THE NORTH DAKOTA
Soybean
GROWER MAGAZINE

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Growth Prompts Growth

Farmers know that as their acres expand and production increases, they may need to take on additional help to make sure they can manage growth. Mustang Seeds finds itself in a similar position--adding resources to make sure customers have the products, support and customer service that has become synonymous with Mustang Seeds.

Eden, South Dakota native and 2021 South Dakota State University (SDSU) graduate Mason Roerig has been hired as Mustang Seeds' new Soybean Product Manager. The move was precipitated by Mustang Seeds' growth.

"I'm very excited about the opportunity and excited about the partnership with GDM and the new products that will be available exclusively to Mustang Seeds," Roerig says.

Dale Nelson has served as production manager for Mustang Seeds corn and soybean products. Because of growth in Mustang Seeds' product lines and geography, Nelson will become Corn Product Manager while Roerig will focus on soybeans.

"Due to our continued growth and loyal customers, we felt this will be a good long term move to continue to provide customers with the top performing soybeans and corn for their operations," Nelson says.

Product managers work with the company's seed grower base. They line up location plots and work with district sales manager to develop a plan for future production needs. Nelson says product managers also analyze and tour plots, and work with breeders on particular desired seed characteristics. In winter, product managers also help select new varieties that will be brought to full seed production.

"Being independent, we have all the traits, so that adds a little complexity to the process, whether its E3, Xtendflex or conventional varieties," Nelson says.

Roerig has experience as a crop scout for two growing seasons. He was also an agronomy sales intern, working with a team of territory managers and agronomists gaining valuable knowledge of competitor seed and seed traits. Roerig also has additional experience with a local seed company doing a variety of jobs in the field, office, and warehouse, which will be valuable to the production manager position. He will graduate with a bachelor's degree in agronomy from SDSU in May and begin working full time immediately following graduation.

"It will be exciting to learn from Dale and to make a smooth transition," Roerig says. "I'm looking forward to corresponding with growers, managing products and developing new products in the best way possible. I couldn't ask for a better time to get involved because of Mustang Seeds' growth and the partnership with GDM."

With growth in soybeans and corn, Nelson says it became hard to manage both and give each crop the full attention that it takes.

"We're expanding into Wisconsin, Minnesota and farther into North Dakota, too," Nelson explains. "Geographic expansion and volume growth are really driving this decision."

Because personal connection to Mustang Seeds customers and growers is important, Nelson says the transition from one product manager to two will happen slowly.

"We want this process to be seamless. We'll both be working, but I'll help and guide Mason," Nelson says. "We feel we have a unique relationship with our customers and our growers, and we want to keep that going in the future."

Learn more about what Mustang Seeds has to offer at www.mustangseeds.com.

THE NORTH DAKOTA Soybean GROWER MAGAZINE

STAFF CREDITS

PUBLISHER/EDITOR
Nancy Johnson, NDSGA Executive Director
nancy.johnson@NDSGA.com | (701) 640-5215

STAFF WRITER
Suzanne Wolf, NDSC Communications Director
swolf@ndsoybean.org | (701) 566-9300

CONTRIBUTING WRITERS
Daniel Lemke
Stephanie Sinner
Jena Bjertness
Betsy Armour

CONTRIBUTING PHOTOGRAPHERS
Wanbaugh Studios
Betsy Armour Images

NORTH DAKOTA SOYBEAN COUNCIL
4852 Rocking Horse Circle South, Fargo, ND 58104
(701) 566-9300 | www.ndsoybean.org

NORTH DAKOTA SOYBEAN GROWERS ASSOCIATION
4852 Rocking Horse Circle South, Fargo, ND 58104
(701) 566-9300 | www.ndsoygrowers.com

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On the cover

While North Dakota soybean farmers are busy seeding the 2021 crop, several value-added soybean projects are gaining traction. A soybean-based dust suppressant with North Dakota roots is hitting the market, and a planned soybean crushing facility is expected to make a big impact in the state. Read more about both developments in this issue of the North Dakota Soybean Grower Magazine.

—Photo by Wanbaugh Studios

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67th North Dakota Legislative Session Very Good For Agriculture: Thank You, Lawmakers!

This column is an attempt to outline some of the positive steps taken by the North Dakota Legislature for your industry in the past two years. Many of the bills to be mentioned had roots in the interim studies following the 66th session in 2019 and ended up becoming law in 2021. Examples include Senator Robert Erbele's committee coming up with ideas about the trespass and posting law. The idea resulted in electronic posting both continuing as a pilot project and as a new posting/trespass law.

Another bill that came in almost ready for prime time was all the wording for grain inspection. That program was transferred from the Public Service Commission to the North Dakota Department of Agriculture before the session. The bill passed with very little discussion because Rep. Dennis Johnson had brought all the players together to hammer the wording out just as Sen. Erbele did with the posting issue.

Another successful effort, spearheaded by Rep. Cindy Schreiber-Beck, was on subsurface water management or tiling. While the bill sailed through the House, it was amended in the Senate with little change. That bill should streamline a tiling project, making the process shorter for all.

There will also be a water study during the upcoming interim, which I can guarantee will be attended by all players. With the legislators noting the benefits of getting the disparate sides together before the session, we can hope to expect more of that protocol.

The North Dakota Soybean Growers Association thanks the appropriate legislators for their dedication to agriculture. Please take a minute to thank them in person or by phone. As you can see from the examples, such as township roads receiving at least $30 million in hard cash with the potential for the North Dakota Department of Transportation (DOT) to leverage federal funds in order to double those resources, these legislators make a huge difference. That result is unheard of in the modern North Dakota legislative era.

Another big accomplishment from this session, that should pay off for decades to come, is the new Agriculture Production and Development Center (APDC), including the Northern Crops Institute (NCI), on the North Dakota State University (NDSU) campus. The center benefits from what is now $70 million from the past two sessions. Despite an executive branch budget cut recommendation, lawmakers approved a hold-even budget for NDSU Research and Extension and also added millions for new State Board of Agricultural Research and Education initiatives along with capital projects from Streeter to Langdon, Carrington and other locations.

The Upper Great Plains Transportation Institute (UGPTI) also fared well. We need the institute to provide the numbers and science to stay informed about our roads and bridges just as the DOT relies on the UGPTI.

In a step that was much anticipated yet with odds against it, a bonding bill of nearly $700 million passed; the bill included the APDC and NCI, giving the added benefit of freeing up money which the North Dakota State Water Commission can utilize for numerous smaller water projects that are sure to benefit rural North Dakota. To be sure, a big deal is $80 million for a value-added loan program which gets vetted through the Bank of North Dakota (BND). There is $10 million for the new Agricultural Diversification and Development (ADD) Fund. The BND and a newly formed ADD fund board will look at the viability of proposals.

The intermodal facility in Minot needs help to get the extra track put down so that rail cars can clear the BNSF tracks and that a full unit train can be loaded at one time. Legislators are making $2 million available for that improvement.

Another law coming from an interim effort is an overhaul of the state's wastewater management, especially when it comes to sewage and septic systems. Installers and each county's local public health unit will now be more uniform and have a board which can resolve inconsistencies that had led to problems. The prime sponsor was, by the way, a city resident.

Keep in mind that, to be successful in our legislature, we need urban lawmakers who are supportive. In fact, while we talk of an urban-rural split, most lawmakers from the city are voting for agriculture because they recognize that it really is the state's economic backbone.

Veteran lawmaker and educator Phil Murphy is the NDSGA liaison between legislators and farmers.

Career and technical education, the arena that trains our needed welders, machinists, mechanics and computer folks, among others, was also boosted financially during this session. Thank you to both education committees. Also, thank you to both tax committees for sifting through all the property tax ideas and exemptions which were sought. The House Agriculture Committee and the Senate Agriculture Committee deserve our thanks for their dedication and patience.

Pulling off this session with enormous effort from the information technology department allowed COVID-infected lawmakers to listen to hearings, contribute and vote from home. Lobbyists watched and testified remotely, and all citizens with a computer and an internet connection could follow to their heart's content. Modern times do have their wonders, but turning good ideas into law is rarely easy. Without the money, the process rarely works, so thank you to the appropriators who rarely get a break from work. Lastly, while I could list a hundred legislators who helped on these and other issues which are too many to mention, including the state fleet using biofuels when practical and the North Dakota Soybean Council getting an election bill passed, we need to recognize the majority and minority leaders who shoulder a load that is larger than the extra $5 per day which they earn. Thank you.

A Wild Ride

It's often said that we grow more during the hard times than we do when things are going smoothly. If that is the case, North Dakota soybean farmers have done a lot of growing in recent years.

I have had the good fortune to serve as the North Dakota Soybean Growers Association (NDSGA) president since 2018. My time as president will end in June, so it seems that now is an appropriate time to reflect on some of the truly remarkable experiences that farmers have dealt with during those three years.

Rumblings of a possible trade war with China became a reality in 2018. Suddenly, the largest market for U.S. and North Dakota soybeans, and one that farmers had spent decades cultivating, all but dried up. Because we are so reliant on overseas markets for our soybeans, the trade war hit North Dakota soybean farmers particularly hard. North Dakota was thrust into the spotlight worldwide as media outlets, government officials and many others sought to highlight the effect that the trade war was having on this country. The NDSGA spoke about the need for free trade on behalf of the state's farmers.

Since the trade war started, the federal government instituted several rounds of the Market Facilitation Program to help support farmers who were adversely affected by the trade war. A Phase I agreement with China was signed and has gotten exports to China active again. However, the NDSGA remains mindful and vigilant to support efforts that keep trade channels open because we know how important the channels are to North Dakota farmers and the state's economy.

Weather was a big story in 2019 and 2020. A very wet fall led to major harvest headaches in 2019 and millions of prevented-planting acres in 2020. Now, drought conditions cover much of North Dakota. While we certainly can't do anything about the weather, the NDSGA has and will remain committed to making sure farmers that have the safety nets needed to manage the weather challenges.

The global COVID-19 pandemic turned much of the world upside down in 2020, and its effects still linger today. The NDSGA lobbied to make sure that farmers were considered essential and also spoke out to ensure that farmers had the inputs needed to feed the country. Fortunately, thanks to vaccines and the efforts made by leaders and everyday heroes, many aspects of life are returning to normal. Even though we've become more proficient at virtual meetings, the return to in-person gathering feels like a step towards normalcy.

Yes, North Dakota farmers have had to contend with some major global and statewide events, but we've grown as a result; hopefully, we're all better for it. It has been my honor to serve as the NDSGA president, and I thank the NDSGA board and members for having the confidence in me to help lead the organization through some extremely challenging times. I'm hopeful that my successor and all of North Dakota's farmers have smoother sailing in the years ahead.

Joe Ericson
President, North Dakota Soybean Growers Association

Email:
joe.ericson@ndsga.com

Website:
ndsoygrowers.com

Membership Application

To join ASA and the North Dakota Soybean Growers Association, complete and return this application with payment.

Name: _____

Spouse: _____

Date of Birth: _____

Farm/Company Name: _____

Address: _____

City, State, Zip: _____

County: _____

Phone: _____

Cell: _____

Email Address: _____

Occupation (Please check all that apply)
❑ Farmer ❑ Retired ❑ Agribusiness
❑ Finance ❑ Elevator ❑ Other

Do you raise:
❑ Cattle ❑ Hogs ❑ Poultry ❑ Dairy

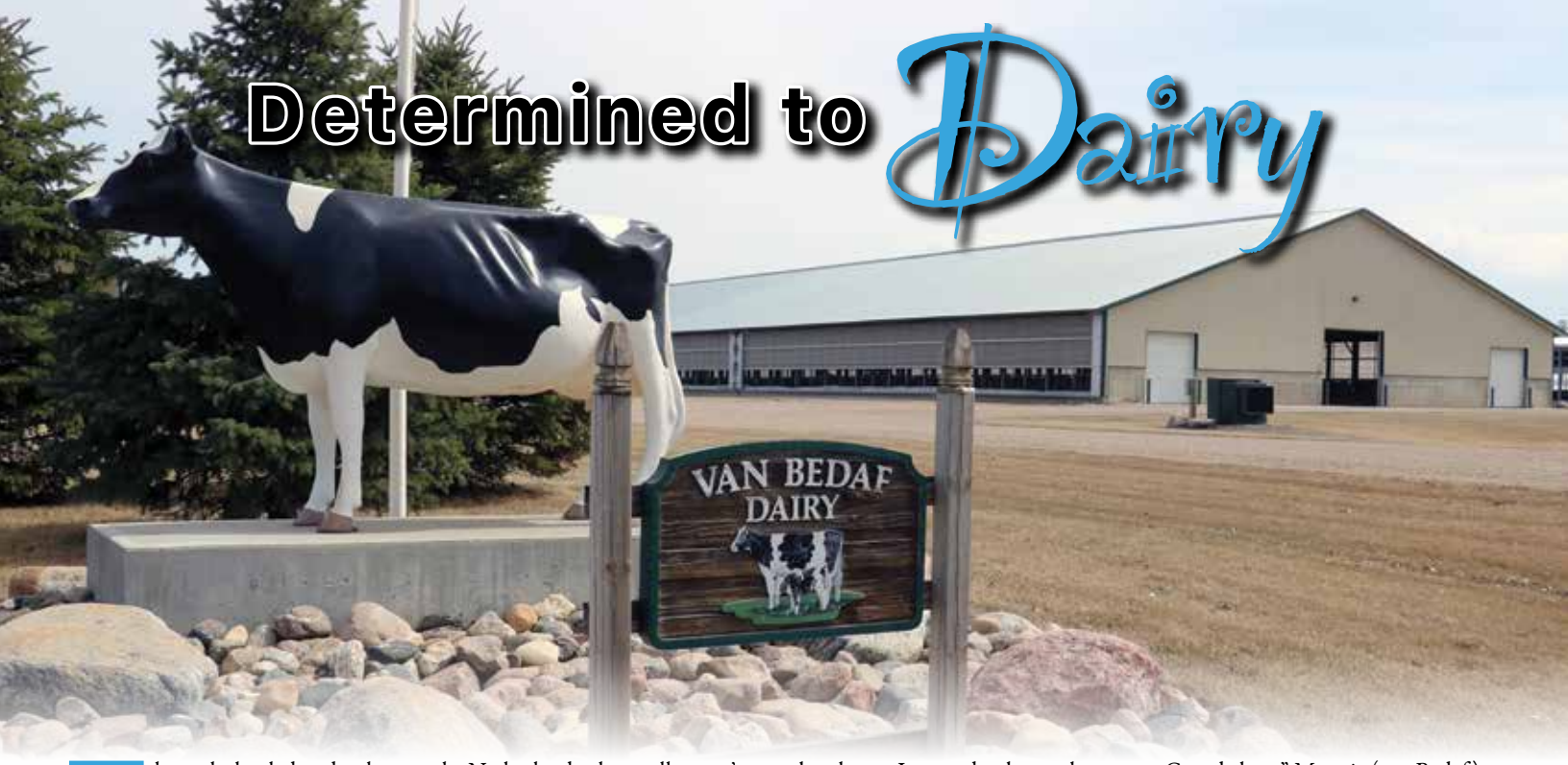
Do you currently grow soybeans?
❑ Yes _____ ❑ No _____
Soybean Acres: _____ Total Acres Farmed: _____

How did you hear about NDSGA? (Please circle one)
Recruited in person; Recruited by phone, Magazine; Internet; Mailing; Radio; Event; Other

❑ 3-Year Membership $200 ❑ 1-Year Membership $75
❑ Check enclosed (please make checks payable to NDSGA)
❑ Credit Card: Visa / MasterCard / Discover / American Express
Card Number: _____
Expiration Date: _____/_____ CVC: _____
Name on Card (Please print): _____
Signature: _____

Mail application with payment to: North Dakota Soybean Growers Association; 4852 Rocking Horse Circle South; Fargo, ND 58104

Determined to Dairy



The path that led to developing one of North Dakota's largest and most modern dairy farms was anything but straight. The journey spanned three countries and several decades.

Corne and Conny van Bedaf grew up on dairy farms in the Netherlands. Once married, they operated a dairy farm of their own before realizing that the small operation with 50 cows likely wouldn't be large enough to support them and their three children, especially if any of the kids also wanted to get into dairy farming. In 2001, with sons Piet and Dries as well as daughter Maartje in tow, the van Bedafs pulled up stakes and moved to Alberta, Canada, to operate a dairy there.

By 2008, the van Bedafs, now milking 110 cows, recognized the need to grow further and relocated again. They left Canada for Carrington, North Dakota, where they established van Bedaf Dairy in 2009.

"Both Mom and Dad grew up on dairies and always enjoyed their lives and wanted their kids to have that same opportunity and then, when we were older, to give us the opportunity to take over the farm at that point if we wanted," Piet van Bedaf says. "They wanted to give us that opportunity and saw that, in the Netherlands, that really wasn't going to be an option. They milked 110 cows in Canada but thought that was too small to support two or even three families if my sister, brother or I wanted to be on the farm also. So, then, they decided to come to the United States, here to North Dakota."

"I was 13 when we moved from Canada here," Maartje (van Bedaf) Murphy recalls. "I vividly remember that because I was in eighth grade. It was an opportunity that our parents had, and I'm happy that we're here."

Piet van Bedaf and his sister Maartje Murphy are making their marks on the family dairy.

Quality Focus

Three times a day, the 1,500 dairy cows trek into the milking parlor. Piet van Bedaf says that the cows produce about 135,000 pounds of milk per day. The milk is bound for the Cass-Clay Creamery in Fargo, with the milk bound for the fluid market.

Piet van Bedaf explains that the family raises their own replacement heifers while most other calves go to another farm.

Animal care is a primary concern for the van Bedafs, and that attention to detail hasn't gone unnoticed. Van Bedaf Dairy was given a milk excellence award from Cass-Clay Creamery. The quality award is given if the somatic cell count stays below 200,000 throughout the year. Being recognized for dairy quality has become a standard at the dairy.

"We've gotten the award every year since we've been there," Piet van Bedaf states. "Mom and Dad have gotten it every year since they've been in dairy, including in the Netherlands and Canada."

Piet van Bedaf describes that fewer than 10% of the Cass-Clay

The van Bedaf's herd of 1,500 dairy cows are milked three times a day, a produce about 135,000 pounds of milk daily.

Creamery's 2,000 members receive the milk excellence recognition.

"It's something that we're proud of that we're able to produce high-quality milk every year, and we can show with this award that it is actually the case," Piet van Bedaf explains. "Milk quality takes a lot of things. It takes good udder prep in the parlor, but it also takes clean stalls and healthy cows. It all needs to come together to be able to produce high-quality milk."

When not in the milking parlor, the cows lounge in spacious covered barns and rest on sand beds. The barns are cleaned daily with the sand scraped out, recycled, cleaned and placed back in the barns.

Open Doors

Large dairy operations are few and far between in North Dakota, but the van Bedafs have opened their farm's doors to visitors and tours. They also host special events at the farm.

In early June, the van Bedafs will celebrate Dairy Month by hosting their fourth biennial LegenDAIRY event at the farm near Carrington. The celebration features a meal, tours of the dairy and the opportunity to learn more about what happens on a modern dairy farm.

"Even in North Dakota, people are getting farther removed from agriculture," Piet van Bedaf says. "A lot of people don't know where the food or the milk that's in the grocery store comes from. We want to give anybody who wants to see where their milk comes from the opportunity to come out, take a look at the cows, see how they're raised, see how they're fed, see how they're milked and see what happens with the milk after it leaves the cow. They can ask questions if they have them."

The LegenDAIRY event not only demonstrates transparency with how the animals are managed, but it also helps build community.

"It's kind of a fun trip for families and older people, too," Murphy states. "These events have been growing and growing. We've had folks brought in from the nursing home. We'll have tour guides take people through the barns on trailers."

LegenDAIRY IV is scheduled for June 6 from 11 a.m. to 3 p.m. More information is available on the van Bedaf Dairy Facebook page.

Family Affair

Piet van Bedaf says that his parents, Corne and Conny van Bedaf, are still fully involved with the operation as is his brother, Dries. Murphy is still connected to the dairy and has even developed a gelato enterprise using milk from the dairy. (See the sidebar.) In addition to family members, the farm employs more than 20 people.

Livestock production requires commitment and round-the-clock dedication to animal care. Nowhere is that dedication more evident than in a dairy operation. Still, family farmers, such as the van Bedafs, wouldn't have it any other way.

"I think, maybe, if you grow up with dairy and you're so invested in it, it becomes a part of you," Piet van Bedaf contends. "It seems like every day is something different. You're never worried about finding something to do because there's always things to do. It's hard work, but it's rewarding, too."

—Story and photos by Daniel Lemke

The dairy herd is fed a carefully developed ration to maximize performance and animal health.

Rations include a variety of ingredients, including dried distillers grains and wheat processing products.

Checkoff Investment Comes Full Circle

North Dakota farmers excel at growing soybeans. Few states have seen the growth in soybean production that we have in our state. With that growth comes the need for consistent markets. Export markets are important for the soybeans' economic sustainability, but so are domestic markets, including the development of innovative soybean uses.

New uses are a focus of the North Dakota Soybean Council (NDSC), which is why it makes investments for projects that have the potential to move soybeans or soy products into innovative places. It's always rewarding to see that investment come full circle with the introduction of a new soy-based product to the market.

One recent success story is the development and market introduction of a soybean-based dust suppressant.

The NDSC supported research at North Dakota State University (NDSU) which examined dust-control products for several years. NDSU scientists tested numerous formulations in a variety of settings to see if soy processing coproducts or soybean oil could provide the basis for a sustainable, environmentally sound alternative to calcium chloride or magnesium chloride.

After numerous iterations, the researchers found a winner. The NDSU formulation was licensed by BioBlend Renewable Resources, a company that produces and markets biodegradable lubricants and industrial products. BioBlend fittingly introduced its soy-based EPIC EL dust suppressant product to the market on Earth Day.

It has been incredibly exciting to watch this project from its infancy. The NDSC invested checkoff funds into this project because board members were convinced that it would deliver a return by creating a new use for soy products. The fact that BioBlend EPIC EL dust suppressant was able to bring NDSU research, that was supported by North Dakota soybean farmers, to the market is rewarding.

With an increased focus on sustainable products in the current global marketplace, there is a big horizon for soybean-based products. Hopefully, the BioBlend EPIC EL dust suppressant is just the beginning of the successes.

As farmers, we've demonstrated our capacity to grow large supplies of soybeans, but it's vitally important to have demand. The NDSC is committed to fostering increased demand for North Dakota soybeans overseas and close to home. Supporting research that leads to a soy-based product reaching the market for use in North Dakota and elsewhere is what the organization is all about. I'd call it a full circle success story.

Austin Langley, Warwick, North Dakota

Chairman,
North Dakota Soybean Council

Email:
alangley@ndsoybean.org

Website:
www.ndsoybean.org

Soy Crush Plant Coming to North Dakota

North Dakota farmers are one step closer to having a large domestic market for their soybeans. Archer Daniels Midland (ADM) announced in May 2021 that it plans to build the state's first dedicated soybean crushing plant and refinery to meet the increasing demand from food, feed, industrial and biofuel customers, including renewable diesel producers.

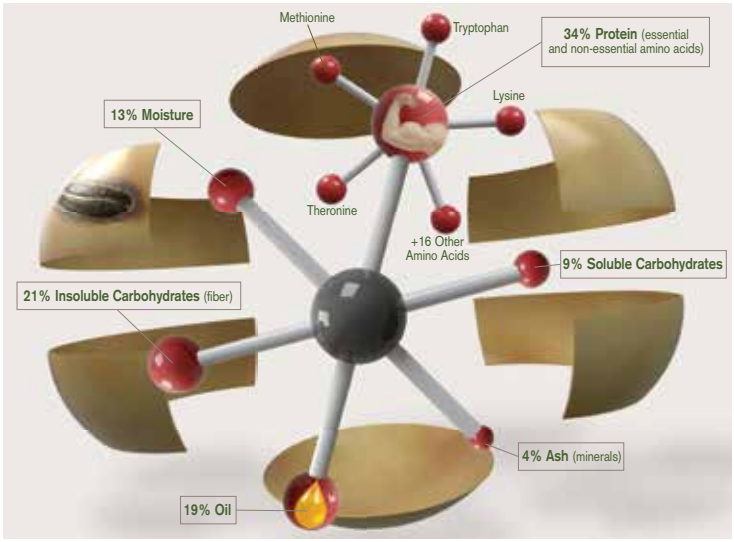
The approximately $350 million crush and refining complex planned for Spiritwood, North Dakota, will feature what ADM calls state-of-the-art automation technology. The facility will have the capacity to process 150,000 bushels of soybeans per day, totaling about 50 million bushels annually.

"ADM's commitment to preserving and protecting our planet's resources stretches from the farm gate to the food on our tables and the renewable fuel we put in our vehicles," says Greg Morris, president of ADM's Ag Services & Oilseeds business. "This exciting new project allows us to partner with North Dakota farmers to further advance the role of agriculture in addressing climate change through the production of low carbon feedstocks for products such as renewable diesel."

The North Dakota Soybean Council (NDSC) has long advocated for a crushing facility in the state to help create domestic demand that will compliment already strong export markets.

"The North Dakota Soybean Council has worked hard and invested in efforts to reach customers around the world with the message that North Dakota has abundant supply of high-quality soybeans,

—*Story continued on page 15*



Soybean composition.

Soy Innovations in TRANSPORTATION

The North Dakota Soybean Council is focusing on transportation opportunities in 2021.

Transportation is an issue for all of North Dakota's agriculture sectors, including soybean production. Fortunately, there is a wide array of transportation issues for which soybeans may be part of the solution.

The North Dakota Soybean Council (NDSC) is participating in a pair of webinars that highlight transportation concerns in North Dakota and demonstrate how checkoff-supported projects could solve issues and offer market opportunities for soy-based products.

"One of our marketing goals in the coming year is to have a transportation focus," says Jena Bjertness, the NDSC's director of market development.

In May, the NDSC worked with the Upper Great Plains Transportation Institute (UGPTI) Local Technical Assistance Program (LTAP) to connect with counties, townships and other entities in order to raise awareness about the soy-based dust suppressant that is available from BioBlend Renewable Resources. The NDSC supported the research at North Dakota State University (NDSU) that led to developing the product marketed by BioBlend as EPIC EL dust suppressant. The biodegradable and sustainable product is used to control dust on roadways and other gravel surfaces.

"Especially in a year of drought, EPIC EL dust suppressant is getting a lot of attention due to the fact that it is so dry," Bjertness states.

A second webinar in June will have an ag focus and will illustrate how checkoff-supported transportation projects are moving forward. The EPIC EL dust suppressant product will be on the agenda again because "it's really a long-term realization of the checkoff investment that was made year ago," Bjertness explains.

Rural bridges are also a concern for North Dakota. If bridges are out of commission, farmers may have to drive many miles out of their way to get to or from farms or the grain market. The Soy Transportation Coalition (STC) has released a manual identifying 20 innovative solutions for rural bridge replacement and repair. Information from the manual will be shared with the people who are responsible for county and township roads in order to see if there are cost-effective solutions.

EPIC EL can be applied with equipment most farmers already have at their disposal.

Bjertness says that one example of a creative solution includes repurposing railroad flatcars into bridges. Soybean Transportation Coalition (STC) Executive Director Mike Steenhoek will join the webinar to discuss potential solutions.

Soy-based products such as PoreShield concrete extender and RePlay asphalt extender will also be introduced to engineers and others who are responsible for the upkeep of North Dakota's roadways. Bjertness explains that those soy-based products can extend the life of concrete and asphalt roadways at a fraction of the cost of new construction.

There will also be a focus on transportation fuels, offering vehicle fleet managers information on how vehicles perform when they operate on biodiesel.

"Given the explosion of interest in biofuels, there's more curiosity and desire to be prepared than there ever has been in terms of biodiesel," Bjertness explains. "We're going to seek out city, state and university fleet managers to help them understand what they need to do to prepare for biodiesel and why they should consider using biodiesel. We want participants to be aware of the benefits of biodiesel and the investments in biodiesel that are important to North Dakota."

Bjertness says that soy-based fuels aren't limited to ground transportation. Sustainable aviation fuel is gaining traction in the biofuels industry and can be made from oilseeds such as soybeans and canola.

"We want to make sure people are aware that these products are available and that they come from U.S. soybeans," Bjertness adds.

—Story by Daniel Lemke, photos by Jim Bahr

Soy-Based Dust Suppressant Launches

Don Kadlec had a dust problem. Truck traffic on the small gravel road next to his rural Pisek, North Dakota, home would kick up so much dust, at times, that he would keep a wary eye out for oncoming traffic when he was outside.

"When I was mowing the lawn, I would look down the road every time I got close to it, and if there was a truck coming, I would hightail it for the woods back behind the house because I just couldn't stand the dust," Kadlec says. "I thought, I suppose I could wear a respirator, but it just didn't sound very appealing to me to spend the rest of my days breathing in this fine dust."

Instead, Kadlec went to the internet where he discovered a study that North Dakota State University (NDSU) Senior Research Engineer Jim Bahr was doing on soy-based dust suppressants.

"I begged him (Bahr) and whined a little, and finally, he got me into this study," Kadlec explains.

Kadlec applied the suppressant on the gravel road near his home. The product successfully knocked down the dust.

Dusty Issue

Kadlec's situation isn't unique. According to the Upper Great Plains Transportation Institute (UGPTI), North Dakota has about 60,000 miles of gravel roadways. Bahr states that the idea for the environment-friendly control came from the road dust problems which occur in North Dakota's western oil fields due to the high volumes of truck traffic on the newly built gravel roads.

About six years ago, Bahr began researching ways to combine soy biodiesel with glycerol in order to make a material that could be dispersed in water and used for a road's dust control. Glycerol is a waste stream from biodiesel production and is cheap and plentiful. Bahr says that soybean oil is now the base component of the dust-control product.

"Soy is a good feedstock because it has the right amount of unsaturation," Bahr explains. "This allows the material to dry and cure into soft semisolid without becoming brittle and hard."

There are other dust-suppressant options used on roadways, including calcium chloride and magnesium chloride. However, they present some environmental concerns that soy-based products do not.

The North Dakota Soybean Council (NDSC) funded multiple years of Bahr's research because of the dust suppressant's potential to utilize soybean products in new ways and to offer additional markets for soy oil.

Bahr describes how NDSU researchers have tested the soy-based dust suppressant on gravel roads which have new gravel with a lot of clay, old gravel with not much clay, sandy gravel with a lot of fine silt as well as horse-riding arenas, gravel quarries, almond orchards, parking lots and fertilizer plants. When applied correctly, Bahr says that the product performed well. Even failed sites taught Bahr and his team a lot about the proper application rates.

Hitting the Market

Representatives from BioBlend Renewable Resources took part in a 2019 event where they heard Bahr describe his research. BioBlend produces and markets biodegradable lubricants and industrial products.

"Our business is manufacturing and distributing biobased and primarily seed-based lubricants and other industrial products," states Todd Allison, regional business manager for BioBlend. "We are always looking for new and innovative technologies to bring to market in order to provide our customers and potential customers with high-quality, renewable, sustainable and biodegradable options."

BioBlend signed an agreement with NDSU to market the soy-based dust suppressant. Marketed as EPIC EL, the product's commercial launch occurred in April.

"This particular product fits very well with both our portfolio of products and our overall mission of Environmental Synergy, or eSyn™," Allison says. "EPIC EL is derived from renewable, sustainable and biodegradable soybeans; is a very high-performing product; and is cost effective. Meeting those three criteria, environmental, high performance and cost effective, make EPIC EL an eSyn product and therefore a perfect fit for BioBlend and our customers."

Allison explains that EPIC EL dust suppressant was developed with an entirely new technology which BioBlend calls EsterLink, where the product essentially encapsulates the dust particles and bonds with itself for long-lasting surface integrity. Preliminary field studies have shown that EPIC EL outperforms traditional dust-suppressant products

while providing environmental protection, especially around natural habitats.

Hundreds of thousands of miles of gravel roadways are treated with dust suppressants each year. Allison states that the environmental and sustainable aspects of the soy-based dust-control product provide a safer alternative that many businesses and municipalities seek.

Soy Support

The NDSC invested checkoff funds into the project "because we were convinced it would deliver a return by creating a new use for soy products," says NDSC chairman Austin Langley. "The fact BioBlend was able to bring NDSU research that was supported by North Dakota soybean farmers to the market is very rewarding."

The foundation for the newly launched EPIC EL soy-based dust suppressant was developed in North Dakota and supported by soybean checkoff funds.

In addition to NDSC funding, the United Soybean Board (USB) has also supported the commercialization of the soy-based suppressant.

When the USB sees a company like BioBlend come out with a green product using a significant amount of soybeans, and the USB endorses it, that definitely lends credibility," Langley adds. "That lends trust in these new use products."

The soy-based suppressant may initially be focused on roadways, the path forward has many other options.

"We will be looking at many channels," Allison contends, "the agricultural communities, municipalities, manufacturing, mining and equestrian to name a few."

As for Kadlec, he was pleased with how the dust suppressant worked because it controlled the dust for months. Kadlec now has a tote of EPIC EL in his shed that is ready for application when it's needed.

"I would recommend it to anybody who lives along a gravel road," Kadlec states. "It's an excellent product."

—Story by Daniel Lemke, photos by Wanbaugh Studios and United Soybean Board

SERIES

Investing in Our Future:
How the Soy Checkoff Supports Tomorrow's Leaders

The North Dakota Soybean Council (NDSC) is committed to supporting the next generation of agriculture leaders who are seeking to help feed a growing world population, to address climate change and sustainable agriculture, and to protect water resources and the environment. The NDSC proudly funds opportunities for students who are exploring degrees that have careers in the agricultural industry.

Each year, the NDSC provides scholarships to undergraduate and graduate students at North Dakota State University (NDSU) who are pursuing degrees in agriculture. In 2006, the NDSC began providing four $4,000 scholarships.

In 2011, the NDSC provided funding to develop the Commodity Trading Lab (CTL) in Barry Hall at NDSU. The CTL is a unique, state-of-the-art resource that is invaluable to train students who are entering the world of agribusiness. Approximately 245 students per year use this lab for their classes. The room is also used for marketing and risk-management seminars that are hosted by the NDSC and are designed to help farmers and industry leaders increase their knowledge and skills. International trade groups are often introduced to the facility and the resources that it provides when visiting North Dakota.

The NDSC's internship program for college students began in 2014 and is typically available year-round. Because of COVID-19, the internship program has been on hold. The NDSC looks forward to resuming this program later in 2021. From producer- and consumer-outreach projects to market development and research-project assistance, there are opportunities for students to learn through hands-on experience with the NDSC.

In future issues of The North Dakota Soybean Grower Magazine, the NDSC will feature the students and young adults who have benefited from the opportunities and scholarships that the soybean checkoff has provided. The focus of the series will be to reconnect with past interns, scholarship recipients and CTL graduates to learn their success stories and "where are they now."

Investing for the Long Haul

The North Dakota Soybean Council (NDSC) invests checkoff funds to better the state's soybean industry. Those investments include supporting new market development, the creation of innovative soybean uses and support for university research to address soybean production challenges. Some of those investments pay off in the short term while others have longer-lasting effect.

For the past 15 years, the NDSC has invested in the future of North Dakota agriculture by offering scholarships to North Dakota State University (NDSU) students who are pursuing degrees in agriculture. Since 2006, 49 students have received scholarships from the NDSC to help with their agriculture education.

"We see scholarships as an investment in the future of North Dakota soybean producers," says NDSC Executive Director Stephanie Sinner. "Our farmer-led board wants to assist students who are pursuing a career path in the soybean industry, whether to take that education back to the farm or to work in the industry."

The NDSC provides four scholarships each year: two for undergraduates and two for graduate students.

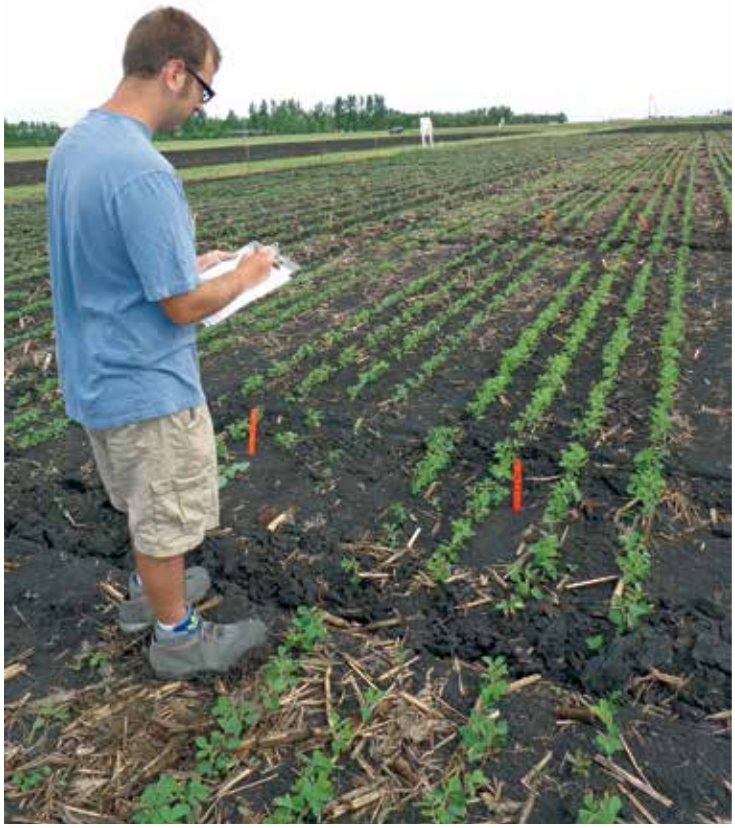
Ryan Buetow is one of the past recipients of an NDSC scholarship. Buetow serves as the NDSU Extension cropping systems specialist at the Dickinson Research Extension Center, a position he's held since 2015.

"My main priority as an Extension specialist is to assist our county-based agriculture Extension agents on crop-related programming, but I also provide resources; answer questions; and help with troubleshooting for farmers, consultants and ag industry across the state," Buetow states.

Buetow explains that his recent research has focused on the growing soil acidity issue and searching for a wide range of management options through a literature review, on-farm research and demonstrations. He's also been speaking at and helping to organize a wide range of events, including webinars, workshops and field days.

Buetow received a Bachelor of Science in crop and weed science, with a minor in botany, from NDSU in 2013. He then started his master's program in plant sciences at NDSU, graduating in 2015. The NDSC scholarship helped Buetow through his master's program.

"While graduate school is an excellent learning opportunity, the pay isn't much. I'm extremely grateful for the opportunity to work with Dr. Kandel as a graduate research assistant during my time in the program at NDSU. The scholarship helped me to cover some books and school supplies as well as to help



Ryan Buetow's professional journey was helped along by the North Dakota Soybean Council scholarship.

ease some cost-of-living expenses while existing on a meager graduate student stipend," Buetow says. "This scholarship along with large quantities of caffeine helped in one way or another as I pushed forward and finished my degree within a decent timeline, so I could start my position at the NDSU Dickinson REC."

Buetow is currently working toward a Ph.D. in plant sciences at NDSU, which should be completed this summer.

Buetow credits the NDSC scholarship and an ambassador position with the Minnesota Soybean Research and Promotion Council during his undergraduate years with helping him to better understand the importance of commodity groups. He also gained a greater awareness about the value of farmers working together to improve production and sustainability.

"As an Extension specialist, groups like the North Dakota Soybean Council are an essential partner in improving cropping systems and farm profitability," Buetow states.

Buetow's commitment to North Dakota agriculture gives testimony to the purpose behind the NDSC's scholarship program.

"A great part of working for NDSU Extension is we serve as a source of unbiased information for producers with a reliance on experience and scientifically sound research," Buetow explains. "The only thing we are trying to sell is the idea of lifelong learning."

For more information about the North Dakota Soybean Council's scholarship program, visit bit.ly/NDSCScholarships.

—Story by Daniel Lemke, photos by David Klassen and NDSU

Thanks to the Soybean Industry Support, Southeast Asia Develops a Taste for U.S. Pork

Pork exports add value to the pork industry and strengthen the domestic demand for soybean meal. Armed with this knowledge, North Dakota soybean farmers, through the soybean checkoff, partner with the U.S. Meat Export Federation (USMEF) to develop markets for U.S. pork around the world. Funding support from the soybean checkoff enables the USMEF to conduct targeted market-development activities in order to increase U.S. pork exports.

"The soybean industry has been a solid partner in developing international markets for U.S. pork," says USMEF Vice President of Industry Relations John Hinners. "This support is critical to the export growth the pork industry has achieved."

In 2020, U.S. pork and pork variety meat exports shattered previous records by reaching nearly 3 million metric tons (MT) valued at more than $7.7 billion. In fact, exports accounted for 29% of the total U.S. pork production in 2020 and equated to nearly $59 per head slaughtered.

Key to sustaining pork export growth is the market development work taking place in new and emerging markets around the world. One such region which is now bearing fruit is Southeast Asia. U.S. pork exports to the Association of Southeast Asian Nations (ASEAN) region grew 28% in 2020, to 77,149 MT, with the value increasing 43% to $186 million.

Pork is a valued protein through much of the region; pork is popular and rooted in local cuisines. Expanding populations, rising incomes, increasing urbanization and modernized retail development signal further growth for pork consumption. Outbreaks of African swine fever in the region, including Vietnam and the Philippines, have affected domestic pork production and have heightened the need for pork imports as a way to meet consumer demand.

While the COVID-19 pandemic has weighed on the region's economy, the pandemic has accelerated trends that make it easier for the USMEF to reach large numbers of consumers. With representation in Singapore, the Philippines and Vietnam, USMEF has fast-tracked online educational and promotional programs for U.S. pork through-

Chefs in Vietnam participate in a USMEF activity promoting U.S. pork cuts in the market. The activity featured 30 professional chefs paired with young aspiring chefs to prepare U.S. pork dishes.

Retail promotions for U.S. pork in Vietnam have been a challenge during COVID-19, but USMEF has partnered with retailers and distributors around the country to encourage Vietnamese consumers to purchase more U.S. products through giveaways and discounts.

out the region.

Consumer demand for meat has remained strong during the pandemic, and the USMEF has worked aggressively to partner with retailers for new promotional approaches. Retailers have expanded their services into e-commerce and home delivery, and the USMEF has worked alongside them, exploring and developing new ways to augment traditional promotions of U.S. pork. In Cambodia, the USMEF partnered with the U.S. Department of Agriculture (USDA) Foreign Agricultural Service and a major Japanese-based retailer for in-store promotions at two locations in Phnom Penh and Sen Sok City. Cooking demonstrations were live streamed on the U.S. Embassy in Cambodia's fan page and attracted more than 13,000 views.

Along with encouraging trial purchases of U.S. pork at retail stores, the USMEF is also using social media to supplement retail promotions. With more people cooking at home and using social media to find new ideas for traditional dishes, the USMEF has partnered with key social media opinion leaders to promote recipe ideas that include U.S. pork.

"In general, U.S. pork is new to consumers in Vietnam," explained Sabrina Yin, the USMEF director in the ASEAN region. "There has been a concern about the quality of imported frozen pork versus local fresh pork, but tastings and cooking demonstrations show consumers the superior quality of U.S. frozen pork."

The North Dakota Soybean Council is a member of the U.S. Meat Export Federation to support the development of additional markets for animal agriculture.

To learn more about USMEF, visit usmef.org.

—Story and photos courtesy of U.S. Meat Export Federation

—Story continued from page 8

naturally high in essential amino acids, which are key building blocks for livestock and poultry," Langley states. "North Dakota is poised to fill the demands of a soybean crushing facility." More than 90% of the soybeans raised in North Dakota currently leave the state as whole beans. A crush facility will help capture value locally while providing farmers with another marketing opportunity.

"This plant is going to put another marketing tool in the hands of every soybean farmer in North Dakota," Langley explains. "Fifty million bushels is a quarter of the crop we produce each year, so having a facility come in that's going to use up that much of our crop is a big marketing opportunity."

North Dakota Soybean Growers Association President Joe Ericson agrees that the crushing facility will provide farmers with a needed domestic market for soybeans. "This news is great for North Dakota soybean growers mainly because we currently have limited crushing capacity," Ericson says. "Capturing value-added opportunities in-state will be a big win for soybean growers and the local economy."

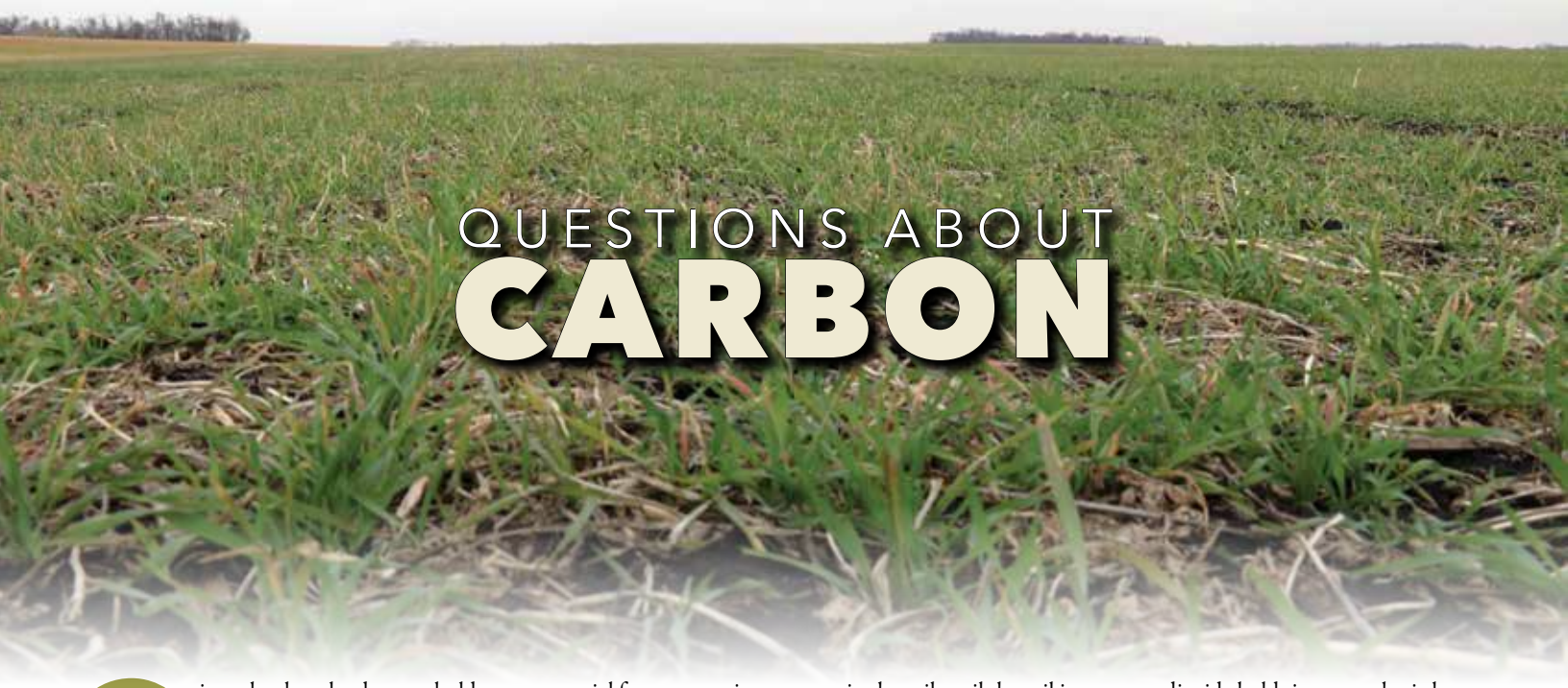
"This soybean processing plant is a gamechanger for North Dakota farmers, adding value and expanding the market for this important crop closer to home while also supporting the production of products such as renewable green diesel right here in North Dakota," North Dakota Governor Doug Burgum states. "Now, with innovative leader ADM and collaboration with local economic development and multiple state agencies, this exciting value-added project has come to fruition. We're deeply grateful for ADM's investment in our state and our highly productive farmers as well as the tireless efforts of so many who helped make this happen, including the Office of State Tax Commissioner, the Jamestown/Stutsman County Development Corp., North Dakota Department of Commerce, North Dakota Department of Agriculture, Lieutenant Governor Brent Sanford, the state legislature, and our entire congressional delegation."

In addition to boosting soybean markets, Langley describes how the crush facility will also be beneficial for growing the state's biofuel and livestock industries.

"Having soybean meal produced from the ADM plant will give us the opportunity to increase livestock production in North Dakota by having a local feed source and also provides the opportunity for North Dakota soybean farmers to supply soybean oil to the booming renewable-fuels market," Langley says.

Construction is expected to be complete prior to the 2023 harvest.

—Story by Daniel Lemke, graphic courtesy of United Soybean Board



QUESTIONS ABOUT CARBON

Given the sheer land mass they cover, the nation's forests and agriculture lands hold great potential for sequestering carbon, the process by which plants capture carbon dioxide from the air and store it in the soil. The carbon stays in the soil until the soil is disturbed through tillage.

Carbon dioxide is a concern because, as a greenhouse gas, carbon dioxide holds in atmospheric heat, preventing warm air from escaping the atmosphere and contributing to climate change.

Planting cover crops helps sequester carbon and the practice is rewarded in many private carbon markets.

Farmers can play a key role in carbon sequestration because crops are highly efficient at using and storing carbon dioxide. Farmer leaders and government officials agree that, for any meaningful carbon reduction to take place in the United States, farmers must be involved.

Practices such as no-till farming, nitrogen management and planting cover crops are all beneficial for sequestering carbon. Many farmers already utilize those tools for agronomic and sustainability reasons. Do those practices also present a financial opportunity for farmers because businesses want to reduce their carbon footprint?

Value to Farmers

Barton, North Dakota, farmer Joshua Stutrud is one of many growers who are curious about the possibility of being rewarded for sustainable farming practices that sequester carbon. Stutrud says that

Editor's Note: *This article is the first in a series of stories to appear in The North Dakota Soybean Grower Magazine; the series addresses the many connections between carbon and agriculture. Through sustainable farming practices, farmers are recognized as having a huge potential influence on carbon sequestration, which reduces carbon dioxide, a greenhouse gas. Carbon markets are emerging as potential opportunities for a farmer to potentially get paid by companies that are looking to improve their carbon footprint. In the coming issues, we'll take a closer look at the potential for farmers.*

he and his family no-till their crops in order to conserve soil moisture and that they also plant cover crops to address soil-salinity issues and to help with weed control.

Farmers can be rewarded for both the no-till and cover crops by a range of private companies that have programs which offer payment to farmers for carbon-storing practices. Stutrud has kept an eye on the development of carbon markets but hasn't yet signed onto one.

"There's potential here, but at the same time, I don't know what type of value there's going to be until there's some sort of a government initiative," Stutrud says, "because what is the value of a carbon credit? There's an unknown value."

According to the American Soybean Association's (ASA) analysis of seven private programs, there is a range of prices that farmers could receive for enrolling acres in a carbon market. Each private program has a different requirement about how many acres must be enrolled. There are also varying contract terms that range from one to 20 years in length. The programs typically use farm data and soil tests to determine if the sequestration goals are being met.

Barton farmer Joshua Stutrud is paying attention to opportunities that could be offered by carbon markets, but has yet to sign on.

"There are a lot of individual markets out there, and producers can sure take a look at all the different opportunities that there are to determine how it will fit into their program. It's not a one glove fits all type of situation," Kansas farmer and ASA Director Charles Atkinson says.

Atkinson is an active conservation proponent. He's also one of two ASA directors who are serving on the Environmental Services Marketing Consortium (ESMC) Producer's Circle. The ESMC is launching a national ecosystem-services market program that pays farmers and ranchers for quantified, verified, certified and outcome-based soil carbon, net greenhouse gases, water quality and water conservation credits which are earned from regenerative agricultural practices.

Atkinson says that some entities are offering a carbon program to reduce their own carbon footprint while other companies will operate as a broker, connecting companies with willing farmers.

"There's a lot of big companies that want to reduce their carbon footprint, and they're not going to be able to do it unless they have agriculture in tow," Atkinson says. "I've always felt agriculture should be the leader in this area because we know that we're important to accomplish what they want to accomplish."

Early Adopters

The goal of carbon programs is to increase the amount of carbon that is sequestered in the soil. However, like Stutrud, most farmers who have

a long history of no-till farming and cover-crop usage would currently be ineligible for most programs. Even though they may have been sequestering carbon for decades, their farm wouldn't qualify under most current programs. That fact remains a major hurdle to be cleared.

"We've been working with legislators in this area already because there are a lot of producers out there who are early adopters, who are already no-till; they're already doing cover crops; they're doing everything they can to protect the resources they have; and yet, under some of the programs, they are not eligible," Atkinson states. "The last thing we want to do is have someone who has been no-tilling for 25 years tear it up to make a few dollars."

Atkinson explains that the ASA has been talking with officials at the U.S. Department of Agriculture (USDA) about a carbon bank or carbon credit to reward early adopters.

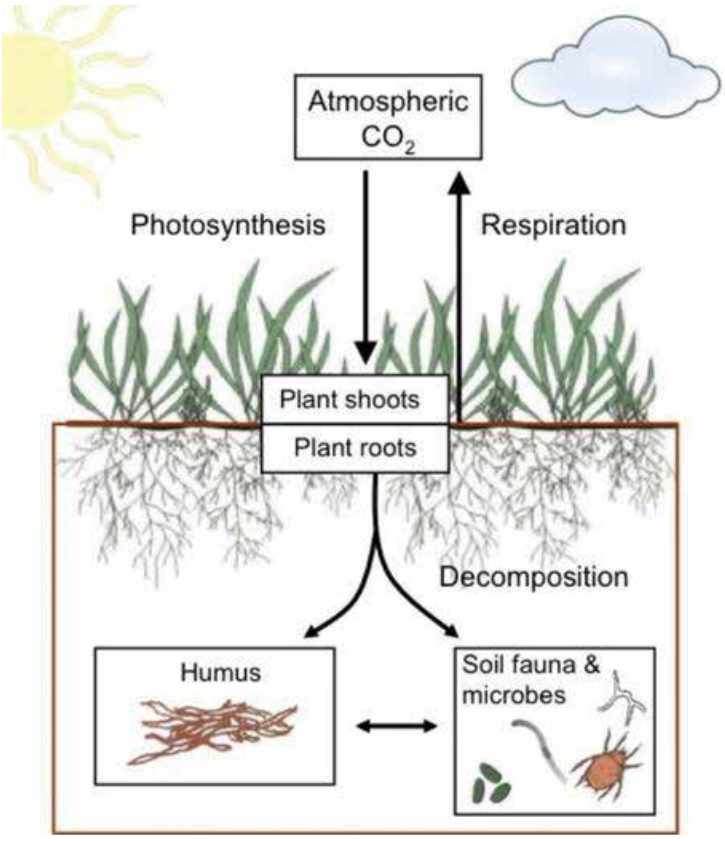
In April, Bayer announced enhancements for their Carbon Program for the 2021-2022 program season includes eligibility for growers who have adopted strip- or no-till or cover crops on fields on or after January 1, 2012.

Government Role

In January, President Biden signed an executive order that elevated climate policy to be an "essential element" of American foreign policy and national security. The order begins the process of determining the U.S. emission reduction target under the Paris Agreement. Among other things, the order formally established the White House Office of Domestic Climate Policy.

The executive order directs the USDA to involve the agriculture sector in the federal government's efforts and highlights the importance of the American agriculture industry as it relates to renewable energy and carbon sequestration. The order directed the USDA to collect input from farmers and other stakeholders about how to use federal programs to encourage the adoption of climate-smart agricultural practices that produce verifiable carbon reductions and sequestrations as well as creating new income sources and jobs for rural Americans.

Keeping carbon in the soil keeps it from being released into the atmosphere as carbon dioxide, a greenhouse gas.



Soil Carbon Storage Cycle

"The opportunity here is to create incentives and markets that reward producers, that reward landowners for good agricultural and forestry practices," Robert Bonnie, deputy chief of staff for policy and a senior climate adviser to the USDA secretary, (nominated by President Joe Biden to serve as undersecretary for Food Production and Conservation (FPAC) in mid-April) told participants at a recent virtual conference which was focused on carbon. "If you think about broader climate goals, reaching net zero by 2050, agriculture has a really important role to play, as does forestry. It's hard to figure out how you get to those numbers without the active participation of agriculture and forestry."

Bonnie says that any sort of government carbon program would be

Robert Bonnie

about voluntary participation.

"It's going to be about markets and incentives, and I think, at USDA, we want to work with everyone to figure out what's the right mix of policy, science and other investments that can help make that happen," Bonnie explains.

Atkinson states that the ASA wants to make sure the carbon market is on the free market and not a government mandate, but there likely needs to be some help from the USDA to reward the early adopters.

Change Coming

Atkinson admits that farmers still have many unanswered questions about carbon programs and any government involvement. Among the most frequent questions he hears from other farmers is about early adopters. He also hears other concerns from growers, including disadvantages of long-term no-till that farmers may face if they want to retire and rent their ground to new farmers.

"What's the benefit of other farmers renting my no-till ground when they can rent someone else's conventional ground and get the carbon credit, knowing they've got the potential for more income to offset their rental rate?" Atkinson asks.

Farmers are also concerned about the cost of making changes to their operations so that they qualify for carbon programs and even about transitioning farms.

The carbon market may be in its infancy, but Atkinson expects greater clarity on the issue in the coming months, which will be welcome news to farmers.

"I'm definitely going to keep my eye on it," Stutrud says. "But there's still a lot of red tape to cut through to get clarity."

—Story and photos by Daniel Lemke, graphic courtesy of Science Education Resource Center at Carleton College

BEFORE YOU SIGN

Farmers interested in carbon markets are encouraged to ask questions before signing a contract. Because of differences with what each program offers, it's important to find out which program may be the best fit.

The American Soybean Association has compiled a list of questions to ask carbon-market representatives when farmers are considering carbon-program options.

- How much is this program going to cost?
- Am I required to implement any conservation practices or to meet any conservation baselines in order to qualify?
- Do I own my project and/or any credits issued to it? What, exactly, is being purchased?
- Am I giving away my private farm-operating data, and what can the aggregator, registry operator or market administrator do with them?
- Who sets the prices for which my credits sell?
- If a buyer pays $50 per ton for my credits, how much do I receive from the amount paid? How fast and how do I get paid?
- Do I have to keep reporting the farm-operating data after the aggregator or credit buyers stop paying for credits? If so, for how long?
- What is my recourse if something goes wrong?
- What happens to my obligations and payments if the company exits the carbon market or goes bankrupt?
- Am I contractually bound to a specific soil treatment, cropping and/or livestock management practice?
- Does a lien attach to my property?
- What is the company's motivation?
- Are there strings attached? Is exclusivity required? Can I still participate in government conservation programs with the same acres?
- How transparent is the process? How flexible is it?
- Are there force majeure clauses? What happens if weather forces the use of tillage or prevents a cover crop from being planted?
- How will I be affected if the company revises its program?
- Will I be responsible to return any of the payments if the projected levels of sequestration are not attained?

Refining SOYBEAN FERTILITY Recommendations

Soybeans require a dozen mineral nutrients to grow and to produce seed. Some of those nutrients are available naturally in North Dakota soils while farmers supplement others with fertilization. North Dakota State University (NDSU) research has changed some long-standing nutrient recommendations that should help farmers to maximize soybean productivity while saving growers money on unnecessary applications.

NDSU researchers who had conducted soybean research for more than a decade gathered to review results and to evaluate whether current fertility recommendations were still the most appropriate. NDSU Extension Soil Science Specialist Dr. Dave Franzen said that some recommendations have changed substantially. The new standards should help farmers get the most from their soybeans while minimizing expenses at a time when fertilizer costs have risen substantially.

"Input costs are higher," Franzen explains. "Nitrogen is up substantially,

and phosphate is about double what it was last year. Export supplies were shut off while the U.S. negotiated some trade deals. Whenever you stop up the supply chain, prices go up."

Nitrogen

Among the ways that farmers can reduce input costs without sacrificing yields is to eliminate in-season nitrogen (N) applications.

"Soybeans don't need supplemental N; it's just a waste," Franzen states. "We didn't find any benefit from foliar fertilization during the summertime either, which is another cost to farmers. Soybeans are perfectly happy to make whatever yield they're going to produce without any supplemental nitrogen or foliar fertilizer."

Phosphorus

Most North Dakota soils are low in phosphorus, and soybeans have generally responded favorably to added phosphates if the soil-test phosphorus values are very low. However, NDSU research shows that the soil-test threshold at which farmers can get a response from adding phosphate fertilizer is lower than previously thought.

"We found that, by using the Olsen test, which is a phosphate extraction test, if we have values over 7 parts per million, then putting on phosphate is not economically justified. We either don't see a yield increase, or the increase is so small that the phosphate fertilizer is more expensive than the income from a yield increase," Franzen explains. "That's a major change."

Researchers discovered that putting phosphate fertilizer in the row with soybean seed decreased yield almost every time. Franzen says that those

NDSU Extension Soil Science Specialist Dr. Dave Franzen says fertilizer efficiency is an area where farmers can get the most from their input investments.

results came as a surprise because fertilizer is applied to increase the yield for small grains, corn and canola, but for soybean, the yields decreased.

"Absolutely under no circumstances should a farmer be putting their phosphate fertilizer with their seed," Franzen states. "If they need to put some phosphate on their field, they should broadcast it or band it with distance between the seed and fertilizer, but absolutely do not put it with the seed."

Franzen describes how numerous North Dakota experiments were examined to make this important recommendation change.

"Every time researchers put phosphates with the seed, we reduced the stand," Franzen says. "There's enough of an effect that the yield suffers. Two, three, sometimes five or six bushels per acre loss are not all that uncommon across all fields."

Franzen states that, at the very best, farmers will break even with the yield but lose money because they're paying to put on the fertilizer.

"There was no study where it was economically beneficial to put the phosphate with the seed," Franzen adds.

Soil Salts

Franzen says that soil salts are an issue for North Dakota farmers. He states that nearly every field has some acres with yield-robbing soluble salts. A laboratory test for electrical conductivity (EC), the measure of soluble soil salts, will help determine if the field can support soybeans.

"When people are choosing fields, the EC value in the soil test is really the most important thing to look at right away," Franzen explains. "If it's over a certain amount, maybe you need to put soybeans in another field and not that one."

The full soybean fertility recommendations are available on the NDSU website at bit.ly/SoybeanSoilFertility

—Story by Daniel Lemke, photos courtesy of NDSU

Many Thanks!

At the end of March, the North Dakota Soybean Council (NDSC) said farewell to two of its directors: Joe Morken (right) of Casselton and Levi Taylor (left) of Ypsilanti. NDSC is proud to recognize these two directors for their combined 12 years of service to the board. Joe served as the chair for 3 years during his 6-year term. NDSC is grateful for their willingness to serve the soybean producers of North Dakota, and NDSC thanks their families for supporting them. Thank you, Joe and Levi!

—Story and photo by staff

NAGC Offers Resources for the WAR ON WEEDS

Housed on North Dakota State University's (NDSU) Fargo campus is a unique resource created to be the conduit between academic research and the farm. The National Agricultural Genotyping Center (NAGC) provides diagnostic testing for plants, animals and even honeybees. That capability is helping farmers manage numerous aspects of farming, including weed control.

The NAGC began operating in 2016 and provides a variety of testing services, including DNA tests. Farmers, crop advisors and county weed agents can send in samples for testing.

"Plants, animals and their associated pests all have DNA. We can use that to our advantage and quickly develop new diagnostic tests, just by analyzing their DNA," NAGC research scientist Zack Bateson says.

Palmer amaranth testing is one area of particular focus for the NAGC as concerns about its increase in North Dakota. Bateson explains that one of the challenges farmers face is how Palmer amaranth can be hard to distinguish from other pigweed species when plants are small and are most susceptible to herbicide applications. A DNA test is the best way to make a positive identification.

"Our pigweed identification test is unique from other available Palmer amaranth tests in that it not only detects whether a sample contains Palmer amaranth, but we can also

NAGC staff operate the facility, located on the NDSU campus.

Research scientist Zack Bateson examines an incoming sample at the NAGC.

Early identification of pigweed species can help farmers manage them, before they mature.

tell you whether it's waterhemp or in the other pigweed groups like redroot, smooth or Powell amaranth," Bateson states. "That information can have important practical applications to what kind of herbicide farmers might use in the field."

Bateson says that the NAGC gets a lot of weed samples from county weed agents and NDSU Extension specialists. Scientists at the center are also seeing a lot more seed-testing labs send samples. Bateson explains that the NAGC can detect and differentiate Palmer amaranth from the other species from seeds as well as from leaf samples. Numerous Palmer amaranth infestations are blamed on contaminated seed which is used to plant fields in the Conservation Reserve Program or used for pollinator habitat.

The NAGC has the capability to determine if a plant is or isn't Palmer amaranth. Bateson states that the plan is for tests to go even further: not only informing farmers what species they have in their field or seed samples, but also telling people something about those plant populations, including whether or not the weeds are herbicide resistant.

"There are genetic markers in the pigweed genome that are linked to herbicide resistance," Bateson explains. "There are a couple markers, in particular, that we're focusing on. The first is glyphosate resistance. In that test, we're looking for a genetic marker that is more abundant in resistant plants. More copies of that genetic marker results in a lot more expression of the protein that allows weeds to escape glyphosate."

Bateson says that the NAGC is also looking to develop DNA tests which indicate resistance to other classes of herbicides, including protoporphyrinogen oxidase (PPO) inhibitors and acetolactate synthase (ALS) inhibitors. That information can be valuable for farmers to decide which herbicides to use in order to manage weeds and which products to avoid.

"We're not in the business to tell growers how to manage," Bateson contends. "We're just trying to help identify the issue because that's the first step into effective management."

Speed is also an asset. Bateson says that the NAGC was established to be a high-throughput testing facility. With rush samples, submitters can get test results back in a matter of hours.

Bateson explains that the NAGC is working with NDSU weed scientists on multiple tests. He describes how collaboration is important for gathering and sharing results.

"We're not trying to do everything ourselves. We're always looking for collaborations, and we're always happy to try to help researchers and breeders," Bateson states. "DNA testing can be a lot of work, and you need certain equipment that a typical lab might not have. We can be the workhorse. We can provide that diagnostic data, so they can work on analysis and other elements of their research."

To learn more about the National Agricultural Genotyping Center, visit genotypingcenter.com.

—Story and photos by Daniel Lemke

The NAGC can use DNA to determine a weed's species, even from tiny seeds.

Self-Care: Part of a HEALTHY FARM Business

Stress is present during a normal year in farming, but the past few years have raised anxiety in rural America to a whole new level. A global pandemic, irregular markets, economic pressures, and even weather challenges have put many farmers on edge.

Even though current circumstances are challenging for nearly all farmers, many producers remain reluctant to seek help if they're feeling overwhelmed.

"We're taught from an early age to solve our own problems, that we pull ourselves up by the bootstraps, get over it and move on," author, farm advocate and nationally known speaker, Michele Payn says.

To fight any stigma attached to seeking help, Payn encourages farmers and family members to take a pragmatic approach.

"I've found that, when we approach stress management as a part of business, that seems to be more palatable," Payn explains.

The goal for most farmers is to operate a successful business. Farmers take pride in managing their farms, many of which have been family run for generations. Payn says to run a successful business, farmers need to look at themselves as an asset and practice some self-care, including getting proper nutrition, exercise, and getting enough sleep."

"When I speak to folks about resiliency in agriculture, the angle I always take is, you spend a tremendous amount of time and money taking care of your land and your animals, when do those same rules apply to yourself because, you can't take care of your farm if you're not healthy yourself," Payn contends.

Local Resources

In 2020, the Jamestown Regional Medical Center (JRMC) partnered with The Village Business Institute to offer up to three free counseling sessions for farmers, ranchers, their spouses, family and farm workers through a program called Agricultural Workforce Assistance (AWA).

Unsurprisingly, not many farmers sought the free resource.

"We know producers are a stoic group and not likely to access care: be it for their mental or even physical health," says JRMC President and CEO Mike Delfs. "That's why we created this program. AWA reduces barriers because so many exist, especially after a pandemic and before a possible drought."

The Village AWA program makes it easy for farmers and ranchers to seek the help they need and to speak with a trained professional who will help them work through their challenges. The AWA offers web-based services so that farmers, ranchers and their families do not have to travel. If technology is a barrier, in-person appointments can be scheduled in Fargo.

The three free AWA counseling services are available to farm and ranch families in JRMC's nine-county region: Stutsman, Foster, LaMoure, Logan, Barnes, Eddy, Griggs, Kidder and Wells Counties.

"Self-care is important to everyone," Delfs states. "That's especially evident to all of us in healthcare after this challenging year. Self-care helps us be our best selves, whether it's providing for our family, caring for our community or feeding the world."

Delfs recognizes that self-care often takes a back seat to other issues. While farmers may be reticent to discuss difficult topics such as mental health, sometimes those issues emerge unexpectedly.

"Mental health challenges are something we see presenting in our Emergency Department. Sometimes, people will come to us seeking care for back pain or headaches when, really, those are symptoms of heavy burdens associated with mental health," Delfs explains. "Offering the AWA is a resource our emergency teams are excited about and grateful for. AWA can treat the actual issue, not just the symptoms."

Proactive Approach

As a farm advocate, Payn touts taking a proactive approach to address issues, and that includes dealing with farm stress and mental health.

"Advocacy is much more effective when we work proactively," Payn says, "and it's much more effective to take care of mental health proactively. Take the time to take a 5-minute walk away when the tractor doesn't work and you're so upset you can't see straight. Take the time to go out with your friends, meet for breakfast or whatever. It's maintenance, but the proactive approach is huge."

Payn says that the culture of self-sufficiency within agriculture sometimes limits farmers' willingness to have an open and honest conversation about how they're handling the stress in their life.

"The challenge is to help people understand that they may be under stress, but there are things you can do proactively to be able to manage that more effectively," Payn adds.

The JRMC and The Village expect to offer the AWA program again in 2021. Farmers can learn more about it at jrmcnd.com/agriculture or by calling (800) 627-8220.

Payn has several resources available on her website at causematters.com, including recordings of Facebook Live sessions with mental-health experts and testimonials from people who have firsthand experience with farm stress and mental-health issues or who have been touched by suicide. Payn also produced a calendar called Agriculture's Growth Calendar, which is a weekly calendar of inspiration and ideas, as well as resources and tips to try to help people better handle stress. The calendar is available at bit.ly/AgriculturesGrowthCalendar

It's important that farmers care for their land and animals, but health experts contend it is equally vital that farmers offer themselves that same level of self-care.

—Story by Daniel Lemke, stock photo

New Directors and 2021 Officers Elected

The North Dakota Soybean Council (NDSC) welcomed two new board members and recently elected 2021 officers.

JP Lueck of Spiritwood, North Dakota, was elected to represent the soybean producers of District 6, Stutsman County. Lueck, his dad and brother farm north of Spiritwood and grow wheat, corn and soybeans. Lueck is also an Engineering Services Supervisor at Collins Aerospace in Jamestown. In addition to his new term on the NDSC board of directors, he is active in the North Dakota Farmers Union and serves as a township supervisor for Rose Township. Lueck holds a degree in Business Administration from Jamestown College.

"I am proud to be able to represent Stutsman County's soybean farmers. As a fifth-generation farmer, I'm excited to help allocate funding for soybean research, market expansion and also educate consumers about soybeans. I hope the results of this work will help North Dakota farmers to be able to continue to grow soybeans while increasing profitability for generations to come," Lueck states.

Jim Thompson, a soybean farmer from Page, was elected to represent District 4, Cass County. Jim farms with his wife Jennifer. Thompson has served on Rich Township and is the Cass County Township Officers Association Vice President. The Thompsons farm soybeans, corn, wheat and dry beans. Jim holds a degree in Aviation Administration and Business Management from the University of North Dakota.

"I am excited and honored to represent District 4, Cass County, on the ND Soybean Council and be part of the work the Council has dedicated itself to, investing in programs and research to further utilize and promote the soybeans produced in North Dakota," Thompson says.

Jim Thompson

JP Lueck

Chris Brossart, a soybean producer from Wolford, was re-elected to represent District 11 which includes, Divide, Williams, Burke, Renville, Bottineau, Mountrail, Ward, McHenry, Pierce, Rolette, Towner, Ramsey, Benson and Ramsey counties. Besides being recently reelected to the board for District 11, Chris Brossart was also elected vice chairman. Brossart farms soybeans, spring wheat, barley, corn and canola with his parents and wife Jenny on a third-generation family homesteaded farm. He graduated from North Dakota State University with a degree in crop and weed sciences and agribusiness. Brossart is the vice chairman of the Soy Transportation Coalition and is also active with North Dakota Farm Bureau and Nodak Insurance Board.

Mike Schlosser, soybean producer of Edgeley, was re-elected to represent District 3 for LaMoure and Dickey counties. Along with his father, Schlosser grows soybeans, corn and wheat. He graduated from North Dakota State University with a bachelor's degree in plant protection and crop and weed science. He is active with North Dakota Farmers Union and a member of the American Soybean Association.

"We welcome JP and Jim to the board. We are eager to work alongside them in their role of representing their fellow soybean producers of Stutsman and Cass counties", said Stephanie Sinner, executive director. "We congratulate Chris Brossart and Mike Schlosser on their re-election to the board. All four will bring strong expertise and excellent perspective to the work of the North Dakota Soybean Council."

During the NDSC board meeting on March 31, executive board officers were elected. Austin Langley of Warwick was reelected chairman of the board. Langley represents soybean farmers in District 9 which is comprised of Eddy, Foster and Wells Counties. He grows soybeans, edible beans, wheat, barley, alfalfa and corn along with his father and uncles on their minimal-till farm. His family also operates a cow/calf operation. Langley holds a degree from North Dakota State University (NDSU) in agricultural economics. He is a member of the National Agri-Marketing Association, Farmers Union, 4-H and active with the Winchester Arms Collectors Association.

"Being re-elected Chairman for NDSC is a huge honor, I'm extremely grateful for the confidence that the soybean farmers of North Dakota have given me. After a year of navigating the Covid-19 Pandemic I'm very excited to refocus our efforts in promoting our soy industry. I can't wait to work alongside one of the greatest groups of people I've come to know over the past five years," Langley says.

Mike Langseth of Barney was re-elected secretary. Langseth represents District 1 Richland County soybean producers. He and his father raise corn and soybeans. Langseth is a member of the North Dakota Soybean Growers Association (NDSGA), along with the Richland County Crop Improvement Association. Langseth holds a bachelor's degree in journalism from the University of Minnesota.

Rob Rose, soybean producer from Wimbledon, was elected treasurer. Rose represents the soybean producers in District 5, Barnes County. Rose farms with his wife Dawn, and they produce soybeans, corn, wheat, barley and pinto beans on a fifth-generation centennial farm. He is a member of the NDSGA and holds an agricultural economics degree from NDSU.

—Story by staff, photos by Betsy Armour and Scherling Photography

Austin Langley

Chris Brossart

Mike Langseth

Rob Rose

Sweet Gelato Opportunity

Maartje (van Bedaf) Murphy was in her second-to-last semester of nursing school at the University of North Dakota when her mom, Conny van Bedaf, told her about a week-long immersion course on the basics of making gelato. Gelato is a frozen dairy dessert that is typically softer and more flavorful than ice cream.

Murphy, whose family moved from the Netherlands to Canada and then to Carrington, North Dakota, to establish a dairy farm, says that gelato shops are common in the Netherlands.

"We enjoy visiting the gelato shops when we go back to the Netherlands," Murphy states. "I remember thinking how much fun it would be to bring this back to North Dakota because there really isn't any gelato here. At that time, I didn't even think that we could use our own milk. I just thought it would be a cute, fun thing to do."

The mother-daughter duo took the gelato-making course; recognized they had the base ingredient, milk, right at their fingertips; and decided to give it a go. Duchessa Gelato was born.

"It started as a mobile business, and we still are a mobile business," Murphy explains. "I was working as a nurse; Mom was working at the dairy, so a brick-and-mortar shop was risky and not really practical."

Murphy says that her mom gave up her side of the garage, which was renovated into a Grade B processing facility, so that they could make gelato there.

Murphy caters events from weddings and graduations to business meetings with a special gelato cart which was imported from Italy. Duchessa Gelato can be found at some farmers' markets or ordered for delivery. The innovative enterprise has grown so much that Murphy was recently named to Forbes Magazine's 30 Under 30 list for Food and Drink.

Next Steps

Murphy and her husband recently purchased a farmstead about three miles down the road from the family's Carrington dairy farm. They're in the process of moving the gelato production from the garage into a new creamery on the farmstead called Cows and Co. Creamery. In addition to the gelato, Murphy plans to start making gouda cheese and fresh cheese curds.

"We want to make it a tourist destination," Murphy states. "People can come to see how we make the gelato and cheese, see what it's like to live on a farm in North Dakota.

Milk from the family dairy provides the base for Duchessa Gelato.

Maartje Murphy operates Duchessa Gelato and plans to move into cheese production and agritourism.

Duchessa Gelato comes in a range of tasty flavors.

We offer tours of the dairy, so people can come and get their coffee, gelato, and cheese and maybe make a quick stop at the dairy to see where this gelato and cheese really comes from. That's where the open dairy concept comes from. This is where your food comes from; this is how the cows are raised; these are the farmers who grow the food you eat, so really closing that gap."

Producing value-added, dairy-based products is an important aspect of the business, but so, too, is helping people better understand agriculture.

"People are very appreciative of us opening our doors and letting them in, whether it's to see how we make gelato or how we farm because people are very interested," Murphy says. "The more people we can get to come to our farm, the better. I think it's beneficial for us and the consumer."

Learn more about Duchessa Gelato at duchessagelato.com.

—Story by Daniel Lemke, photos courtesy of Duchessa Gelato

CommonGround ND
ABOUT FARMING CONNECTIONS

This article is reprinted from the March 31, 2021 issue of the Cass County Reporter

Soy Foods Council Executive Director Linda Funk hosts a series of videos to encourage the addition of soy products in a healthy diet.

Making connections between farmers and consumers continues to be the emphasis of CommonGround North Dakota, which is part of a larger initiative for farmers to share information about farming and the food they grow.

If you've heard of ComonGround ND, it is probably because of one of their events about food. In the past, they've hosted ag adventure days and dinners comprised of local farm ingredients and often served on a farm or in a field.

But the organization has always been about more than events, it's been about answering the questions that consumers have and sharing facts and personal stories about food and farming. Now, when getting people together in-person is more challenging, CommonGround ND's work online has become more important.

Three key initiatives currently in progress at CommonGround ND include:

- Food Talk and Recipes Video Series to share information to encourage conversations about North Dakota farming
- #FarmFactFriday initiatives to make ag stories accessible
- Launch of training to help consumers understand food labels

Food Talk and Recipes Video Series

CommonGround ND debuted a new video series on YouTube called Food Talk and Recipes. These videos are designed to educate viewers in an accessible and friendly way to spark interest in new foods while learning more about where your food comes from.

Currently, the series is focused on soybean products and how to incorporate them into your kitchen and lifestyle. Viewers can learn about the different types of soy foods, including which are easy to store because they can easily be stored in your pantry.

Watch for videos on sweets made with soy products, stuffed pepper and soy food recipes made in an Instant Pot coming in this series. These videos are hosted by The Soyfoods Council's Executive Director Linda Funk.

Future videos will highlight other local farm products. When the soy series concludes, a series on beef will come next, with topics like how to calibrate a meat thermometer and how to make amazing leftover meals with a pot roast.

#FarmFactFriday Initiative

"Volunteers are a big part of the CommonGround program," says Julie Peterson of Harwood, who is a local volunteer with the organization. Volunteers help spread the message of CommonGround ND to reach more food consumers in the area.

One of those local volunteers is Bridgette Readel of Hunter, who records a #FarmFactFriday video each week to share facts, answer questions and tell stories about food and farming.

Readel grew up on a farm in Wishek and now works as a market development specialist at Corteva Agriscience in Hunter. She's involved in training and educating her staff and customers on products, selling skills and agronomics.

She's also an agronomist, a wife and a mom, so she records the #FarmFactFriday videos in her spare time. She started recording these videos in 2020 and sharing them on her own social media pages.

"CommonGround was encouraging others to shareag stories and I took it to heart," says Readel. Topics have ranged from ND honey production and local ag history to local ag companies.

In March, they made their debut in the CommonGround ND blog and social media. She's currently focusing on short videos about entrepreneurs in ND agriculture. She says her next theme for videos will be women homesteaders in ND and their experiences.

#FarmFactFriday is a social media hashtag that has been used for several years by many farm enthusiasts. Hashtags provide a way to collect articles and messages about a specific topic easily by searching for that hashtag.

You can find Readel's #FarmFactFriday videos on the CommonGround ND blog, YouTube channel and social media, plus on Readel's personal social media.

Food Labeling Training

As a consumer, understanding the labels on both the front and back of food products can be challenging. Food labels contain helpful information regarding ingredients, nutrition, storage, and recipe ideas. They help provide clarity for all the choices consumers have in the grocery store today. However, some of the marketing "claims" seen on food products today can leave room for confusion.Common words that need more definition are terms like grass-fed, organic, GMO-free and antibiotic- free.

To help educate consumers on food labeling, CommonGround ND created a consumer-friendly course to help anyone better understand the terms used on a food label. Several CommonGround ND volunteers were trained to instruct the course.

Peterson advocated for the training to help consumers understand label claims. She noted that many claims are confusing to consumers and they don't know where to find and make food choices that are right for them and their families, she added.

During the presentation, the volunteer leads the audience through a virtual trip to the average grocery store, including the meat, dairy and produce aisles. She provides information about the food label terms and works to help the audience answer related questions they have.

Planned as an in-person course, CommonGround ND is hoping to be able to start scheduling as more people become comfortable in group gatherings. If you would like to schedule a Food Label presentation fora group, email info@comongroundnd.com.

—Story by Char Gust, photo by staff

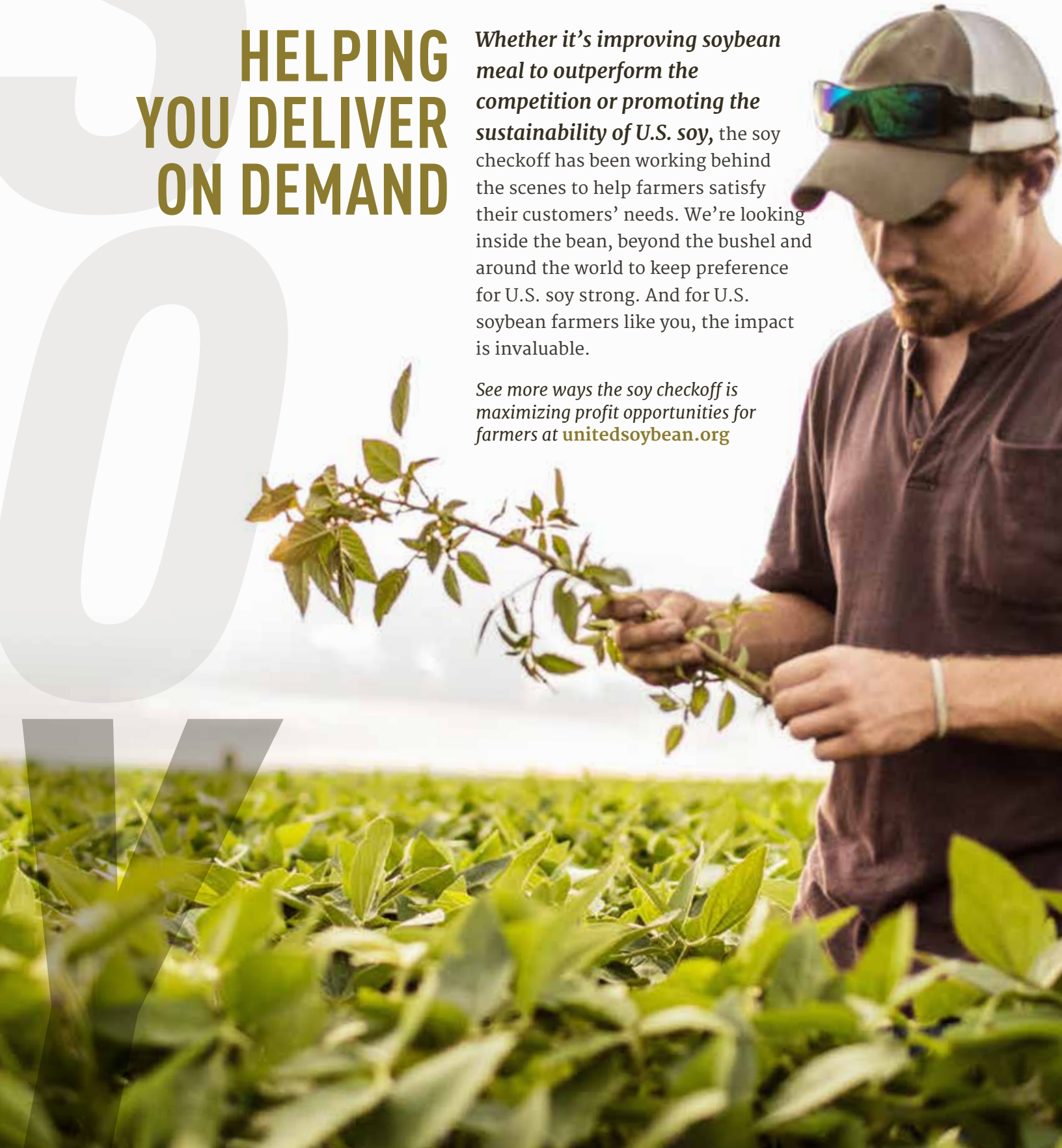
OUR SOY CHECKOFF™

unitedsoybean.org

HELPING YOU DELIVER ON DEMAND

Whether it's improving soybean meal to outperform the competition or promoting the sustainability of U.S. soy, the soy checkoff has been working behind the scenes to help farmers satisfy their customers' needs. We're looking inside the bean, beyond the bushel and around the world to keep preference for U.S. soy strong. And for U.S. soybean farmers like you, the impact is invaluable.

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



Crushing Capacity Will Bring Value to North Dakota

This could be a game-changer for North Dakota soybean farmers. After years of discussions and countless conversations espousing the need for soybean crushing capacity in North Dakota, the announcement that ADM plans to build a 150,000 bushel per day processing facility and biofuel refinery near Spiritwood came as very welcome news to many people in the state.

Currently, North Dakota is one of the few soybean-producing states without a sizable soybean crushing industry. The U.S. Department of Agriculture (USDA) estimates that North Dakota farmers will plant about 7 million acres of soybeans in 2021. Since 2016, farmers in the state have grown between 5.5 and 7 million acres of soybeans each year. Unlike North Dakota's canola production, which is largely processed in-state, just about all of the soybeans leave the state as whole soybeans. The ADM plant will change that equation in a big way, consuming about one-fourth of the state's annual soybean production for soybean meal and oil.

A study conducted by LMC and commissioned by the United Soybean Board and the National Oilseed Processors Association showed that, in 2016, soybeans accounted for 9% of North Dakota's gross domestic product. The state reached that number without much processing.

Domestic processing adds value to soybeans by separating the seeds into their component parts of meal and oil. The potential to create jobs and to generate value-added soybean products that increase domestic markets is beyond intriguing because of the many benefits such a facility would provide.

Oilseed Opportunity

We're all aware that North Dakota is an energy state. Coal and oil resources lie below the ground and help to drive the state's economic engine. North Dakota also has abundant energy sources that grow above the ground on an annual basis. Crops such as soybeans capture the sun's energy to grow and to reproduce.

Once separated from the meal portion of the bean, soybean oil can be refined into biodiesel, the nation's only commercially available advanced biofuel. Biodiesel returns 3.5 times the energy it takes to produce it. According to the National Biodiesel Board, biodiesel reduces lifecycle greenhouse gases by 86%; it lowers particulate matter by 47%; and it reduces hydrocarbon emissions by 67%.

North Dakota already has biodiesel and renewable diesel plants operating in the state. With the increased emphasis on low-carbon fuels, North Dakota is poised to take advantage of new opportunities.

Numerous states and cities are pushing for lower carbon emissions, and many localities are turning to biodiesel and renewable diesel in order to meet those goals. California's biodiesel and renewable diesel use grew from 14 million gallons in 2011 to 830 million gallons in 2019, a nearly a 6,000% increase in 10 years. About 22% of every gallon of diesel consumed in California is now biodiesel and renewable diesel. Research from the University of California-Davis suggests that the 22% renewable diesel content needs to be closer to 60 to 80% if California is going to meet its climate targets by 2030.

With more states pushing for reduced or zero carbon emissions from vehicles, North Dakota is poised to become a player on the national scale in renewable energy. Despite a rush to move to electric vehicles, there is a role for biodiesel and renewable diesel for the long haul, especially for high-powered vehicles such as farm and construction equipment, as well as for trucks and locomotives.

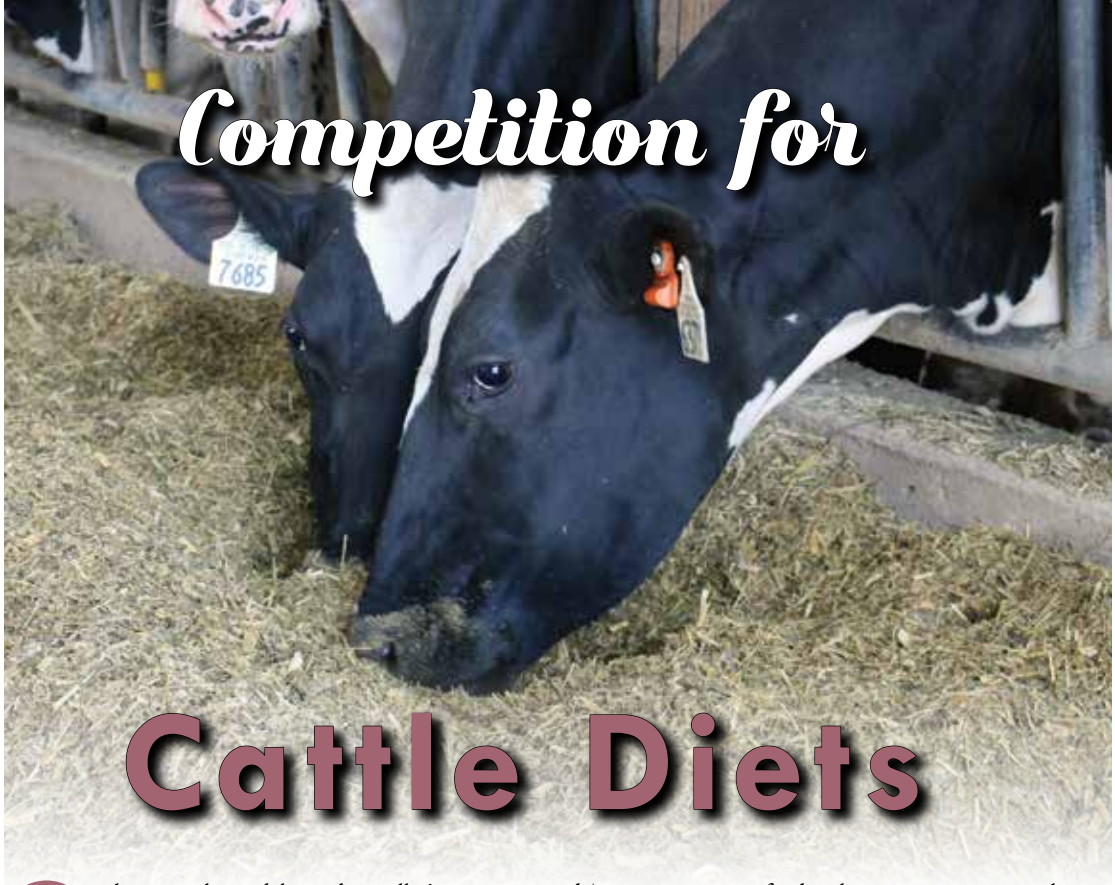
Added Benefit

In addition to elevating North Dakota's profile in renewable energy, soybean processing will make soybean meal more available to the state's livestock producers. Soybean meal is a highly sought protein source for most animal diets. Sometimes, cattle ranchers and dairy farmers choose protein sources other than soybean meal because soybean meal is, often, too expensive. Soy crushing in North Dakota will reduce the soybean meal's costs, making it a more attractive feed ingredient for animal diets. In-state capacity will also reduce expenses significantly because freight is a substantial portion of feed costs.

Ryan Pederson
NDSGA Vice President
National Biodiesel Board Treasurer

Potential is a wonderful thing, but on the flip side, unmet potential typically reflects disappointment and unrealized possibilities. I'd hate to see North Dakota's soybean-crushing and renewable-energy potential go unmet.

North Dakota farmers produce high-quality soybeans that are sought after around the world. Now markets much closer to home including livestock producers and biofuel refiners will also have access to those soy products. Crush capacity in North Dakota will provide additional markets to the state's farmers, it will allow value-added opportunities to be captured locally, while reducing North Dakota's reliance on export markets. That sounds like a game changer to me.



Competition for Cattle Diets

Soybean meal is widely used as a high-quality protein source for hog, poultry and even aquaculture feed. Soybean meal also works well for ruminant rations, but soybean meal's use for beef and dairy rations is often limited by price.

"The main reason soybean meal is fed is as a protein supplement," says Karl Hoppe, Extension specialist for livestock systems at the North Dakota State University Carrington Research Extension Center. "Soybean meal is much higher than any of our other protein meals on a percentage of crude protein basis, so it's a nice adjustment to the ration."

In North Dakota, instead of soybean meal, Hoppe explains that many cattle producers will feed distiller's grains, a 30% protein feed that is left over from ethanol processing. Distiller's grain is a popular ingredient for cattle diets because it can be purchased and fed wet, which adds some moisture to the ration.

"Feeding soybean meal certainly works well in cattle. It's the top of the line, the gold standard, but it just comes down to price," Hoppe states.

Soybean meal frequently costs about $400 per ton while dried distiller's grain is around $200 per ton. Wet distiller's grains are even cheaper because they are 50 to 60% water.

"When soybean meal is competitively priced, in finishing diets, we'll see inclusions of an extra pound per head per day just to maximize performance in the cattle," Hoppe explains.

In addition to distiller's grains, North Dakota cattle and dairy farmers have access to canola meal, sunflower meal and even linseed meal. Hoppe says that those products are all competitively priced because they're usually higher in fiber content, meaning that monogastric animals, such as hogs, can't use those meals because the food doesn't have the energy content that soybean meal does, so the price is often discounted.

"Soybean meal certainly works well in our dairy rations, too; it just becomes a price point," Hoppe states. "From an amino acid perspective, soybean meal has a different profile than what our other feeds do, so you might be able to maximize fermentation utilizing that product."

Cattle and dairy producers face different challenges with their feed rations than hog or poultry feeders because rumen microbes in cattle can change the feed's protein profile immensely.

"What you put in, unless it's a bypass protein that escapes the rumen and is digested in the small intestine, the microbes will cannibalize it and make their own protein," Hoppe explains. "In dairy cow rations, you can make changes, and you'll affect milk production right away. With beef cattle, we're looking at the weaned calf or the cow that goes to market. We hope the feed efficiency is better."

Freight is also a factor in what farmers feed to their cattle. Hoppe says that the price of hauling feed around is a bigger cost than trying to get efficiencies better by feeding specific amino acids.

While soybean meal faces price challenges, Hoppe states that soybean hulls, a byproduct of soybean crushing, work exceedingly well in cattle rations, and the hulls are unique because they're high in calcium. Hoppe says that soy hulls also work well for sheep feed.

Whole soybeans can be used as cattle feed, but Hoppe says that a cow's intake has to be limited because the fat in whole soybeans can be toxic to the rumen microbes. If the overall ration is more than 7 or 8% fat, then it becomes toxic, and there is reduced digestibility of feedstuffs by the microbes. Adding green, immature soybeans can give a lot of energy and protein to a cow and can be an excellent addition to a beef-cattle ration.

—Story and photos by Daniel Lemke

Soybean meal can be a high-quality dairy ration ingredient, but it faces competition from other products.

RED RIVER BASIN Water Quality Program AVAILABLE

The Red River Basin Water Quality and Wildlife Habitat Pilot Program is now available for farmers in Cass, Grand Forks, Griggs, Ransom, Richland, Sargent and Walsh Counties.

Seven Soil Conservation Districts (SCDs) in the Red River Basin are coordinating with the North Dakota Game and Fish Department as well as the North Dakota Department of Environmental Quality in order to initiate the program which is designed to increase wildlife habitat and to improve water quality in the Red River Valley. The program targets marginally productive croplands, including saline areas and flood-prone properties in the uplands and along riparian corridors.

Participating SCDs and their staff will assist producers with evaluating management options on marginally productive croplands and will provide cost-share assistance to help farmers implement conservation practices. Eligible practices include conservation cover, filter strips, grass waterways, pollinator habitat, range planting, forage and biomass planting, and more.

Sixty percent of eligible practice costs will be supported with Outdoor Heritage funds. The remaining 40% are the producer's responsibility. In addition to cost sharing, producers are eligible to receive payments for the management and maintenance of select practices.

The program will be active from 2021 through 2025. Farmers in the seven counties should contact their local SCD for more information.

—Story by Daniel Lemke, graphic courtesy of USDA

Red River Initiative

RED RIVER BASIN WILDLIFE AND WATER QUALITY ENHANCEMENT PILOT PROGRAM

Overview

New for 2021, seven Soil Conservation Districts (SCDs) in the Red River Basin are coordinating with the ND Game and Fish Department and ND Department of Environmental Quality to initiate the Red River Basin Wildlife and Water Quality Enhancement Pilot Program (Program). Specific counties where the Program will be available include; Cass, Grand Forks, Griggs, Ransom, Richland, Sargent and Walsh. The Program will be active from 2021 - 2025.

Objectives

The primary objectives of the Program are to increase wildlife habitat and improve water quality in the Red River Valley. Marginally productive croplands (e.g., saline areas, flood prone sites, etc.) in the uplands and along riparian corridors are the primary focus of the Program.

Practices

Participating SCDs and their staff will deliver the Program locally to assist producers in evaluating management options on marginally productive croplands and providing cost share assistance for the implementation of eligible conservation practices. Eligible practices include:

- Conservation Cover
- Critical Area Planting
- Filter Strip
- Grassed Waterway
- Pollinator Habitat
- Range Planting
- Forage and Biomass Planting
- Riparian Forest Buffer
- Riparian Herbaceous Buffer

Payments

Sixty percent (60%) of eligible practice costs will be supported with Outdoor Heritage funds and the balance of costs (i.e., 40%) will be the responsibility of the producer.

In addition to the practice cost share, producers are also eligible to receive payments for the management and maintenance of select practices, including Conservation Cover, Pollinator Habitat, Riparian Forest Buffer and Riparian Herbaceous Cover. These payments will be issued through management agreements established between the participating producer and SCD.

Management agreements can be up to 5 years in length and the payments will be based on local county rental rates. Payments to the producers can be provided as an annual or lump-sum payment and cannot exceed fifty percent (50%) of the county rental rate.

For more information on the Program contact your local Soil Conservation District.

Cass County SCD
Contact: Eric Dahl 701-282-2157 ext. 3
Email: eric.dahl@nacdnet.net

Grand Forks SCD
CoJustin Parks – 701-772-2321 ext. 3674
Email: Justin.parks1@nd.nacdnet.net

Griggs County SCD
Contact: Nathan Johnson – 701-797-2240
Email: Nathan.J.Johnson@nd.nacdnet.net

Ransom County SCD
Contact: Robert Flath – 701-683-4101 ext. 109
Email: Robert.Flath@nd.nacdnet.net

Richland County SCD
Contact: Jennifer Klostreich – 701-642-5997
Email: Jen.Klostreich@nd.nacdnet.net

Wild Rice (Sargent County) SCD
Contact: Matt Olson – 701-724-6226 ext. 102
Email: matt.olson@nd.nacdnet.net

Walsh County - Three Rivers SCD
Contact: Yari Villanueva – 701-284-7363
Email: scdwatersheds@polarcomm.com

North Dakota | Game and Fish

North Dakota | Environmental Quality

Getting to Know Your NDSC Board Member

JP Lueck, Spiritwood, North Dakota
Stutsman County Representative

Tell us about your farm.

We farm north of Spiritwood. Our 2,000 acre farm is split up between soybean, corn and wheat. I farm with my dad and brother on our fifth-generation operation.

What do you like best about farming?

I enjoy the solitude and independence being out in the middle of nowhere with the fulfillment of watching my crops grow.

Did you always know farming was something you wanted to do?

Yes. However, the size of our farm didn't support more than one family, so out of high school, I worked on neighboring farms while I went to college. A college degree has helped me secure a well-paying job in town. That job has allowed me to be able to participate in our family's operation while ensuring a steady income for my family.

What's most exciting about the upcoming growing season?

We are getting a good price for what we are growing, which is giving farmers renewed hope and motivation.

How and why did you get involved with the North Dakota Soybean Council (NDSC)?

I personally got involved to understand the value chain of North Dakota soybeans. As farmers, we take the product off the field, deliver to the elevator, and then, we lose sight of what happens next. Being part of NDSC, I hope to learn more about that process as well as help define how our soybean checkoff is invested in research and new markets.

Why are soybeans part of your crop mix?

We have moved away from wheat and barley, and moved those acres to soybeans. They are a good rotation with corn and have been more profitable for us.

If you could change something about the current operating climate for ND farmers, what would it be?

With the recent announcement of the soybean crushing plant in the state, this will help lower North Dakota farmers reliance on exports through the Pacific Northwest. A crushing facility will provide North Dakota farmers with a different revenue stream, which could help when exports get disrupted in the future.

What has changed most about farming since you've been involved?

The use of technology and the size of implements.

What changes do you expect to see on your farm in the next 5 to 10 years?

Dad is slowly retiring, so my brother and I are beginning to take over more of the operation.

What do you like to do outside farming?

We do a lot of camping, boating and running around to the kids' various events.

If you could go anywhere, where would it be?

It would be fun to visit European countries because they are full of history.

If you could add equipment or technology to your farm, what would it be?

I would like to implement the use of variable rate seeding and fertilizing, which could help increase input efficiency.

What's the one piece of farm equipment or technology you wouldn't want to be without?

Autosteer.

JP is a North Dakota Soybean Council board member. To learn more about serving on the North Dakota Soybean Council as a county representative or as a board member, visit bit.ly/NDSCelections

—Story and photo by staff

Dr. David Franzen
North Dakota State University Extension Soil Specialist

Where did you grow up?

I grew up outside of Chicago. My family was involved with railroads and steel mills.

What got you into the field of soil science?

I was really interested in science. Discovery enchanted me, so when I got to the University of Illinois, I enrolled in chemistry, but I didn't see myself in a lab coat, so I took a different direction. In one of my courses, they had a soil pit. I got down in the pit and saw physics; I saw chemistry; I saw biology; I saw math, and I thought, this is it.

What was the path that brought you to NDSU?

I worked part time as an undergrad for a prominent soil fertility professor at the University of Illinois. He offered me a master's study, so I did that after my undergraduate degree. After I got out of graduate school, I was (an) agronomist/manager for a string of fertilizer plants in Illinois. I worked there for about 18 years. The last 4 years, I worked and went back to school at the same time, earning my Ph.D. in 1993. This job at NDSU came up, and I started in June 13, 1994.

What is most challenging about your work?

North Dakota is a really interesting state with about 18 possible rotational crops. It's not like Illinois where anything that's not corn or soybeans is a roadside ditch.

One of the things that I've found from the very beginning is that, when you go into a study thinking you know what the result is going to be, 99% of the time, you're surprised. It's always a little bit different than what you thought. Conventional wisdom isn't always correct. So, I've had some huge surprises along the way. That's exciting and humbling all at the same time.

What has been most rewarding?

I did a site-specific sampling study, which was my first big project. I found that zone sampling would really take the place of an intensive grid, and that was shocking because grid sampling was what I was taught. The shock of that realization was similar to find that fertilizer in the row with the soybean seed was costing yield. For 25 years, I thought you could put a little fertilizer in with the soybean seed because that's what people who came before me would tell people, and farmers had been doing it for years, and who am I to question them? But then when the researchers at Carrington did the work and did it for multiple years in multiple places and found that it was a terrible idea, then I had to believe the numbers and change.

We're the only state that has a long-term no-till nitrogen credit, and I got that idea from farmers the very first year I was here. I tested the idea in my wheat, corn and sunflower work, and there was a credit every time.

There have been a lot of exciting things that have come along that I feel pretty good about. The zone testing, the nitrogen credit for long-term no-till, the different changes in recommendations, the trashing of the yield goal and going to an economic model, all that is radically different than what it was before, and all of the changes are supported by research at the hundreds of sites we've had over the years.

What do you like to do away from work?

I must have inherited enough carpenter from my Swedish grandfather that I like to tinker around the house and remodel rooms. I play piano. I've played for church for a long time. I also dove into genealogy. I did my wife's not too long ago, and it's a very interesting family with first European immigrants to America roots. Now, I'm working on mine, which is also very interesting.

—Story by Dan Lemke, photo courtesy of NDSU

Landman Recognized for Service

North Dakota Soybean Growers (NDSGA) Executive Director Nancy Johnson presents Northwood, North Dakota farmer Sam Landman with a plaque in recognition of his service on the NDSGA board of directors. Landman retired from the NDSGA board.

—Story by staff, photo by Wanbaugh Studios

Soybeans Top Exported Ag Commodity

The U.S. Department of Agriculture's (USDA) Foreign Agricultural Service (FAS) released its 2020 U.S. Agricultural Export Yearbook, a statistical summary of U.S. agricultural commodity exports. The total U.S. agricultural exports in 2020 were nearly $146 billion, up almost 7% from 2019 and the second-highest level on record behind 2014. The primary factor for this surge in exports was increased shipments of soybeans, corn and pork to China.

According to the FAS yearbook, "Soybeans continued to be the United States' No. 1 agricultural export, increasing 38% to a record $25.7 billion in 2020 and accounting for nearly 18% of total U.S. agricultural exports. In 2020, soybean shipments to China accounted for 55% of total soybean exports, returning to levels prior to China's imposition of Section 232 and 301 retaliatory tariffs, when China accounted for at least 50% of total bean export value since 2009."

The yearbook noted that U.S. soybean exports are forecast to be at record levels for the marketing year ending in August (2020-2021). Soybean shipments are back on trend this year with large sales being shipped in late 2020 and early 2021.

The Yearbook also noted that China, Canada, Mexico, Japan, the European Union and South Korea were the top six export markets for agricultural goods in 2020.

Soy Leaders Support Phase I

The American Soybean Association (ASA) and other ag groups expressed support for continued implementation of the U.S.-China Phase I trade agreement in a letter to the Biden administration. The letter, along with supporting documents outlining both the positive effects of the agreement and still unfulfilled commitments, was sent to U.S. Trade Representative Katherine Tai and USDA Secretary Tom Vilsack.

The ASA letter said that the U.S.-China Phase I trade agreement is critical to both the near- and longer- term success and growth of American agriculture as well as the millions of American jobs which the agricultural sector sustains. While some segments of U.S. agriculture continue to be hurt by China's retaliatory tariffs, U.S. food and agricultural exports to China in 2020 were the largest in history, nearly $26.5 billion, comprising 18% of total U.S. agricultural exports.

U.S. soybean growers were pleased to see China increase its purchase of soybeans in the latter half of 2020 under the agreement and expect continued purchases of U.S. soy as China recovers from the pandemic and African Swine Fever.

While the importance of the Chinese market to soybean growers cannot be overstated, ASA leaders explain how it is also necessary to hold the Chinese accountable for commitments that are yet unfulfilled. Soybean growers urge the Biden administration to continue pressing Beijing on its commitments to overhaul its biotechnology approval process: a long-term goal of U.S. agriculture that was promised reform with the Phase I agreement.

ASA Monitoring Infrastructure Plan

President Biden unveiled a $2 trillion infrastructure plan that includes a proposed total increase of $115 billion to modernize bridges, highways and roads which are in most critical need of repair, including major chokepoints in rural America.

While federal efforts to prioritize infrastructure projects are widely supported across agriculture and transportation sectors, the ASA is monitoring proposed funding mechanisms and will continue to oppose changes to the estate tax or the elimination of the stepped-up basis on capital gains.

The proposed eight-year infrastructure spending plan centers around major investments that are intended to rebuild the country's roads, bridges, and transit; to improve access to clean water and broadband; to increase access to home- and community-based care for people with disabilities and the aging; and to revitalize American manufacturing, including climate-related sectors such as biofuel development.

Specific investments in rural communities would include providing 100% broadband coverage; modernizing aging schools; creating a more resilient electricity grid; rebuilding aging infrastructure, such as roads, bridges, and water systems; providing research and development funding to land-grant universities; and positioning the U.S. agricultural sector to lead the shift to net-zero emissions while providing new economic opportunities for farmers. The plan includes $621 billion for transportation infrastructure spending that is dedicated to rebuilding the nation's roads, bridges, ports and rail systems.

ASA Urges Increased Funding for Conservation Technical Assistance at USDA-NRCS

The American Soybean Association (ASA) and other ag groups signed two letters requesting increased funding for the USDA-Natural Resources Conservation Service's (NRCS) Conservation Technical Assistance (CTA), a program that is vital for ensuring that producers have the technical knowledge and tools they need in order to implement conservation practices that will help to achieve the greatest benefits for their specific operations.

In letters delivered to both USDA Secretary Tom Vilsack and congressional appropriations committee leadership, the groups highlighted how U.S. farmers are already among the top stewards of the country's natural resources, along with the positive influence of USDA conservation programs, such as the Environmental Quality Incentives Program (EQIP), the Conservation Stewardship Program (CSP) and the Conservation Reserve Program (CRP), but say more can be done to help producers reach their conservation goals.

The groups underscored the value in supporting agriculture's role in addressing climate change—a top priority for the Biden administration—and urged for increased investment to allow the NRCS to add resources at the local level.

ASA, Corteva Agriscience™ Young Leaders Named

Another new class of emerging leaders is honing their skills to serve as the voices for U.S. agriculture through the American Soybean Association (ASA) and Corteva Agriscience's™ Young Leaders program.

The 38th class of Young Leaders met virtually in March and will continue the training with two in-person sessions later in 2021.

The ASA's longest-running leadership program, Young Leaders was founded in 1984 and continues to set the bar for leadership training in agriculture by identifying and training new, innovative and engaged growers.

During the virtual meeting, Young Leaders had the opportunity to connect with one another, to discuss the upcoming in-person training programs and to hear from soybean industry leaders.

"The Young Leader program provides participants with the tools and knowledge they need to be successful leaders while helping them build confidence and grow a strong support network," ASA President Kevin Scott said. "I've seen firsthand the impact it can have. My son, Jordan, and daughter-in-law, Samantha's, experience in the program encouraged them to get involved, and I couldn't be prouder to say that Jordan is now serving as president of the South Dakota Soybean Association."

"For nearly 40 years, the Corteva Agriscience Young Leader program has worked to identify, develop and support leaders in the U.S. soybean industry. We are honored that our long-term collaboration with ASA means these growers will sharpen their talents and develop skills to help America's soybean farmers and the agriculture industry," stated Mike Dillon, global soybean portfolio leader, Corteva Agriscience. "The 2021 Young Leader class is an outstanding group, and I am optimistic they will contribute to the soybean industry's bright future."

The 2021 Young Leaders class includes Andrew and Brittni Cossette of Fargo.

—Story by staff

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GROWERS ASSOCIATION
4852 Rockinghorse Circle South
Fargo, ND 58104
(701) 566-9300

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Join the NDSGA for a day of fun on **August 24, 2021** at Rose Creek Golf Course in Fargo. Golf, lunch, social, dinner and prizes. Register yourself or a whole team by August 16 by going to the Events tab at NDSoyGrowers.com. For more information, contact Nancy Johnson at (701) 640-5215 or nancy.johnson@ndsga.com.