

Spring Issue 2022

# SOUTH DAKOTA SOYBEAN LEADER

A publication of the South Dakota Soybean Association

## 2022 Spring Check-In

- ▶ Soy Industry News
- ▶ Legislative Recap
- ▶ New Soybean Processing Plant  
Creating New Opportunities
- ▶ How to Handle Fertilizer Costs  
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- ▶ Sustainability Protocol Boosts U.S.  
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# PRESIDENT'S OUTLOOK

*By Jordan Scott, SDSA President*



**JORDAN SCOTT**  
SDSA President

The South Dakota Legislature had another busy session this year. There were nearly 500 bills and resolutions on a variety of topics. Several of them could have an impact on soybean farmers and our families. A few of the highlights included workforce housing, tax changes, land assessment, infrastructure, and cybersecurity. Marijuana bills were popping up like weeds all session as well.

One of the most interesting topics to me has been cybersecurity. It is vital to every aspect of our state. Farming is no exception. The amount of data and computers that we all use to plant, monitor, spray, and harvest our crops is incredible. Our generation is the first to be challenged so greatly by these and many other issues. World events and the threat of cyber-attacks have also highlighted this issue.

I recently returned from Washington, DC, where our South Dakota Soybean Association (SDSA) team spoke with each of our Congressional representatives. While we were there, leadership from American Soybean Association (ASA) met with NASA about cybersecurity, weather, and data collection. Yes, that NASA. I dreamed about being an astronaut and wearing that NASA badge as a young boy. Never did I ever think that we would be working with NASA on the farm! They even had a booth at Commodity Classic, our yearly meeting and farm show with ASA. I say all this to make this point: the issues affecting farmers are constantly changing. Policy and technology are increasingly influencing how we farm, for good or bad.

We continue to monitor bills that come up every session at the state and national levels. A few areas of national focus are biofuels, supply chain (import and export), Waters of the United States (WOTUS), and EPA rulings. As the policy board of SDSA, we constantly have conversations with legislators and agency officials about all these issues.

Without the support of members in SDSA, we could not have these meetings and make the connections with legislators (and NASA) that will shape the way future generations farm. I would like to extend a huge thank you from our board and staff to all our members. We are glad that you see the value in membership, and we truly love representing all South Dakota soybean farmers. ■



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SOUTH DAKOTA SOYBEAN LEADER

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Spring Issue 2022 | Volume 11 Number 1

- 3** President's Outlook
- 5** Letter from your Chairman
- 6** Market Update
- 7** National Biodiesel News
- 8** Soy Industry News
- 10** New Cybersecurity Project Could be Critical in Protecting Agriculture
- 11** Bio-Resins with Soy Oil could Create a New Product and Market for Soybeans
- 13** Letter from the Executive Director
- 14** Whole-Farm Philosophy: South Dakota Farm Couple's Conservation Plan Integrates Crops and Cattle
- 16** Legislative Recap
- 18** New Soybean Processing Plant Creating New Opportunities
- 20** Consumer Perception
- 21** SDSU Extension Announces Agriculture Behavioral Health Voucher Program
- 22** Hungry for Truth
- 24** How to Manage Fertilizer Costs Against Tight Margins
- 25** Sustainability Protocol Boosts U.S. Food Soybean Demand
- 26** Soil Health: SDSU Soil Health-Minimizing Soil Disturbance
- 28** Soil Health: More Than Corn and Beans: Diverse Plants Work for Farm, Soil
- 30** For ASA CHM. Scott, 2022 Classic a Family Celebration
- 31** SDSRPC & WISHH Build Partnerships to Reap the Power of Soy Protein
- 34** SDSA Membership



# LETTER FROM YOUR SOYBEAN CHECKOFF

Provided by Tim Ostrem, Chairman of the South Dakota Soybean Research and Promotion Council

**S**pring planting is go-time for farmers, and the South Dakota Soybean Research and Promotion Council board of directors has been busy making decisions and investing the Soybean Checkoff to help you in your farming practices throughout the year.

## PRODUCTION RESOURCES:

SDSU and the North Central Soybean Research Program are working on checkoff-funded weed and pest management research projects. Visit our On-Farm Research website for research results. Yield contest winners share the practices that they use to achieve some of the best yields we've ever seen in the state. Information about varieties, maturities, fertility, herbicides, fungicides, conservation tillage, strip-till, and no-till practices are shared for your benefit online at [www.sdsoybean.org](http://www.sdsoybean.org) under Yield Contest Results.

## TRANSPORTATION:

Do you have bridges in your county that need attention or possibly replacement? The Soybean Checkoff will assist ten South Dakota counties that grow soybeans by providing up to \$10,000 for bridge repair or replacement utilizing unique and cost-effective methods. Getting trucks and equipment from field to market safely is a priority.

## FUEL:

Renewable diesel is creating tremendous demand for soy oil as a feedstock. Renewable diesel has the same specifications as fossil fuel diesel so it can be used in pipelines and has the same cloud point as petroleum diesel. Using [Usage?] of biodiesel and renewable diesel improves lubricity in diesel equipment.

## PROCESSING:

Increased use of renewable diesel and other soybean products has made it possible for expansion for South Dakota Soybean Processors, who recently announced plans for a new crush plant near Mitchell. The facility will help narrow basis and provide soybean meal for area livestock. This new venture will also enhance the local economy with the addition of about 50 employees.

## MARKET DEVELOPMENT:

Farmers can go to the field this spring knowing your Checkoff is seeking new customers for your soybeans. The Checkoff supports programs such as the World Initiative for Soy in Human Health (WISHH) which seeks new emerging markets for our soybeans in economically disadvantaged countries with human protein needs. As the economies of those countries develop and demand for meat grows, the United States Soybean Export Council (USSEC) promotes U.S. soybean use for aquaculture and livestock.

## CONSUMER OUTREACH:

Our Hungry for Truth consumer outreach initiative is gaining more traction every day. Check out and share farm stories, recipes, information on new uses of soy, and more online at [hungryfortruthsd.com](http://hungryfortruthsd.com) and Hungry for Truth SD on Facebook and Instagram.

## TECHNOLOGY:

Soybean Checkoff dollars helped to build the Raven Precision Ag facility at SDSU. Precision agriculture is the future of farming and South Dakota farmers have always been quick adopters of new technology.

With all these projects and more, I'm excited to go to the field again and help feed and fuel the world! ■



**TIM OSTREM**  
SDSRPC Chairman

## GLOBAL SOYBEAN BALANCE SHEET IN FOCUS

By Tregg Cronin, Grain Market Analyst at Halo Commodities

Thanks to drought in parts of South America, the global soybean balance sheet has gone from overburdened to tight in a couple short months.

When writing the last article for the Soybean Leader in December, projections for crops out of South America were mammoth. Yet, as we've seen all too often, weather the last half of December and first part of January can make or break a Brazilian soybean crop. For the month of December, key soybean production areas of Rio Grande Do Sul and Parana saw 27-34% of normal precipitation. In January, both provinces saw around three-quarters of normal precipitation. Combined, the two account for 30% of the total Brazilian soybean crop. On the February WASDE, the USDA lowered the Brazilian soybean crop to 134.0 million metric tons (MMT) vs. 138.0 MMT last year. However, it was the Brazilian state forecaster CONAB which stole the show in February, cutting their estimate of the country's soybean crop to 125.0 MMT. This should portend additional cuts by the USDA on subsequent WASDE reports.

At the time of this writing, the Argentine soybean crop was still up in the air but looking to come in as the smallest in four years. To round out South American production, Paraguay was also staring at the smallest soybean production since 2011/12 as it dealt with its own production issues. To get a sense of the true available supply to the globe, we often like to combine the major exporters into one balance sheet. Once Argentina, Brazil, Paraguay and the United States are combined into a single supply and demand table, we see the smallest total supplies since 2017/18. Global demand, however, at 316.781 MMT is the largest on record, just besting last year's by less than one million tons. This yields ending stocks of 53.6 MMT, the smallest since 2014/15. The stocks/use ratio of this group tallies 16.93%, the lowest percentage since 2011/12.

This global supply and demand situation holds large implications for planting intentions in the United States this spring. Early estimates point toward an additional 1-2 million acres of soybeans being planted in the U.S. That said, current economics are favoring corn in many parts of the central corn



Major exporter ending stocks of soybeans are projected to slip to the smallest since 2014/15 at a time of record global demand without any further cuts to South American production.

belt. In addition, as the planting data from the 2021/22 marketing year showed, there are not an abundance of free acres to be had with the current marketing year featuring a relatively low 2.1 million acres of prevent plant. Even accounting for planted acres two million above 2021/22, and normal growth rates in demand, carryout projections on soybeans for the 2022/23 marketing year struggle to get above 300 million bushels.

Corn, soybeans, and spring wheat all need acres to maintain or build comfortable balance sheets in the coming year. A host of issues from geopolitical tensions, high priced or scarce inputs and moisture concerns are all playing into producer decision making. This year's acreage battle could come down to the wire and risk premium will have to be maintained throughout.

Major exporter ending stocks of soybeans are projected to slip to the smallest since 2014/15 at a time of record global demand without any further cuts to South American production. ■





## HOW RENEWABLE DIESEL WILL TRANSFORM AGRICULTURE

As the push for energy independence and achieving a lower carbon footprint continues to ramp up nationwide, many analysts believe soybean producers are going to see significant industry implications in the immediate future.

Soybean oil, of course, is one of the primary feedstocks for two biofuels—renewable diesel and biodiesel—at the center of advancements in the clean energy sector.

The main difference between the two is that the former can generally be distributed with existing energy infrastructure, while the latter requires separate storage and handling due to its cold-weather properties.

Both meet the federal government’s renewable fuel standards (RFS) and benefit from the tax credit for carbon oxide sequestration, also known as 45Q.



Source: Biodiesel Magazine, “The Rush to Crush” (Rabobank, September 2021)

### RENEWABLE DIESEL ON THE RISE

Because of its relative ease of transport and the identical chemical properties it shares with petroleum-based diesel, it is renewable diesel that stands poised to become the major driver of increased demand for soybeans and other oilseeds.

“In my opinion, renewable diesel will have a bigger impact on American agriculture than ethanol has,” says Joe Kerns, CEO of Partners for Production Agriculture. His team of market analysts has been watching the industry closely, and he feels quite bullish on this particular biofuel’s potential for impact.

He’s not alone. Last fall, Rabobank projected renewable diesel production to increase more than sixfold over the next ten years to an almost unfathomable 6.1 billion gallons by 2030. If that comes to fruition, soybean crush will have to more than double to keep pace with demand.

Kerns expects this transformation to happen rapidly. He pointed out that the ethanol industry had to build out the infrastructure to make production viable, and that took time. Today’s landscape looks quite different from the early 2000s.

“We have all the refining capacity necessary to take any lipid substrate and turn it into renewable diesel,” says Kerns, who notes that significant investments are already underway for processing plants and refineries across the country.

“This is going to be the biggest revolution,” he says, “and people are going to look back in two to three years and say, ‘What in the world just happened?’”

### IMPACT ON PRODUCTION AGRICULTURE

This shift in demand will impact producers in three significant ways: higher prices for soybeans (and higher input costs), increased acres planted to soybeans (and less acres planted to other crops) and rising cropland values.

“If we see renewable diesel and biodiesel grow in the next five years like the ethanol industry grew in the 90s and 2000s, there will be a transformational change in the landscape of agriculture,” says Dr. Bob Thaler, South Dakota State University Distinguished Professor of Animal Science and SDSU Extension swine specialist.

He points out that just this winter, South Dakota Soybean Processors announced plans to build a new processing plant near Mitchell. This will provide better access to markets for producers in the central region of South Dakota, which could aid in the shifting of additional acres planted to soybeans.

And this sort of infrastructure investment isn’t happening in isolation. Processors and refineries are ramping up their capacity for the anticipated growth in demand for biofuels.

Thaler has also been watching this trend for another reason: swine nutrition.

He believes the projected increase in soybean production to meet oil demand will change the face of animal nutrition as well.

“Soybean meal—long the gold standard for protein and amino acids—is likely going to become cheaper and could replace at least some corn as an energy source for pigs,” says Thaler.

He also suggests that more readily available soybean meal might find its way back into feedlots to supplement protein needs in cattle—something that hasn’t happened for a generation.

### PREPARING FOR CHANGE

So what does all of this mean for producers? In short, it means change is coming.

“We are going to have to get innovative,” says Kerns. “We’re going to have to adapt. But that’s what we do best. All of this change might be uncomfortable. It’s also going to be incredibly profitable.”

Kerns explains that producers will want to take inventory of their current assets and needs in order to prepare for the changes ahead.

Assessing available cropland, determining what equipment needs or labor shortages are present on their operation, and looking at futures or options are all important steps producers should consider.

“This is not a generational or multi-generational shift,” says Kerns. “It’s going to happen in three to five years, but the magnitude of the change is completely unprecedented.” ■

## Shop Talks

South Dakota Soybean Association hosted two Producer Shop Talks this winter. One was near Emery at Josh and Kara Kayser's shop, and the other was near Harrold at Colin and Heather Nachtigal's shop. Each program included updates on the following: crop insurance, advocacy efforts of SDSA on a state and national level, SD Soybean Checkoff programs, soil health, and news from South Dakota's Congressional Delegation. Watch our website for dates of our Summer Producer Shop Talks.



Shop Talk held at Colin and Heather Nachtigal's shop



Josh Kayser's Shop Talk

## Soy100

Over 100 farmers attended Soy100: Growing 100 Bushel Soybeans in Brookings on March 22. Attendees heard an outlook on weather and markets for the upcoming growing season.



## USSEC

Mike McCranie, farmer from Claremont, SD, was appointed to the United States Soybean Export Council (USSEC) board of directors.



United States Soybean Export Council Board

## New Farmer-Leaders Appointed to United Soybean Board



Tim Ostrem, SDRPC Chairman

The U.S. Department of Agriculture announced the appointment of nine new U.S. soybean farmers to serve on the United Soybean Board (USB) and reappointed eight directors for an additional term. Farmer-leaders will serve a three-year term. Tim Ostrem was appointed for South Dakota.

## Lead your Soybean Checkoff on a State and National Level



The SD Soybean Research and Promotion Council is accepting applications for directors in districts 3, 4, and 7. District map and application requirements online. Deadline to apply is 4-14-2022



The South Dakota Soybean Research & Promotion Council is seeking soybean farmers interested in filling two of South Dakota's four seats with the United Soybean Board (USB). Deadline to apply is 4-20-2022.

Find more information on these leadership opportunities at [www.sdsoybean.org](http://www.sdsoybean.org).



## On the Hill

On Tuesday through Thursday, March 1-3, The American Soybean Association (ASA) hosted meetings and DC Hill visits with Congressional delegations from across the soybean belt.



This was the first in-person Hill visits since the summer of 2019. SDSA met with Senator Rounds and ag staffers Joe Bliss and Michael Brooks in his office in the Hart building, Representative Johnson and new Ag Policy Advisor Chance Hunley in his Longworth office, and Senator Thune and Ag Policy Advisor Ryan Donnelly in the Whip's office in the US Capitol.

## Ag Fest

On Tuesday, January 25, the SD Soybean Association met in Pierre for a board meeting followed by the Legislative Ag Fest. The board briefly discussed business before welcoming Secretary Roberts and District 28A Representative Oren Lesmeister to give a legislative update to the group. Ag Fest was held Tuesday evening and presented an opportunity for various ag groups to meet with state legislators. SD Soybean staffed a booth and highlighted many marketing and promotional activities.



## Commodity Classic

SD Soybean Checkoff and SD Soybean Association farmer directors from across South Dakota attended Commodity Classic in New Orleans, LA. Attendees participated in tours, met with partner organizations from around the world, and spent time learning about new technology on the trade show floor.



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# NEW CYBERSECURITY PROJECT COULD BE CRITICAL IN PROTECTING AGRICULTURE



**T**echnology has greatly impacted many industries we heavily rely on, including agriculture. The evolution of precision ag allows producers to collect and analyze data to effectively use crop inputs to maximize efficiency. But along with the benefits comes cybersecurity risks.

Many of us have already seen the implications of cyber-attacks within agriculture. Cooperatives being ransomed for millions of dollars. Hackers changing the chemical balance inside a water plant. Incidences like these are why South Dakota State University (SDSU) has partnered with Dakota State University (DSU) to start a project called CyberAg.

“The food and agriculture sector is a critical national infrastructure,” said Dr. Richard Hanson, DSU Interim Provost and Vice President for Academic Affairs. “That is why we have become very concerned about protecting the data that drives precision agriculture and the range of potential cyber vulnerabilities within agriculture and food production.”

To kick off this initiative, SDSU and DSU have put together House Bill 1092. The bill is currently going through the legislative process. It is a one-time ask for \$1.25 million to fund a cyber ag symposium to identify needs, research projects to create solutions, and more.

“We have seen things already happening in the marketplace that ultimately impacts all of us as consumers and producers,” said Karla Trautman, Director of SDSU Extension. “We want to get on the front-end of minimizing that impact to all. Find solutions to prevent these cybersecurity threats from occurring.”

*If funded, the CyberAg project will help in three major ways.*

## 1. RESEARCH TO FIND SOLUTIONS.

As stated above, the project’s first step is a national cyber ag symposium.

“This symposium would bring together cyber industry experts, university experts, and producers so we can share concerns, identify vulnerabilities, build relationships, perhaps share expertise and start to build a series of interventions,” said Dr. Hanson.

Once concerns are identified, SDSU and DSU will have the framework to start collaborative research projects to create solutions.

“We will start to put the experts to work researching solutions to mitigate the risk,” said Trautman. “What we’re hoping to gain from the research is identifying licensable technologies that we can hit the marketplace with.”

## 2. IMPROVEMENTS TO PRECISION AG EDUCATION.

The findings from the symposium and research will also impact what happens in the classroom at SDSU.

“There will certainly be a component of this initiative woven into the academic portion of our Precision Agriculture major at SDSU,” Trautman said. “We want our students to learn about the practices, knowledge, and research we’re finding in the field.”

## 3. SOLUTIONS FOR PRODUCERS TO IMPLEMENT.

Finally, and most importantly, the initiative will provide outreach to put research findings in place and help producers protect themselves from cyber risks.

“It’s not only about working with our producers to identify needs and getting them connected with experts but teaching them to mitigate risks and helping them implement security measures,” Trautman said. “So a key part of this project will be identifying how we do that and then doing it. We want to make sure farmers have confidence that the data they are collecting is secure.”

Take measures to protect yourself now.

As a producer, you can be doing things now to protect your operation against cyber threats.

“Be aware that everything you put into a cyber network is out there forever,” Dr. Richard said. “Take caution in how you build your networks and how you protect those networks. And consider investing in encryption.”

Trautman advises producers to “Know who has access to your data. Understand how your equipment works so you can easily recognize if something is not quite right. If your data is incorporated into an agreement, have a full understanding of what that agreement means.” ■



# BIO-RESINS WITH SOY OIL COULD CREATE A NEW PRODUCT AND MARKET FOR SOYBEANS

By Carol Brown

Scientists across the country are exploring how to use soybeans in various new ways. Soy oil is being used in rubber products, road surfacing materials, waxes and more.

Agricultural and Biosystems Engineering Distinguished Professor Kasi Muthukumarappan is leading a project that uses soy oil to produce a bio-resin composite material that has commonly been made with petroleum. The South Dakota State University scientist, known on campus as Muthu, is producing a thermoset resin that could replace similar products made with crude oil. The multi-year project is funded by the South Dakota Soybean Research and Promotion Council.

“The project is in two phases: development or production of the bio-resin, which has been accomplished. The second phase is testing its functional characteristics such as strength and heat tolerance,” says Muthu. “We hope to create a product that has a high value for the soybean market by creating a new use for soy oil.”

He is using the crude soy oil to produce a thermoset polymer, which hardens to a permanent state. The thermoset is a different class of polymer than thermoplastic, which can be heated to soften or melt to reform into other products. There have been corn-based resins developed, but they are in the thermoplastic class, Muthu says, which can’t be used in the same products due to their properties.

There are other advantages to using soy oil in this product in addition to its performance in the thermoset material. Soy oil is less expensive than petroleum to use in the manufacture and there is little to no waste. It takes nearly the same amount of soy oil to produce the resins as those with petroleum.

“The mass balance of soy oil to bio-resin produced is 95 to 98 percent,” he says. “So the soy oil is not wasted in making of the plastics. Moreover, this can lessen the use of fossil fuel as soy is a renewable source, making the process green and sustainable.”

Thermoset resins are used in a myriad of products worldwide from industrial parts to household products to clothing and footwear. Replacing the petroleum-based materials in these products with soy creates another market for soy oil domestically and internationally.

“The global price for soy oil is estimated at around 65 cents per liter, but for epoxy resins the value is around \$2.50 per liter,” says Muthu. “The market is waiting for us.”



*In Kasi “Muthu” Muthukumarappan’s lab at South Dakota State University, he and his research team are exploring the use of soy oil in the manufacture of bio-resins and polymers, reducing the need for fossil fuels in these products.*

As the soy-based bio-resins are developed and tested, Muthu and his team are looking to the next phase. They intend to try greener chemicals in the manufacturing process and as well as looking into its biodegradability properties. He sees great potential for this product and for those who grow the soybeans. ■

**This project was funded by the soybean checkoff. To find research related to this research highlight or to see other checkoff research projects, please visit the National Soybean Checkoff Research Database.**

#### SOURCE

Brown, C. (2022, March 21) Bio-resins with Soy Oil Could Create a new Product and Market for Soybeans. Soybean Research & Information Network. [soybeanresearchinfo.com/research-highlight/bio-resins-with-soy-oil-could-create-a-new-product-and-market-for-soybeans](https://soybeanresearchinfo.com/research-highlight/bio-resins-with-soy-oil-could-create-a-new-product-and-market-for-soybeans)



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# LETTER FROM THE EXECUTIVE DIRECTOR

By Jerry Schmitz, Executive Director of South Dakota Soybean

The South Dakota Soybean Association (SDSA) and South Dakota Soybean Research and Promotion Council (SDSRPC) work in unison to ensure producers have unencumbered freedom to farm, information to make the best production choices, and sufficient market demand that will help drive price. Freedom to farm means that SDSA is active at the local, state and national levels, addressing crop insurance, environmental regulation, land use, wetlands, land and estate taxation, Waters of the United States (WOTUS), pesticide use, facilities funding for research, livestock permitting and many other issues that directly impact family farms.



**JERRY SCHMITZ**  
Executive Director of SDSA  
and SDSRPC

The mission of SDSA is to improve the competitiveness and profitability for South Dakota soybean farmers through policy and education. In addition to addressing policy issues, SDSA is active in several other ways that assist and inform farm families. SDSA publishes this magazine and manages AgOutlook, the annual soybean convention and trade show held each December. The Board also oversees the Soybean Yield Contest and local Shop Talks, where producers and board members interact and share on a more personal level. These activities are designed to serve farmers by learning what is most important to you and your family and actively address those needs on your behalf.

The mission of SDSRPC (the Checkoff) is to enhance opportunities for South Dakota soybean farmers by investing checkoff dollars into marketing, research, education, and promotional initiatives. In the past decade, the primary focus of the Checkoff has been demand, demand, and demand in an effort to create competition and drive price. That included courting potential users domestically and internationally and creating more competition for soy usage by developing new uses. The success of those efforts has resulted in the need for an increased supply of soybeans.

Soy customers, particularly foreign buyers, highly value personal relationships with U.S. soybean farmers. They love to visit farms and fields to see the care farmers take to produce high-quality soybeans. They also appreciate farmers visiting their businesses to see how they are using soy and the quality of the product they receive. Producers of foreign poultry, swine, dairy, and fish are huge consumers of soy meal.

Research funded with your checkoff dollars has helped develop over one thousand uses for soybeans through innovation and partnerships with industry to create products that provide environmental benefits and enhance public safety. Everything from high protein feed and food products, renewable diesel and aircraft fuel, adhesives, lubricants, dust suppressants and artificial turf. Soy-based products are used in transportation for tires, foam in car seats, concrete and asphalt road/path/parking lot preservatives. Soy products touch our lives daily from head to toe, inside and outside each of us. From infant formula to protein supplements, footwear to hair care. This incredible little bean has even found its way into medical devices.

The national soybean organizations, United Soybean Board and the American Soybean Association work in tandem on projects to promote soy usage and communicate to the world the measures American Soybean Farmers take to ensure land preservation and environmental protection. The United Soybean Board is partnering with states to promote and highlight sustainability and share your commitment with the public and soy end-users that place a high value on it. By working together, soybean farmers are building a very bright future for themselves and the next generation. ■

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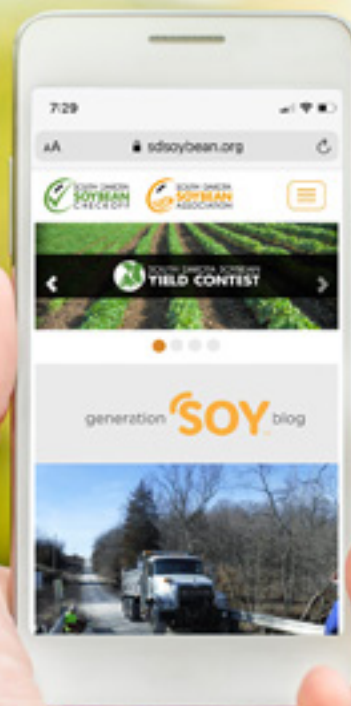
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## WHOLE-FARM PHILOSOPHY: **SOUTH DAKOTA FARM COUPLE'S CONSERVATION PLAN INTEGRATES CROPS AND CATTLE**

**C**onservation-first decisions drive the whole-farm philosophy adopted by Jamie and Brian Johnson, a fourth-generation farm couple from Frankfort, South Dakota. The Johnsons have been farming for 15 years, continuously tweaking their sustainable crops plus-cattle approach.

“The diversity in our system allows us to consistently be productive because not every year is the same, and not every crop is great. When you have a diverse blend of crops and livestock, you reduce your risk and can take advantage of weather and market changes,” says Brian. “Integration is a long-term goal for us to continue improving our conservation.” Brian’s great grandfather established the Johnson homestead after moving from Sweden more than a century ago. The original quarter has grown to 1,800 acres of cropland and 500 acres of grassland. Brian’s parents, Mickie and Alan, passed on their passion for resource optimization.

The Johnsons’ present crop rotation includes corn, soybeans, small grains and cover crops that are planted following small grain harvest for maximum growth potential.

### MAXIMIZING COVER CROP CONTRIBUTIONS

“Cover crops improve the soil profile, build organic material and place root systems where the next year’s crop can take advantage of subsoil nutrients left there,” Brian explains. The Johnsons experiment with many species of cover crops to increase water infiltration while providing nutrients to the soil and growing feed for the cattle. They retrofitted a planter to better

seed cover crops into bio strips, planting in 20-inch rows. Tillage radishes break up soil compaction, while vetch and lentils provide nutrients to the soil. Brian is considering adding faba beans to the mix as a nitrogen source when corn is the next crop to be planted.

“Our corn and soybean yields have been steady or increasing each year during the last 10 years, and I attribute a lot of that to our soil health improvements,” Brian adds.

Working with the Natural Resources Conservation Service (NRCS), the Johnsons enrolled in the Conservation Stewardship Program (CSP) in 2009 to address soil erosion and salinity. They also enrolled in the Conservation Reserve Program (CRP). Since 1986, the Johnsons have been 100% no-till and have seen soil health and water infiltration improve. Crop residue minimizes erosion and runoff, allowing the full vegetative cover to insulate and repair deficient areas.

The Johnsons also use management zones to soil sample every other year, and this directs the multiple applications of nitrogen they use in-season at the right times. They switched to variable-rate nutrient application in 2004 to better manage input efficiency. “It’s allowed us to be more cost-effective, more economical, but also more profitable. By placing the nutrients precisely, we are not overusing or wasting fertilizer resources,” Brian explains.

Manure also plays a role in fertilization. Soil sampling the year before corn or soybean planting confirms adding phosphorus or potassium is usually not needed.

“By using some biological nitrogen, we decrease our commercial fertilizer nitrogen need. My goal is to reduce our nitrogen use ratio in corn to 0.6. Right now, we’re at 0.7-0.9,” Brian says.

With technology and shifting farming practices come other opportunities, including prescription seeding rates.

Prescriptions for the following crop are made based on sampling and yield goals. They rely on a variety of trait seed for different crops to manage weeds. Brian scouts the fields regularly throughout the growing season, which, together with the crop diversity, naturally eases pest management and substantially reduces pesticide use per acre.

“By incorporating rye, for example, after corn we can change how much herbicide we have to use in the spring on soybeans,” Brian explains. “All corn and soybean acres receive a preemergence herbicide and are followed by a postemergence application of glyphosate, if necessary. The ability to change herbicide modes of action with crop rotation has allowed us to have a solid weed management program and avoid any resistance issues to date.”

## BEEFING UP THE CATTLE COMPONENT

The Johnsons have discovered synergy with their crop rotation and cattle herd. The family has 110 head of registered and commercial Angus cattle that are released onto the fields for grazing cornstalks in the fall or for grazing mature cover crops, wherever possible. Jamie is the one who encouraged raising more cattle and improving the grazing side of the operation. Grazing the stubble and cover crops build up soil microbes, while the manure and urine are the catalysts that make the regeneration process work more quickly.

“It all comes together. You get that diversity and the nutrients that help reduce your input applications,” she says. “The hoof action spreads and incorporates manure, further enhancing the cooperative relationship between the cattle and the land. The goal is to provide higher quality forage for the animals and make sure the land is not being overgrazed.”

Brian sees it as “free” grazing. “When you’re grazing cornstalks, you’ve already produced your corn crop, and that dry matter is there,” he explains. “As long as the cattle are there at the right time, you don’t add any compaction. It’s a great, cost-effective way to feed livestock.”

Although the cattle enterprise is the smaller portion of the overall operation, the Johnsons are no less committed to its stewardship and conservation. Grass acres account for about 20% of their total acres, with native grasses making up more than 80% of that. They carefully monitor pasture and grazing conditions to preserve grass regrowth and weed prevention, too.

“I think integrating livestock back onto the land has really upped our game with organic matter reducing input costs,” says Jamie. “It’s more management as far as physical labor, like putting up a fence, but it’s less management on the other side. It is really a great partnership.”

## ENRICHING SOIL AND WATER HEALTH

Jamie has become a soil health champion, speaking out about the opportunities and challenges of partnering a crop operation with a cattle enterprise.

“I think what has been done historically to native grasslands is more impactful on the future than anything in the past,” she explains. “Tearing up pastures to plant corn created problems with natural land use, resulting in salinity issues, not just for our kids but for generations to come.”

As the family’s CRP contracts began to expire in 2020, they chose to use most of the acres for grazing instead of reenrolling in the program. By micromanaging smaller tracts adjacent to pastures and cropland, the Johnsons believe they will further improve soil health while adding value to the operation through increased livestock integration. That includes seeing high levels of microorganism activity, plentiful earthworms, and a soil structure with prevalent micro- and macropores. Organic levels are currently around 4% and their goal is 6%.

“Soil health benefits start with the ability to absorb as much water as possible. It’s about holding capacity for years when you need it,” says Brian. “With a healthy living soil, you can get through drier years and build a system that has diversity above- and below-ground.”

Besides CSP and CRP, the Johnsons participate in the Environmental Quality Incentives Program (EQIP) and Wildlife Habitat Incentives Program. Some of the CRP acres are located on the edge of sloughs, which creates a buffer strip with vegetation filtering water before reaching the wetland. Wildlife is abundant, along with bee and butterfly friendly species planted by Jamie to improve pollinator habitat. A contract through EQIP provides the renovation of an existing Elm tree shelterbelt and 1,800 feet of new trees along the sides of their calving pasture.

“Our plan is to install new water tanks with a new well and a mile of water pipeline to furnish fresh water for the cattle,” explains Brian. “This improves the location of the water source and conditions for controlled grazing. Two stream crossings and a new fence will expand rotational grazing options and make forage production on cropland more accessible.”

## KEEPING IMPROVEMENT OPTIONS OPEN

Ultimately, the Johnsons’ goal is to leave the farm better than they received it. They will continue to reduce input use and increase productivity through conservation management.

“With crop diversity, livestock integration and conservation practices, we believe the landscape will withstand any challenges Mother Nature may impose,” adds Brian. “We want to be more efficient without purchasing more acres and by adding value with livestock.”

With evolving seed technology, Brian is considering soybean trait selection changes. They currently plant about 75% glyphosate-resistant and 25% dicamba tolerant soybeans. As new herbicide traits are available, they will have a broader range of weed control options.

“I don’t know if we’re doing a lot different; it’s just we’re willing to try new things and learn from that and from people that may be smarter than we are,” Brian says. “In the end, this is still a business. We must be able to make money, but we have to be conservation minded as well. Being productive, profitable and sustainable is really the goal for us.”

“We have four children, and we want to pass this on to them,” adds Jamie. “We are passionate about what we do and want to create a legacy of nurturing the land.” ■

### SOURCE

American Soybean Association and Farm Journal  
[www.agweb.com/news/business/conservation/whole-farm-philosophy-south-dakota-farm-couples-conservation-plan](http://www.agweb.com/news/business/conservation/whole-farm-philosophy-south-dakota-farm-couples-conservation-plan)

# LEGISLATIVE RECAP

**T**he bicameral system did what it was supposed to do and filtered out most of the noise and most of the bills sent to the governor's desk for signature will do some good for our state.

There were a number of agricultural bills that had their day in the sun, but for a number of reasons did not thrive. HB 1039, a bill that would have changed the rules for assessing ag land with an elevation over 1,950 feet failed and was sent to the 41st day. HB 1325, a replacement bill to address Class IV soils, was passed and signed by the Governor.

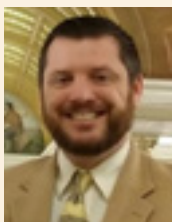
HB 1321, a bill to try to deal with "frivolous or vexatious" complaints against commercial pesticide applicators was killed in committee. It was not that the idea does not have a certain appeal to many in the agricultural industries, but that the bill needed greater clarification.

HB 1306 originally dealt with appropriating \$50 million from the general fund to go to county rural access infrastructure but was amended to \$25 million, passed and was signed by the Governor.

The Ag Cybersecurity bill (1092) has passed both houses and was signed by the Governor. It will fund the creation of a CyberAg partnership with SDSU and DSU, which will have undergraduate and graduate-level courses.

Finally, a bill to construct an agriculture and diesel power laboratory on the MTI campus has passed and is awaiting the Governor's signature.

While the legislative session was short, there is no question that a lot occurred. There were 339 House Bills, Almost 40 house resolutions and commemorations, 212 Senate bills, and 41 Senate resolutions and commemorations. You can rest assured that your legislative team and Soybean leadership did everything they could to make sure that there was a net positive gain for SD Soybean farmers. ■



## ABOUT JEROMY PANKRATZ

Jeromy joined Pankratz & Associates after spending 15 years in both public and private practice. After law school, Jeromy served as a judicial clerk for the First Circuit in South Dakota. As a private attorney, Jeromy started as a general practitioner with extensive experience in both trial and negotiations work and expanded into lobbying and public relations. During his time in private practice, Jeromy was the elected State's Attorney for Hamlin County. Jeromy also worked in Attorney General Marty Jackley's office, serving as the primary lobbyist for the office for six years. Jeromy now offers legal advice through Pankratz Law.



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# NEW SOYBEAN PROCESSING PLANT CREATING NEW OPPORTUNITIES



*Ostrem calls new plant 'another opportunity for South Dakota soybeans to be raised and processed here'.*

South Dakota soybean growers will soon have access to greater processing capacity. “The South Dakota Soybean Processors (SDSP) have decided to create a new location just south of Mitchell, [South Dakota],” said Tim Ostrem, Chairman of the South Dakota Soybean Research and Promotion Council, the Checkoff arm of South Dakota Soybean. “We’re excited about that opportunity.”

The plan, added Ostrem, is to build a multi-seed processing plant that will begin operation in 2025. “You can use the soybean meal produced by this plant to feed area livestock,” he said. “There’s going to be the opportunity of using soy oil, making biodiesel, renewable diesel, and other products.” The plant’s projected output also includes food-grade oil, and located as far west as it is, the facility will be well situated to process other high-oilseed crops such as sunflowers and camelina.

“This plant’s obviously being built in an area where there is not any processing currently, so basis should improve in that area,” said Ostrem. “It’s a little further west than some of these other plants; it just creates a new opportunity for South Dakota Soybean [Processors] to grow and process these products in-state.”

To put the proposed plant’s capacity in perspective, Ostrem pointed out that in 2020, South Dakota soybean farmers produced 226 million bushels of soybeans. “This new plant is expected to crush 35 million bushels a year and will also open up the opportunity for 50 employees,” he said, “so it’s a real good avenue to create demand and opportunities for employment for the people in that area.”

The plant, South Dakota Soybean Processors’ third, in addition to plants currently operating in Volga, South Dakota, and near Miller, South Dakota, will produce a corresponding amount of soybean meal and sunflower meal to serve the Mitchell area’s growing hog and dairy production, as well as helping to satisfy growing demand for soybean oil-based biofuels.

“We’ve been really focusing on creating new demand for the soybeans that we grow, because our acres keep increasing,” said Ostrem. “This offers another opportunity for South Dakota soybeans to be raised and processed here, and that’s exactly what we were hoping, to keep that revenue stream in-state.” ■

# SUPER SPROUTS

SPONSORED BY THE SOUTH DAKOTA SOYBEAN CHECKOFF

MEET SPROUT, THE MASCOT FOR THE SUPER SPROUTS EDUCATIONAL PROGRAM. SUPER SPROUTS AIMS TO PROVIDE AT HOME EDUCATIONAL ACTIVITIES FOR CHILDREN OF ALL AGES. SPROUT'S GOAL IS TO ENSURE EVERYONE KNOWS ABOUT THE SUPERPOWERS OF SOYBEANS!



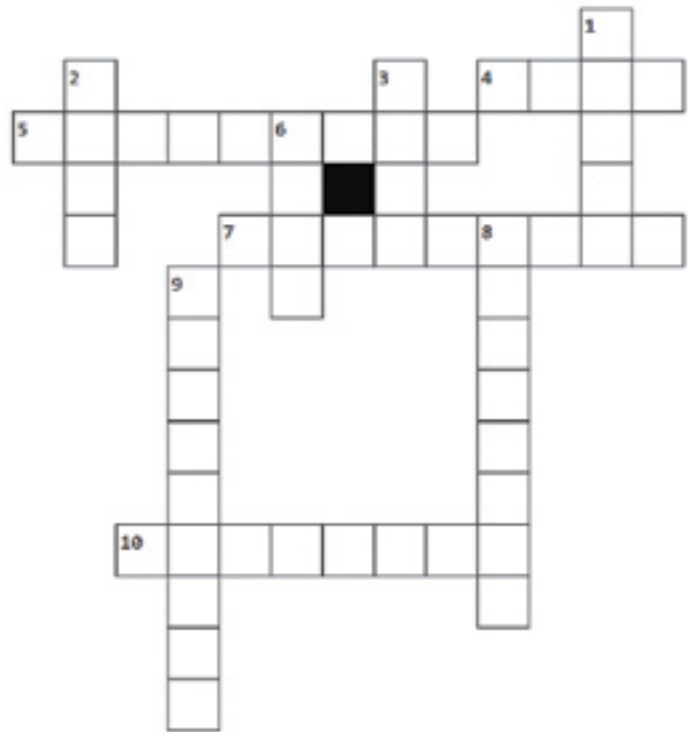
## SOYBEAN CROSSWORD

### Across

4. Soybeans are made up of 20% oil and 80% \_\_\_\_\_.
5. The top three \_\_\_\_\_ US soy is exported to are China, Taiwan, and Indonesia.
7. \_\_\_\_\_ is a renewable, clean burning diesel replacement made from soybeans.
10. Soybeans are the most \_\_\_\_\_ agricultural commodity exported from the US.

### Down

1. On average, soybeans travel 860 miles by this aquatic vehicle.
2. Soybean meal feeds \_\_\_\_\_, dairy, turkeys, chickens, and fish across the US and the world.
3. 97% of soybean meal is used for animal \_\_\_\_\_.
6. On average, soybeans travel 1,100 miles in trains by \_\_\_\_\_.
8. A majority of SD soybeans are \_\_\_\_\_ or shipped to other countries.
9. Global demand for food and biofuel has \_\_\_\_\_ exponentially.



**WANT MORE FUN? SHOW US YOUR ANSWERS!**

### SOYBEAN SWAG GIVEAWAY

With your parents help, complete this page and send a photo to [mkessler@sds soybean.org](mailto:mkessler@sds soybean.org) or post a photo and tag @SDSoybean on Facebook. You can also mail your completed page and contact information to SD Soybean at 5000 Broadband Ln. Suite 100, Sioux Falls, SD 57108. One participant with a completed super story will be sent a super special soybean item! Entries must be recieved by June 1, 2022 to be eligible.



INVESTING CHECKOFF DOLLARS

**HAVE FUN AND BE SURE TO ENTER!**



## CONSUMER PERCEPTION

Consumers want food that is grown in the U.S. or made with U.S.-grown crops. Soybean Checkoff-funded research confirms that consumers support domestic agriculture. The survey indicates positive movement in consumer attitudes, according to Mace Thornton, vice president of communications and marketing strategy for the United Soybean Board. “I don’t know whether or not that is an indication that people really are thinking about American-grown agriculture – American-grown soybeans – during the current pandemic, as being safer, healthier,” said Thornton, “but that’s certainly the big trend that we took away from this.”

Positive consumer perceptions, along with growing awareness that U.S. soybeans are sustainably grown, create an opportunity to raise the profile of soyfoods, said Thornton. “That is the biggest area where soy’s reputation comes into play.”

Consumer support of domestic agriculture is strengthening, according to the survey, with 78 percent of respondents saying it’s important to purchase U.S.-grown food, including soybeans. “Consumers really trust U.S. farmers as being custodians of the food supply,” said Thornton. “About 82 percent of the consumers felt very or somewhat positively about U.S. farmers. We also found out that 83 percent of the consumers in our survey rank farmers as being the most trusted aspect among members of the food supply chain to help ensure food safety.”

With promotion and education being key pillars of the checkoff, the survey validated that informing consumers is an effective tool, with 72 percent of respondents feeling more positive about soy as a food ingredient after learning about the sustainability of soybeans. The survey indicated only 39 percent

of consumers are aware that the soybeans used in popular foods are grown sustainably. Likewise, communicating about soy as a high-quality “complete” protein proved to be the most impactful statement on consumers’ perception of soy, highlighting an essential opportunity to demonstrate its excellent protein profile to health-conscious consumers.

Sixty percent of respondents think soy-based foods are somewhat or very healthy, but Thornton sees opportunity in the 26 percent who have a neutral view, and the six percent who don’t have enough information to answer. “That means that not only do we have 60 percent that is pretty firmly in our camp when it comes to thinking of soy as being healthy,” he said, “there is another 32 percent out there that we can help target with our fact-based messaging to help move that needle even further. ■





# SDSU EXTENSION ANNOUNCES AGRICULTURE BEHAVIORAL HEALTH VOUCHER PROGRAM

**S**DSU Extension, the South Dakota Department of Social Services (DSS), and the South Dakota Department of Agriculture and Natural Resources (DANR) have launched an Agriculture Behavioral Health Voucher program.

The purpose of this voucher program is to provide access to free counseling services for farmers, ranchers, and their family members.

“Months of drought, in addition to low prices for our cattle producers, have taken a toll on farmers and ranchers across the state,” said DANR Secretary Hunter Roberts. “I strongly encourage our producers to take advantage of these resources and reach out for assistance. No one should wait to be in crisis before seeking the care they need.”

“The suicide rate for those that work in agriculture is 1.5 times higher than those that work in other occupations”, said Andrea Bjornestad, SDSU Extension Mental Health Specialist. “My most recent study of producers in the region suggested that a little over one in every four farmers reported mild to severe depressive symptoms as well as a little over one in every four farmers reported mild to severe anxiety symptoms. When mental health begins to decline, safety can also become an issue.”

According to Bjornestad, there are multiple barriers to entry that exist that can hinder producers seeking mental health care. These barriers include costs, distance to services and access to mental health providers.

The goal of the Agricultural Behavioral Health Voucher program is to remove such barriers to allow greater access to mental health services in the agricultural community by reducing the cost of such services and providing access to telemental health services through the program.

“It seems as if there is a belief that only those who are suffering from a mental illness seek counseling services, but that is not true,” said Bjornestad. “In addition to improving depressive and anxiety symptoms, counseling can be helpful for other concerns such as relationship issues, to improve family communication, discuss generational transitions in farming, decrease stress, learn effective coping skills, and manage grief or loss.”

“Anyone can experience stress or feelings that we aren’t sure how to handle, but you don’t have to go

through it alone,” said Department of Social Services Cabinet Secretary Laurie Gill. “There is support available throughout South Dakota.”

To access Agriculture Behavioral Health Vouchers, producers and their immediate family members can call 2-1-1, the Avera Farm and Rural Stress Health Hotline (1-800-691-4336) or visit [sdstate.edu/directory/andrea-bjornestad](http://sdstate.edu/directory/andrea-bjornestad). ■

For more information on the voucher program, please visit [605strong.com/#farmer-rancher](http://605strong.com/#farmer-rancher) or contact Andrea Bjornestad at **605-688-5125** or [andrea.bjornestad@sdstate.edu](mailto:andrea.bjornestad@sdstate.edu).

## Farmers and ranchers don't have it easy.

If you need help, visit [605Strong.com](http://605Strong.com) to receive mental health or substance use disorder counseling at no cost. Together, we are 605 Strong.



# Hungry for Truth.



*Opening up conversations between South Dakotans and the farmers who live and work here is what we do. In fact, that's what Hungry for Truth is all about. This month, we wanted to explore what the life of a farmer looks like when they're not on the farm. We had an exciting opportunity to speak with Mike McCranie, a director on the South Dakota Soybean Research & Promotion Council about traveling for work and for leisure. Mike also serves on the United Soybean Board, the United States of America Soybean and Egg Export Council, the United States Soybean Export Council, and Northern Soy Marketing. Below, Mike is sharing his perspective on a few traveling experiences.*

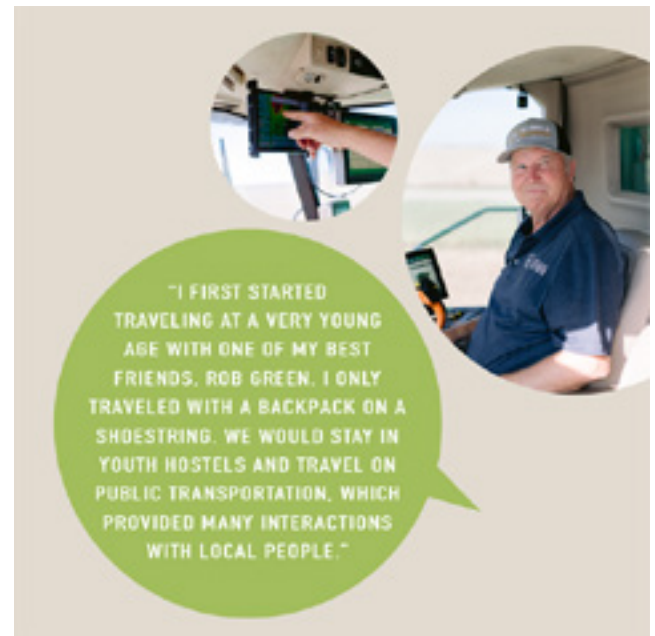
I first started traveling at a very young age with one of my best friends, Rob Green. I only traveled with a backpack on a shoestring. We would stay in youth hostels and travel on public transportation, which provided many interactions with local people. Public transportation in Third World countries consists of riding buses that break down in the middle of nowhere and trains that are loaded with not only people but produce and animals. While traveling in foreign countries, I made it a point to explore local agriculture. I discovered that you can always learn something from any person involved in agriculture, no matter how primitive or advanced their farming practices. You never know what new practices you'll learn from the variety of people you meet!

My travel styles definitely changed after I got married. My wife, Monica, and I love to travel domestically and internationally. It's always a great way to catch up with different friends I've made over the years. When traveling for the South Dakota Soybean Research and Promotion Council, our travels consist of trade missions. Traveling on trade missions is not the same as traveling for leisure. These travels are solely meant to meet with customers and promote the soybeans that we raise. Agendas are full of meetings with customers, while free time may only consist of an hour here or there where you get to explore the new city or country you are in.

My biggest piece of advice to farmers wanting to travel more is to look for travel groups, especially if you are wanting to learn about local agriculture.

There are different organizations that plan these types of trips, which will take doing some of your own research. Travel groups are generally safer, while typically getting the expertise of the locals that lead your tours on the trip.

Traveling is a great way to learn more about the operations it takes to run a farm in different landscapes, regions, and countries while also allowing you time to relax and step away from your own operations to refresh and come back ready to work!



"I FIRST STARTED TRAVELING AT A VERY YOUNG AGE WITH ONE OF MY BEST FRIENDS, ROB GREEN. I ONLY TRAVELED WITH A BACKPACK ON A SHOESTRING. WE WOULD STAY IN YOUTH HOSTELS AND TRAVEL ON PUBLIC TRANSPORTATION, WHICH PROVIDED MANY INTERACTIONS WITH LOCAL PEOPLE."



A good, deviled eggs recipe is among the most classic favorites for the holidays, parties, and gatherings. Even though South Dakota weather isn't quite on board yet, we are ready for spring to come. To get into the mood though, we made these savory bacon deviled eggs!

This isn't your typical deviled eggs recipe. They are definitely delicious and are super easy to make. The recipe includes a few simple but healthy ingredients that make it an irresistible snack or appetizer. Plus, you have plenty of time to test this recipe out before bringing it to all of your spring gatherings this year! We think they're sure to be a hit, but you be the judge!

## INGREDIENTS

- 12 eggs
- 2 tbsp pickle relish
- 1/4 cup mayonnaise
- 1 tbsp hot sauce
- 1/4 cup cream cheese
- 1/2 tsp Paprika
- 2 tsp Dijon stone ground mustard
- Bacon crumbs (to top)
- 2 tbsp pickle juice

## INSTRUCTIONS

1. Fill a pot with 1/2 inch of water and boil. After the water comes to a boil, turn the heat off and add the eggs to the pot. Turn the heat up to medium-high, cover the pot, and cook for 11 minutes. Place cooked eggs in a bowl of cold water to cool for 3 minutes.
2. Peel the eggs and then cut them in half, lengthwise. Remove the yolks and add to a bowl. Save the egg whites for later.
3. Smash the yolks with a fork. Add the rest of the ingredients and mix until smooth.
4. Spoon the mixture into a piping bag and fill the holes in the egg whites with the mixture. Top with bacon crumbs.

## POSSIBLE VARIATIONS:

We would say our deviled egg recipe is top-notch, but you can make it sweeter, spicier, or more savory to match your preference. Some variations that we would suggest include adding additional ingredients like chives, shallots, jalapeno, or goat cheese.



We'd love to see your amazing dish. Take a photo of your deviled eggs and tag us on Instagram [#hungryfortruth](#).



## FUN FACTS:

Did you know that 700 million eggs are laid by chickens annually in South Dakota? Poultry is also the number one consumer of soybean in the country! So really the question should be: what came first, the chicken or the soybean? Soybeans are really involved in so many of our everyday foods and products!

## WHAT'S SO "DEVILED" ABOUT DEVILED EGGS?

The term "deviled" comes from an 18th-century culinary term to describe spicy or zesty food. Deviled eggs are typically hard-boiled eggs filled with mayonnaise, mustard, and a few other spices.

## HOW TO MAKE THE BEST DEVILED EGGS?

The key to the best deviled egg is boiling your eggs perfectly. Make sure to follow the step-by-step instructions recipe to learn how long to boil your eggs!

Find more recipes at [hungryfortruthsd.com](https://hungryfortruthsd.com)

# HOW TO MANAGE FERTILIZER COSTS AGAINST TIGHT MARGINS



*Sara Bauder,  
SDSU  
Extension  
Agronomy  
Field  
Specialist*

**T**he cost of fertilizers soared to unprecedented levels last year, and that price trend remains intact as we approach the 2022 spring planting season.

It's a confounding reality for producers as rising input expenses continue to squeeze margins that strong commodity prices would have otherwise supported.

How will you manage costs effectively to maximize profitability this year? One approach is to double down on your understanding of soil fertility and health.

## WHAT DO YOUR SOIL TEST RESULTS SAY?

Many producers already regularly take soil samples and work with a lab to analyze them, but this practice—and learning how to interpret the results—can give you greater insight when evaluating input decisions and fertilizer rates. Simply put, you don't want to overmanage acres when margins are exceedingly tight.

“Especially in a year like this when the market for fertilizer is so high and volatile, it's really important for producers moving into soybeans to make sure they have the right amount of phosphorus (P) and potassium (K) out there for those beans,” said Sara Bauder, SDSU Extension agronomy field specialist.

Bauder did note, however, that last year's drought conditions might skew the nutrient findings in soil samples taken last fall. Running a soil test this spring after the ground has thawed and some additional moisture is present to get more accurate results may not be the worst idea, so long as timing allows.

Paying close attention to the recommendations at the end of your soil test report is key.

SDSU Extension has published a fertilizer recommendation guide that offers growers fertilizer application rates based on soil test results and yield goals; it has curated a list of nearby soil labs that will provide university recommendations when asked.

“It might be a year to really look hard at what you apply,” said Bauder. “A lot of times the university recommendations are more conservative.”

With that in mind, it might be worthwhile to compare and contrast lab or agronomist recommendations with those from SDSU Extension in an effort to more effectively manage costs.

## STRENGTHEN YOUR SOIL MANAGEMENT PRACTICES

The fact of the matter is that we don't know how long this fertilizer price environment will persist.

To ensure you're doing everything you can to support healthy, fertile soil, now is a good time to evaluate soil management efforts on your operation.

Bauder frequently emphasizes the five principles of soil health when talking with growers about management concerns, and the rising cost of inputs has kept that conversation at the forefront.

SDSU Extension can serve as a great resource for producers looking to implement new soil management strategies; your local conservation district can also lend a hand.

“We're going to look at your whole cropping systems, including this coming year's crop, and how we can help you to build that soil health and fertility,” said Bauder, “and then keep it where you want it for years to come.”

“Keeping that general picture of soil health in mind—trying to leave more crop residue on the surface, adding a crop to our rotation, integrating livestock—can really help us be resilient in years like this when we're having some really tough decisions to make about fertilizer,” she added.

## WHEN WILL FERTILIZER PRICES RETURN TO NORMAL?

The high cost of fertilizer seems to be here for the foreseeable future. That's why it's more important than ever to make sure you aren't overmanaging your acres with unnecessary applications and looking at management strategies to build more fertile soil.

If you have questions about these principles on your operation, it's a great idea to reach out to SDSU Extension or consult with a trusted agronomist. ■





# SUSTAINABILITY PROTOCOL BOOSTS U.S. FOOD SOYBEAN DEMAND



There's export demand for sustainable U.S. soybeans in Northeast Asia, which includes Japan and Korea. Rosalind Leeck, the U.S. Soybean Export Council (USSEC) director for that region, calls Japanese and Korean demand for U.S. soybeans "relatively stable," despite the pandemic.

"The one that we have observed over the course of the last two years, particularly as a result of COVID, has been the increased demand for soy foods, and particularly, fermented soy products," said Leeck, speaking during a recent USSEC webinar. "As a result, that has actually increased what we've been able to supply to Japan from a soyfoods standpoint."

The same is true in Korea, according to Leeck. "We have seen the food bean business and the food bean demand increase, and in both cases, the U.S. enjoys a very high market share."

There is increased awareness among Northeast Asian consumers about sustainability, said Leeck. Japan and Korea were late to the game in the sustainability conversation, but an attitude shift with greater attention to sustainability has taken place, especially since the Tokyo Olympics. That, she said, has translated to companies taking a greater interest in sustainable soybean sourcing.

"We've been able to, as the U.S. soy industry through our Soy Sustainability Assurance Protocol, provide that solution, to provide that verification of sustainable sourcing, the sustainable production for the consumers and for the industry in Japan and Korea," she said.

Specifically, the South Korea-based Lotte Food Company saw increased business when it began labeling as sustainable its vegetable oil made from U.S. grown soybeans. That labeling is seen as a key marketing opportunity for the food company, demonstrating to consumers the company's sustainability criteria.

Several companies in Japan have adopted the Soy Sustainability Assurance Protocol, displaying the logo on their products. "Japan leads the world in having the most companies utilizing the logo and the most consumer-facing products with hundreds of them with the sustainable U.S. Soy logo on it," said Leeck, "so we're quite excited about that." ■



# SDSU SOIL HEALTH— MINIMIZING SOIL DISTURBANCE

## FARMERS FIND NO-TILL HITS ON MANY SOIL HEALTH PRINCIPLES, BRINGS MANY BENEFITS

*By Janelle Atyeo for the SDSA Soil Health Initiative*

Since Lewis Bainbridge stopped tilling his fields more than 25 years ago, it's been "continuous improvement," according to the Ethan, South Dakota farmer. "We've been at it a long time and have no reason to change," he said.

Though he's retired from farming now, his sons Matt and Neal still reap the benefits of what their father began decades ago. "We've kind of grown up with it," Matt said. "It's pretty much all we know."

One big improvement that comes from no-till: "You have incredible water infiltration," Lewis said.

That's a benefit in wet years and dry years, and the Ethan area has experienced both extremes in recent years.

"Untilled soil builds a higher water holding capacity. It acts like a sponge," said Heidi Rients. "It's doing what it's supposed to do," she said. "It's holding water, and it's readily available for the plant when needed."

Rients has worked closely with the Bainbridges over the last decade as a Resource Unit Conservationist at the Natural Resources Conservation Service in Mitchell. Reducing tillage is often the first step farmers take on the path to healthier soils. That

one move hits on many of the five principles of soil health, Rients said.

The obvious one is minimizing soil disturbance, which helps build organic matter and keeps the soil structure intact. It leaves residue as a soil cover, helping prevent erosion. No-till also plays into maximizing plant diversity. "With a no-till system, you need to think more diversity to combat disease," Rients said.

Integrating livestock is another soil health principle. "No-till is a perfect way because you're leaving more out there for livestock to graze," Rients said. "There are trickle-down benefits, too. By holding onto water in the soil profile, it's reducing runoff into creeks and lakes," Rients said. "Nutrients stay in place. It mineralizes nitrogen, immobilizing it so it's available for the next crops. That's a profitable win for a producer," Rients said.

The amount of phosphorus the Bainbridges apply has dropped between 25 and 50%, Matt said.

The benefits of no-till just keep rolling in. The longer fields go without tillage, the healthier the soil biology, according to a recent study by South Dakota State University study that compared conventional tillage with short-term no-till of three to five years, and long-term no-till fields like the Bainbridges'.

“It will show some benefits in a year, but it’s going to take time,” Rients said. “It’s more than just not tilling. It’s a system.”

Lewis is thankful that his dad was open to new ideas all those years ago. Before making the switch, they managed their fields with ridge-till. He remembers a lot of hours in the tractor cab, leaning on his right shoulder while he planted and then cultivated and then cultivated again. “It just got to be a whole lot of tractor time and a lot of work,” he said.

Many farmers today hold down full-time jobs off the farm, so the time savings is huge, Rients said. Making fewer passes through the field is easier on the soil, too. It decreases compaction and saves on fuel.

Starting out with no-till, Lewis didn’t have the tools his sons do today. Those tools include equipment such as specialized planters, as well as other soil health builders like cover crops. They can make it much easier for farmers to get started on the path to raising crops with minimal soil disturbance.

The Bainbridges have found having the right tools makes field work easier. When they first started planting no-till fields, they would fill the insecticide boxes of their old planter with gravel to help maintain the downward pressure needed to plant through stubble. Now Matt and Neal Bainbridge enjoy running a newer planter with attachments built for the job. “Those planters are made to plant no-till,” Matt said.

There are equipment costs upfront with no-till, but overall, it requires less equipment and smaller tractors, Rients said.

Cover crops are another tool that helps transition to no-till. When the Bainbridges switched to no-till, they had some years of planting in not-so-great soil conditions, Matt said. Cover crops can help use excess moisture and build soil structure that can keep the planter rolling when the ground is wet.

“Now that cover crops are mainstream, a person can adapt to no-till a lot quicker,” Matt said.

When the Bainbridges transition a newly rented field to no-till, they typically plant wheat first, followed by a cover crop.

“We put some different roots in the soil that haven’t been there in a while,” Matt said. “We try and get ahead of the transition.”

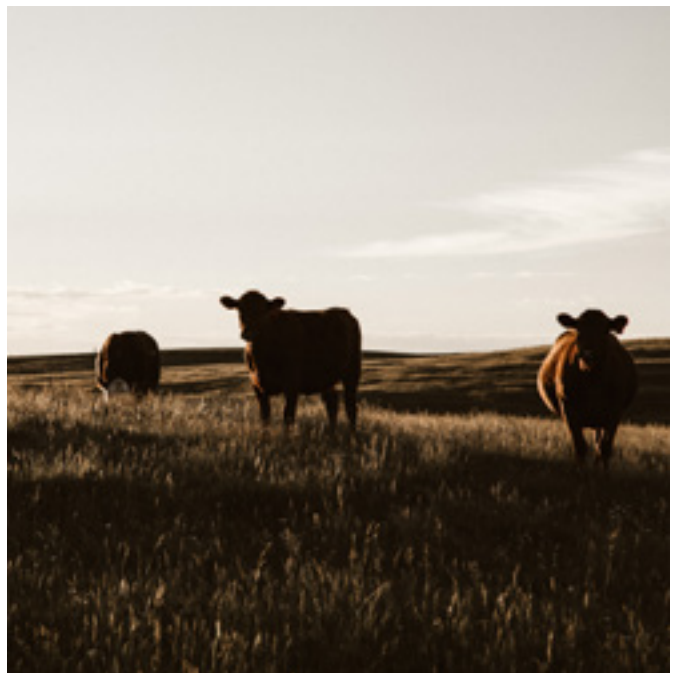
Lewis started his switch to no-till by planting corn into soybean stubble because it was the easiest to work through. “It’s definitely a learning curve,” he said.

Some tips he found include make sure you spread the crop residue adequately, make sure your disc openers are good, and your planter is tight. “Because you only have one shot at it,” he said. “We’ve kind of refined it over time and keep trying to do better.”

Rients said she appreciates that the Bainbridges are willing to try new things. They’re great record keepers who are constantly learning from what they do, she said, and they’re willing to mentor others who want to improve the health of their soils. “They know that you don’t just stop at no till,” Rients said. “There’s more to do, and it’s benefiting their land and their resources.”

Rients encourages farmers to use NRCS as a resource. She and her colleagues work with farmers on a voluntary basis to help them inventory their land and identify resource concerns they might have. They can help track down financial assistance, too.

“Just give it an honest try, even if just on a couple fields,” Matt said. ■





## MORE THAN CORN AND BEANS: **DIVERSE PLANTS WORK FOR FARM, SOIL**

*By Janelle Atyeo, for the South Dakota Soybean Association*

**O**n the edge of Castlewood, South Dakota, it's diversity that makes it all work on the Schooley farm.

From adding small grains to the crop rotation and planting cover crops to putting cattle on the crop land and fostering native grasses in the pastures, Chad Schooley has worked over his 30 years in farming to bring diversity to his Hamlin County farm.

Schooley runs a cow-calf operation and a feedlot, along with raising soybeans, corn, alfalfa and small grains. For the last 20 years, he's incorporated cover crops as a way to build soil health and provide winter grazing for his cow herd. His cropping system makes it all work. "The key to cover crops is your rotations," he said.

Growing a strict corn and soybean rotation makes it difficult to establish a healthy cover crop stand. It can be difficult to seed covers into standing crops, and waiting until after harvest means there isn't much time before frost hits.

"Our growing season isn't long enough here," said Schooley, who represents District 4 on the South Dakota Soybean Association Board of Directors.

That's where small grains come in. This year, he'll follow 250 acres of winter wheat with a cover crop.

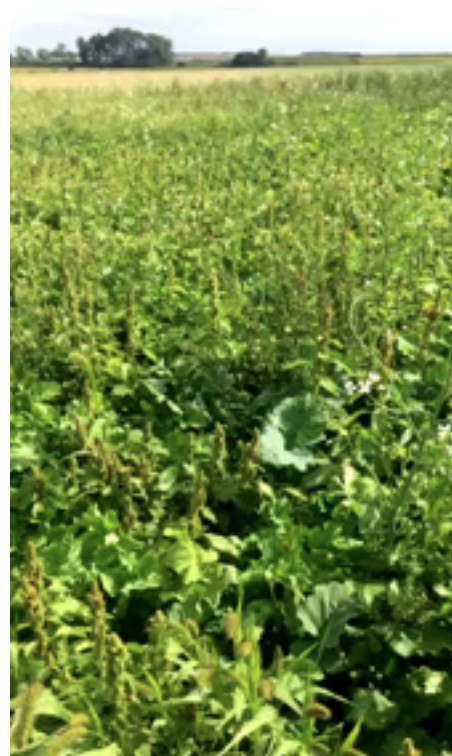
"If you can get a small grain in the rotation, cover crops really fit well," Schooley said. He plants wheat and oats, and his goal is to harvest them by the last week in July in order to seed his cover crop as soon as possible. That's because moisture is key to jumpstarting the cover crop stand and he wants to take advantage of any summer rain. He's found they need about an inch of rain to thrive.

After a dry period last summer, his Hamlin County farm caught enough rain to get the cover crop growing. Fall brought a good amount of moisture, and his cover crop soaked it in.

"Now we have a very nice cover crop," he said.

Some years, the radishes and turnips in his cover crop mix reach knee high by the time he turns his cows out. Regrowth from the harvested oat crop can reach waist-high and start to head out.

"There's lots of eating out there," Schooley said.



After corn harvest, he moves his cattle from summer pastures to graze on stalks. Around Dec. 1, they go to the cover crop field. Even if snow covers the ground, the cows will dig in to find food.

“Every day they’re out looking for something,” he said.

By spring, the covers are pretty much gone, he said, and the field is ready for corn planting.

Encouraging plant diversity is one of the five principles of soil health. Not only does a cover crop feed cattle like Schooley’s, keeping a living root in the ground feeds the soil microbes that cycle nutrients, enhance soil structure and generally make soil function like it’s meant to.

“The more diverse we get our species growing above ground, we’re going to increase diversity below ground,” said Gabe Brown, the North Dakota farmer and soil health pioneer, speaking on regenerative agriculture in Aberdeen this winter.

There are other benefits. A diverse crop rotation can help break cycles of disease and pest problems and suppress weeds. Keeping the soil covered reduces erosion.

Having a diverse ecosystem is important, Brown said, and it’s a different mindset for a lot of farmers who tend to get focused on treating problems rather than taking preventative measures.

“We just look to write a check for everything,” he said.

While Schooley is concerned with planting his cover crop in time to catch enough rain, he doesn’t worry about the covers robbing moisture from his cash crops.

“That doesn’t usually factor in,” he said. “There’s more benefit than there is loss.” In fact, cover crops have proven to build the soil’s ability to store water. Covers have also been shown to increase yields for subsequent crops. A survey of farmers by the Sustainable Agriculture Research and Education program found yield increases improved with the length of time farmers planted a

cover crop. What’s more, farmers reported their biggest yield bump following a drought year. Yields averaged 11.6% better in soybeans and 9.6% in corn fields where farmers had grown cover crops prior to the 2012 drought.

A recent study by South Dakota State University researchers studied the economics of a diverse crop rotation. While it’s hard to beat the profitability of corn and soybeans, production costs are high. Factoring in the cost of machinery, seed, fertilizer, and herbicide, researchers found the rotation with the highest net revenue was that of corn, soybeans, spring wheat, and peas. It required less applied nitrogen than the others in the study - a big money saver, especially given recent fertilizer prices.

On Schooley’s farm, he attests that cover crops help with insect and weed control. They help make nutrients in the soil available to the crops, and they make the moisture he gets go farther, he said.

“We’re starting to see the benefit with organic matter and basic soil health,” he said.

The benefits will keep building, and that’s important at Schooley’s teenage sons, the fifth generation on the Schooley farm, get closer to taking up the job of managing the land and livestock.

Cover crops and crop rotations aren’t the only ways the family is bringing plant diversity to his farm. His pastures were once dominated by warm-season grasses. He added more cool-season perennials and native grasses. Along with incorporating rotational grazing patterns, he’s noticed it makes his pastures more resilient and improves soil health. His cattle are gaining better, and wild birds are thriving in the diverse cover the native grasses provide.

Whether it’s adding diversity to pastures or cropland, Schooley encourages producers to check out resources available to them. Experts at the South Dakota Soil Health Coalition and specialty seed companies can help choose a cover crop mix to suit your goals. ■

# FOR ASA CHM. SCOTT, 2022 CLASSIC A FAMILY CELEBRATION

By Tom Steever, *Brownfield Ag News*

The 2022 Commodity Classic was an in-person event for the first time in two years. One of those most excited to be in New Orleans was American Soybean Association (ASA) Chairman Kevin Scott. Before being chairman, Scott was elected ASA President during a Zoom meeting a year ago last December. Stopping for a few minutes during the 2022 Commodity Classic Trade Show, Scott said taking the reins virtually at the height of the pandemic was analogous to getting done what needs to be done.

“Farming continues whether you’re sick or not. We plant the crop, we harvest the crop, and we market that crop, regardless of the situation,” said Scott, “and it went well.” Having become ASA Chairman a few months ago, Scott, a corn and soybean grower at Valley Springs, South Dakota, considers this a slowing down in his national leadership role, during which he can help support the ASA President. “We’re just really thrilled right now that we got back to Commodity Classic, and things look pretty normal now,” said Scott. “You know we still have COVID to deal with, but business is going on and it feels better.”

Typically, the ASA President’s family is recognized at the annual ASA Awards Banquet at Commodity Classic, which, for Scott, would have been a year ago, when COVID prevented the event from happening. “I thought, ‘you know, we didn’t get to do that last year,’” he said. “We encouraged all the kids to come down to New Orleans this year, and it’s a great thing for me.” Scott maintains that family is the reason he divides time between farming and commodity group leadership. “The sustainability of what I do is really critical to the next generation, so if there’s not a viable soybean option for my son, or for his son, then I’ve failed and I haven’t done what I could. This is the part of me doing what I can to bring that next generation onto the farm,” said Scott, adding, “if they want to.”

Scott and his wife Jannell were accompanied in New Orleans by 14 of their children and extended family. The next generation of Scotts is also involved in soybean leadership. It’s one more reason to be proud, according to the elder Scott.

“It is rewarding that the son I farm with, and his family all feel the same need that I did to further the business of soybeans in the U.S.,” said Scott. “Jordan is currently the president at South Dakota Soybean. He’s been there for two years, and he is considering taking my place on ASA when I retire. I hope he does.”

Scott considers relationships he’s built over the years to be like family, and he wants his son Jordan to experience the same thing. “He’s thrilled about it, he’s better on the stump than I am; he does policy well, and I’m thrilled with it.” ■



*Kevin Scott and family*





# SDSRPC & WISHH BUILD PARTNERSHIPS TO REAP THE POWER OF SOY PROTEIN



*WISHH group members stand in front of Edesia, an enterprise in Rhode Island that manufactures 1.5 million packets of soy-containing foods at their factory every day.*

*Members of the WISHH group inside the Edesia factory*

**S**DSRPC Director Dawn Scheier joined WISHH in December to witness the power of soy protein for businesses and government agencies that are on the frontlines of global food security.

Scheier participated in WISHH’s USB-funded “U.S. Soybean Growers Take Action for Global Food Security” dialogue in Rhode Island on Dec. 15-16. USDA Foreign Agricultural Service Associate Administrator Brooke Jamison and U.S. Agency for International Development Deputy Assistant Administrator Mike Michener attended along with other global food security leaders and industry representatives.

“With everybody in the room, we were all bringing something to the table,” says Scheier. “Soy is a really good, nutritional, safe source for food. And that’s why we are really suited for this area.

“We as farmers always want to develop new markets,” she adds. “This is one way to do it. We grow a good source of protein, and we feed the world. And this is how we can develop more areas.”

The program included an opportunity to pack soy-protein foods at a Rhode Island-based enterprise that counts on U.S. soy to supply protein. Every day, Edesia manufactures 1.5 million packets of soy-containing foods at their technologically sophisticated factory that runs 24-hours a day. Edesia is the largest U.S.-based producer of Ready-to-Use Therapeutic (RUTF) and Supplementary (RUSF) foods.

In 2022, Edesia forecasts they will use 7.5 million pounds of soy flour, requiring the equivalent of about 192,307 bushels of soybeans. Additionally, Edesia would like to use 5 million pounds of high oleic soybean oil per year.

Edesia and WISHH are exploring a new all-soy formulation of a RUSF, which would meet their protein requirements and reduce their costs. Edesia calculates that the soy protein product would allow them to produce enough of this nutritional treatment to nourish a total of 2 million children each year.

“Not all proteins are created equal,” reported Edesia staff to WISHH’s event attendees. “Soy is by far the best protein available in the plant world for both quality and quantity. That is why soy is such an important part of our products.”

Edesia’s leading customers are the U.S. Agency for International Development (USAID), USDA, UNICEF, WFP, and other organizations that purchase their products. These organizations transport Edesia’s products to some of the world’s most challenging places and remote locations. As a federal contractor selling into USAID’s Title II P.L. 480 program, they must source U.S. commodities.

In total, Edesia’s products are consumed in 60 countries. The packages that Scheier saw manufactured in December shipped to West Africa where government and non-governmental organizations are distributing them to communities with high levels of malnutrition.

WISHH already conducts trade and development activities in the region that is home to WISHH supply chain partners. These companies can also produce high-performing foods and feeds with quality U.S. ingredients to further fill the protein gap. ■

# SLIPPERY SLOPE FOR CROP PROTECTION PRODUCTS

Farmers got some favorable news in mid-January when the Environmental Protection Agency (EPA) announced it had extended the label for Enlist™ herbicide through 2029. However, some troubling news came at the same time as the EPA placed restrictions on Enlist™ One and Enlist Duo® herbicide applications in some Minnesota, South Dakota and Nebraska counties.

Farmers in six Minnesota counties are restricted from spraying Enlist Duo® herbicide on their crops. Growers in parts of south-central South Dakota and a large portion of central Nebraska can no longer apply either Enlist™ One or Enlist Duo®.

“The issue that growers are facing is that they may have already bought herbicides for their Enlist™ soybeans,” says Mustang Seeds CEO Terry Schultz. “They are going to be challenged this year, or they may not be able to use Enlist™ herbicide at all because of some restrictions put on by the EPA.”

Schultz says the EPA decision, based on efforts to protect endangered species, delivers some immediate difficulties to farmers who have already made plans and purchases for the 2022 growing season.

“Minnesota has label restrictions that does not allow growers to spray Enlist Duo®, but it does allow them to spray Enlist One™,” Schultz says. “South Dakota has counties in the south that all Enlist applications are banned. If they are a grower in southern South Dakota or Nebraska and they’ve got Enlist™ soybeans, and have herbicide already bought, it’s now illegal to spray that product. That’s a problem.”

## LARGER CONCERNS

Schultz says that Mustang Seeds does have a variety of different trait platforms that farmers can access. Farmers who need to make a switch in their seed and herbicide platforms for 2022 can still do so. However, global supply chain issues may limit availability of some crop protection products.

“As a company, we definitely would like to see this restriction go away. But if growers need to adhere to the new EPA regulations, if they end up going to a different herbicide platform, we do have that ability,” Schultz explains.

Losing the use of some Enlist™ products is problematic for some growers, but the concern among many people in the



agriculture industry is that these restrictions may be just the beginning of tighter regulation on crop protection products.

“Restricting this technology, even in those counties, is going to allow further government regulation on more of our crop protection products,” Schultz contends. “Our concern and the industry’s concern is that we’re going to continue to have these issues as we try to raise enough crops to feed a growing world.”

Schultz says Mustang Seeds fully supports the use of all traits and tools for their customers. He also encourages farmers to not sit on the sidelines and watch more products be taken away.

“We encourage people to talk to their legislators and urge them to allow growers to have all the necessary tools available to produce their crops,” Schultz says. “This is not going to bode well for even the competitive platforms of products, and farmers need these tools to farm. We do have the options right now, but the concern is that if something else gets banned on the other side of the herbicide spectrum, we’re going to be up against serious problems.” ■



To learn more about the products and trait platforms available from Mustang Seeds, visit [www.mustangseeds.com](http://www.mustangseeds.com).



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## PROTECTION IN THE PALM OF YOUR HAND.



# SDSA MEMBERSHIP: AN INVESTMENT IN THE FUTURE OF SOYBEAN FARMING

By Drew Peterson, SDSA Director, District At Large, 2019-20 Young Leader

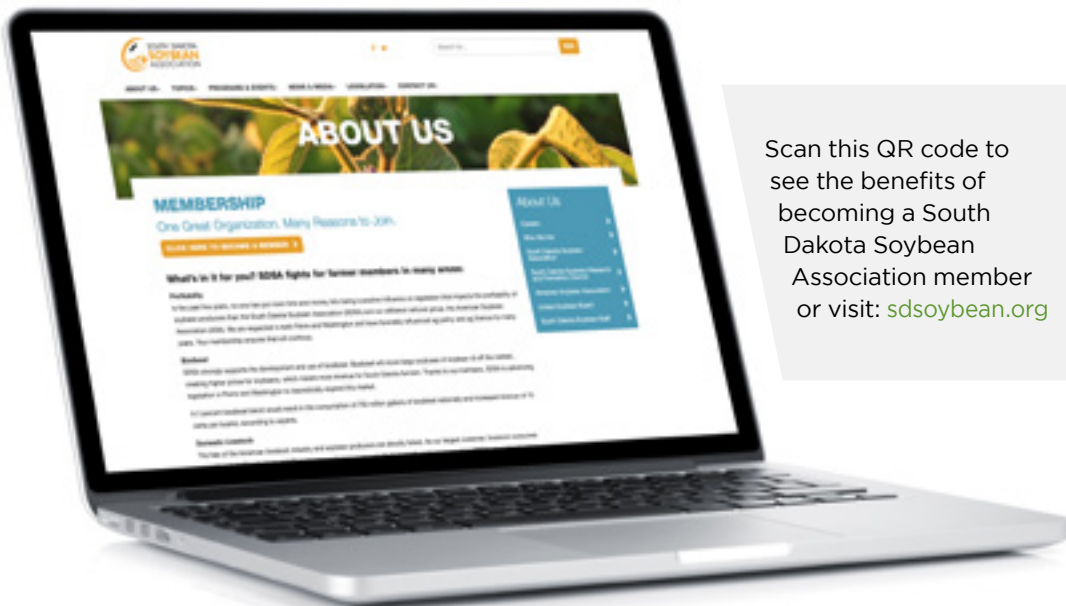


**DREW PETERSON**

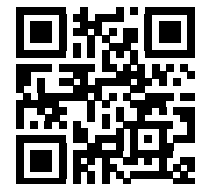
These are volatile, exciting, and sometimes scary times depending on whose ideas you hear that want to shape our farms and the way we farm them. Take some relief in knowing that the South Dakota Soybean Association is working with our political leaders to both enhance and protect what we do on the farm.

While our elected officials can't talk to every farmer on every issue, they do talk to us at the South Dakota Soybean Association. As farmer directors, we are all soybean farmers. We meet in person, over Zoom, and on the phone with political leaders and their staff to work through policy issues and how they affect us. Our voice as soybean farmers is heard, and it helps those in office better serve and advocate for all of our soybean farmers. We are their constituents, after all!

Member dues are a large part of the funds that we use to advocate for farmers on important issues at the local, state, and national levels. If you haven't done so, please consider becoming a member of the South Dakota Soybean Association, and help us advocate for you. ■



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