

AMERICAN SPRING 2023 soybean

Vol. 10, No. 4

People. Policy. Profitability.

A PUBLICATION OF THE AMERICAN SOYBEAN ASSOCIATION

UNITED STATES
ENVIRONMENTAL
PROTECTION AGENCY

EPA at Center
of Pressing
Policy Issues

SOY FACES

Hear from Farmers
Leading Advocacy Teams

SOY FORWARD

Farmer-Funded Lab
Focuses on New Soy Uses

ISSUE UPDATE

Future Looks Bright for
Biobased Products

INDUSTRY PERSPECTIVE

River Levels Rebound
from Historic Lows

RFS
WOTUS
Pesticides

SHT 산업 Spring, 2023

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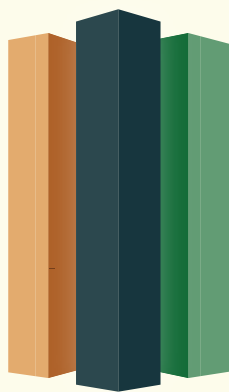
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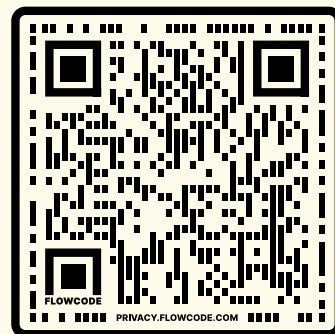
Make Moves with U.S. Soy

Our founding farmers took action **22 years ago** to launch ASA's World Initiative for Soy in Human Health so WISHH could grow new markets for U.S. Soy. Today, WISHH is working with strategic partners that use soy for food or feed in **28 countries** across Asia and Latin America to sub-Saharan Africa.

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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The American Soybean Association (ASA) represents U.S. soybean farmers on domestic and international policy issues important to the soybean industry. ASA has 26 affiliated state associations representing 30 states and more than 500,000 soybean farmers.

American Soybean is published quarterly by the American Soybean Association, 12647 Olive Blvd., Suite 410, Creve Coeur, MO 63141. Phone: 314.576.1770. Web: SoyGrowers.com

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ASA leadership corner

In March, thousands of you (a record 10,400-plus people, to be more exact!) joined me in setting aside your on-farm or other routine duties and traveling to Orlando for the annual Commodity Classic event. Education is a hallmark of Commodity Classic, so while we park our traditional schedules a few days each spring to attend, we are still learning, engaging with one another, and expanding our awareness of the agriculture industry amongst our peers. There truly is nothing like coming together with industry colleagues to exchange ideas, hear from thought leaders (including keynote speaker Tom Vilsack, USDA Secretary of Agriculture), discover the latest trends and research, see the newest equipment—and maybe even visit Mickey Mouse when the event is in Florida and away from cooler temps!

This year, as your association president, I was invited to share on stage during the General Session those issues most important to soy. Looking back, your soy policy organization has advocated the past year on, among other topics:

- Crop protection
- Fertilizer duties
- WRDA
- WOTUS
- Mississippi River conditions
- Rail concerns
- Tax laws
- EPA's "chemistry cliff" for chemical reviews
- Trade agreements and market access
- And, of course, biofuels and the RFS

We also have engaged in or laid the foundation for soy opportunities, including within USDA's Bioproduct Pilot Program, President Biden's biotech and bio-manufacturing executive order, the Growing Climate Solutions Act, USDA's Food for Progress plan, Climate-Smart Ag Grants and implementation of the Infrastructure Bill.

To continue forging ahead with a clear, inclusive and strategic policy vision, ASA's voting delegates met during Commodity Classic to hash out and approve our organization's newest policy resolutions, which will serve as a road map for the next year. Building demand and expanding market access—both domestically and globally—along with protecting farmers' freedom to operate—will remain cornerstones of ASA policy. Protecting and enhancing the RFS, improving WOTUS and passing an on-time, sufficiently funded, meaningful farm bill are just three of many objectives we have been and will continue to advocate on. ASA will always work to protect and enhance the tools farmers need to stay economically viable, be that in the farm bill, by preserving crop protection tools, supporting biotech innovations and conservation programs, safeguarding against bad tax decisions, pushing for support of biofuels and other markets, or other measures to sustain soy's presence.

I am proud to work with all of you and serve on the ASA board alongside outstanding soybean farmers from across the country. We appreciate ASA's newest

Daryl CATES



Daryl Cates, ASA President

industry partners, as well as those who have supported us now for years. And, we value our relations with state soy affiliates. Together, and with the support of ASA's WISHH program, the U.S. Soybean Export Council and United Soybean Board, we approach both soy issues and opportunities as a united front.

I close by encouraging you, if you do not attend Commodity Classic, to consider joining us next year in Houston. ASA co-owns the show, established in 1996 and the nation's largest farmer-owned, farmer-run trade show event, with National Corn Growers Association. Together, we coproduce Classic with the National Association of Wheat Growers, National Sorghum Producers and Association of Equipment Manufacturers. In other words, it really is a farm show for farmers.

Between now and seeing you in the Lone Star State, please stay engaged with ASA and remember we are here advocating on your behalf 365 days a year.

ASA in action



ASA USSEC/MEXICO

In March, ASA and USSEC leaders met with the Embassy of Mexico in D.C. to discuss issues pertaining to agricultural biotechnology. Pictured from left: ASA Chairman Brad Doyle (AR), CEO Stephen Censky, President Daryl Cates (IL) and Executive Director of Government Affairs Christy Seyfert.

While in D.C., USSEC/ASA Directors Stan Born (IL), Josh Gackle (ND), Brad Doyle (AR) and Daryl Cates (IL), along with ASA staff and USSEC leadership, visited with USTR Chief Agricultural Negotiator Doug McKalip (center).

USTR VISIT



ASA PRIORITIES



HILL to FARM

ASA Director Charles Atkinson, left, (KS) met with EPA Administrator Michael Regan (right) in mid-February.



In January, ASA President Daryl Cates (IL) met with Senate Ag Committee Chairwoman Debbie Stabenow (D-MI) to discuss ASA priorities for the 2023 Farm Bill and the Renewable Fuel Standard.

ASA in action



SOY POLICY



In Washington, D.C., ASA President Daryl Cates stopped by the office of Senate Agriculture Committee Ranking Member John Boozman (R-PA) to discuss ASA policy priorities and the farm bill.

EPA VISIT



ASA Vice President Josh Gackle (ND) (left), Chairman Brad Doyle (AR) (third from left), President Daryl Cates (IL) (second from right) and CEO Stephen Censky (right) met with EPA Administrator Michael Regan (third from right) in March during ASA's spring board meeting and Hill visits.

HILL VISIT



ASA Director Ronnie Russell (MO) (left) visited with Rep. Mark Alford (R-MO) on Capitol Hill in March.

INNOVATION TO MARKET



Dr. Dominique Carter
White House Office of Science & Technology Policy

ASA's Innovation to Market Work Group (IMW) gathered in Arlington, Virginia, in February to discuss issues facing the pesticide and biotechnology industries. The event included presentations and discussions with Kimberly Nesci, director of the Office of Pest Management Policy at USDA and Dominique Carter, PhD, assistant director for Agricultural Sciences, Innovation and Workforce in the White House Office of Science and Technology Policy.

More than 100 grower-leaders and staff gathered at ASA's annual Soybean Leadership Academy to hear from featured industry-leading speakers, engage in training and fellowship with members of the soy family from across the country. SLA provides tools that enable state and national soybean board and association leaders to be more effective, efficient, and inspired leaders.



LEADERSHIP ACADEMY

HILL VISIT



ASA Director Andrew Moore (GA) (right) preps for March Hill visits with son, Joseph Moore, and father-in-law, Barry Bryant.

FARM BILL/RFS



ASA President Daryl Cates (IL) and ASA Executive Director of Government Affairs Christy Seyfert met with House Ag Committee Chairman GT Thompson (R-PA) to discuss ASA priorities for the 2023 Farm Bill and the Renewable Fuel Standard.

STATE LEADERS ON CAPITOL HILL



Kentucky soybean leaders met with Sen. Rand Paul (R-KY) during March visits with lawmakers on Capitol Hill.

ASA *in* action

ASA Chief Economist Scott Gerlt & Sr. Director of Marketing & Communications Wendy Brannen speak to the 2023 ASA Corteva Young Leader Class during the group's training at Commodity Classic. This year's Young Leaders are Lane Anders (AL); Steve Breeding and Lacey Dixon (DE); Sarah Landers (IL); Alexandra Miller (IA); Andrew and Mary Lauver (IA); Daniel Anderes (KS); Catlin Young and Aaron Vinson (KY); Robert Wasmler (MI); Gary and Tina Schoenfeld (MN); Skyler and Ashlyn de Regt (MS); Bill Parks (MS); Aaron and Chandra Blasé (NE); Stephanie and Jesse Cook (ND); Dustin and Casey Converse (OH); Austin Heil (OH); Kody and Shelby Leonard (OK); Jena Hanna (SC); Jeff and Emily Kloucek (SD); Will and Robin Hutchison (TN); Jake Steffes (WI); and Daniel Chiappetta (CAN).



YOUNG LEADER CLASS



USDA VISITS

ASA leadership met with USDA Under Secretary for Rural Development Xochitl Torres Small in March. From left: ASA Vice President Josh Gackle (ND), ASA President Daryl Cates (IL), Torres Small, ASA Chairman Brad Doyle (AR), and ASA CEO Stephen Censky.



ASA leaders visited with Dr. Chavonda Jacobs-Young, USDA Under Secretary for Research, Education, and Economics. From left: ASA Vice President Josh Gackle (ND), Jacobs-Young, President Daryl Cates (IL), Chairman Brad Doyle (AR) and CEO Stephen Censky.

ASA ACTION PARTNERSHIP



ASA Executive Director of Government Affairs Christy Seyfert and Director of Government Affairs Kyle Kunkler provide a policy update to ASA Action Partnership members, who met in March in Arlington, Virginia, for dialogue and discussion with a focus on "Geopolitical Threats to U.S. Agriculture." ASA President Daryl Cates (IL) served as host to the group comprised of representatives from industry, states and other national soybean organizations. ASAAP is a collaborative effort of all soybean industry sectors with a stake in the growth and profitability of the industry.

U.S. Soy's Well-Earned Reputation for Sustainability

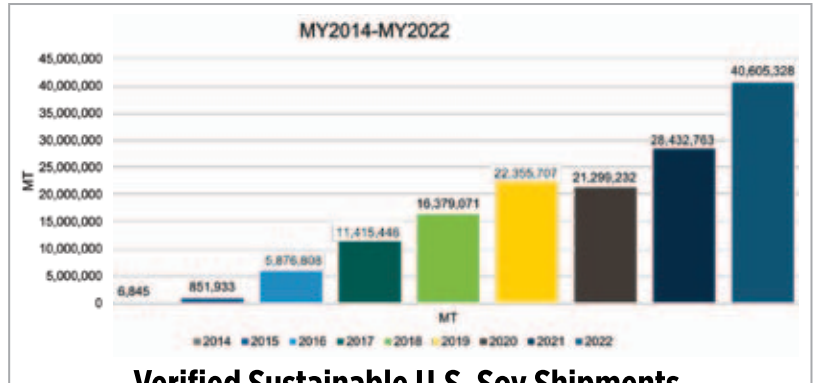
U.S. soybean farmers are widely recognized for their innovative solutions to the challenge of a changing climate. Through their commitment to sustainable agriculture, they are producing more with fewer resources while at the same time supporting a healthy society and preserving the planet. As a result, U.S. soy has the lowest carbon footprint, including land use change, compared with soy of other origins.

This progress is being recognized globally, with an increasing number of food companies adopting the Sustainable U.S. Soy (SUSS) label as they shift procurement toward more sustainable supply chains. The SUSS logo is currently featured on more than 1,000 SKUs from 70 companies across the Americas, Greater China, Northeast Asia and Southeast Asia.

A great example of this is when Ichiban soymilk began featuring the SUSS logo served on non-stop Vietnam Airlines flights from Ho Chi Minh City to San Francisco in late 2022. By carrying the SUSS logo, Ichiban soymilk manufacturer ThaiCorp International can now leverage it to generate new sales and marketing opportunities as consumer demand for sustainable products continues to grow.

For international customers of U.S. soy, certifications are critical. Importantly, they reassure customers that the products they consume are truly contributing to the sustainable development of the planet and society, while also helping to stem the challenge of greenwashing, which is the exaggeration of environmental credentials.

Verification of the sustainability of U.S. soy is provided through the U.S. Soy Sustainability Assurance Protocol (SSAP), a program



**Verified Sustainable U.S. Soy Shipments
for Marketing Years 2014-22**

developed through a multi-stakeholder process in 2013 to meet international sourcing requirements. The verification covers all the laws and regulations that U.S. farmers must follow, as well as on-farm sustainability practices voluntarily implemented to ensure a sustainable supply of soy. The SSAP includes farm audits conducted by an independent third party—the Natural Resource Conservation Service of the U.S. Department of Agriculture.

For the 2022 marketing year, 60% of all soy exports from the U.S. had an SSAP certificate. The year-over-year growth has been dramatic. Shipments of verified sustainable U.S. soy have increased from just over 851,000 metric tons in 2014 to more than 40 million metric tons in 2022.

Customers of U.S. soy around the world are also now able to better demonstrate their commitment to sourcing sustainable ingredients, with the expanded SSAP allowing transfer of certificates up to four times. The change to the SSAP by Soy Export Sustainability, LLC, which is partially funded by the national soybean checkoff, allows customers to keep records of their sustainable U.S. soy

purchases, use these purchases to meet their ESG (Environmental, Social and Governance) goals, and report on their progress toward those goals. Importers can receive a certificate in their name from an exporter; the importer is then able to transfer certificates to their customers. A new online database has been created enabling this functionality, and a total of 42 customers have registered to receive certificates to date.

The European Feed Manufacturers' Federation (FEFAC) has confirmed that SSAP passed stringent, independent benchmarking against its FEFAC Soy Sourcing Guidelines 2021, including criteria to confirm "conversion-free" soy, or crops that are produced without the need to convert forestland or natural habitats to farmland. SSAP has also earned Silver Level Equivalence when benchmarked with the Sustainable Agriculture Initiative Platform's Farm Sustainability Assessment 3.0 and is recognized by the Consumer Goods Forum's Sustainable Soy Sourcing Guidelines and the Global Seafood Alliance's Best Aquaculture Practices. *SOURCE: U.S. Soybean Export Council*

2023 commodity classic

Record-Breaking Commodity Classic in Orlando

More than 10,400 attendees—farmers as well as exhibitors, industry stakeholders and members of the media—gathered for the 2023 Commodity Classic March 9-11 in Orlando. The 2023 event broke the previous Commodity Classic record of 9,770 attendees, which was held in New Orleans in 2016.



ASA President Daryl Cates (IL) talks biofuels and other soybean policy priorities with emcee Ross Shafer (right) on the General Session stage during the Leaders' Panel.



ASA Director/Classic Co-Chair George Goblish (MN) (fourth from left) cuts the ribbon along with the rest of the Commodity Classic Joint Venture Committee leaders to mark the opening of the 2023 Commodity Classic trade show floor. Photo Credit: Oscar & Associates

USDA Secretary Tom Vilsack delivers the keynote address during Commodity Classic General Session, where he talked about the farm economy and grants announced by USDA later that day for modernizing equipment and supporting climate-smart practices, with a focus on reducing input costs, assuring market access and other goals to keep U.S. ag competitive. Photo Credit: Oscar & Associates



ASA Director Pam Snelson (OK) discussed progress on Climate-Smart Ag programs with Robert Bonnie, U.S. Department of Agriculture Undersecretary for Farm Production & Conservation.



ASA's policy team welcomed (left to right) NRCS Chief Terry Cosby, RMA Administrator Marcia Bunger, FSA Administrator Zach Ducheneaux and USDA Under Secretary for FPAC Robert Bonnie for a Government Policy Update during Commodity Classic.



ASA Director Rob Shaffer (IL) discusses a policy resolution during the Voting Delegates Session in Orlando. Photo Credit: Oscar & Associates



ASA Directors Ryan Rhoades (OH) (left) and Tanner Johnson (WI) (center) lead ASA's trivia game at the association's booth on the trade show floor. Photo Credit: Oscar & Associates



From left: ASA Director Scott Metzger (OH), auctioneer/past ASA director Eric Maupin (TN) and ASA Director Casey Youngerman (TN) welcome attendees to "SoyPAC in Paradise," ASA's annual PAC auction for 2023. Photo Credit: Oscar & Associates



From left: ASA President Daryl Cates presents Les Seiler, Fayette, Ohio, and his brother, Jerry, with ASA's National Conservation Legacy Award during an awards ceremony at Commodity Classic. Regional Conservation Legacy Award winners recognized during ASA's awards program were Terry and Lori Dabbs, Stuttgart, Arkansas (South Region); Tom Perlick, Washburn, Wisconsin (Upper Midwest Region); Michael Vittetoe, Washington, Iowa (Midwest Region); and Les Seiler, Fayette, Ohio (Northeast Region). Photo Credit: Joseph L. Murphy



Parks Wells, Tennessee, accepts ASA's Distinguished Leadership Award during an awards ceremony in Orlando. The ASA Distinguished Leadership Award recognizes a soybean grower or association staff leader who has shown a high level of dedication and successfully led others to meet goals and achieve successes to benefit soybean farmers. Photo Credit: Joseph L. Murphy



Willard Jack, retired ASA director and soy farmer from Belzoni, Mississippi, received the Pinnacle Award during an awards ceremony at Commodity Classic. The Pinnacle Award is ASA's top honor and an industry-wide recognition of a lifetime of work that demonstrates the highest level of contribution and leadership within the soybean family and industry. Photo Credit: Joseph L. Murphy



From left: ASA President Daryl Cates (IL) presents Ryan Bivens, Hodgenville, Kentucky, with the Outstanding State Volunteer Award at the annual ASA Awards Celebration during the 2023 Commodity Classic. Photo Credit: Joseph L. Murphy

POLICIES IN PROG



Renewable fuels, WOTUS and pesticide compliance are among top ASA advocacy priorities beyond the farm bill

By Allison Jenkins

In a farm bill year like 2023, members of the American Soybean Association's government affairs team have their hands full, working relentlessly to ensure their growers' priorities make it into this sweeping legislative package. After all, every one of the bill's 12 titles affects the soybean industry in one way or another.

However, there are many other important farm policy issues that fall outside those wide parameters, and they cannot take a backseat while the focus is on

the farm bill, says Christy Seyfert, ASA executive director of government affairs.

"When there is so much attention directed at the farm bill, it means we have to hammer that much harder on other policies not tied directly to it," Seyfert says. "For our team, advocacy opportunities and activities are endless."

The Environmental Protection Agency is at the center of several of the most pressing policy issues currently taking precedence for ASA, including

the Renewable Fuel Standard, the Waters of the United States rule and Endangered Species Act compliance.

Fueling debate

Weighing heavily on the minds of the ASA government affairs team is EPA's proposed Renewable Fuel Standard volumes. In December, the agency announced blending mandates for the refining industry at a level that would essentially curtail growth in soy-based biofuels over the next three years.

When Congress created the



RFS in 2005, the idea was to reduce emissions and reliance on imported oil by requiring transportation fuel in the U.S. to contain a minimum volume of biobased components. Starting this year, EPA has full authority to change the way the RFS is administered. And it did. Instead of issuing mandates annually, the agency opted to switch to a multiyear target.

The problem for the soybean industry is that the current RFS proposal calls for biobased diesel volumes below actual production.



"We appreciate Representatives Graves and Rouzer for leading important efforts to rescind the recently released Waters of the U.S. rule, which in no way provides the clear, nationwide regulatory certainty farmers and land managers have requested repeatedly."

—ASA President Daryl Cates (IL)

In February, ASA President Daryl Cates (IL) was quoted along with others in a news release on the administration's WOTUS rule from the House Committee on Transportation & Infrastructure and the U.S. Senate Committee on Environment & Public Works.

About 3.1 billion gallons of renewable diesel and biodiesel were produced in 2021 and about 3.2 billion gallons in 2022. Yet, EPA wants to set volumes at 2.82 billion in 2023, 2.89 billion in 2024 and 2.96 billion in 2025.

Alexa Combelic, ASA director of government affairs, says those volumes would stifle demand and industry growth.

"The proposed standard basically flatlines our industry over the next several years," she said. "It doesn't consider the significant investments that have been made in soybean crush facilities or the role of biobased diesel in lowering carbon emissions."

Public comments closed Feb. 10, but the proposal is subject to revision until EPA releases a final rule June 14. That's where ASA comes in. Combelic says she and her advocacy team of soy farmers are actively engaging with EPA, Congress and others, even working outside typical soybean strongholds like the Midwest to influence areas such as New England and California where biofuel demand is booming.

"Biodiesel and renewable diesel are the easiest fuels to drop into the hard-to-decarbonize sectors, such as heavy-duty truck

hauling," Combelic says. "Biofuels can be part of the climate solution right now."

Soy oil makes up 50% of the feedstock for biodiesel and a little less for renewable diesel, so these products represent an important, growing market for soybean farmers. They also help provide employment and rural development opportunities. That's the message ASA took directly to EPA Administrator Michael Regan in early March, Combelic says. She and her team have also met with U.S. Secretary of Agriculture Tom Vilsack on the issue.

"Based on those high-level meetings, you can see just how much of a priority the RFS is to our organization and farmers," Combelic says. "We're trying to move the needle between that draft rule and the final rule in June. It's very much a coalition effort with farmers and other industry stakeholders involved, and it's critical that EPA gets it right."

Muddying the waters

Also of topmost concern for soybean farmers is the Waters of the United States rule, which is currently in litigation limbo. Ariel Wiegard, ASA director of government affairs, is leading the

(continued on page 14)

(continued from page 13)

association's advocacy on this issue.

"It's something our farmers are very concerned about because it would impact their ability to manage their land the way they want," Wiegard says. "This rulemaking can also impact infrastructure improvements, such as building roads, bridges and ports. It's not only important to the farmer but also the larger farm economy and supply chain."

EPA published its latest WOTUS iteration Dec. 30, essentially restoring the definition used prior to 2015 before it was revised under the Obama administration. The new rule, however, incorporates a complicated two-part standard to identify which waters are regulated.

"As it stands, the rule does not provide the certainty we need," Wiegard says. "ASA wants to see the definition rewritten so it does not place undue burden on our farmers."

The current WOTUS rule officially went into effect March 20, despite the fact that it is facing several legal challenges and a pending Supreme Court opinion. ASA is also supporting several lower court cases that were filed to enjoin the rule.

In another ASA-endorsed challenge, on March 9 the U.S. House of Representatives passed a joint resolution disapproving the WOTUS rule under the Congressional Review Act. The Senate, in turn, passed the resolution on March 29, sending it to President Biden's desk.

As expected, the president vetoed the resolution in early April, but Wiegard says the bipartisan action by Congress sent a strong message that the new rule is unworkable. "It might push the administration to require some changes from the EPA."

The final say on this matter will rest with the Supreme Court, which could issue a ruling any day, Wiegard says.



ASA Director Alan Meadows (TN), who serves as chair of ASA's Regulatory Advocacy Team, participated in a forum last summer hosted by the Congressional Western Caucus to discuss the importance of modernizing the Endangered Species Act.

"It was the very first case the court heard when the session started in October, but they could wait until the session ends in June, which is when they often roll out the most controversial opinions," she says. "One way or another, we're likely to get a new rule or revision, we just don't know yet what mechanism will force that to happen. We're in wait-and-see mode."

Protecting pesticides

Another complex issue ASA has been actively following is EPA's attempt to bring pesticide registrations in compliance with the Endangered Species Act. The agency has registered and reregistered pesticides without going through the ESA process for decades due to the sheer volume of work it requires. Bypassing this process has led to a barrage of lawsuits, which could cause the courts to vacate pesticide registrations.

In response, EPA in November released a new workplan that will impact how pesticides are registered, labeled and used in the United States. The workplan also highlights mitigation measures intended to reduce spray drift and surface water runoff, minimizing pesticide exposure to endangered

species. The list includes practices such as vegetative filter strips, grassed waterways, field borders, reduced tillage and cover crops.

Kyle Kunkler, ASA director of government affairs, acknowledges the gravity of the situation and says the association and its members are invested in helping to find a solution.

"Growers want the agency to be compliant," he says. "If not, we're going to continue to lose registrations and tools in court. This is probably one of the largest, most existential issues to threaten the ability of growers to access pesticides."

While applauding EPA's current efforts, Kunkler says the workplan only focuses on creating new mitigation measures without taking into account the conservation and production practices farmers have already implemented.

"Farmers are the original conservationists," he says. "They want to leave their land in as good a shape — if not better — than when they started farming. And that means by protecting wildlife, too. But at the same time, farmers want to know that if they must adopt protections, there's sound, scientific justification for them."

Amid this scrutiny, the ASA team has been working closely with EPA to ensure an effective, efficient, evidence-based regulatory process for registering pesticides going forward. The goal, Kunkler says, is to make sure growers maintain access to the current tools and create an easier pathway for new products to come online.

“EPA has an obligation to use the best available science in making decisions, and there’s a lot of data out there that isn’t being considered,” he says. “The good news is that we are having productive dialogues with EPA, and I really think they’re listening.”

Sharing your voice

Members of the ASA government affairs team say it’s critical that farmers take part in conversations about these and other policy priorities.

“My advice to farmers is get to know your association staff at the state and national level and be a resource for them,” Kunkler says. “We have some good ideas and perspectives but nowhere near all the answers.”

Keeping in touch with elected officials is also an important way farmers can share their voice, adds Seyfert.

“Stay engaged and build relationships with your members of Congress and their staff,” she says. “Even if you have a seasoned member who’s been in office a long time, that doesn’t mean their staff has. Make those connections.”

For specific opportunities to weigh in on important issues, Seyfert advises farmers to keep an eye out for ASA’s “Action Alerts,” passed on from ASA by their state soy affiliates, or visit the Soy Action Center, an online engagement tool with a number of valuable resources, to access calls to action directly. The site can be found at soygrowers.com/soy-action-center/.

New Year, New Uses: U.S. Soy Eyes Biobased Opportunities, Growth

The soybean industry has long partnered with companies and invested resources into biobased product development—but there’s vast opportunity for growth that benefits U.S. soy growers, consumers and the environment. To spotlight how soy fits into arising biobased opportunities following President Biden’s recent biobased executive order and other program announcements, ASA launched a biobased social media campaign in January that explored the over-1,000 current industrial uses for soy and more. Here are examples of ASA’s #SoyBiobased posts highlighting the mighty bean’s many uses along with opportunities to foster growth in the agriculture bioeconomy.

#SoyBiobased

Environmentally-friendly products & uses include the following, to name just a few:

- NASA's lawn
- Goodyear tires
- Graffiti remover for historic spots
- Door mats throughout the Pentagon
- Bug repellent
- Bike paths
- Ford seat cushions and headrests
- Cosmetic lines
- Flip flops and other shoes

Reliable, sustainable soy products are made and used in products everywhere—from Aveeno to NASA! Read more “soy success stories” at soybiobased.org.

Biobased Benefits

- Soybeans remove carbon dioxide from the air, helping end users meet their sustainability goals.
- The beans fix their own nitrogen from the atmosphere, reducing the need for energy-intensive, nitrogen-based fertilizers.
- The domestic supply of soybeans continues to grow, which makes it easy for non-food users to plan ahead when building out their materials' supply chains.

Source: United Soybean Board

#SoyBiobased

Soy is clean, affordable, dependable and sustainable. Researching and finding new biobased uses just makes sense for U.S. soybean farmers, non-food end users, consumers and the planet.

(continued on page 16)

Check out the most common non-food uses for soy

- ADHESIVES
- COATINGS
- FIBER
- INGREDIENTS
- LUBRICANTS
- PAPER
- PLASTICS
- RUBBER
- SOLVENTS

Source: United Soybean Board



Where can you find soy?

There are three primary categories dominating the biobased market today: coatings, adhesives and fiber. The future for #SoyBiobased is promising, with many industries using soy as a desirable alternative to harmful chemicals.

Behold, the Mighty Bean!



#SoyBiobased

DYK? Soybeans remove CO2 from the air, helping manufacturers and other end users meet their #sustainability goals. That's one #ClimateSmart bean.

#SoyBiobased



"The Bioproduct Pilot Program will provide a great opportunity to expand upon what we in the soy family have been doing for years—creating plant-based, sustainable construction materials & consumer goods using U.S.-grown soy. ASA was glad to work with Sen. Rounds & others to support the inclusion of this language in the Bipartisan Infrastructure Law & we welcome this announcement from USDA."

- Dave Walton, ASA Director
Biotuels & Infrastructure Committee Chair

USDA's Bioproduct Pilot Program, established through the Infrastructure Investment and Jobs Act, will provide \$10 million over two years to study the **benefits of biobased products** for construction materials and consumer products.

BIOBASED BOOST

President Biden signed an executive order in September, launching a national biotechnology & biomanufacturing initiative that supports many positive actions & opportunities for soy, including enhanced markets for biobased products, greater access to biotechnology, & support for R&D to boost our bioeconomy.



ASA has been vocal about supporting investment in bioeconomy research and development. Soy growers applaud this effort and look forward to working with the administration in continuing to develop **#SoyBiobased** markets.

ISSUE update

By Ariel Wiegard, ASA Director
of Government Affairs

Future for Biotech and Biobased Products is Bright

As a lobbyist representing soy growers in Washington, D.C., one of my favorite facts to share with lawmakers is that there are over 1,000 products made in the U.S. from soybeans. No matter what their state or district is known for, there is usually something soy-based that resonates with them: Manufacturing? We have soy-based industrial lubricants. Cars? Seat foam and tires. Lumber? Plywood adhesive. Fashion? Shoes and cosmetics. Golf courses? Researchers are even developing soy-based golf balls! Not to mention the most obvious uses of soy as food, feed and biofuel feedstock.

Much of this diverse commercialization is made possible thanks to meaningful research investments by the national and state soy checkoffs, in partnership with universities and other research institutions. But it is also enabled by a favorable policy environment that celebrates and cultivates innovation and growth of the bioeconomy.

The bioeconomy is the portion of the economy based on products, services and processes derived from biological resources (e.g., plants) and driven by technological advances in the life sciences and biotechnology.

Some analysts predict that as much as 60% of the physical inputs to the global economy could be produced biologically! Many view the bioeconomy as a solution to food security, energy independence and environmental sustainability.

Notably, last year the Biden administration kicked off a whole-of-government approach to bolster the bioeconomy in its Executive Order on Advancing Biotechnology and Biomanufacturing Innovation. ASA is excited to track and engage in implementation of the EO, which will collect essential data to measure and grow the bioeconomy; securely expand biomanufacturing capacity, including by boosting farm commodity production; require federal agencies to have a biobased procurement program for supplies and subcontracts to drive demand and create economies of scale; provide education and training to grow the bio-workforce; and modernize biotechnology regulations for clarity and efficiency.

This last point on regulatory modernization is especially key, as new genetic traits drive soy growers' ability to meet the needs of users and developers of soy biobased products. Thankfully, we are seeing positive, pro-innovation steps in D.C. that will enable genetic innovation to

enhance agriculture: EPA is finalizing a plant genetic engineering rule that was proposed during the Trump administration; USDA has proposed in its FY24 budget to fund regulation of animal biotechnology innovations that will provide disease resistance in flocks and herds; and FDA will finally be moving forward with proposed plant gene editing guidance that we've been waiting on for six years.

Of course, 2023 is also a farm bill reauthorization year, and ASA is working hard to strengthen the BioPreferred Program, which was created in the 2002 Farm Bill to spur economic development, create new jobs and provide new markets for farm commodities through a federal purchasing program and voluntary labeling initiative for biobased products. Numerous lawmakers are eager to help ensure BioPreferred fully supports market growth for our farmers' favorite crop through the 2023 Farm Bill.

News coming out of Washington, D.C., is often full of frustrating stories and hurdles to overcome, but in the case of biotech and biobased products, I am pleased to report the future is bright.

ASA currently chairs the Ag Biotech Alliance, a coalition of pro-innovation stakeholder groups that support policies enabling greater access to products of genetic improvement technologies in agriculture, and is also a founding member of the Ag Bioeconomy Coalition, which works to advance federal policy initiatives that foster growth toward a circular economy based on innovative products derived from renewable inputs.

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INDUSTRY

perspective

By Mike Steenhoek,
Executive Director,
Soy Transportation
Coalition

River Rebounds from Historic Low Water Levels

Last fall, much of our nation's attention was devoted to the historically low water levels on the inland waterway system—particularly the Mississippi River. A system that all too often suffers from a lack of appreciation and understanding became more recognized as an integral link in the U.S. economy's supply chain. For agriculture, the concern was particularly acute—not only given the volume of soybeans and grain transported by barge but also due to the low water conditions occurring in the middle of harvest season. The timing could not have been less opportune. The American Soybean Association, Soy Transportation Coalition and other agricultural organizations were active in raising attention to these challenges and urging our national leaders to do everything possible to address the situation.

Fortunately, since last fall, export terminals and barge operators have been reporting more of a return to normalcy.

According to the U.S. Geological Survey, on March 12, 2023, the water level on the Mississippi River at Memphis, Tennessee, was 27.86 ft. A year earlier, on March 12, 2022, the water level there was 30.65 ft.

For additional comparison, on the Mississippi River at Memphis on March 12, 2021, the river gauge reading was 29.69 ft. On March 12, 2020, the river gauge reading was 26.02 ft.

- Lowest gage reading in 2022: -10.79 ft. (Oct. 22, 2022)
- Highest gage reading in 2022: 30.71 ft. (March 9, 2022)

- Action stage (the stage at which a rising water level will begin to trigger mitigation measures by the authority in charge): 28 ft.
- Minor flood stage: 34 ft.
- Major flood stage: 46 ft.
- Minimum operating limit: -12 ft.

On the Mississippi River at St. Louis, Missouri, on March 12, 2023, the water level was 13.76 ft. A year earlier, on March 12, 2022, the water level there was 9.66 ft.

For additional comparison, on the Mississippi River at St. Louis on March 12, 2021, the river gauge reading was 12.54 ft. On March 12, 2020, the river gauge reading was 23.68 ft.

- Lowest gage reading in 2022: -3.53 ft. (Dec. 25, 2022)
- Highest gage reading in 2022: 29.61 ft. (May 7, 2022)
- Action stage: 28 ft.
- Minor flood stage: 35 ft.
- Major flood stage: 40 ft.
- Minimum operating limit: -4.97 ft.

We are observing more of a return to normal not only with river levels but also with barge freight rates. In the U.S. Department of Agriculture's

Grain Transportation Report for the week ending March 14, 2023, the barge rate for a shipment originating in St. Louis was \$15.64 per ton. This compares to \$34.75 per ton for the week ending March 15, 2022. This amounts to a 55% decrease in barge rates over the past year. According to the Grain Transportation Report, rates reached their highest for the week ending on Oct. 11, 2022, when they hit \$105.85 per ton (originating in St. Louis) during the period in which river levels were acutely low.

No one notices a road until they encounter a pothole. In 2022, we had numerous "potholes" that impacted our multimodal transportation system. From historically low water levels on the Mississippi River, to the potential of a railroad strike, to a rise in fuel costs, to labor shortages, to congestion at our ports, there were a number of challenges agriculture and other industries had to manage. It serves as a reminder that a well-functioning supply chain is not just about cost, speed and reliability: It is also about resiliency. We look forward to continuing to work alongside the American Soybean Association and others to advocate for such a system for America's soybean farmers.





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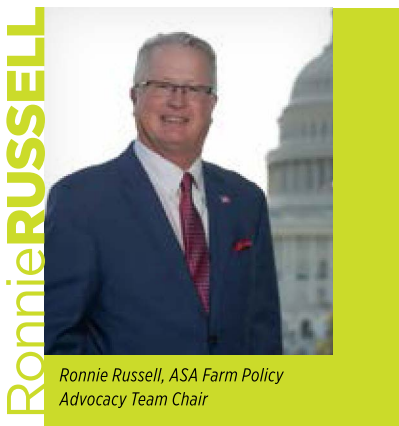
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ASA Advocacy Team Leaders Talk Policy Priorities for 2023

Volunteer farmer representatives work year-round to represent the realities of growing soybeans to Washington policymakers. Those American Soybean Association board members—some 60 growers from throughout the soy states—are each assigned to one of ASA’s five “advocacy teams,” key groups broken out by major policy topics that work to protect those interests for soy.

ASA advocacy team grower leaders and staff leads have their work cut out in 2023 with the new farm bill, but many other pressing issues will potentially affect agriculture in the months ahead.

Here, we talk with the five AT chairs on some of the big topics they see ahead for the soy industry in 2023.



Ronnie Russell, ASA Farm Policy Advocacy Team Chair

Farm Policy

Ronnie Russell farms 1,700 acres in west central Missouri. As chair of the Farm Policy team, Russell wants to make sure D.C. decisionmakers understand the importance of soy in the larger picture of feeding America—and the world. “We believe this is beyond the farm bill; it’s a food

security issue.” American soy farmers generated \$59.2 billion from the 2021 crop, and more than half of that crop was exported.

Russell is adamant that soy farmers need a dependable safety net. “Sometimes worldwide dynamics affect the future of food security, including the farm safety net,” he says. During the trade war with China that began in 2018, U.S. agriculture endured significant market impacts, which unfortunately revealed gaps in the farm safety net.

Russell would like to see significant improvements to the Title I farm safety net for soy to improve effectiveness of the Agricultural Risk Coverage (ARC) and Price Loss Coverage (PLC) programs. Soy growers are calling for an increase in the soy reference price in combination with a voluntary option to update base acres upon which ARC and PLC are paid. “ASA’s farm bill survey and listening sessions showed the interest that soy growers have in a more meaningful Title I farm safety net, as well as the need to protect crop insurance,” he says. “Crop insurance is the most important risk management tool that we have, and it has to remain affordable and accessible.”

Conservation & Precision Ag

Pam Snelson, chair of the Conservation and Precision Ag Advocacy Team, farms around 5,000 acres in northeast Oklahoma and southeast Kansas. Top on her list is access to precision agriculture tools and technology, including right-to-repair rules for the modern farm equipment that

enables precision ag. The easy-to-fix Allis-Chalmers tractors of yesteryear have given way to high-tech planters and combines.



Pam Snelson, ASA Conservation & Precision Ag Advocacy Team Chair

“Complex repairs can require a dealership tech, but others we can manage successfully ourselves, if given that ability,” Snelson says. But mechanics often can’t get out quickly, which means operations grind to a halt. After a good deal of pushing, equipment manufacturers are starting to let farmers repair their own machines. “For small things, that’s what we want in order to operate efficiently, and then we can leave the larger issues in the dealer’s hands,” she says. Another important issue is data privacy and security for farmers, with Snelson emphasizing nonpublic disclosure of individual producer data.

Snelson wants to see better access for farmers to the Environmental Quality Incentives Program (EQIP), Conservation Stewardship Program (CSP) and Conservation Reserve Program (CRP), all of which are included in the farm bill. These voluntary schemes promote cover crops, soil improvement and sustainability,

(continued on page 22)

(continued from page 21)

and they help promote wildlife habitat. Snelson and soy growers are also seeking appropriations support to help fully staff Farm Service Agency offices and the Natural Resources Conservation Service, which has branches around the country. “They are currently very short staffed,” she says, which impacts farmers. Also in the mix for 2023 is a continued effort to limit the way the government applies the Clean Water Act to farms. Snelson says the current Waters of the U.S. run-off rules are too strict and overreaching, which can place unnecessary burdens on producers. “The way it is written, navigable waters can be streams on your property.”



Monte Peterson, ASA Trade Policy & International Affairs Advocacy Team Chair

Trade Policy & International Affairs

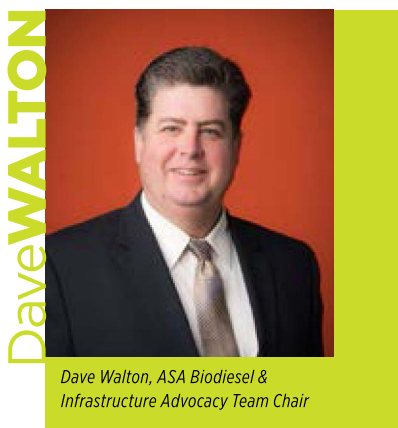
“There’s always a concern because of the political climate on trade,” says Monte Peterson, chair of the Trade Policy and International Affairs team. He explains that, despite the current frostiness between Beijing and Washington, China remains U.S. soy farmers’ biggest customer. “We want to continue to trade with them.”

The Valley City, North Dakota, farmer is keeping an eye on the big picture in 2023. “We continue to monitor market issues around the world that would impede the export of American soy,” Peterson says. He’s also pushing the Office of the U.S. Trade Representative

to diversify the commodity’s international customer base. That includes more sales to South Asia, Central America, Egypt and markets in southern Africa. Also important is more funding for the Market Access Program, which champions the sale of American soy and other agricultural products worldwide. The program’s budget, however, has been flat for many years—even with farmers contributing half of a percent per bushel to help fund it.

Biofuels & Infrastructure

Dave Walton farms 1,000 acres in east central Iowa. As chair of the Biofuels & Infrastructure team, he watches closely developments at the Environmental Protection Agency. EPA sets standards annually for the amount of renewable fuels in the energy supply. That includes biomass-based diesel, manufactured mainly with soybean oil. This year, the agency raised the standard by just 60 million gallons to 2.8 billion. Soy growers were expecting a much higher increase. “That’s the head scratcher,” Walton says. He would like to see those 60 million gallons boosted by a factor of 10 to better spur growth in the biodiesel market.

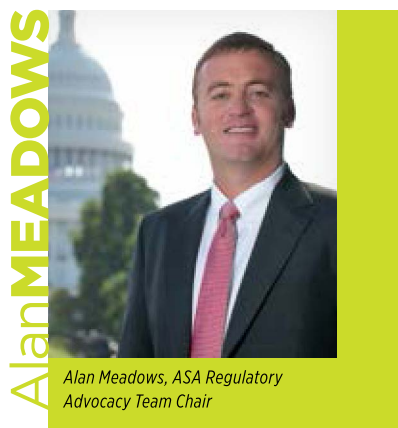


Dave Walton, ASA Biodiesel & Infrastructure Advocacy Team Chair

Walton also wants to make sure soy farmers enjoy advantages from the dollars flowing from President Biden’s \$1 trillion infrastructure law. That includes money for both biodiesel and bio-heating oil distribution

facilities. “We’re not asking for more, we’re just asking for it to be spent wisely,” he says. ASA is also supportive of biofuels infrastructure spending in the new farm bill.

Also on Walton’s plate for 2023 is working with the Army Corps of Engineers on drought conditions on the Mississippi, which caused serious shipping disruptions over the last year. “If the flow of soybeans stops, it would have a serious negative impact on prices,” he explains. Add to that the challenges of aging rail and road systems and a lack of qualified truck drivers and Walton’s portfolio of distribution worries is quite full.



Alan Meadows, ASA Regulatory Advocacy Team Chair

Regulatory

Alan Meadows won’t be focusing as much on the farm bill this year. The Halls, Tennessee, farmer is mostly worried about pesticide legislation, regulation and court cases. A primary issue is rules regarding the pesticide dicamba. “If nothing else is handed down, we’ll keep using it as labeled,” he says.

Walton explains that the key reason courts block the use of pesticides is because the products are not in compliance with the Endangered Species Act. “We want these decisions to be rooted in sound science. A lot of times they’re assuming growers use four times the amount that they do,” he says. “We don’t use maximums of these chemicals,” he explains.

A close-up photograph of the front left wheel and fender of a bright green car. The car is parked on a dark asphalt surface. The wheel is a black multi-spoke alloy wheel with a Goodyear tire. The word "GOODYEAR" is embossed on the tire's sidewall. The car's body is a vibrant green color. In the background, a blurred white building is visible.

(YOU)

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SOY checkoff news

Data Truths—How Data Helps with Decision Making

Technological advancements allow today's farmers to work much more efficiently than those in the past. Soil sensors gauge soil moisture levels and send alerts when irrigation is needed. Today's combines have a larger capacity and utilize tailored software to relay information like yield and moisture levels to the farmer in real time during harvest.

Through the use of aerial imagery from satellites and drones to GPS-supported technologies such as autosteer and site-specific spray prescriptions, farmers are able to make more informed decisions, leading to profitability while reducing their environmental footprint.

Collecting this much data creates another problem—what to do with it and how to manage it. Data related to soil composition, historical yield trends and inputs can be overwhelming. The soy checkoff is working to solve this problem with research that provides solutions to help farmers better utilize and manage data, ultimately leading to greater farm profitability.

"We try to make good use of our data," says Laurie Isley, a soy checkoff farmer-leader from Michigan. "We do regular soil testing on our farm, so we have a deep understanding of our farm's soil health, and we make our fertilizer decisions based off the results. We also use precision technology and data points to help us ensure we only apply

nutrients when the soybean plant needs it so it's not wasted."

Isley farms in the Maumee River watershed, part of the larger Lake Erie watershed in Southeast Michigan. The region is not immune to water quality issues. Keeping nutrients on the land and out of the waterways is an environmental concern she takes seriously.

"We generally have sandy soil on our farm," Isley says. "We use data to show us where and how we can make the soil the best for our crops. We also use other management tools like cover crops to help keep the soil in place. We have a crop growing on our land 12 months a year."

Tony Mellenthin, a soy checkoff farmer-leader from Wisconsin, agrees, saying, "Data collection is one of the most important tools we have to make decisions on the farm moving forward. From yield maps and collecting to tillage maps, we use data to make decisions that maximize our bottom line."

"We not only have yield maps on our fields, but we also have soil sampling for each field. When we combine those two data sets, we can zero in on where nutrients are and are not needed. It is good for the farm and good for the environment."

Derek Potter, a North Carolina soy checkoff farmer-leader, grows soybeans, corn, wheat and timber. He says every time he goes across a field, he collects data.

Farmers have many data points that can help them make on-farm decisions.

"Sometimes, the problem is that we have too much data," says Potter. "We want to make sure we are correctly interpreting what the data is actually telling us."

If a farmer would like to dive deeper into data collection and analysis, Potter suggests finding a mentor or someone trustworthy to talk to.

"You can spend a lot of money on data. You can get pretty maps that look good, but what are you going to do with it?" he says. "Find someone who is doing something that you are interested in trying. See how it works before you spend money on something that might not work on your farm."

Technology is an indispensable part of every farm, regardless of size. Through technology, farmers maximize yields by controlling variables like moisture levels, crop stress, soil moisture conditions and ever-changing climates. Data collection enables farmers to make informed decisions to increase efficiency and more accurately manage costs.

"We cannot eliminate every variable. Weather is going to do what it does. But by using modern technology and data to our advantage, we can increase yield and profitability," says Isley.

Source: United Soybean Board

Soil Carbon Sequestration—What’s in It for You, the Farmer

The Earth’s climate is changing. Adverse weather patterns are becoming more frequent and severe. Farmers are having to deal with longer periods of excessive heat, drought or extreme flooding.

An increased focus on climate change and creating carbon dioxide removal solutions for governments and corporations—many of whom have established mid-century carbon net-zero goals—are creating opportunities for farmers to monetize carbon sequestration production practices. The door is opening for farmers to be an integral and active part of the climate change solution.

A 2020 EPA report estimated that agriculture is responsible for 11% of total greenhouse gas emissions. This positions agriculture to be a key contributing business sector in the effort to resolve climate change issues. It also gives farmers the option to capitalize on economic opportunities through their use of specific production practices proven to improve soil health and agronomic performance.

The soy checkoff is taking a proactive step to help you explore

the world of carbon market programs through a unique and comprehensive learning tool—the USB Carbon Toolbox. The toolbox provides an easy-to-navigate electronic platform to explain and help you find answers to your questions about carbon markets and carbon market programs so you may more easily determine if one is right for you, when you are ready.

Carbon sequestration: benefits, understanding and preparing

Soil carbon sequestration in production agriculture occurs when crops produce food through photosynthesis. Carbon dioxide is removed from the atmosphere, oxygen is released, and carbon is stored in the soil. Water, air, nutrients and reduced soil disturbance all contribute to visible and structural changes in the soil profile and properties. Those changes include:

- Improved organic matter turnover and nutrient cycling.
- Improved soil structure.
- Improved water availability.

For decades, many farmers across the U.S. have been using and reaping the agronomic benefits of cover crops or various forms of conservation tillage as part of their regular production practices. Now that carbon offset protocols, or standards that quantify emission reductions, are being developed, some carbon market programs may allow farmers to receive payments for those sustainable practices if they meet specific program criteria.

The world of carbon markets developed quickly and changes constantly. Carbon market programs vary like the soil across your farm. Information in the Carbon Toolbox will help you develop a clearer understanding of carbon market terminology and definitions. That knowledge will better inform your decision-making process and help you determine if a program is right for you and your farming operation.

The toolbox also includes links to both federal and state resources, a list of agricultural practices that qualify you for carbon market programs and an introductory section on reviewing contracts and legal documents that will assist you when speaking with your legal advisor.

As a farmer, you are the world’s foremost front-line environmentalist. You are always working to conserve natural resources and improve your land so you can leave it better than you found it for the next farming generation. With the soy checkoff’s Carbon Toolbox, you can become a viable part of the solution to mitigate world climate change.

Source: United Soybean Board



Photo credit: United Soybean Board



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WORLD

Twenty-Five Percent More U.S. Soy in Global Food Security Product

Each April marks Soy Foods Month. April 2023 finds ASA's World Initiative for Soy in Human Health partnering on important work with Edesia Nutrition to demonstrate the benefits of 25% more soy protein in Edesia's product, which is designed to deliver sustainable nutrition for global food security.

In December 2021, WISHH convened a global food security dialogue in Rhode Island, home to Edesia Nutrition. U.S. soybean growers witnessed the important contributions their crop made to Edesia's protein-packed foods, which are used to respond to malnutrition in more than 60 countries. The U.S. Agency for International Development and many other organizations purchase and distribute these Ready-to-Use Supplementary Foods (RUSF) and Ready-to-Use Therapeutic Foods.

Building on the United Soybean Board-supported dialogue and tour of Edesia, WISHH took the next steps to lead action aimed at addressing

global food security by tapping U.S. soy's value as a protein powerhouse. USB is funding WISHH's work with Edesia on a product that contains 25% more soy flour than earlier formulations. Adding more soy allows Edesia to reach more people, thanks to the RUSF being more cost effective than other ingredients.

"WISHH's work with this nourishing product fits with our strategic plan to deliver sustainable soy solutions to every life, every day," says USB Director Dawn Scheier, one of the soybean farmers who traveled to Rhode Island. "What better way to commemorate Soy Foods Month than to build an even greater role for U.S. soy in global food security?"

"We can all be proud that U.S. soy is a powerhouse crop for global food security and human nutrition in general," adds WISHH Chair and ASA Director Roberta Simpson-Dolbeare, who also attended the WISHH program at Edesia. "World food prices hit a record high in 2022, which reinforced the importance of

U.S. soy's ability to deliver affordable and available food and feed around the globe. While simultaneously working on trade and development, WISHH leads U.S. soy action for global food security, and that also contributes to productive and stable economies."

Demand is high for the Edesia product. A July 2022 USAID announcement led Edesia to project its use of U.S. soy protein might double, up from 190,000-bushel equivalent.

USB funding not only supported WISHH's work in development of the new soy formulation; it also sponsored Edesia's participation in the Dubai International Aid and Humanitarian Development Conference in March. Edesia will feature the product at an upcoming USAID conference in Washington, D.C.

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.

Participants at the Dubai International Aid and Humanitarian Development Conference learn about how ASA/WISHH partnered with Edesia Nutrition to develop a new food for global food security programs that uses 25% more U.S. soy.

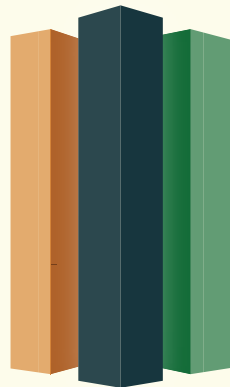




Make Moves with U.S. Soy

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.



ASA Leadership & Education Continuum

ASA's leadership training programs provide soybean farmer-leaders with tools and training designed to increase advocacy effectiveness and strengthen relationships with key legislators, regulatory bodies and media. The programs are designed to provide a training path from introductory to advanced leadership development—an education continuum.

5 ASA Board of Directors

Audience: ASA board and executive committee members

Purpose: Provide current ASA leaders with additional training to increase overall effectiveness.

4 Soybean Leadership Academy

Audience: Senior board leaders and staff CEOs; elected officers/board members and managerial/lead staff

Purpose: Provide general sessions and track-based training by top leadership trainers and industry experts.

3 Leadership At Its Best

Audience: State and national soybean association board members

Purpose: Present intermediate leadership, communication, issues and advocacy training.

2 Young Leader Program

Audience: Growers/grower couples interested in leadership

Purpose: Present basic leadership, communication and issues training.

1 Ag Voices of the Future

Audience: College students

Purpose: Provide an introduction to the soybean industry, advocacy and career opportunities related to ag policy.

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ASA and BASF offer an annual \$5,000 scholarship to an eligible high school senior planning to pursue a degree in agriculture.

For more information on these ASA programs, visit SoyGrowers.com



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SOY FORWARD

Farmer-Funded R&D Lab Successfully Develops New Uses for Soybeans, Soy Oil

By Tom Steever

Dylan Karis has problems at work. They're not the kind he grumbles about to his closest friends, though. In fact, problems are his job at Airable Research Laboratory, and ARL's solutions result in more soybean oil-based products on the market.

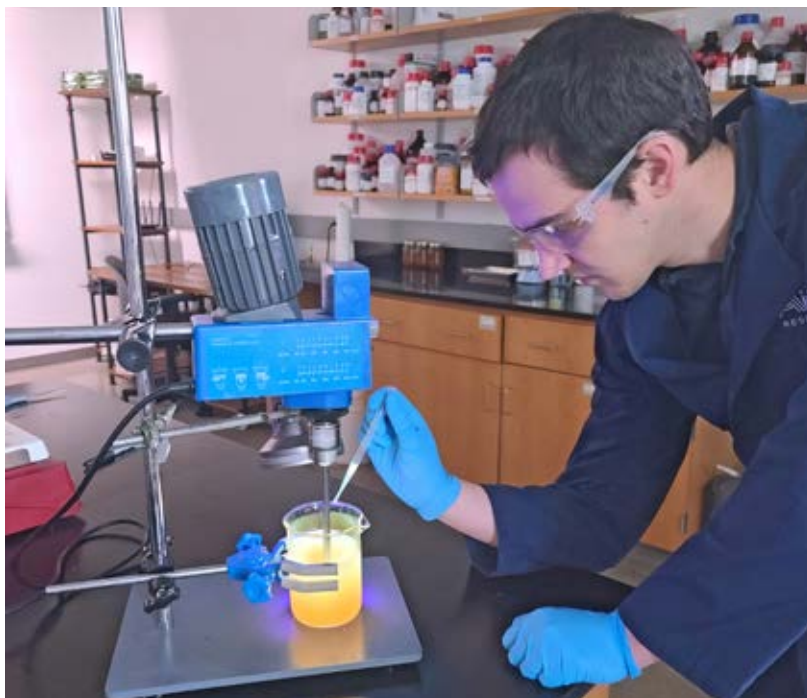
"We work on a variety of different challenges, so it's difficult to pinpoint a specific type of problem we try to solve," said Karis, lead chemist at ARL, located in Delaware, Ohio, who went on to explain an example.

"Say a company [wants to] convert an existing product that they have on the market already, but they want to make it more bio-based. They come to us to see how they can incorporate soy into their product either through a direct replacement or an entirely new product line that incorporates soy."

The lab's founder and chief laboratory officer, Barry McGraw, says consumers and industrial chemical companies are looking for biobased solutions and biobased products, sometimes to replace existing petroleum products or to add a new product for which their customers are looking.

"We wear kind of the 'biobased' or the 'soy-based' hat 100% of the time," said McGraw during a recent interview. "As far as I know, this may be the only research and development lab that focuses on one raw material, which is soybean oil or soybeans."

ARL was founded in 2019 by the Ohio Soybean Council, the state's soybean checkoff arm, with the aim of developing soy-



Dylan Karis is the lead chemist at Airable Research Lab, where they're finding biobased solutions for consumers and industrial chemical companies, in some instances looking to replace existing petroleum products or to add a new product. Photo Credit: Barry McGraw

based products for companies that prefer to generate a more environmentally friendly footprint.

The lab gets funding from the checkoff councils of four other states. In addition to Ohio, there's financial help from Illinois, Iowa, Missouri and Michigan. "That allows us to do the up-front research and development for commercial companies that are interested in soy-based products without any cost to them," said McGraw. "All we ask of them is the ability to evaluate our material for their specific application."

Industrial uses for soy have become ubiquitous, notably with the proliferation of soy ink in the

late 1980s. Since then, soybean oil has progressively taken the place of petrochemicals in thousands of consumer products ranging from tires to solvents to carpet backing to shoes. (Raise your hand if you've ever stuffed a Christmas stocking with a pleasantly scented soy candle.)

None of soy's industrial use success stories was written quickly or inexpensively. ARL works directly with companies to expedite and accelerate the process of bringing soy-based products to commercialization, which "is very hard and challenging," according to McGraw. "We work with commercial

companies that are interested in us developing a soy-based product for them. It just increases the probability of success.”

McGraw concedes, however, that success in commercializing a soy-based product is not guaranteed.

“When we start a project, we’re focused on proof of principle, and if we can’t show proof of principle, we kill the project; we go to the next project.” Understanding the market and working directly with companies to verify that a concept has practical potential, says McGraw, “gets us to the market easier.”

McGraw is also quick to point out that a single one of the lab’s innovations will not, by itself, result in soybean usage on the scale of livestock feeds and renewable fuels.

“If you look at just one new use or one bio-based product, it doesn’t necessarily get your attention with respect to acreage or demand of how much soybeans will be utilized,” McGraw explained, “but when you look at hundreds of different industrial uses for soybean oil or soybeans, it really starts adding up with respect to volume and demand for their product.”

The lab’s unique business model is part of the reason it’s successful and able to attract clients in search of biobased products. “We are fully farmer funded,” said Dylan Karis, referring to support from the five state soybean checkoff organizations. “What that means is we can do proof-of-principle experiments at no cost to the commercial clients that we’re working with. That reduces the barrier to entry of getting soy introduced into whatever problem they’re trying to solve.”

While the soy industry also works closely with university and corporate partners, the ARL template is proving efficient. “We have shown that we can do four times the amount of research with the same amount of money that



Innovative Chemist Connor Young works on a project in the lab. At Airable Research Laboratory, a small team of chemists and engineers work to find solutions that result in more soybean oil-based products on the market. Photo Credit: Barry McGraw

we were [spending] with universities or research and development organizations,” said McGraw, “so when we’re talking about checkoff funding, we’re talking about soybean farmers’ money, and it’s important to me and to our staff to utilize it most effectively.

“The lab gives us the ability to develop what commercial companies want versus what we think they want,” explained McGraw, adding the recent example of a company called LFS Chemistry. That company approached ARL early in 2022 about developing a soy biobased product to reduce the build-up of scale blockage in oil and gas pipelines. By March of 2022, ARL had hit LFS Chemistry’s targets, and by April, about four months after beginning at square one, McGraw says the technology was licensed. “And now we’re about 12 months in, and we’re already in the commercialization phase where we’re scaling it up and producing product for sale,” he said, adding that ARL’s small size allows it to

avoid the licensing and ownership bureaucracy that hinders larger research firms.

Another advantage that McGraw personally brings to the lab team is experience in the patent and contractual side of getting a product to market.

“By having our own lab, and with a background in contracts and patent law and licensing, it allows our company to be very versatile so we can quickly develop something for [our clients],” he said, “and we’ll patent that technology and then we’ll license it to a commercial company.”

Among the lab’s success stories is its development of a soy-based emulsion for rejuvenating asphalt roofs.

“By adding this soy-based technology to your roof, it can restore your roof for up to five years,” said McGraw, “and you can repeat that process two or three times to get maybe 10 to 15 years more life out of your roof.”

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ARL also develops soy-based products for companies that are more readily recognizable, such as Stanley Black & Decker, the parent company of power tool brands Craftsman, DeWalt and many others.

“We helped with the value chain of getting them to switch to a soy-based bar and chain oil for chain saws,” said McGraw. “It’s nice to have some of those companies that people recognize. It has the Ohio Soybean Council’s logo on the back of the bottle. We’re pretty proud of some of those.”

Often the point of bringing something soy-based to market is that it’s better for users and for the environment. Exposure to diallyl phthalate, a substance used in small amounts in automobile manufacturing, can cause health problems.

“I’ve been working on developing a replacement for diallyl phthalate by making an analog using a soy-based starting compound and functionalizing it such that it has similar properties but doesn’t have the same toxicity,” said Karis. “In one aspect, that is definitely better than the current material, and so far, our data has shown that it is [functionally] on par with that material.”

Truckers need to regularly maintain lubrication at the point their truck’s fifth wheel couples with the trailer they’re hauling. A soy-based grease product is on the market encased in a petroleum-based wax coating for clean storage and handling. The problem is that summer heat in truck cabs softens the wax coating, resulting in the pads partially melting and sticking together.

“We looked and found that you can actually use a soy-based



With financial help from the Ohio, Illinois, Iowa, Missouri and Michigan checkoff councils, Airable Research Lab is fully farmer funded. Pictured: Innovative Engineer Alex Shand in the lab. Photo Credit: Barry McGraw

wax, and it has a [higher] melting temperature, or basically the point at which the wax begins to soften,” said Karis. “And because that point is higher, it will not melt together at temperatures that would be in a truck, even in a place like Texas.”

The process of improving the product also means it has a higher biobased concentration.

“We increased the soy content in that product from 60% to 95%, so now they have more bio-base in their product,” said McGraw, about the fifth-wheel grease pads, “it also performs better with [improved] packaging and other performance properties.”

Dylan Karis puts his problem-solving into perspective when comparing it to doing similar work at a university research lab.

“I am really proud of being able

to work on bio-based materials that seem to make a difference,” said Karis of his career at ARL. “It’s really exciting for me to be able to work on something that companies care about, and in turn, people care about, and improve essentially the base of materials available for companies to use.”

Since its founding in 2019, ARL has continued to expand full-time staffing and increase the number of companies for which it’s doing research.

“We’ve only been doing this with full-time chemists and engineers for a year, and it’s going really well,” says Barry McGraw. “I think things like this are the future, where we’re not just funding a little bit here and there, we’re going at this 100%. That’s pretty exciting for me.”

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#SOY SOCIAL

Check out what's trending in U.S. soy on social media

Rep. Randy Feenstra tweeted about his visit with Iowa soybean growers in March after ASA's annual spring Hill visits.



Rep. Randy Feenstra @RepFeenstra · Mar 1

I enjoyed meeting with folks from @ASA_Soybeans to discuss the upcoming Farm Bill and my strong support for the biodiesel industry.

I will always be a strong voice for #IADA farmers, producers, and our agricultural community in Congress.

Charles Atkinson @KSAPres12 · Mar 2

Sustainable, Affordable & Secure food is the importance of the next farm bill. Our @KsSoybean directors met with @RogerMarshallMD. Presented @ASA_Soybeans priorities on crop insurance, EPA Renewable Fuel Standards & WOTUS.

ASA Director Charles Atkinson (KS) posted about Kansas soybean leaders' visits with lawmakers in D.C. and shared policy priorities discussed, including farm bill, the Renewable Fuel Standard and Waters of the U.S.



To celebrate the 40th anniversary of U.S. soy's partnership with China, the U.S. Soybean Export Council is highlighting significant moments in the history of developing the strong trade relationship.

USSEC @USSEC · Mar 9

Led by U.S. #Agriculture Secretary John Block, officers from @ASA_Soybeans & the U.S. Feed Grains Council & Wheat Associates traveled to China in 1981 to develop trade. In 1982, they helped organize the opening of the first Beijing office.

#USSEC #USSOYINCHINA #SOYTRADE #USSOY

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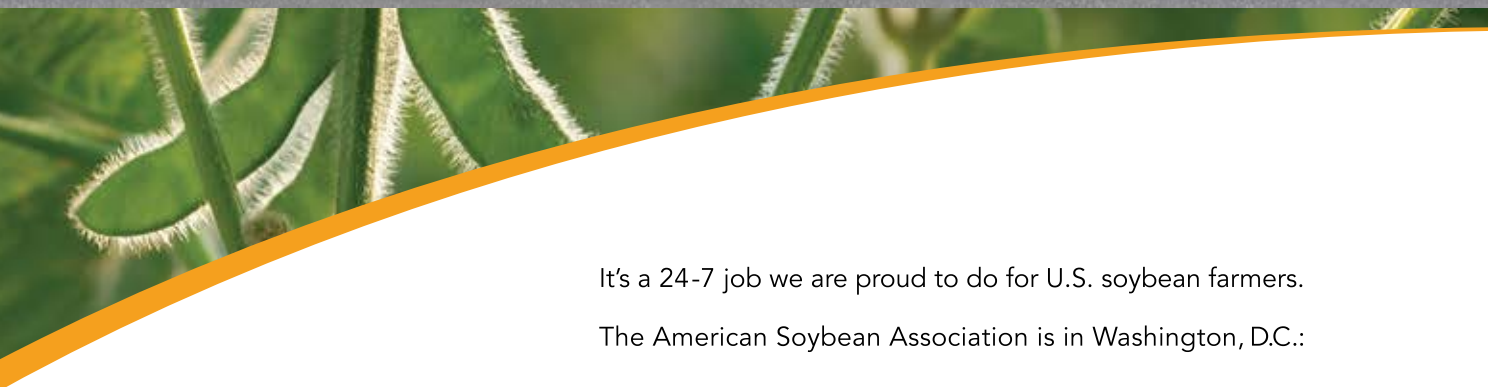
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SoyPAC funds raised are for the benefit of political candidates and activities on a national level that support the soybean industry. Contributions to SoyPAC are voluntary and you have the right to refuse to contribute without reprisal. Your contribution to SoyPAC must be personal—not corporate. Maximum annual individual contribution to SoyPAC is \$5,000. Contributions to SoyPAC are not deductible as charitable contributions for federal income tax purposes. Any suggested amounts are suggestions only and not enforceable; more or less than the suggested amount may be given; the amount given by the contributor, or the refusal to give, will not benefit or disadvantage the person being solicited. Federal law requires us to use our best efforts to collect and report the name, mailing address, occupation and name of the employer of individuals whose contributions exceed \$200 in a calendar year. Under federal law, only U.S. Citizens and Lawful Permanent Residents (i.e., green card holders) may contribute to SoyPAC.



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