

THE NORTH DAKOTA Soybean GROWER MAGAZINE

VOLUME 6 • ISSUE 6
DECEMBER 2017



INSIDE

Farming in a
Sustainable Way

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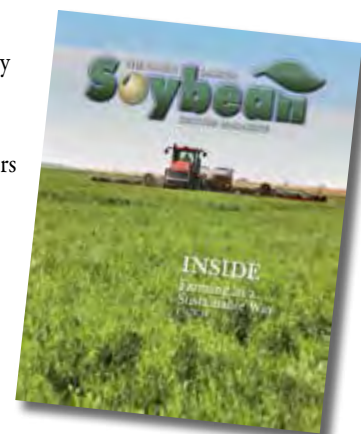
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On the cover

Farming sustainably means different things to different farmers. For some farmers sustainability means no-till or minimum till farming, while others manage their farms using conventional practices. Regardless of their tactics, most growers agree that if they are able to farm without depleting natural resources and they remain profitable so they can pass the farm on to the next generation, they're on a sustainable path.

—Photo by Wanbaugh Studios



The North Dakota Soybean Grower is published six times a year by the North Dakota Soybean Growers Association, 1555 43rd St. South, Suite 103, Fargo, ND 58103. Website: www.ndsoygrowers.com.

To update subscription information, please call 800-469-6409, (701) 239-7194 or email info@NDSGA.com.

Send editorial and advertising materials to Nancy Johnson, 1555 43rd St S, Ste 103, Fargo ND 58103, nancy.johnson@NDSGA.com. Publication of editorial or advertising material in the North Dakota Soybean Grower magazine does not imply endorsement by the North Dakota Soybean Growers Association. Check agronomic advice with local sources and always read and follow product labels.

Legislative Director Scott Rising and I have been attending various meetings since the session ended.

As usual, interim committees took some months to get organized and to hold their first meetings. Due to budget constraints, committee chairs were asked to keep their meetings to a total of 3 to 5 over the 18 or so months of the interim period leading up to the 2019 session. For some committees, this request will be difficult to meet, while others are charged with less complex issues. The idea to remember about interim committees is that their general purpose is to examine and discuss directions for the next legislature to take. What follows is an overview for what some committees are or will be looking at that we think could affect growers in North Dakota.

Interim Tax is taking a comprehensive look at property tax. Obviously, an issue for farmers, property taxes appear to be going up and could be controversial in the next session. Scott Rising has been covering this committee and says that it seems like just about everything is on the table for discussion.

Government Finance is looking for a tool to reduce budget volatility, but nothing of note has caught on yet. Another topic of great interest for growers is that the committee is looking for different means to fund transportation. Remember, North Dakota currently raises money that is only adequate to fund about a third of our depreciation on roads and bridges. Scott Rising is in touch with the Soy Transportation Coalition and hopes to bring that group to a committee meeting to testify.

The Budget Section reports that North Dakota finished with

a positive ending to the 2015-17 biennium with \$97 million, \$65 million of which can remain in the General Fund and \$32 million deposited in the Budget Stabilization Fund. More good news is that the 2017-19 biennium appears to be tracking to the projections. You may have noticed that our crude oil price is in the lower \$50 range, a marked improvement from last year when the price was languishing in the lower \$40s.

With 7 new appointees to the State Water Commission (SWC), the Water Topics committee met to review the current status of water projects, studies and issues. The Fargo-Moorhead (FM) diversion project is being watched for its effects on agriculture. The Red River Valley (RRV) Water Supply Project is also being monitored; we are interested in as many communities and rural water systems being hooked up as possible. There is also a move in the general direction to manage water by basin rather than with county water boards. Many water boards have already made moves in this direction by forming joint water boards. Fortunately, SWC members are appointed by drainage basin, which may help with that transition should the momentum continue.

Natural Resources has discussed how North Dakota is complying with Federal regulations about high-level radioactive-waste disposal. This discussion came about when researchers wanted to dig a bore hole about 8 inches wide and 3 miles deep to see what happened at that depth. Citizens (mostly farmers) testified that they were concerned the drilling was an

attempt to store high-level waste from another state. North Dakota regulates low level (hospital, x-ray, research, etc.) and the much lower level Technologically Enhanced Naturally Occurring Radioactive Materials.

Agriculture has met to hear about the Health Department's proposed nutrient-management plan. The nonpoint pollution statistics for nitrogen and phosphorous could be better, and the officials stressed that, with the grower's use of new fertilizer distribution technology, our waters can climb to cleaner status. There has also been a discussion about what might need to be looked at concerning vomitoxin testing. There were stories about wide differences within the same samples as well as much testimony from the feds and many agricultural groups. The committee was warned to be careful about changing the testing methodology while education and enforcement were stressed.

Lastly, Energy Development and Transmission has met the most. The committee is taking testimony from three hub cities and their counties while trying to ascertain how those communities (Williston and Williams County, Dickinson and Stark County, and Minot and Ward County) have used previous funding from the legislature to cope with the oil boom's effects. The committee is also looking at trying to provide stability for future funding so that communities can plan more effectively. Taxing wind energy is yet to be on the committee's agenda.

—Story by Phil Murphy



Veteran lawmaker and educator Phil Murphy has joined the NDSGA to serve as liaison between legislators and farmers.

More diverse uses for soybeans provide more opportunities for farmers to profit.

First of all, I hope that everyone had a safe and successful harvest. As we were busy in the fields this fall, the North Dakota Soybean Growers Association (NDSGA) was very active, helping to share agriculture's story and promote policies that affect farmers.

As I have talked about before, opportunities to use our soybeans in this country return more profit to the farmer. Biodiesel is an example of a soybean use that shows a great return across the country. The NDSGA has been working hard to ensure that the Renewable Fuel Standard (RFS) has a positive effect on farmers and the nation by showing not only how biodiesel affects engine performance through greater lubricity and fewer emissions, but also the economic value biodiesel has on agriculture and the entire economy. I would personally like to thank our two senators for stepping up to defend biofuels and production agriculture.

We had the opportunity to voice concerns

about the U.S. Fish and Wildlife wetland easements that producers have across the state. Many of these easements were acquired years ago. Whether you are in favor of these easements or not, it is time to look at the issues farmers are having and to help change some rules. These acres are governed by a completely different set of rules than what is set by National Resources Conservation Service policies. This lack of uniformity is burdensome and confusing for land owners, and we will continue working to create an outcome that is helpful to North Dakota producers.

Over the past 12 months, there has been a lot of talk about the next Farm Bill. These discussions are ongoing, which I hope is a good sign that Congress will address the Farm Bill in a timely manner next year. I cannot urge you strongly enough to voice your opinion. We would like to hear your thoughts and stories so that we can help deliver a positive outcome with



Craig Olson, President North Dakota Soybean Growers Association

the next Farm Bill.

The holiday season and the end of the year are approaching fast. I would like to thank everyone for their continued efforts to make agriculture a strong and reliable industry. If you would like to help our cause in pursuing a positive future for agriculture, please consider joining the North Dakota Soybean Growers Association.

Thank you, and I wish you the best this holiday season and in the coming year.



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

Name: _____
 Spouse: _____
 Date of Birth: _____
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 Phone: _____
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How did you hear about NDSGA? (Please circle one)
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 Yes _____ No _____
 Soybean Acres: _____ Total Acres Farmed: _____

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Working the Soil System

Morton County farmer Rocklin (Rocky) Bateman was at a crossroads. After farming

conventionally for years, financial challenges in the 1990s put him and his family in the unenviable position of needing to change how they farmed or to get out of the business.

The Batemans chose the former.

Tucked in the rolling sand hills near New Salem, North Dakota, Bateman farms land that has been

under continuous family ownership for 120 years. Some of the ground he currently farms was homesteaded by his great grandfather, and another parcel was settled by his great-great grandfather.

“When my family immigrated to central Morton County from Germany, all the really good land

had already been homesteaded, and only the marginal Heart River hills were left,” Bateman says. “We were conventional farming, but on these marginal soils, erosion had eliminated the very shallow topsoil, and our organic matter was gone. Nothing would grow anymore, and we didn’t know why.”

Time for a Change

Bateman started farming right after high school in 1973. He and his family made farming work for about two decades before they were forced to confront a harsh economic reality. What they were doing wasn’t working. Rather than leave farming, Bateman began to focus on soil health. As a result, 20 years ago, he committed to no-till farming.

“We didn’t just do a few acres; it was all or nothing,” Bateman admits. “It was the best decision I ever made.”

Bateman connected with researchers and local experts who were knowledgeable about no-till farming through his adult

farm-management group. He toured farms in western North Dakota where pioneering farmers were practicing no-till.

“That put me on the path to meet the right people and ask the right questions,” Bateman says.

In addition to no-till, Bateman’s approach includes a dynamic mix of cover crops. The goal is to mimic the native prairie which is a combination of warm- and cool-season grasses and broadleaf plants. A decades-old analysis showed that the prairie was once home to over 120 species of plants that were growing in community. Bateman uses a wide range of plants, including soybeans, peas, oats, spring wheat, durum, canola, alfalfa and cover crops, to help speed up biological time and to restore the land to a more productive state.

“Our goal with cover crops is to get 10 or more species in the ground. That has a multiplying effect by adding diversity of root systems,” Bateman says. “We are trying to speed up our soil’s recovery time.”

Rather than simply rotating crops, Bateman rotates the root



Nancy Jo and Rocky Bateman farm land that has been in the Bateman family for more than 120 years.

systems that will best restore the soil based on needs, including economics and disease pressures.

Bateman implements the five pillars of soil health: soil armor (crop residue), minimizing soil disturbance, plant diversity, continual live plants and roots, and livestock integration. Bateman's daughter and son-in-law raise cattle that graze on crop residues and cover crops. He also uses cattle manure from the corrals to help improve the soil quality for particularly troublesome spots.

Building Productivity

Soil tests on Bateman's land in the early 1990s showed less than 1 percent organic matter. Now, he has fields that have tested as high as 5.2 percent organic matter. Because that carbon is what Bateman calls "gas in the tank of the soil biology," his productivity has climbed along with the increased organic material and is

comparable to the best nearby soils.

"The system is giving back," Bateman says. "In 20 years, I've tripled my corn and wheat yields. Soybeans are relatively new, but we're on an upward trend for yield there, too. That's exciting. It proves the system works."

Farming in a semi-arid region, rainfall can be at a premium. The area's average annual rainfall is less than 14 inches. Bateman's no-till system only disturbs about 4 to 5 percent of the soil when planting. The rest of the time, he leaves the soil alone and lets the root systems do their work.

"I used to think rainfall was the limiting factor," Bateman says. "Water wasn't the issue; my tillage was. Once I converted, the soil took off."

Sustainability

Bateman says that he spent half of his farming career doing things

wrong. Switching to no-till, incorporating cover crops and focusing on soil health were game changers for him.

"Soil health drives everything," Bateman contends. "Instead of fighting it, we're working hand-in-hand with the soil."

Not only has his approach increased yields and restored soil health, there are other practical benefits. Bateman says that increased organic matter and soil health have reduced the need to add commercial fertilizer. Fuel use has shrunk from about 6 or 7 gallons per acre to 2 gallons per acre. Equipment repairs, tractor hours and human work hours have also been reduced, which all add to the farm's bottom line.

"We enhance our sustainability by mimicking nature. This is a long-term process that we will be working on for generations," Bateman says. "We are looking to stop soil erosion, nutrient loss and improve water quality. In my opinion, a true no-till system gives you all of this for free."

Bateman is now working to restore the soil bacterial and fungal

ratios. Having the proper balance could mean that the soil will be in a better position to naturally fight disease and even weed pressure.

Bateman is sharing what he's learned and his passion for soil health. In addition to farming, Bateman is a director for the Morton County Soil Conservation District, is a state director for the North Dakota Association of Soil Conservation Districts and works with the USDA-Agricultural Research Service's Northern Great Plains Research Station in Mandan.

Failure is not an option.

Bateman's goal is to pass the farm he's been working for 20 years to restore on to the next generation.

"I am going to continue building and restoring my soil's health so that I can reduce or eliminate my dependence on commercial inputs," Bateman says. "I believe it is in my best interest to let the soil give me what we need for free rather than spending money on it."

—Story and photos by Daniel Lemke

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Rocky Bateman uses cover crops with diverse root systems to restore and build soil health.



Dear Fellow North Dakota Soybean Producers,

The holidays are upon us, and I, on behalf of our board and staff, want to take this opportunity to wish all North Dakota soybean farmers and their families a very Merry Christmas and a happy and prosperous New Year! It's been another strong year for soybeans here in the state.

The North Dakota Soybean Council (NDSC) has been busy now that harvest is over. In mid-November, NDSC's research committee met to discuss proposals and hear presentations made by

researchers. The board looks forward to supporting another year of quality soybean research that you can use on your farming operations. I encourage you to review NDSC's annual Research Update that accompanies this magazine issue. Research is one of the most important efforts NDSC supports. The results of that research are paying dividends.

Don't forget to mark your calendars for the 2018 Northern Corn and Soybean Expo. This is the first year we will be partnering

with our friends at North Dakota Corn to bring producers a one-day event. Our joint convention will be at the FargoDome on Tuesday, February 13th. We have planned a very exciting, fun filled, educational Expo. With great headliner speakers, informative breakout sessions and an expansive tradeshow, I urge you all to plan to attend on February 13th. See page 20 for full Expo agenda.

As always, NDSC continues to effectively invest and leverage North Dakota soybean checkoff resources to maximize the benefits of North Dakota soy, and in 2018, our mission will remain the same.



**Joe Morken,
Chairman
North Dakota
Soybean Council**

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It's Election Time for the North Dakota Soybean Council

Not Ready for Board Service? Consider a County Representative Position

In 2018, the North Dakota Soybean Council (NDSC) will seek four soybean farmers from the following districts to serve on its Board of Directors:

- District 3: LaMoure and Dickey Counties
- District 4: Cass County
- District 6: Stutsman County
- District 11: Northwestern North Dakota Counties (See map)

In January, nomination forms will be issued to soybean producers in the listed counties. Election ballots will follow in February. You can nominate yourself or someone you know in your county who has a passion for the soybean industry and a willingness to serve.

Who is qualified to serve as a director on the NDSC?

Any person who plants or causes to be planted a soybean crop where the person has an ownership interest with the intent that, upon maturity, the crop will be harvested. The person will meet this requirement during the next available growing season or has met this requirement during the immediately preceding growing

season. Organic producers who have been exempted from paying assessments are not eligible to serve on the NDSC board.

What is the time commitment required for board service?

The NDSC board meets quarterly for two days in Fargo. Most board members are appointed to serve on state and national boards that work to support the soybean industry. Examples include the Soy Transportation Coalition, the North Central Soybean Research Program, the National Biodiesel Board, the World Initiative for Soy in Human Health, the U.S. Soybean Export Council and the Northern Crops Council. These external meeting commitments range from 3-4 meetings a year, averaging 1-3 days in length. Reimbursement is provided for travel to and from these meetings, along with lodging and meals.

What are the expectations of service?

The NDSC board is a working board, meaning that directors are expected to attend all committee and board meetings, to come

prepared to the meetings in order to make informed decisions, to attend various council-sponsored meetings and events, and to comply with council policies as well as state and federal regulations. New directors participate in four orientation sessions throughout the year in order to integrate them into the council's work. Directors are supported by a six-member team of qualified, experienced and dedicated employees.

Why serve? What's in it for me?

Service on the NDSC Board of Directors:

- Enables you to influence how your checkoff dollars are invested.
- Places you in a position to influence the industry's direction.
- Enables you to greatly expand your network of fellow producers, leaders and key soybean-industry influencers on a state and national level.
- Increases your industry knowledge through your exposure to production research, domestic and international marketing, educational opportunities and other areas.

What are the responsibilities of a county representative?

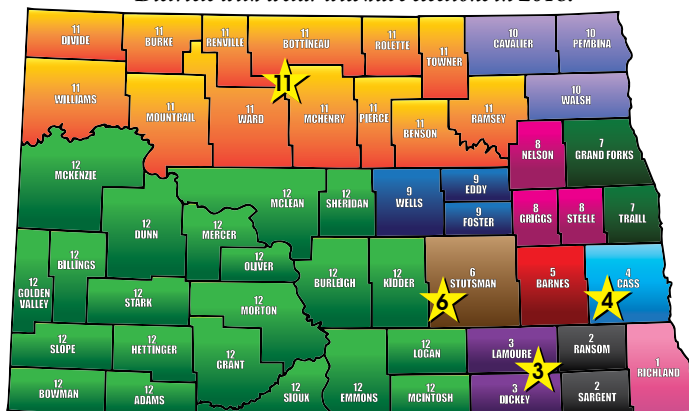
While there are no regularly scheduled meetings for county representatives to attend, there are many opportunities to serve that do not require a large investment of time or travel. Examples of ways to serve include

- Participate in soybean-producer outreach efforts, giving feedback about programs and initiatives that the NDSC is interested in pursuing.
- Provide input to establish the NDSC's research priorities for the year.
- Attend the annual Northern Corn and Soybean Expo to be recognized.
- Participate in the NDSC director-election process.
- Attend NDSC sponsored events and producer-education meetings as able.
- Help promote, educate and communicate the NDSC's work to producers in your counties.
- Communicate issues of concern or ideas about the soybean industry or the NDSC to the NDSC.

How can I learn more about serving on the NDSC board or as a county representative? Contact NDSC CEO Diana Beitelspacher by email: dbeitelspacher@ndsoybean.org or visit our website, www.ndsoybean.org, for election updates.

—Story by staff

Districts with a star will have elections in 2018.



What counties are included in the 2018 elections?

- LaMoure, Dickey, Stutsman, Cass, Divide, Williams, Burke, Mountrail, Renville, Ward, Bottineau, McHenry, Rolette, Pierce, Benson, Towner and Ramsey.

North Dakota Soybean Council Hosts Chinese and Indonesian Soybean Buyers



Chinese visitors watch North Dakota soybean harvest.

A delegation of soybean buyers from China and Indonesia, hosted by the North Dakota Soybean

Council (NDSC), visited farms and elevators in Cass, Steele and Traill Counties on October 2, 2017. The purpose of the delegation's visit was to build relationships between North Dakota soybean producers and international customers, and to discuss the quality of this year's soybeans being harvested in North Dakota.

The group collected samples of North Dakota soybeans in order to test the moisture, essential amino acids, protein and oil.

The 15 guests visited the NDSC office on the morning of October 2nd. NDSC CEO Diana Beitel-spacher officially welcomed the group and provided an overview of the NDSC, the soybean checkoff

and the North Dakota soybean industry. The daylong soybean tour of the Red River Valley included visits to Maple River Grain and Agronomy, Casselton; Joe Morken's family farm, Casselton; Jim Thompson's family farm, Page; Jason Mewes' family farm, Colgate; Mike Satrom's family farm, Galesburg; and the Alton Grain

Terminal, Hillsboro. North Dakota soybean farmer Joel Thorsrud of Hillsboro met the group at Alton.

"We are always happy to show and discuss the quality of our North Dakota soybean crop and build relationships with our important customers," says NDSC Chairman Joe Morken. "We are also proud to provide North



Group photo at Joe Morken's family farm in Casselton.



Page farmer Jim Thompson, far right, visits with international guests at his farm.



Jason Mewes of Colgate visits with international buyers.

Dakota soybean samples to these visiting, major feed and food buyers, so they can see exactly what they are buying: an abundant, safe, clean and quality product for their families, companies and fellow consumers.”

About 1.936 billion bushels of U.S. soy were exported to customers around the world during the 2015-2016 marketing year. The

value of these exports came to a record of more than \$24.8 billion. In 2016, North Dakota produced 249-million bushels of soybeans. Exporting is a key element for North Dakota soybean producers because over 90 percent of the soybeans harvested in North Dakota leave the state. Approximately 70 percent of the soybeans grown in North Dakota are shipped to the



Hillsboro soybean farmer Joel Thorsrud answers a buyer's questions.

Pacific Northwest and are destined for Southeast-Asian markets.

“Time spent in-person with our customers is an essential piece of what we do to promote North Dakota soybeans,” says NDSC Director of Market Development Stephanie Sinner. “We really appreciate our soybean farmers taking time out of their busy

harvest season to visit with our trade delegation and talk about their farming operations. For many of our guests from overseas, this is their first time on a farm, so getting to know our farmers one-on-one is invaluable for our industry.”

—Story and photos by staff



Galesburg farmer Mike Satrom shows a Chinese buyer the quality of North Dakota soybeans.



Kevin Satrom, Galesburg, gives guests combine rides.



North Dakota Soybean Council Treasurer Participates in 35th Anniversary Celebration of U.S. Soy in China

Langley tours the Shanghai Songjian Maotian Wetland Ecological Farm. The IPA system requires higher-quality feed with high protein and better water stability for lower-feed conversion and less waste removal, which means more soy-based feed consumption. U.S. soybeans are a perfect fit.

Collaboration is the key takeaway from the recent 35th anniversary celebration of U.S. soy in China.

In September, North Dakota farmer Austin Langley traveled to Beijing, Shanghai and Hangzhou to take part in a mission that marked 35 years of partnership between the U.S. soy industry and China. Langley, of Warwick, is a director and treasurer for the North Dakota Soybean Council.

A delegation of U.S. grower leaders, representing more than 300,000 U.S. soy farmers, visited China from September 16-23, on a mission that marked this milestone.

Langley, who calls the visit “fast-paced,” says that the group went from talking with government officials and industry leaders in Beijing, to discussing the importance of trade policies, to meeting with feedmill buyers in Hangzhou, to visiting an aquaculture farm in the Shanghai area, all in the course of a few days.

He says that the mission was eye opening in a number of ways. “A lot of times, we farmers drop our beans off at the elevator and just forget about it.” When soybeans are put on a train car in North Dakota, they are shipped to the Pacific Northwest. “It takes 18 days for the beans to go from Seattle to Beijing.”

At a meeting with the Ministry of Agriculture in Beijing, delegates met with Ye Anping, deputy general, Department of International Cooperation, who called for the U.S. soy industry to focus more efforts on public education around biotechnology.

“We need to stand in each other’s shoes and understand our positions. That’s the best way to mutual understanding,” Mr. Ye said.

Speaking to the U.S. growers, Mr. Ye continued, “We can see that you are all very proud to call yourselves

farmers. One day, when Chinese farmers are also proud to say they are farmers, that’s when we’ll know that we modernized agriculture.”

At the Chinese Feed Industry Association Meeting, the grower leaders met with He Xintian, secretary general, who stated, “Our organizations have great potential

for collaboration. We require more and more soybeans every year. Soybean production in China cannot meet demands of the market here, and U.S. soybeans have a great reputation in this market.”

Prior to the 35th anniversary celebration gala, the U.S. delegates met with U.S. Ambassador to



A large Panamax arrives to China from the Pacific Northwest of the United States carrying U.S. soybeans.



China Terry Branstad in order to learn more about the market for U.S. soy in China. The grower leaders listened to Ambassador Branstad's views about the overall relationship between the U.S. and China, China's view of the U.S. as a supplier of agriculture products, China's own ag production, biotech approvals and China's continued demand growth for soybeans.

The group toured the Hebei Hopefull Grains and Oils Company, one of the biggest privately owned soybean-crushing groups in China and an active participant in the U.S. soy industry's activities both in China and the U.S. During the 2015-16 marketing year. The Hopefull Group was one of the top 10 importers of U.S. soybeans with a total purchase of over 1 million metric tons (MMT); the U.S. share of the company's total purchase was 46 percent, 11 percentage points higher than the national average of 35 percent.

In Shanghai, the U.S. delegation toured the USSEC's intensive pond aquaculture (IPA) farm in Songjiang. IPA technologies utilize U.S. soybean meal as a primary ingredient for fish feed and help to create a preference for U.S. soybeans. China is the world's largest aquaculture-producing nation, accounting for more than 60 percent of the global aquaculture production.

In Hangzhou, participants attended the JCI conference and a gala dinner.

On the mission's last day, par-



Ambassador Branstad responds to Langley's question about the importance of Chinese markets during the meeting prior to the 35th anniversary celebration gala.

ticipants visited the Liangyou Port Logistic Complex in Waigaoqiao, Pudong, where they saw a Panamax from the U.S. Pacific Northwest unloading bulk soybeans.

China remains U.S. soy's top customer, buying more than one of every four rows of soybeans which are grown in the United States.

"As farmers, we wear a lot of hats, but we need organizations like USSEC to work with countries like China, not just to make contacts but to keep markets open for our soybeans," says Langley.

"It's really important for the next generation, like me, to get involved," Langley emphasizes. "We are the future of trade."

—Story and photos courtesy of Jen Del Carmen, U.S. Soybean Export Council



During a processor tour, Langley checks out a large container of soybean cooking oil that is sold in China.



Myths, Tips & Facts: Diesel and Biodiesel Use in Winter

North Dakota ranks second only to Alaska for bragging rights about the coldest winters in the

United States, which can make life difficult for diesel users. Diesel really isn't meant to function in cold temperatures, but proper understanding and fuel management can keep you running all winter long.

Myth: Biodiesel causes filter plugging in cold temperatures.

Fact: Diesel fuel requires special handling in cold weather. There are many factors that cause filter plugging in the winter.

- When temperatures get below 32°F, water freezes. If you have water in your fuel system, you can see icing problems below 32°F.

Tip: Avoid water-absorbing filters. They collect water and freeze when temperatures are below the water's freezing point.

- Typical North Dakota diesel has

a cloud point of -5°F to 5°F. In order for diesel to operate below these temperatures, diesel users must blend with No. 1 diesel and/or use diesel-fuel additives with anti-gel.

Tip: Fuel additives must be added when the fuel temperature is at least 10-15 degrees above its cloud point.

- The colder the temperatures, the thicker the diesel fuel gets. It doesn't take much to restrict the flow through the fuel filter, and any type of contamination will be more pronounced in winter: water, sediment and oxidation can lead to filter plugging.

Tip: Install a new fuel filter when going into the winter.

Myth: Biodiesel causes diesel to look milky and thicken during freezing-cold temperatures.

Fact: Paraffin is a naturally occurring material in petroleum diesel fuel. The diesel's cloud point refers to the temperature when the first wax crystals appear. When the fuel's temperature is at or below its cloud point, more paraffin appears and sticks together, forming bigger compounds which fall to the bottom of the tank. Wax Anti-Settling Agent additives are used to keep the paraffin from attaching to each other and suspending in the fuel

rather than collecting at the bottom of the tank where they can cause filter plugging.

Myth: Farmers are encouraged to use B10 or B20. Higher blends aren't good to use during harvest because farmers will have problems if they are still running a combine in November.

Fact: B10 and B20 have higher cloud points than No. 2 diesel. No. 2 diesel in North Dakota has a cloud point of about 0°F. B20 with that same base No. 2 diesel and vegetable-based biodiesel has a cloud point of about 6°F to 8°F. BEFORE the temperatures get really cold and regardless of biodiesel use or not, think about how you winterize your fuel if you still have work to do in the field. Adding No. 1 diesel will lower the cloud point. Adding a winter-diesel additive will lower the temperature at which you can operate. In order to work, fuel additives must be added when the fuel temperature is at least 10-15 degrees above its cloud point. Utilizing B10 or B20 is not recommended if you need to use the fuel during the winter. For farmers who are done with diesel once harvest is finished, let the fuel freeze, and it will melt in the spring without any issues. If you need to

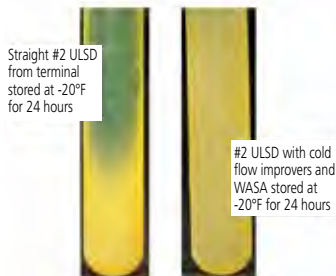
use your diesel, blend in more No. 1 or winterized No. 2 to get to a B5 level.

Myth: Even low biodiesel blends, such as 5 percent, lead to winter-operability problems.

Fact: Biodiesel blends of B5 and lower are physically similar and perform the same as petroleum diesel fuel. In fact, the specification for petroleum diesel, ASTM D975, includes biodiesel blends up to 5 percent for on/off road engines. Whichever methods you utilize to winterize No. 2 diesel fuel, use the same strategy with biodiesel blends of B5 or lower. Minnesota is the next-coldest state after North Dakota. Minnesota's No. 2 diesel fuel has contained 5 percent biodiesel in the winter since 2008.

Contact the Regional Diesel Helpline with questions about diesel or biodiesel fuel, or for help with filter-plugging issues: (800) 929-3437.

—Story by Lisa Peddersen, MEG Corp.



Wax crystals stick together and fall to bottom of the tank.

WASA keeps wax crystals from joining together and suspending in the fuel.

Cloud Points

Diesel samples were collected from terminals in North Dakota. The samples were tested for their cloud point. Then, soy biodiesel was added to make B10 and B20 blends, and cloud-point tests were conducted on those samples. The results indicated that the B10 and B20 blends would operate at temperatures of 8°F or higher. Winter diesel additives would need to be added around 20°F in order to achieve operability below 0°F.

CLOUD POINT

Type	No. 2	B10	B20
Fuel A	0°F	3°F	5°F
Fuel B	2°F	5°F	7°F
Fuel C	0°F	3°F	5°F



Pooling Resources FOR THE Greater Good

When good people come together, great things happen. This isn't the official motto of the

North Central Soybean Research Program (NCSRP), but it's certainly representative of the group's contributions to the soybean industry over the last quarter century.

The NCSRP is a farmer-led organization that invests soybean-checkoff dollars for regional research. In addition to North Dakota, 11 other state soybean boards actively participate and fund NCSRP: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, Ohio, South Dakota and Wisconsin. The board meets three times a year to discuss research proposals, the progress of current projects, common issues among the states and the direction of future research.

"Soybean pests don't know where the boundaries of the states are," said Gene Stoel, NCSRP president and a farmer from Minnesota. "By working together, we get a broader perspective on what needs to be done. The pests may be a little different in each state, but knowing that gives us a leg up on the research that needs to be done."

The 12 NCSRP-member states grow nearly 85 percent of the soybeans produced in the United States and represent more than 350,000 farmers. The farmers who represent these states on the NCSRP board have a shared vision

and commitment to regionally coordinated research and communication efforts.

The NCSRP has funded hundreds of research projects on dozens of topics. One of the NCSRP's most publicized projects, the Second Soybean Cyst Nematode (SCN) Coalition, is co-led by North Dakota State University's Sam Markell.

The SCN coalition is challenged with raising awareness about the SCN pathogen and integrating

ways to combat it. Motivating the coalition are several challenges that are unique to the SCN pathogen and how it has been managed for the last few decades. The most concerning issue is farmers' lack of awareness or apathy toward the situation. As part of a 2015 survey, researchers found that 45 percent of farmers didn't think identifying SCN was important, and of these farmers, 69 percent didn't think that SCN was a serious issue. This means that not only is SCN the

biggest yield robber for North American soybean farmers, but also that the farmers, often, aren't aware of the damage being caused.

"Growers a generation ago quickly learned about SCN and started managing it with the best tools they had," said Markell. "Once something is under control and being managed, you don't tend to actively think about it as much. The problem with SCN is that it's been changing, so the old tools aren't as good, meaning the growers aren't managing it as well as they thought."

In 2017, the NCSRP will celebrate its 25-year anniversary of helping north-central farmers invest and benefit from checkoff dollars for research. From yield improvement, to yield preservation by pest and disease management, to farmer communication, the NCSRP has had a major influence on the soybean industry at the state, national and regional levels.

—Story by Allie Arp, NCSRP,
photo by Creative Treatment



Dr. Sam Markell discusses SCN.

Keeping it Simple



Jamestown, North Dakota farmer Tony Wagner was already committed to farming in a sustainable way

when he got an eye opener that cemented the importance of protecting the soil.

Several years ago, Wagner was removing an old fence from a field that had a 4- to 6-foot tall berm of

soil around it that had built up over the decades. The dirt, what Wagner called “blow sand,” extended about 60 to 80 feet from the fencerow. Wagner started removing the soil with a scraper in an effort to

smooth the field. When he got down a couple feet, he made a surprising discovery.

“Another fence,” Wagner says. “So much dirt had blown in, probably since the 1930s, that someone put

another fence right on top of the old one because the first fence had been completely covered up by dirt.”

A Different View

At an early age, Wagner knew that farming was for him. He began farming his own property by the eighth grade using his parents’ equipment. He left for college, earned a degree from the North Dakota State College of Science and promptly returned to the farm. Wagner now farms with his father and one hired hand, producing soybeans, corn, wheat, field peas, barley and oats. They also raise cattle.

Part of Wagner’s efforts to be sustainable include a high percentage of no-till farming. The only tillage that takes place is where corn will be planted the following year so that fertilizer can be banded.

“We are trying to conserve moisture and reduce erosion,” Wagner says of the move to nearly all no-till farming. “We’ve also reduced our fuel consumption by one-fourth to one-third, and we’re farming more acres than we used to.”



Jamestown farmer Tony Wagner’s efforts to conserve soil and moisture have yielded productivity benefits, too.



Cover crops are planted following early season crops like wheat. The next year Wagner plants crops, including soybeans, into the cover crops.

Wagner's Process

Jamestown, North Dakota, farmer Tony Wagner waits until his early season crops are harvested before planting cover crops into those fields. Wagner's chosen cover crop blend is seeded following wheat, barley, oats or peas.

"We usually plant them toward the end of July or early August," Wagner says.

Rather than using a broadcast application, Wagner uses a seeding tool to incorporate the seed into the soil. The early planting date allows plenty of time for the crops like barley, rye, and radishes to get established. The plants can have months to grow before winter comes.

"About half of the crops we will terminate in the spring, the others will die with the frost," Wagner says.

Plants like cereal rye are winter hardy and green up in the spring. Wagner says he typically sprays the over-wintering cover crops 10 to 14 days before planting crops like soybeans into them. The cover crops die before they compete for water, nutrients and sunlight with whatever cash crop has been planted.



About 10 years ago, Wagner began incorporating cover crops into his operation. He's worked with crop consultant Lee Briese for many years, seeking innovative ways to improve the soil's health. Wagner says that the land he farm ranges from sand that won't even stay in a soil probe to heavy, dense soil. Cover crops help him manage both soil types. He typically seeds 3 or 4 different cover crops into each field, with a different mix of barley, oats, rye, peas or radishes customized for each field's needs.

In addition to reducing erosion, Wagner says that the cover crops help the soil to hold more water. The soil in one of his fields which was seeded to cover crops didn't freeze during the winter of 2016-2017. It was covered with 16 to 18 inches of snow which insulated the soil. Wagner could insert a soil probe into the ground the entire winter while a soybean field without cover crops across the road froze solid.

"By spring, both fields lost their snow cover at the same time. In the field with cover crops, there was no

water standing while the other field had water in every low spot you could find," Wagner says.

Basic Approach

Wagner says that he is one of the few farmers in his area who is no-till farming and incorporating cover crops. While the process can quickly become complicated, Wagner says that he keeps it simple. All of his wheat, pea, barley and oat fields are planted with cover crops after harvest. He doesn't attempt to spread cover-crop seeds over the standing crops because he likes to make sure that the cover-crop seeds get into the ground.

"I'm keeping it very simple," Wagner contends. "I don't get too radical in what I'm doing, but I am learning new things."

Wagner says that the use of no-till management and cover crops has been worth it for him. In addition to reducing erosion, cutting down fuel consumption and managing water better, the cover crops have a soil health and productivity benefit.

"We are seeing that, 2 years after incorporating cover crops, there is a 10 to 15 percent yield jump in all crops," Wagner says. "We leave strips so we know where we had cover crops and where we didn't."

Wagner admits that making the switch to no-till with cover crops isn't all "sunshine and rainbows," but it works for him. The key is making the commitment.

"I think it's working great, but it's an adjustment. It's a whole new way of farming," Wagner says.

Wagner knows that other farmers are watching what he does. He also knows that, for growers to recognize the true value of this approach, "you can't try it one year, say it didn't work and then give up. You have to be patient."

—Story by Daniel Lemke,
photos by Wanbaugh Studios

Sustaining Customer EXPECTATIONS

Developing a universally accepted definition of sustainability is nearly as elusive as the legendary

Loch Ness Monster. While many organizations and entities have their own standards, most definitions center on balancing today's resource requirements with the need to protect the well-being of future generations.

For farmers, sustainability means that, in an era of socially conscious consumers, how agricultural commodities are grown has become nearly as important as the crop itself. Global soybean custom-

ers are no different than individual consumers. Because buyers can purchase soybeans from multiple global sources, U.S. farmers strive to understand and to meet the export partners' expectations while remaining economically viable.

In recent years, sustainability has grown from a concept to an expectation. U.S. soy customers want assurances that the soybeans are grown in a sustainable manner. There is no universal definition

of sustainability when it comes to agricultural products, but U.S. and North Dakota soybean farmers focus on the care and management of resources because those are good practices for the environment and for business.

"U.S. soybean farmers have implemented sustainable farming practices that are not only environmentally friendly, but also make economic sense and are socially responsible for the community,"

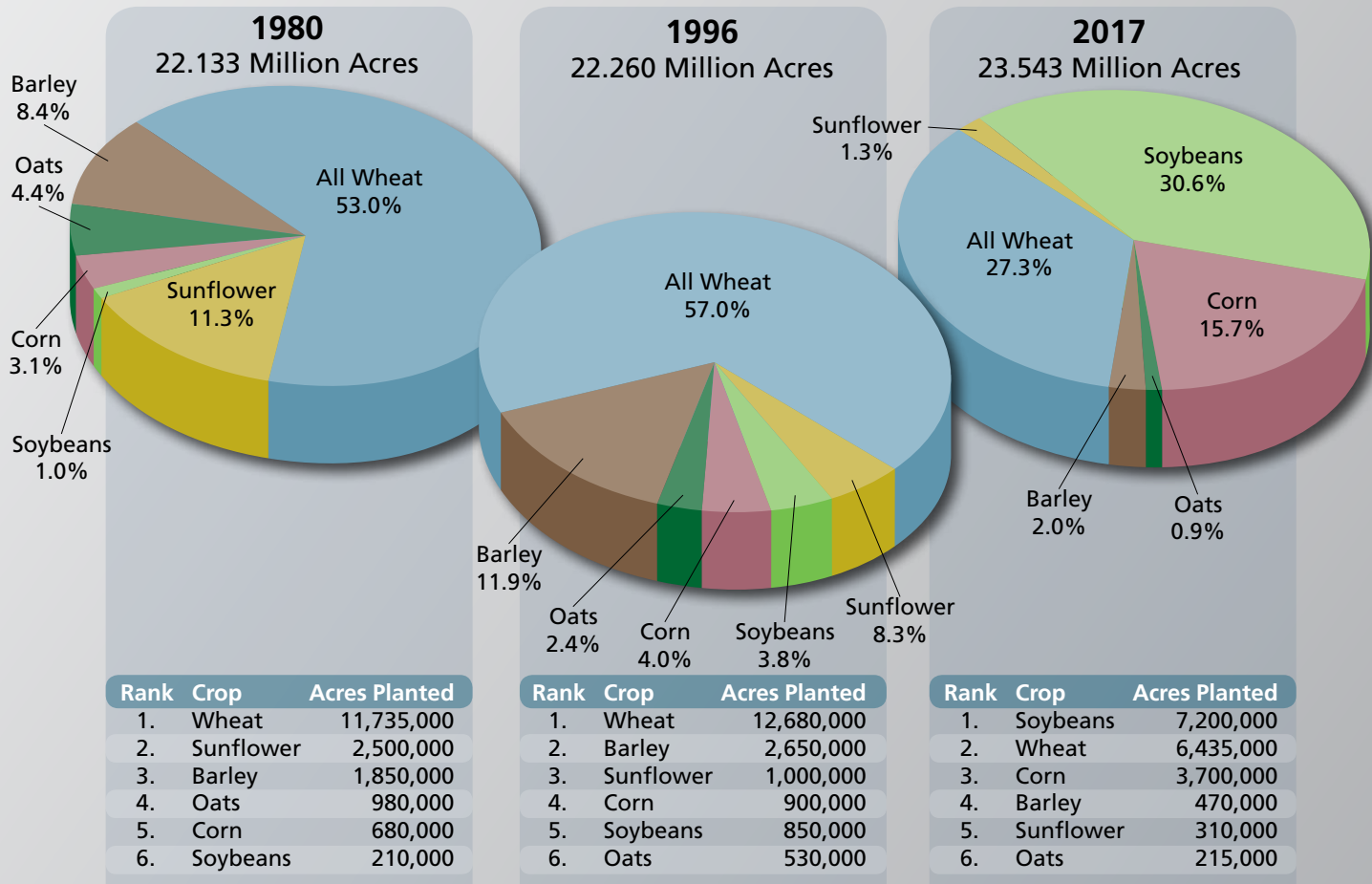
says Rosalind Leeck, marketing director for the U.S. Soybean Export Council (USSEC). "From crop rotation and reduced tillage to nutrient and water management, it's the many things U.S. soybean farmers do that add up to the big picture of sustainability."

Taking Credit

Valley City farmer Monte Peterson believes that most North Dakota farmers are farming sustainably even if they don't verbalize it. To stay in business, often for generations, farmers must be doing something right.

"Each of us does what we believe to be sustainable," Peterson

Percentage of North Dakota Principal Crops—Area Planted by Year



says, “but we don’t always make the connection. A lot of times, farmers shrug it off. We need to take note and talk about what we’re doing. We need to communicate that message.”

Just as consumers around the world are demanding sustainable products, soy customers are demanding supply chain sustainability. Leeck says that this increased emphasis has elevated sustainability from a “want” to a “need.”

“Certifying raw materials, such as soy products, as ‘sustainably-sourced’ meets consumers’ growing environmental demands,” Leeck says.

The USSEC has partnered with the United Soybean Board, the American Soybean Association and other industry partners to develop the U.S. Soybean Sustainability Assurance Protocol (SSAP). The SSAP is a third-party sustainability certification that is based on U.S. conservation laws and the best practices of more than 275,000 U.S. soybean farmers. This

protocol helps inform customers that their sustainability demands are being met.

“Farmers implement practices every day that make big contributions in the area of sustainability, including crop rotation, water management, reduced tillage, pest management, nutrient management, precision farming and conservation, to name a few,” Leeck contends.

“We need to share the message of the way we’re doing things on our farms,” Peterson adds. “It isn’t dreaming up something new that has to be done—we’re doing it.”

Many people in the soy industry are working to help customers understand that, for U.S. soybean farmers, sustainability isn’t just a buzzword; it’s how they do business. Continuously improving sustainable farming practices is needed to feed a growing population while minimizing the impact on the environment.

—Story by Daniel Lemke,
photos by Staff



USSEC Marketing Director Rosalind Leeck says farmers do a lot of things that make them sustainable.

Establishing a Protocol

The U.S. Soybean Sustainability Assurance Protocol (SSAP) was established by the U.S. Soybean Export Council (USSEC), the American Soybean Association and the United Soybean Board in order to address customer concerns. The protocol is a certified, aggregate approach to demonstrate the sustainability performance of U.S. soybean production.

The U.S. Department of Agriculture (USDA) and other sources compile data regularly. The organizations collect data from U.S. soybean farmers through existing government programs. Common practices, such as crop rotation, water and nutrient management, as well as reduced tillage, all contribute to careful stewardship of resources, a key component of sustainability. The precision-farming practices employed by many farmers also contribute. According to the SSAP criteria, 98 percent of U.S. soybeans are grown sustainably.

There are a number of sustainable practices that soybean farmers are already using. According to the United Soybean Board, the methods include

- **Crop Rotation:** 94 percent of soybean acres are under continuously rotated plantings, contributing to increased biodiversity.
- **Water Management:** Soybean farmers use no-till farming, grass filter strips, cover crops, etc. to manage water. These practices help slow the runoff from fields, trapping and filtering sediment, nutrients and pesticides before they reach surface waters.
- **Reduced Tillage:** 70 percent of U.S. soybean acres use conservation tillage, including no-till.
- **Pest Management:** 49 percent of U.S. soybean farmers scout their fields weekly during the growing season.
- **Nutrient Management:** 46 percent of U.S. soybean farmers test their soil every 1-3 years.
- **Precision Farming:** 43 percent of U.S. soybean farmers use precision technology to increase on-farm efficiency.



Valley City farmer and USSEC board member Monte Peterson knows customers worldwide care about how crops are grown.



**NORTHERN
CORN
SOY
EXPO**
FARGODOME • 2018



February 13, 2018
7:30 a.m. – 4:30 p.m.



FargoDome
1800 N University Drive
Fargo, ND 58102

7:30 a.m. – 8:15 a.m.

Registration and Buffet Breakfast – Lobby
Trade Show opens – Concourse

8:15 a.m. – 8:30 a.m.

Welcoming Remarks
Expo Co-chairs Matt Gast and Ryan Wanzek

8:30 a.m. – 9:45 a.m. | Rooms 201-204

Mega Trends in Agriculture

Dr. Jay Lehr

Science Director, the Heartland Institute

Jay Lehr is a global futurist, PRO-Agriculture independent scholar and author of 35 books on subjects such as water supply and the environment. Dr. Lehr will reveal the biggest boons in agriculture from anonymous sharing of data to what seed and chemical companies have achieved and what they have planned for the future.

9:45 a.m. – 10:15 a.m.

Break, visit trade show – Concourse

10:15 a.m. – 11:00 a.m.

Breakout sessions (see chart below)

11:15 a.m. – 12:00 p.m.

Breakout sessions (see chart below)

12:00 p.m. – 12:45 p.m.

Lunch – Concourse
Trade Show open – Concourse

1:00 p.m. – 1:45 p.m.

Breakout sessions (see chart below)

2:00 p.m. – 2:45 p.m.

Breakout sessions (see chart below)

2:45 p.m. – 3:15 p.m.

Break, visit trade show – Concourse

3:15 p.m. – 4:30 p.m. | Rooms 201-204

What's Driving Agriculture in the Year Ahead?

Mike Pearson

Farmer, banker and *Market To Market* television host

Pearson will provide an outlook for farm markets and global trends impacting these markets.

Breakout Sessions	Room 104	Theater Room	Room 102	Room 103
10:15 – 11:00	Soil Health Tips and Tricks Dr. Abbey Wick	Farm Bill Panel ND Congressional Delegation	The Role of Trade Agreements and Farm Bill for Exports Dr. Saleem Shaik	Water Management & Wetland Regulation Kale Van Bruggen
11:15 – 12:00	The Scouting Report: Soybean Diseases Dr. Sam Markell	ND Corn Growers Association Annual Meeting	Livestock Development in North Dakota Amber Boeshans	Water Management & Wetland Regulation Kale Van Bruggen
1:00 – 1:45	Essential Amino Acids Add to your Bottom Line Peter Mishek	ND Soybean Growers Association Annual Meeting	Rules of Engagement: Connecting without Teaching or Preaching Val Wagner	Corn Diseases in North Dakota Dr. Andrew Friskop
2:00 – 2:45	Soil Health Tips and Tricks Dr. Abbey Wick	Dicamba - Can We Use it Safely? Dr. Kirk Howatt and Dr. Rich Zollinger	Understanding Inversions and How NDAWN Detects Them Daryl Ritchison	Corn and Soybean Insect Pests on the Rise for 2018 Dr. Janet Knodel



North Dakota Livestock Alliance Celebrates the New Ransom County Pig Farm

October 12th was a day filled with excitement for the future of North Dakota's swine industry.

Members of the media, North Dakota Livestock Alliance (NDLA) board members, neighbors and pork-industry stakeholders came together to celebrate the new Ransom County Multiplier pig farm. This impressive facility is owned by the Nelson County Pigs Cooperative. This co-op was founded 15 years ago by hog producers from North Dakota, South Dakota, Minnesota and Iowa. This barn will provide good-quality, high-health replacement breeding gilts to the barns owned by the co-op members.

Gilts are females that have not had a litter of piglets. The Nelson County co-op is building this state-of-the-art facility with the goal of becoming self-sufficient in the state of North Dakota. This means that the "closed herd" will no longer accept outside animals.

All approved feed and livestock trucks will be cleaned and disinfected before entering the site. All employees, managers and their possessions will undergo biosecurity protocols before entering the barns; these actions include showering and changing into the barn's clothing. By following these strict protocols, they reduce exposure to swine diseases, therefore protecting the health of their animals while maintaining North Dakota's high-health reputation.

This barn was permitted by the North Dakota Department of Health to house 2,500 sows in the project's first phase, with another 2,500 sows being added during the second phase. The positive economic impact from this facility is already reverberating throughout the region. Phase 1 of the

construction will consist of \$6 million facilities that will create 10 new jobs. Three employees from the area have already been hired; the others will be new to North Dakota. NDLA's Chair Craig Jarolimek reminded the day's attendees that "operations like this will bring new families to our small towns. They will support our local businesses, schools, churches, and housing markets. North Dakota needs more animal agriculture to revitalize our rural communities."

During construction, Ransom County Multiplier employed regional electricians, plumbers and excavators. The local purchases of food and lodging, fuel, propane, wiring and plumbing greatly benefited local businesses. The barn purchased a staggering 7,500 yards of concrete from three regional suppliers. Once construction is complete, the pigs will require 3,300 tons of feed annually, consisting of 88,000 bushels of corn and 740 tons of soybean meal.

As is common in the swine industry, Ransom County Multiplier will be managed by a health and production service. Suidae Health and Production of Morris, Minnesota, will provide and train employees for the barns as well as providing veterinary and bookkeeping services. Jeff Kayser, director of management services for Suidae Health and Production, was the enthusiastic tour guide for the media day attendees. As they walked through the barns, Kayser explained

Suidae's vigilant adherence to the industry's most modern biosecurity measures and animal-care practices. The pigs will be given extra space in the gestation and farrowing areas while multiple technologies will be used to maintain the pigs' surrounding temperatures and environment. "We intend to be an industry leader in how we care for our animals," Kayser stated.

The barn's employees will be certified in the swine industry's Transportation Quality Assurance and Pork Quality Assurance programs. These programs were created by the U.S. swine industry to share the tremendous care that farmers take every day. More information about these programs can be found at www.pork.org. Kayser also stated, "Animal care at Ransom County Multiplier will always be in compliance with the Common Industry Audit Standards."

Along with biosecurity and animal-care practices, this barn will vigilantly adhere to environmental best-management practices and to those rules set forth by the North Dakota Department of Health. Manure will be stored in underground, concrete pits that are designed by engineers and will be applied to the neighboring farmland once per year in a manner that reduces odor and maximizes the nutrient availability to the plants. As are all Concentrated Animal Feeding Operations (CAFO) in North Dakota, this farm will be inspected and its manure-application practices reviewed regularly by the North Dakota Department of Health. This operation will also be audited by third-party inspectors from the swine industry in order to ensure adherence to the pork industry's program standards.

—Story and photo by Amber Boeshans, North Dakota Livestock Alliance



Jeff Kayser providing a walking tour of the new barn to media attendees.



Getting it Right

Soybean Production Meetings 2018

Soybean producers who are interested in intensive soybean management should plan to attend one of

four “Getting it Right in Soybean Production” meetings scheduled for Fessenden, Kenmare, Rugby, and Langdon, North Dakota. The “Getting it Right in Soybean Production” programs and lunches are sponsored by the North Dakota Soybean Council which oversees the promotion, research and marketing programs that are funded by soybean-checkoff dollars. The programs are free and open to the public. Preregistration is not necessary.

At the meetings, North Dakota State University (NDSU) Extension Service faculty and staff will discuss past soybean research which was conducted in North Dakota as well as the outlook and production issues for 2018.

Farming is very complex, and new production information is generated annually. With tight budgets, it is important for producers to gain as much knowledge as possible. These soybean education meetings, featuring research-based information and practical tips, can help producers with soybean-production decisions for the 2018 growing season.

The meeting dates and place are as follows:

Tuesday, Jan. 23rd: Wells County

Location: Festival Hall, Wells County Fairgrounds, 604 Hwy 15

in Fessenden, North Dakota, 10 a.m. to 3 p.m. Contact Lindsay.maddock@ndsu.edu.

Wednesday, Jan. 24th: Ward County

Location: Memorial Hall, 5 Third St. NE, Kenmare, North Dakota, 10 a.m. to 3 p.m. Contact Paige.f.brummund@ndsu.edu.

Thursday, Jan. 25th: Pierce County

Location: Dakota Farms Restaurant, 308 Highway 2 SE, Rugby, North Dakota, 10 a.m. to 3 p.m. The program also includes the crop-improvement association’s meeting. Contact Yolanda.schmidt@ndsu.edu.

Friday, Jan. 26th: Cavalier County

Location: Research Extension Center, 9280 107th Ave. N.E., Langdon, North Dakota, 10 a.m. to 3 p.m. Contact Anitha.chirumamilla@ndsu.edu.

Speakers

Participating NDSU Extension agents (Lindsay Maddock, Tim Becker, Nicole Wardner, Paige Brummund, Dan Folske, LoAyne Voigt, Yolanda Schmidt, Rachel Wald and Anitha Chirumamilla) will be the hosts and will provide local production and crop updates.

Sam Markell, NDSU Extension pathologist, will provide an update about the disease outlook for 2018

and field-research results from 2017. Two important topics will be an update on soybean cyst nematodes and how to manage soybean diseases.

Hans Kandel, NDSU Extension agronomist, will provide information about variety selection. He will also give the latest information on various production issues, such as the importance of good root nodulation, fertility issues and water management, and the results of the soybean production survey.

Greg Endres, NDSU Extension specialist/cropping systems, will discuss intensive soybean management, no till and strip till versus conventional till, planting dates, plant populations and row spacing, different soybean special inputs that are on the market and weed-management issues.

Anitha Chirumamilla and T.J. Prochaska, NDSU Extension entomologists, will discuss how to manage various insect pests, including spider mites and soybean aphids.

—Story and photo by
Dr. Hans Kandel, NDSU



Jessica Halvorson, research specialist, and Sam Markell, NDSU Extension pathologist, showcased research findings during a plot tour. Getting it Right information will be based on recent soybean research.



New Resources for Phytophthora Root and Stem Rot Management

Soybean acreage for 2017 was estimated at a record high of 89.5 million acres across the nation, up

seven percent from last year. As one of the top four yielding states, North Dakota planted and harvested over 6 million acres in the last two years, and more than 80 percent of those acres were located in the fertile soils of the Red River Valley. As soybean acres continue to increase, so does the concern about pathogen outbreaks. One well-known disease in the valley is Phytophthora root and stem rot (PRSR). PRSR is caused by *Phytophthora sojae*, a soil-borne organism that is found throughout much of North America. While the distribution of PRSR can be sporadic and dependent on weather conditions, it is considered to be one of the most destructive diseases within the key soybean regions, including closer to home in the Red River Valley.

P. sojae is more likely to subsist in poorly drained soil, but PRSR outbreaks can appear in just 7 days, even in well-drained fields that were saturated from heavy rainfall. PRSR can manifest throughout the growing season, triggering pre- and post-emergent damping off of seedlings as well as root and stem rot later in the season. Red-to-black lesions begin to develop at the soil level and reach 12 inches up the stem, which may coincide with wilting leaves. Part of the difficulty for managing this pathogen is the existence of highly resistant spores which can reside within the soil or crop residue in a dormant state that remains viable for years. In susceptible soybean varieties and

under favorable conditions, *P. sojae* has the potential to cause severe yield reductions or, worse, to destroy entire fields. Management for PRSR occurs before planting by selecting soybean varieties that have excellent tolerance or race-specific resistant varieties against *P. sojae* in combination with fungicide seed treatments.

The accurate diagnosis of PRSR from field symptoms can be difficult for a few reasons. First, PRSR can cause a pre-emergence damping off, a symptom associated with other early season diseases (e.g., Pythium rot and sudden death syndrome). Second, later in the growing season, the typical symptoms of PRSR can also be mistaken for other diseases, such as Pythium root rot and stem canker. Third, PRSR's characteristic lesions can be equivocal in the field. For example, the disease's root-rot phases can be difficult to detect compared to the stem-rot phase which produces more obvious symptoms. Further adding to the confusion, the symptom severity (stem vs root rot) can depend on the particular *P. sojae* race or races present in the soil as well as the corresponding resistant or tolerant soybean variety that is planted in the field.

Scientists at the National Agricultural Genotyping Center (NAGC) are excited to announce the development of a rapid DNA-based test that can detect *P. sojae* in the soil and plant roots. This new test has been optimized by using North Dakota isolates of *P. sojae*

that were generously given to the NAGC by Dr. Berlin Nelson, a soybean pathologist at North Dakota State University. This test was partially funded by the North Dakota Soybean Council (NDSC) and provides North Dakota growers with the opportunity to be proactive in terms of PRSR management. For example, growers can submit a soil sample prior to planting in order to check for the presence of *P. sojae*, giving them confidence about their decision to plant PRSR-resistant or tolerant soybean varieties. In the unfortunate event that damping off occurs, the rapid PRSR test could determine whether *P. sojae* was the causal pathogen, giving growers time

to utilize management strategies that target PRSR when replanting is recommended. Annual monitoring for the presence of *P. sojae* in fields could also help to protect future soybean seasons by predicting the relative risk of PRSR outbreaks.

In July 2017, the NAGC achieved accreditation status through the International Organization of Standardization (ISO/IEC 17025) with an emphasis on plant-pathogen tests. This accomplishment was a testament to the quality service from the NAGC scientists as well as our commitment to continually deliver the latest advancements for diagnostic tests to North Dakota growers. The sample-submission guidelines as well as the fee schedule for this test and others can be found on the NAGC's website (<https://www.genotyping-center.com>).

—Story and photo by
Megan O'Neil, National
Agricultural Genotyping Center



National Agricultural Genotyping Center lab staff.

Supporting Opportunities for **Food-Grade Soybeans**

With the 2017 harvest near completion, many producers will evaluate the performance of the

varieties they chose for 2017 and will base some of their 2018 planting decisions on those results. With current world and U.S. ending stocks, it would be reasonable to expect grower prices to remain at unprofitable levels for the next year.

We encourage every producer to visit with Northern Food Grade Soybean Association (NFGSA) member companies about the 2018 grower programs that they can offer. Most often, these programs will have a higher net return per

acre. That additional effort is mostly related to paying attention to production details. These details do not begin and end at harvest time. Starting to make your 2018 production plans early will greatly improve your chances of both a successful and a quality crop.

This industry has invested heavily in its genetic programs, addressing cyst, IDC and yield challenges. Many food grade/non-genetically modified organism (GMO) varieties are now yielding similar

or better than other commodity-type varieties.

If a producer is interested in a value-added program, he/she can call any of the NFGSA member companies for additional details. These programs have limited acres, and some can fill up quickly.

NFGSA Members

Brushvale Seed, Inc.

Breckenridge, Minnesota

Richland IFC, Inc.

Breckenridge, Minnesota

SB&B Foods, Inc.

Casselton, North Dakota

Healthy Food Ingredients

(SK Food International)

Fargo, North Dakota

SunOpta Grain and Foods Inc.

Moorhead, Minnesota

Unity Seed Company

Casselton, North Dakota

JB Global

Burnsville, Minnesota

HC International, Inc.

Fargo, North Dakota

Grain Millers, Inc.

Eden Prairie, Minnesota

Parsley Farms Seed Co.

Warroad, Minnesota

North Star Packaging

Grand Forks, North Dakota

—*Story and photo courtesy of Northern Food Grade Soybean Association*



Food-grade soybeans.

Best of the Best in Wheat and Soybean Research - 2018

Researchers and Extension Specialists from North Dakota State University and the University of Minnesota are working together to deliver the most current research information to help you make better management decisions on your farm. One of the highlights will be hands-on demonstrations where you get a closer look at important production and marketing tools.

Best of the Best in Wheat and Soybean Research and Marketing workshops will be held Wednesday, January 31st at the Alerus Center, Grand Forks and Thursday, February 1st at the Courtyard by Marriott in Moorhead.

These sessions are free. Pre-registration is encouraged. CEU credits are available.

For times and to register, call (800) 242-6118, ext 3 or go online at www.smallgrains.org and click on Best of the Best link.

Brought to you by the MN Association of Wheat Growers, ND Soybean Council, MN Wheat Research & Promotion Council, ND Grain Growers Association, MN Soybean Research & Promotion Council and the ND Wheat Commission.



Screening of “Food Evolution” at the Fargo Theatre

CommonGround North Dakota hosted a free screening of the movie “Food Evolution” on Tuesday, November 7 at the Fargo Theatre. Approximately 130 people attended the event.

Amid a brutally polarized debate marked by passion, suspicion and confusion, “Food Evolution,” by Academy Award-nominated director Scott Hamilton Kennedy, explores the controversy surrounding GMOs and food. Traveling from the Hawaiian papaya groves, to banana farms in Uganda, to the cornfields of Iowa, the film, narrated by esteemed science communicator Neil deGrasse Tyson, wrestles with the emotions and the science driving one of the most heated arguments of our time.

In the GMO debate, both the pro and anti camps claim that science is on their side. Who’s right? “Food Evolution” shows how easily misinformation, confusion and fear can overwhelm objective analysis.

“Food Evolution’s” message is targeted to consumers who have honest questions about their food and are looking for answers,” says Val Wagner, CommonGround North Dakota coordinator and a farmer and rancher from Monango. “CommonGround North Dakota decided to host a screening of the documentary not only because of its scientific side, but also because it talks about how we can feed the world and still be conservation minded and sustainable. It also answers a lot of questions surrounding social responsibility.”

After the movie screening, a panel of scientists and farmers were at the Fargo Theatre to answer questions from the audience. Dr. Greg Lardy, department head of Animal Sciences and a professor at NDSU; Dr. Tom Peters, Extension agronomist and an assistant professor at NDSU; Teresa Dvorak, farmer, rancher, mother and ruminant nutrition specialist from Manning;

and Sarah Lovas, farmer, mother-to-be and a soil-science specialist and agronomist from Hillsboro, answered questions for approximately an hour. Wagner facilitated the panel.

“Food Evolution” is available on iTunes, Amazon and Hulu.

CommonGround North Dakota is a group of farmers who are working to bring clarity to discussions about food and farming. The program is about starting a conversation between the farmers who grow food and the consumers who buy it. The conversation is based not only on personal experiences as farmers, but also on science and research. If you would like to learn more about CommonGround North Dakota, email Val Wagner at wagntales@gmail.com, or visit www.facebook.com/CommonGroundNorthDakota.

—Story and photos by staff



The Fargo Theatre marquee promotes CommoGround North Dakota’s screening of “Food Evolution.”



Val Wagner visited with the movie guests before the screening on November 7; she answered food and farming questions.



A panel of NDSU scientists and local farmers answered the audience’s questions after the “Food Evolution’s” screening.



5 Tips to Eat Smart During the Holidays

Seasonal sweet treats and multi-course meals tempt even the most dedicated healthy

eaters during the holidays. That's why the American Heart Association designated November as Eat Smart Month.

Kicking off with Eat Smart Day on Nov. 1, the month-long campaign was part of the association's new Healthy For Good movement which is supported by the North Dakota Soybean Council. As part of the campaign, the association provided nutrition tips and healthy recipes throughout the month.

To kick off the month-long celebration, Suzanne Wolf, communications director for the North Dakota Soybean Council, and Julia Dangerfield with the American Heart Association performed a "media blitz" in Fargo to raise awareness about Eat Smart Month and ways that North Dakotans can incorporate heart-healthy soy into their diets during this holiday season.

During their appearances, Suzanne and Julia shared these tips:

- 1. Spice it up:** A new study found that people who enjoy spicy foods appear to eat less salt and have lower blood pressure.
- 2. Add color:** Not only are bright colors donning shop windows this season, but they are also at the supermarket and on the holiday buffet. From red apples, orange pumpkins to green edamame, adding one cup of fruits and vegetables a day is a significant step toward a more vibrant life. Add a burst of color to your holiday spread with fruits and vegetables at every meal.
- 3. Pre-game:** It's easy to overeat or munch on snacks while in social settings. To help resist

temptation, eat a healthy snack (like soy nuts) or meal before heading to the event. High-fiber foods, such as soyfoods, are smart options because they keep you full longer.

- 4. Mini-mize:** Practice moderation, not deprivation. Opt for a small plate; help yourself to a smaller portion; or ask for a to-go box in advance, placing half your order out of sight in the container.
- 5. Slow down:** It takes time for your stomach to signal your brain that you're full. Slow your

pace by setting down your fork between bites, taking frequent drinks of water and pausing to talk with friends and family.

Find more tips and recipes to help you eat smart during the holidays and year-round at heart.org/EatSmartMonth. Check out the New American Heart Association Cookbook on ShopHeart.org.

—Story and photo by Chrissy Meyer,
American Heart Association



Suzanne Wolf and Julia Dangerfield visited North Dakota Today Show on November 1st and shared eating tips, tools and information to help viewers stay prepared and motivated to eat healthy over the holidays.



May Your Holiday's Be Soy-ful!

The holidays are right around the corner. People either love this time of the year or feel so stressed that it is hard to enjoy the season.

This season, choose to enjoy family and friends. Make some memories with your children or grandkids, ones they will remember forever. As you think about food memories, don't forget about adding just a little soy: soy flour to baked goods (keeps

the baked goods fresher), shelled edamame to favorite vegetables, textured vegetable protein to cookies, and soy cream cheese and soy sour cream to appetizers and dips. Don't forget about the secret savory seasoning, miso. Keep the soy a secret until you hear the compliments. Take time to heat a cup of chocolate soymilk and to watch a favorite movie or listen to music

while writing Christmas cards.

Please visit www.thesoyfoodscouncil.com for lots of recipes

and ideas!

—Story, recipes and photos by Linda Funk, The Soyfoods Council

Soy Cheesecake with Dried Cranberries, Almonds and White Chocolate

Compote Ingredients

- 2 apples, such as Gala, peeled, cored, cut into ¾-inch pieces
- 1 cup fresh or thawed frozen cranberries
- 2 tablespoons sugar
- ½ cup fresh orange juice
- 1 teaspoon ground ginger

Cheesecake Ingredients

- 1½ cups graham-cracker crumbs
- 3 tablespoons sugar
- 3 tablespoons soybean oil
- 28 oz. soft, silken tofu, drained and cubed
- 1½ cups sugar
- 8 oz. soy cream cheese
- ½ cup soymilk
- ¼ cup soy flour
- 1 tablespoon vanilla extract
- ¾ cup sliced almonds
- ¾ cup sweetened, dried cranberries
- ¾ cup white-chocolate morsels

Directions

Preheat oven to 325°, rack in the center. Place large baking pan filled with 1 inch of water on rack to preheat. Press a large sheet of foil around the base of a 9-inch springform pan with 2-inch high sides. Coat the inside of the pan with nonstick spray, and set aside.

Compote: In a saucepan over me-



dium heat, combine all ingredients. Bring to a simmer and cook, stirring occasionally until apples are soft, about 15 minutes. Set aside.

Cheesecake: In a bowl, combine graham-cracker crumbs and sugar. Add oil, stir to blend. Press crumbs evenly into springform pan over the bottom and about 1 inch up the pan's sides; set aside. In a food processor, blend the tofu, sugar, cream cheese, soy milk, soy flour and vanilla until smooth. Transfer filling to a bowl; fold in the almonds, cranberries and white chocolate morsels; pour filling into crust. Smooth top and place the springform pan inside the baking pan of water. Bake for 1 hour or until filling is firm. (Do not overbake.) Turn off oven; crack door open slightly; let cheesecake cool in the oven for 1 hour. Cover and chill for at least 8 hours. Use a thin-bladed knife dipped in hot water to slice the into 16 wedges. Serve with the cranberry-apple compote.

Yield: 16 servings

Chicken Marsala

Ingredients

- 1½ cup brown rice flour
- ½ cup soy flour
- 2 eggs
- 2 six-ounce chicken breasts
- Soybean oil for frying

Directions

In small bowl, mix rice and soy flour. In separate bowl whisk egg. Place the chicken in the egg; coat each side. Dredge chicken in the flour, coating each side. Place the chicken in a deep-fat fryer, or pan fry until done. Serve immediately with marsala sauce.

Marsala Sauce

- 1 tablespoon soybean oil
- ½ cup sliced crimini mushrooms
- ¼ cup sweet marsala wine
- ½ cup soymilk
- ½-1 teaspoon sugar
- 3 tablespoons chicken stock



- 1 tablespoon yellow miso
- ¼ cup soft, silken tofu
- Salt, black pepper and granulated garlic to season

Directions

Heat oil in small saucepan, sauté mushrooms about 1 minute. Add the marsala wine (be careful as it may flare up); add the rest of the ingredients, bring to a boil. Boil for 1 minute, then simmer 3 minutes. Season with salt, black pepper and garlic. Garnish with al-dente asparagus, carrots, or other vegetables.

Toffee Bars

Ingredients

- 1 cup butter, softened
- 1 cup brown sugar, firmly packed
- 1 egg yolk
- 1 teaspoon vanilla
- ¼ teaspoon salt
- 1½ cups all-purpose flour
- ½ cup soy flour
- 1-ounce bar milk chocolate, melted
- ¾ cup soy nuts, chopped

Directions

Preheat oven to 325°. In a large mixing bowl, cream the butter until light. Add sugar, egg yolk and vanilla; beat until well blended. Add the all-purpose flour and soy



flour; mix well. Spread the mixture evenly in a lightly greased 10x15x2-inch pan. Bake for 12-15 minutes. (Watch carefully because cookies brown quickly.) Let cool for about 5 minutes. Spread the melted chocolate on the bars. Sprinkle with chopped nuts. Cool completely. Cut into bars.

Yield: Approximately 2½ dozen



Dealing With DICAMBA

This situation isn't what farmers wanted. Newly approved dicamba-based herbicide products were

intended to give farmers options for treating weeds, many of which have developed resistance to glyphosate. Instead, the results included a spate of damage complaints which prompted government officials to take action.

A North Dakota Department of Agriculture (NDDA) survey shows that more than 200 people indicated how they believe their crops or plants were damaged by improper applications of the herbicide dicamba during the

2017 growing season. The NDDA survey received 215 responses, with 207 indicating damage. Only 23 people indicated that they had verified dicamba damage through plant tissue analysis. Approximately 163,204 acres were reported

damaged in 3,623 fields spread over 28 North Dakota counties.

Nearly all reported damage was to non-dicamba tolerant soybeans, but there were also reports of damage to gardens, and ornamental plants. Most of the comments the NDDA received in the survey indicated those affected believed the off-target applications were caused by volatilization and in most cases the label was followed properly.

"The injuries and damage reported are consistent with herbicide damage—leaf cupping, leaf curl and crinkled leaves," Agriculture Commissioner Doug Goehring says. "But of the 207 responses indicating damage, 184 had no plant-tissue analysis to verify the damage was caused by dicamba."

Dicamba is a selective herbicide which is used to control broadleaf



Curled leaves were one indicator that non-tolerant soybeans may have been impacted by dicamba.

Strict record keeping required for application of restricted-use pesticides

The certified applicator must keep the records for two years. Records must be generated no later than 14 days after application and a record must be kept for each application and made available to State Pesticide Control Officials, USDA, and EPA upon request. Those items include:

1. All Items required by for recordkeeping on restricted use pesticides by certified applicators including:
 - The brand or product name
 - The EPA registration number
 - The total amount applied
 - The month, day, and year
 - The location of the application
 - The crop, commodity, stored product, or site
 - The size of treated area
 - The name of the certified applicator
 - The certification number of the certified applicator

2. Date and provider of required training completed and proof of completion.
3. Receipts or copies for the product purchase.
4. A copy of the product label, and any state special local needs label that supplements the label.
5. Record of the buffer distance calculation and any areas included within the buffer distance calculations.
6. Record that a sensitive crop registry was consulted; or document surveying neighboring fields for any susceptible crops prior to application.
7. Record of the time at which the application started and the time when the application finished.
8. Record of the type of application (for example: pre-emergence, post-emergence) and number of days after planting if post-emergence.

9. Record of the air temperature in degrees Fahrenheit at the start and completion of each application.
10. Record of the wind speed and direction at boom height at the start and completion of each application.
11. Record of the spray nozzle manufacturer/brand, type, orifice size, and operating pressure used during each application.
12. Record of the brand names and EPA registration numbers (if available) for all products that were tank mixed for each application.
13. Record of compliance with the Proper Spray System Equipment Cleanout.

Manufacturers agreed to a process that will get the revised labels into the hands of farmers in time for the 2018 season. The EPA will monitor the success of these changes to help inform their decision about whether to

allow the continued "over the top" use of dicamba beyond the 2018 growing season. When the EPA registered these products, it set the registrations to expire in two years, allowing the EPA to change the registration, if necessary.

Although the EPA has announced its changes, North Dakota officials are formulating additional measures.

"We are currently drafting North Dakota-specific restrictions for Dicamba to mitigate potential damage to non-target crops in 2018," Goehring says. "The proposed changes should be finalized by early November."

The restrictions will only affect applications made on soybeans for XtendiMax by Monsanto, Engenia by BASF and FeXapan by DuPont. The restrictions will not affect generic dicamba formulations for use in small grains and corn.



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weeds and woody plants. Dicamba was primarily used with pre-plant applications on soybeans, but new formulations were approved for post-emergence use on Dicamba-tolerant soybeans.

Reports of damage from off-target dicamba applications occurred in nearly every soybean-producing state, prompting the Environmental Protection Agency (EPA) to further restrict dicamba use. In mid-October, the EPA reached an agreement with Monsanto, BASF and DuPont on measures to further minimize the potential for drift to damage neighboring crops. EPA officials contend that the new requirements will allow farmers to make informed choices for seed purchases heading into the 2018 growing season.

The EPA worked with states, land-grant universities and pesticide manufacturers to examine the underlying causes of recent crop damage. The EPA reviewed the available information and developed changes to implement during the 2018 growing season. Manufacturers have voluntarily agreed to label the changes that impose additional requirements for post-emergence use.

Prior to applying FeXapan, Engenia or Xtendimax products in 2018 and beyond, applicators must complete dicamba or auxin-specific training.

—Story by Daniel Lemke, photos by Wanbaugh Studios

Nutrient Strategy Nears Completion

After more than five years of work, a plan to manage nutrient runoff in North Dakota's surface waters

is inching closer to reality.

The North Dakota Department of Health (NDDoH) has developed the Nutrient Reduction Strategy for Surface Waters to address environmental, human-health and water-quality issues that are caused by excessive nutrients, including nitrogen and phosphorus, in the state's waters. The strategy will also serve as a blueprint for local, state and federal agencies; cities; counties and the public to address excessive nutrient runoff and loading in the state's rivers, streams, lakes, reservoirs and wetlands.

"The goal is to focus attention on reducing nutrient contributions to lakes, rivers and streams across the state," says Mike Ell, NDDoH Division of Water Quality. "We are trying to get everyone on the same page and with the common goal of reducing nutrient contributions. This isn't the NDDoH's strategy; it's the state's strategy."

Lengthy Process

Strategy development involved the formation of a planning team with diverse representation from

industry, cities, agriculture, environmental groups as well as state and federal agency representatives. The planning team developed an outline for the strategy and recommended working groups to help fill in the details. The NDDoH then facilitated a series of working-group meetings for planning-team members and other interested stakeholders to help develop recommendations about what should be in the strategy.

"This really has been a bottom-up process," says Scott Korom, senior environmental engineer with Barr Engineering in Bismarck. Korom was involved in the strategy's development. "It was primarily a voluntary, grassroots, consensus-based process, which is refreshing. I'm thankful that the state took that approach."

The Nutrient Reduction Strategy will help prioritize watersheds and best management practices (BMPs) in order to achieve cost-effective solutions to reduce the delivery of nutrients to the state's surface waters. The strategy addresses municipal and

industrial point sources, storm water, animal-feeding operations, private sewage-disposal systems (i.e., septic systems) and agricultural nonpoint sources.

"The Strategy is intended to be an equitable process," Korom says, "For example, 72 percent of the land in the Red River Valley is in agriculture, so a lot of the responsibility will fall on ag in this basin, but not all of it."

Watershed Focus

The NDDoH recognizes that successful strategy implementation will best be achieved on a watershed scale with locally-led projects. This process is intended to promote a more coordinated effort for the collection and sharing of data and information, increased availability of technical and financial resources, and more focused and effective nutrient-management activities.



North Dakota's draft nutrient reduction strategy is intended to be a blueprint for reducing nutrient runoff.



The strategy will help prioritize watersheds and best management practices to reduce delivery of nutrients to the state's surface waters.

The primary delivery method for implementing the strategy will be the Basin Water Quality Management Framework. The basin framework is organized around five major river basins in North

Dakota: the Red River Basin, James River Basin, Souris River Basin, Upper Missouri River Basin and Lower Missouri River Basin.

As each watershed project is implemented through the basin

framework, the goals are generally accomplished by promoting voluntary adoption of specific best-management practices, providing financial and technical assistance to implement best-management practices, disseminating information about the project and identified solutions, and evaluating progress toward meeting pollutant-reduction goals.

Ell says that successful implementation of the Nutrient Reduction Strategy will involve an adaptive management process. Adaptive resource management is a systematic approach for water-quality improvement and nutrient reduction by learning from what has been done, including what works and what doesn't work, and adapting and changing course if the desired outcomes aren't being reached.

"Whether we are seeing improvement in water quality is a direct way to measure outcomes," Ell says. "Acres where nutrient-management practices have been put in place could be another."

The strategy will function as a blueprint and starting point for a multi-year, multi-faceted effort to reduce nutrient pollution in North Dakota's surface waters. The strategy will also provide guidance to develop nutrient criteria for North Dakota's surface waters.

The strategy is driven by guiding principles that any implementation plan to reduce nutrient runoff must be technically and scientifically defensible; they can be reasonably implemented with state and local laws. Implementation must be equitable and include measures to safeguard public health and to minimize economic impacts.

Impact on Ag

Ell says that, even though the goal is to reduce nutrients in the state's water, the strategy recognizes that nutrients such as nitrogen

and phosphorus are necessary and critical for food production.

"We are not advocating a reduction in fertilizer use, but we want to use nutrients in a manner that reduces the delivery of nutrients in runoff to our lakes, rivers and streams," Ell says.

Because so much of North Dakota is in agriculture production, it's logical that any implementation plans developed for specific watersheds will have an impact on agriculture.

"We have to be realistic and know that there are going to be rules, regulations and best-management practices happening in all states," Korom says. "That may not be what we want, but it's going to happen. I can't think of a better way to address these issues here in North Dakota than through this bottom-up, stakeholder-driven approach."

"As farmers, we have a responsibility to use nutrients wisely," says Rolette, North Dakota, farmer Ryan Pederson. "My hope is that, in the process of finalizing the plan, farmers and grower groups will get their background and points of view included."

Ell says that there is still work to be done with finalizing the strategy. The draft plan is in the hands of the planning-team members who will provide input and offer possible revisions. Ell expects to hold additional reviews and stakeholder meetings this winter. The goal is to have the strategy finalized by May 2018.

Korom says that it's important for farmers and landowners to be involved with the process and to make the effort to attend a stakeholder meeting this winter in order to provide input and to learn how the strategy could affect their farm as well as how they operate.

—Story and photos by Daniel Lemke

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Mike Muhs
Langdon, North Dakota

Tell us about your farm.

I operate a family farm with help from my wife and four children, as well as my semi-retired dad, raising soybeans, wheat, canola and corn.

What do you like best about farming?

I enjoy the ever-changing tasks that a farmer gets to experience throughout the year. No two days are the same. Farming has always been in my blood.

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

I became involved with the North Dakota Soybean Council (NDSC) after I was nominated by my peers to represent Cavalier County. From there, I was selected to represent District 10 (Cavalier, Walsh and Pembina Counties).

How has your involvement been beneficial to you? Why?

Although I'm in my first year on the NDSC and still have lots to learn, I've enjoyed being involved with the NDSC's work. Most people don't realize how much time, effort and dollars it takes to keep the soybean industry growing the way farmers need it to in order to remain profitable. Now, I have a much better understanding of what our checkoff dollars do for the North Dakota farmer.

Why are soybeans a part of your crop mix?

Soybeans have become an important part of my farm's crop rotation. Cavalier County is well known for its canola production. Disease issues come with that crop because the rotations are so tight. Soybeans have given many growers a profitable option to throw into the mix.

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

Lately, seed technology has changed the game for many crops. Increased yields, disease and insect resistance, along with other traits have raised the bar for productivity. Hopefully, this trend continues at a profitable level for years to come.

What do you like to do outside farming?

In my spare time, I enjoy camping and relaxing at the lake with family during the summer. Winter

turns us into a hockey family. I coach; three of my kids play and one refs; Mom takes the pictures.

If you could go anywhere in the world, where would it be?

Brazil and New Zealand are places where I'd like to go and see their agriculture industries at work.

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

I'd like to continue improving my grain-handling system and dryer.

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

I couldn't live without my high-wheeled sprayer. It's a great time to see your crop growing and to protect it the best you can.

— Photo by Wanbaugh Studios

NDSGA Director at Town-Hall Meeting

Rolette, North Dakota, farmer and North Dakota Soybean Growers Association (NDSGA) Director Ryan Pederson (standing) presented at a town-hall meeting to discuss wetland easements and other issues. The September 22 meeting in Devils Lake was organized by Congressman Kevin Cramer (table center) and included two U.S. Fish and Wildlife Service (USFWS) officials.

The primary issue centered around permanent wetland easements, many of which farmers sold to the USFWS more than 50 years ago. Presenters like Pederson said that one of the issues is that, when those easements were sold, they

weren't always clearly defined or understood.

"My grandpa sold wetlands to the USFWS but excluded certain areas. It later came back that some of what USFWS considered wetlands weren't wetlands at all," Pederson says. "Why we think it's unfair is that grandpa's intent was fairly clear. Had he known those other areas would be considered wetlands, he certainly would have excluded them, too."

The USFWS has different criteria for wetlands than does the Natural Resources Conservation Service (NRCS), leading to frequent conflicts.

Pederson says that the NDSGA

supports letting farmers mitigate wetlands and having easements treated uniformly by the NRCS and USFWS. The NDSGA also supports allowing farmers to buy

back old easements so that USFWS could use the funds to reinvest in more appropriate wetlands.

—Story by Daniel Lemke,
photo by staff



Getting to Know the Expert

Editor's Note: North Dakota farmers have access to a wealth of information and resources. In many cases, that knowledge resides with an individual. The North Dakota Soybean Grower wants to introduce readers to some of these expert resources.



Dr. Janet Knodel, North Dakota State University (NDSU) Extension Entomologist and Associate Professor

Where did you grow up?

I grew up in the Fargo area and attended NDSU as an undergraduate.

Please tell us about your education.

After earning my undergraduate degree, I moved east to

Virginia Polytechnic Institute and State University for my M.S. in entomology. I worked as a faculty research assistant on botanical insecticides, such as neem, against greenhouse insect pests for the USDA-Agricultural Research Service in Beltsville, Maryland, and as a senior extension associate, biological monitoring coordinator at Cornell University. My love for the great Midwest and family led me back to my beautiful home state of North Dakota. I worked for 8 years as an area extension crop protection specialist at the North Central Research Extension Center in Minot and obtained my Ph.D. in Entomology in 2005 while working, full time, in this position.

What kind of work did you do prior to joining NDSU?

I've spent my whole career, over 20 years, working on extension and applied research of field-crop insect pests and answering problems that farmers face. However, I wear many different hats besides field-crop entomology. I also worked with insect pests of trees, shrubs, lawns, home and garden; and with "good insects," such as pollinators and parasitic wasps. The old saying "time flies when you're having fun" applied here!

What is the focus of your research?

My research includes multiple projects that examine strategies for the best pest management of soybean aphids. My colleagues and I are also looking at aphid interactions with Soybean Cyst Nematode. We hope to do additional work on the identification

of pyrethroid-resistant soybean aphids and to test the use of drones for insect scouting.

In addition, I'm one of the team leaders and an active member of the North Central Soybean Entomology Research and Extension Team on soybean aphids. I currently direct research on the pollinator diversity project with nine north-central states, the Brown marmorated stink bug survey, the neonicotinoid seed treatment research and the extension outreach in North Dakota.

I have led the Integrated Pest Management (IPM) Survey since 2013 and co-coordinated it with Dr. Marcia McMullen (retired) from 2006 to 2012. The goals of the IPM Survey are to monitor for insect pests as well as wheat, barley, soybean and sunflower diseases. Producers estimate that the IPM data about the North Dakota soybean-aphid populations saved them about \$26 million annually by reducing insecticide costs by using the soybean-aphid threshold.

I also coordinate and co-edit the NDSU Extension Service Crop & Pest Report (C&PR) website and blog. C&PR readers are mainly producers; agronomists of fertilizer, chemical, seed companies, university extension, and research workers; and crop consultants. Since I started coordinating the C&PR, it has increased 18-fold to more than 4,809 readers in 10 countries on 5 continents!

How does aphid research impact North Dakota soybean farmers?

Research has resulted in significant impacts. In the United

States, the estimated economic net benefit for the adoption of the soybean-aphid threshold is \$1.3 billion; there is a rate of return of 124 percent while reducing costly insecticide inputs and preserving natural enemies and pollinators.

Note: For more information on aphids and other NDSU insect research, visit www.ag.ndsu.edu/extensionentomology/

How much of a challenge do insects like aphids present to soybean farmers?

In North Dakota, soybean production has expanded from 1.9 million acres valued at \$250 million in 2000 to 6 million acres valued at about \$2.2 billion in 2016. The soybean aphid, which is native to Asia, was first detected in North Dakota in 2001, and today, the insect poses a serious threat to soybean production. Soybean-aphid densities can damage soybean plants by reducing plant height, pod number and yield. Yield reductions have ranged from 12 to 45 percent. An average of 250 aphids per plants with 80 percent of the plants infested and increasing populations is the economic threshold for soybean aphids.

What do you like to do away from work?

I enjoy bird watching, biking, hiking, yoga and working in my pollinator flower garden and my vegetable garden.

—Story by Daniel Lemke, photo courtesy of NDSU

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Former Soy Industry Leader Named Deputy Ag Secretary

Former American Soybean Association (ASA) Chief Executive Officer Steve Censky has been sworn in as the Deputy Secretary at the U.S. Department of Agriculture (USDA). Censky was nominated by President Trump and confirmed by the U.S. Senate in October. Censky was sworn in later that month.

Prior to joining ASA, Censky worked in Washington, D.C., for over a decade. He began his career on Capitol Hill as a legislative assistant for agricultural and transportation matters for South Dakota Senator Jim Abdnor. Censky later served in both the Ronald Reagan and George H. W. Bush administrations at the USDA, helping to craft the 1990 Farm Bill and eventually serving as the administrator of the Foreign Agricultural Service. There, Censky was involved with global trade negotiations and running the nation's export programs.

Censky, who was born and raised on a diversified farm near Jackson, Minnesota, served the ASA for 23 years, 21 of which he spent as the organization's leader.

"We can't thank Steve enough for the legacy he leaves here at ASA," says ASA President and Illinois farmer Ron Moore. "We are a more effective and representative advocate for soybean farmers because of him. He leaves big and well-worn shoes to fill; this isn't an easy job, but it's a rewarding one. We look to the candidates for the CEO position to bring their innovation and experience, and novel concepts for advancing the soybean industry to us."

NDSU Extension Offers Succession Planning Workshops

Farmers and ranchers who want to pass their operation on to the next generation can learn more about the process by attending workshops on succession planning that are offered by North Dakota State University (NDSU) Extension. The Design Your Succession Plan (DYSP) workshops will be held at a variety of locations throughout the state in the next several months. The curriculum includes a module developed specifically for people who are considering a transition from full-time farming or ranching.

"Very often, the two or more generations already are working together but have not yet taken the steps toward succession planning," Carrie Johnson, an NDSU Extension Service personal and family finance specialist, says. "It is often one of those things all parties know they should be doing, but they just haven't gotten around to it, or they don't know where or how to start."

The DYSP workshops help farm and ranch families to think about what they want for their business, to explore the options and to consider the consequences of each option before making any decisions. Some people may wish to transfer a viable business to the next generation. Others may desire to divide the farm or ranch assets and want to determine an acceptable process.

DYSP workshop participants learn how to start and to sustain those discussions, and how to begin developing a succession plan. They also learn about choosing and preparing to work with legal and fi-

nancial professionals who will help make sure that the plan is workable.

Locations, dates and times for the upcoming DYSP workshops include

Mandan: Nov. 28, and Dec. 5, Farm Credit Services

New Salem: Nov. 28, and Dec. 5, Morton County Fairgrounds

Watford City: Nov. 28 and 30, and Dec. 7, McKenzie County Courthouse

Langdon: Nov. 30 and Dec. 5, Cavalier County Courthouse

Belfield: Dec. 5, 7 and 12, Choice Financial

Linton: Dec. 6 and 13, Emmons County Courthouse

Towner: Jan. 16, 18 and 22, 2018, 314 Main St. S.

LaMoure: Jan. 23, 25 and 30, 2018, 200 Highway 13 W.

Visit <https://www.ag.ndsu.edu/> succession for more information.

ASA Supports Effort to Foster Ag Innovation

A bipartisan group of 79 Congress members has sent a letter to U.S. Department of Agriculture (USDA) Secretary Sonny Perdue, Food and Drug Administration (FDA) Commissioner Scott Gottlieb and Environmental Protection Agency (EPA) Administrator Scott Pruitt, urging the agencies responsible for regulating biotechnology to coordinate and to advance policies and strategies that promote agriculture innovation domestically and internationally through the President's Interagency Task Force on Agriculture and Rural Prosperity.

The USDA, FDA and EPA are in the process of reviewing the regulatory system for how their agencies regulate biotechnology.

ASA President and Illinois farmer Ron Moore applauded the letter, saying "Soybean producers rely on agriculture innovations like biotechnology to help grow a safe, affordable and abundant food supply. We need consistent regulatory policies based on sound science that promote new technologies in agriculture that also help put less strain on our natural resources."

The letter urges a "consistent, science-based, risk-proportionate regulatory system" for agricultural biotechnology.

Ag Advocates Support For Additional Research Funding

The U.S. Department of Agriculture's (USDA) research, education and extension budget should be doubled to \$6 billion during the 5-year life of the 2018 Farm Bill, according to a broad coalition of 63 organizations, including the American Soybean Association (ASA).

The coalition submitted its request to House and Senate agriculture leadership.

"Modern agriculture is a science-based business," said Richard Wilkins, a Delaware farmer and ASA chairman, "and yet, we as a nation are not investing enough in publicly funded research while China has doubled its commitments. We need to regain and maintain our nation's place as the international leader."

—*Story by staff*



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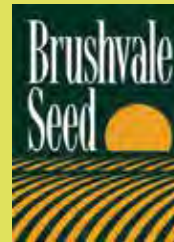


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