

Ohio Soybean News™

JULY-AUGUST 2022

A PUBLICATION OF THE OHIO SOYBEAN ASSOCIATION

INSIDE THE BEAN

p. 10

Biobased Legislation, p. 6

The Value of
U.S. Soybeans, p. 20-21




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MAINTAINING OUR REPUTATION TO DELIVER

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

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

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Ohio Soybean News

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COVER STORY:

If you have heard it once, you've heard it a thousand times: soy is in almost everything. Soybeans are a diverse crop that can be used for cooking, car engines and cleaning. Soybean oil has unique properties that allow it to be an environmentally friendly alternative for petroleum-based products. Soybean meal provides humans and animals with high-quality protein to build muscles. In this issue, see how your checkoff is investing in new soy-based products and markets.



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OHIO SOYBEAN ASSOCIATION



Patrick Knouff

Ohio Soybean Association President
Shelby County soybean farmer

We are entering one of my favorite times of the year — fair season! My family is always busy come the end of July with the Shelby County and Ohio State Fairs. Through 4-H and open shows, my kids and I have taken show pigs to both fairs. Many of you can relate to the stress that comes with show-day preparations but getting to share the summer and

memories with your family makes it completely worth it. I look forward to seeing everyone in Columbus July 27 – August 7 for the first full-force State Fair since 2019. Both the Ohio Soybean Council (OSC) and Ohio Soybean Association (OSA) will be at the Land & Living Exhibit in the Nationwide Donahey Ag and Hort building for the run of the fair.

In May, President Biden announced his administration's three-pronged plan to support American farmers. These new flexibilities could include increasing the number of counties eligible for double cropping insurance, increasing technical assistance for technology driven precision agriculture and doubling the funding for domestic fertilizer production. OSA applauded the administration for recognizing the resources farmers need to boost production and aid in lowering global price hikes.

OSA is visiting Capitol Hill in July to talk policy priorities with our legislators. Several OSA board members will be discussing the 2023 Farm Bill, infrastructure funding, biofuels and so much more. By continuing to talk with our representatives, Ohio soybean farmers have a presence and a voice at our nation's capital.

Legislative maps for the Ohio House of Representatives and the Ohio Senate have been finalized following Ohio's redistricting process and the primary date has been set for August 2. Regardless of your party affiliation, make sure you take the opportunity to vote. Voters can find out which Ohio House, Senate and congressional districts they live in with the Secretary of State's "Find My District" tool: <https://www.ohiosos.gov/elections/ohio-candidates/district-maps>.

As always, OSA relies on input from our members to influence our policy efforts. If you have any input or concerns surrounding the 2023 Farm Bill, contact Emilie Regula Hancock at eregula.hancock@soyohio.org. And stay up to date on the latest OSA news by becoming a member at SoyOhio.org/membership.

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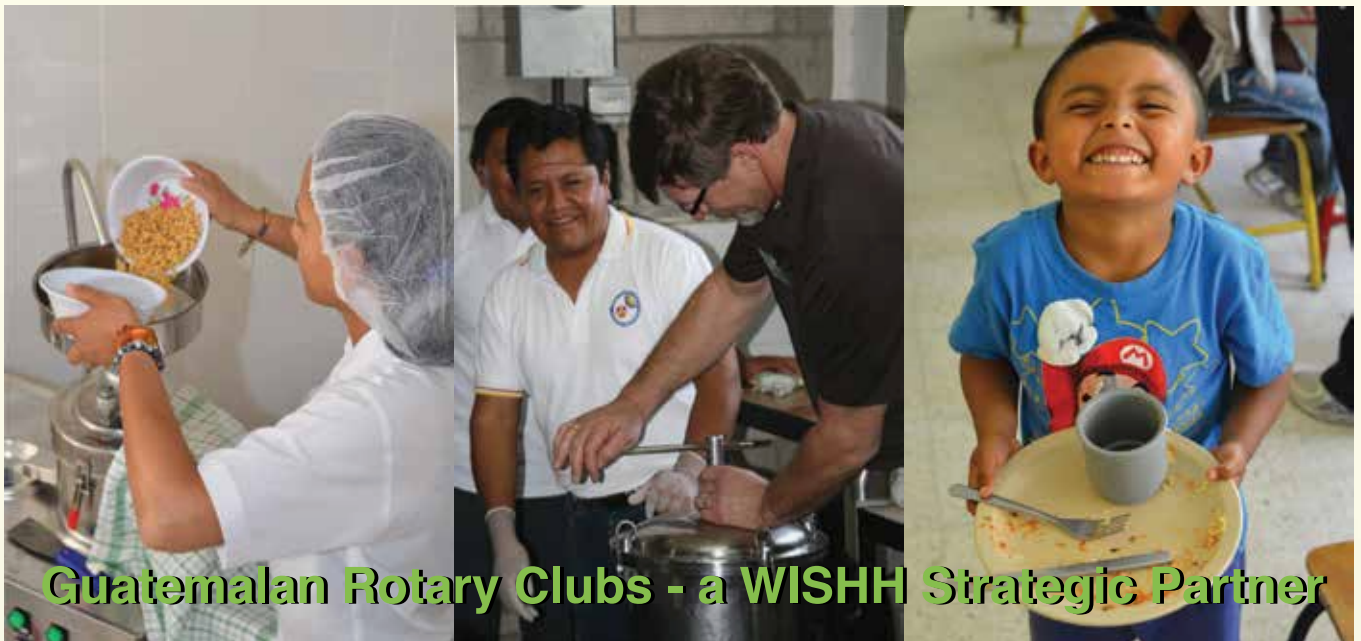
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Policy Encourages Bioproduct Preferences

By **Emilie Regula Hancock, OSA**
Policy & Membership Manager

One of the Ohio Soybean Association's (OSA) top priorities is to support and encourage the increased purchase and use of sustainable biobased products by state agencies.

In 2010, the Ohio General Assembly passed Senate Bill 131 which established a biobased product preference program. This legislation created a preferred purchasing program for companies selling bioproducts — products made with soybeans and other renewable resources.

Ohio companies lead the way in developing and selling plastics, paints and packing supplies. The legislation

moved to include state agencies and universities in the preferred purchasing program. The purpose of the legislation was to support products made from Ohio crops, reduce the state's usage of petroleum-based products and bolster university research regarding bioproducts and the companies that make and sell them.

The bill was a bipartisan piece of legislation sponsored by Senator Capri Cafaro (D-Hubbard) and Senator Karen Gillmor (R-Tiffin). Senator Cafaro stated that goal of the legislation was to promote Ohio agriculture and industry. Senator Gillmor said the new program would allow the state to leverage its considerable purchasing power to bolster the market for such innovative products while benefiting research

initiatives as well as the agricultural industry. The bill overwhelmingly passed both chambers and was signed into law by Governor Ted Strickland in March 2010.

The Ohio Soybean Council (OSC) has invested millions of checkoff dollars into researching and developing biobased products using soy. OSA continues to advocate for this biobased product preference. Soy-based alternatives often provide greater benefits in terms of cost, function and sustainability compared to existing non-biobased products. These green products capitalize on a critical market trend: recent polling shows that 71 percent of Americans would prefer to purchase a bioproduct over a petroleum- or chemical-based product if the cost is equivalent. ♦

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The Ohio Soybean Council wants growers to stay on top of the most recent agronomic discoveries. That's why your soybean checkoff developed Field Leader, an online resource to give you access to the latest soybean research.

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20



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Look for OSC at Your Farm Bureau County Annual Meetings

The Ohio Soybean Council (OSC) is looking forward to discussing soybean checkoff investments with farmers all around

Ohio. For the third year in a row, representatives from the OSC Board of Trustees and staff are attending Ohio Farm Bureau County annual

meetings to talk about project investments of the soybean checkoff.

In 2021, OSC attended 28 county annual meetings either in-person or virtually. While there, OSC farmer-board members talked about their experiences on the checkoff board and staff presented and led discussions about OSC's mission, vision and goals.

"We find a lot of value in this opportunity to talk with farmers across Ohio," said Mike Heffelfinger, Van Wert County soybean farmer and OSC Communication-Education Committee chair. "Talking with farmers about how their checkoff dollars are being invested into new products, international markets, education and so much more raises awareness about the Ohio Soybean Council and how we work to make soybean farmers more profitable."

OSC's goals are to expand markets for Ohio soybeans, drive innovation through agronomic research and soy-based products and build understanding around sustainable practices in the soybean industry, all to help maximize farmers' profitability. Keep an eye out for the OSC team as they travel across Ohio to reach as many farmers as they can.

For more information about the soybean checkoff and where your dollars are being invested, check out the 2021 Investor Report at SoyOhio.org. ♦



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**OHIO SOYBEAN
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INVESTING IN NEW MARKETS FOR U.S. SOY

From promoting the profitability of using high-quality soybean meal in India to training animal producers on nutrition in Colombia, the soy checkoff is working behind the scenes to develop more market opportunities for U.S. soy. 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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Soy Innovative

Airable Products, Projects and Partners

Airable Research Lab (Airable) was founded November 2019 and has since been focused on developing new products that use soy-based feedstocks to meet industrial and consumer market demands. The lab is funded by the Ohio Soybean Council and several other qualified state soybean checkoff boards.

“One of the benefits of having a soy-focused R&D lab is that soybean checkoff dollars are invested in soy-based research and development efficiently and effectively,” said Barry McGraw, Airable chief laboratory officer. “If a technology isn’t working, we can kill that project quickly and move on to the next idea.”

Airable works with known and respected companies, such as Stanley Black & Decker and LFS Chemistry, to create biobased products that not only meet growing market demand for sustainable manufacturing but also increase the demand for soybeans.

Read on for current Airable products, project and success stories.

Scale Inhibitors

Airable developed a soy-based scale-inhibiting additive that prevents the build-up of calcium scale in water systems. The project targets the oil industry, which has a significant need for scale inhibitors. When oil wells begin pumping, minerals in the reservoir water are precipitated and deposited in the system, creating “scale.” Over time, these deposits grow and harden, preventing fluid from flowing through pipelines, valves, pumps and other machinery. The result is slowed production — and, if the buildup is left unaddressed, damaged equipment. Scale inhibitors are chemicals that prevent or slow the precipitation of scales. There are ongoing efforts to develop “greener” processes for inhibition.

Airable responded to this industry need, working with a partner that specializes in sustainable products for

the oil and gas industry. The researchers began with a proof-of-principle project, modified the most promising formulation to match the partner’s preferred characteristics, and scaled up the final formulation. The result is a scale inhibitor with roughly 58 percent soy content and 60-80 percent inhibition efficiency.

The lab has licensed this technology to the commercial partner and filed for a provisional patent.

High-Temperature Waxes

Airable synthesized a soy-based wax that can replace carnauba wax in formulations. Carnauba has useful properties that make it popular across multiple industries: a high melting point, UV ray protection, water resistance and extreme density. However, this material is sourced from the carnauba palm tree, which grows only in Brazil, presenting supply chain challenges, as well as a history of environmental and social



High-melting
soy wax

implications within Brazil. Furthermore, the very density that makes the raw material attractive also necessitates that synthetic chemicals (usually petroleum-based) be added to form a wax paste that can be easily applied.

With these challenges in mind, the Airable team produced a biobased, locally and ethically sourced wax to replace carnauba wax. The Airable product is hard, durable and water-repellent. It can be used for home DIY products and industrial applications.

Concrete Shrinkage Reducers

Concrete has been an essential in construction since 300 BC, when the ancient Romans used it to build their architectural marvels. For just as long, concrete shrinkage, which causes the cracks you see in cement structures, has presented a challenge. Only in the last couple of decades have concrete suppliers turned to shrinkage-reducing additives (SRAs) to minimize shrinking and the associated damage. With this relatively new component entering the massive

global concrete market (over \$700 billion in 2020), Airable recognized an opportunity: a soy-based SRA for concrete applications. Airable researcher Alex Shand has been working on an SRA using soy fatty acid

derivatives. He added the mixture to a concrete sample and is comparing the results to a second sample that contains a commercial (non-soy-based) SRA. So far, the results are promising.

Carbonated Soy

Airable is cooking up carbonated soy-based products. Carbonates are used to produce polyurethane, which has a slew of applications — foams, fibers, coatings, etc. However, traditional carbonates rely on starting materials, like isocyanate reactants, that are extremely reactive, powerful irritants that can cause marked inflammation. Workers in industrial settings have experienced health issues ranging from cold-like symptoms to severe asthma. In addition to being toxic, isocyanates react with water to form carbon dioxide, contributing to the greenhouse effect.

Airable's carbonated soy product has 78 percent bio-renewable content. Better yet, the soy-based materials actually transform CO₂ into a useful feedstock — a biobased cyclic carbonate that can be

used in non-isocyanate polyurethanes. The soy-based carbonates provide an excellent option for manufacturers looking for sustainable feedstocks.

Sofia's Soy Cleaner

Sofia's Soy Cleaner is a 50 percent soy methyl ester concentrate that, when mixed with water, produces an all-purpose household cleaner. Not only is the product biobased, it is sold in recyclable and refillable bottles. With marketing funds from the Ohio Soybean Council, the soy cleaner brand focuses on soybeans and soybean farmers. All the way down to the design and packaging, this product is eco-friendly and soy-centered. Manufactured in Akron, Ohio, this product helps expand soybean markets and drive soy-based innovation. Check it out at sofiassoycleaners.com.

"Airable really is a one-of-a-kind lab and something the Council takes a lot of pride in," said Jerry Bambauer, OSC Research Committee chair and Auglaize County soybean farmer. "We are increasing farmer profitability by exploring new markets and driving demand for soybeans and soybean oil."

For more information about technologies developed and supported by Airable, visit AirableResearchLab.com. ♦



Commercial
non-soy-based SRA

Soy-based SRA



DEWALT Launches Biobased Chainsaw Oil

Those familiar with the soybean checkoff have heard it said over and over — soy is in almost everything. Now DEWALT has introduced a line of biobased Biodegradable Chainsaw Oil made from ... you guessed it, soybean oil.

New DEWALT Biodegradable Chainsaw Oil is a high-performance biobased formulation that is compatible with all gas and battery-operated saws. As chainsaw oil is a 100 percent loss application, meaning 100 percent of the oil ends up in the environment, which includes soil, groundwater and emissions dissipating into the air, it's important to use a biodegradable product to help reduce environmental pollution. This All-Seasons -15°F biobased chainsaw oil has a higher viscosity index than any petroleum chainsaw oil and is a USDA Certified Biobased Product. Tested on thousands of cuts with temperatures measured on the bar, motor and electronics, this oil is designed to help maximize bar and chain life while being safer for the planet.

"We have a strong and growing green presence in the outdoor market, and we are committed to finding solutions that are more environmentally friendly, while meeting our customers' needs," said Marty Guay, Vice President of Business Development for Stanley.

Sustainability is top of mind for those providing goods and services in today's global economy, and Dan Fitzgerald, director of product sustainability, Stanley Black & Decker, knows that better than most. "This product offers sustainability without compromise," said Fitzgerald. "About 20 million gallons of bar and chain oil are discharged into the environment

every year. Without a way to capture and recycle bar and chain oil that is released into the atmosphere — also known as a 100 percent loss application — creating a formula from renewable, sustainable plant oil that is biodegradable is an environmentally responsible solution that DEWALT is proud to offer its customers."

And these guys know about tools. Stanley Black & Decker is the

also owns iconic brands including CRAFTSMAN, MAC TOOLS and BLACK+DECKER.

"We are in the process of updating our owner's manuals for all of our chainsaw brands," Fitzgerald said. "We want to specifically recommend this product for use in all of our chainsaws, which will bring the

consumables more in line with our values."

The soy oil used is sourced from Owensboro Grain (OG) in Kentucky and manufactured in Ohio. "The Ohio Soybean Council and Airable Research Lab offered generous support and collaboration in getting this product

to market," said Scott Porter, CEO and Co-Founder of Dynamic Green Products, Inc., which developed this ground-breaking product.

While this is not the first biobased bar and chain oil to reach the marketplace, it's the first one to tout the benefits of soy oil, and the ONLY bar and chain oil that is Certified Ultimate Biodegradable and independently tested by a leading university for performance. It is rigorously tested, and the price point is commensurate with synthetic bar and chain oils on the market. Fitzgerald said their unofficial motto is "sustainability without compromise."

The new product can be found in Bomgaars Supply stores in the Midwest, High Plains and Rockies regions, and is currently available through **HomeDepot.com, Amazon.com, MAC TOOLS, ACME Tools** and a few other outlets. ♦



Every bottle of DEWALT Chainsaw Oil is stamped with OSC's logo and states DEWALT's support of the American soybean farmer.

world's largest tool manufacturer. In December 2021, they completed their acquisitions of MTD holdings and Excel Industries, creating a global leader in outdoor power equipment. Along with DEWALT, the company

Greasing Up Grain Trucks with Soy

By Madi Layman

Formed in 2019, Gear Head Lube set out to create an innovative and driver-friendly grease for tractor trailer fifth wheel lubrication. Gear Head Lube chose soy for its biodegradable and superior lubrication properties. With the support of the Ohio Soybean Council and Airable Research Lab, Gear Head Lube successfully marketed a product that is user friendly, environmentally friendly and soybean industry friendly.



greases. It also appeals to fleet owners as they look to reach their environmental initiatives.

There are about two million tractor trailers in the U.S. and Canada. Assuming that each tractor trailer is lubricated once every two weeks on average, that makes for a great market opportunity. Gear Head Lube's team

views the U.S. market to have the potential for tens of millions of their grease pads every year. That accounts for about six million bushels of U.S. soybeans. This will drive a demand for about two million gallons or more of soy oil per year.

"We would like to say how much we appreciate the support we got from the Ohio Soybean Council," said Todd Whiting, Gear Head Lube director of product development. "We have been using funding for marketing and it has been so valuable to us."

The Ohio Soybean Council and Airable Research Lab support companies like Gear Head Lube to market sustainable, soy-based products, which increases demand for soybeans and soybean oil.

Gear Head Lube was awarded the Heavy Duty Trucking Top 20 Products of 2022 award for this unique and impactful product. Their fifth wheel grease pads were showcased during the 2022 Mid-America Trucking Show in Louisville, Kentucky. The product is currently available for purchase at www.gearheadlube.com.

For more information on how Airable Research Lab and your soybean checkoff are marketing innovative soy-based products, visit AirableResearchLab.com. ♦



Gear Head Lube developed soy-based dry pads that can be used to grease the fifth wheel of a tractor trailer. The grease is made from domestically produced soybean oil and is formed into a dry three-inch square. This pad is then placed on the fifth wheel surface and when the weight of the trailer is lowered onto the fifth wheel, the pad is crushed and morphed into a semi-solid grease. The turning of the truck and trailer spreads the grease, doing the work for you without the mess.

In addition to a mess-free product the pads offer positive environmental impacts. The grease is made of a high percentage

of soybean oil, making it environmentally friendly and renewable.

"The fifth wheel of the tractor trailer is an exposed exterior surface. And sooner or later, everything that is used on that fifth wheel is going onto the roadbed. From the roadbed it's going onto the roadside and into the groundwater," said Brian Walker, Gear Head director of sales, marketing and business development. "There is a substantial benefit to having an environmentally friendly, biodegradable product for this application."

This is a big plus for farmers as they lower the risk of contaminating their soil with traditional fifth wheel



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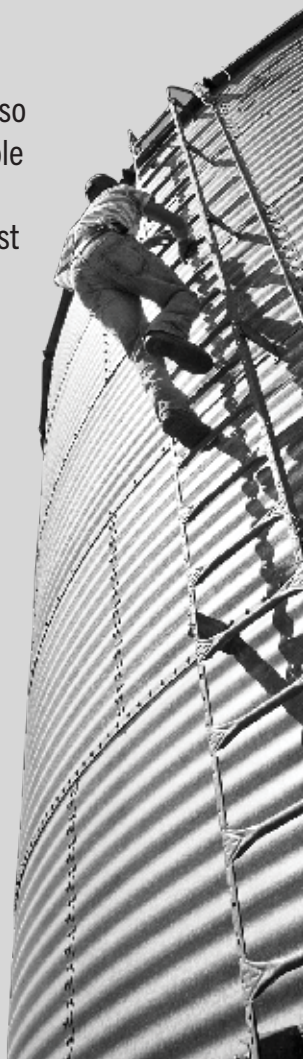
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WE CAN'T WAIT TO SEE YOU!

The Ohio Soybean Council is excited to see you again at the 2022 Ohio State Fair! Visit us on the Mountain Dew Midway for Soybean Day on **July 29th** or in the Land & Living exhibit **all 12 days**.





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CFI Brings Ag and Food Together to Earn Consumer Trust

We've all seen the shift. Today's consumer has heightened interest about food — where it comes from, who's producing it and how, and the impact on people, animals and the planet. We've also seen the proliferation of misinformation about how food is produced. Throw in a pandemic, supply chain issues, the war in Ukraine, inflation, soaring fuel prices and stores with bare shelves, and consumer curiosity and skepticism about food has quickly turned to deep concern.

In this environment, it's imperative that agriculture and food double down to engage with the public to earn trust in a food system that's continually innovating and working to produce safe, healthy, abundant food in more sustainable ways. Without trust, agriculture and food lose their "social license" — or public permission to continue to produce.

That's why the Ohio Soybean Council (OSC) joined The Center for Food Integrity (CFI) 12 years ago, to gather around the table with others in agriculture and food to build this trust. OSC Chairman Jeff Magyar currently serves on the CFI board as the United Soybean Board representative. OSC Executive Director Kirk Merritt has served on the CFI board for several years and currently serves as the board treasurer.

CFI is a not-for-profit organization whose more than 150 members and project partners represent the diversity of today's food system — from farmers, ranchers and food companies to universities, non-governmental organizations, restaurants, retailers and food processors. The organization, celebrating its 15th anniversary in 2022, doesn't lobby or advocate on behalf of any brand, company or food production method. It simply works to ensure consumers have the balanced information they need about food to make informed



choices that are right for them and their families.

CFI does this in several ways, including:

- ▶ Initiating and facilitating public discussion on food issues as a neutral third party
- ▶ Developing deep consumer insights through its knowledge, networks and continuous research that reveals consumer attitudes, motivations, behaviors and trends
- ▶ Providing strategic direction and training to improve alignment between the food system and consumers
- ▶ Convening, empowering and supporting its members to develop best practices in earning trust
- ▶ Connecting members with others across the food chain for deeper discussion and learnings

CFI is known for its peer-reviewed and published consumer trust model, which shows that engaging with consumers on shared values is the key to earning trust, and its consumer research that helps the food industry develop policies and practices, and communication and consumer outreach strategies.



The trust model and research are foundational to all its programs, trainings and initiatives, including the Engage shared values training and Engage: Earn

Trust in Technology training, the Optimizing Sustainability framework, which gives food system stakeholders tools to evaluate the growing list of sustainability priorities to determine the impact of potential decisions, and the Coalition for Responsible Gene Editing in Agriculture. The Coalition recently launched a voluntary framework to increase transparency and stakeholder engagement to build trust in the products derived through gene editing and those using them. This is just a small sample of what CFI does for the food industry and we're proud to play a part.

By gathering around the table with farm and food organizations through CFI, the Ohio Soybean Council is more empowered than ever before to earn trust in Ohio soybean farmers and U.S. Soy. We have a great story to tell and CFI provides the resources, tools and networks to help us share it. ♦

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The Value of U.S. Soybean Oil: Beyond Price and Protein

By Brandelyn Twellman

What started as 300 samples of soybean oil collected from origins around the world has improved the buying experience for crushers and refiners across the globe. Gone are the days of determining value by price and protein alone. The U.S. Soybean Export Council's Soybean Oil Value Calculator, funded by U.S. soybean farmers and their checkoff, is an innovative tool which enables customers to make decisions based on the nutrient value of soy, oil quality and refining yield by country of origin, rather than merely its crude protein content and/or price, allowing real-time comparison.

Its purpose? While the calculator tangibly allows for real-world value comparisons and cost differentiations, USSEC created this innovative tool to go beyond the buying process and spark collaboration between members of a team.

"With the Soybean Oil Value Calculator, USSEC has provided more information to international buyers on the value of their soybean oil," said Will McNair, USSEC Director of Human Nutrition and Oil. "It helps to start a conversation among those in many different roles and functions, whether they are working for crushers, refiners and other customers.

It allows people in commercial operations and refining roles to come together so they can clearly see that soybean oil isn't just about

the lowest price. It's about getting a high-quality oil that enables you to spend less on refining or produce a higher refining yield."

HOW IT WORKS

The Soybean Oil Value Calculator quantifies the economic value of processing soybean oil by origin through identifying characteristics

Comparing soybean oil from the U.S. and South America, U.S. Soy exhibits a higher value proposition, solidified through use of the calculator. This online tool enables data input and analysis of value by individual users.

"We're using real-world data collected to create a profile of different origins of soybean oil," McNair said. "Customers can then access

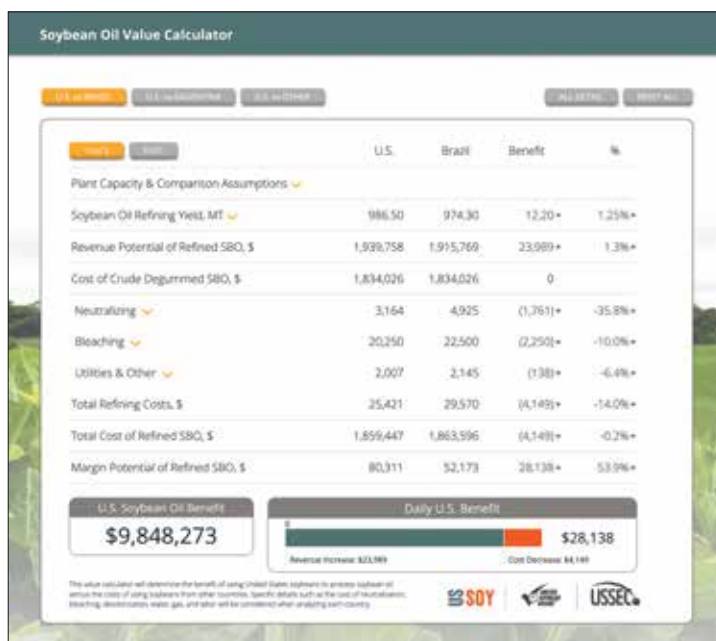
USSEC's Soybean Oil Value Calculator, plug in their numbers, and receive a personalized cost estimate in their preferred currency."

By enabling customers to insert their own data into the calculator such as capacity and expenses, crushers and refiners use this innovative tool to analyze the estimated refining benefit of using U.S. Soy. The analysis and Soy Oil Value Calculator shows the superior value of U.S. soybean oil. It also validates why U.S. soybean oil can be more valuable to the end users compared with soy from other origins. The data provided includes increased revenue from

decreased refining loss and the actual cost associated with refining.

The calculator has expanded the value of soybean oil and provided buyers a firsthand look at the U.S. Soy advantage. USSEC plans to build forward. With 300 additional samples currently being collected, the research, analysis and comparison will continue into the foreseeable future, saving crushers and refiners both time and money for years to come.

Interested crushers and refiners can dive into the Soybean Oil Value Calculator at USSoy.org/soybean-oil-value-calculator. ♦



that contribute to refining cost differences. Three-hundred soybean oil samples were collected from U.S., Argentine and Brazilian origins. Working with a variety of refining experts, USSEC determined the profile of the samples and gathered estimated costs of refining each.

The Soy Oil Value Calculator analyzes soybean oil refining yield, revenue potential of refined soybean oil, cost of crude degummed soybean oil, and refining costs (neutralizing, bleaching, utilities). Characteristics evaluated include free fatty acids, color, Neutral Oil Loss and more.

HOW GLOBAL TRADE ISSUES, SUPPLY AND DEMAND ARE DRIVING UP FERTILIZER COSTS

At The Mosaic Company, our mission is to help the world grow the food it needs. We do everything we can to offer stable prices and a reliable supply of critical fertilizer to U.S. farmers. In fact, we supply about half of the phosphate fertilizer applied in the United States. We recognize that fertilizer costs have increased dramatically over the past several months, and feel a responsibility to share our global perspective on this complex issue.

1) Fertilizer demand follows commodity prices

Demand for fertilizer has increased as farmers try to capture additional revenue from higher crop prices, leading to an increase in both planted acres and fertilizer use. The trade outlook for U.S. agricultural commodity exports remains strong for 2022, as it was in 2021, and with higher grain prices driving higher fertilizer demand, higher fertilizer costs historically follow.

Additionally, fertilizers are globally traded commodities, just like soybeans, and as a result, fertilizer prices are influenced by many factors such as increases in commodity prices driving global demand of fertilizers.

2) The cost of fertilizer production has increased

Higher input costs such as ammonia and sulfur, two critical inputs for production of phosphates, were subject to sharp increases in 2021, and have seen further acceleration in 2022. Prices have increased 428% and 401%, respectively.

3) Trade and Supply disruptions continue to reshape the market

Other countries announced restrictions of fertilizer exports to ensure their own domestic supply. For example, China, which accounts for over 25% of global phosphate exports, imposed strict export controls in October 2021 and are expected to remain for the

foreseeable future. In addition, the geopolitical situation in Eastern Europe is further complicating global fertilizer supplies. While the U.S. is in a better position than many other countries, global product supply and supply chain has been disrupted due to sanctions and port closures. Until this situation deescalates, and transportation normalizes, fertilizer supply will continue to be constrained keeping prices elevated in 2022.

In March 2021, the U.S. International Trade Commission issued a countervailing duty on Moroccan and Russian phosphate fertilizer imports due to unfair foreign subsidies. Irrespective of this, phosphate imports came into the U.S. at record levels, and from a more diversified supply base. In fact, U.S. phosphate imports increased by 1.7 million metric tons or 73% year-over-year in 2021 and from double the amount of suppliers relative to historical norms. This has resulted in a more balanced and fair-trade market, which creates a more competitive environment with trusted and reliable suppliers for American farmers and American agriculture in the long term. Phosphate prices in the U.S. are currently \$150 to \$200 per ton less than in other major agricultural markets such as Brazil and Europe. Assertions that the countervailing duties are driving U.S. prices higher are simply untrue.

We understand the pressures ag retailers and farmers are facing during this tumultuous time and the frustration that comes with it. We value our long-standing relationships and are committed to our retail partners and their farmer customers, and will continue to offer them transparency and support as they navigate tough decisions ahead.



Value of U.S. Soybeans: The Proof Is in the Nutrients

Originally published by the United Soybean Board

With input prices still rising, farmers are stretching every dollar they spend. Their checkoff, though, is looking to add to the dollars they'll make, showing buyers they have to look at more than soy's price tag.

The U.S. Soybean Export Council's (USSEC) digital tool reveals the benefits of purchasing U.S. soybean meal on quality over price. For decades, the companies buying soybean meal focused on crude protein, price and availability. With support from your checkoff, including state organizations, USSEC is changing the conversation.

In 2020, USSEC released a Nutrient Value Calculator (NVC), which allows international feed buyers and

nutritionists to assess the value of U.S. soybean meal compared to meal of other origins.

To show buyers an accurate view of U.S. soybean meal's value, the calculator accounts for essential components for feed quality and efficiency, such as amino acids and energy value. USSEC's staff around the world introduce key customers to the tool, partnering with them to input the customer's specific data, diet requirements and goals to provide a more accurate assessment of U.S. soybean meal value.

To create value for U.S. soybean farmers, the checkoff works together with industry partners like USSEC to define and promote the unique value and versatility of U.S. soybeans and soy products through both traditional avenues and new opportunities.

"U.S. soybean meal might cost more upfront than those of Brazil and



Argentina, but the calculator proves ours has better quality parameters. And that higher quality can achieve customer goals more efficiently, with less cost," says Doug Winter, a checkoff farmer-leader from Illinois who serves as chairman of USSEC's board of directors.

When the value added by U.S. soybeans is made clear to customers, their decisions and their demand are simple.

Decisions made simple

A study completed in 2020 found that meal from different countries of origin should be treated individually when formulating swine and poultry diets.

Using the NVC, developed by Genesis Feed Technologies in partnership with the soy checkoff, the economic value of U.S. soybean meal can be evaluated by using formulas representative of the regional feed manufacturers. Nutrient values and prices of all the other components of the diet are also used in the tool's calculations. The NVC indicates that U.S. soybean meal contributes to cost reduction in broiler diets.

"Ultimately, we can prove that U.S. soybean meal has better internal quality parameters," says Karey Claghorn, the executive director of marketing, communications and operations for USSEC. "The energy content and digestible amino acids, especially critical ones like lysine specifically, are a huge topic right now because there's a shortage of synthetics in the market."

The study showed that the average U.S. soybean seed composition is 34 percent protein, including essential and nonessential amino acids, 21 percent insoluble carbohydrates, 19 percent oil, 9 percent soluble carbohydrates, 4 percent ash (minerals) and 13 percent moisture.

It's clear that U.S.-grown soybean meal provides the numbers nutritionists need, but it also comes with so much

more, such as a readily available supply and a dependable infrastructure system to get our product where it needs to be when it needs to be there.

"Soybean farmers take pride in growing a high-quality, sustainable crop

each year and being a reliable supplier for the world," says Winter.

Moving the needle on preference

USSEC has already seen positive results from using the NVC with customers. Claghorn says they are currently using the NVC in Southeast Asia, the Americas, Europe, the Middle East and North Africa.

Soybean meal is an essential source of protein for the global feed industry, where it is used in swine, bovine, poultry and aquaculture diets. Claghorn says the USSEC team is deploying the tool for poultry, swine and some dairy rations right now. The NVC tool could also be used to demonstrate the future value of U.S. soybeans in the world aquaculture industry.

"We would like to get there in aquaculture," Claghorn says. "We're still having the conversation about replacing fishmeal with soybean meal as a more sustainable protein source. Then we can talk about market share and value."

Proving quality can improve the bottom line

U.S. farmers take pride in growing high-quality crops each year while being a reliable supplier for the world. Bill Bayliss, a Logan County soybean farmer and Ohio Soybean Council vice chairman, has participated in several trade missions that highlight U.S. soybeans to international buyers, even hosting trade missions with international buyers on his farm. He is excited that an effective tool like the NVC is helping show the value of soybeans grown on his farm.

After all, that's the mission of the checkoff — to create value for U.S. soybean farmers like Bill and Doug.

"We know buyers are often looking one direction and nutritionists are looking the other," Bayliss says of buying habits in international markets. "Producers have to be as efficient as possible when it comes to average daily gain and feed conversion to get their animals to market. It needs to be



Animal agriculture is soybean farmers' biggest customer - the meal from nearly 30 million bushels of Ohio soybeans are fed to pigs, chickens, cattle and other livestock and poultry every year.

the most economical way. The NVC shows people that all soybeans are not created equal."

He hopes the tool will impact the way soy is purchased moving forward.

"By sharing this with people, it is creating a culture shift through the value chain," he says. "We need to have buyers looking at different ingredients instead of just protein. We need to bridge the gap between buyers and the nutritionists, and the NVC is a way for us to do that."

And farmers have put their faith and their investments in the checkoff to make that happen.

"The soy checkoff funded portions of this tool," Claghorn says. "Work that we're doing in the field with boots on the ground supports those direct customer interface actions. So, every day, everything is integrated with the checkoff."

She says the NVC is one of many tools in USSEC's arsenal. USSEC officials access a full toolbox to demonstrate why U.S. soybean meal should be used in feed operations. Other tools help demonstrate topics of interest from the reliability of U.S. supply chains to sustainability.

"You want to zone in on one thing at a time with the customer to move the needle," Claghorn says. "This helps us to break it down. It's a cultural shift in how people purchase and look at input buying." ♦

Combating Infrastructure Inflation

By Mike Steenhoek, Soy Transportation Coalition, Executive Director

The sticker shock Americans are increasingly experiencing is not limited to grocery stores or gas stations. Inflation is also intruding on the cost of constructing roads, bridges and other infrastructure projects. According to the American Road and Transportation Builders Association (ARTBA), the cost of highway and road construction materials has increased overall by 21 percent over the past year. A \$1 million bridge replacement last year will cost over \$1.2 million this year. A \$100 million portfolio of road construction last year will cost \$121 million this year. The ARTBA further highlights the inflation over the past year among major components of transportation construction:

- ▶ Asphalt: 56 percent increase
- ▶ Concrete Block and Brick: 11 percent increase
- ▶ Ready mix concrete: 9 percent increase
- ▶ Machinery and equipment (mixers, pavers, and related equipment): 15 percent increase

While additional resources for transportation projects are being provided by the recently enacted “Infrastructure, Investment, and Jobs Act” and other state and local measures, infrastructure inflation will continue to erode some of its purchasing power.

The farmer leaders of the Soy Transportation Coalition (STC) have long promoted more economical ways to maintain and improve our infrastructure, but this mentality is particularly timely given the

significant cost increases confronting transportation construction. In an effort to combat this infrastructure inflation, the STC is partnering with state soybean organizations to promote innovative methods of replacing and repairing rural bridges that: **1.)** Will provide notable cost savings; **2.)** Have been validated as safe by members of the engineering community, and **3.)** Are widely accessible throughout rural America.



The Geosynthetic Reinforced Soil-Integrated Bridge System provides durability and decreases bridge construction time and cost due to the simplicity in design and accessibility of necessary materials and equipment.

In 2021, the STC published the report, “Top 20 Innovations for Rural Bridge Replacement and Repair”, that profiled specific opportunities for states, counties, and municipalities to maintain and improve their bridge inventory while making the taxpayer dollar stretch further. This year, in order to encourage further utilization of the innovative approaches featured in the report, the STC and other soybean farmer organizations are offering funding to help underwrite some of the pre-engineering and

design expenses of replacing or performing a major rehabilitation on a rural bridge if one of the concepts in the report is utilized and if the bridge being replaced is located in an area in which soybeans or soy products are transported.

A few examples of the “Top 20” concepts are as follows:

Railroad Flat Car Bridges

- ▶ Cost per bridge: \$120,000 (vs. \$275,000 - \$350,000 prevailing method)
- ▶ Cost savings: 50 percent - 60 percent
- ▶ Construction time: 15 percent - 25 percent faster

Geosynthetic Reinforced Soil-Integrated Bridge System (GRS-IBS)

- ▶ Cost per bridge: \$250,000 - \$350,000 (vs. \$350,000 - \$600,000 prevailing method)
- ▶ Cost savings: 25 percent - 60 percent
- ▶ Construction time: 50 percent - 75 percent faster

Buried Soil Structures

- ▶ Cost per bridge: \$75,000 - \$95,000
- ▶ Cost savings: 50 percent - 60 percent
- ▶ Construction time: 20 percent - 25 percent faster

In providing this funding, the STC and other soybean farmer organizations hope to provide tangible savings for those states, counties, or municipalities who partner in the project as well as further demonstrating these cost-saving concepts — resulting in greater momentum for others to utilize them in the future.

View the full “Top 20” report at SoyTransportation.org. ♦

On World Food Day and every day, WISHH'S strategic partners take local action.



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www.wishh.org



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.



**"THE CHECKOFF HAS BEEN A HELP TO US.
IT'S OPENED FOREIGN MARKETS AND FUNDED
RESEARCH ON DISEASES AND FUNGI.
THE RESEARCH AND DEVELOPMENT
HAS JUST BEEN VERY POSITIVE."**

-JAN LAYMAN, KENTON, OHIO



**BY INVESTING IN THE SOYBEAN CHECKOFF, FARMERS ENSURE END-USER
DEMANDS ARE MET WHILE RAISING SOYBEANS PROFITABLY. USING
INFORMATION FROM THE OHIO SOYBEAN COUNCIL, FARMERS TRACK
RESEARCH ON NEW VARIETIES, NEW USES AND NEW FOREIGN MARKETS
TO GROW NEW OPPORTUNITIES.**

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