

STRAIGHT ROWS

Volume 28, Issue 1 | July 2023

WOTUS regulations remain clear as mud

After 14 years of pushing through the federal court system, the Sackett's won their case against Environmental Protection Agency (EPA) with a unanimous (9-0) decision stating their property is not jurisdictional. In 1972, the Clean Water Act was put in place to keep the country's aquatic environments safe from pollution and destruction. However, the stipulations for this act are about as clear as mud and decided on a case-by-case basis.

Background

In 2007, the Sackett's wanted to develop a property a few hundred feet from Priest Lake in the Idaho Panhandle. EPA decided their lot contained a federally protected wetland and ordered the couple to cease any further construction without a permit. Their lawyers stated the wetland was not protected by the Clean Water Act solely because there was dry land separating it from the other bodies of water.

To fully grasp why the Sackett case and its decision is so important, it is vital to understand a previous case in 2006, *Rapanos v. United States*. This case was a battle of two opposite opinions by Supreme Court justices Antonin Scalia and Anthony Kennedy. Scalia believed jurisdictional waters or wetlands only qualified if there was a

physical connection — regularly flowing tributaries or a continuous surface — to those already under federal protection. Kennedy believed if the body of water shared a significant nexus — physical, chemical or biological health with an adjacent body of water already protected — they deserve the same level of protection. Kennedy's point of view aligned with the Bush and Obama administration. The Trump administration used Scalia's perspective to adopt its definition which was opposed when the Biden administration came into leadership.

The Decision and its Meaning

Definition of jurisdictional waters is vague and "unworkable," according to Congress. There is not a clear meaning of which waters will fall under WOTUS protection. The rule currently states wetlands must be "as a practical matter indistinguishable from waters of the U.S." — they must have a "continuous surface connection to bodies that are WOTUS in their own right". This phrase can be interpreted broadly and the further definition of "adjacent water" is even more unclear. The original statute does not mention the nexus test, making that a seemingly irrelevant reason for EPA to impose.

How does this impact farmers?

Farming has many obstacles and using the nexus rule to protect waters would be yet another hurdle. Allowing water to be protected without a physical connection to a water already in jurisdiction will heavily obstruct economic growth and building infrastructure. Uncertainty still lies after this ruling, like the answers to these questions:

- What exactly does "relatively permanent" mean?
- What are the distance limitations?
- What satisfies the "continuous surface connection requirement"?

Under the 2023 rule, waters must be flowing or standing year-round or continuously during certain times of the year but there is no minimum number of days required and is adjusted during droughts. Additionally, a physical connection is determined by a continuous surface connection of the two waters, not a hydrological connection. While the thought behind this case could help farmers in the future for building infrastructure and crop ground, opinions could still be viewed differently and the fight to have clear-cut definitions will continue.

The last time I wrote this column, spring was upon us and the anticipation of planting the 2023 crop was here. I know many of you have been enduring excessive drought conditions and as a farmer, there is nothing like braving that experience. Living in Northeast Kansas, one of our struggles in the spring is being excessively wet and battling Mother Nature to get the crop planted in a timely manner. Our heavy clay soils like to stay wet in the spring.


Fortunately, this spring was fairly dry and we were able to get our crop planted without too many obstacles. As always, times are changing and farmers are evolving in their planting methods and philosophy. I observed more early soybeans planted this year in our area than ever. I am seeing many more farms with two planters and both crops getting planted at the same time.



who were able to attend this meeting and I'm happy to report Kansas Soybean was robustly represented in our nation's capital.

Growing up, my father gave me some very sound advice (and still does routinely!): Often he would tell me not to get caught up in seeing how many acres you can cover in a day but to take a moment to delight in the blessing of being on the farm. Many times, I'll catch myself thinking about that advice as our industry is producing more bushels with less numbers of farmers and less help to do it. It seems the only way to cover all the bases is to push for more acres in a day. However, the fact remains that we are fortunate to be in the business of farming and I encourage all of you to be content and satisfied with our unique calling in life.

KSA is a strong, respected organization in the soybean industry and we want to represent you, the members, as best as we can. If you have any questions or concerns please reach out and we'll be happy to find a solution.

Best Regards,


Summer is a busy time for the Kansas Soybean Association. I just recently returned from a trip to the Port of Catoosa in Tulsa, Oklahoma. The Port handles more than 2.2 million tons of cargo per year via barge, rail, and truck; and is one of country's busiest inland river ports. The port is located at the head of the McClellan-Kerr Arkansas River Navigation System, which gives it access to move products to and from the Gulf of Mexico, making it a valuable resource to all of Kansas agriculture.

The chief purpose of the KSA is to represent the Kansas soybean industry at both the state and national levels. We have just returned from the July American Soybean Association meeting in Washington, D.C. On this trip, members spent time discussing the issues that are affecting you and I and all soybean producers in the state and nationally. We then take those concerns to Capitol Hill and sit down for a conversation with our elected representatives, examining what is important to our industry and how lawmakers can best support soybean farmers. We had several board members

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Final RVOs discount industry's biofuel capabilities

After seven months of advocating and pushing back, soybean growers received disappointing news from the Environmental Protection Agency. The final Renewable Fuel Standards for 2023, 2024 and 2025 set biofuel blending levels considerably below the amount that can be utilized.

In December, EPA came out with drafted numbers, giving the industry time to counteract. The proposed numbers were low and did not complement the supply that would be produced. The American Soybean Association and other industry groups pushed to increase the blending obligations. When the final ruling came out, numbers for 2024 and 2025 increased slightly from the drafted numbers but still did not align with the industry's capabilities.

Within the first five months of 2023, biomass-based diesel production has increased by more than 30% (400 million gallons) compared to the same period in 2022. In the final volume obligations, there was only a 21% increase from 2022 to 2025; 9% lower than the increase of production in just 5 short months.

The proposed numbers from Clean Fuels Alliance America supported achievable, aggressive growth for the soybean industry. According to the crush capacity companies, they would increase their soybean oil supply by about 5.5 billion pounds. This translates to about 700 million gallons of renewable diesel, far above EPA's three-year RVO growth of a 590 million gallons. With the blending levels set where they are,

these RVOs are likely to restrict growth in soy-based biofuels over the next three years.

Investments have already been made to build and operate new crush and production facilities based on the increasing supply, not on data from 2007 which EPA used to make its final decision. Industry groups feel the EPA is not recognizing the immense growth of soybean production and how it could be used for biodiesel production. Over the past few years, soybean oil demand was recognized. Farmers and soybean enthusiasts worked to provide more soybeans to achieve this demand. However, with EPA unable to recognize the importance, the industry is now faced with the issue of how to handle a potential surplus.

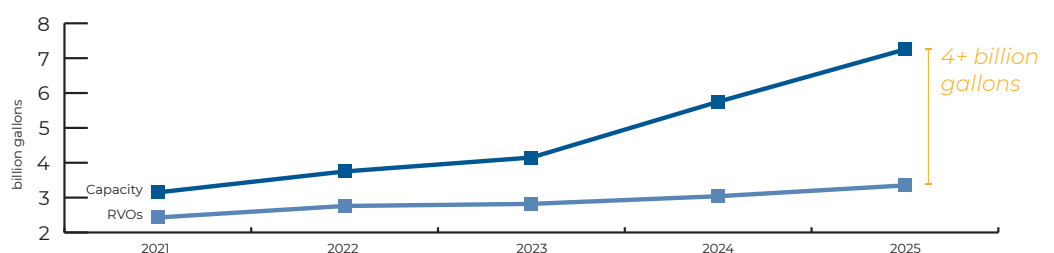
Final RVOs Compared to Previous Years

Total Volumes	2021	2022	2023	2024	2025
Biomass Based Diesel (billion gallons)	2.43	2.76	2.82	3.04	3.35
Non-cellulosic Advanced (billion RINs)	4.49	5	5.1	5.45	5.95

Final RVOs Compared to December Draft

Total Volumes	2023 Draft	2023 Final	2024 Draft	2024 Final	2025 Draft	2025 Final
Biomass Based Diesel (billion gallons)	2.82	2.82	2.89	3.04	2.95	3.35
Non-cellulosic Advanced (billion RINs)	5.10	5.10	5.20	5.45	5.3	5.95

Biomass Based Diesel Growth Capacity Outpaces Final RVOs



(YOU)

Who's the No. 1 protein source in chicken feed?
YOU are. That's right. You're winning.

All soybean farmers, including you, are really big in poultry and livestock feed. How? By pooling your resources through your soy checkoff. Learn how your soy checkoff is bringing tangible returns back to you and your operation at unitedsoybean.org/hopper.



Moving Soy Forward.
Moving You Forward.



Get Recognized Nationally!

Do you love conservation? The American Soybean Association is encouraging soybean growers across the U.S. to submit their conservation story for the **Conservation Legacy Award**. All applications must be submitted by Aug. 31, 2023.

This award recognizes sustainable soybean production achieved through best practices for managing land and inputs. Because each region of the U.S. addresses different climates and challenges, the award is divided into four regions for recognition: Midwest, Upper Midwest, Northeast and South. Each region names a winner, and one of those four farmers will be named the National Conservation Legacy Award winner at the 2024 Commodity Classic in Houston, Texas.

Along with national recognition for promoting sustainability, regional winners earn a video highlight, national media feature in Farm Journal and on AgDay, plus an expense-paid trip for two to Commodity Classic Feb. 28–March 2, 2024, in Houston, TX.

When Randy and Nicole Small won the Midwest regional award in 2020, they had implemented continuous no-till on their Neodesha farm since 1999.

“With a no-till system we’re saving soil, we’re rejuvenating soil, we’re building organic matter,” Randy said at the time.

“In the end, that’s going to make a big difference in how productive our sons can be and how sustainable their operation can be.”

The couple also utilized cover crops and relay cropping to plant soybeans into growing wheat. Their practices, they shared, helped save on fuel and labor and allowed them to reach yield levels they thought were not possible.

ASA is also seeking nominations for three additional awards:

Outstanding State Volunteer Award: Recognizes the dedication and contributions of individuals who have given at least three years of volunteer service in any area of their state soybean association’s operation.

ASA Distinguished Leadership Award: Visionary leadership within ASA or a state soybean association is recognized by this award, which is presented to either a soybean grower-leader or association staff leader with a least five years of leadership service.

ASA Pinnacle Award: An industry-wide recognition of those individuals who have demonstrated the highest level of contribution and lifetime leadership within the soybean family and industry

Submissions are accepted online through October 27 at www.soygrowers.com/awards.

You look like a leader!

If you have a passion for agriculture and leadership, the ASA Corteva Agriscience Young Leader Program is for you!

Whether you’re a multi-generation farmer or starting your own, this program is a great opportunity to expand your knowledge and hone your leadership skills.

“I really developed some valuable relationships, and it was interesting to see how farming varies across the United States.”

– Kim Kohls
2018 Young Leader

Through this program farmers make connections with peers in the industry and become stronger advocates for soybeans and growers. The Young Leader program is designed for individual farmers or farm couples who are interested in developing their skills to represent the soybean industry and pursue leadership positions at the state or national level. For more information or to hear how this program impacted other Kansas soybean farmers, visit www.kssoy.org.

- **Phase 1:** Monday, Nov. 27 – Thursday, Nov. 30, 2023; Corteva Global Business Center in Johnston, Iowa
- **Phase 2:** Tuesday, Feb. 27 – Saturday, March 1, 2024; in Houston, Texas in conjunction with Commodity Classic
- **Phase 3:** Optional. Individuals selected for the 2024 class of Young Leaders have an opportunity to apply for the prestigious third phase to bolster leadership skills learned in the program.

Apply by Sept. 1

Mestagh jumps into new staff role

Hello all!

I am Josey Mestagh and have recently started in the new Communications and Membership Specialist position with Kansas Soybean. My purple pride runs deep as I graduated from Kansas State University with a bachelor's of science degree in Agricultural Communications and Journalism in May 2023. I am excited to join the Kansas Soybean team and am ready to implement my ideas and personality to the team. Thanks to a few board member visits, I have already been able to learn so much about soybean production and exports, and the KSA membership program.

I grew up in McLouth, Kansas, with my parents and older brother. My family has now grown to include my sister-in-law and niece (who I can never say no to). On our small farm I got to grow up around horses, cattle, chickens, cats, dogs, rabbits and the occasional goat. In my free time you can find me spending it with my family, friends and dog, Callie, or exploring the world with a camera in my hand.

I am one of those crazy people that wants to do everything and usually somehow does. Now that you know this about me, it will not shock you when I say during my youth I competed in rodeo, played softball, and participated in 4-H as an officer and in numerous projects, from horse to photogra-

phy to horticulture. Once I was in high school, I joined FFA, because I knew it would expand my knowledge of agriculture even more. Little did I know, it would be what introduced me to my career path. Through FFA I competed in many CDEs and LDEs from public speaking to dairy cattle judging and was an officer for three years. While I may have drove my parents crazy driving thousands of miles for me to participate in things, I wouldn't be who I am today without each and every one of these experiences

A few more things I love: K-State Wildcats, Sonic drinks, cows, the mountains, supporting local and chicken sandwiches

During college I completed two internships, one with the From the Land of Kansas program within the Kansas Department of Agriculture and the other with U.S. Custom Harvesters. With From the Land of Kansas I was able to broaden my knowledge on the many sectors of agriculture, membership system, social media efforts and writing skills. Through U.S. Custom Harvesters I had the opportunity to create videos recapping their annual convention and vendors in their tradeshow.

I plan to help current implementations flourish and bring forth new ideas to enhance our organization. The voices of farmers are tremendously important, but we all know you are



Reach out!

mestagh@kansassoybeans.org

busy. I want to tell your stories, the successes and the hardship, to make our world fully understand how crucial you are to our world. My goal is to continue in the efforts of making that known and keep farming in the hands of the farmers.

A second goal is to increase our membership. To do that, I will need your help. I want to hear from our farmers on what they think is important and how the membership service and renewal process could be improved. Getting to know the soybean farmers our organization fights for is a top priority for (or to) me. I would love to hear from you guys and will be getting a survey sent out within the next month to learn more about your experience as a member of KSA.

KANSAS SOYBEAN ASSOCIATION

Is it time to renew your membership?

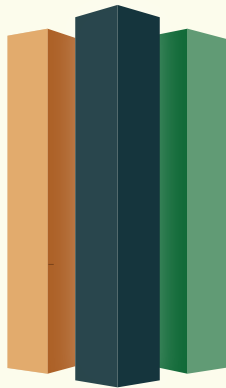
Hop online or contact the office.



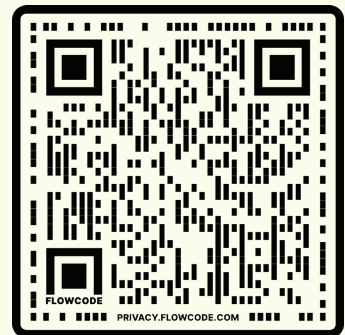
Make Moves with U.S. Soy

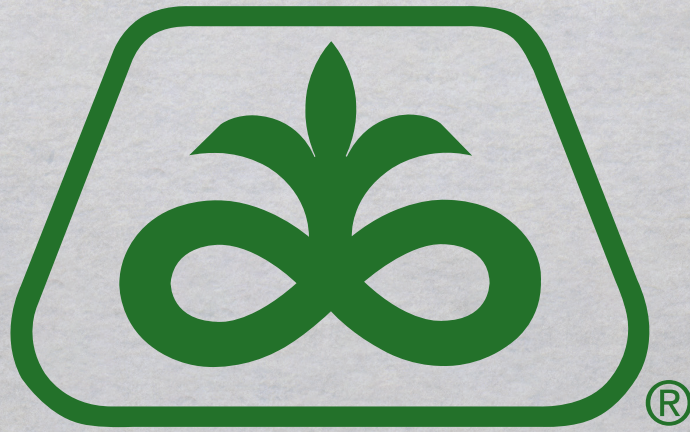
WISHH connects Trade, Development & Food Security in Cambodia where **fish account for 61% of households' animal protein** intake. We cultivate trade with Cambodian feed mills that are buying U.S. soybean meal for the growing aquaculture industry that WISHH is developing. Our trade and development work makes protein more available in the country where **45% of Cambodians live in moderate or severe food insecurity**.

Find out how WISHH's three pillars of trade, development and food security cultivate new markets for U.S. Soy protein.



Trade. Development. Food Security.





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Source: U.S. Market Research

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Checkoff discussions heat up alongside summer temps

R-CALF USA applauds it. Sponsoring Sen. Mike Lee (R-Utah) calls it a “common sense reform.” Rep. Nancy Mace (R-S.C.) and Dina Titus (D-Nev.) led the charge to bring it to the House of Representatives. It has supporters in the Farm Action Fund, National Dairy Producers Organization and Kansas Cattlemen’s Association.

“It” is the Opportunities for Fairness in Farming Act. And it has the attention of checkoff proponents.

The OFF Act surfaced in September 2021 when Lee brought the bill to the Senate. It did not progress any further. Fast forward to February 2023 and the bill landed back on the table with the same set of sponsors, comprising Sens. Cory Booker (D-N.J.), Rand Paul (R-Ky.), Elizabeth Warren (D-Mass.) and Kirsten Gillibrand (D-N.Y.) in addition to Lee. Lee, Booker and Paul attempted to land similar legislation, Senate Bill 741, in the 2018 Farm Bill (to no avail).

Now, months after its reintroduction, discussion around the legislation is heating up. In essence, the OFF Act of 2023 aims to establish restrictions on checkoff programs and further increase transparency. A key stipulation in the bill calls for “strict separation of engagement between [checkoff boards] and policy entities,” by not allowing any contract or agreement with such groups. It could essentially sever ties between state checkoff boards and association groups working toward complementary goals.

Advocates pushing the OFF Act forward – and pushing for its inclusion in the 2023 Farm Bill – purport checkoffs are a “slush fund,” have become

“wasteful,” and “funnel money to lobbyists.” While the names of certain checkoffs have risen to the forefront in these discussions, it is important to note this legislation lumps all checkoffs together under its proposed rules. It is a situation with complex undercurrents.

Authorized in the 1990 Farm Bill, the Soybean Promotion, Research and Consumer Information Act created the soybean checkoff. It became effective in 1991 through the Soybean Research and Promotion Order. Though the United Soybean Board administers the national soybean checkoff, USDA oversees its compliance and publishes rules, referendums and other required documents. All 22 national commodity checkoffs operate in the same manner – with USDA’s oversight. The rules are stringent.

The Agricultural Marketing Service approves the release of every material branded by the checkoff. The Order states that financial records must be maintained and available to USDA for auditing. Meetings must be open to the public. Perhaps most importantly, compliance with the law prohibits checkoffs from engaging in policy work or utilizing any assessed funds for government influence. These are restrictions already established to execute a checkoff’s operations.

Every five years, producers contributing to the checkoff have the opportunity to request a referendum, which, if granted, would bring the existence of the checkoff to a vote. It requires 10 percent of contributing producers to complete the form at their local FSA office. Just 708 farmers out of 500,000 in the U.S., or one-tenth of one-percent,

That's value!

A 2019 study found the soybean checkoff’s ROI is \$12.34 back to farmers for every \$1 invested.

requested a vote on the soybean checkoff during the 2019 referendum period. That indicates overwhelming acceptance of the soybean checkoff and its promotional efforts.

For good reason – checkoff efforts across the nation have created a strong return-on-investment for contributing producers. Early in July, Rep. Barry Moore (R-Ala.) introduced a resolution in the House of Representatives expressing support for checkoffs, their ability to develop and strengthen commodity markets and their value to producers.

In the resolution, Moore cites the calculated return-on-investment for various commodities to showcase the industry-wide benefit brought about by each checkoff. It also acknowledges the omega-3-enriched feed ration research conducted at Kansas State University, funded by the Cattlemen’s Beef Board, which has led to increased consumption, rates of gain and finished carcass weights of cattle, thus bringing additional value to ranchers.

The soybean checkoff itself returns \$12.34 to the grower per every \$1 assessed, as determined in a 2019 study conducted at Cornell University. A study into the efficacy of checkoff activities is required by USDA every 5 years; the results in 2019 increased \$7.14 from the same study in 2014.




unitedsoybean.org



RESEARCHING A BETTER BEAN

Whether you're dealing with drought, flood, heat or other climate-related stress, the soy checkoff is working behind the scenes to diversify U.S. soybean genetics and increase stress tolerance. 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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KSA board meets July 22

The Kansas Soybean Association board of directors convened July 22 in Great Bend, Kansas, in conjunction with the annual corporate tour. Ten directors attended the meeting. Possible revision of the KSA district map constituted key discussion during business, though it remains in preliminary deliberation to be picked up at the November meeting.

Other important agenda items included:

- Choosing a speaker list for the 2024 Kansas Soybean Expo.
- Considering locations and agenda items for the 2024 Strategic Planning session.
- Preparing for the 2023 Yield and Value Contest entries to go live and determining participation incentives for the contest.
- Discussing membership recruitment tactics and opportunities.
- Reviewing the Corporate Tour.
- Hearing national policy updates and a recap of the July American Soybean Association board meeting, which included Capitol Hill office visits.

The board of directors is scheduled to meet Friday, November 17. Board members are always accessible to members of KSA between meeting dates to discuss policy opportunities and member representation.

SBOC free from judgment

USDA's Agricultural Marketing Service officially removed 'soybeans of other colors' as a grade-determining factor in July.

The U.S. was one of only two countries that included color as a grade standard, putting American growers at a disadvantage in the marketplace with competitors like South America. Moving forward, the Federal Grain Inspection Service will only use three main factors—damaged kernels, foreign material, and splits—when assigning a grade to yellow soybeans. While no longer a grading criterion, SBOC will be available for informational purposes, though only upon request.

The change will go into effect Sept. 1 to correspond with the beginning of the new soybean marketing year.

Ag groups scrutinize patchwork regulations

It's almost a full-time job keeping track of state-level regulations implemented on various pesticide labels, then following those cases through the court system. Take *Hardeman v. Monsanto*, for example – a case with considerable back-and-forth that ultimately fell short of the Supreme Court in 2022 and did not protect uniform pesticide labeling.

The Environmental Protection Agency sets standards on pesticide formulations and makes scientific rulings on the labeling of such through the Federal Insecticide, Fungicide and Rodenticide Act, or FIFRA for short. Yet, some state entities have added label warnings that do not align with the EPA's science-based findings. It creates a patchwork of regulatory differences across the U.S. that makes it difficult for growers to access certain pest solutions.

The Agricultural Labeling Uniformity Act, a bipartisan piece of legislature in the works from Reps. Dusty Johnson (R-S.D.) and Jim Costa (D-Calif.), is intended to prevent states from taking a position contrary to EPA established science, but would still allow for continued local use-case provisions.

Grower organizations will continue to watch the bill closely.

USDA names Torres Small Deputy Secretary

Xochitl Torres Small was recently confirmed as Deputy Secretary of the U.S. Department of Agriculture – a positive for agriculture, according to many in the industry.

ASA Chief Executive Officer Stephen Censky served in the position from 2017–2020 and noted Torres Small enters the role with a comprehensive background in Washington, D.C., including as a district court clerk, attorney specializing in water and natural resources law and as a member of the U.S. House of Representatives, where she was a member of the House Agriculture Committee. Most recently Torres Small served as the USDA Under Secretary for Rural Development.

Soybeans facilitate next-gen battery function

Dr. Lin Liu in Kansas University's department of mechanical engineering is looking toward next-generation lithium-sulfur batteries to solve the degradation issues with current lithium-ion batteries and expand upon the life and capability of such batteries.

Battery production and utility make up a multibillion-dollar industry. The lithium-ion batteries currently in the marketplace consist of a sandwich structure with the negatively-charged anode side and positively-charged cathode side with a liquid electrolyte solution in the middle that enables the internal reaction by conducting the ionic current. Liu's model of lithium-sulfur batteries uses a similar sandwich structure containing pure lithium metal on the anode side, a solid ceramic-based polymer separator and a carbon matrix lined with sulfur particles on the cathode side. The carbon matrix is composed of carbonized soybean hulls.

Sulfur is an ideal material in next-generation batteries because it is economical and has an abundance of energy. When it reacts with lithium metal, "it could be a gamechanger," Liu says. It does, however, need carbon in the mix in order to conduct electrons and complete the reaction. A carbon source provides the pathway.

"We are building a rechargeable battery so electrons come and go," Liu explains. "The reason we put soybeans in the cathode side of the battery is to move those electrons back and forth."

Why soybeans? It's simple – soybeans check all the boxes for

how the carbon source needs to act.

"What we really want to achieve is to use a soybean to build this carbon matrix," Liu says. "We have to find something with a very high carbon content that also has manageable purity and ample porosity. If you put all those things into an evaluation rubric, soybeans came out on top."

Liu has been researching batteries for 15 years and previously sourced a carbon polymer from a commercial vendor. He realized that an alternative, applicable carbon source was growing in fields around him.

"I thought we should definitely use Kansas-grown soybeans to produce what we really want," he says.

Currently, Liu is sourcing green soybeans from local farmers markets but would like to find a source for quantities of processed hulls.

According to representatives of the processing industry, about 95 percent of the current demand for processed soybean hulls is using them as an additive in animal feed.

This summer, Liu and his team wrapped up year one of the research project, which was to prove the concept that soybeans can be used to produce a working, rechargeable battery paired with a lithium metal. The Kansas Soybean Commission approved funding for year two of the project, which builds upon the design and fabrication of solid-state lithium-sulfur batteries.

Liu leveraged the checkoff dollars granted by the Commission

to apply for and receive project funding through NASA. Initially, KU secured nearly 200,000 dollars in funding from the year one findings to go toward enhancing the sustainability and resilience of the batteries for space application. Recently, Liu and his team confirmed that they would receive over one million dollars from NASA to continue building upon the function and safety of their batteries. Liu collaborated with research and industry partners from Kansas State University, Wichita State University, Spirit Aerospace, Argonne National Laboratory and others to secure the additional funds.

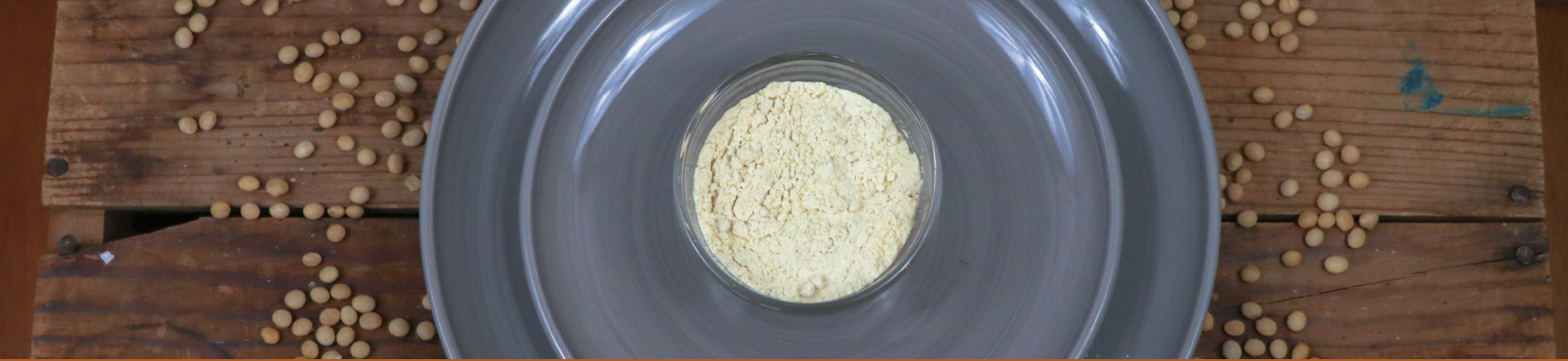
"We are proposing a safer, more powerful and more reliable battery for space applications," Liu explains.

Using batteries for aerospace technology requires a highly-safe, stable battery. That is a key reason Liu decided to pursue production of a next-generation battery from the start.

"You hear in news about battery explosions and it's hard to avoid that with traditional batteries," Liu notes. "Lithium-sulfur is much safer – you can cut it, you can puncture it, you can bend it and won't cause detriment."

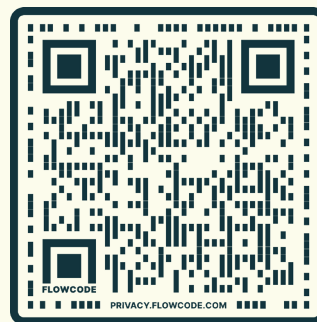
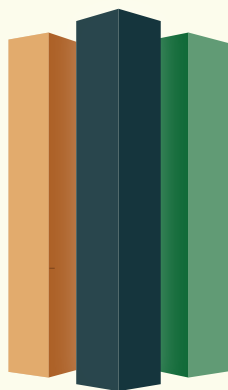
Safety and reliability are just a few of the potential benefits for these next-generation batteries. There is an environmental incentive; lithium-sulfur batteries tout higher energy output, increased use capacity per recharge, and simple recycling. The ultimate goal is to bring these batteries to the market, which could be 10 years from now, Liu says.

Read more in the August Soy Notes.



You Grow a Protein Powerhouse for Global Food Security

Find out how ASA/WISHH's soy checkoff-supported work with Edesia Nutrition led to the company developing a product that contains **25% more soy flour** than earlier formulations. Adding more soy allows Edesia to reach more people throughout the world.



Trade. Development. Food Security.

Top photo courtesy of SNI Global



Right Timing Can Maximize Profits of Fungicide Applications in Soybeans

It's no secret that when it comes to fungicide applications in soybeans, timing is a critical factor. According to Beck's Practical Farm Research (PFR)[®] seven-year data, applying a fungicide at the R3 growth stage shows a return on investment of \$17.68 per acre.

Beck's, the largest family-owned retail seed company, launched PFR in 1964 with a goal to provide a practical agronomic research program that helps farmers with decisions that can improve profitability. For years, Beck's PFR has evaluated fungicide products and practices. Fungicides primarily prevent or mitigate disease pressure, but they can also increase water use efficiency, photosynthesis, nitrate reductase activity, increase the window for grain fill, and improve stress tolerance.

"The R3 growth stage, which

lasts approximately 10 days, is the key time to apply a fungicide in soybeans, said Celena Kipping, agronomy associate at Beck's." It's crucial to target this window to experience a consistent response year in, year out."

Nearly 70 percent of a soybean plant's yield comes from nodes six to 13. Many of the uppermost nodes of this region of the plant do not exist at R2 (full flower); therefore, a fungicide application this early has a limited impact on pod retention and seed size. Conversely, at R4 (full pod), many of the lower nodes of this region are too far along in pod development for a fungicide to have a meaningful impact.

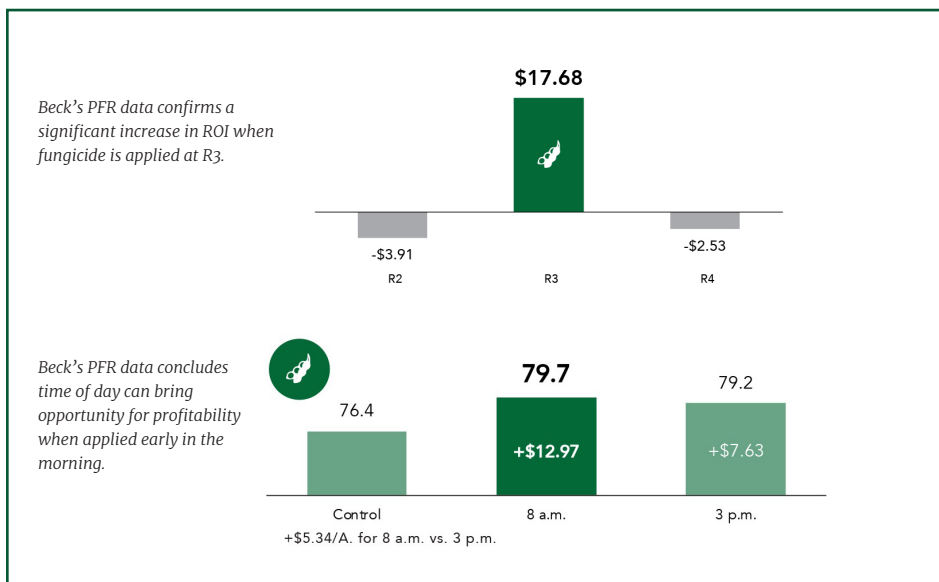
In 2017, Beck's developed the PFR Proven[™] endorsement. For a product or practice to become PFR Proven, it must be tested

for three years at multiple locations, must provide a positive yield gain each year, and must average a positive return on investment over the three-year period. Fungicide timing is one of five PFR Proven success strategies for soybeans.

Beck's PFR data also found that the time of day a fungicide application is made can also significantly impact final soybean yields. A three-year multi-location fungicide time of day PFR study indicated a \$12.97 per acre advantage when treatments were made at 8:00 a.m. versus a \$7.63 per acre advantage when treatments were made at 3:00 p.m. vs the untreated control.

"By applying fungicide at 8:00 a.m. after a heavy dew, we have seen improvements in coverage on the soybean plant," said Scott Dickey, regional agronomy manager at Beck's. "This improved coverage enhances the efficacy of fungicide treatments, improving the overall ROI of the treatment. PFR data indicates that a carrier volume of 15-20 gallons per acre is the sweet spot. Another benefit of early morning treatments is that the stomates on soybean plants are open in the cooler, wetter environment allowing for better uptake and effectiveness of the fungicide treatment.

For more information about Beck's PFR, products, services, or dealer network, please visit www.beckshybrids.com or call 800.937.2325.



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STRAIGHT ROWS

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The voice for Kansas' 16,000 soybean farmers

1000 SW Red Oaks Place
Topeka, Kansas 66615-1207

Calendar of Industry Events

Aug. 8-10	North Central Soybean Research Program Meeting; Pennsylvania
Aug. 14-17	Iowa Biofuels Tour; Iowa
Aug. 17	Kansas Governor's Summit on Ag Growth; Manhattan
Aug. 17-19	Risk and Profit Conference; Manhattan
Aug. 21-23	SoyConnex; New York City, NY
Aug. 25-26	CommonGround Yoga on the Farm and Meeting; Wichita
Aug. 30	Bunge + Kansas Soybean Association Farmer Dinner; Emporia
Sept. 6-8	Soy Nutrition Institute Global Meeting; St. Louis, Missouri
Sept. 8	Kansas Soybean Commission Annual Meeting; Topeka
Sept. 8-17	Kansas State Fair/ Agriland Exhibit; Hutchinson
Sept. 12	Charlene Patton's Soy Foods Demo at the State Fair; Hutchinson
Sept. 23	Kansas State University Football Celebrate Ag Day Game; Manhattan
Nov. 7-9	Grass and Grain Farm Show; Manhattan
Nov. 8-10	U.S. Meat Export Federation Strategic Planning; New Orleans
Nov. 15-16	Kansas Water Office Governor's Water Conference; Manhattan
Nov. 17	Kansas Soybean Association Board Meeting; Topeka
Nov. 27-28	No-till on the Plains Board Meeting; Manhattan
Nov. 29-Dec. 1	KLA Convention and Trade Show; Wichita
Nov. 30-Dec. 2	Wichita Farm and Ranch Show; Wichita
Dec. 4-7	United Soybean Board Meeting; St. Charles, Missouri
Dec. 17-20	Soy Transportation Coalition; Panama
Jan. 9-11	Topeka Farm Show; Topeka
Jan. 10	Kansas Soybean Expo; Topeka (Save the Date!)

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