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Rural Broadband No Longer a Luxury PAGE 16



INVESTING IN NEW MARKETS FOR U.S. SOY

From promoting the profitability of using high-quality soybean meal in India to training animal producers on nutrition in Colombia, the soy checkoff is working behind the scenes to develop more market opportunities for U.S. soy. We're looking inside the bean, beyond the bushel and around the world to keep preference for U.S. soy strong. And it's helping make a valuable impact for soybean farmers like you.

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Nearly every farm implement is equipped with technology for gathering and sharing data. Increasing demand from precision agriculture technologies highlights the need for rural areas to have sufficient broadband access. According to some experts, North Dakota is in a better position than most other states ...

—Photo by Wanbaugh Studios



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Preparing for the Session

s we draw closer to the beginning of the biennial legislative session in January, most people are hoping to meet as usual. However, according to my back-of-the-napkin unofficial estimate, in the North Dakota Senate, the average age is around 65 while the average age of House members is closer to 53. Many members of the legislature are over 70. One senior House member wants to meet in person if we are going to hold a session. He did not want to be involved in a virtual session because of the difficulty of holding meetings and getting testimony. He also stated, correctly, that we really do not have to meet in 2021.

The North Dakota constitution says that, in any given two-year period, the legislature has up to 80 days to do its business. North Dakota could have a session dealing only with finances one year and then have a policy-centric session later that same year, the next year or some combination. North Dakota is one of only four states that meets every other year.

Another legislator foresees a session without the public present because the capitol is being wired, so each committee can be viewed online. Many legislators greatly value input from the public and the lobbyists who often testify in their fields of expertise. Without that information, legislators will have to work harder to gain the perspective needed or guess to make decisions.

Lawmakers have worked around a lot of cancellations for their interim committees but are getting some meetings done. The Commerce Committee met for the last time and covered several relevant topics. The North Dakota University System testified about progress on the North Dakota Career Builders and Skilled Workforce Scholarship and Loan Repayment Program. This tool was passed during the 2019 session to help businesses recruit and retain talent. The North Dakota Soybean Growers Association supported this program so that we can keep welders, manufacturers and information technology (IT) people who are important to the ag industry in our state. COVID-19 may have made the talent pool a bit deeper because the state's unemployment rate went from the neighborhood of 2 percent to around 9 percent.

Nicolas Flom, executive director of the Northern Plains Unmanned Aircraft Systems (NPUAS) test site, discussed with the Commerce Committee how the NPUAS is trying to set up the site in the Watford City/ McKenzie County area. Unmanned aircraft or drones can be helpful for the oil and gas industries as well as for environmental and agricultural interests. The NPUAS works closely with Grand Skies at the Grand Forks Air Force base to continue progress on what makes longrange drones economical, namely the ability to go without chase planes that have a human pilot. This practice is called Beyond Visual Line of Sight, and it was granted to North Dakota before anywhere else in the country. Utilities have drones flying along their lines, and the U.S. Border Patrol with Customs is also pursuing these technologies.

Lori Capouch, rural development director for the North Dakota Association of Rural Electric Cooperatives, updated legislators on rural grocery stores. There was talk of how the state could help these struggling entities stay afloat and keep rural areas viable. A silver lining for COVID-19 was that rural grocery stores saw large sales increases because of the pandemic, with some stores up by 100 percent. Capouch indicated that usage shows there is the rural population necessary to support those stores.

There was much more clarity about wastewater/ septic systems. Installers, regulators and county representatives have testified wanting the state to set standards for how these systems are designed and installed as well as to license installers. The new Department of Environmental Quality (DEQ), the entity that was split from the Health Department, will handle the task. A technical board composed of installers and regulators would handle disputes. The skeleton of a bill has been submitted. The DEQ testified that it can no longer help with the two full-time jobs it had hoped to dedicate because of COVID-19. The director stated that the DEQ had to cut existing programs and could not afford the time or money to start new ones. In response, the Association of Counties attorney, Aaron Birst, modified the original bill draft to remove the DEQ from that position and replaced it with a technical board. The advisory board could, hopefully, take on the role of dispute resolution to avoid lawsuits. The Commerce Committee decided not to hand in any official interim bill draft, but the chairman offered hope that someone in or outside the committee would take the new bill and sponsor it. Until the North Dakota budget mess gets straightened out, we can still hope that the state will improve the uniformity of treating our wastewater.

The Agriculture and Transportation Committees have not met since December 2019. State Board of Agricultural Research and Education (SBARE) Chair Mark Birdsall and North Dakota



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

State University Extension head Greg Lardy gave an update where they expressed that priority number one for the upcoming session is to hold onto the current budget. Almost any cut means the loss of programs and people.

Karl Rockeman, director, Division of Water Quality, Department of Environmental Quality, reported on animal feeding operations. He stated that permit applications were mostly to upgrade existing institutions as well as three new facilities, a number that was about average. Agriculture Commissioner Doug Goehring testified about the effort to operate the Grain Licensing Division in regard to private insurance products for ag commodity producers. The department is looking at how to cover operators in the world of handling grain, including warehouses/elevators, brokers, roving grain buyers, farmers and others, when it comes to insolvencies and bad actors. Stu Letcher of the North Dakota Grain Dealers Association also testified on the bill, and it appears the industry and regulators are getting closer to language and policy upon which people can agree.

The committee's other notable issue during the last session was that bankers wanted to know if a producer was lent money by another entity after the bank had lent to him. The bank group proposed using a tool in the Secretary of State's office called the Central Indexing System. Steve Solwei from the Secretary of State's office said that the staff could arrange it using existing funds. Letcher testified that his industry would be in favor.

Finally, the Road Train Pilot Program Study will end up with a resolution to Congress to allow road trains. Axle configurations, fewer loads and fewer drivers are some attractions should this option someday take shape. Senator Larry Luick is driven to help this scenario progress. The committee will meet again to wrap up discussions before the session starts in January.

Reaping What We Sow

his time of year, most farmers have turned their attention to the harvest. It's an exciting time of year where we see the results of a lot of hard work. We've prepared for and worked toward this goal for a very long time. It has taken months of planning, tilling, planting, agonizing over weather conditions and monitoring those crops to get to this point in the growing season.

We all know that, unless you do the things that are necessary to grow a crop during the season, there won't be much crop to harvest come fall. We don't just show up in the field in September and October expecting to have a crop in need of harvest. It's the result of a plan that has been carried out over a long period of time.

The work that the North Dakota Soybean Growers Association (NDSGA) does to advocate on behalf of the state's soybean farmers functions much the same way as our farming plans. We can't expect to have legislation in Washington or Bismarck meet the farmers' needs if we haven't done the work up front to learn about an issue, formulate a position, and then communicate that stance through personal visits with lawmakers or through official testimony at the capital. Another Legislative Assembly is set to get underway in January. Like everything else in these extraordinary times, the legislative process in Bismarck is likely to look and function differently than it has in the past. Meetings and hearings will undoubtedly be conducted in new ways. However, the state's business will go on, and the NDSGA will be there to monitor, cultivate and communicate as we always have.

Issues surrounding taxes, transportation and the environment will be on the NDSGA's radar during the upcoming assembly along with a wide range of other topics that concern North Dakota farmers.

Like the farmers and other ag professionals who carefully watch the field conditions during the growing season, NDSGA leaders and staff will monitor the legislative process and, where appropriate, provide input. We know that we can't show up at the end and expect a good result. That's why we'll be there every step of the process.

Best wishes for a safe and productive harvest season.



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Membership Application

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

Name:				Do you currently grow soybeans?		
Spouse:				□ Yes □ No		
Date of Birth:				Soybean Acres: Total Acres Farmed:		
Farm/Company Name:				How did you hear about NDSGA? (Please circle one)		
Address:				Recruited in person; Recruited by phone, Magazine;		
City, State, Z	Zip:			Internet; Mailing; Radio; Event; Other		
County:				□ 3-Year Membership \$200 □ 1-Year Membership \$75		
Phone:				Check enclosed (please make checks payable to NDSGA)		
Cell:				Credit Card: Visa / MasterCard / Discover / American Express		
Email Address:				——— Expiration Date:/ CVC:		
Occupation (Please check all that apply)				Name on Card (Please print):		
Garmer	Retired	🗅 Agribusine	ess	Signature:		
G Finance	Elevator	• Other		Mail application with payment to: North Dakota Soybean Growers		
Do you raise	:			Association; 4852 Rocking Horse Circle South; Fargo, ND 58104		
🗖 Cattle	🖵 Hogs	🖵 Poultry	🖵 Dairy	Č Č		

Navigating a Changing Landscape

he Richard farm has been through myriad changes in the more than 130 years that the land has been in the family. Located in the shadow of Fargo and in the path of growth from nearby Horace, the farm is at the intersection of city and country. While hay bales line the fields near the farm site and soybeans are on the horizon, the hum of cars and trucks travelling on nearby Interstate 29 is a constant companion.

"Being this close to Fargo, there's a lot more traffic," says Claude Richard. "We're also dealing with a lot of expansion from town."

In addition to encroachment by urban growth, some of the Richard farm is in the path of the Fargo-Moorhead flood diversion project, which could convert hundreds of acres of the family's farm land into wetland in order to mitigate Red River flooding in town. That project will undoubtedly change the look of the farm again.

Family Affair

Claude Richard is the fifth generation to farm the land that was homesteaded in 1889. He has witnessed a lot of the community growth happening around the farm. The family farm has also undergone changes through each generation. Sons Ryan and Jamie Richard returned to the operation after going to college.

"We had expanded the operation, so there was room for both boys," states Claude Richard, who retired three years ago. "That just means you work twice as hard without the pay."

Ryan Richard returned to the fam-

ily operation after graduating from college in 2002. In addition to raising corn and conventional soybeans, Ryan Richard operates a beef-cattle operation on his home farm about three miles from the family homestead.

Growing an Industry

While working the land has been a family tradition for well over a century, the Richards have also had a hand



Ryan Richard's teenage sons Cole (left) and Brody (center) are involved with the family's beef cattle operation.

in expanding North Dakota's soybean industry. Claude Richard served on the boards of both the North Dakota Soybean Growers Association (NDS-GA) and the North Dakota Soybean Council (NDSC). Ryan Richard served on the NDSGA board, fulfilling his maximum term. He is now one of North Dakota's representatives on the United Soybean Board (USB).

"There's only been a few months in the past 16 years where there wasn't a Richard on one of the soybean boards," Ryan Richard says.

North Dakota has grown into one of the nation's premier soybean-producing states, regularly ranking in the top 10 for overall production. Cass County, home to Fargo and the Richards' farm, is often the top soybean-producing county in the nation.

Soybeans didn't always enjoy a prominent role in North Dakota agriculture. It took many years and concerted efforts from farmer leaders to build the state's soybean production.

"We didn't have much of a voice. When I started serving on the soybean boards, we only raised about 500,000 acres of soybeans in the entire state," Claude Richard recalls. "By the time I got off the council, there were 3.2 million acres. Soybeans also used to be grown mostly in the Red River Valley; now, they're in just about every county in North Dakota."

The additional acres gave the NDSC more resources. As soybean production grew, more checkoff dollars were available to invest in efforts to help the state's soybean farmers.

"The council finally started to have some funds to do some research," Claude Richard states.

In addition to having more funds to support agronomic research and market-development efforts, soybean growth also helped advance North Dakota's voice in agriculture policy discussions. As more farmers started raising soybeans, many producers recognized the need to have farmer leaders advocating on their behalf.

"We've increased membership, which led to us getting a second American Soybean Association (ASA) director," Ryan Richard explains. "We now have four USB directors, which is the most any one state can have."

Shaping the Future

Ryan Richard got involved with soybean-industry leadership in 2011, when he took part in the ASA Young Leader program. After completing the leadership program, he joined the NDSGA board of directors. After serving six years on the NDSGA,



The greater Fargo area is closing in on the Richard farm. This soybean field is harvested just on the outskirts of nearby Horace.

Ryan Richard became one of North Dakota's four USB directors.

The USB is a 78-member board of farmer leaders from across the nation that oversees the soy checkoff's investments. Ryan Richard is on the USB Demand Action Team, which works to increase demand for soybeans and soy components such as the oil. Ryan Richard is in his first year as a USB director, but says that he's learned much, and is excited about future opportunities.

"There are a lot of exciting things happening that are creating soybean demand," Ryan Richard explains. "We've got soybean oil in tires, adhesives, sealants and a lot of other innovative uses."

Ryan Richard states that he is very optimistic about biodiesel and the opportunity it presents for soybean oil use. California is striving for low-carbon fuel standards, which biodiesel can help the state meet.

"Consumers there want to know that we're sustainable for the environment, which we are," Ryan Richard says.

New England states, including New York, are already strong users of biodiesel in fleet vehicles. Many areas of the Northeast utilize heating oil to warm their homes. BioHeat, a blend of heating oil and biodiesel, is already widely available in that region and offers additional markets for soybean oil.

Ryan Richard explains that the USB is also researching and supporting the development of high-oleic soybeans which could help soybean oil get back some lost market share in the cooking sector while also presenting some exciting opportunities for new industrial soy uses.

Constant Change

On Ryan Richard's farm and in the shade provided by a hoop barn, dozens of beef cattle line the feed bunk waiting anxiously while his sons, Brody and Cole, deliver the cow's daily rations. The two boys, fresh off the school bus, represent the seventh generation of Richards involved with the farm.

Ryan Richard admits that, when finishing college, he never would have imagined running a cattle operation. However, beef production has grown into a major part of his farming enterprise and serves as a testament to the need to adapt and to adjust to a changing landscape.

The Richard family operation looks very different today than it did years ago, and it will undoubtedly continue to evolve in order to thrive for another 130 years.

"There's still reason for optimism," Claude Richard says, "because everyone still has to eat."

—Story by Daniel Lemke, photos by Wanbaugh Studios and Daniel Lemke



In addition to crop production, Ryan Richard has diversified his operation to include a beef cattle herd.

A Lasting Influence



s farmers, we are constantly searching for ways to improve our operations as well as to be more efficient, more productive and better at what we do. One reason that we focus on improvement is profitability. Equally important to most of us is leaving a legacy: leaving things better than when we started.

I have had the opportunity to serve on the North Dakota Soybean Council (NDSC) for six years. When I started on the NDSC board, I was familiar with what the organization was all about, had served on other boards, and felt like I was ready and capable of contributing to the industry that is so important to me.

While I was familiar with the council and its mission, I had no idea about the depth at which the organization worked. The council's scope included supporting important soybean research, international market development, trade relations, biodiesel, industrial soy uses and so much more.

Much of what gets done to support North Dakota's soybean farmers happens because of the council directing checkoff funds toward the most relevant and valuable channels. The best part is that it's farmers who are making the decisions.

I am nearing the end of my time on the council,

so I am encouraging fellow farmers who have an interest in furthering the state's soybean industry to consider joining the board. You can be one of 12 North Dakota farmers who have a vote on how the checkoff funds are invested.

Beyond the responsibility of directing checkoff investments, being on the council is a tremendous learning experience. I have learned a great deal about many aspects of the soybean value chain. The knowledge you can gain from being on this board is incredible. In addition to working with industry leaders in agribusiness, universities and other organizations, you will also meet and work with innovative farmers. I'm not ashamed to admit that the friendships I've developed with other farmers is one of the most valuable things that I'll take from my council experience.

I've long felt that, as farmers, if we're not learning, we're probably going backwards. There aren't many opportunities to get deeply involved with something as educational and influential as the NDSC. It's well worth the investment of your time.

If you are interested in becoming part of the NDSC, I encourage you to visit the website, www. ndsoybean.org, in order to learn more about what the NDSC does and how you can get involved.



Joe Morken North Dakota Soybean Council Director Casselton, North Dakota

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Elections will be held for the following districts in 2021:



District 3: LaMoure and Dickey Counties District 4: Cass County District 6: Stutsman County District 11: Benson, Bottineau, Burke, Divide, McHenry, Mountrail, Pierce, Ramsey, Renville, Rolette, Towner, Ward and Williams Counties



Dr. Carrie Miranda Joins NDSU as Soybean Breeder

r. Carrie Miranda has joined North Dakota State University as an assistant professor and project leader for the soybean breeding program. In addition, she will teach NDSU's Department of Plant Sciences Applied Plant Breeding and Research Methods class in the fall of 2021.

The goals of Dr. Miranda's soybean breeding program at NDSU are to produce high-yield varieties while discovering new genetic mechanisms for useful traits to ensure North Dakota farmers have access to superior soybean varieties.

"We look forward to Dr. Miranda working with scientists, producers and growers with the common interest of developing and improving soybean varieties," says Richard Horsley, NDSU Department of Plant Sciences head.

Dr. Miranda is originally from Cleveland, Ohio, where she completed her bachelor's degree in biology at Cleveland State University.

After volunteering for AmeriCorps in Arizona and teaching English in Seoul, South Korea, she

returned to the U.S. to complete her master's degree in molecular biology at San Diego State University.

Uniting her passion for food security and molecular biology, and incorporating a new skill of plant breeding, she completed her Ph.D. at the University of Missouri.

During that time, she was awarded a Borlaug Research Fellowship Grant. With funding from the Soybean Innovation Lab and the University of Missouri, she conducted field trials in northern Ghana to determine the genetic mechanisms controlling maturity in tropical soybeans.

Following graduation, she worked as a pea breeder for Puris Foods in Oskaloosa, Iowa, before returning to the University of Missouri as a U.S. Department of Agriculture-Agricultural Research Service postdoctoral fellow focused on using bioinformatic tools to identify and validate candidate genes.

—Story by NDSU Agriculture Communication, photo courtesy of Dr. Miranda



New NDSU soybean breeder, Dr. Miranda

AVOIDING THE Harvest Rut

he harvest window is rarely flung wide open to give farmers unlimited time to get fall work done. Most years, farmers deal with intermittent periods where work can get done. In recent years, wet fall conditions have hampered harvest efforts in many parts of North Dakota. Not only do wet conditions complicate harvest, they can also lead to longer-term challenges such as ruts and soil compaction.

Harvesting and pulling grain carts through wet soil can leave serious ruts, especially as farm equipment has gotten larger. While growers may have little choice but to harvest when they can, avoiding damage to wet ground is better than trying to fix ruts and compaction later.

"Preventing the occurrence in the first place is certainly more ideal than trying to remediate compaction after it happens," says Aaron Daigh, associate professor of soil physics and hydrology at North Dakota State University.

Daigh explains that ruts and compaction can cause damage that has a long-lasting effect.

"It's definitely worth avoiding ruts and compaction. According to our research, when compaction happens,

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Ruts in wet soils can cause long lasting problems for the impacted areas.



North Dakota Soybean Council



orth Dakota soybean farmers and the researchers who support them are a forward-thinking group. Kendall Nichols has the research to prove it. The North Dakota Soybean Council (NDSC) Director of Research helps the council strive to take care of its farmers as they work to raise the best crop that they can.

"The NDSC is a progressive group. They are interested in research that can provide the farmer a good return on investment," Nichols said. "We want to give farmers an advantage in their production systems and also look at ways to increase soybean demand."

In North Dakota, the soybean is relatively new to the agricultural system. Nichols recalls when the crop was only planted in a few fields in the state. The NDSC looked to other states to benefit from their years of experience.

"Because other states have a more mature soybean industry, they may have more issues, or more diseases may have impacted them," Nichols stated. "We try to learn from that. We're all one industry, and collaboration with other states and organizations is very important."

The NDSC supports research on soybean issues in the state and also some that are widespread. The soybean cyst nematode (SCN) is a pest that is found across the country. North Dakota State University (NDSU) is home to the SCN Coalition, led by plant pathologist Dr. Sam Markell. The coalition is a national organization which works to combat this pest. White mold also affects most soybean-growing states. NDSU plant pathologist Dr. Michael Wunsch is a leader in white mold research.

"I think Michael is one of the best researchers on white mold anywhere," Nichols said. "He has some interesting information on maximizing your return on fungicides. Timing of spraying is critical, and some of the old recommendations are probably outdated."

In addition to supporting these agronomic issues, the NDSC invests checkoff money for research that broadens demand.

"If we weren't reliant on one



outlet, we can spread out demand between a number of different products and uses for soybeans, which could help stabilize prices," Nichols stated. "The U.S. soybean market can become more stable as we continue to find more products and uses for soybean oil and meal."

The NDSC has supported various research projects that explore new uses for soybean oil. One endeavor that is gaining ground in the state is using a soy-based product to control dust on gravel roads. Nichols said this project morphed into something else that may expand the product's usage beyond the original goal.

"The board funded the research project about four or five years ago. The researchers compared the soyoil product with calcium chloride, which was traditionally used on gravel roads to keep the dust down," Nichols explained. "The soy-oil product performed well, and it didn't get washed off with the rain. It lasted two to three times longer; and it didn't have to be reapplied."

The researchers found that the soy-oil product also showed an affinity for asphalt. The scientists are now exploring how this product can work with reclaimed asphalt. The hope is that, in the future, roads would be repaved with asphalt that was previously removed from road surfaces and combined with the soy oil.

"It's being scaled up now, and there are companies doing larger-scale testing this year," Nichols said. "We're hopeful it can hit the market soon."



nimble product that could be used United Soybean Board and the U.S. in a lot of things we haven't even Soybean Export Council are trying to reopen some markets and to North Dakota is already using establish new markets. These dollars soy oil products in innovative ways, are well spent, according to Nichols.

> "The checkoff is an investment in the future: like going to college or a trade school," said Nichols. "When you learn a new skill, you expect that learning investment to return multiple times over, and I think the soybean checkoff does that."

For more information about the soybean research projects supported by the North Dakota Soybean Council, go to the state's webpage: https://soybeanresearchinfo.com/ states/north-dakota/

—Story by Carol Brown, Soybean Research and Information Network, photos by staff



United Soybean Board Director Jay Myers at WCCO Belting Company. The Wahpeton company manufactures belting using soy oil.

This project is just one example of how researchers are exploring new uses for soy in North Dakota. Other projects are testing soy oil in building materials, including spray-on

insulation, polymers for chipboard and paint, and even 3D printing.

"There's a wide spectrum of what researchers are looking at using soybean oil," Nichols said. "It's a pretty

—Continued from page 9

you can expect to have a yield consequence not just the next year, but the year after, too. If compaction is bad enough, if there's really wet or really dry conditions, that compaction can show its face again for the next decade."

Traffic and Tires

Each time a tractor, combine, semi or other piece of heavy equipment crosses the field, there's the potential to cause compaction and ruts. Cutting down on the number of trips that implements make will reduce the odds of compaction.

Daigh states that, because field traffic can't be avoided, proper tire inflation is crucial and can help minimize some of the compaction risk.

"When you drive on a field, if your tires are at pressure appropriate for roads, up around that 40 to 45 psi range, you're automatically over inflated for in the field," Daigh says. "In the field, you only want about a quarter or a third of that pressure; that way, you're getting the entire

benefits of that tire out there on their field to spread the load across."

Daigh explains that, even if tractors or combines sink into wet soils, if the tires are properly inflated, they won't go in as far, and the compaction won't be as severe: "It's easier to take care of shallow compaction. Deep compaction is the stuff you've got to wait and be patient for, and that's where you're going to see the biggest consequence."

Fall Fix

If the harvest process produces ruts, Daigh says that timing is important. If ruts occurred in a field that was harvested early in the season and if the soils have dried out and aren't frozen, a fall tillage pass could help fix the rut.

"You can fill in those ruts using a tillage implement that only digs down as deep or a little shallower than the ruts," Daigh explains. "You just want to fill the rut in, not necessarily go after any compaction underneath it."

If ruts freeze before they can be

fixed in the fall, Daigh recommends waiting until spring to address them. Trying to till a rut when the ground is frozen isn't effective, and it causes a lot of wear and tear on equipment.

thought of."

their soybeans.

and farmers are reaping the benefits

more directly than they probably

know. The WCCO Belting Com-

pany, based in Wahpeton, manufac-

tures belting for industrial and agri-

cultural use. Soybean farmers could

replace belts on their combines or

balers by using products made from

The soybean checkoff is the

common denominator for these

advances. Nichols noted that, if it

weren't for the checkoff, the price

the farmer secures at the elevator

would probably be quite a bit less.

The soybean industry is working

fervently to stabilize the market. The

Freezing and thawing does help with compaction in the top few inches of soil, Daigh says, but only if there are numerous freeze/thaw cycles. He describes how most ruts are deeper in the soil, so you won't have much success fixing deep compaction during winter weather.

Long-Term Management

Daigh states that one way to cut back on field traffic is to reduce tillage. He asserts that modern planters can handle more crop residue and still get a consistent stand count.

"If we cut back on tillage and have more residue, most folks immediately think that's going to cut down on yields. Our planters are really good at handling high residue these days," Daigh says. "Growers need to get accustomed to the adjustments planters need. With (the) right seed genetics for your situation, you can still get

good stand counts and cut back on your passes."

Another option, according to Daigh, is to interseed cover crops. When cash crops come off the land, cover crops are there helping to transpire that water in the soil for any follow-up practices.

"Even if there's only a little growth in between the rows, it still gives the soil more structure and strength when you're driving across just because you have a bit more roots in the soil," Daigh states. "Roots act pretty much like rebar in concrete. They innately give soil more strength."

Daigh says that crop rotation can affect the risk for ruts during a wet harvest. Farmers who plant corn on corn or are in a corn-soybean rotation could consider a third crop option, such as a small grain. Because small grains are typically harvested during an earlier and drier period of the growing season, some rut risk is mitigated.

> —Story by Daniel Lemke, photo courtesy of Chris Brossart



U.S. Soy Global Trade Exchange & Specialty Grains Conference Draws More than 1,000 Attendees



The virtual field day allowed GTE attendees to visit export infrastructure and soybean farms in several U.S. states, including North Dakota, with video tours.

taying connected during a global pandemic has been important in all facets of life, and that includes the business of U.S. soy and specialty grains. The U.S. Soy Global Trade Exchange (GTE) & Specialty Grains Conference connected more than 1,000 buyers and sellers from more than 60 countries in a virtual event that, for years, had been held in person.

"We promised that we'd deliver the next best thing to being together in one geographical location by creating a unique online space for us all to gather virtually," Specialty Soya and Grains Alliance (SSGA) Executive Director Eric Wenberg said. "I believe we did that."

SSGA co-hosted the GTE with the U.S. Soybean Export Council (USSEC) on Aug. 24-27.

"We're grateful to our partner, US-SEC, for its worldwide outreach; to all of our sponsors this week and to all of our trade partners we've established over years of relationship-building to make sure this critical event continued," Wenberg said.

In total, more than 1,500 people registered for the GTE, and the conference remained open on-demand for an extra month in case they missed the live event or if they wanted to see a session they missed or re-watch a presentation or the many other video features that were offered. GTE speakers included Ted McKinney, USDA under secretary of agriculture for trade and foreign agricultural affairs; Ken Isley, USDA administrator of the Foreign Agricultural Service; Gregg Doud, U.S. trade representative chief agricultural negotiator; Kevan Hueftle, U.S. Paralympic sprinter; Emily French, ConsiliAgra managing director; and Will Sawyer and Tanner Ehmke, CoBank Knowledge Exchange.

Other sessions included the Pro Farmer Crop Tour Report; media sponsor RFD-TV's "State of the Industry" premier; SSGA breakouts on container shipping, traceability and the outlook for food soya exports; and USSEC breakouts on U.S. soy sustainability, protein and oil.

Other highlights included a daily trade show with 34 exhibitors; a virtual field day that included tours of farms from all around the country; a virtual kitchen featuring the recipes of Chef David Bonom and daily live chats with the chef; and a live band, uRequest Live, which kicked off the GTE with a pair of performances.

The North Dakota Soybean Council (NDSC) was a state-level sponsor for the GTE as well as an exhibitor at the event's trade show where it highlighted the superiority of North Dakota soybeans. Attendees were able to browse the booth; to view videos, brochures and other materials; and to chat with booth representatives, similar to an in-person trade show. A chat function made networking easy with a translation function. It translated communications into a user's native language, removing language-barrier concerns.

North Dakota soybeans were also featured in a farm-tour video. At an in-person GTE, foreign attendees load buses in order to tour nearby soybean farms. The virtual field day brought that experience to the computer screen with videos that highlighted soybean farms and shipping logistics in different U.S. states, including North Dakota. The North Dakota farmtour video highlighted the quality of northern-grown soybeans and their high essential amino acid content.

"This was a complex show with many different activities under one banner," said SSGA Chair Curt Petrich, owner/partner of Fargo-based HC International. "I was fortunate enough to lead the SSGA panel on traceability, and I was impressed with the way the event came together-although not surprised. We're fortunate to be working in a tried and true industry like Specialty Soya and Specialty Grains Association produced in the United States, where there's real commitment to make sure meetings like this continue to take place year after year to keep everyone connected."

The SSGA is grateful to the GTE sponsors, including industry-level sponsors, SB&B Foods, The Delong Company, The Redwood Group and IOM Grain; and state-level sponsors: the North Dakota Soybean Council, the Illinois Soybean Association, the Iowa Soybean Association, the Minnesota Soybean Research & Promotion Council, the Ohio Soybean Council, and the Wisconsin Soybean Marketing Board.

> —Story and photos by Shane Frederick, SSGA



NDSC was one of 34 exhibitors at the virtual GTE Aug. 24-27.



Big Reasons Why WISHH's Work Matters Right Now

he COVID-19 pandemic makes 2020 a year of unprecedented challenges for global food supply chains. Even so, big trends with five new reports demonstrate the untapped potential that the American Soybean Association's (ASA) World Initiative for Soy in Human Health (WISHH) program is helping capture for U.S. soybean growers in order to fill protein gaps in emerging and developing markets.

"WISHH connects trade and development across global market systems, improving food security," says Gerry Hayden, a Kentucky soybean grower who serves as an ASA director and is the incoming WISHH chair. "Our long-term work is more important than ever for U.S. soybean growers, as well as WISHH strategic partners, in emerging and developing economies in Asia, Africa and Central America."

Here are five timely reasons why WISHH's work truly matters.

Trade access during COVID-19 is critical and is repeatedly emphasized by global leaders, including the United Nations' (U.N.) Call for Immediate Action that was issued in June. Priority Action 1.2 declares food production, marketing and distribution as essential services everywhere in order to keep trade corridors open and to ensure the continuous functioning for critical aspects of food systems in all countries. WISHH connects trade and development across global market systems, improving food security.

Overall growth for the volume of meat consumption in developing countries is expected to rise at approximately five times the level of developed countries, according to the Agricultural Outlook 2020-2029.

Released July 13, the joint report from the Organisation for Economic Co-operation and Development (OECD) and the Food and Agriculture Organization (FAO) of the United Nations also finds that the growth in feed consumption is mainly due to the ongoing expansion of livestock herds and aquaculture production in low- and middle-income countries.

From Africa to Asia, WISHH is implementing programs to assist feed, livestock, poultry and aquaculture entrepreneurs with developing lasting market systems that are required for high-quality protein production. erating the production of healthy protein-rich foods.

Together with its strategic partners, WISHH builds sustained businesses that manufacture nutritious and affordable soy-based foods, ranging from tofu in Myanmar to soy-based beverages and other grab-and-go foods in Africa and Central America.

The United Kingdom-based Chatham House Royal Institute's Business Case for Investment in Nutrition finds that governments, businesses and financial groups are increasingly mobilizing to counter the economic effects of poor nutrition. The July 2020 report explains that businesses in low- and middle-income countries collectively lose between \$130 billion and \$850 billion a year through reduced workforce productivity.

Local business leaders, governmental and non-governmental organizations, and academic institutions join WISHH to increase the demand and to fuel economic growth for the sustained availability of nutritious and affordable human foods and livestock feeds.

Citing a 527 percent rise in global aquaculture production from 1990 to 2018, a new report affirms the trends driving WISHH's work with aquaculture, including aqua feeds, in the emerging and developing markets. The FAO's State of the World's Fisheries and Aquaculture (SOFIA) 2020 report states, "The priority should be to further develop aquaculture in Africa and in other regions where population growth will challenge food systems most."

WISHH has an extensive track record in aquaculture that began in 2011 with the U.S. Department of Agriculture (USDA)-funded FEEDing Pakistan project, which is based on WISHH identifying aquaculture as an opportunity to reduce Pakistan's protein gap. Currently, WISHH leads the USDA-funded Commercialization of Aquaculture for Sustainable Trade (CAST)–Cambodia project and is also working with African aquaculture entrepreneurs.

About WISHH

ASA/WISHH connects trade and development across global market systems, improving food security. Knowing that protein plays an essential role in human nutrition, visionary U.S. soybean growers founded WISHH in 2000 to serve as a catalyst for the emerging markets. WISHH brings the power of strategic partnerships to a unique market-system approach.

—Story and graphic courtesy of WISHH

Global efforts are not on track to meet the U.N.'s Sustainable Development Goals (SDG) by 2030, including SDG No. 2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture. To address the challenge, the State of Food Security and Nutrition in the World 2020 report recognized the importance of accel-



Best Fuel Practices BEFORE, DURING AND AFTER Harvest

arvest season begins in the sunny warmth of September and can end in the blustery frigid temperatures of November and December. Your fuel needs to perform at both weather extremes. The introduction of ultra-low sulfur diesel (ULSD) and the increased use of biodiesel blends have changed the fuel characteristics for the diesel many of you were accustomed to pre-2006. Pre ULSD, storing and using diesel was less complicated. Today, it requires attention to the tank's maintenance and the use of best practices. Here are some general guidelines for worry-free fuel performance this harvest season and beyond.

Water is a major source of fuel problems. Over time, water accumulates in tanks as a result of condensation caused by warmer daytime temps and cooler nighttime temps. Water accumulates as this process is repeated over time. Once temperatures fall below 32°F, icing occurs, which can lead to plugged filters. Water is also the source of bacteria growth. Prior to ULSD, sulfur was a natural anti-microbial. Microbes live in the interface between the fuel and the water, using the fuel for food and the water for oxygen. The contamination can cause fuel filters to plug. Today's ULSD is also less stable and less tolerant of less-than-ideal conditions.

Make plans for how you will winterize your fuel. In North Dakota, typical No. 2 diesel starts clouding anywhere from 0°F to 6°F. No. 1 diesel usually starts clouding around -40°F. During the winter months, No. 1 diesel can cost 20-50 cents more per gallon than No. 2 and can sometimes be scarce. No. 1 diesel has a lower BTU content, resulting in lower fuel economy. For these reasons, it is often more cost-effective to utilize a combination of No. 1 diesel and cold-flow additives.

Keep Tanks Full

Air in fuel tanks can cause:

- Fuel degradation from oxidation
- Water in fuel tank bottoms

Water in fuel can lead to:

- Microbial contamination
- Tank corrosion
- Icing in cold temperatures

There are different types of cold-flow additives, including cold-flow improvers, de-icers and Wax Anti-Settling Agent (WASA). Cold-flow improvers help enhance the low-temperature operability of fuel. De-icers help keep the water in the fuel system from freezing. WASA keeps the naturally occurring paraffins in the diesel suspended in the fuel, preventing them from dropping to the bottom and plugging fuel filters. A combination of these cold-flow additives provides the best results for diesel and biodiesel blend winter operability.

You can use biodiesel in the winter. Biodiesel blends up to 5 percent have the same physical characteristics and perform the same as No. 2 diesel. Biodiesel provides excellent lubricity for the fuel, extending engine life by reducing wear on the moving parts, and biodiesel use directly benefits soybean farmers. Know what percentage of biodiesel is in your tank. Blends that are higher than 5 percent will raise the fuel's cloud point. Try to get your blend down to 5 percent or less in the winter.

After harvest, fill the fuel tanks for all your equipment. Keeping the tanks full reduces the amount of air in the tank. Exposure to air causes fuel oxidation and degradation. Excess head space in the tank can lead



to condensation and water problems. Below 32°F, there is icing.

Tips for Diesel Storage, Handling and Use During the Winter

- Always install a dispenser filter on a storage tank. If there are any issues with contaminants, the dispenser filter will plug but keep them from progressing to the vehicle tanks.
 - o Going into fall, install a new, 30-micron filter to accommodate the increased fuel viscosity.
 - Avoid using water-absorbing filters. The pleats will become saturated with water and freeze at temperatures of 32°F or lower.

Checkoff Investment

- In the fall before colder weather sets in, visually check the tank for free water by obtaining a tank-bottom sample. Check again in the spring.
- Bulk fuel and equipment tanks should be kept as full as possible in order to reduce condensation, oxidation and fuel degradation.
- When blending No. 1 diesel with No. 2 diesel, put the No. 1 diesel in the tank first. No. 1 diesel is lighter than No. 2 diesel and will not mix if it is put on top of No. 2 diesel.
- Winter additives should be administered when the fuel temperature is at least 10 to 15 degrees above the fuel's cloud point.

Diesel Helpline

The Diesel Helpline exists to assist diesel users with diesel- and biodiesel-related questions, to troubleshoot and diagnose filter-plugging problems, and to provide guidance about proper fuel-handing and tank-maintenance practices. If you have questions, encounter a fuel-related problem or need help troubleshooting the cause of filter plugging, please call the Helpline at 1-800-929-3437 or email info@megcorpmn.com. Retain fuel and filter samples to send in for diagnosis.

> —Story and graphics by Lisa Pedderson, MEG Corp Fuel Consulting

Check tank bottoms for water in the fall and spring. Remove any water and sediment if found. Water can corrode tanks, creating rust which can cause <u>filter plugging.</u>



NCI Launches Fullfat Soybean Meal Handbook and Webinar Series

he Northern Crops Institute (NCI) recently launched its fullfat soybean (FFS) meal handbook and webinar series. This integrated experience, centered around feeding FFS, was a collaboration among the Northern Crops Institute, the Minnesota Soybean Research and Promotion Council, and the North Dakota Soybean Council. FFS meal differs from standard soybean meal in that the oil is not extracted from the bean prior to further processing. The whole, intact soybean is processed (often via extrusion) with heat (in order to inactivate antinutritional factors) to make a meal that is both high in protein and lipid (fat) content. This allows nutritionists to take advantage of both the protein and energy inherently found in soybeans.

The 80-page FFS Meal Handbook focuses on how farmers and feed millers around the world can feed FFS to animals in a cost-effective, beneficial way. From covering economic implications to feeding multiple species, the handbook is a wealth of information. A solid foundation for this handbook was created by previous versions, and NCI was excited to update text and to add content for this edition. The handbook was edited by Dr. Robert Thaler of South Dakota State University and was authored by respected nutritionists with expertise on a wide range of animal species.

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NCI

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Along with the new handbook, purchasers receive access to a series of webinars that outline the book's content. To date, there have been three sessions, with a fourth one planned for later this year. These sessions center around feeding FFS meal to swine, poultry, ruminants and aquaculture. Each session is between two and three hours long, and provides specific knowledge about each species as well as supplemental handbook material.

Due to COVID-19, NCI has had to adapt the way it holds courses, and hosting these webinars has continued to allow NCI to reach customers across the globe. Meeting in a virtual environment is a great way for people from around the world to get together in order to discuss the nuances and implications of feeding FFS meal to multiple species. Each webinar has brought together over 100 participants in addition to over 100 people watching the recorded versions.

Dr. Koch, NCI's feed production center manager and one of the speakers during the webinar series, had the following observation about the first webinar:

"I was very pleased with the turn out in today's webinars. We had excellent questions from the participants. I think the four presenters made an excellent team and provided the participants with an exciting program that should send them to the handbook and give FFS a second look."

Dr. Koch went on to say, "Soybeans and soybean meal continue to be the protein of choice for feeding livestock and poultry around the world. However, access, economic and nutritional considerations in different regions pose problems that limit animal agriculture production. With global protein demand increasing as economies become stronger, the demand for meat, milk and eggs is expanding. FFS meal may provide a critical piece of nutrition for some livestock producers as a way for them to improve economics and efficiencies."

When asked what their thoughts were on the webinar, one participant stated, "It was an outstanding and informative webinar." Another person mentioned, "For me, it was very-very useful."

The Northern Crops Institute's FFS Meal Handbook is the first book that NCI has published. When asked about its significance, NCI Director Mark Jirik said, "The Northern Crops Institute is always looking for new and innovative ways to fulfill our mission of growing markets for crops grown in this region. This handbook is a perfect example of meeting the original vision of our founders for publications that help grow markets for crops grown around the world."

To learn more about the NCI, please visit www.northern-crops.com.

—Story and photos by Grant Christian, Northern Crops Institute



NCI continues to host webinars to reach customers across the globe.

No Longer a Luxury

or many people across the United States, the COVID-19 pandemic proved the importance of reliable internet service. With millions of people working from home, students thrust into online learning environments and healthcare providers shifting some interactions to virtual visits, many segments of everyday life became increasingly reliant on broadband service, especially in rural areas.

The same broadband need holds true for agriculture. Farming is increasingly reliant on gathering and sharing data. This information is vital when making long-range as well as day-to-day decisions. However, farmers in many regions of the country find their online resources lacking.

According to a whitepaper produced by the United Soybean Board, 60 percent of U.S. farmers and ranchers do not believe that they have adequate internet connectivity to run their businesses. A lack of internet access has affected 33 percent of farmers' equipment purchases, and a lack of rural internet influences \$13 billion in annual farm-equipment purchases.

It's not just at their home base

where connectivity is needed. Sometimes, the internet is necessary in the middle of nowhere. Farmers rely on connectivity to process data, such as yield and soil fertility maps; to identify and treat crop and livestock problems; and to find solutions in order to fix machinery. In addition to technology innovations such as the autosteer, drones, remote sensors and more, 67 percent of farmers believe that it's important to transfer data wirelessly from the field.

More than half of all U.S. farmers want to incorporate more data with their operations, but slow internet speeds, high costs and unreliable connections are barriers for using those data.

Better than Most

Broadband access may be a widespread issue in many areas, but several experts say that North Dakota is in better shape than most other states when it comes to broadband service. Polar Communications CEO Karl Blake explains that 98 percent of North Dakota has access to 1-gigabit service. More than 300 North Dakota towns are gigabyte capable.

"The Broadband Association of

North Dakota (BAND) is made up of 15 rural broadband companies, including Polar Communications. We have really focused not only on the cities, but also the rural areas," Blake states. "It gets back to the concept of universal service. Wherever you live, you should have access to the same type of service. I know we have broadband access in rural North Dakota that some big cities in other parts of the country can't get."

Polar Communications' service territory covers over 3,600 square miles of North Dakota. Polar Communications was recently awarded a \$21 million loan/grant combination from the U.S. Department of Agriculture (USDA) through the agency's Reconnect program. Polar Communications is using the funds for infrastructure in underserved rural areas of Walsh and Grand Forks Counties.

The pandemic has brought a larger emphasis on why broadband is needed everywhere, not just in metropolitan areas.

Greater Demand

Dr. Xin (Rex) Sun is an assistant professor of North Dakota State University's Agricultural and Biosystems



Interest in North Dakota State University's precision agriculture program is growing, an indication that demand for rural internet access for data sharing is likely to increase.

Engineering department, working in the area of precision agriculture. He agrees with Blake's assessment that North Dakota, generally, has very good broadband service. At the same time, he says that the demand is increasing as farmers incorporate more technology and precision ag practices.

"Precision ag technology is all about useful data for farmers," Dr. Sun states. "We see the need for good broadband service because, with increased technologies, North Dakota infrastructure is being pushed."

The broadband need varies based on each farm and the technology that farmers are using. The more technology they deploy, the more data with which they will interact, Dr. Sun explains.

"Flying a drone, for example, if the drone sensor is well developed and uses a 4K camera, for example, one picture could be 10 to 20 megabytes," Dr. Sun says. "Depending on the acreage, one flight could easily use 500 megabytes to 1 gigabyte of data. Using that high amount of data, if you talk about real-time transmission, that's going to require much bigger capacity."

Dr. Sun states that, while most areas of North Dakota have broadband access, the service needed to download and upload large amounts of farm data can be expensive. He's hopeful that having more service providers will give farmers some less-expensive options.

"It will take some time to get to the point where every farmer has options," Dr. Sun adds.

Attracting Attention

Rural broadband needs are attracting the attention of global innovators such as SpaceX, Amazon and Microsoft.

SpaceX is developing its Starlink system using low-orbit satellites to deliver broadband service globally. The Starlink service is expected to be available in the northern United States and Canada in 2020, with wider global availability in 2021.

Amazon's Project Kuiper is also based on low-orbit satellites. Like Starlink, Project Kuiper targets

Microsoft

How TV white space gets rural America online

Closing the digital divide



Operators deploy wireless broadband on unused white space spectrum between existing TV channel signals

underserved and unserved areas of the world.

Connectivity is also a key component of Microsoft's TechSpark Initiative. Launched in 2017, TechSpark is a five-year initiative that is focused on bringing resources and partnerships to rural and small communities in six states across the U.S., including North Dakota.

"Just as electricity became a necessity in the 1930s, broadband is a necessity today," says Taya Spelhaug, Microsoft TechSpark's regional manager for North Dakota. "Yet, millions in the U.S., particularly those in rural areas, lack access, resulting in a growing digital divide that is driving economic and social inequality. This is a critical problem that we at Microsoft are working to help solve."

In 2017, Microsoft also launched the Airband Initiative as both a callto-action and a programmatic effort to help close the rural broadband gap. In the U.S., the Airband Initiative has the goal of expanding broadband access to 3 million unserved and underserved people by July 2022.

Spelhaug explains that, for the past decade, Microsoft has partnered with internet service providers in the U.S. and around the globe on dozens of projects that have validated the benefits of using TV white-space technology to reach underserved communities. TV white space is a spectrum of currently unused TV



Delivering fast, reliable and affordable internet access

broadcast bands that can enable

broadband connections for a cost-ef-

particularly well-suited for hard-to-

Compared to traditional fiber,

Spelhaug says that TV white-space

lower populations; the transmissions

can travel over longer distances and

penetrate through tricky terrain. TV

pand broadband access, especially in

rural areas, but there is no one-size-

fits-all solution. She describes how

Microsoft is working with partners

through the Airband Initiative in or-

der to help develop and implement

approaches that best fit individual

Spelhaug says that closing the rural

broadband gap will help ensure that

The most significant way to achieve

this goal is by changing policy at the

action includes Congress allocating

tions Commission (FCC) so that the

FCC can implement measures to im-

prove the accuracy of its broadband

people don't have broadband access.

Microsoft has developed the

sensors, drones and low-cost broad-

FarmBeats platform which uses

band connectivity via TV white

maps to better understand where

funds to the Federal Communica-

federal, state and local levels. This

farmers have widespread connectivity.

geographies and regions.

white space is one tool to help ex-

technology is often cheaper and

faster to deploy in regions with

reach rural areas.

fective, yet high-speed, solution that is



space in order to track everything from soil temperature to pH levels to moisture data.

"We are working with Land O' Lakes to pioneer new innovations in agriculture and enhance the supply chain, expand sustainability practices for farmers and the food system, and improve connectivity in rural areas," Spelhaug says.

Microsoft has also partnered with Emerging Prairies for the Grand Farm, a project designed to spur innovation around farming and agriculture.

"Through TechSpark, we are investing \$1.5 million in the project and bringing our technology, such as FarmBeats, and the talent of our employees to help the Grand Farm be the farm of the future," Spelhaug explains.

Blake says that the Dakota Carrier Network, owned by 14 independent broadband providers, including Polar Communications, is working with the Grand Farm near Fargo and the North Dakota State University (NDSU) Smart Farm near Casselton.

"We're learning more about how we can assist farmers and the ag community in gathering farm data and having the network that is needed to process that data," Blake states.

Building a Future

The demand for rural broadband access isn't likely to subside because new precision-agriculture technology is developing nearly every day.



Hard-to-reach communities can be quickly and easily connected

"The precision ag industry is growing so fast, and it's based on farmer's interest," Dr. Sun says.

NDSU offers a precision-agriculture major, and Dr. Sun is in his fourth semester of teaching precision-ag classes. Dr. Sun states that, in the first semester, seven students were enrolled in his class. By the second semester, that number was up to 26; now, it's at 47.

"The majority of students are next-generation farmers. They're farm kids who want to return to the farm," Dr. Sun says. "Just from the class enrollment numbers, I can see how much interest is coming from the next generation of farmers."

Service providers and government officials are recognizing the need to build and to maintain infrastructure in order to keep up with the connectivity demands. Blake explains that Polar Communications has applied for another round of USDA Reconnect funding and that the FCC has launched at \$20 billion program called the Rural Digital Opportunity Fund to expand rural broadband development.

"Broadband today is like telephone service was 50 years ago," Blake contends. "It's not a luxury; it's a need. It's something you have to have to conduct daily life."

—Story by Daniel Lemke, graphic provided by Microsoft and photo by Dr. Xin Sun, NDSU

EPA Officials OUR LOCAL FARMS

or nearly 30 years, employees of the Environmental Protection Agency (EPA) have visited North Dakota farms to connect with some of the farmers whom the EPA regulates. This year, a COVID-19-delayed and shortened tour included Region 8 Administrator Greg Sopkin; two other members of the regional office in Denver; and Carrie Meadows, an EPA agriculture adviser to Administrator Andrew Wheeler.

For the past few years, the tour has been organized by the North Dakota Grain Growers Association, with assistance from the North Dakota Soybean Growers Association (NDSGA), the North Dakota Corn Growers Association and the Red River Valley Sugar Beet Growers Association.

Based on interest expressed by the EPA staff to visit with an agronomist, the NDSGA portion of the tour made a stop at Lovas Farms near Hillsboro, North Dakota. The operation is run by Peter, Jason and Sarah Lovas.

In his opening remarks at Lovas Farms, Administrator Sopkin expressed his interest in understanding more about the actual operation of a farm in order to do his job better. Jagadeesan Sethuraman, Region 8 chief of staff, and Rebecca Perrin, Region 8 agriculture adviser, also expressed an interest to expand their understanding of modern farming.

Meadows provided her background and role in advising the EPA on agriculture-specific issues.

Sarah Lovas, who has an agronomy consulting business and manages agronomics for the operation, demonstrated how excess water can be managed with drainage tile. She also used maps produced by grid sampling fields to show the variation in potash and phosphate fertilizer levels across a field. She explained how a fertilizer spreader would then be programmed to apply the proper amount of each nutrient to the correct area.

Sarah Lovas does her soil sampling work with a pickup that has a hydraulic probe. She demonstrated how this sampling process works. Taking advantage of nice weather, the group had the opportunity to have a handson experience with Fargo clay and to learn more about its characteristics.

In other stops, the group visited the Tim Kozojed farm, also near Hillsboro, North Dakota, to learn more about corn growers' concerns. Near Casselton, the EPA staff visited Morken Farms where Joe Morken talked about the sugar industry's concerns. In addition, the tour stopped at Howe Farms where Jim and Michael Howe gave an update about wheat and barley industry issues.

In a roundtable the day before, NDSGA board member Josh Gackle of Kulm was able to pass on thanks for the recent action that the EPA took to reject a number of small refinery exemption requests. Issues related to the re-registration of products containing dicamba for over-the-top use were discussed with the EPA staff.

North Dakota Commissioner of Agriculture Doug Goehring also provided an overview of North Dakota's crop diversity.

After taking advantage of an offer to drive a tractor, Meadows reiterated the importance of the EPA staff interacting with a variety of farmers.

—Story and photos by staff



Sarah Lovas demonstrates soil sampling equipment to EPA staff.

SECOND

Round

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n additional \$14 billion dollars in relief has been approved for farmers who continue to face market disruptions and associated costs because of COVID-19. The U.S. Department of Agriculture (USDA) will use funds being made available from the Commodity Credit Corporation (CCC) Charter Act and Coronavirus Aid, Relief, and Economic Security (CARES) Act to support row crops, livestock, specialty crops, dairy, aquaculture and many additional commodities. Signup for the Coronavirus Food Assistance Program (CFAP 2) runs through December 11, 2020.

Farm organizations, including the American Soybean Association (ASA) welcomed the second round of relief because farmers faced significant losses in 2020 due to COVID-19. A study commissioned by the National Oilseed Processors Association and the United Soybean Board identified a \$4.7 billion market loss to soybean growers and crushers from January to June of 2020.

While sales and soybean prices have improved in recent weeks, many soybean farmers presold portions of their crop at much lower prices before the prices rebounded. CFAP2 only pays 54 percent of the actual production history (APH). Soybean industry leaders stress that the CFAP programs won't make agricultural producers whole, but the aid will assist farmers who have been navigating various obstacles this year.

Unlike the first round of CFAP payments, which was based upon unsold inventory for row crops from 2019, CFAP2 will be based upon acres that were planted to the crop in 2020. For a crop to be eligible, the national price had to decline by at least five percent between the week of January 13-17, 2020 and July 27-31, 2020.

The payment rate for soybeans per acre is the higher of \$15 or the product of the nationwide crop marketing percentage, the crop-specific payment rate and the producer's 2020 APH yield from crop insurance. The nationwide crop marketing percentage and crop specific payment rate for soybeans are 54 percent and \$.58, respectively.

The per acre payment rate is the maximum of \$15 and \$.3132 per bushel times the APH yield per bushel for soybeans. If an APH yield is not available, 85 percent of the weighted 2019 Agriculture Risk Coverage-County Option (ARC-CO) will be used instead. The per acre rate is multiplied by the acres reported to the Farm Service Agency (FSA) on the crop acreage report excluding prevented plantings and experimental acres. USDA estimates that soybean CFAP2 payments will total \$1.4 billion and payments for the entire program will sum to \$13.2 billion.

Total CFAP2 payments cannot surpass \$250,000 per person or legal entity. Producers who did not participate in CFAP1 are eligible for CFAP2 while those that did must reapply for the second round. The sign-up period ends December 11, 2020 and sign-up can be done at https://www.farmers.gov/sign-in or at the local USDA Service Center.

—Story and graphic by staff

CFAP2 Soybean Examples	Example 1	Example 2
a. Nationwide crop marketing percentage	54%	54%
b. Payment rate	\$0.58	\$0.58
c. Soybean APH yield	45	50
d. Product (a x b x c)	\$14.09	\$15.66
e. Maximum of \$15 and product		
(max [15, d])	\$15.00	\$15.66
f. Eligible soybean acres	1,000	1,000
Total soupcas payment* (o x f)	¢15.000	¢15.000
iotal soybean payment (e x l)	\$15,000	\$15,000

*Does not consider payment or AGI limits



Noxious and Resistant Weed UPDATE

Palmer amaranth plants growing on the edge of a soybean field in North Dakota in September 2020.

arvest is always one of the best times of the year to evaluate what worked and what did not work with herbicide programs. Weed escapes can easily be noted from the combine cab and are a good preview for some of the weed challenges that will be present in that field next year. Harvest is also a good time to determine if any weed infestations are spreading in a particular area and to start planning for next year's war on weeds.

Herbicide-resistant weeds are, unfortunately, becoming more prevalent across the state. Resistance to group 1 and group 2 herbicides is spreading for foxtail species and wild oat. These weeds can still be managed with glyphosate in glyphosate-resistant soybeans. However, glyphosate resistance is rapidly being found in other weed species. Glyphosate-resistant kochia and common ragweed are growing in prevalence across North Dakota, but of particular concern in 2020 was the population pressure from waterhemp and horseweed (marestail). These two weeds were prevalent on a lot of Prevent Plant acres this year and will be problematic for whatever crop gets planted in those fields next year.

Glyphosate-resistant waterhemp is now firmly entrenched in many of the state's soybean-growing areas. The recent wet summers in eastern North Dakota have been favorable for the growth and reproduction of waterhemp. There has not been any confirmed resistance to dicamba; 2,4-D; or glufosinate (Liberty, others) in waterhemp in the state, but there have been some cases with a concerning number of late-summer escapes; those fields are prime candidates to switch up the herbicide programs in 2021.

Glyphosate-resistant horseweed was a challenge in 2020. The high amount of rainfall across the state in September of 2019 caused a lot of fall germination, and those plants are always difficult to control the following spring. Fall is always the best time to spray horseweed, so if there is warm weather throughout October, fields that are set to be no-till soybeans in 2021 would benefit from a fall herbicide application to control the currently emerged horseweed plants. It can be very difficult to control postemergence in soybeans, but luckily, dicamba; 2,4-D; and glufosinate are all effective on horseweed.

Noxious weeds have not typically been a major concern for soybean production. One obvious exception would be Canada thistle. In general, Canada thistle was more prevalent across North Dakota in 2020 than in recent years. However, the noxious weed making the most headlines this year was, once again, Palmer amaranth. There were a number of additional counties where Palmer amaranth was confirmed in September (3 as of this writing). Palmer amaranth continues to be a great concern in North Dakota due to its competitive nature and its ability to quickly develop herbicide resistance. Palmer amaranth was found in several soybean fields this year well after herbicide spray season was over. It is





important to remember that control options will be very similar to waterhemp control options and that most, importantly, herbicide applications must be made in a timely fashion on small weeds to expect good control.

The options for weed control in soybeans during 2021 will look very similar to 2020. The Enlist soybean system is being planted on many acres, and weed-control results from the first two years of this trait being widely planted remain mostly good. Bayer is expecting to launch Xtendflex soybeans in 2021, pending certain import approvals. These soybeans will have resistance to dicamba, glyphosate and glufosinate. At the time of this writing, it is still unknown what dicamba products will be available in 2021 and what the labels will look like. However, it is more likely than not that dicamba products will be available for use with Xtend and Xtendflex soybeans next year. Both the Enlist and Xtend soybean systems offer good herbicide

options for controlling glyphosate-resistant broadleaf weeds. However, it is still important to remember that these herbicides are not new. There are no new mode of actions coming to the soybean market in the next couple of years, so it will be vital to use the current herbicides responsibly in order to avoid evolving resistance to these herbicides. The war on weeds does not appear to be getting any easier, and now is the time to start planning for a successful 2021 season.

More information on Palmer amaranth and other noxious and invasive weeds is available at: www.ag.ndsu.edu/weeds, www.ag.ndsu.edu/palmeramaranth, www.bit.ly/NDgovNoxiousWeeds.

To report a suspect plant, go to www.nd.gov/ndda/pa or contact your local county weed officer or North Dakota State University Extension agent.

—Story and photos by Dr. Joe Ikley, NDSU Extension Weed Specialist



Glyphosate-resistant waterhemp escapes in a field in North Dakota.



North Dakota Department of Agriculture Palmer Amaranth Distribution

Lab confirmed positive for Palmer amaranth 2018 2020 2019

As of 09/09/2020



Managing Sticky Situation

s most farmers can attest, getting farm implements stuck just can't be avoided all the time. Despite the driver's best efforts, equipment, including combines, can get stuck during the fall harvest. That scenario has played out often during the past few years because North Dakota farmers have dealt with wet fall conditions and likely will again in some locations for 2020.

Combines mired in mud present a colossal headache for farmers and must be handled properly, especially to ensure the safety of the people working to free the stuck equipment.

North Dakota State University Agricultural Machine Systems Specialist John Nowatzki says that factors for safely removing a stuck combine include knowing the machine's weight, the strength of the connecting equipment and the condition of the connection devices. Nowatzki

explains that the most common cause of injury when removing stuck farm equipment comes from connecting devices which fly back toward the pulling implement.

"It's important to keep people away," Nowatzki states. "A lot of experts recommend keeping people back 100 feet. I don't think that's enough. I prefer that they stay back 200 feet."

Removing stuck equipment is a challenge because every scenario is different. Combines can bog down in low spots, side hills or any number of places.

Nowatzki says that one of the first things to consider when trying to extract a stuck combine is the machine's weight. That information should be available in the equipment manual or online.

If the combine is not completely stuck and has some traction to help the towing unit, Nowatzki states that the pulling tractor's weight



North Dakota farmers have had to contend with wet soils the past several harvest seasons.

must be at least equal to combine's weight. The deeper the combine is stuck, the heavier the tractor needs to be in order to pull the combine. However, when the combine is stuck

moving the towing vehicle while keeping the force in place for a short in mud, there is a suction force that time. This strain from the tension may break the stuck vehicle lose. "The weight of the stuck combine, the suction force of the wet soil and the resistance against the ridge of soil all work against the pulling force of both the towing tractor and the connecting devices," Nowatzki explains. If there isn't a single tractor available that's heavier than the combine, two tractors may be needed. If possible, placing the towing vehicle or vehicles on ground that is higher than the combine can be advantageous.

> Most combines come with a connection point on the rear axle. If you are utilizing a tractor as the towing vehicle, the combine should be connected to the tractor drawbar by using a recover strap, rather than a chain or cable, and pulled backwards. Recovery straps are designed

holds the combine in place. One

extraction technique is to attach a

force on the rope and then to stop

tow rope to the stuck vehicle, to put



Freeing combines that have become stuck in the mud requires proper handling to prevent injury or damage.



Even combines with tracks are not immune from getting stuck.

to stretch while chains or cables can have unseen weak spots, creating a potentially dangerous situation. Nowatzki says that recovery straps are labeled with the pulling-weight recommendations and need to be strong enough to handle the task. The straps are only as strong as the weakest link, so Nowatzki recommends using the heaviest possible screw clevises to fasten the strap to the towing tractor. A screw mechanism with threads is stronger and more reliable than a clevis with a single safety pin.

During a harried and hurried harvest, farmers are often focused on keeping machinery rolling. If equipment does get stuck, Nowatzki reminds growers that safety needs to be the focus.

"It can be difficult to think safety first in that situation," Nowatzki admits. "Farmers have a big investment in equipment, and they want to get back at it as quickly as they can. But you really do have to focus on safety."

—Story by Daniel Lemke, photos by Mike Schlosser and Chris Brossart





orth Dakota's surge from a role player in the soybean world to a major global force didn't happen by accident, and the soybean spread isn't done. Soybean production is pushing into nearly every North Dakota county, including many areas that would have seemed impossible not many years ago.

Among the organizations helping to push soybeans into new parts of the state is the North Dakota Crop Improvement and Seed Association (NDCISA). The NDCISA serves as a voice for certified seed producers in North Dakota and across the Midwest. The organization also licenses public seed varieties that are developed at North Dakota State University (NDSU).

"We license varieties from NDSU and a couple other genetic providers," says NDCISA Executive Director Chad Anderson. "By doing that, we're able to get new genetics and new varieties out to our seed producers while still returning money as a nonprofit back into agricultural research through royalty collections."

Anderson states that NDSU has been a genetic provider and a producer of good soybean varieties for many years. As a state institution, NDSU was not focused on marketing seed. The NDCISA helps to market soybean varieties and gets improved genetics, which are affordable, to the producers.

Anderson explains that NDSU and the NDCISA have formed a good partnership which benefits both organizations and the state's farmers.

"They (NDSU) handle our breeder and foundation seed for us. From the day that these varieties are released, NDSU continues to manage the breeder and foundation seed lots. From there, we distribute that foundation seed out to our member growers," Anderson explains. "It works quite seamlessly because they can maintain the highest security that is required for certified seed in-house at NDSU."

Because western and northern North Dakota have different agronomic challenges than the eastern part of the state, public varieties that are suitable for areas with a shorter growing season and less moisture have helped fuel the growth for soybean acres.

"It's very important to develop new lines and products," Anderson says. "As we know, soybeans have expanded in the last years and are now grown all the way out into eastern Montana. Typically, soybeans have been bred for up and down the Red River Valley, so a lot of this is new territory. We're breaking into new territory with soybeans that have been developed with monies through the North Dakota Soybean Council."

Regional Resources

Four NDSU Research Extension Centers (REC) have been tasked with growing foundation seed. RECs in Langdon, Carrington, Minot, and Williston receive new varieties from the NDSU breeding program and grow foundation-grade seed.

"We produce foundation-grade seed; we want this seed to be 99.9 percent pure," says Shana Forster, director of the North Central REC in Minot. "We want to produce high-germination, disease-free, weed-free seed. We produce founda-



Chad Anderson, Executive Director of the North Dakota Crop Improvement and Seed Association says the organization has helped to support the spread of soybean production across the state.



tion-grade seed, and after the first year of release, the seed is distributed via a county allotment program, where seed growers will receive a small amount to produce on their farms. These seed growers then produce certified or registered seed, which is then sold to other producers. The research centers only produce foundation-grade seed; producers only grow registered or certified seed, so we are not in competition with each other. It is a really good partnership."

Forster states that, when she came to the North Central REC (NCREC) more than a decade ago, there were far fewer soybean acres in the region. Traditionally a wheat stronghold, soybean acres have occasionally surpassed wheat acres in the area.

Having productive soybean varieties that perform in the climate and cropping system found in western North Dakota was an important step to increase soybean acres.

"Up until a few years ago, we had some conventional NDSU varieties, but the ND17009GT release really put soybean on the map in this area," Forster says. "Producers are able to save their own seed, which can significantly impact their cost of production."

In addition to producing foundation seed, three RECs have upgraded or are in the processes of updating seed-conditioning facilities. A plant was recently completed in Carrington, and the new facilities at the NCREC in Minot will be operational in late 2020. Williston should be ready to process seed for 2021. The new facilities have mechanical and optical sorting as well as seed cleaning and conditioning capabilities.

"The CREC (Carrington REC) has recently completed the construction of a new foundation-seed conditioning facility that replaces the original plant that was built in 1963," says Blaine Schatz, director of the Carrington REC. "The new plant basically has 10 times the processing capacity of the old plant with enhanced seed-conditioning capabilities. The



Director of the North Central Research Education Center Shana Forster is welcoming a new seed conditioning plant set to be operational this fall at the Minot location.

most significant enhancement represented by the new facility beyond the large increase in capacity is the incorporation of an optical sorter into the processing line."

Forster states that the previous NCREC seed facility, which has been removed, was last updated in 1982 and was specifically set up for conditioning small grain crops because pulse crops and soybeans were not grown in the area at that time. The North Central REC hasn't had a conditioning facility that functioned since 2009.

In addition to raising foundation seed and conditioning seed, agronomic research at the RECs is helping to improve soybean production and utilization for North Dakota farmers. Variety trials, fertility studies, disease research and plant-pathology evaluations all support soybean farmers.

Niche to Mainstream

Schatz recalls the early 1980s when researching and even planting soybean seedstock was considered very fringe for the area. He says that several area growers tried raising soybeans only to have very dry late-summer conditions cause low yields and a poor experience, so soybeans weren't embraced by the growers.

"The pattern of wetter weather conditions that started in the 1990s that caused all the disease problems in small grains really helped establish soybeans as a major crop in the region," Schatz states. "The variety development that began occurring for our region in the 1990s coupled with the subsequent technologies that were introduced really changed the dynamics of producing soybeans. Soybean is clearly a regular part of crop rotations for growers in our region."

Anderson explains that the most popular public varieties coming from NDSU have been the glyphosate-tolerant material. The productive varieties and lower cost than commercial soybean seed make certified seed attractive to a lot of farmers.

"When we have unprecedented economic struggles in the ag community, we're able to supply new genetics to these producers at an affordable price. A large reason why we have seen a lot of the increase in acres is the work we've been doing advertising and marketing these varieties and getting the word out to the producers. The fact that NDSU has done a very good job of coming out with competitive genetics that we can market at an affordable cost has been a win-win, plus we're giving money back to research to develop the varieties that growers need."

Farmers can keep their own seed from the certified varieties. However, Anderson encourages people to plant certified seed because that choice ensures farmers that they'll have high-quality seed that has been conditioned properly.

"There's a lot of things that go into that seed. Right now, most guys are selling that registered, certified seed around that \$24-\$25 per unit," Anderson says. "The input cost is really quite low for what they can get with the inoculated, treated and cleaned seed."

"Generally," Schatz explains, "the cost of seed for public varieties contributes toward the positive economics of growing soybean in regions of the state where yield potentials are lower than the traditional production regions."

To learn more about certified seed, visit www.ndcropimprovement.com.

—Story by Daniel Lemke, photos by David Klassen

Checkoff Investment



s part of its continuing work to create demand for U.S. food specialty soybeans in the Indian market, the U.S. Soybean Export Council (USSEC) hosted a successful two-day webinar on July 14 and 15, 2020. The "Virtual Workshop on Opportunities for Food-Grade Soybeans" attracted more than 225 participants in the South Asia (SA) region.

The USSEC's regional food program addresses the diversity of the soy market in India and identifies opportunities for U.S.-grown soybeans with educational events such as the virtual workshop. Bangladesh, Nepal, Pakistan and Sri Lanka are not traditional soyfood-consuming areas. With the exception of Sri Lanka, the soyfood industry remains an emerging market. Currently, soymilk, tofu, soy nuts and other whole soybean-based products offer opportunities for U.S.-grown soybeans in the region.

The workshop sessions outlined current trends for whole soybean-based products and highlighted the attributes and sustainability of U.S.-grown specialty soybeans. Other topics included the health benefits of soy protein and the use of a soy-protein isolate in soy-based dairy analogs.

Plant-based milk alternatives are

a growing food-product category globally. For the SA soy market, beverage products represent a significant opportunity. A workshop session was devoted to the topic of "Soymilk, Tofu and Soy Dairy Analogs." With a reported 60-70 percent rate of lactose intolerance among the Indian population (compared to an estimated 10-15 percent intolerance rate among the U.S. population), there is increasing consumer interest for soymilk.

Soy nuts are another product with the potential for regional markets and were highlighted during the workshop. With the exception of Nepal and India, soy nuts are not available in the local markets. Soy nuts are an excellent product fit for the region's snack-consuming populations.

Other educational sessions at the workshop included a video presentation about soy-nut processing as well as soymilk and tofu video demonstrations. Question and answer sessions provided an opportunity for participants to hear from experts in the field. Kevin Roepke, USSEC regional director, South Asia, opened the event with a welcome statement and provided closing remarks. Presenters included consultants Dr. Kavitha Reddy, Dr. Suresh Itapu and Dr. Ratan Sharma, along with Indranil Chatterjee, protein lead, DuPont, APC; and Robert Sinner, the vice chairman of the Specialty Soya and Grains Alliance.

Event participants provided the USSEC with highly positive feedback about their workshop experience and the content. One hundred percent of the attendees either agreed or strongly agreed that the event was a good use of their time and said that they would recommend the event to colleagues.

Robert Sinner put the event into perspective with an eye toward the future. "The workshop provided both basic and technical knowledge on the production of soy products. Participants from these emerging economies are always entrepreneurial with questions ... looking for new and valuable information to not only improve, but also to expand their soyfood profiles," he stated. "Because the U.S. is the most reliable and quality source of food specialty soybeans in the world, it was only natural that our own industry showcases this material. It was a real pleasure to share and receive responses that the participants are now eager to obtain the necessary understanding and tools for securing quality supply. We need to continue programs like these for expanding U.S. soybean markets."

"The workshop was amazing, and I learned a lot of new things from it," said Sasith Nuwantha, a production executive at Pussalla Meat Producers in Sri Lanka. "It was the best webinar I have participated in so far."

—Story courtesy of USSEC, photos by Betsy Armour and USSEC



Soy nuts are an excellent snack.



The soyfoods industry remains an emerging market.

Checkoff Investment



CREATES FOOD VIDEOS FOR MOMS

ommonGround North Dakota (CGND) has partnered with various North Dakota organizations to talk about food in order to assist moms with meal planning and prep as well as to answer food questions and to dispel food myths.

During a recent video shoot, North Dakota Beef Commission Executive Director Nancy Jo Bateman highlighted how to use a cooked beef chuck roast for multiple meals, how to calibrate a meat thermometer and how to make an easy breakfast burrito using ground beef.

"We are glad we had the opportunity to partner with CGND to bring these videos about tasty, but easy, meals featuring beef to moms. As we all know, meal planning and prep can be a daunting task. With a protein as versatile as beef roast, moms can get three or four extra meals for the week with leftovers," Bateman says. "These short beef videos will give moms some great ideas for meal planning. Our goal is to promote beef and to also make it as easy for busy moms who need ideas and a helping hand in the kitchen."

Currently, there are more food videos in the works, and they will be in production later this fall. CGND is collaborating with other partners, such as The Soyfoods Council and Midwest Dairy, to bring more food video content to consumers. These short food videos will be posted on CGND's website and social media platforms throughout the fall and winter. The goal is to continue the efforts to educate and to help moms bring easy and delicious, trusted North Dakota grown products to their families' tables.

"We want to promote healthy, easy-to-make meals but also support moms to feel good about what they are feeding their kids. Protein makes you feel full longer, so less snacking in between meals," Linda Funk, The Soyfoods Council executive director explains. "Incorporating soyfoods into your families' diets can add necessary protein, calcium and vitamins to help keep young bodies growing strong." Besides the added nutrition



CommonGround North Dakota partnered with the North Dakota Beef Commission and other North Dakota Organizations to help create food videos for busy moms. One of the short videos emphasizes how one cooked beef chuck roast can be used for multiple meals. Recipes at www.beefitswhatsfordinner.com/recipes.

that soyfoods can bring, Funk emphasizes that soymilk and other whole products, such as edamame, soy nuts and canned soybeans, are readily available and have a great shelf life. This availability creates a win-win for busy moms when they need to whip together a healthy meal or snack in short order for starving kids.

"Midwest Dairy is happy to be working with partners such as CGND to share dairy's incredible story," states Char Heer, program manager for the Midwest Dairy Association. "We are excited to reach families with this video series and give them a sense of how dairy is responsibly produced and can be an easy, nutritious component to any meal or snack."

CGND is a group of farmers who are working to dispel myths about modern agriculture and are building trust in farming communities and farm families. If you would like more information about CGND or are interested in becoming a volunteer, please visit the website at www. commongroundnd.com.

-Story and photos by Betsy Armour



North Dakota Beef Commission's Executive Director Nancy Jo Bateman presents recipes during the video shoot that gives moms great beef cooking tips and ideas for meal planning and prep.



Breakfast, being the most important meal of the day, can be a struggle, but this flavorful, salt-free breakfast burrito that was featured in one of the short videos shows how using ground beef is easy and nutritious.

By the Numbers

arm operators know that agriculture economics have been beyond challenging for the past several years. An evaluation of records from the North Dakota Career and Technical Education North Dakota Farm Management Education program reveals how difficult conditions have been and how important government programs have been for the bottom line in recent years.

North Dakota State University (NDSU) Extension Ag Finance Specialist Dr. Bryon Parman and his colleagues in the NDSU Farm Business Management program worked in partnership with North Dakota Farm Management Education to evaluate farm records for the 2018 and 2019 growing seasons. What the researchers found was that government payments, including Market Facilitation Program (MFP) funds and disaster payments, made a huge difference for farm profitability during those two years.

In 2018, even with government-program support, the lowest 20 percent of farm operators lost \$42,700 despite total government payments of \$43,959. Without government assistance, those farmers would have lost over \$85,000.

The middle 40 to 60 percent of operations would have made \$30,000 without government payments in 2018. The highest 20 percent of operators derived almost a third of their 2018 income from government programs.

In 2019, government payments were even more important. The lowest 20 percent lost \$96,000. Without over \$78,000 in government aid, the situation would have been worse. The middle 40 to 60 percent would have lost money as well. Even the highest 20 percent of operators derived over half of their farm income from government payments that year.

"This is nominal income," Dr. Parman says. "The high 20 percent could be a huge farm with multiple employees. That may be a father and three sons working together. This is in nominal dollars the farm recouped; it's not income per person."

Dr. Parman explains that the data show how, without government programs such as MFP, the financial situation for the agriculture economy would have been even more dire.

"This data just bears out how important MFP has been and how likely important the Coronavirus Food Assistance Program (CFAP) is going to be," Parman states. "We don't know how impactful it's going to be, but in reading the tea leaves, I think the 2020 CFAP payments are going to be extremely important, for the livestock guys especially."

Farm income for 2020 won't be known for some time, but Dr. Parman expects that program payments, such as CFAP or any other emerging programs, will provide a big share of the net farm income.

Challenges Ahead

Dr. Parman says that, because there is so much uncertainty about the markets, possible additional government programs or support,

2018 Net Farm Income and Government Payments for the Low, Mid and Highest Net Farm Income Groups

	State Average	Low 20%	40–60%	High 20%
Gross cash farm income	\$772,147	\$630,177	\$640,028	\$1,419,845
Crop government payments	\$23,347	\$17,734	\$18,523	\$46,221
CRP payments	\$1,119	\$1,119	\$437	\$1,623
Other government pay- ments (MFP & Disaster)	\$35,734	\$25,106	\$35,269	\$57,246
Total governemt payments	\$60,200	\$43, 959	\$54,229	\$105,090
Net farm income	\$116,227	-\$42,700	\$80,927	\$365,638

(Source: NDSU Farm Business Management)

weather and even anticipated crop size, it can be extremely challenging for farmers who are trying to make business decisions.

"The best advice we're giving farmers is to keep forging ahead. I personally wouldn't bank on another round of payments," Dr. Parman states. "I wouldn't let government program payments influence my marketing decisions and my business management decisions because you just don't know what they're going to look like. You have to manage as if no more aid is coming."

Barring unforeseen circumstances, some experts expect the challenging economic conditions to continue for the next few years. Organizations such as the Food and Agricultural Policy Institute (FA-PRI) at the University of Missouri anticipate that 2020 and 2021 farm income will be substantially lower nationwide because of reduced government payments.

FAPRI's projections may or may

not come true, but Dr. Parman explains that they illustrate why

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2019 Net Farm Income and Government Payments for the Low, Mid and **Highest Net Farm Income Groups**

	State Average	Low 20%	40–60%	High 20%
Gross cash farm income	\$846,523	\$954,899	\$514,996	\$1,534,550
Crop government payments	\$16,943	\$13,808	\$7,367	\$38,279
CRP payments	\$1,222	\$527	\$1,044	\$3,102
Other government pay- ments (MFP & Disaster)	\$68,404	\$63,903	\$43,275	\$127,817
Total governemt payments	\$86,569	\$78,238	\$51,686	\$169,198
Net farm income	\$74,100	-\$96,157	\$39,002	\$317,478

(Source: NDSU Farm Business Management)

farmers shouldn't spend money they haven't made and should focus on the things they can control. Farmers should pay attention to discussions about additional farm programs and government aid, but don't bank on any assistance.

"Make management decisions based on things that you're comfortable with," Dr. Parman says. "Put the

blinders on, and focus on what you can control."

Dr. Parman states that, given the tight economic margins which most farmers face, working with Farm Business Management Education can be extremely valuable for both new and seasoned farmers.

> —Story by Daniel Lemke, photo by staff



Dr. Bryon Parman, NDSU assistant professor agrifinance specialist.

A New Approach to Seasonal Wetlands

rorth Dakota's farm country is freckled with wetlands. Some potholes are there year-round; others are just temporary or seasonal, depending on rainfall. Some years, those temporary wetlands can be farmed; other years, they can't, which can create a hassle for farmers.

A new U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) program is designed to compensate farmers in the Prairie Pothole Region for keeping small, temporary wetlands in place on working farmland.

The Prairie Pothole Water Quality and Wildlife Program is a new funding opportunity that is available through the Environmental Quality Incentives Program (EQIP). When enrolled, producers are eligible for payment on cropped wetlands which are two acres or less in size with intact hydrology. The payment rate will differ by region.

"In the 2018 Farm Bill, we were able to add 29 words to the Conservation Title that make a big difference for us in the Prairie Pothole Region," says NRCS State Conservationist Mary Podoll. "We targeted this area because we have these small, temporary and seasonal wetlands. The Farm Bill gave us the authority to come up with an economic value for the practices that farmers are doing."

Podoll explains that, in the past 20 years, seasonal wetlands have become more common because the groundwater level has risen and because the state gets ample rainfall. Podoll states that the efforts were focused on the small, seasonal wetlands because, even though many years, farmers can farm through them, the wetland hydrology is important. As long as farmers aren't draining them, the temporary wetlands still offer a considerable natural resource benefit.

Little Wetland, Big Impact

Delta Waterfowl Senior Vice President John Devney says that the majority of wetland resources in North Dakota are small and seasonal wetlands. In the Prairie Pothole Region, which includes North and South Dakota, Minnesota, Iowa and Montana, there are more than 1.5 million temporary and seasonal wetlands which are 2 acres in size or smaller, according to Devney. Those 1.5 million wet-lands only encompass 645,000 acres, yet they support over 895,000 breeding duck pairs.

"Those are still the most abundant wetland resource," Devney states. "Biologically, because ducks are territorial, lots of little wetlands are way more important than one big wetland. Ten 1-acre wetlands will support 10 times more breeding ducks than one 10acre wetland."

Devney says that, well beyond providing wildlife habitat, the public derives great benefit from those wetlands. He explains that small wetlands annually store 484,000 acre feet of water, which helps to reduce downstream flooding. The wetlands consume 57 million pounds of nitrogen, al-most 1.1 million pounds of phosphorous and sequester almost 3.8 million tons of carbon.

In 2013, Devney along with other conservation and agriculture

leaders met to discuss why small, seasonal wetlands were important to conservationists and why farmers had issues with the wet-lands. From those initial conversations came a pilot program, the Working Wetlands pilot, which was funded through the North Dakota Outdoor Heritage Fund in order to compensate farmers for not draining, filling or in any way affecting the small wetlands. The pilot project was met with enthusiasm and was used as an example by Devney and others to get language into the 2018 Farm Bill that authorized something more permanent.

"There's a lot of public benefit that those little itty-bitty wet spots provide," Devney contends. "If you look at it from a farmer's perspective, the farmer isn't receiving any income, revenue or incentive for those public benefits that he or she is providing. That's the case we made to Congress. Look at these benefits. Why can't we find a program to pay for those benefits because the public is deriving a lot of benefits from those small wetlands?"

New Approach

Podoll says that the Prairie Pothole Water Quality and Wildlife Program is different from other NRCS programs because it focuses more on preventing issues than repairing them.

"As a conservationist of more than 30 years, we would be better off if we actually prevented problems rather than fix them," Podoll states. "I'm very excited about this small piece that says this part of the ecosystem, these small wetlands are important, and we recognize that they're kind of a pain for agriculture, but if we give you an economic incentive to start thinking how you can use them better in your system as soil health, as wildlife habitat as a part of your overall cropping rotation, I think it's going to change the dialog between agriculture in the Prairie Pothole Region and the wildlife conservation people. They're going to see that we can work together."

Podoll explains that 109 farmers or landowners will participate in the program for the upcoming year, encompassing about 3,500 acres. She's optimistic that the Prairie Pothole Water Quality and Wildlife Program will help farmers look at seasonal and temporary wetlands in a new light.

"I think the program is a game changer in how we talk about the value of temporary wetlands. I think people will be more open to saying, yes, somebody obviously thinks they're important. It's not just about wildlife; it's about the hydrology, and it's about soil health," Podoll says. "Secondly, it changes how we look at conservation. Instead of fixing a problem after it occurs, we start think-ing about how we can be preventative. We have to get better at prevention."

The NRCS will work with applicants to determine which wetlands are eligible based on the National Wetlands Inventory. Once the wetlands are deemed eligible, producers will then need to decide which of the three available management levels is appropriate for their operation.

"Farmers are willing to protect these wetlands, especially if it doesn't materially encumber their operation," Devney states. "We're not saying they have to avoid those areas, and we're not taking land out of production. What we're doing is flipping the narrative from these things being a liability to the operation to being an asset."

To learn more about the Prairie Pothole Water Quality and Wildlife Program, contact your local NRCS office.

> —Story by Daniel Lemke, photo by Wanbaugh Studios

The Fun of it



Thank you for making the 17th annual Fargo golf tournament successful! The tournament is a way for the North Dakota Soybean Growers Association (NDSGA) to say thank you to members and supporters. Your membership dues and sponsorship of NDSGA events help to provide the necessary funds to continue policy and advocacy work in Bismarck and Washington, D.C. We're proud of our past successes and are continually working to make things better for soybean growers throughout North Dakota.

Congratulations to our tournament winners:

First Place: Team Ag Insurance Services: Bob Green, Scott Mitchell, Jay Mitchell and Joel Mitchell. *Second Place:*

Team SB&B: Scott Sinner, Todd Sinner, Jeremy Sinner and Bob Sinner.

Third Place:

Team AgCountry Farm Credit Services – Jamestown: Steve Dale, Randy Blaskowski, Nick Blaskowski and Morgan Dale.

Congratulations to our contest winners:

Closest to Hole #4: Josh Brehm Longest Putt #6: Geoff Lien Longest Drive #9: Jay Mitchell Closest to Hole #11: Nick Blaskowski Longest Drive #16: Jake Lee Longest Putt #18: Randy Hooey

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Lunch: BNSF Railway Lunch Coolers: Asgrow Golf Towels: Asgrow Signs: D-S Beverages.

—Story and photos by staff









Milo Braaten Portland, North Dakota

Tell us about your farm.

I live in Steele County between Portland and Finley. I live on the farm where my great grandfather homesteaded; it's been in the family since the 1800s. We raise corn, soybeans, sunflowers and edible beans. I farm alone, but I have help from my sons, along with a couple retired guys who have helped me from time to time.

What do you like best about farming?

I just enjoy where I live. I love the rural setting and making things grow. The simplicity of the rural life is wonderful.

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

No. I started on the farm working when I was 8 years old with my dad. When I got out of high school, it was nice to get away. I went to college and worked a year in the cooling and heating business with my degree. After my third year of college, I worked building furniture and cabinets, and I then I realized I couldn't be in a workplace doing the same thing every day. I just love being outside, and my dad came to me and asked if I would be interested in farming, and I jumped at the chance.

What's most exciting about the upcoming growing season?

That it's almost over. We didn't get much planted: 70 percent prevent plant. But the condition of the ground is very good—it's dried out—and we've controlled the weeds this year. Right now, it's looking like we have a pretty good chance of getting a decent crop put in next year, and hopefully, prices stay up.

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

Perry Ostmo contacted me because he was leaving the board. He told me about his experiences with the board, and he said it was probably the best board he's ever served on. I thought it was a great opportunity for myself to gain more knowledge about the soybean industry. It didn't

He said it was probably the best board he's ever served on.

take much for me to say "yes."

Why are soybeans part of your crop mix?

They're a pretty easy crop to raise. They work really well with your corn rotation. They've been lucrative, though the last few years when the prices fell, soybeans didn't look so good. But overall, they're a good mix.

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

A profitable market. Prices are coming around, though I just hope it's just not some short-lived situation. I just hope the export markets and trade climate continue to stay strong.

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

I would say technology and genetics, the genetic traits that we have in the seed. I've been doing this for almost 40 years, and what a difference of how we handle weed pressure and how we take care of our crops. It has changed so much, and the changes are because of improved technology and genetics.

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

I have two sons who are agron-

omists. I just hope they will come back to the farm, though I'm pretty sure they want to because they enjoy North Dakota. It's nice they have their agronomy degrees to do other things besides come back to the farm right away.

What do you like to do outside farming?

I am a car enthusiast. I like old cars. I enjoy riding motorcycle. I'm a lake nut, too, and have had a boat since I was young. I love water.

If you could go anywhere, where would it be?

My first cousin lives in New Zealand, and I'd like to visit him. Either that or I'd love to go to Alaska and Europe.

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

I would probably say (an) RTK guidance system over regular autosteer, so we could do a little more precision farming.

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

I really like the autosteer and the yield mapping. As I am getting older, not having to steer really saves on the body.

—Story and photo by staff



Ron Haugen North Dakota State University (NDSU) Extension Farm Management Specialist

Where did you grow up?

I grew up on a family farm near Aneta, North Dakota, and still actively farm.

Tell us about your education.

I graduated from Northwood High School, earned a degree in computer programming from North Dakota State College of Science, and later got my B.S. and M.S. degrees in agricultural economics from NDSU.

What brought you to NDSU, and how long have you been there? I attended college there and stayed. I've been with Extension for 29 years.

What is your focus at NDSU?

As (the) farm management specialist for NDSU Extension, I specialize in farm programs, crop budgets, custom rates, crop insurance, machinery economics, income tax, property tax, long-term viability and short-term cash flow. Generally, most farm-management topics. I am available to answer questions from producers and Extension agents.

Given the challenging farm economics, is there advice farmers need to keep in mind for their operation?

With low prices and weather problems that affect the bottom line, things have gotten more difficult. With tightening cash flow, the ability to refinance must be addressed. For those thinking about quitting, the best way to exit farming must be addressed. Producers that have built equity in the good years now have a decision on whether to dip into that equity to continue to farm.

When making these difficult decisions, be honest and upfront with family and lenders. Do not be afraid to ask for help. There are a lot of emotional strains when things start going bad. Be honest about that as well.

Given trade issues, a pandemic and nearly 3 million acres of prevented-plant acres in North Dakota, are these times nearly unprecedented for farm-management challenges?

Yes, these are extraordinary times, but in my memory, nothing compares to the difficulties of the farm crisis of the 1980s.

> —Story by Dan Lemke, photo courtesy of NDSU

Prevented Planting Acres NEARLY A RECORD

Imost every year, farmers somewhere in North Dakota are unable to get their crops in the ground because of adverse weather conditions. Wet conditions in 2020 pushed the state's prevented-plant acres to near record levels.

"It's definitely be in the top five of prevented-plant acres that we've ever recorded in North Dakota," says Brad Thykeson, North Dakota U.S. Department of Agriculture (USDA) Farm Service Agency (FSA) executive director. "What's probably unique about it is it's not a statewide event; it's mostly targeted in the eastern half of the state. We're in the top five all time with about half of the state affected, so you can probably imagine how much land is sitting idle in the eastern half of North Dakota." The USDA crop acreage report released on September 11 showed a national total of more than 10 million acres of prevented-plant in the United States. North Dakota had more than 3 million acres of cropland that couldn't get planted, including about 620,000 acres that would have gone into soybeans. More than 2 million acres were destined for corn and another 340,000 wheat acres that were not seeded.

Nearly one-third of the nation's prevented-plant acres are located in the eastern half of North Dakota.

Thykeson says that farmers dealt with the fallout from the 2019 harvest season which included early, heavy snow. Spring rains made the situation worse for many farmers.

"What we're experiencing is the hangover we had from the fall of

2019. There was just so much rain that kept falling for about three or four months," Thykeson states. "The standing crop was another big play in the prevented plant this year. We've never had that much standing corn going into spring. It's pretty hard to manage those acres with the crops still standing in there."

Thykeson explains that, years ago, farmers would do summer fallow on some acres, which was more common when fields lacked moisture. In recent years, the issue has been too much rain. In that case, leaving fields black and idle isn't good for the soil.

"Producers can do what they want, but they've been educated enough that they know leaving it black is not good for anybody. A lot of producers are trying to get something established in those areas to get ready for next year's crop," Thykeson says.

In addition to managing weeds and reducing erosion, establishing green cover in areas that couldn't be planted in 2020 improves the chances for a better outcome in 2021.

"We're seeing a lot of cover crops getting established in those prevented-plant acres," Thykeson explains. "What we're getting with the cover crops is some root structure back in the soil. Getting that ground in shape for 2021 is a very high possibility as long as Mother Nature cooperates, too."

In addition to dealing with prevented planting issues, Thykeson says that FSA offices have been inundated with a range of new and existing farm programs which the FSA oversees.

"Even our veteran employees have never seen this much of a smorgasbord of programs," Thykeson states. "From the Coronavirus Food Assistance Program, to WHIP Plus, certifying acres with prevented plant, emergency haying and grazing in some spots, county offices have been beyond swamped."

—Story by Dan Lemke

Bean Briefs

Mexico Announces Plan to Ban Glyphosate by 2024

In August, Mexican President Andres Manuel Lopez Obrador announced that his administration would ban the herbicide glyphosate by 2024, breaking its commitments to the United States-Mexico-Canada Agreement by violating the sanitary and phytosanitary provisions.

Over the past year, the American Soybean Association (ASA) has engaged with industry partners, Capitol Hill, and the U.S. government to voice the soybean industry's concerns about the actions taken by the Mexican government pertaining to crop protection and biotechnology tools. While these actions have been alarming, the ASA does not expect the situation to affect soybean trade between the two countries. Along with the National Corn Growers Association, CropLife America and the Biotechnology Innovation Organization, the ASA continues to press the U.S. trade representative and the U.S. Department of Agriculture to work with the Mexican government to find a solution that continues allowing the free movement of U.S. soybeans to Mexico. The ASA will continue to raise this situation in its advocacy efforts with the U.S. government.

A Century of Service

The American Soybean Association (ASA) returned to its roots in order to celebrate a century of coordinated efforts and the ensuing successes on behalf of U.S. soybean growers. With support from the Indiana Soybean Alliance and the Fouts family, who helped launch one of the nation's strongest agricultural advocacy offices, the ASA celebrated its 100th anniversary on the Indiana farm where it all started with a small, but significant, historical marker dedication and tours of heirloom soybean plots.

The outdoor ceremony was streamed live for soy supporters to celebrate safely across the country. Among the individuals helping the organization celebrate in Indiana were the U.S. Department of Agriculture's Deputy Secretary of Agriculture Steve Censky, who served the soy industry as the ASA CEO for two decades, and Indiana Gov. Eric Holcomb. Other notable guests were from Purdue University, the Indiana Soybean Alliance, the Fouts family, and ASA's past and present leadership.

ASA, Ag Groups Petition for Broader Rehearing on Ninth Circuit Dicamba Case

The American Soybean Association (ASA) led other farm-trade associations in urging the U.S. Court of Appeals for the Ninth Circuit to take a broader look at the dicamba case and supported the registrant motions for rehearing the case.

The original decision, made by a three-judge panel in June, vacated the dicamba registrations and sided with arguments filed by plaintiff non-government organizations (NGO) claiming that the Environmental Protection Agency (EPA) did not follow the law under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). The resulting vacatur caused widespread confusion and uncertainty for farmers amid the planting season.

While an ASA-led grower coalition filed an amicus brief last month defending the EPA's decision to allow the continued use of existing product stocks, this additional amicus brieffiled once again by the ASA, National Cotton Council of America, National Association of Wheat Growers, National Corn Growers Association, National Sorghum Producers and American Farm Bureau Federationaddressed the underlying case. The amicus brief stated that the panel failed to properly apply FIFRA's substantial evidence standard when creating the panel's own risk-assessment criteria, which the group believes the EPA should have considered. The brief also argued that the panel's decision inappropriately vacated product registrations that were not under consideration in the underlying NGO complaint. The grower brief contended that these concerns warrant an en banc, or rehearing, of

the dicamba case before a broader 11-judge panel of the Ninth Circuit.

The brief contended that the panel opinion "adversely affects the predictability, efficiency, and sustainability of growers' farming operations and their ability to rely on predictable and science-based regulatory decision-making and governmental oversight."

The groups also called for a fullcourt review in order to clear up the "misconception and misapplication of FIFRA's substantial evidence standard," which conflicts with existing law and jeopardizes the growers' abilities to rely on "predictable and expertise-driven regulatory decisions."

House Unanimously Passes New Water Resources Development Bill

In August, the House unanimously passed the bipartisan Water Resources Development Act of 2020 (WRDA) by a voice vote. The American Soybean Association (ASA) is pleased that the bill includes changing the cost-share ratio for Inland Waterways Trust Fund (IWTF)-financed lock-and-dam projects to 65 percent general fund and 35 percent IWTF through FY2027, a policy priority for which soybean growers have been advocating throughout 2020.

Earlier in the month, the ASA, along with 27 agricultural groups, sent a letter to the U.S. House urging passage of WRDA while highlighting the importance of making the cost-share permanent, like the Senate version of the bill, and not subject to the seven-year sunset clause included in this legislation. Introduced in May of this year, the Senate Environment and Public Works Committee's WRDA bill has yet to be considered by the full Senate.

SDA, USTR Appoints ASA President Bill Gordon to Ag Trade Advisory Committee

Minnesota farmer and American Soybean Association President Bill Gordon is one of 25 new members appointed by U.S. Secretary of Agriculture Sonny Perdue and U.S. Trade Representative Robert Lighthizer to serve on one of seven agricultural trade advisory committees. Gordon will serve on the Agricultural Technical Advisory Committee (ATAC) for Trade in Grains, Feed, Oilseeds and Planting Seeds.

The ATAC committee is comprised of senior representatives from across the U.S. agricultural community who provide advice to the U.S. Department of Agriculture and the Office of the U.S. Trade Representative on trade policy matters, including the operation of existing trade agreements and the negotiation of new agreements. Members of the six ATACs provide technical advice and guidance from the perspective of their specific product sectors.

Gordon and the other newly appointed advisors will serve until 2024. Each committee will be supplemented by additional appointments over the next four years.

ASA Joins the American Connection Project Broadband Coalition

As part of an ongoing, larger effort of American Soybean Association (ASA) engagement in the rural broadband space, the association has joined the American Connection Project Broadband Coalition.

Land O'Lakes, along with 48 other organizations, launched the coalition to advocate for publicand private-sector investment in order to bring high-speed internet infrastructure to rural areas. In the federal policy space specifically, there are three main goals: greater federal funding, better mapping for broadband deployment, and more coordination among agencies and areas of government.

Rural broadband policy is a top priority for the ASA during the pandemic. The ASA continues to advocate for rural broadband access to support a soy grower's ability to farm, to find markets for and to transport beans as agriculture becomes an increasingly more technology-driven sector.

FULL-CIRCLE RETURN

HERE'S HOW THE SOY CHECKOFF WORKS. The national soy checkoff was created as part of the 1990 Farm Bill. The Act & Order that created the soy checkoff requires that all soybean farmers pay into the soy checkoff at the first point of purchase. These funds are then used for promotion, research and education at both the state and national level.



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