in the Innovation Grows Here campaign highlighting sustainability and being a good steward of the land.

Thoughts on the move



RACHEL PEABODY | Editor | Illinois Soybean Association

When I walk, I think. There's something about my feet in motion, with early morning sounds and not even a car on my road for 30 minutes, that seems to order my thoughts. I always say it's the best part of my day.

My walking paths have looked a little different over the past decade, and so have my thoughts. It's where I got in shape for my wedding dress in 2013, and it's where I've logged countless miles with our beloved old dog whose walks with me will be in my memories long after he's gone. It's where I came up with the names for our twin girls during the fall of 2016, it's where I've mentally designed dream kitchens for our latest flip property, and it's where I've tackled countless mental grocery lists and email drafts. Some mornings it's where I write my latest Illinois Field & Bean column with my tennis shoes racing me back to my laptop as soon as I get to the house.

Walks are pretty sacred to me, and so are the thoughts that come from each mile.

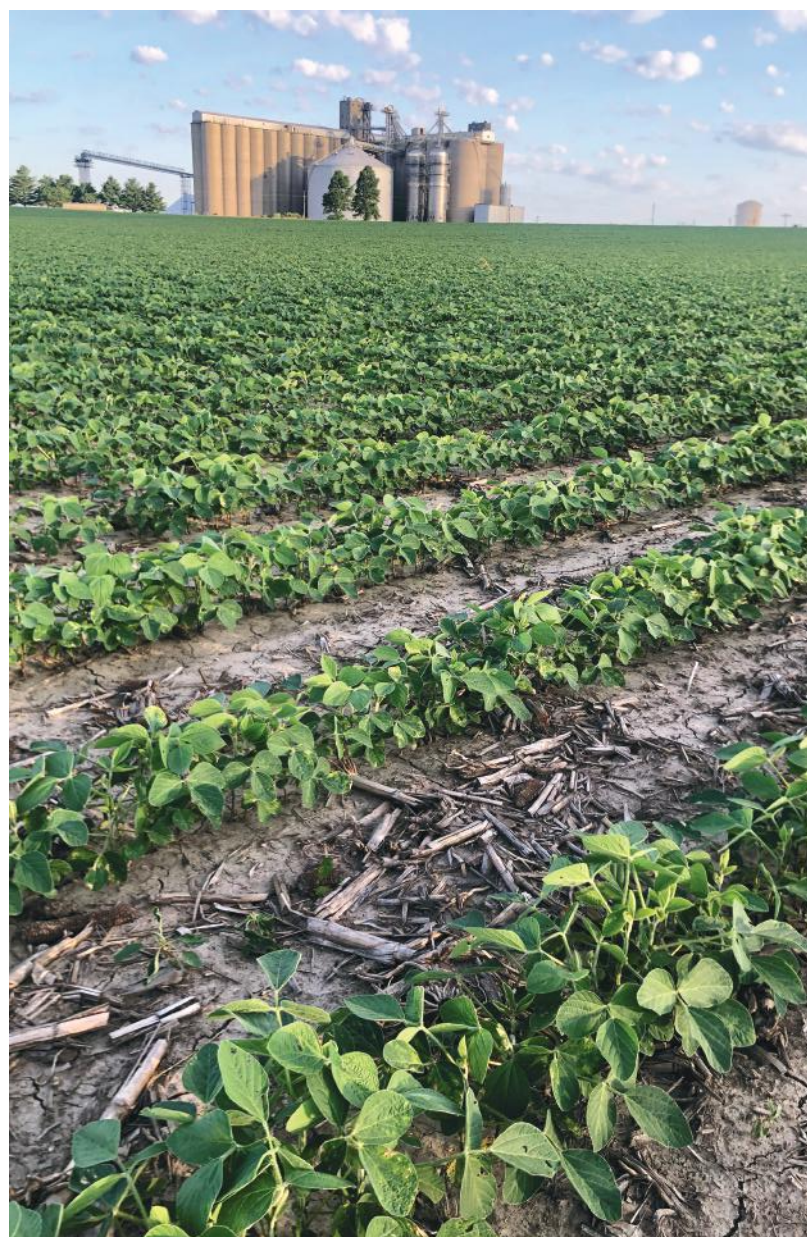
This July issue we are talking about conservation. And to me, conservation is the very reflection of thought. People who examine the world and look at how we can make it better, with less damaging environmental impact. It's people who figure out how we can produce more, with less inputs. To me, that's what Illinois farmers do every day, and there's not one that I know who isn't thinking about conservation and sustainability efforts on their acres each season.

In this issue, we start to look at topics that are top of mind for soybean growers right now, like carbon – check out our feature on what it takes to grow an on-farm carbon program on page 6. Conservation and sustainability also include our work with biodiesel, and on page 16, you will learn how farmers play an important role in the business of cleaner air.

We created this issue knowing that Illinois soybean farmers care about conservation practices and growing a sustainable product. Your state checkoff cares about these issues too, and it's work that your Illinois Soybean Association team is engaged in daily, and ever-increasing.

I hope the pages of Illinois Field & Bean get you thinking about what conservation looks like on your farm today, tomorrow, and in the future. What moves will you make to keep working towards more sustainable practices on every acre?

What's a conservation issue that is top of mind for you? Drop us a line at ilsoy@ilsoy.org today.





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By National Biodiesel Board

A product created by soybean farmers and their checkoff nearly 30 years ago is now getting national attention due to its public health benefits, especially in urban and rural neighborhoods.

Since 2020, Americans have been hyper focused on their health and the air they breathe due to the paralyzing pandemic that swept across our country and many others. While the pandemic put us in a state of shut down, pushing us apart, it brought a lot of us to the same realization – our health and safety is critical. Now, many people from coast to coast are prioritizing cleaner, healthier air.

Throughout the past couple

of years, the National Biodiesel Board (NBB) has touted that our industry is “Better. Cleaner. Now!” And now, based on foundational research, we know that our fuels are proven to combat significant health issues that often affect a lot of us.

A recent landmark study, conducted by Trinity Consultants, confirmed what our industry has known for years – biodiesel has proven positive impacts. We have always known that biodiesel offers a better and cleaner alternative to petroleum diesel; on average, biodiesel reduces carbon emission by 74 percent. This study quantifies the health benefits and shows that by using renewable fuels like biodiesel and renewable diesel, we can

bring major improvements to people's lives.

This new research demonstrates that switching to biodiesel results in a multitude of benefits at the neighborhood level, including health benefits such as decreased cancer risk, fewer premature deaths, and reduced asthma attacks.

The research, sponsored by NBB and our partners, used well-established EPA air dispersion modeling tools coupled with health risk assessments and benefit valuations to assess the public health benefits and resulting economic savings of converting from petroleum-based diesel to B100 in 13 communities in the U.S. exposed to high rates of petroleum diesel pollution (e.g., ports, logistics facilities, high traffic urban areas, and communities using petroleum heating oil for space heating).

Researchers found that switching to 100 percent biodiesel for home heating oil and transportation would annually bring the 13 communities studied:

- 340 fewer premature deaths.
- 46,000 fewer lost work-days.
- \$3 billion in avoided health care costs.

In the transportation sector, benefits included a potential 45 percent reduction in cancer risk when heavy-duty trucks such as semis use B100 and 203,000 fewer or lessened asthma attacks.

When Bioheat® fuel made from 100 percent biodiesel is used in place of petroleum heating oil, the study found an 86 percent reduced cancer risk

and 17,000 fewer lung problems.

And, because the study included only 13 sites and communities, the benefits noted above represent just the “tip of the iceberg.” Applying similar air dispersion and health risk assessments to other freight and high diesel-use sites would show substantially greater benefits across the country. That is what makes this study so meaningful – it shows that B100 can achieve substantial benefits by reducing pollution in our hardest to decarbonize markets.

This means these communities, which continue to be disproportionately affected by diesel pollution, don't need to wait 5, 10, and in some cases 20 years for an electrified solution to deliver cleaner air. With biodiesel, they can enjoy cleaner, healthier air today and for the many years it will take for states to achieve deep electrification.

This pandemic took a lot from each of us, and we recognize that Americans will look at their health and wellness through a different, more concerned lens. Our desire is that, when it comes to the air we all breathe, people across the country feel secure in the promise that biodiesel brings.

Farmers should be proud of the key role they play in helping produce a drop-in renewable fuel that has such dramatic health benefits for end-users – whether they live in the Midwest or thousands of miles away. As carbon discussions continue to grow in urban and rural areas, biodiesel can provide immediate solutions for decarbonization efforts today, which is especially critical given the importance of reducing carbon emissions and air pollution sooner rather than later.

The study quantifies in a groundbreaking way the benefits of using more biodiesel at higher blend levels and adds momentum to our goal to reach 6 billion gallons of biodiesel and renewable diesel use by 2030 with the help of America's farmers.



A new study quantifies biodiesel's benefits as it relates to health.



Reduce cancer risk



Lower premature deaths



Lessen asthmatic symptoms



Reduce restricted activity days in urban areas



Reduce sick days

Say

CONGRATULATIONS TO LOREN PRIBBLE



2021 ILLINOIS FFA STATE PROFICIENCY WINNER IN FIBER AND/OR OIL CROP PRODUCTION

Loren Pribble, a high school junior from Goreville, Illinois was announced as the 2021 Illinois FFA Proficiency winner in Fiber and/or Oil Crop Production. His Supervised Agricultural Experience (SAE) focused on growing soybeans on his family's farms in both Goreville and Thompsonville, Illinois.

Pribble farms with his father and grandfather, raising soybeans, corn, and wheat on their acreage while learning the importance of agriculture. He began farming with his grandfather and was taught how to operate machinery when he was around 10 years of age by the best instructor – grandpa. By age 12 he was tilling fields on his own for the family operation. The SAW focusing on soybeans was a natural choice for Pribble because of his interest in learning more about their growth and his passions for agriculture. Pribble states, "Soybeans are my favorite crop to plant, grow, and harvest because of the equipment, time, and overall ease of their growth stages." In the future, his goals are to farm with his father while obtaining a degree in agribusiness economics with a minor in agronomy.

Pribble will compete on the national FFA level this year with his SAE.

The Fiber and/or Oil Crop Production SAE focuses on an FFA member owning the enterprise or working for a business that includes the best management practices available to efficiently produce and market crops for fiber and/or oil such as cotton, sisal, hemp, soybeans, sesame seed, flax, mustard, canola, castor beans, sunflower, peanuts, dill, spearmint, and safflower.

The Illinois Soybean Association is a proud sponsor of the Fiber and/or Oil Crop Production Illinois FFA State Award. ISA believes in the importance of supporting the next generation of agriculture, understanding the impact they will make for years to come.





A Focus on Productivity Leads to Long-Term Sustainability

Advanced Agrilytics combines biology, chemistry and data expertise to understand what is happening above and below ground at any given location in your fields.

Get to know Advanced Agrilytics and their mission to help you better understand your fields.

By Kayla Hedrick

Something was missing in precision agriculture. That was the thought that led to the creation of Advanced Agrilytics by its industry-veteran founders: Kess Berg, Jon Fridgen, and Aaron Gault. After years of working in precision technology, they recognized that data without agronomic expertise doesn't provide a road map to long-term productivity, and they needed to fill that gap.

The founders set out on a mission to combine that needed data and agronomic expertise, resulting in an approach that focuses on managing to individual environments within

a field and a foundation that sets farmers up for long-term economic and environmental sustainability.

Advanced Agrilytics takes a farmer's historical data and merges it with an in-depth understanding of how other variables in the field – soil, fertility, water, topography – impact results in a less-than-uniform way. Then, they back up their recommendations with a precision agronomist that knows the trouble spots in a farmer's fields. The combination leads to a more complete use of the tools farmers already have at their fingertips to increase productivity, profitability, and sustainability.

This high-tech, agronomic approach to production management is what attracted Sean Arians, Regional Business Director and Illinois farmer, to his role with Advanced Agrilytics.

"With my background in precision agriculture and my passion for sustainability, the ideas Advanced Agrilytics implements with managing to the environment just clicked with me. It's smart and it makes sense from a profitability standpoint for our farmer customers," says Arians, who leads teams east of the Mississippi River for Advanced Agrilytics. "We take a hyper-targeted approach to manage underlying problems within a field, not just

treat symptoms. This impacts recommendations across the board from seed and fertilizer to when and where to address pest pressures."

While a lot of industry-led recommendations focus on broad-brush approaches to treating symptoms, the Advanced Agrilytics approach to addressing the underlying problems at a sub-acre level sets a farmer up for long-term success. By addressing problems specific to their fields, farmers can increase productivity in those trouble areas and ultimately increase economic sustainability. Or, in other words: profitability.

Advanced Agrilytics was designed to cover all bases when it comes to plant growth. They have the data expertise – a proprietary vault of information covering everything from soil wetness to nitrogen loss – but they also have biological expertise, taking care of what’s underground, and chemistry expertise, for what’s above ground. What’s more, they customize their approach to meet the farmer where he or she is, using the tools already in use on the farm.

Proven, Science-Backed Recommendations

Advanced Agrilytics was established in Indiana nearly a decade ago. Their science-backed approach has returned results in spades to their long-term customers. This led to a major geographical expansion that includes Illinois and Iowa, among other states.

While they’ve only been operating in Illinois for a few years, the team has grown exponentially in that time. There are currently 10 precision agronomists working throughout the state, as well as agronomy leads, AJ Woodyard and Jeremy Hogan, agronomy veterans in their own right.

Arians says the team is built to bring personalized, agronomic expertise to their customers. “Our team may have different backgrounds, but they all have one thing in common: a desire to continue to help our customers improve,” he adds. “This continued need for information and growth aligns well with sustainability goals like the Illinois Nutrient Reduction Loss Strategy and other initiatives impacting Illinois soybean growers.”

One area where Advanced Agrilytics shines with its expertise is nutrient uptake. Not only do

they focus on timing, ensuring a plant can actually use the nutrients applied, but also on how various factors within the field – soil, water, slope – impact how much of a nutrient the plant is actually receiving.

Understanding how these factors interact and making recommendations for improvement, not just replacement, is a key differentiator for Advanced Agrilytics.

Managing for nutrient uptake also helps mitigate nutrient loss, a smart way for a farmer to optimize their productivity without wasting resources. But, also, it’s a way to position farms for long-term environmental and social sustainability.

“We’re working to balance a farmer’s need for economic sustainability with the environmental and social needs within their communities,” says Kay Kuenker, CEO of Advanced Agrilytics. “We’re providing real-time solutions to

farmers, using the tools they are comfortable with coupled with our expertise in agronomy and data analytics.”

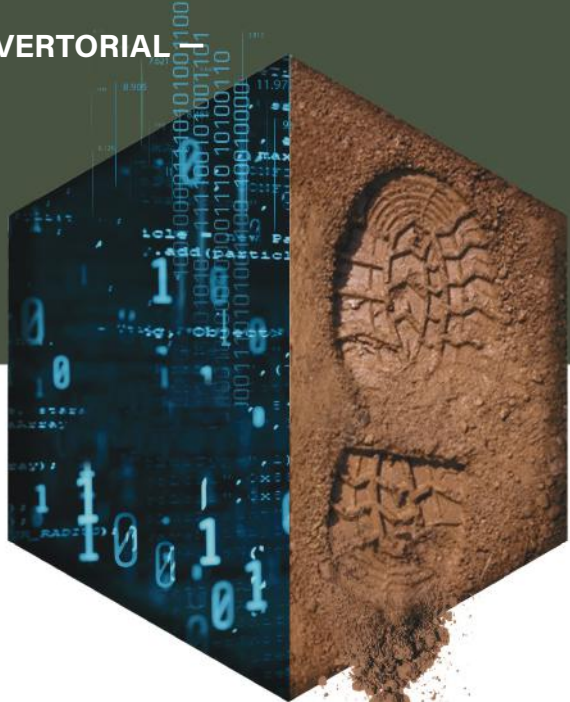
Advanced Agrilytics also has a research arm that helps keep the team up to date on the latest seed, inputs, and equipment from industry brands. This in-depth research provides unprecedented insights to Advanced Agrilytics customers on how products will perform in similar conditions to those on their farms.

“Having an unbiased agronomy partner that knows your fields and how the products perform in a variety of environments is something our customers really have come to appreciate,” says Arians.

Advanced Agrilytics is currently enrolling new customers. To find out more or connect with an agronomist in your area, please visit www.advancedagrilytics.com.



Seth Logan, a precision agronomist in Southern Illinois, reviews details for a customer’s prescriptions during #plant21.



NUTRIENT MANAGEMENT POSITIONS FARMS FOR LONG-TERM SUCCESS

The Economic, Environmental and Social Benefits to Targeted Management

Managing to the Environment

Understanding how water, soil type, topography, and fertility factor into results and drives environmental and economic sustainability.

Applying Agronomic Expertise

High-touch precision agronomy focuses on following science-proven recommendations and making adjustments throughout the growing season as-needed.

Investing in the Future

Economic-focused recommendations; decisions are customized for each farm and the preferences of that customer, optimizing productivity and profitability while protecting the environment.

There are two sides to precision agriculture – knowing what the data is telling you and knowing what to do with it. For Advanced Agrilytics, combining the data analytics and the agronomic expertise is just part of standard operating procedure.

“We’re really looking at fine-tuning how soybeans – and corn – are grown to increase nutrient uptake and mitigate risk for farmers and the overall environment,” says AJ Woodyard, lead agronomist for Illinois and a soybean guru in his own right. “Reducing nutrient loss is a major factor both economically and environmentally. We approach our recommendations with considerations for everything from low spots in a field to proximity to water tables, making adjustments accordingly.”

Advanced Agrilytics’ approach to management positions farmers for long-term sustainability going beyond the 4-R’s to look at a farm’s economic, environmental and social sustainability.

Nutrient use efficiency is a key focus of Advanced Agrilytics. Understanding specific influences in the field and how they interact with each other is something that takes specialized attention. Advanced Agrilytics uses a science-based approach to managing to the environment, with considerations of soil type and nutrient makeup, water holding capacity, water tables and topography. These factors play into many aspects of production, but especially when considering nutrient uptake and fertilizer loss for phosphorus in soybeans and nitrogen in corn; an advantage to those operating near water-tables or trying to meet the Illinois Nutrient Loss Reduction goals.

What’s different about Advanced Agrilytics? They look at the big picture and position farms to think toward the future, whether they have one-, three- or five-year goals. With a holistic view of your farm and of sustainability, Advanced Agrilytics is focused on the economic, environmental and social factors influencing today’s farms.

ADVANCED AGRILYTICS IN ACTION

REDUCING PHOSPHORUS LOSS

Our phosphorous recommendations work in concert with the environment to reduce P rates in poorly drained soils and low areas in fields, areas with greater diffusion rates and plant-available phosphorous. By reducing potential loss via runoff and tile drainage, we gain wins for the environment and farm profitability.



IMPROVING NITROGEN USE EFFICIENCY

Advanced Agrilytics’ refined nitrogen recommendations improve efficiencies for farmers by taking a focused-approach to plant utilization in sub-field environments. We also reduce fertilizer loss, which can lead to run-off and negatively impact waterways.

.95 Units of Nitrogen / Bushel of Corn

ADVANCED AGRILYTICS

1.2 Units of Nitrogen / Bushel of Corn

INDUSTRY AVERAGE



ADVANCED AGRILYTICS

Learn more about Advanced Agrilytics by calling 877-327-6428 or visiting www.advancedagrilytics.com

A Tool for Soil, Water Quality Improvement

Five tips to cover all the cover crop bases

By Illinois Farm Bureau

Managing nutrients on farms can be accomplished in different ways, depending on what farmers each have to work with in their fields. Farmers can certainly learn from each other, too, what works and what doesn't. Illinois Farm Bureau (IFB) has a program that helps with that exchange.

IFB's Nutrient Stewardship Grant Program this year features 21 projects across 28 counties, and county Farm Bureaus are hosting field days to showcase how farmers improve soil health and water quality to address the Nutrient Loss Reduction Strategy (NLRS) in the state.

The first three events were held this spring in Jefferson/Franklin counties, Sangamon County, and Richland/Lawrence counties featuring cover crop use in watersheds. Here are some of the tips from the field days that could be useful for farmers, along with ideas of where to go for assistance if you want to try implementing some of these successful strategies.

Tip 1. Be patient.

Planting cover crops is a learn-what-works-as-you-go exercise. Most farmers speaking at the events found that after a few years, they see erosion control and weed suppression, followed by better soil health, greater water-holding capacity, and reduced compaction, all at little added cost.

One area that requires patience is with finding the best timing for cover crop planting. One solution is to aerial seed into standing crops from a helicopter. Try dropping cover crop seed on a soybean field when the leaves turn yellow. Seed will land on

bean leaves and fall to the soil when the leaves drop. In addition, some farmers prefer to plant corn or soybeans into green cover crops rather than planting after cover crop termination.

Tip 2. Use the right seed mix for the right purpose.

Farmers say that after several years planting cover crops, the increase in organic matter becomes evident and is partly due to seed selection and seed mix.

For example, if adding nitrogen to your soil is a goal, consider a proven 13-way seed mix of cow peas, sunn hemp, cahaba vetch, yellow sweet clover, crimson clover, sorghum sudan grass, millet, oats, rapeseed, turnips, sunflowers, buckwheat, and phacella.

Want to attract bees? Adding canola to a rye and tillage radish mix will do the trick.

Finally, choose quality seed if you want to maximize the nutrient contribution to the soil.

Tip 3. Consider continuous cover to stop erosion in watersheds.

Several farmers at the field days so far list continuous cover as one of the best ways to stop erosion in their respective fields located in Illinois watersheds. Flat fields, especially near creeks and rivers that top their banks in the spring, will keep hold of the soil with a cover of cereal rye or wheat. Terminating the cover crop just prior to planting may maximize erosion control and limit nutrient loss in priority watersheds and help meet NLRS targeted objectives.

Tip 4. Minimize disturbance to improve water quality.

Better soil health has been proven to lead to better water quality. Making small changes to help enrich the soil with cover



Mark Litteken, left, and Cliff Schuette demonstrated the impact cover crops can have on organic matter at Litteken's farm in Clinton County in April.

crops can bring on big long-term changes that include increased soil biodiversity and viable living root structures that will minimize soil disturbance and runoff.

Conservation best management practices (BMPs) are documented in watersheds to reduce sediment and nutrient flow and prevent algal blooms, so communities get better quality water.

Tip 5. Take advantage of available assistance.

Contact your county Farm Bureau, local USDA service office, or soil and water conservation district to explore what cost-share dollars or grants might be available in your area to implement cover crop practices. Create a nutrient-management plan and continue to increase the number of acres using BMPs on your farm

to improve soil health practices and reduce tillage.

Consider adding field borders and buffers, grass waterways, and strips and other practices that filter field runoff as well. Funding assistance may be available through USDA's Natural Resource Conservation Service (NRCS) or explore the Illinois Environmental Protection Agency's 319 program or USDA's Conservation Stewardship Program for other sources.

By funding conservation practice implementation, these and other programs reduce the nitrogen, phosphorus, and sediment runoff into our waterways so we can help meet NLRS goals.

To learn more about the 2021 Illinois Farm Bureau Nutrient Stewardship Field Days, including where field days will be held this summer, visit <https://bit.ly/3iRedPV>.



Today's biodiesel offers so many benefits for fleets, fuel retailers, drivers, and more that it beats out standard diesel by a mile.

A Low-Carbon Solution for Today

Biodiesel technology is easily accessible and cost-effective.

By Claire Weinzierl

Optimus Technologies is a clean energy technology company based in Pittsburgh, Penn. that manufactures the Vector System, an advanced fuel system technology that enables diesel engines to operate on 100 percent biodiesel, providing a low-carbon solution that is cost-effective and available today.

The B20 Club of Illinois, a partnership of the Illinois Soybean Association and American Lung Association, has worked with Optimus and Indigenous Energy through multiple projects with fleets like the Chicago Park District (CPD) and Archer Daniels Midland (ADM) to implement the Vector System on various types of equipment to test the performance and capabilities under various loads and conditions.

Optimus has also worked with several other organizations to implement their technology, including the DC Department of Public Works, Star Oil Company, Renewable Energy Group (REG), Broco Oil, and more.

Cleaner Air and Cleaner Parks with Biodiesel

CPD, the largest municipal park manager in the nation with 8,800 acres of green space, is a strong advocate for the utilization of biodiesel because it's the easiest way to boost fleet sustainability. CPD has been using blends up to 50 percent biodiesel and 50 percent diesel (B50) in a wide range of unmodified diesel vehicles since 2013. To fully maximize biodiesel's potential to reduce carbon dioxide and other harmful pollutants, CPD partnered with the B20 Club to install Optimus Technologies' Vector System in two refuse

trucks that empty trash and recycling bins from the Lakefront parks. This allowed the trucks to use B100 all year round, reducing their carbon footprint by over 80 percent and reducing particulate matter by almost 50 percent.

Since the program started in 2018, the B100 trucks have been monitored and compared to two identical diesel trucks, showing no operational problems. The seamless integration into the general fleet has encouraged CPD to order an additional five Vector Systems for installation this year and to install another B100 fuel dispenser on Chicago's South Side.

Optimus Technologies' Vector System is the only EPA-compliant biodiesel engine system for medium- and heavy-duty diesel trucks on the market and provides fleets the easiest way to reduce fuel

costs, lower greenhouse gas emissions, and address renewable fuel targets. A comprehensive, all-in-one system, the Vector System is also the only fuel system that does not require rebuilding, replacing, or significantly modifying existing engines, making it unnecessary to buy a new vehicle or purchase separate parts.

The Vector System enables vehicles to run primarily on B100, thereby maximizing the reduction in emissions. During start-up of the vehicle, a lower biodiesel blend (ex. B20) will be used for a short period of time until the Vector System determines that the pure biodiesel has reached the optimal operating conditions and temperatures. At that point, the system will automatically switch over to B100. When the vehicle is turned off, the engine will continue to run while the B100 biofuel is purged from the engine and replaced

with the same lower biodiesel blend used during startup. This process eliminates the possibility of fuel system clogging and ensures trouble-free operation, even during the coldest, brutal Chicago winters.

Based on data captured from Optimus customers, the vehicles operate on B100 for 85 to 90 percent of the time.

Vector System Viability Pilot Program

Another cooperative pilot program with ADM, with support from Optimus Technologies, the American Lung Association, Illinois Soybean Association (ISA), National Biodiesel Board (NBB), and Missouri Soybean Merchandising Council, is also demonstrating the real-world viability of Optimus Technologies' revolutionary Vector System.

Five over-the-road trucks owned and operated by ADM were outfitted with the Optimus Technologies Vector System in 2020 and are being used in daily

fleet operations, with each vehicle traveling 160,000 to 180,000 miles and reducing up to 500,000 pounds of carbon dioxide annually. All of the biodiesel used in the project is produced from soybean oil from ADM's crush plant and the Mid-America Biofuels biodiesel facility in Mexico, Missouri.

A cold snap back in February forced temperatures to plunge as low as negative 10 degrees Fahrenheit in Central Ill. but was no trouble at all for the ADM fleet that ran more than 23,500 trouble-free miles on sustainable B100 biodiesel that month.

ADM's use of B100 during the cold snap goes to show how well biodiesel can operate in winter weather, even in the coldest U.S. climates.

Today's biodiesel offers so many benefits for fleets, fuel retailers, drivers, and more that it beats out standard diesel by a mile. For more information on ISA's biodiesel efforts, B20 Club, or additional farmer resources, please visit ilsoy.org/biodiesel.



A cold snap in February forced temperatures to plunge as low as negative 10 degrees Fahrenheit in Central Ill., but was no trouble at all for the ADM fleet that ran more than 23,500 trouble-free miles on sustainable B100 biodiesel that month.

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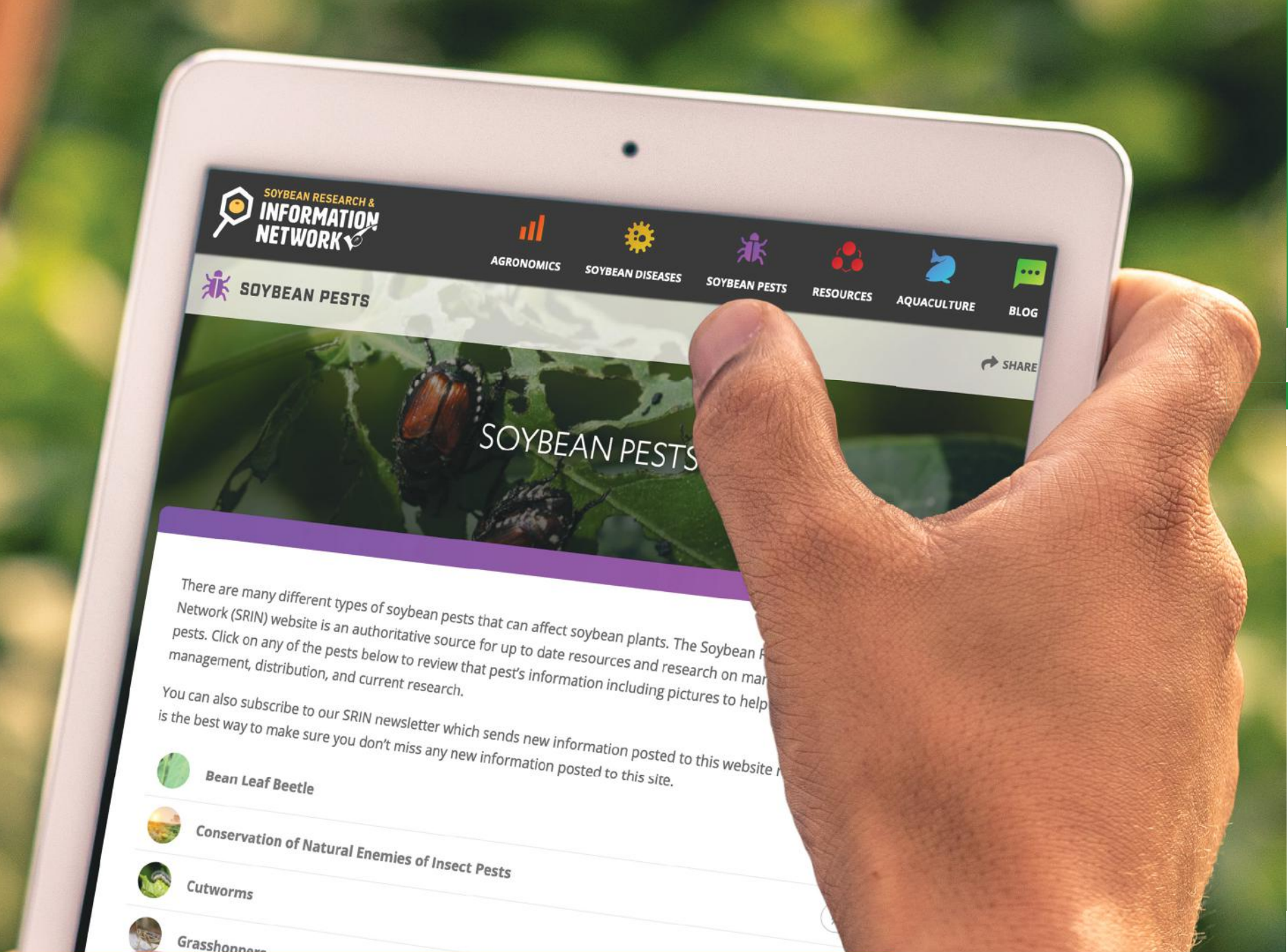
SOLAR SAVINGS

Solar costs less than traditional utility power providing immediate and long-term cost savings. Strong tax and financial incentives make solar extremely favorable for commercial and agricultural businesses. This includes the federal Investment Tax Credit (ITC) that is a universal and important incentive for solar customers. The ITC rate is currently twenty-six (26%) percent. Predictable energy prices also mitigates risk for the opportunity for other investments.



ILLINOIS SOLAR

The Illinois Shines Program has a phenomenal opportunity that allows the renewable energy credits produced by your solar project to be sold back to Illinois Utilities at a guaranteed price. This incentive is geared to support the State's detailed plan to acquire 25 percent of Illinois' energy from renewable sources by 2025. The funds in this program are expected to be renewed, but joining the waitlist now may secure your position in the Illinois Shines Program.



ONE LESS THING TO WORRY ABOUT.

Illinois is developing a UAS-based artificial intelligence (AI) toolkit to detect SCN related stresses of soybean. This toolkit will increase our ability to manage SCN by being more precise in our deployment of management tools in field. This AI approach to SCN management will be useful in assessing the efficiency of pesticides. To find out more about this unique toolkit and other research projects, visit:

soybeanresearchinfo.com

Funded by the soybean checkoff

*Illinois
Field & Bean*



GMO'S ROLE IN REDUCING ENVIRONMENTAL IMPACT

A look at how today's biotechnology is creating so much more, using so much less

By Betsy Osman

Climate change is not easy to understand. In some ways it feels abstract, futuristic, and less urgent than many of the other challenges our society is facing. It's not grabbing media headlines and suffocating our newsfeeds. And for all of us having just survived a global pandemic, it may not appear to be an immediate threat like COVID-19. Our capacity for alarm has grown weary.

But the reality is, our global home is at risk. And it's human health that will ultimately pay the price.

Greenhouse gas emissions continue to increase and global temperatures continue to rise. And though reducing the production of greenhouse gases is a good start, finding cutting-edge solutions for the active removal of greenhouse gases promises a one-two punch in the fight against climate change.

Genetically Modified Organisms (GMOs) are already helping farmers around the world reduce the environmental impact of agricultural production. When people refer to genetically modified organisms, they are referring to crops developed through genetic engineering, a more precise method of plant breeding. Genetic engineering, also referred to as biotechnology, allows plant breeders to take a desirable trait found in nature and transfer it from one plant or organism to the plant they want to improve, as well as make a change to an existing trait in a plant they are developing.

Over the last year, GM crops reduced atmospheric carbon

dioxide emissions by 5.2 million pounds, which is equivalent to taking nearly 10 million cars off the road for one year. Additionally, the usage of herbicide tolerant GM crops accompanied by farming practices, like conservation tillage, helps to reduce carbon emissions on farms globally and plays an integral role in minimizing agriculture's carbon footprint. Conservation tillage has been linked to improved crop production, improved soil health and water retention, and decreased greenhouse gas emissions.

Reducing the carbon footprint of agricultural production is an important step in combating climate change. While there is still a long way to go, advances in crop biotechnology are helping farmers all over the world reduce carbon emissions and make agricultural production more sustainable while meeting the needs of a growing global population. And U.S. agribusiness leaders, like Bayer, are committed to bringing innovations, such as groundbreaking digital tools and analytics, to the fight.

"Millions of farms around the world can become millions of ways to help reverse climate change," says Mike Graham, Head of Plant Breeding, Crop Science at Bayer. "That's why we're working with farmers to build a net carbon neutral future for agriculture. Specifically, in terms of helping farmers, we know that every innovation or practice that helps a farmer reduce emissions also helps them reduce inputs, realize better harvests, or tap into a new revenue stream."

Continues Graham, "Farmers

have always worked to grow more while using fewer inputs. It's called sustainable intensification, and it's the definition of farming efficiency. Innovations in plant breeding, crop protection, and digital tools have helped farmers make unimaginable leaps in feeding a growing population while conserving resources."

Advances in breeding and new seed traits can equip farmers with crops that need less water, fertilizer, or crop protection to grow the same amount, or even more. Not only does this increase the farm's efficiency, but it reduces the tractor time and emissions that would have otherwise been needed to care for less self-sufficient crops.

It gets even better. By tailoring crops to the environment they'll

be grown in, new technologies can unlock bigger yields and more robust fields. So every farm has a formula that works for them.

Says Werner Baumann, Chairman of the Board of Management of Bayer AG and Chief Sustainability Officer, "Sustainable action is an integral part of everything we do. With innovative solutions of our leading businesses in health and agriculture, we will contribute significantly to the sustainable development in the world."

Meaningful, bold advancements in science and fever-dream technologies will make the United States a global leader in critical climate solutions. But it's Illinois farmers who will bring the home-court advantage.



Mike Graham, Head of Plant Breeding, Crop Science at Bayer

A Business Case for Conservation

In 2020, the Illinois Soybean Association joined as an equal partner with the Illinois Corn Growers Association, doubling the size of the Precision Conservation Management program from 15 to 31 counties and building what will become a landmark conservation program influencing conservation decisions on farm and policy decisions in Springfield, Illinois, and Washington, D.C.



Precision Conservation Management
www.precisionconservation.org

Precision Conservation Management (PCM) is a conservation program initiated through funding by the USDA Natural Resources Conservation Service (NRCS) – Regional Conservation Partnership Program (RCPP). PCM combines precision technology and data management with farm business and financials to help farmers manage, adopt, and adapt conservation practices long term and improve on farm decision-making. Our No.1 goal is to integrate conservation practices and financial data to help farmers understand how specific management changes can influence both their environmental impact and their bottom line.

The program began in 2016 with its first RCPP grant. In 2020, PCM worked with 280 farmers in 16 counties on 223,000 acres, representing a sevenfold increase since the program began. PCM excitedly looks forward to expansion in 2021, adding four new regions in Illinois thanks to a partnership with the Illinois Soybean Association and an additional region in Nebraska sponsored by PepsiCo.

Farmers in five key watersheds in Illinois and Kentucky voluntarily participate in the program. Through collaboration with the local Soil and Water Conservation Districts (SWCDs), participating farmers can utilize the one-on-one technical assistance to guide them through conservation decisions and to aid in the evaluation of their farm relative to others in the program. PCM has over 30 contributing partners, including projects with PepsiCo, NASA Harvest, National Fish and Wildlife Foundation, Ecosystem Services Market Consortium (ESMC), Field to Market® and The Nature Conservancy (TNC). PCM thanks these partners for supporting our efforts as we work with farmers to help them understand and manage the risks associated with adopting new conservation practices.



To truly utilize the economic benefit of conservation practices, PCM asks farmers to suspend the belief that higher corn and soybean yields equal increased profitability. As farm organizations, we believe this quest for higher yields has been “baked” into farmers’

psyche for generations. PCM challenges farmers to consider that obtaining high yields, and the higher input costs that goal often requires, may not be the best economic or conservation model for Illinois farms and Illinois farm families.



The 2021 PCM report features aggregated data from the **827,000** acres of farmland



70% of the most profitable corn fields used an in-season nitrogen application strategy



93% of the most profitable corn fields applied nitrogen fertilizer at a rate that equaled 1.0 lb. N/bushel corn or less



44% of the most profitable soybean fields have no-till as the most common tillage practice



76% of soybean fields kept direct costs lower than \$149 per acre

Intrigued? Dive into six years of PCM data by reviewing the Business Case for Conservation on our website at www.ilcorn.org.





The Soil and Water Outcomes Fund provides financial incentives directly to farmers who transition to on-farm conservation practices such as no-till and cover crops that yield outcomes like carbon sequestration and water quality improvement.

Expanding Environmental Influence

The Soil and Water Outcomes Fund compensates farmers for conservation.

By Claire Weinzierl

Early this spring, the Illinois Soybean Association (ISA) partnered with the Soil and Water Outcomes Fund and other groups to catalyze farmer adoption of conservation practices that generate verifiable carbon sequestration and water quality improve-

ments, expanding into counties in northeast Illinois.

The Soil and Water Outcomes Fund is a partnership of AgOutcomes, a subsidiary of the Iowa Soybean Association, and ReHarvest Partners, a subsidiary of Quantified Ventures.

The Soil and Water Outcomes Fund was established

in Iowa, through working with municipalities, and trying to find solutions for them to work with farmers in upstream watersheds to address water quality issues. That concept, which is now three to four years old, predated the focus on agricultural carbon programs.

Initially, the Outcomes Fund was started as a water quality project, and the realization came that farmers doing water quality practices were also benefiting the climate by reducing greenhouse gases. Thus, the concept of water quality and climate mitigation naturally came together. The

Outcomes Fund has grown its pool of interested customers to include municipalities, state, and federal governments, and private companies who are all interested in securing water quality outcomes and climate mitigation.



Soil and Water Outcomes Fund

Illinois Expansion

The expansion into Illinois is targeting 20,000 acres of new conservation practice adoption in Bureau, DeKalb, DuPage, Grundy, Kane, Kendall, Lake, LaSalle, Lee, McHenry, and Will counties. However, the expansion is just a fraction of what the Soil and Water Outcomes Fund plans to do in 2021.

This calendar year, the Outcomes Fund plans to expand to more than 100,000 acres of cropland across Iowa, Ohio, and Illinois, significantly increasing opportunities for farmers to be compensated for implementing conservation practices that produce verified environmental outcomes.

In Illinois, the Outcomes Fund has been able to secure corporate partners — Nutrien Ag Solutions, PepsiCo, Ingredion — who all have made corporate commitments around reducing their greenhouse gas footprint in their supply chain. This was seen as an opportunity for farmers in Illinois to help implement conservation, while at the same time providing a way for those corporate partners to realize on-farm greenhouse gas reductions that help meet their goals.

"So, for example, farmers who grow corn in northern Illinois who sell the corn to an Ingredion facility, which then ends up in a Pepsi product, are reducing their carbon footprint and benefitting not only their farm, but also the corporate partners who are paying those farmers for the environmental outcomes," says Adam Kiel, Executive Vice President of AgOutcomes, Inc. "It's an emerging partnership between all parties — farmers

and corporations — to collectively work together on climate change mitigation.

"Similarly, on the water side, the Outcomes Fund is working with the U.S. Department of Agriculture to financially reward those farmers, who are producing the climate change benefits, for the water quality benefits that they're producing from the same conservation practices."

Farmer Enrollment

The Soil and Water Outcomes Fund provides financial incentives directly to farmers who transition to on-farm conservation practices such as no-till and cover crops that yield outcomes like carbon sequestration and water quality improvement. The environmental outcomes are verified using a combination of environmental modeling, in-field monitoring, and remote sensing. The water quality and carbon sequestration outcomes produced by farmers in Illinois are being purchased by a mix of public and private partners.

"I would tell a farmer interested in expanding conservation on their farm, that this is a way to monetize the benefits of that conservation and receive compensation for your time and effort as it relates to conservation," says Kiel. "I oftentimes compare it to producing a crop, except instead of a bushel of soybeans, it's a ton of carbon sequestered in your soil, or a pound of nitrogen prevented from entering waterways."

Kiel explains that this approach is just a different market opportunity that farmers

are not used to participating in, in terms of corn and soybean markets. But this is a market for environmental services that I think is very innovative and allows farmers to produce as much as they want and get compensated accordingly. The more a farmer produces in terms of environmental outcomes, the more opportunity there is for payment."

What's Next for the Soil and Water Outcomes Fund

By the time this publication reaches your mailbox, the Soil and Water Outcomes Fund will be operating in Illinois, Iowa, Ohio, Virginia, Pennsylvania, and North

Carolina, in addition to pending funding requests to expand the footprint in Illinois to 50,000 acres in 2022 and 50,000 in 2023, and also to expand the program into Indiana and Missouri.

The partnership with the Soil and Water Outcomes Fund is a component of ISA's efforts to scale sustainable agriculture practices in a farmer-centric and outcomes-driven manner, and ISA's hope is to demonstrate the value of sustainability to Illinois soybean farmers.

For more information on the fund or if you're a farmer interested in enrollment, please visit www.theoutcomesfund.com to learn more.

"We're making a living off of this ground and we're hoping our children will too."

- Dean Atkins, IL Farmer



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Investing in Agriculture

Our company was created by a group of farmers, and as an Illinois farmer, you likely understand the benefits biodiesel contributes to the rural economy by supporting nearly 2,000 jobs. In March 2021, CoverCress Inc. announced \$8 million in partner funding for a new low carbon oilseed, which included an investment from REG Ventures, LLC, a subsidiary of Renewable Energy Group, Inc. The innovative company is developing a new winter oilseed crop under the CoverCress™ brand, which is planted near corn harvest and harvested immediately before soybean planting. This enables three full season crops in only two seasons. Derived from pennycress, a native winter annual, the low carbon intensity oil from the plant represents a new scalable source of material for producing fuels like renewable diesel, biodiesel, and sustainable aviation fuel.

Right Place, Right Time

Our business and industry are at an inflection point. Waiting for future action is something the environment cannot afford, and with each day that a fleet fails to switch to cleaner fuels, harmful emissions continue to plague our communities. The lower-carbon solutions from REG are available now, at scale, with no equipment upgrades required. In 2020 alone, REG produced 519 million gallons of biodiesel and renewable diesel, resulting in 4.2 million metric tons of carbon reduction.¹ That's equivalent to carbon dioxide (CO₂) emission reduction from 1.7 million passenger electric vehicles on the road in one year², greenhouse gas (GHG) emissions from 10.4 billion miles driven by an average passenger vehicle³, or CO₂ emissions from 4.6 billion pounds of coal burned.³

Making an Impact Today

In the United States, the transportation sector is the largest contributor of GHG emissions, with medium to heavy-duty trucks accounting for about one-quarter

of those emissions.⁴ An important factor that is often overlooked is the cumulative effect of greenhouse gasses. Once released into the atmosphere, they persist for many years, meaning each year's GHG emissions add to those from previous years and continue to have a climate impact for many years after the year they were produced. This is why negative impacts from greenhouse gases in the atmosphere can increase so dramatically over time and also why simple annual accounting of GHG emissions fails to reflect their true environmental impact.

There are cleaner fuels available now, such as biodiesel and renewable diesel, which offer significantly lower GHG emissions than petroleum diesel and can be used today with existing engines. Using the highly regarded California model, known as CA-GREET⁵, to calculate the lifecycle carbon intensities (CI) of various fuels, REG calculated the CI reductions of our best-in-class biodiesel versus the following options:

- 88 percent reduction vs. ultra-low-sulfur diesel
- 85 percent reduction vs. compressed natural gas
- 65 percent reduction vs. a heavy-duty vehicle charged by the U.S. grid average electricity (2019 average)

Whatever options a consumer chooses to explore, the timing of the associated GHG reductions should be weighted at least as heavily as the long-term potential for GHG reductions in the distant future. By starting to save today, we can have the biggest beneficial impact on our environment for years to come.

Sources:

¹ Carbon reduction based on life cycle analysis of REG-produced fuels versus petroleum diesel

² Assuming annual travel of 11,484 miles/year and national grid average electricity versus gasoline using CA-GREET

³ [epa.gov/energy/greenhouse-gas-equivalencies-calculator](https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator)

⁴ www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions

⁵ ww2.arb.ca.gov/resources/documents/lcfs-life-cycle-analysis-models-and-documentation






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MAINTAINING OUR REPUTATION TO DELIVER

Whether shipping by river, road or rail, the soy checkoff is committed to ensuring America's infrastructure is a significant advantage for U.S. soybean farmers. We're looking inside the bean, beyond the bushel and around the world to keep preference for U.S. soy strong. And it's helping make a valuable impact for soybean farmers like you.

See more ways the soy checkoff is maximizing profit opportunities for soybean farmers at unitedsoybean.org



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