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October 2022


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INSIDE THIS ISSUE OF

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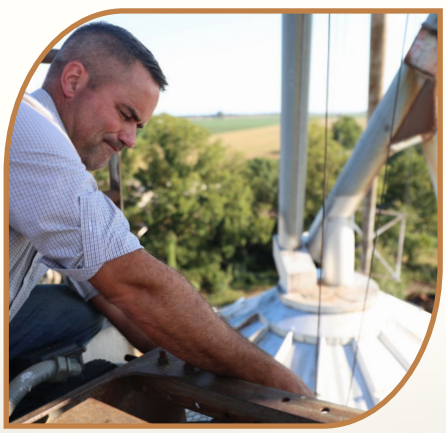

Cover Shot

The cover photo of the October issue was captured by Alex Porter of Dexter, Missouri. Pictured is MSMC Board Chair Aaron Porter of Dexter, Missouri.

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Contact Samantha Turner at (573) 635-3819 or sturner@mosoy.org for advertising information.

From The Field

Notes from Missouri Soybeans' Leadership Team

Harvest is upon us. We have anticipated this exact moment since early in the year. Many times, I get the same feeling I used to get the night before Christmas. I look forward with excitement to the blessings from above found in each field.

As Missouri's legislators make their way back to the state's Capitol, I hope they feel this same excitement and joy in their role and keep in mind the farmers in the fields back home. This session, we are going up against some tough battles as growers and rural Missourians, but I have no doubt our team of staff and farmer-leaders will make their voices count.

In Missouri, we have an upcoming U.S. Senate race that will be integral to the agricultural industry. In a fight to protect agriculture and rural communities, Missouri's soybean producers voted to support Attorney General Eric Schmitt for this seat. We believe that Schmitt will advance and implement policy impactful to the soybean farmer and remain a sound supporter of domestic agriculture, biofuels and generational agriculture with a strong stance against the death tax. As Missouri Soybeans, we simply ask that you exercise your right to vote and join us in making your voice heard.

Yields great or small, I still find this time of year so beautiful. Every fall when I climb into the cab of the combine, I count my blessings and enjoy the beauty of harvest. As you race to gather the produce that the Lord has provided to us, don't forget to enjoy the beauty of the season all around you and keep a strong hold on that excitement you possess for this profound profession.

Matt Wright - Missouri Soybean Association President

By now, combines are running hard across the state and harvest is well underway. I will admit, I am not upset to have this past growing season in the rearview mirror. From cold and wet to ridiculously hot and dry overnight, this season has certainly been full of challenges.

Unprecedented shortages in the supply chain made it difficult for producers to secure everything from inputs such as seed and chemicals to machinery and parts, and most certainly at a premium. But if you are reading this, I do not have to tell you about it. You most likely lived it. You understand the pressure many of us have felt and share in this experience. But one thing that amazes me time and again is the resilience, perseverance and faith that farmers from all across this great state possess that tomorrow will be better.

Missouri farmers are always looking to the future, making plans with the hope that, Lord willing, the seed that they so carefully plant will overcome what Mother Nature dishes out and become a bountiful harvest.

Our board of farmer-leaders manage your checkoff with that same fervor as we strive to invest in the future of our industry. I am constantly impressed with the passion these volunteer leaders possess to develop strategies and implement plans that will bring new genetics to the marketplace, expand existing demand and offer new alternative markets for the commodity we produce. Like me, they seek a future in which their children and their children's children can succeed in the industry that we all love, providing safe and sustainable food and fuel for an ever-growing population while overcoming what seems to be a growing list of challenges.

While the 2022 growing season may go down in our memory as one of those years we would like to forget, hopefully, harvest will hold some pleasant surprises. I pray that everyone has a safe harvest and look forward to a prosperous 2023.

Aaron Porter - Missouri Soybean Merchandising Council Chairman

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MISSOURI SOYBEANS

Letter from the Executive Director

"The Lord will indeed give what is good, and our land will yield its harvest." (Psalm 85:12)

Harvest is one of my favorite times of the year. The crisp, fresh air brings with it a season of newness and opportunity. Harvest is a time for reflection on the countless hours of diligent labor that went into producing a sustainable crop. Fall is a time of giving thanks and counting blessings. And hopefully, once you have reaped what you have sown, it is a time to rest and reset on the new year approaching.

Giving thanks is rooted within this season. We give thanks for healthy, prosperous lives, and we give thanks for family and friends. At Missouri Soybeans, we share our thanks for the farmers and ranchers who have crafted a bountiful food supply, as well as extend our gratitude to all of those who work along the soy value chain. We would not be here without all of you and the state's No. 1 crop – soybeans.

This year, Missouri Soybeans has had much to give thanks for, and we sincerely count our blessings as it has been a successful year. We successfully launched a completely redesigned mosoy.org, had numerous legislative wins, reached acreage goals with SOYLEIC soybeans, effectively allocated funds for a record-breaking checkoff, shared strategic insights from a collaborative Future State of Soy report, hired several new staff and added a multitude of new programs to our organization. I'm only scratching the surface.

We know you as farmers are putting in the long hours of windshield time and consuming copious amounts of coffee this time of year. While your team in Jefferson City isn't operating the combine or hauling beans to the elevator (unless you want us to), we are logging the miles and working around the clock to best serve you and ensure your beans remain viable in the marketplace.

In the past two months alone, our staff has hosted Soy Socials in each soybean district, staffed the booth and doughnut fryer during the Missouri State Fair, facilitated numerous field trips, participated in Delta Days in southeast Missouri, attended legislative farm tours, effectively executed the annual Crops and Conservation Field Day and so much more.

It may be the season, or simply the people I'm surrounded by, but I can't help but feel immensely thankful for the team we have built at Missouri Soybeans.

Thank you to our Missouri farmers for all you do to provide a safe, abundant food supply. God bless, good luck and have a safe harvest.

God Bless,

Gary Wheeler

Executive Director/CEO
Missouri Soybean Association
Missouri Soybean Merchandising Council
Foundation for Soy Innovation

SOYBEAN POLICY UPDATE

As the summer wraps up and both federal and state policymakers continue on the campaign trail, this time of year is normally one of reflection for the Missouri Soybean Association (MSA). We look back on our accomplishments from the previous session, focus on thanking our supporters and prepare legislative priorities for the upcoming year. This time around, things look a little different.

State Legislation

Special Session

After vetoing the omnibus agriculture bill in July, the governor called the legislature for a special session that was set to begin on Sept. 6. However, after several meetings with leadership, the legislature decided to not go to special session until Sept. 12, the Monday of veto session.

In his call for special session, Gov. Parson asked the legislature to work on two things: extend specific agricultural-related tax credits and Missouri Agricultural and Small Business Development Authority (MASBDA) tax credits to a six-year sunset as opposed to HB 1720's two-year sunset and secure a $700 million state income tax cut to bring the tax rate to 4.8%.

At the time this issue was sent to print, the legislature had not yet convened to debate on the tax cut or the extension of the agricultural tax credits. It is unclear whether they will try to override the governor's veto. This move would be unprecedented for a supermajority of the same party to override their governor on an issue.

Election

We are just one month out from the mid-term election in November. Missouri will choose a new U.S. senator on Nov. 8 and a new state auditor. All the Missouri State House of Representatives are up for election along with half of the State Senate. However, most of these races were already decided in the primary election in August.

After the election, the Missouri House and Senate caucuses will meet separately to choose their chamber leadership. These caucus leadership elections will determine the atmosphere and future of the chambers, particularly for the Senate, which has seen tension brewing for the past few years between conservative caucus members and current leadership.

Federal Legislation

Inflation Reduction Act

The Inflation Reduction Act (IRA) was passed by Congress and signed into law by President Biden this summer. While the IRA included many different provisions, arguably provisions that have nothing to do with reducing inflation, it tossed money at several ag-related programs:

- Extended the $1 per gallon biodiesel blender's tax credit through 2024;
- Added clean energy production credits (where biodiesel, sustainable aviation fuel (SAF) and other biofuels will qualify) from 2025 through 2027;
- Provided a credit ranging from $1.25 - $1.75 per gallon of SAF through 2024;
- Invested an additional $500 million to improve the Higher Blends Infrastructure Incentive Program at the USDA; and
- Included $46 billion for the USDA, and roughly $19.5 billion for agricultural conservation. Of that $19.5 billion, it added more than $18 billion in additional funding for existing farm bill conservation programs, including the Environmental Quality Incentives Program ($8.45 billion), Regional Conservation Partnership Program ($6.75 billion), Conservation Stewardship Program ($3.25 billion) and Agricultural Conservation Easement Program ($1.4 billion).

I'd like to note that the IRA also placed funds in the Rural Energy for America Program. Agricultural producers with at least 50% of their gross income coming from agricultural operations and/or small businesses in eligible rural areas can receive grant funding and/or guaranteed loan financing for renewable energy systems—and biodiesel is a qualifying renewable energy system.

USTR Chief Ag Negotiator Nominee

On Sept. 7, the U.S. Senate Finance Committee will vote to send the nomination of Doug McKalip to serve as Chief Agriculture Negotiator in the Office of the United States Trade Representative (USTR) to the full Senate. McKalip faced criticism from Republicans during his hearing regarding the Administration's lack of focus on traditional free trade agreements and increasing U.S. foreign market access, but notably McKalip's qualification for the role was not a major point of debate.

Emergency Relief Program

Thus far, about $6.4 billion has been distributed to 165,000 producers through USDA FSA's Emergency Relief Program (ERP). As a new phase of the program, USDA will send more than 18,000 producers new or updated pre-filled disaster applications to offset eligible crop losses. This action by USDA comes on the heels of a letter sent in July by a bipartisan group of senators asking USDA to consider solutions to issues regarding calculation and distribution of ERP payments.

Double-Crop Soybean Safety Net

I'd like to thank the Risk Management Agency (RMA) for its outreach to farm organizations regarding expanded crop insurance protection for double-crop soybeans. As double-cropping practices expand, MSA and some of our neighboring state associations sent a letter to Secretary Vilsack outlining priorities to consider.

Amidst the global food crisis caused by the war in Ukraine, American soybean farmers are a willing partner to produce crops that can help solve food insecurity around the globe. We reminded the secretary that improved access to crop insurance tools will help soybean farmers take the first step to considering new double-crop production practices that are not commonplace in some more northern regions of the country.

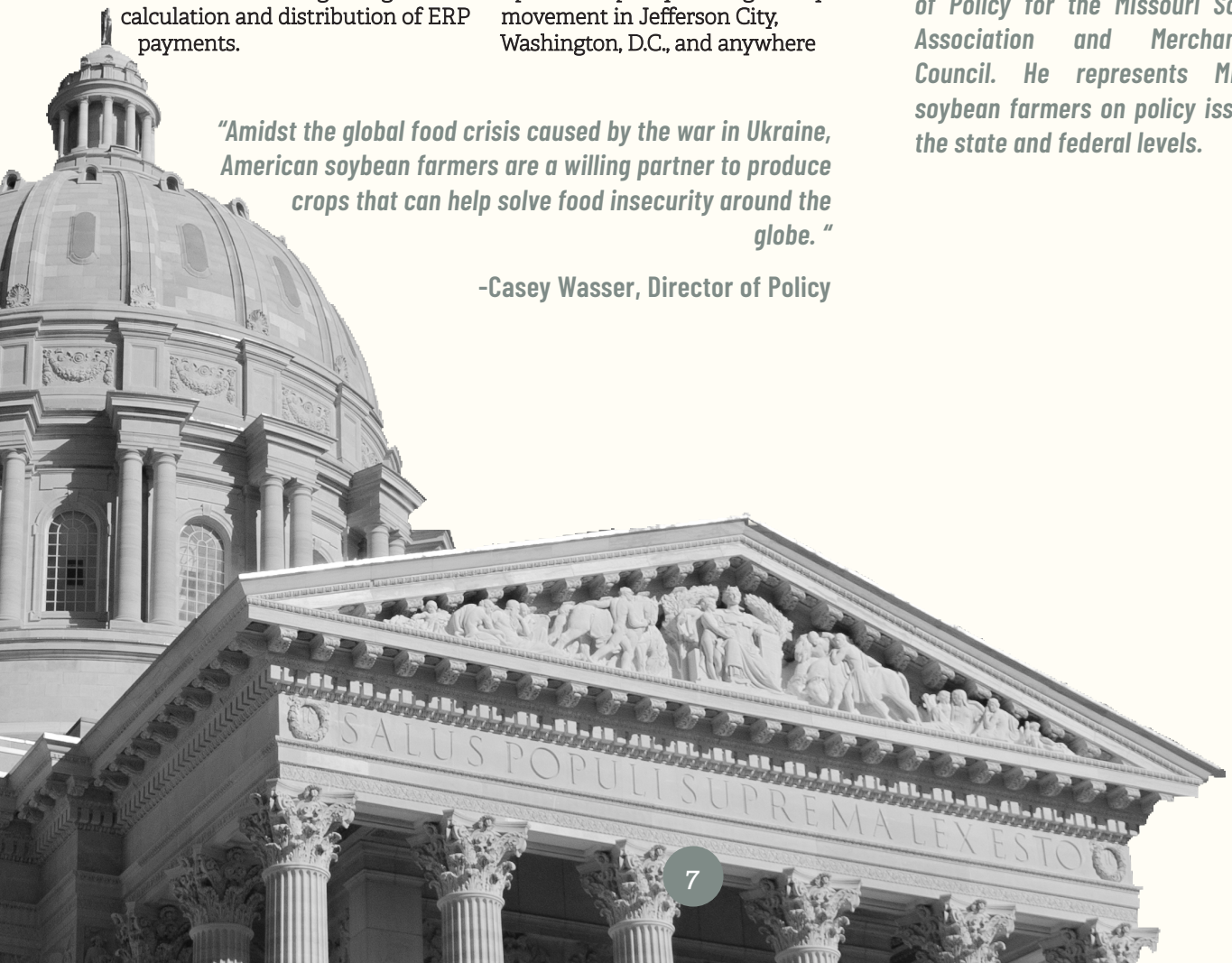
Want to know more?

MSA federal and state PAC contributors gain access to an exclusive newsletter for monthly updates on policy and regulatory movement in Jefferson City, Washington, D.C., and anywhere Missouri soybean farmers stand to be affected. The newsletter also provides more details on Missouri elections and the role MSA and you can play to impact the outcomes. Visit MoSoy.org or scan the QR Code for more details.

Casey Wasser serves as the Chief Operations Officer and Senior Director of Policy for the Missouri Soybean Association and Merchandising Council. He represents Missouri soybean farmers on policy issues at the state and federal levels.

"Amidst the global food crisis caused by the war in Ukraine, American soybean farmers are a willing partner to produce crops that can help solve food insecurity around the globe. "

-Casey Wasser, Director of Policy



MSA Endorses Eric Schmitt

In a fight to protect agriculture and rural communities, Missouri's soybean producers voted to support Attorney General Eric Schmitt for U.S. Senate.

"As the state's No. 1 industry, it is imperative we have a friend of agriculture in this U.S. Senate seat," said Matt Wright, Missouri Soybean Association (MSA) president. "We believe that Schmitt will advance and implement policy impactful to the soybean farmer and remain a sound supporter of domestic agriculture, biofuels and generational agriculture with a strong stance against the death tax."

Schmitt understands the need to prioritize Missouri's domestic energy independence and has plans to fight for more opportunities for the Show-Me State's farmers.

In Missouri, biodiesel supports more than 3,000 jobs and totals $1.3 billion in statewide economic impact. With the addition of a new Cargill crush plant, Missouri will garner increased soybean demand and an added annual production capacity of 62 million bushels of soybeans.

"The Biden administration's retreat on American energy independence increased prices at the pump and hurt Missouri's farm communities. We need to be investing in America and that means supporting farmers who feed and fuel our nation," Schmitt said. "In the U.S. Senate, I will partner with soybean farmers to fight for energy independence and policies that allow agricultural producers to thrive."

"Eric Schmitt understands agriculture and has long proven his commitment to Missouri Soybeans and the farmers we serve," said Gary Wheeler, Missouri Soybeans CEO and executive director. "As Attorney General, Eric has joined us in the fight to push back against federal government overreach and taken action to support the tools farmers need. We're confident he will do the same as our next U.S. senator."

The Association's farmer board champions Missouri farmers, being the voice to many audiences who impact agriculture. After more than 50 years, MSA continues to advance and protect the interests of Missouri soybean producers.

The Missouri Soybean Association is a statewide membership organization working to increase the profitability of Missouri soybean farmers through advocacy and education efforts across the state.

Membership Matters

The Missouri Soybean Association (MSA) has been fighting on behalf of our state's producers for more than 50 years and has produced countless wins on the state and national levels. From federal trade issues and taxation to supporting biodiesel and animal agriculture markets, MSA continues to support policy work that protects your freedom to operate and improves your bottom line.

As we head into 2023, your MSA team will be focused on biodiesel and farm bill programs. To stay updated on these issues and make your voice heard, join or renew your MSA membership by visiting **membership.mosoy.org.**

Membership giveaway winner Steve Howe from Wheeling, Missouri has been a Missouri Soybean Association member since 2001!

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CONSERVATION COLUMN

by Clayton Light

Harvest is now in full swing, and farmers are starting to enjoy the benefits of the hard work and long hours they have spent throughout the year. As the weather starts to cool down and leaves change color, it is the perfect time to start thinking about conservation.

The first conservation practice that comes to mind around harvest time is cover crops. Cover crops are not a new concept when it comes to conservation, but it is a practice that has been getting a lot of attention lately. The federal government is putting more money than ever toward conservation practices with a focus on climate-smart commodities. There is also a big push in the private marketplace for products that support sustainability, and that has been building a carbon market.

With so much funding pushing conservation practices, farmers will have more opportunities to plant cover crops than ever before.
If a farmer is wanting to take advantage of some of the funding for cover crops and wants to start planting covers for the first time, here are a few things to keep in mind:

Start small. It might seem easy to enroll all your acres at once into a cost-share program, but I recommend taking a couple of fields and starting small. It takes a few years to learn little tricks that will make you successful with cover crops.

Ask a friend or neighbor who has been using cover crops. Just a simple conversation can help give you valuable information to reduce mistakes.

Treat the cover crop like a cash crop. Think about what species you are planting and the timing of termination in the spring. In Missouri, we always have unpredictable weather, and if it is too wet to spray the fields, then your cover crop might get too tall and cause some yield drop. If you have good planning and start small, then you will be more successful and have a better chance to continue planting cover crops in the future.

Follow the combine. With the focus on harvest, most farmers do not have the time to spend drilling or broadcasting cover crop seeds. To have a successful cover crop, most farmers need to be following the combine and planting cover crops. This takes time and preparation. But, as new technologies develop such as robotic planters and drones, this may not be an issue in the future.

As this technology becomes more readily available and funding opportunities are provided, farmers will have tools at their fingertips to help with some of the common concerns with cover crops.

If you have any questions regarding cover crops, never hesitate to email me at clight@mosoy.org.

OUR SOY CHECKOFF™

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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**

HARVEST HELPERS

by Eric Oseland, PhD

If you were to poll a group of agronomists on their favorite segment of the growing season, my bet would be harvest would rise to the top. While planting is full of excitement, and the decisions throughout the season can be a challenge, harvest is the time to evaluate what worked, what didn't and what can be improved next year.

Each year, reoccurring thoughts tend to pop up. Whether its firsthand from the farmer, a research discovery or a lightbulb moment I had from the field, we wanted to share with you some tips as you enter this harvest season.

Next year, leave a check strip

Whether it is a fungicide, insecticide, sugars, micro packages or other, leave a strip where you don't apply. For your own farm knowledge and that of your adviser, it is nearly impossible to know if an application returned on investment, or what level without having a comparison. If using a commercial applicator, this may be more difficult, but with many reminders, it can be accomplished. Check strips can answer many questions at the end of the season and help advise decisions in future years. If you find yourself wondering this year if that fungicide pass paid, this is a good way to solve that in the future. Although it is too late to make this change for this year, keep this in mind for the next growing season.

Check the combine settings often

It is painful driving by fields in October and November that are blanketed with soybean seedlings. Although pod shatter can certainly contribute to this, I strongly recommend that farmers check their combine settings often throughout the day. The settings that were working well early in the day may be too aggressive later when beans are drier. Similarly, the settings that worked well the evening before might be spitting full pods out the back the next morning. Beans can vary in moisture widely throughout the day. Depending on the size of the soybean, only three seeds lost per square foot can equate to a bushel of loss. In some cases, I have seen 15-20 seeds per foot. There are many other ways soybeans avoid making it into the combine grain tank including shatter, lodging, header loss and more, so doing what can be done to direct all beans to the grain tank is important. Once the combine is set, try to consciously check loss each hour. Develop a system for measuring loss to know if you are operating at an acceptable threshold.

Take note of weed control

When the combine is rolling through the field, take note of what weeds were controlled well and what is escaping. During the past few years, we noticed some large-seeded broadleaf weeds such as cocklebur are escaping weed management programs. In other cases, maybe waterhemp is the issue. Regardless, there is likely a way your weed management program can be adjusted next year to compensate for those escapes, which will likely only get worse if no changes are made. For example, many farmers have moved away from some herbicide chemistry due to waterhemp resistance. This has resulted in a resurgence of cocklebur in many fields. By noting cocklebur is making a comeback in your field, a herbicide product can be added back to your program to help suppress this weed in the future. However, once a field is harvested, it is difficult to go back and determine what weeds were problematic the year before.

Enjoy the process and be safe

Most importantly, enjoy the harvest season and be safe. As our CEO Gary Wheeler would say, take time to look into the trees and think about your farm and what could be improved. There is nothing more exciting than seeing the results of your yearlong planning and labor.

As always, if you have agronomic questions or issues on your farm, or want to discuss needed research, contact eoseland@mosoy.org.

MSA 2022 YIELD CONTEST

Missouri farmers have consistently brought in big soybean yields in the annual yield contest, combining innovation and expertise throughout the growing season that pays off at harvest. The time to show those big yields is coming up quickly. There will not be an entry form required to enter the contest.

The annual Missouri Soybean Association (MSA) Yield Contest presents growers in each of the Association's seven districts a unique opportunity to compete against one another for top yield – a battle of the brands. The regional competition allows farmers to show their skills against others producing in similar soil and under similar weather conditions. The contest will continue to include district-level competition, recognizing winners in the tilled, no-till and cover crop categories. Top statewide winners will be recognized for dryland and irrigated production. Entries topping 100 bu/ac will continue to receive special recognition in the 2022 contest.

Entries must be from fields 10 acres or larger in size, with a harvest minimum of two acres, and located within Missouri. All participants must be at least 18 years of age. Each entry must be submitted on a separate harvest form. All contest harvest entries must use soybean varieties available in the marketplace for Missouri. No experimental or research line(s) are eligible for the yield contest.

MSA extends great thanks to the Missouri Soybean Merchandising Council and industry partners for continuously sponsoring this event and recognizing Missouri's elite producers with cash prizes.

Prizes will be awarded during MSA's district meetings and annual meeting in early 2023. Winners will also be recognized online and in the *Missouri Soybean Farmer*.

Harvest forms, rules and prize details are available on mosoy.org, or growers may request copies by calling the Missouri Soybeans office at (573) 635-3819. Enter today for a chance to win!

Submissions Due Nov. 30
No Entry Form Necessary

STAFFING UPDATE

Missouri Soybeans continues to expand its team at the Center for Soy Innovation in Jefferson City and Bay Farm Research Facility in Columbia. This summer, the organization added three new faces to the soybean staff, all working to serve the Missouri farmer.

"It's been wonderful to see the expansion of the Missouri Soybeans' team and watch the staff continue to collaborate and strategize on projects that make farmers' operations more viable," said Matt Wright, MSA president. "I can't wait to see what each of these staffers brings to the table. I can already gauge their knowledge, passion and eagerness to invest in the soybean industry."

To expand the team at the Bay Farm, Missouri Soybeans hired Brady Lichtenberg to help lead farmer-focused land stewardship projects as the organization's conservation programs manager.

In this role, Lichtenberg will work to increase grower and industry awareness about conservation-related issues and enhance participation in the United States Department of Agriculture (USDA) farm bill programs, Missouri Department of Conservation (MDC) projects and other opportunities available for production agriculture. Lichtenberg will also work to integrate the benefits of soil, water and wildlife conservation management practices into farmers' agronomic and economic business plans, as well as grow the return on existing conservation research administered by Missouri Soybeans.

Joining Lichtenberg in Columbia, Beth McCollum will serve as the new Bay Farm Research Facility administrator. Under this position, McCollum will serve Missouri's farmers by ensuring all ground-breaking research projects that producers invest in are managed in a professional and timely manner. The goal of this position is to provide expedited access to research to make farmers more efficient.

MSA also grew its policy team with the addition of Liz Henderson as the organization's first policy coordinator. In this newly created role, Liz will work directly with the senior director of policy and chief operating officer, Casey Wasser. Collectively, the policy team is responsible for the continued enhancement of leadership and influence within policy, politics and overall industry relations.

Protecting soybean farmers' interests takes many forms beyond policy development, including regulatory outreach and policymaker education. To expand the role beyond the walls of the Capitol, Henderson will work to promote the soybean checkoff program and policy education efforts through the coordination of legislative tours and sponsorships of agricultural events.

"I feel very fortunate to be able to grow our team of expert staff at each of our soybean-driven facilities," said Gary Wheeler, Missouri Soybeans CEO and executive director. "With these additions, we will be better able to deliver on what our soybean producers want and need."

Missouri Soybeans works diligently to serve the soybean farmer and meet the demands of the grassroots grower. With each change and addition to staff, Missouri Soybeans is better able to have a more boots-on-the-ground approach and meet the soybean farmer where they live and work. Please reach out to these individuals and wish them a welcome hello, and don't hesitate to call the office at (573) 635-3819 if you ever need assistance from the Missouri Soybeans' staff.

Brady Lichtenberg

Beth McCollum

Liz Henderson

The Ultimate Farmer Investment

USDA projects that 12 *billion* pounds of soybean oil will go into U.S. production of clean fuels, like biodiesel, this year. Clean fuel production has become a massive industry, supporting 65,000 jobs, creating $17 billion in economic activity and providing about 13% of the value of a bushel of soybeans. But none of this existed until the Missouri Soybean Merchandising Council invested in a new idea.

In the early 1990s, the soybean-processing industry was drowning in soybean oil. Mounting oil stocks and low prices were a drag on the price of beans, and farmers were already hurting from the farm crisis of the 1980s.

Missouri Soy funded the testing of soy diesel in pick-up trucks and, after positive results, it recruited other partners and established the National Biodiesel Board, a trade association created before a commercial product was even available.

Now, the National Biodiesel Board is Clean Fuels Alliance America, and the modest tests of soybean oil in pick-up trucks have yielded biodiesel, renewable diesel and sustainable aviation fuel. Clean fuels power on-road vehicles, heavy equipment, trains, ships and airplanes. They generate electricity and heat homes. More than three billion gallons of clean fuels were sold in 2021, a success by any measure, but we're aiming to double that by the end of the decade.

Farmers are a crucial part of the clean fuels industry, and this is an exciting time to get involved.

Join Us for Clean Fuels Conference 2023

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JANUARY 23–26

Waging A Worm War

by Jason Jenkins, Mill Creek Communications

Soybean growers are losing ground to a nematode nemesis as traditional sources of resistance break down.

Every season, Missouri's soybean producers are prepared to combat pests and diseases. From planting through harvest, they monitor their fields diligently. Should they see an issue, growers take action to limit losses to yield or seed quality.

But this strategy only works when they can see their adversary. And soybean cyst nematode (SCN) is different. Like a thief in the night, this pathogen that feeds on the roots of soybeans and other legumes can seemingly slip into a field and go undetected. Though no above-ground symptoms may be visible, SCN eventually announces its presence on the yield monitor, where losses of 15% to 30% or more can be realized.

Today, SCN is the most economically damaging pathogen for soybeans in North America. It's estimated that SCN causes more than $1.5 billion in damage annually, according to the SCN Coalition, a group of public universities, checkoff organizations and corporate partners working to raise awareness and combat the pest.

Traditionally, soybean growers have battled this subterranean foe by planting resistant cultivars that reduce SCN's ability to develop and complete its life cycle. But after decades of using the same source of resistance, the system is breaking down.

"I think a real argument can be made that we currently do not have sufficient SCN resistance in modern soybean cultivars," says Andrew Scaboo, an assistant professor at the University of Missouri who leads the Northern Missouri Soybean Breeding Program.

Battle Plan Breakdown

It's been nearly 70 years since SCN was first detected in the United States. The parasitic roundworm was found in North Carolina in 1954; its presence in Missouri was noted two years later.

"Generally, where you have soybean in the U.S., you have SCN present," says Mandy Bish, interim director of SCN Diagnostics at the University of Missouri. "It's found in all soybean-producing counties in Missouri."

Following SCN's discovery, soybean breeders went to work developing resistant cultivars. In 1968, the first set of SCN-resistant soybeans were released, offering a weapon in the war against this potentially devastating pathogen. More than 95% of commercial soybean varieties today derive their SCN resistance from a single breeding line called PI 88788.

But a multi-state survey in 2016 found that 100% of SCN populations in Missouri show elevated reproduction on soybeans with PI 88788-type resistance.

"As we've learned from herbicide-resistant weeds, if you use the same method of control over and over again, the pathogen is going to develop resistance, and that's what we're seeing now," Bish says. "It's providing some protection, but we're losing ground on that protection."

Other resistant lines have been identified, including one known as Peking. However, few commercial varieties using Peking-type resistance have been bred for soybean maturity groups suitable in most of Missouri.

As the leader of the Northern Missouri Soybean Breeding Program, Scaboo and his team are working to identify novel genes that control SCN resistance and introduce them into cultivars for Missouri growers. It's been known that one specific gene, called rhg1-b, confers SCN resistance in PI 88788, and that two other genes, rhg1-a and Rhg4, do the same for Peking. Recently, it was discovered that a third gene, Rhg2, in Peking provides even greater protection against the most virulent nematodes.

"True Peking-type resistance is a three-gene model, not a two-gene model," Scaboo says. "It's the interaction of these genes that gives you that resistance to the types of virulent nematodes that are found in Missouri.

"We hope to have at least one three-gene Peking-type variety released in the next one to two years," he adds. "Five years from now, we will predominantly release varieties that have these two- and three-gene combos."

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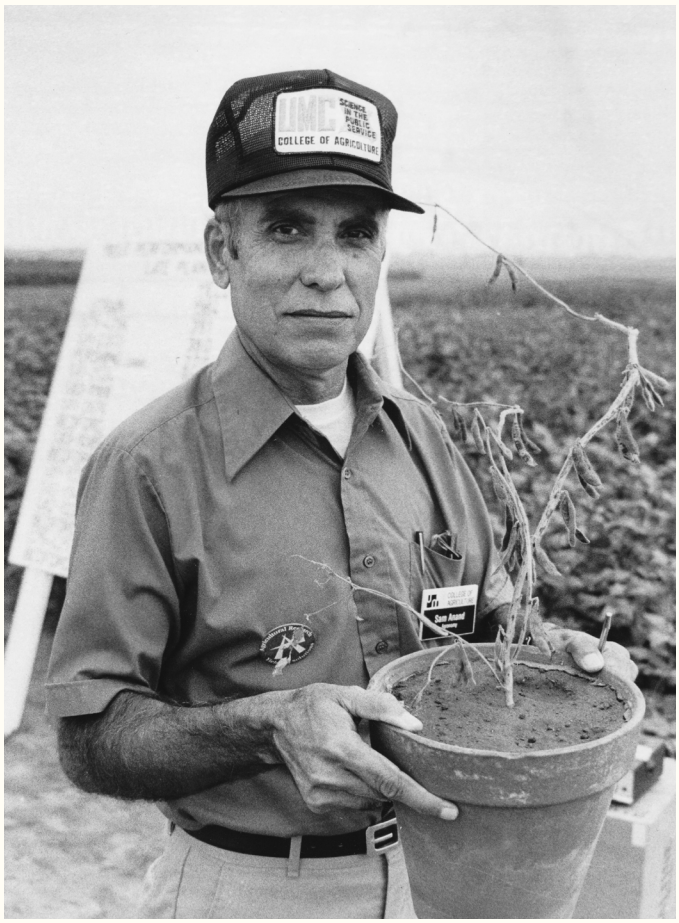
-Andrew Scaboo, Associate Professor at the University of Missouri-Columbia

Photo courtesy of USDA-ARS



Managing SCN

While new varieties with stronger resistance are in development, growers need to actively manage their fields for SCN. That process begins with a soil test, Bish says.

"It's best to take samples in the fall right after soybean harvest because that is when egg counts will be highest," she says. "When sampling a larger field, break it into 10- to 20-acre blocks. In each block, use a soil probe to take 15 to 20 subsamples that are 1 inch in diameter and 8 inches deep. More is always better. Combine them to create one pint-sized composite."

Sampling in a zig-zag pattern helps ensure that the soil collected is representative of the block. Currently, thanks to support from soybean checkoff funds, the diagnostic lab is able to offer SCN egg counts on four soil samples at no cost to Missouri growers.

"Just note 'free farmer sample' on your submission form," Bish adds.

By themselves, the microscopic nematodes can only move inches through the soil. They are more likely to be spread by anything that moves soil, including wind, water and

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machinery. Bish recommends that when feasible, fields with known SCN populations should be worked last to prevent spreading the nematodes to other fields. Power-washing planting and tillage equipment between fields also reduces the risk of transferring infected soil.

Rotating the SCN-resistant soybean variety that's planted in a field can also help keep nematodes in check. Though most commercial varieties use PI 88788 for resistance, they do vary in the number of copies of the rhg1-b gene they contain.

Another consideration is the use of a seed treatment such as Saltro or ILEVO. In a Missouri Strip Trial study, for example, soybeans treated with ILEVO averaged 2 bushels per acre more than untreated soybeans. At locations where sudden death syndrome was observed, the advantage increased to 3.5 bushels per acre.

While the cysts that contain the nematode's eggs can persist in the soil for years, SCN is parasitic and requires a host. Planting a non-host crop in a field helps break up the SCN life cycle and reduce egg counts.

"A good rotation for Missouri would be to follow soybean with corn, then follow the corn with a non-host cover crop such as cereal rye before coming back to soybean," Bish says. "You're not going to eradicate SCN from that field, but you can reduce them."

Missouri soybean growers interested in receiving free SCN egg counts on four soil samples can download the sample form at www.scndiagnostics.com or call 573-884-9118 for more information.

MFA Crop-Trak Consultant Jacob Tracy collects a soil sample in a soybean field near Macon, Missouri, following harvest.

Photo courtesy of MFA Incorporated.

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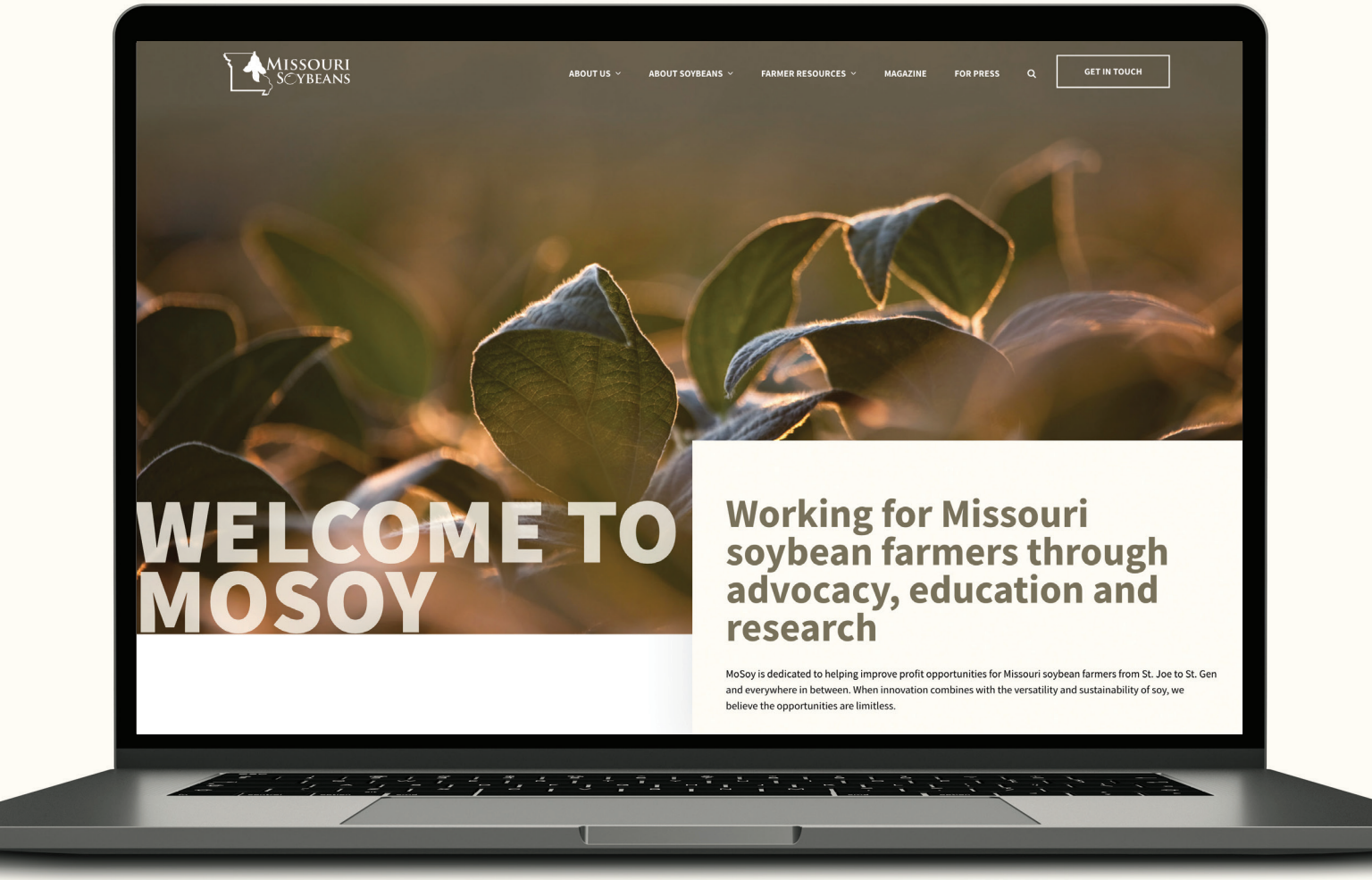

VISIT MOSOY.ORG

Ready, Set, Raceway

by Karen Coble Edwards

The Missouri Soybean Merchandising Council is investing in ways to create a soy market in Cambodia through the utilization of in-pond raceway systems.

Missouri Soybean Merchandising Council (MSMC) funds are making it possible for the American Soybean Association's World Initiative for Soy in Human Health (WISHH) to grow Cambodia as a long-term U.S. soy market. WISHH introduced the first Missouri soy checkoff-funded in-pond raceway systems (IPRS) in Cambodia in 2020 and is already working on fourth-generation models. These systems are built to help Cambodian farmers overcome their unique fish production challenges, which will allow them to use more soy-based pellet feeds.

Missouri soy checkoff resources continue to support WISHH's work, including the ongoing services of a global aquaculture expert in Cambodia. Leonard Rodgers, Ph.D., WISHH's aquaculture adviser in Cambodia, used his decades of experience to adapt raceway designs he worked with at Auburn University to meet the southeast Asian nation's unique challenges. The resulting IPRS are a breakthrough technology that continues to improve.

"The most important takeaway from my time in Cambodia is things that work in Vietnam, Thailand and China don't necessarily work here," says Rodgers. "The biggest issue that Cambodian farmers face is they have a wet season and a dry season. During their dry season, the land becomes almost like a desert, so farmers struggle. If they don't have rainwater or runoff, they are stuck. Vietnamese and Chinese aquaculture requires lots of water to flush through the ponds, so that isn't an opportunity here."

WISHH's Cambodian IPRS have floats that allow them to rise and fall with the water levels in the ponds. Therefore, they offer the farmers a new management tool to keep production going despite the weather. The raceways also offer the farmers flexibility to move to different ponds. "You unbolt it, take it apart and move it," says Rodgers.

The IPRS also help farmers manage fish in Cambodia where they traditionally use homemade feeds with rice bran as the main ingredient.

"It's low in protein, so you have to feed a lot of it to put muscle on the fish," says Rodgers.

"An in-pond raceway helps the farmers monitor their biggest cost outlay, which is feed," stresses Rodgers. "Cambodian fish farmers' feed costs usually constitute 70% to 90% of their cost of production. In an IPRS, farmers can monitor the feed as they put it in and make sure they don't overfeed."

Meanwhile, WISHH is working with Cambodian feed mills to manufacture soy-based feeds for aquaculture. One of these feed mills is already a U.S. soy

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WISHH works with international associations to build lasting potential for U.S. soy trade.

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WISHH is a program of the American Soybean Association and is funded in part by the United Soybean Board and state soybean board checkoff programs.

customer and has just made a multi-million-dollar expansion. Through the United States Department of Agriculture (USDA) Food for Progress Project in Cambodia, WISHH sent a technical expert to the mill to work with them on their extrusion equipment that serves their production of feeds for fish, swine, duck and more.

Soy-based pellet feeds in IPRS also offer an important edge over the common feed rations that literally pollute the ponds.

"As you increase feed loading in the pond, you decrease the ability of the pond to hold fish because the pond has to serve as the waste management system as well," says Rodgers. "A lot of oxygen is required to break down the traditional rations that rot uneaten in ponds, so fish yields are going to be lower."

WISHH is leveraging MSMC checkoff investments with funding from the United Soybean Board (USB) to promote the fourth-generation models of the IPRS in Cambodia. Rodgers found and assisted a Cambodian fabrication center that was making playgrounds and other metalwork.

Fabrication center founder Darren Polischuk saw the potential for a new product that their center could train young people to manufacture and test in ponds that they built to allow

them to get rapid feedback for their product innovation. This fabrication now markets the IPRS in a turnkey set of four raceways. The sets include all the equipment a farmer requires, including controls, blowers and backup power generation systems that are key to fish survival in rural communities where electrical supplies are often inconsistent.

The newer model IPRS have sunscreens to help control the temperature as well as allow the farmer to lock four raceways together and walk on sideboards as they feed and manage their fish. The IPRS now allow the farmer to put partitions in them so they can manage the fish for parasite treatments. The partitions also allow the farmers to sell their fish in batches, which can help them gain a better market price.

The ability to stagger fish production is an exciting opportunity for Tim Thy who installed the raceways at his ponds located near the city of Siem Reap, a major tourist destination. He had worked in the tourism industry until the pandemic dried up his business. To find a new source of income, he installed three raceways. He started with tilapia and is now using his raceways to expand into additional fish species based on market demand and his ability to separate the fish in the IPRS.

WISHH's unique Missouri soybean checkoff-supported in-pond raceway systems allow farmers to manage their use of soy-based feeds.

Photos courtesy of WISHH

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Field to Finish

by Madelyn Warren

From the rolling hills of northwest Missouri to the fertile plains in the southeast corner, soybeans are grown, transported or processed in nearly every county. As the growing season comes to an end and harvest begins, here is a brief glance at some of the faces beyond the field and behind each step of the soy value chain.

Meet Clarissa Cauthorn

Beck's Hybrids Seed Adviser

On a Saturday in 2015, Clarissa Cauthorn crossed the stage at the University of Missouri's commencement ceremony. On Sunday, she drove to Beck's Hybrids to begin her new career and three months later, she married a farmer, Andrew Cauthorn. It was a very busy year for Clarissa. However, as she celebrates her seventh year at Beck's with her husband and two sons by her side, it is safe to say that she wouldn't have it any other way.

For Clarissa, selling seed is about a servant's mentality and putting the grower first.

"When you're looking at the front end of the value chain, make sure that those you buy your seed from have your best interests in mind," said Clarissa.

The process begins with hours of conversation to understand the grower's unique needs. While some farmers are early adopters, others prefer consistency on their operation and choose the same seed variety each year. In the spring, dealers make sure each farmer has their product and that it is placed properly. However, the process doesn't end there. In the summer and fall, sales representatives play many roles. Whether that is answering agronomic calls, working to determine yield or educating growers on the newest research findings, a dealer's job never ends.

"For most of us, we only get 40 opportunities in a lifetime to put a crop in, watch it grow over the summer and harvest it," said Clarissa.

"I think farmers sometimes get caught up in the day-to-day and miss the opportunity to learn about what they need to be doing in the next three years. That is where a seed salesman comes in."

As the fields are finally harvested, some farmers choose to store their beans on site while others bring truckloads to the co-op to be stored or marketed.

Meet Paige Brock

Ray-Carroll County Grain Growers Grain Originator

"Producers need to know what their break-even point is and set their goals," said Paige Brock, grain originator for Ray-Carroll County Grain Growers. "You can plan and predict, but the grain markets are a world of gray and are always shifting."

For most of her career, Paige worked as an agriculture teacher, educating youth in the classroom. Now, she spends most of her days talking to farmers and doing a different type of educating, one that deals mostly in contracts.

As a grain originator, Brock works with producers in the area to help them understand their options when marketing grain. Originators work diligently to build a rapport with farmers, communicate their elevator's basis and explain the different types of contracts available to them. While their role doesn't allow them to advise on financial actions, they are able to report statistical information to help producers make more informed decisions.

"Every merchandiser or originator wants to make their company money," said Paige. "But we're cheering on the farmer, too. Farmers must do their research. They need to look at what's going on in the world before making a decision. But they also have to know that there is no such thing as a sure thing."

After contracts are locked in, beans are then sold and transported to the nearest crush plant, where they are processed for commercial use.

Meet Jeff Johnson

Cargill Inc. Soybean Processing Plant Facility Lead

Crush plants provide immeasurable value to the soybean industry by breaking down the powerful bean into meal and oil for a variety of uses. Jeff Johnson, facility lead for Cargill's soybean processing plant in Kansas City, Missouri, is just one of the many transplants that benefits the state and plants like Cargill's.

Jeff began his career with the company as an engineering student in Gainesville, Georgia and now oversees the operations for the Kansas City location, which has a crush capacity of 64 million bushels

"I enjoy helping solve problems that directly impact our customers," said Jeff.

"I'm always working to make our plant more reliable and have a team that is better trained so that we can solve problems faster without compromising any of our safety standards."

The crushing process for soybeans is quite extensive. On location, the soybeans are cleaned of foreign material and conditioned before having their hulls removed. Afterward, a process called "flaking" allows the oil to be extracted. The bean is then toasted, cooled and ground into meal. This meal, which is typically 46% to 48% protein, is then transported by truck and rail and primarily used in animal feed. The end result for the oil is less clear. Customers either purchase crude oil or that which has been cleaned of contaminants through a process called "degumming." Soybean oil has limitless opportunities to be used in food, feed, fuel or fiber as a more sustainable alternative.

While Cargill's Kansas City location has its own biodiesel plant, Missouri is home to seven others as well.

Meet Cliff Smith

Mid-America Biofuels General Manager

Cliff Smith probably didn't know quite what he was getting himself into when he was approached by Biofuels LLC investors and ADM to step into the role of general manager at the Mid-America biodiesel plant. Now, each day looks a little different. Whether he is at the plant directing operations or in Washington, D.C., advocating for the industry, most of his time is spent talking about all things biodiesel.

The plant manager is a passionate advocate for the alternative fuel. He works closely with Clean Fuels Alliance America to communicate to policymakers the importance of biodiesel legislation and support on the federal and state levels.

"Biodiesel provides a drop-in replacement for traditional diesel and is available today rather than waiting on a less realistic alternative for the future," said Cliff. "It allows for less dependence on foreign oil and creates fewer emissions."

The renewable fuel is made from plant-based oils, primarily soybean, through a process called transesterification, which separates the methyl esters from glycerin.

The biodiesel industry has a long history with Missouri. In fact, farmer-leaders from the state were the first to come together to create the high volume, value-added use for soybean oil. With 86% fewer carbon emissions and a statewide economic impact of more than $1.3 billion, the farmers were successful.

"The production of biodiesel is a direct benefit back to the farmers in the state of Missouri," said Cliff. "The soybeans they are selling to processing plants, which are then made into biodiesel, help that bottom line and adds to the value of the soybean."

The powerful soybean has a long journey before being made into our food, feed, fiber and fuel. Biodiesel is just one result of the endless possibilities that the soy value chain represents. Even then, while one season's harvest is being transported to retailers across the globe, seed advisers like Clarissa are already working with farmers to begin preparations for the next year.

MSMC CHANGES CHAIR AND RECOGNIZES RETIREES

Southeast Missouri soybean farmer Aaron Porter was elected as Missouri Soybean Merchandising Council's (MSMC) chairman by the checkoff's board of directors at its summer meeting in July. As chairman, Porter will lead 13 farmer-leaders elected to serve and oversee Missouri's soybean checkoff investments.

"The responsibility of the Missouri Soybean Merchandising Council is to give Missouri soybean farmers the best opportunity to profit through strategic checkoff investments," said Porter. "As the new chairman of the checkoff, I believe in striving to maximize the farmers' bottom line around the state through innovative research-derived solutions, comprehensive consumer and stakeholder engagement, and novel market development strategies."

Porter, from Dexter, Missouri, represents District 7 on the MSMC board. Porter farms full time with his father-in-law and wife, growing corn, cotton and soybeans.

This is Porter's first term as the Council's chairman. Porter succeeds Kyle Durham, two-year chairman from Norborne, Missouri — representing District 2.

"I am certain Aaron will serve the checkoff well as our new chairman," said Gary Wheeler, Missouri Soybeans CEO and executive director. "Aaron is an incredibly humble leader, bringing with him a level head and intentionality to the board. Missouri Soybeans can rest assured Aaron will add an intense thoughtfulness to his chairmanship."

Porter previously served as the council's vice-chairman and has been on the board for six years.

Additions to the council's executive board include Mark Lehenbauer as vice-chairman and Kevin Mainord as secretary/treasurer. Lehenbauer and Mainord represent Districts 3 and 7, respectively.

MSMC also welcomes two new board members, Nathan White and Marc Zell. White resides in Ray County and is serving as the District 1 director upon John Kelley's retirement. Zell is a producer from Linn County and will be replacing Bob Littleton as he retires from his position.

Missouri Soybeans extends their great thanks and appreciation to Kelley and Littleton for their years of service and expertise in the soybean industry.

"The dedication Bob and John provided to the board cannot be understated," said Wheeler. "Their strategic thinking, passion and teamwork will be sorely missed, and the soybean farmers of Missouri should be proud of these gentlemen's hard work during the past several years."

MSMC is committed to promoting and advancing innovative research, production and marketing solutions to maximize Missouri soybean farmer profitability.

Aaron Porter, New MSMC Chair

John Kelly, District 1 Retiree

Bob Littleton, District 2 Retiree

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Hungry for Harvest

Pumpkin Bread

1 cup all-purpose flour
1/3 cup defatted soy flour
1 teaspoon baking soda
1 teaspoon salt
1/2 teaspoon ground cinnamon
1/2 teaspoon ground nutmeg
2 eggs
1 cup granulated sugar
1/4 cup water
3/4 cup canned pumpkin
1/3 cup soybean oil

Preheat oven to 325 degrees.

Combine all-purpose flour, soy flour, baking soda, salt, cinnamon and nutmeg in medium bowl; stir to mix.

Combine eggs and sugar in large bowl; mix well.

Add water, pumpkin and oil to eggs and sugar; mix well. Gradually add flour mixture to pumpkin mixture, mixing until just combined.

Transfer batter to 9-by-5-inch loaf pan that has been sprayed with non-stick cooking spray.

Cook for 45-50 minutes, or until wooden pick inserted in center comes out clean.

Let cool for 10 minutes, then remove and serve.

Beanie Black Widows

1 cup graham cracker crumbs
1-1/2 cups soynuts, crushed
1 cup flaked coconut
3-1/2 cups powdered sugar
1 cup crispy rice cereal
1 cup peanut butter
1 cup margarine, softened
1 tablespoon maple or coconut extract
1 (16-ounce) package of chocolate almond bark
Mini M&Ms and pretzel sticks for decoration

Combine graham cracker crumbs, soynuts, coconut, powdered sugar, rice cereal, peanut butter and margarine in large bowl. Mix well with electric mixer. Add maple/coconut extract.

Roll mixture into walnut sized pieces.

Refrigerate for 1 hour or until firm.

Melt almond bark and dip chilled balls into chocolate.

Top with M&M eyes and pretzel legs and return to fridge.

Let chocolate harden in refrigerator and serve.

Harvest Puppy Chow

1 cup semisweet chocolate chips
1 cup creamy peanut butter
1/2 cup margarine
1 box of Chex cereal
1 cup salted soynuts
1 (16-ounce) package powdered sugar

Combine chocolate chips, peanut butter and margarine in saucepan; melt over low heat, stirring well.

Combine cereal and soynuts in large bowl with tight fitting lid.

Pour melted chocolate mixture over cereal mixture. Put lid on bowl and shake gently.

Sprinkle powdered sugar over mixture and shake again.

Let cool and serve.

Recipes Tested by:
Amber Meyer &
Ryan Siegel

Photos by: Ryan Siegel

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Blessings and Bull's-Eyes

MSMC Board Chair Aaron Porter shares his memories of farming, family and faith.

Q: Tell us a little about yourself.

A: I love farm life. Nothing better, except maybe a little ranch in the middle of the Rockies where I can run some momma cows and hunt elk.

I met my wife, Sarah, while at the University of Missouri–Columbia. We have three children: Alex, Ava and Adam. In them I am truly blessed.

Q: Tell us about your farm.

A: My father-in-law and I, along with my wife and children, raise irrigated cotton, corn, soybeans and sweet corn in Stoddard County near Essex.

Q: What is your involvement in agriculture?

A: I serve on the Stoddard County Farm Bureau Board. I am also a member of the MU Seed Advisory Committee, Strip Trial Program Farmer Panel and the Fisher Delta Research, Extension and Education Center Advisory Board.

Q: Should tractors be red or green?

A: I bleed green.

Q: What is your favorite planting or harvest snack?

A: Great Value Deluxe Mixed Nuts

Q: Tell us about your favorite memory on the farm.

A: Hitting round bales with the pickup-mounted bale spear at 20 mph. It was my job to watch out the back glass and make sure grandpa hit the bull's-eye. I'd get a knot on my head, and he'd get a good laugh. Fell for it every time; would love to do that over again.

Q: Who is your favorite farm influencer?

A: I follow what the University of Missouri, Mississippi State, Georgia and Illinois Extension Services say. They all provide great research that I use to aid in decision-making. I also really like Soybean Research Information Network (SRIN). It is a tremendous resource for soybean-related information. Check it out next time you have an agronomic question about soybeans.

Q: What are you listening to while working?

A: Right now, Ian Munsick

Q: Does your family implement any sustainable practices?

A: We use cover crops, terraces and tile on certain fields to alleviate erosion. We also no-till all of our beans to make them easier to plant into the next spring.

Q: Who is your biggest influence?

A: My Grandpa Miller is the reason I do what I do. He taught me a lot about farming and a lot about what makes a life well lived.

Q: What would you tell your kids or other next-gens to encourage them to be involved in agriculture?

A: I advise my children to find something they love that we cannot do without. Nothing adheres to that rule better than agriculture. The old saying goes, "you need a farmer three times a day." Whether a farmer, crop geneticist, chemical engineer, agronomist or veterinarian, all are essential in providing food, fuel and fiber. Agriculture is a rewarding endeavor that must rise to the challenge of meeting the needs of a growing population.

Q: How do you take your coffee?

A: Contrary to my doctor's advice, I get my caffeine fix from Pepsi.

Photos courtesy of Alex Porter


TREMOR

Soybean Safety

by Karen Funkenbusch, University of Missouri

Harvest can be an exciting time on the farm. However, it is also one of the busiest and most dangerous seasons of the year for farmers and rural families. Working long hours can result in fatigue and stress contributing to mistakes that can often lead to severe injuries.

The best safety advice is to slow down, be prepared and put practical systems in place to have a healthier harvest.

Taking care of you:

- Do a mental tuneup by making time, even during busy days, to do something that you enjoy.
- Get proper sleep during harvest and take frequent breaks throughout the day to stay alert.
- Eat nutritious meals and snacks and stay hydrated to help you stay strong and productive.
- Tune in to your body. Pay attention to your signs of stress and respond accordingly. Seek prompt medical attention as needed.
- Use good body mechanics. Some fall crops require hand-harvesting and heavy lifting. Remember it is better to make multiple trips with lighter loads than to strain your body by lifting or carrying too much.
- Use personal protective equipment such as ear plugs, gloves and safety glasses when appropriate.

Have an emergency plan:

- Be prepared. A safety plan with procedures ensures when there is an emergency, everyone knows how to respond accordingly.
- Have a first-aid kit stocked and fire extinguisher easily accessible, and make sure everyone knows where they are and how to use them.
- Know who to call when there is an emergency.
- Carry a fully charged cell phone or two-way communication device.

Equipment:

- Read and follow maintenance recommendations found in the equipment owner's manual.
- Keep your equipment in good working condition.
- Check to ensure all guards and shields are properly positioned.
- Use tractors equipped with rollover protective structures (ROPS) and wear a seatbelt.
- Be sure recommended lights, flashers and warning indicators work properly.
- Install the slow-moving vehicle (SMV) emblem and make sure it is visible.
- Always turn off the tractor before checking, unclogging or servicing equipment.
- Use an escort vehicle when necessary.
- Wear fitted pants, tuck in any loose shirt tails and avoid wearing scarves when working near machinery.

Grain:

- Always lock/tag out when unloading equipment, before entering bins or doing maintenance.
- Do not enter bins while the grain is being loaded or unloaded.
- Ensure guards and shields are in place on all grain-handling equipment.
- Wear a dust mask or respirator.
- Wear a safety harness and secure a lifeline when entering bins.
- Never work alone in a bin; have someone watching outside the bin that can contact you and call for help.
- Lower augers, ladders and other implements to avoid hitting any electrical lines.
- Check bins for grain condition and heating during storage periods.

For More Resources Visit Extension.org/AgSafety

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Soybeans in SEMO

by Samantha Turner

Soybean production in the Bootheel of Missouri looks a little bit different. From irrigation to port accessibility, the methods of growing and marketing soybeans are unique compared to the rest of the state.

SEN. BEAN HOSTS FIELD DAY

Soybean production looks a little different in southeast Missouri (SEMO). As you head south on Interstate 55, just past Cape Girardeau, you begin to enter the flatlands of SEMO soil. It is home to sweet tea, soybeans and mosquitoes large enough to carry you away.

Filled with cotton, rice, corn and beans – and everything in between – southeast Missouri is the most agriculturally diverse region of the state. Not only is it rich in its diversified row crops, but the Bootheel is the Show-Me State's largest soybean-producing district.

For SEMO, soybeans are an economic engine with roots planted on nearly 19,300 farms and 1 million acres. Across this bountiful acreage, this district has an output of sales of more than $1 billion. In New Madrid County alone, the soybean industry accounts for more than 580 jobs and $424 million in revenue. Just last year, the region raised more than 57 million bushels of beans, according to the National Agricultural Statistics Service (NASS).

For many producers, including Missouri state Sen. Bean, Missouri Soybean Merchandising Council (MSMC) board member Baugh Meredith and farming duo Will Hunter and Laura Collins, soybeans are a fundamental piece of the family farm.

A SEMO Staple

"Soybeans have always been a staple in our operation," states Sen. Bean. "Soybeans make for an excellent rotational crop. With the diversity on our farm, soybeans continuously perform well in a rotation with cotton and rice and put nutrients back in the ground for the next growing season."

Bean represents Missouri's 25th senate district. In his position, he is a strong advocate for the agricultural industry focusing on property rights, biodiesel and the soybean checkoff.

As a fifth-generation farmer, Bean shares he has always had a soft spot for soybeans. The senator served on MSMC for 13 years before leading up the national checkoff on the United Soybean Board.

Soybean supporters Laura Collins and Will Hunter share a similar sentiment to Bean.

"What makes soybeans so promising is that they are such a versatile crop and can be grown in most conditions," said Hunter.

Collins and Hunter are sister and brother farming partners and collectively own and operate Willow & Co. in Bell City, Missouri.

"The farm is mostly soybeans these days," said Collins. "We have found that input costs are less with soybeans, and we can receive a proportionate cost return on the crop."

The Willow & Co. operation farms 6,500 acres growing cotton, rice, corn and soybeans, with more than 3,500 acres planted in beans.

"The Bootheel grows good crops, and we can generate just as much good net revenue out of our soybeans as we can any other crop," said Hunter. "Each soybean acre makes our family operation viable and sustainable for the next generation."

Increased Irrigation

According to most farmers in southeast Missouri, what makes production stand out most is the region's irrigation system.

Thanks to the Bootheel's access to an abundant aquifer, many farmers utilize irrigation. According to the Missouri Department of Natural Resources (DNR), there are more than a dozen major aquifers underlying various parts of the state. Generally, an aquifer is defined as a saturated, permeable geologic unit that can transmit large quantities of water under ordinary hydraulic gradients.

Missouri is divided into eight groundwater provinces, and SEMO is known as the Southeastern Lowlands Groundwater Province. This province includes 11 counties and is more than 3,900 square miles. Because SEMO's aquifer sits so high, the producers in the region are better able to access the area's water source and limit the drilling of wells that take time and resources.

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LAURA COLLINS & WILL HUNTER

However, soybean growers wouldn't be able to best utilize this aquifer if it wasn't for the Little River Drainage District (LRDD), which allows the excess water to drain off the flatlands.

"In the Bootheel, we are very dependent on drainage because we are so flat," said Collins. "And we are dependent on irrigation because our soil demands it."

The LRDD helps protect the rural lands of southeast Missouri by converting the region from a swamp where mosquitos and snakes once ruled to some of the most productive in the Midwest. According to LRDD, the counties that make up the district contribute nearly one-third of all of Missouri's agricultural income, providing a lifeline to the region's economic development. Under the LRDD, more than 300 miles of levees are maintained and 2 million acres can be drained.

According to MSMC board member Baugh Meredith his family has been irrigating before he started farming. Meredith is a third-generation farmer from Caruthersville, starting full time on the farm in 1977. Today, Meredith is bringing along the fourth generation to the farm with his son, B.T.

"Irrigation in the south is mostly pivot and furrow irrigation," said Meredith. "Flood irrigation is also popular, especially in the rice-producing areas, but I have seen a lot more pivots going up in recent years. There are pros and cons to all irrigation, but the important thing is that our beans are healthy and hydrated."

To aid with irrigation and ensure it reaches each part of the field, SEMO's farmers typically utilize a hipper to plant beans on an elevated bed and set soybeans in 36- to 38-inch rows. This practice allows furrow irrigation to flow down each row and enter the bean's root system. Producers do this by laying miles of poly pipe at the high end of the soybean field.

Willow & Co. Farms share they are 100% irrigated on all acres. They stated irrigation doesn't always guarantee them a good crop but provides flexibility.

"With as much irrigation as we have, we are a work in progress all the time. It's not as simple as planting your field, harvesting a crop and walking away," said Hunter. "Every acre is strategically managed and cared for intensively. We put a lot into our soybeans, so we need a lot more out from the market."

More Marketability

Southeast Missouri's steady irrigation systems bring with them healthy yields, strong soybean content and a matchable market to sell.

"In the Bootheel, we typically have a higher level of protein and oil content, making us more marketable internationally," said Bean. "A lot of our beans are getting shipped to China because of our strong soybean profiles."

To increase the marketability of the southern soybean crop, Cargill recently announced its plans to build a new soybean processing facility in Pemiscot County near Hayti and Caruthersville.

"You can't ask for a better location," said Bean. "It makes our beans more desirable and puts money in the pockets of farmers and rural Missourians."

The facility will be the first of its kind for southeast Missouri with an annual production capacity of 62 million bushels of soybeans. The location of the new facility will expand the $94 billion economic impact of Missouri agriculture, accelerate economic development and enhance workforce opportunities in the Bootheel.

"Another facility to sell our soybeans is an obvious positive and provides deep value to our agricultural systems," said Meredith. "It will also help our net basis become stronger and assist in getting unloaded faster, making harvest more efficient."

L-R: SEN. JASON BEAN, OTTO JAMES BEAN, VERNON PICKARD

Growing with Gratitude

With several benefits on its side, southeast Missouri makes an ideal place to raise a crop.

"The sun rises in the east and sets in the west, and we are out in it every day," said Hunter. "We understand we are like the rest of the world, but there's just something different about it down here. It's beautiful, it's unique and it's a wonderful place to raise a family and a farm."

As you come off Crowley's Ridge south of Cape and begin your descent into the land of cotton, peanuts and soybeans, remember the strong economic input and diverse richness southeast Missouri provides to the Show-Me State.

Missouri Soybeans continuously tips its hat to the growers not only in SEMO but all of Missouri and applaud the many contributions to the state's top cash crop – soybeans.

MSMC BOARD MEMBER, BAUGHN MEREDITH

FOUNDATION FOR SOY SCHOLARSHIP

The Foundation for Soy Innovation bridges resource gaps for the next generation of problem-solvers working within the soy value chain.

The Foundation for Soy Innovation scholarship program is back, bringing opportunities for college-aged students to further their education and interest in the soybean industry. The scholarships, made possible by contributions from Missouri's farmers, support students and early-career faculty who are working along the soy value chain, from agronomic research to developing new soy-based products.

The foundation exists to advance the technology, ingenuity and partnerships integral to the future of soy at every stage in the process. From innovation in how farmers produce soy to elevating the ways we put soy to work and developing environmentally friendly soy-based products, there are great opportunities ahead.

Through this scholarship program and other efforts, the foundation and its partners support the academic and professional development of the next generation of leaders in the soybean sector. The foundation is led by farmer-leader and longtime seedsman Matt McCrate of Cape Girardeau.

"One of the primary initiatives of the foundation is to develop scholarship programs for hands-on experience to advance innovation and create demand for soy," McCrate said "Through the foundation, we hope to engage stakeholders to build upon the work of Missouri's soybean farmers in research, business development and marketing, and to educate and empower future generations working with soy."

Last year, the foundation had the opportunity to present two students with scholarships, Eduardo Beche of the University of Missouri and Anthony Ribolzi of Missouri State University.

"We're working to support those who need to be at the table to raise the bar on the work farmers are doing," said McCrate. "Through this scholarship, we are investing in young students to discover new uses for soy and make Missouri a leader in soybean innovation."

The foundation is pleased to offer $1,000 scholarships for 2022 for individuals positioned to make an impact on the future of the value chain. Scholarships are intended for advanced undergraduate students, graduate students, early-career faculty and young professionals, and may be used for coursework, supplies, specialty training and/or participation in a professional conference. Applications are accepted now through Dec. 15, 2022.

To learn more about the Foundation for Soy Innovation, explore soyfoundation.org.

GRANULARITY AND SCALABLE DATA ARE CRITICAL

when making decisions on your operation – the same can be said for farm finance and agricultural policy decisions. Why settle for broad, nationwide averages and blanket policy approaches that do not reflect the uniqueness of Missouri's geography, climate, and production trends?

The University of Missouri's Rural and Farm Finance Policy Analysis Center (RaFF) launched in March 2022 to fill a critical gap in agricultural finance and policy analysis. RaFF provides groundbreaking, objective insights and information for policymakers and producers to help them make informed financial and policy-oriented decisions.

This Congressionally funded policy research center, through the development of state economic models, equips decision-makers with an understanding of how different economic scenarios can impact individual states. RaFF collaborates with a growing consortium of experts at land-grant universities in key agricultural states, which brings local expertise and experience to ground-truth the economic models. These models can be used to estimate the financial implications of weather events, proposed policy initiatives, technological change, and other shocks that make a difference in farming and rural economies.

RaFF is excited to announce the release of the fall 2022 *Missouri Farm Income Outlook*. This Missouri-focused report leverages farm income and production data from 2021 and offers a glimpse into 2022 and beyond; it should be noted that the reported 2021 data are USDA's first state-level estimates and are subject to revision.

As RaFF continues to grow, the center plans to work with industry partners to provide commodity-specific insights relevant to stakeholders' needs and support policymakers through economic analyses and briefings. Additionally, RaFF will continue to release semiannual farm income outlook publications and Riff from RaFF policy briefs – all to equip decision-makers with the information and insights to understand how a variety of factors can impact farming communities in Missouri and beyond.

Scan to read the *Outlook*

LEARN MORE AT RURALANDFARMFINANCE.COM

Rural & Farm Finance Policy Analysis Center
University of Missouri

HERE'S HOW THE SOY CHECKOFF WORKS

The national soy checkoff was created as part of the 1990 Farm Bill. The federal legislation that created the soy checkoff requires that all soybean farmers pay into the soy checkoff at the first point of purchase. These funds are then used for promotion, research and education at both the state and national level.

FARMERS SELL BEANS TO ELEVATORS, PROCESSORS AND GRAIN DEALERS.

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PROMOTION | **RESEARCH** | **EDUCATION**

Half goes to the Missouri Soybean Merchandising Council for investment* in areas that are a priority for Missouri soybean farmers.

ROI TO THE FARMER

Half goes to the national checkoff for investment in USB's Long-Range Strategic Plan.

CHECKOFF MATH: RETURNING $12.34/$1 INVESTED

Source: Cornell University (2019)

**Led by 13 volunteer soybean farmers, the Missouri Soybean Merchandising Council invests and leverages soy checkoff dollars to MAXIMIZE PROFIT OPPORTUNITIES for all Missouri soybean farmers.*

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