



THE NORTH DAKOTA Soybean GROWER MAGAZINE

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INSIDE

Railroad Delays Costing Farmers and Elevators

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Colfax Farmer Sees the Value of Membership

Colfax farmer Craig Olson was a member of the North Dakota Soybean Growers Association (NDSGA) but says he didn't really get to see what it was all about until he was elected to serve on the board of directors three years ago. "The biggest thing I've learned is what we do in Washington, D.C., and at our state level," says Olson. "There are a lot of people in this country that write our laws and policies that have never been on a farm or really don't know much about agriculture."

Vice President Olson says the main job of the NDSGA is to go out and educate those people about what we do and why we do it, and to show them the benefits of what we do so that they can write policies and make soybean farmers profitable.

Olson sees potential for membership growth in North Dakota, which has some 6,000 soybean growers, but only 700-plus are members of the NDSGA. "The more members you have, the bigger the voice you can have when you're talking to someone about your issues. A lot of NDSGA members have grown beans for a long time and see the value of being a member. It's the newer growers that could really benefit from membership," says Olson.

Olson also chairs NDSGA's legislative committee and says the

board is always looking for soybean growers who are willing to help the industry. He says that you don't have to be on the NDSGA board to serve on committees.

The main issue the Soybean Growers currently have is the ag rail situation, trying to get crops moving on railroads. Olson says that NDSGA continues to push the railroads to get the crops moving so we can prepare for this fall's harvest.

Olson expects a lot of corn to be

piled on the ground this fall. His bins are pretty full and says the grain elevators can't do anything about the wider-than-normal basis. "They're just as stuck as we are on this crop," according to Olson.

Being represented in Washington and Bismarck more than pays the membership dues for the North Dakota Soybean Growers Association, says Olson. "And there's also other benefits, like the Novozymes inoculant, and discounts on purchases of seed and new vehicles."



Craig Olson



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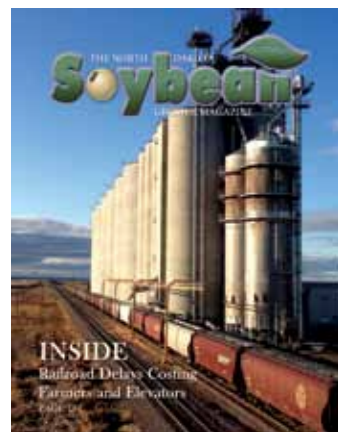
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On the Cover: *The Alton Grain Terminal shuttle loading facility south of Hillsboro, N.D., has more than 4 million bushels of storage.*



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To join ASA and the North Dakota Soybean Growers Association, complete and return this application with payment. **SAVE TIME AND POSTAGE.** JOIN ONLINE AT www.SoyGrowers.com

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As a member-driven organization, your support is vital to us.

As a member of the North Dakota Soybean Growers Association, you are able to take advantage of many member benefits. Members receive special pricing on many General Motors, Chrysler, Jeep and Dodge vehicles. You now have access to Ford Motor Company's X-plan Pricing on many new Ford Vehicles.

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Complete and return the form on this page or just call 701-640-5215 to become a member today!

CAN'T WE DO BETTER?

As we begin another season, we are faced, yet again, with a set of unique challenges that we must work through. The late start to spring has all of us feeling rushed and in a hurry to plant. We are not new to this game anymore. We have been faced with more than our share of planting challenges over the last few years, and we always seem to find a way to get the work done. In the end, we are always surprised with how well things go. We always seem to face the challenge and conquer it. With that in mind, I have a new challenge for you.

As I write this article, the North Dakota Soybean Growers Association has 728 active members, which ranks us in 11th place among all the soybean-producing states. The March 31st Prospective Plantings Report showed that North Dakota will plant 5.65 million acres of soybeans this year, putting us in 4th place in the nation. These numbers show that seven states (Ohio, Wisconsin, South Dakota, Nebraska, Missouri, Kentucky and Indiana) with fewer acres have more members than we do. In my opinion, that fact doesn't make us look very good.

The American Soybean Association assigns directors to each state based on the number of active members the state has. We currently have one director on the 45-member board. As we know all too well, North Dakota is often faced with a unique set of issues with which the rest of the country is not familiar. Every day, we are faced with transportation and wetland issues that our fellow farmers to the south and east struggle to understand. We do our best to make our voice heard, but sometimes, just one voice is not enough. Luckily for all of us, a second voice is well within reach.

The goal of the association is to have our second ASA director seated in December of this year. Therefore, we need to recruit 122 new members by September 30. My goal is to reach 900 members this year, which will allow us to pass Indiana and Missouri and to pull even with South Dakota. Although helping us get a second ASA director is important, your membership is even more important at home.

A large portion of our resources and time is spent making positive changes here in North Dakota. In just a few short months, the state legislature will be convening to chart a course for the next biennium. We have a great legislative staff that represents our industry well. Although they are good at what they do, their real strength comes from our numbers. The legislators all know that, when they speak, they are speaking for all our members. Knowing that, wouldn't it be great if we could make their voice even more powerful?

As we move past the planting season and into the nurturing of our crops, I wish you and your farm the right weather for a profitable year. I will also leave you with a challenge. I challenge you to strengthen our voice by becoming a member of the North Dakota Soybean Growers Association. We need you to help us do better.

Happy Summer!



Jason Mewes,
President
North Dakota Soybean
Growers Association



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Six Tips for Managing Pests

Regarding pest-management strategies for soybeans, Dr. Sam Markell and Dr. Janet Knodel, NDSU Extension plant pathologist and entomologist, offer the following six tips.

Scouting. Scouting is one of the most important and simple things that you can do to assess the threat of loss from yield-robbing pests such as soybean aphids, spider mites, foliage-feeding caterpillars or soybean cyst nematode. This information can pay dividends when determining management strategies. When monitoring for pests, scout several areas of the field because some pests can occur in “hot” spots, such as spider mites which often move into a field from the edge. An easy sampling protocol is to do five randomly selected locations per field while

walking a Z- or W-pattern and to sample 10 plants per location, for a total of 50 plants per field. Keep records about the number of insects or diseases per plant. It’s important to go back to the field on a regular basis, such as weekly, to see if new pests have emerged.

Use Economic Thresholds. Economic thresholds, or E.T.s, are useful tools for making pest-management decisions about whether to invest in the cost of a pesticide spray. The E.T. is the point where action should be taken to avoid higher pest densities that will cause significant yield loss. It’s important to understand that, at the E.T. level, there is no yield loss yet. The following E.T.s are recommended to manage insect pests in soybeans:

- Soybean Aphids: An average of 250 aphids

per plant and actively increasing aphid populations on 80 percent of the field, from vegetative through R5 (beginning seed) soybeans.

- Spider Mites: Heavy leaf stippling and mites are observed easily on lower leaves with some stippling that progresses into the middle canopy. Hot and dry weather favor mite outbreaks.
- Foliage-Feeding Caterpillars (Loopers, green cloverworms, thistle caterpillars and alfalfa webworms): Rather than using thresholds for individual defoliating insect species that are present in the field, consider the total leaf area lost as a threshold: vegetative=50 percent defoliation; bloom=40 percent defoliation; bloom to pod fill=20

percent defoliation; and pod fill to harvest=35 percent defoliation.

Rotate Pesticide Modes of Action. It’s important to rotate the mode of action to prevent the pests from developing resistance. The two-spotted spider mite is a good example of an insect pest where the mode of action must be rotated if more than one application of insecticides is needed for control. These pests have a short life cycle (multiple generations per year) giving them the edge to develop resistance to insecticides that are used repeatedly in a short period of time.

Crop Rotation. Crop rotation is a very important way to keep pathogen levels from increasing to high, sometimes unmanageable, levels. Crop rotation reduces the need for a rescue pesticide



application, helps preserve the lifespan of pesticides and resistance genes, and reduces the likelihood of yield loss. Phytophthora root rot is a classic example of why crop rotation is important. Many growers with Phytophthora root rot have experienced yield losses. However, growers who have Phytophthora root rot and limit crop rotation often see the diseased areas expand rapidly in a field. Those growers who do not rotate resistance genes in soybeans provide a perfect opportunity for the pathogen to adapt. Many fields in the southern Red River Valley have Phytophthora populations

that now overcome resistance genes. Would crop rotation have prevented this resistance? Probably not, but it would have slowed the resistance development in a big way. Need one more reason to rotate soybeans? Soybean Cyst Nematode (SCN).

Use Resistance Genes if Needed. Resistance genes are available for some of the most important pathogens and insects, including aphids and nematodes. Resistance genes provide a cost-effective option to fight insects and pathogens before problems occur, and can reduce or eliminate the need for a costly pesticide application. We recognize

two important barriers when using resistance genes. First, there is no perfect variety that has everything; and second, it can be difficult to predict which resistance gene is needed. However, if you are aware of specific problems in a field (e.g. Phytophthora or SCN), or are willing to hedge a bet (e.g. soybean aphid), resistance genes might put you money ahead by limiting yield loss and/or pesticide applications. When using resistance genes: rotate your genes (if possible), and monitor your fields for diseases and insects. (Pathogens and insects will adapt!)

Stay Engaged and Adapt. Agriculture

changes very quickly, and we anticipate that future management tools and recommendations will be dynamic. We can foresee situations where fungicides and/or insecticides with new modes of action will be developed. Forecasting models will be developed for additional pests. However, we can also see situations where new pathogen races develop or new insect pests are introduced to North Dakota. Staying engaged and being ready to adapt have frequently paid dividends throughout agricultural history. The same thing is true in modern agriculture; it just happens faster!

PROBLEMS WITH GOOSE DEPREDATION?

The North Dakota Game and Fish Department and USDA Wildlife Services offer assistance programs for producers who are experiencing crop depredation by geese, including scare devices, harassment techniques and training.

For chronic problems on agricultural land, special depredation permits are available that allow destruction of nests and eggs, and direct killing of Canada geese and goslings.

Depredation permits require a site inspection from USDA Wildlife Services to begin the process, phone number is 701-355-3300. For more information about Canada goose depredation permits, visit the Game and Fish website at www.gf.nd.gov/private-land-programs.

Qualified previous permit holders can renew their permit at the Game and Fish web address above, or call 701-328-6351.

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Horace Grower Gives Back

For Ryan Richard, growing soybeans involves more than just planting a crop in the spring and harvesting it in the fall.

The Horace, N.D., farmer also believes it is important to promote the soybean industry and to ensure its farmers have a voice in farm policy decisions. That's why Richard is a member of the North Dakota Soybean Growers Association (NDSGA) Board of Directors.

"I think it's important to give something back to the ag community," Richard says. "It's important for me to go to Washington and make sure this industry is well represented."

Richard has traveled to speak to North Dakota's two U.S. senators and representative several times during the past two years to discuss the U.S. Farm Bill. He is also the NDSGA delegate to the National Biodiesel Board and has talked to members of Congress about renewable fuel issues.

Richard plans to make another trip to Washington this month in order to talk to North Dakota's congressional delegation about the Renewable Fuel Standard and transportation issues.

"Transportation would be the biggest thing on my



radar, the car shortage. We just can't get our product out of the state. That's important because more than 90 percent of the soybean crop is shipped out of state." The shortage of rail cars has resulted in North Dakota farmers being at a \$2 per bushel disadvantage compared to farmers in other parts of the country, Richard noted.

Richard started farming in 2002. After graduation from Fargo South High School in 1997, he earned associate degrees in farm management and agricultural mechanics from the North Dakota State College of Science in Wahpeton and then attended North Dakota State University in Fargo, graduating with a degree in general agriculture.

Richard and his brother, Jamie, have a limited-

liability partnership called 6G Farms. They work together with their father, Claude, growing soybeans, corn, sugar beets and wheat as well as caring for a 150-head Angus cow-calf herd.

The Richard brothers started farming with a small number of acres. They gradually grew the number as farmland became available and as they earned the trust of area landowners. "We went from 80 acres, to a quarter, to a half (section) and started doubling every year," Richard said.

The brothers and their dad farm a total of 7,000 acres. On average, they grow 2,000 to 3,000 acres of soybeans annually. Soybeans have been an important part of their farm's crop rotation for a long time, Richard said.

Although prices have

fallen in recent months, soybeans are still a moneymaker for Richard. "It's still a profitable crop. It's a good part of our rotation."

Richard and his wife, Jessica, have three sons, ages 8, 7 and 5, and a daughter, 6 months. They live on a farmstead east of Horace where they are building a new house. Their two oldest sons already help with odd jobs on the farm, just as Richard did when he was a child. He started mowing lawns by age 8 and was driving the tractor for the dump cart at age 12, he said.

The 2014 crop season, like several during his dozen years of farming, had a challenging start. In early May, instead of wheeling a tractor across the field, Richard was working on equipment. However, he wasn't panicking about the lateness of the spring planting season. Planting soybeans in June doesn't affect the yield, he said.

Richard maintained a positive outlook, even as the rains continued to fall in early May. He wouldn't trade his chosen career for a less stressful job.

"I like that there's no monotony; there's a lot of things going on throughout the year. It keeps me on my toes."



Diana Beitelspacher
Chief Executive Officer
North Dakota
Soybean Council

DEAR VALUED SOYBEAN PRODUCERS:

I have a feeling that many of you are addicted to your smartphones. I am no exception. After all, our work demands that we stay connected, are in the know and are able to make business decisions quickly. I have an insatiable need to stay on top of everything that is happening in the news, in the business world, and with work and friends.

My smartphone plays an important role in keeping me connected wherever I am. I use it as an alarm clock; I text family, co-workers and friends with “important” messages; I conduct business on my phone, use it as a GPS, listen to music and take pictures to capture memories. From this perspective, my smartphone makes my life efficient and manageable.

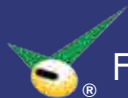
The problem is that my smartphone dependence is starting to erode the boundaries between my professional and personal life. My phone is the last thing I check at night and the first thing I reach for in the morning. I have even taken it on vacation. With all the time I spend on my smartphone, I have come to realize that, if I don’t start to wean myself from my smartphone dependence, it will soon become an expectation for me to be accessible 24/7.

On a recent Sunday, I made the commitment to turn off my smartphone for 24 hours and learned some valuable lessons. I thought that I would share them with you.

First, smartphones consume a lot of our time. We make phone calls, check email and send text messages that could easily wait. During my period of disconnectivity, I wondered what messages I was missing, who called me and what was happening in the world. When I checked my phone the next day, I realized that almost everything I missed on Sunday could have waited until Monday. There were a number of missed calls, emails and text messages, but the world did not end because I responded to them 24 hours later.

Second, it’s important to periodically disconnect to “live in the moment” and appreciate your surroundings. At one point during my “living in the moment” day, I went for a long walk and could actually feel the relief of not being chained to my smartphone. I wasn’t beholden to the people texting me, calling me or emailing me. I could hear my surroundings instead of the sound of my calypso ringtone. I reminded myself about how good it felt to live in the moment.

I challenge you to unplug for a day of digital detox. You will see how it does wonders for the soul! Have a wonderful summer.



North Dakota Soybean Council Hosts Reception and Private Screening of the Movie “Farmland”

Before the film hit theaters nationwide in May, the North Dakota Soybean Council (NDSC) and U.S. Farmers & Ranchers Alliance (USFRA) held a private preview screening of the documentary “Farmland” on April 30th at the Marcus West Acres Cinema in Fargo.

“Farmland,” a film by award-winning director James Moll, offers viewers an intimate and firsthand glimpse into the lives of six young farmers and ranchers across the U.S.,

chronicling their high-risk/high-reward jobs as well as their passion for a way of life that has been passed down from generation to generation yet continues to evolve.

NDSC invited professionals working in the restaurant, medical, health, nutrition, grocery and food industries to the private premiere. NDSC also invited media and area consumers who did not grow up on a farm and who are not familiar with agriculture, but have questions and concerns

about today’s agriculture, farming practices and how food is grown.

“With misconceptions circulating about agriculture and farming today, the North Dakota Soybean Council was proud to host this movie premiere,” says Suzanne Wolf, NDSC’s communications director. “The average American is several generations removed from farm life. Keeping consumer confidence strong in today’s farmers and agriculture was NDSC’s

goal in bringing the movie to Fargo. Our sponsored, private, premiere screening on April 30th brought in over 190 people to see the movie.”

Prior to the movie premiere on April 30th, a reception, promoting NDSC and the North Dakota soybean industry, was held in the lobby of Marcus West Acres Cinema. Several North Dakota farmers and ranchers also attended that reception. Moviegoers and the media were encouraged



Over 190 moviegoers saw NDSC’s sponsored, private, premiere screening of the movie “Farmland” on April 30th at Marcus West Acres Cinema in Fargo.



Funded by the **North Dakota** soybean checkoff.

to talk with them and NDSC about the film, North Dakota's soybean industry, soyfoods,

today's agriculture practices and farming. A light buffet dinner was served and featured

soyfood recipes. Movie attendees were also able to win "Farmland" movie souvenirs by

spinning the trivia wheel and answering soybean- and farming-related questions.



At the end of the movie and as they left the theatre, moviegoers were given gift bags with more information about U.S. farming and agriculture, NDSC, a "Farmland" movie discussion guide and other small gifts.



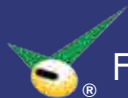
Moviegoers enjoyed dinner, trivia games and prizes, and conversation prior to the movie at NDSC's promotional reception. Past United Soybean Board Chairwoman Vanessa Kummer of Colfax, N.D. (far left) chats with movie guests and answers soybean- and farming-related questions.



Staff prepares Marcus West Acres Cinema for the reception and movie premiere. From left to right: NDSC CEO Diana Beitelspacher, NDSC Director of Research Programs Kendall Nichols, NDSC Communications Director Suzanne Wolf, North Dakota Soybean Growers Association Executive Director Nancy Johnson, NDSC Director of Marketing Stephanie Sinner and NDSC Manager of Business and Administrative Services Molly Fern.



Britt Aasmundstad of the North Dakota Department of Agriculture tests her knowledge about North Dakota's soybean industry at the "Farmland" movie premiere reception. Michele Bartholomy, a CommonGround N.D. volunteer, provided the trivia questions to moviegoers.



North Dakota Soybean Council Sponsors 2nd Annual Grain Trading Seminar

On March 19 and 20, the North Dakota Soybean Council (NDSC) and NDSU sponsored a Grain Trading Seminar course at NDSU in Fargo. The two-day seminar, led by Dr. Bill Wilson and Dr. Frayne Olson of NDSU's Agribusiness and Applied Economics Department, was offered free to 27 North Dakota soybean producers who learned

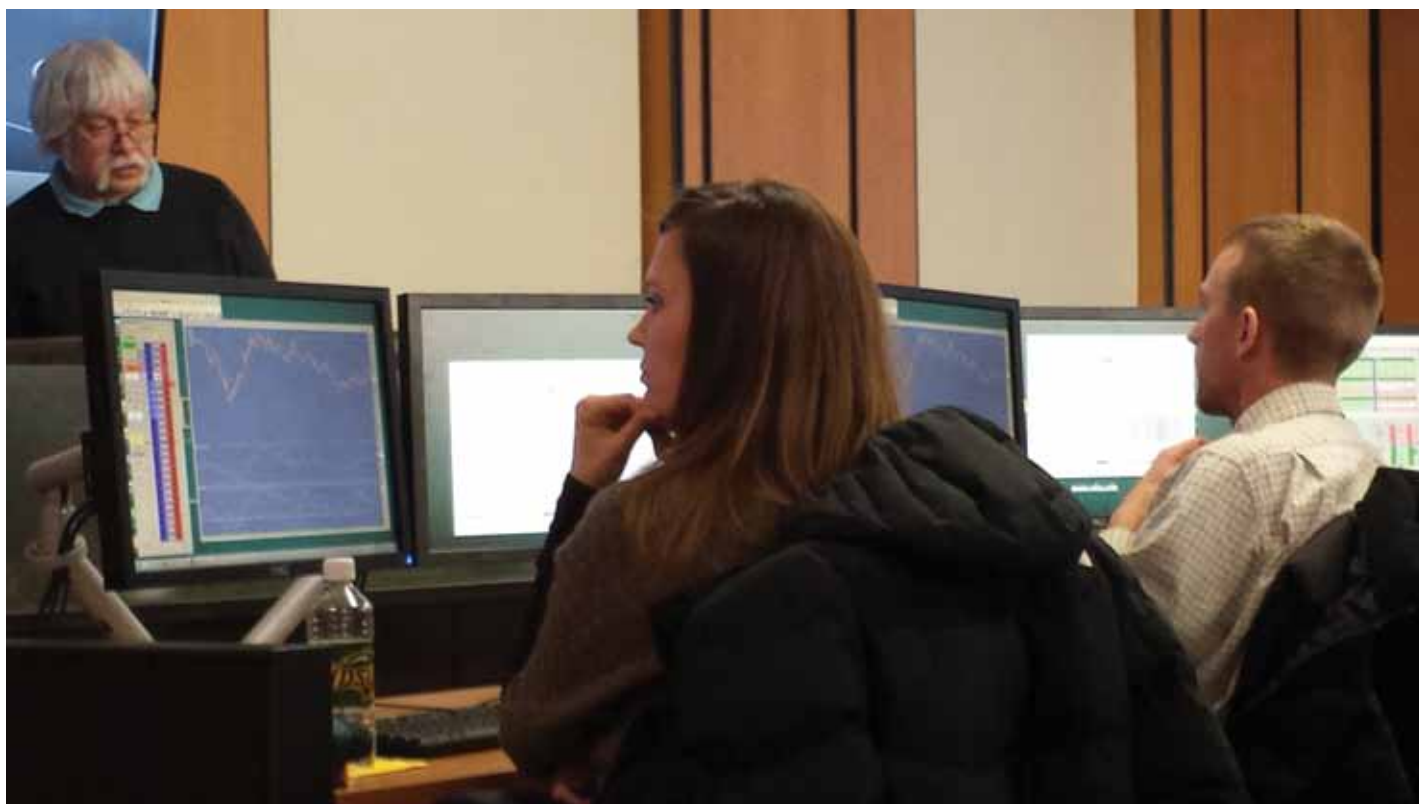
more about trading grain in today's fast-paced markets. Participants spent the two days using state-of-the-art equipment in NDSU's Commodity Trading Room, at Barry Hall in Fargo, and learned how trading impacts the farms' bottom line. The agenda included trading technologies, basis, options, geograin,

hedging, contract types, producer marketing plans and strategies.

"These are two days of intense learning, but it's worth every minute," says Stephanie Sinner, NDSC's Director of Marketing. "It's important that we can offer courses like this to our producers, so they can stay ahead of the game by understanding

all their options and how to manage their risk when it comes to getting their soybeans to market."

Most participants learned about this course via email. If you would like to be added to our email list and be the first to learn about these opportunities, please send your email address to mfern@ndsoybean.org.



Soybean farmers Laura and Tim Overmoe of Hillsboro, N.D. participated in the two-day Grain Trading Seminar course at NDSU in Fargo. Bruce Dahl (far left), a Research Scientist in the Agribusiness and Applied Economics Department assists participants with questions.



Nutrient Management Framework: North Dakota Agriculture Must be Involved

On April 16, 2014, the North Dakota Department of Agriculture (NDDA) gathered representatives from more than 20 state agriculture groups to discuss how NDDA should approach a nutrient management plan. According to North Dakota Agriculture Commissioner Doug Goehring, the North Dakota Department of Health (NDDoH), at the urging of the Environmental Protection Agency (EPA), is working on a statewide management framework that could significantly impact agriculture. Throughout the nation, other states have strict regulatory approaches for this issue, negatively impacting agriculture. To avoid an unworkable regulatory approach, North Dakota agriculture organizations and producers must be involved in this process.

The EPA issued a memorandum on March 16, 2011, that emphasized partnering with states in addressing phosphorous and nitrogen pollution,

explains Commissioner Goehring. The memo stated that, “while EPA has a number of regulatory tools at its disposal, our resources can best be employed ... by states.” The document is a call to action for states to implement plans that prioritize watersheds that need reduction, to set management goals, and to examine point and non-point source nutrient loading.

“The NDDoH has regulatory authority over water quality in the state and started planning a framework in 2011,” says Commissioner Goehring. “Currently, the NDDoH is facilitating work-group sessions and welcoming input while striving toward a final plan that is workable for our state. These work-group sessions are a perfect time for agriculture’s voice to be heard.”

The North Dakota Soybean Council and Soybean Growers Association participate in these work groups.

The EPA set numeric limits for nitrogen and phosphorous loading in

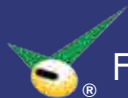
the Chesapeake Bay in 1987. The agency targeted agriculture, claiming that animal manure application and other processes accounted for nearly half of the bay’s nitrogen and phosphorous loading. As a result, the region is now subject to state regulations that are used to meet federal mandates. This locks states into plans with unattainable goals, says Commissioner Goehring.

Regardless of origin, nitrogen and phosphorous loading causes water quality issues, Commissioner Goehring further notes. These nutrients, which do not degrade in water, create environmental impacts, such as increased algae and decreased biodiversity, and affect human health and livestock. These problems and the regulations that historically follow them are why North Dakota’s agriculture industry must help craft a state-specific plan that is realistic and attainable.

“During the April agriculture stakeholder meeting, it was clear that

producers want a voluntary, non-regulatory approach which incorporates best management practices (BMPs),” says Commissioner Goehring. “We differ from states like Iowa, which has a more stringent approach, because of North Dakota’s agricultural diversity. This is why a state-specific approach is the only way forward.”

“Regulatory approaches are not an acceptable route for nutrient management in North Dakota,” Commissioner Goehring says. “For years, farmers and ranchers have planted buffers, monitored runoff, rotated crops and optimized fertilizer application to manage nutrient runoff. The NDDA and other agriculture groups are monitoring this issue, but more voices have more impact. This issue is not going away; and we need to act, so others don’t do it for us. A grassroots development of this management plan is the right step for North Dakota agriculture.” To get involved, contact Jim Gray at the NDDA (701-328-1505).



Essential Amino Acids: Building Blocks for a New Measure of Soybean Quality

It's the story of soybeans sold from North Dakota: always getting discounted in the market because of low crude protein (CP), regardless of being some of the highest-quality soybeans on the world market today. Well, your checkoff dollars are working to change this situation for you! Here is how it's happening...

FIVE ESSENTIAL AMINO ACIDS

The main characteristics in our soybean quality story are cysteine, methionine, threonine, tryptophan and lysine. They are essential amino acids (EAA) – also known as “limiting” amino acids – because swine, poultry and farm-raised fish cannot manufacture the compounds. They must be supplied in the diet. These EAAs occur naturally in soybeans, which is why soybean meal is such an excellent feed ingredient.

When these EAAs are not present in sufficient quantities in a feed ingredient, nutritionists and producers must supplement them with expensive synthetic amino acids. This step is added cost.

What if we could supply the EAAs naturally, thus eliminating the need for synthetic additives?

RESEARCH SHOWS THAT WE CAN

Research shows that our northern climate, with colder temperatures and shorter growing seasons, actually benefits amino acid content in soybeans. While cooler weather limits nitrogen fixing in the soybean plant, resulting in lower crude protein (CP) content, it has the opposite effect on EAA. Thus northern-grown soybeans often have higher EAA content.

Studies from many sources show northern soybeans that have lower CP content actually have higher EAAs than samples with higher CP scores.

INTRODUCING A NEW MEASURE OF QUALITY

To take advantage of this EAA benefit, the soybean checkoff boards of North Dakota, South Dakota and Minnesota are working together to introduce a new measure of protein quality. It is called Critical Amino Acid Value (CAAV), and it is changing the language of soybean protein quality

from crude protein to essential amino acids.

CAAV is calculated by adding the sum of the five most critical amino acids. It gives a measure of the CP percentage and provides a much more reliable value indication than the traditional CP measure.

With the traditional yardstick, CP percentages are just an estimate for the quantity of the total amino acids based on the detected nitrogen level. Measuring EAA content with the CAAV sum is a much better measure of protein quality.

Discerning nutritionists and producers, both



NDSC Director Charles Linderman (third from the right) visits the General Milling Corporation in the Philippines in February 2014 and discusses the importance of CAAV data with international buyers.



domestically and globally, want to know the limiting amino acids' content in feed ingredients because it indicates the feed's true value.

With crude protein (CP), we're using a 150-year-old technology in a 21st-century industry. Buying and feeding protein based on CP is inefficient and may be costly. CP is merely an estimate of protein based on an approximate measure of nitrogen ($CP = \text{percent N} \times 6.25$). CP does not provide any information about EAA content, and the level of nitrogen can be influenced by factors besides protein.

CAAV measurement delivers more value to producers, buyers and nutritionists by providing a more accurate picture of soybean protein quality, especially for northern-grown soybeans.

NORTH DAKOTA'S ROLE

The tri-state EAA team (North Dakota, South Dakota and Minnesota) allocated checkoff funds to conduct a series of technical CAAV seminars in the states' biggest soybean-buying markets: the Philippines, Vietnam, Indonesia, Thailand, China, Taiwan, Malaysia and Singapore. To date, the North Dakota Soybean Council (NDSC) has had two soybean



Brent Kohls, a soybean farmer from Mayville, N.D., talks with overseas buyers in Thailand and Indonesia about North Dakota's 2013 soybean production and the advantages of northern-grown soybeans.

producers or farmer-leaders participate in the overseas seminars. The seminars' purpose is to meet with animal nutritionists and soybean buyers to discuss the importance of buying soybeans that are high in amino acids and to explain the benefit that the soybeans will bring to feeding operations and bottom-line results. The person-to-person interaction also allows NDSC to enhance established relationships with buyers that the organization has known and worked with for many years.

The delegations were small with only 1-2 farmer-leaders from each of the 3 states, Project Manager Peter Mishek,

and a University of Minnesota soybean scientist presenting the research about amino acids in soybeans. The presentations included 2013 crop production and quality summaries, CAAV data, farmer perspectives and an introduction to CAAV.

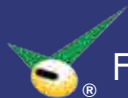
The first seminar was presented in February 2014 in the Philippines and Vietnam. Charles Linderman, an NDSC director from Carrington, N.D., participated in the Philippines segment of the trip that visited Manila and Makati. The second seminar took place in March 2014, and the group was in Surabaya, Jakarta and Medan, Indonesia, as well as Thailand. Brent Kohls

of Mayville, N.D., represented North Dakota soybean producers on this trip.

"This was a very valuable trip for North Dakota soybean farmers," says Kohls. "The millers and feeders are coming around to the concept of critical amino acids in soybeans and soybean meal. The buyers/feed mills are beginning to realize there are more important components of soybean quality than just crude protein. The feeders have agreed to begin testing while some have already begun analyzing shipments to find out the true value in their own feed rations."

BOTTOM LINE

The ultimate goal with the CAAV project is to achieve equal footing for northern-grown soybeans in the marketplace by not basing soybean value on crude protein alone. Working directly with soybean buyers, the three-state effort hopes to move them forward to look at the entire picture for their soybeans and to see the value they are getting from our soybeans that are naturally high in amino acids. This effort aims to positively impact the buyer/feeder's bottom line as well as helping get the true market value for North Dakota soybeans.



Transportation Beyond the Elevator Matters to You

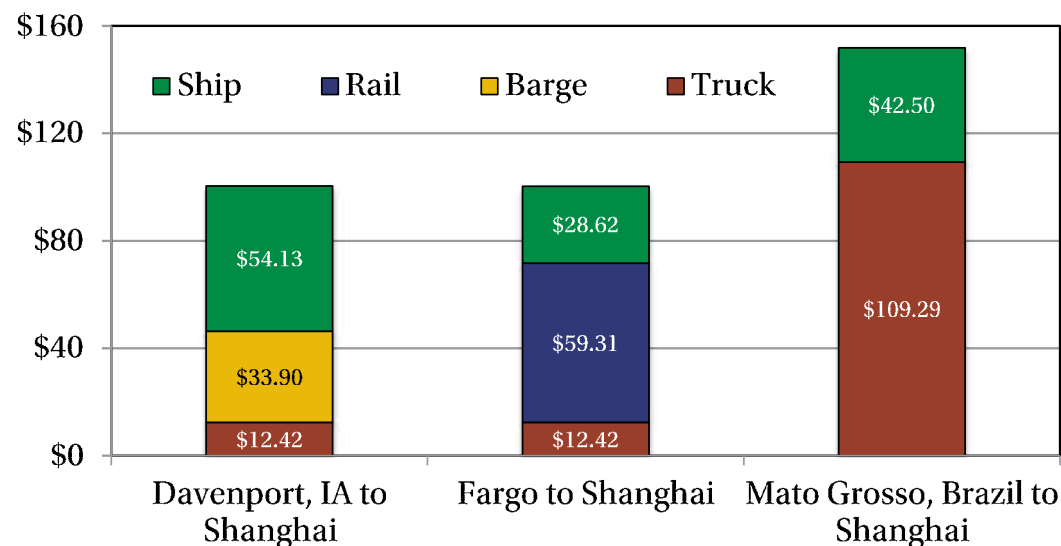
The predominant concern confronting North Dakota farmers is not from either the supply or demand side of the equation. Rather, the main concern is the connectivity between the supply and demand.

North Dakota soybean farmers currently face scarce access to the freight rail system, antiquated rural roads and bridges, and trucking regulations that constrain efficiency. In other areas of the country, soybean farmers and shippers struggle with a lock-and-dam system that is dilapidated and increasingly unreliable.

The reason North Dakota soybean farmers are so competitive is not due to a lower cost of production but, rather, a lower cost of transportation. As the graph indicates, having access to freight rail or the inland waterway system can enable soybeans to be transported much more effectively. According to the U.S. Department of Agriculture, it costs \$100.35 to transport a metric ton of soybeans originating in Fargo, North Dakota, to a

COST OF TRANSPORTING SOYBEANS TO CHINA

Cost per metric ton, fourth quarter, 2014, USDA data



customer in Shanghai, China. In comparison, it costs \$151.79 to ship soybeans originating in Mato Grosso, Brazil to Shanghai.

According to Mike Steenhoek, executive director of the Soy Transportation Coalition (STC), while Brazil and other countries are investing in their infrastructure, we remain lackadaisical with investing in ours. It can be accurately stated that the U.S. is more of a spending nation than an investing nation. A high percentage of taxpayer dollars is used to meet immediate wants, rather

than to provide a transportation infrastructure that meets the future needs of North Dakota agriculture and the broader economy.

The Soy Transportation Coalition is an organization comprised of 12 state soybean boards, including the North Dakota Soybean Council (NDSC), along with the American Soybean Association and the United Soybean Board. On behalf of NDSC, Chairman Scott Gauslow of Colfax, N.D., and Mike Appert of Hazelton, N.D., sit on the STC board. Gauslow is currently the vice chairman of the STC.

“Being an active part of the STC has allowed us to steer conversation and resources towards the transportation challenges our soybean farmers are faced with here in North Dakota,” says Gauslow. “STC has been a great help in getting transportation front and center for conversations and action to help alleviate our troubles.”

“Maintaining a competitive advantage requires continuous attention and diligence,” says Steenhoek. “As our industry progresses, so must our transportation system.”



New Products, New Opportunities Boost Soy Value

Soybeans offer an abundant and renewable supply of ingredients, making it possible for companies to reduce the petroleum content in commercial and industrial products. Last year, the soy checkoff partnered with manufacturers to help commercialize 45 new soy-based products, giving farmers and others more opportunities to buy products that contain U.S. soy. These products have helped increase the industrial demand for U.S. soy by 482 percent in the last 10 years.

"Many soy-based products that are on the market today are due to the continued research funded by the soybean checkoff," says Jay Myers, a soybean farmer from Colfax, N.D., and a director of the United Soybean Board. "Industrial applications

diversify demand for U.S. soybeans and add value for U.S. soybean farmers."

The following items are some of the latest and exciting soy products that resulted from your soybean-checkoff investment.

SOY-BACKED TURF

Soybean season goes into overtime again this fall because football fields covered in soy-backed AstroTurf GameDay Grass, like the one at the FargoDome, continue to grow in popularity at high schools and colleges across the nation. Bio-Cel technology, developed by Universal Textile Technologies with support from the soy checkoff, replaces petroleum-based ingredients with soy-based polyols to manufacture the AstroTurf backing system. Water does not affect the

backing. The system also withstands football cleats, making this new use for soybean oil a popular choice for sports facilities.

TRACTOR TIRES

Bridgestone Americas, Inc. is currently testing a tractor tire that contains 10 percent soybean oil. Each 900-pound tire contains about 90 pounds of U.S. soy oil, the oil from about 8 bushels of U.S. soybeans. According to the company, that's enough to completely replace the petroleum-based oils in the tires.

SOY-BASED FOAM

Since Ford began using soy-based foam in the seats of the 2007 Mustang, the company has used it in more than 7 million vehicles nationwide, reducing carbon dioxide emissions by more than 20 million pounds and petroleum by

more than 5 million pounds annually.

SOY-BASED PAINT

The next time you see fresh, white traffic stripes on the road, it might be BECKOSOL Traffic Paint that is made with soy oil. The green construction movement has driven the demand for products that can maintain strict environmental regulations without sacrificing performance. Researchers recently developed this water-based paint that offers easy application, high gloss, excellent flow and leveling, and durability similar to traditional traffic coatings.

Visit a Lowe's or Home Depot to see your soybeans on the shelf. Take home a can of Rust-Oleum Ultimate Polyurethane, and you'll be ready to give the shelves or other interior wood furniture in your home a finishing touch. This environment-friendly option has a better resistance to household chemicals and scratches; it dries faster than non-biobased products; and it's 33 percent more durable than the leading competitor.



Railroads Costing Farmers, Elevators

As of late April, Plains Grain and Agronomy (PG & A) General Manager Keith Brandt's Enderlin facility was full of 2013 corn and was 1,500 railcar loadings behind. Brandt thinks 50 to 70 million bushels of last year's corn could still be in the bin when this fall's harvest begins. He anticipates that PG & A will probably have to quit accepting corn until it gets over the hump with the soybean harvest.

The clogged system is responsible for new-crop

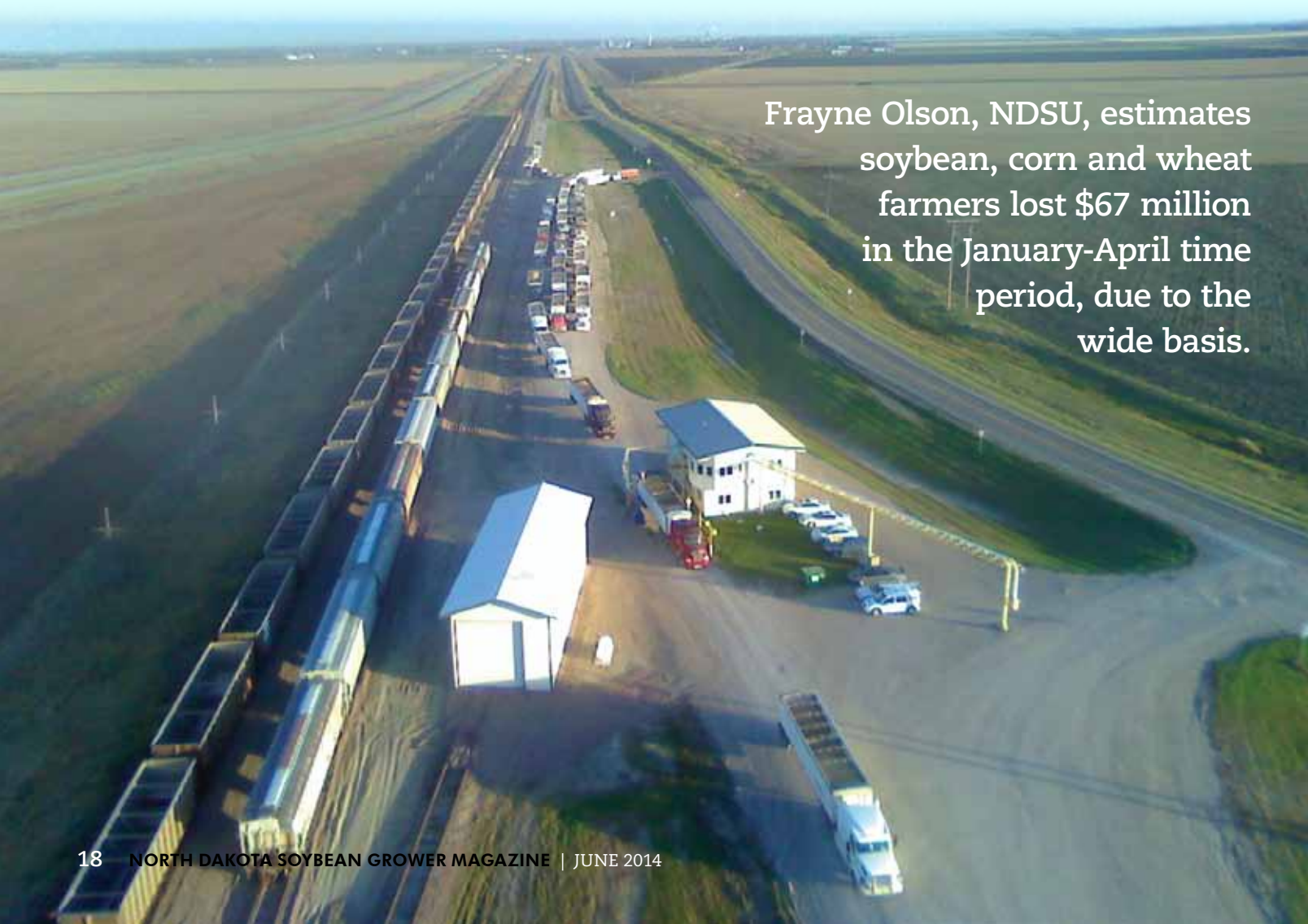
basis levels that Brandt estimates are 15 to 20 cents wider than normal. "And that probably won't narrow unless the railroads start to perform better or we have a poor crop," says Brandt. "I think the only way that can happen is if business on one end of the railroad slows down. That's either a slower economy or a short grain crop."

Brandt says the old-crop soybean basis has been 30 to 50 cents per bushel wider than normal, the result of the

elevators' uncertainty about when they'll be able to deliver grain to buyers. Brandt says that margins for handling grain are narrow and that elevators are carrying a full house of cash inventory, so interest expenses continue to climb as well.

The wide basis has been felt by farmers. Dr. Frayne Olson, North Dakota State University Extension crops marketing economist, estimates that soybean, corn and spring wheat farmers lost about

\$67 million of revenue for crops sold from January through April 2014 due to the wider-than-normal basis levels. Olson calculates that the soybean basis at six key elevators across North Dakota in March was 89 cents wider than the previous five-year average. He says there is the potential for an additional \$95 million in lost revenue from the sale of on-farm stocks of wheat, corn and soybeans if basis levels do not improve.



Frayne Olson, NDSU, estimates soybean, corn and wheat farmers lost \$67 million in the January-April time period, due to the wide basis.

Testifying on behalf of the American Soybean Association (ASA) at a Surface Transportation Board (STB) public hearing in Washington, D.C., in April, Underwood, Minn., farmer Lance Peterson estimated that the basis in his area was 60 cents per bushel wider than normal. He figured that he lost \$40,000 on his remaining 2013 crop as a result. "Losses in the upper Midwest could be in the hundreds of millions of dollars," said Peterson. "That's making lenders hesitant and could make it difficult to get operating loans."

North Dakota Grain Growers Association President Bob Wisness, testifying at that same hearing, said that farmers who were unable to sell their grain were taking out loans to cover their operating costs this spring.

Ag processors have also been affected. Production was slowed and, in some cases, halted at various ethanol, sugar, corn, soybean and flour milling operations due to the lack of rail cars to ship the finished product.

North Dakota Grain Dealers Association Executive Vice President Steve Strege was told of one North Dakota elevator that paid \$750,000 in late penalties, just in the month of January. Elevators have

Plains Grain & Agronomy GM Keith Brandt blames the clogged transportation system for the wider-than-normal basis.



paid as much as \$6,000 per car in the secondary market, twice the normal rate. That amount equates to approximately \$1.00 per bushel.

"There is so much uncertainty about what freight will cost and when they (grain elevators) might get it," says Strege, "that they're either going to buy less (grain) or take more of a margin, so the farmer gets less income as a result."

Olson says the main reason for the wider basis is the higher cost and availability of trains. "If you're an elevator manager and you're full and a farmer calls up and says he wants to deliver grain, what do you do?" asks Olson. "And so, what is happening is the local elevators keep lowering the price to prevent farmers from delivering." Olson says that there are a lot of things that can influence the basis, but it's simply the difference between what the futures market is telling farmers to do and what the cash market is telling farmers

to do.

The wide basis negated a nice rally for old-crop soybean futures this spring, prompting farmers to question how they can take advantage of that opportunity. Olson says that there are a couple ways: to work with a commodity broker and sell a futures contract, or to use a hedge-to-arrive, or a futures-fixed, contract with your local elevator. In either case, the basis is left open.

Looking ahead to this fall, Olson sees better odds of the basis improving rather than widening more. He does not expect a major improvement. "If our crop is a little smaller than expected, buyers may have to bid more aggressively to get grain to flow," according to Olson. "But, if we have another really big crop, that will put additional pressure on our transportation system."

Strege says that BNSF Railway normally talks about three turns of its shuttle trains per month

between North Dakota and the west coast. That number got down to 1.6 this winter. BNSF's Agricultural Group Vice President John Miller told the National Grain and Feed Association convention in March that he hopes to get back to 2.5 turns per month by the end of this year.

Strege thinks that Canadian Pacific (CP) will have a bigger problem catching up. "They've actually leased some of their locomotives to BNSF; some CP shippers have talked about being 100 days behind on cars," said Strege.

Strege also thinks the railroads have seen what shippers can pay in the secondary market, so we can expect rate increases.

The cold winter and rising crude oil shipments have been given much of the blame for the lack of railcar deliveries, but Olson thinks the problem started before the cold weather arrived. Olson says last year's record corn crop, and the large soybean and wheat crops were met with tremendous demand after the grain pipeline was nearly empty following the 2012 drought. "So, there was tremendous pent-up interest in buying grains, so the pipeline had to be refilled as quickly as possible," says Olson. Also, railroads that downsized during the Great Recession have not

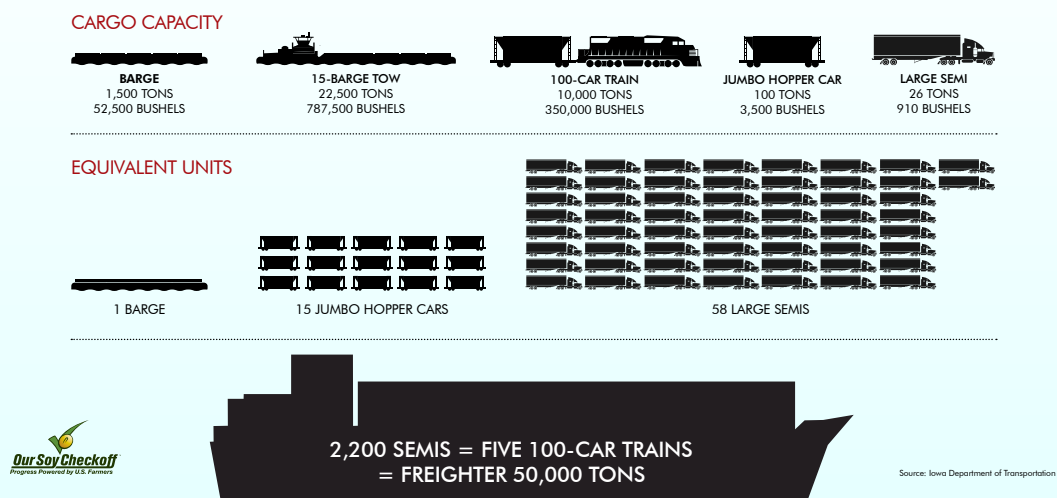
been able to get enough crew members or engines to meet demand.

Cory Tryan, grain manager at Alton Grain Terminal, LLC, Hillsboro, N.D., thinks the railroads were pretty fortunate to be able to catch up this spring because farmers were slow to move grain. “We had our worst pre-bought book for fall delivery for seven or eight years, so it looked like we weren’t going to handle anything at harvest,” said Tryan. “So, how does a railroad prepare for that? I think they got caught off guard. We really only had about 60 percent of a normal harvest-flow last fall, and we still had a wreck.”

Tryan, whose shuttle-loading facility is on the BNSF main line that runs both directions, pre-buys his shuttle freight one-to-two years in advance and buys in 10-day windows. He says that he got most of the pre-bought freight on time, although a couple Domestic Efficiency Trains were over 30 days late. “I can’t complain, I guess,” says Tryan, “but I did scratch my head when there were locomotives sitting here, running, for six-to-eight days, hooked to a train that was loaded and ready to go, and they (BNSF) were saying they were short of locomotives.”

The shift in North Dakota crop production and the volumes now being handled are also a

BULK GRAIN transport



factor, according to Olson. “Moving from 40- to 50-bushel wheat to 100- to 150-bushel corn has put some strain on the existing system,” says Olson. “Another structural shift occurring in North Dakota is the rapid growth in world soybean consumption, led by China and other Asian countries. The shortest, lowest cost way to serve that demand is to pull soybeans from the Northern Plains to the Pacific Northwest.” Another structural shift, seen worldwide, is the move to just-in-time delivery. No one wants to build storage.

Minnesota Soybean Growers Association Vice President Bill Gordon told the April STB hearing that, if there aren’t enough U.S. beans reaching the Pacific Northwest, customers like China will go to Brazil to meet their needs, risking our reputation as a

reliable supplier.

ASA Director Peterson says soybeans are especially impacted by transportation costs because over 50 percent of U.S. soybeans are exported. Eighty percent of those export sales take place between September and February.

North Dakota Soybean Growers Association Director Eric Broten has a big worry. “Is there is enough slack built into the schedule this summer to get caught up or will we go into harvest as far behind, or even farther behind, than we were last winter?”

PG & A’s Brandt says another factor that no one is talking about is the demand for exporting coal. “In the next five years, there will be demand for exporting coal off the West Coast that would almost double the amount of grain we’re currently exporting,” according to Brandt. “If

that happens, I don’t know where the track capacity will be. In five years, BNSF Railway wants to be double-tracked across North Dakota and Montana, but that won’t be enough.”

BNSF Railway spokesperson Amy McBeth says the railroad is a victim of its own success. “Last year, there were 800,000 new units carried on all Class 1 U.S. railroads. BNSF had 400,000 units of that growth,” she said. Volumes on the railroad are near BNSF’s all-time high that was reached in 2006. BNSF plans to spend \$5 billion on capital improvements this year; \$900 million of that amount is for expanding and maintaining lines that serve the Dakotas.

At the STB hearing in April, BNSF Executive Vice President and Chief Marketing Officer Steve Bobb said that BNSF is investing heavily, will

work its way through the current issues and will be a stronger railroad. "We will have the current agriculture demand moved and be positioned for new crop this fall," said Bobb.

Brandt doesn't think that we'll get the rail problems fixed as quickly as the railroads are leading us to believe. With all the work the railroads are doing on their tracks this summer, there will be track blocks. Trains are idled while crews are working on tracks from 7 a.m. to about 4 p.m. four days a week.

Soy Transportation Coalition Executive Director Mike Steenhoek says that BNSF is putting



Steve Strege, NDGDA, says the uncertainty in the rail business has resulted in additional costs for grain elevators which impacts growers.

its money where its mouth is. "The question is, will it be enough?" asks Steenhoek. "They're (BNSF) confident they'll be able to remedy the

situation, and there is evidence that the problem is getting better, but I have a healthy degree of skepticism."

Like a number of other rail shippers, Brandt thinks the railroads put too much blame on the cold winter for their lack of railcar deliveries. Brandt's Enderlin, N.D., shuttle-loading facility peaked with loadings in 2008-2009. He also says fewer grain cars were loaded in April than in February at PG&A.

No one disputes the impact of Bakken crude oil shipments. From early 2010 to the end of 2013, U.S. production of crude oil rose nearly 40 percent. By 2016, production is expected to increase another 25 percent. Most of this increase is occurring in the middle of the country. An estimated 400,000 carloads of crude oil originated in the U.S. in

2013, a 37-fold jump since 2009. Seventy-one percent of the nation's crude oil moved by rail last year.

NDSU's Olson is not suggesting that farmers change their loyalty, but thinks there may be times when an elevator 20 miles down the road will get trains and your local elevator may not. If that situation happens, farmers will see strong incentives if they're prepared to make those deliveries. Another thing that Olson thinks will be very important is for farmers to work with their elevator to get better coordinated on when they deliver. He also says that, at times, there will be considerable premiums for on-farm storage.

For grain elevator managers, Olson thinks managing freight will be critical in the future, both for the cost of freight and the deliveries.

The extremely tight supply of soybeans may help narrow the basis at harvest. Bret Oelke, a regional extension educator with the University of Minnesota Extension Service, says that the marketplace will really need soybeans right away and that Northern Plains' farmers are the first to market. "That (timing) should, if not make basis considerably better than we expect, at least not let get any wider," says Oelke.

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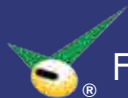
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Soybean Producers Elect Four Directors to the North Dakota Soybean Council

North Dakota soybean farmers elected four directors to the North Dakota Soybean Council (NDSC). Each director will serve a 3-year term.

Perry Ostmo, a soybean producer from Sharon, N.D., was elected to represent Nelson, Griggs and Steele Counties. Ostmo raises soybeans, corn, hard red spring wheat, barley and edible beans. He is also the clerk/treasurer of Sharon Township and the Aneta Fire District; treasurer of the Steele County Township Officers Association; a board member of the Steele County Soils Committee, Job Development Association, Steele-Traill County NDSU Extension Advisory Committee and Trinity Church Council; secretary of the Prairie Faith Parish; president of the Sharon Marketing Club and vice president of the Steele County Farmers Union. Ostmo has a Bachelor of Science degree from NDSU in agronomy. Ostmo and his wife, Patti, have four children. He has been



Perry Ostmo

appointed to the NDSC marketing committee and represents NDSC on the Northern Crops Council.

"I'm very excited and honored being elected to the North Dakota Soybean Council," says Ostmo. "I look forward to serving on the marketing committee as we continue to find new uses and greater markets for all North Dakota soybean growers."

Tyler Speich of Milnor, N.D., was re-elected to a 3-year term representing Ransom and Sargent

Counties. Along with his father and brother, Speich raises soybeans, corn, alfalfa, wheat and sunflowers. The Speichs also operate a cow/calf operation. Along with farming, he is also a seed sales representative. Active within his community and county, Speich is involved with the Sargent County Farm Bureau, Sargent County Crop Improvement board and Milnor Fire Department. He currently serves as vice chairman of the NDSC and represents NDSC on the North Central Soybean Research Program board. Speich has a bachelor's degree from NDSU in crop and weed sciences. He and his wife, Betsy, have one daughter.

Minto, N.D., soybean producer Arthur Wosick was re-elected to a 3-year term, and he represents Pembina, Walsh and Nelson Counties. Since 1982, Wosick has increased foundation seed for new NDSU varieties of wheat, barley and durum seed for the Walsh County Crop

Improvement Association, where he currently serves as secretary. Since 1977, he has raised soybeans. He has been the Pulaski Township assessor since 1979, a member of the American Legion and the treasurer of the Polish National Alliance of Warsaw. Wosick represents NDSC on the World Initiative for Soy in Human Health board. He and his wife, Joane, have four adult children and five grandchildren.

Mike Appert of Hazelton, N.D., was re-elected and represents District 12 which consists of 21 southwest North Dakota counties. Appert raises soybeans, corn and sunflowers. He has a finance degree from the University of North Dakota and is also a seed dealer. He sits on the Red Trail Energy, LLC board and his local church board. Appert sits on the Soy Transportation Coalition on behalf of NDSC. He and his wife, Linda, have two children and one grandchild.



North Dakota Soybean Council Re-Elects Executive Officers

Executive board officers were re-elected during the North Dakota Soybean Council's (NDSC) board meeting on March 25, 2014. Scott Gauslow of Colfax, N.D., was re-elected as

chairman of the board. Gauslow represents farmers in Richland County. He is currently NDSC's representative for the Soy Transportation Coalition where he serves as vice chairman.

The board re-elected Tyler Speich of Milnor, N.D., as its vice chairman. Speich represents soybean farmers in Ransom and Sargent Counties. Speich represents NDSC on the

North Central Soybean Research Program Board.

Harvey Pyle of Fargo, N.D., was re-elected as secretary. He serves soybean farmers in Cass County. Pyle represents NDSC on the National Biodiesel Board.

Westhope, N.D., soybean producer Dusty Lodoen was re-elected to the position of treasurer. Lodoen represents soybean producers in 13 counties in northwest North Dakota. He represents NDSC on the U.S. Soybean Export Council.



Scott Gauslow



Tyler Speich



Harvey Pyle



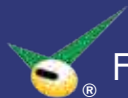
Dusty Lodoen

NDSC RECOGNIZES FORMER BOARD MEMBER FOR DEDICATION AND SERVICE

At its March 25, 2014, board meeting, the North Dakota Soybean Council (NDSC) bid farewell to veteran board member Mike Satrom of Galesburg, N.D. (right). He had served on the board since 2012. Satrom also represented NDSC on the Northern Crops Council since 2012. He also served on the NDSC board from 2000-2006. Satrom, along with his son, Mark, operates a farm in Steele County, raising soybeans, corn, spring wheat and edible beans.

NDSC thanks Satrom for his many years of dedication and service to North Dakota's soybean industry. An appreciation plaque and cake were presented by NDSC's CEO Diana Beitelspacher (left) on behalf of NDSC.





Overhead Power Line Safety and Spray Equipment

Andrew Thostenson, pesticide program specialist with NDSU Extension Service, advises the following steps to stay safe when dealing with electrical hazards and spray equipment:

- Carefully observe power line locations before you enter the field.
- When setting up spray booms, maintain a minimum 10-foot clearance between your equipment and the power line. (Just because you do not physically come into contact with a line does not mean you are okay. Electricity can and will arc.)
- While 10 feet is a minimum, remember that it is difficult to judge distances when the end of the boom may be 50 or 60 feet from your cab location. Plus, the angle of your vision may be skewed or partially obstructed. Therefore, 25 feet of clearance would be desirable.
- If you arc or come into contact with a line, stop and call for help IMMEDIATELY on a cellular telephone or radio. Contact 911, indicating to the dispatcher that there is an electrical emergency.
- Instruct responding family members, co-workers, or neighbors to maintain a distance of 30 feet from your equipment. They should not enter this area unless instructed by a utility professional.
- If the equipment is still functional, slowly back away from the line.
- DO NOT exit the cab unless instructed to do so by a utility professional.
- Exiting the cab is a high-risk maneuver and should ONLY be attempted if your life is threatened, i.e., by fire.
- If you have to leave the vehicle because of fire,
 1. Keep your arms close to the trunk of your body.
 2. Do not grab handholds or railings as you exit the cab.
 3. Jump as far from the machine as possible, but stay in control of your limbs. Arms that are outstretched or legs that are spread wide, when energized, can arc. This placement can cause serious electrical burns and/or death.
 4. Once you land on the ground, keep your arms close to your body, and take very tiny steps or small bunny hops away from the equipment. Keep your legs close together to avoid an arc. DO NOT run or stride away from the equipment.

Successful pesticide application requires attention to detail. Stay observant, and look for electrical hazards. If you come into contact with a line or if electricity arcs onto your equipment, do not panic. Call for help, and exit the vehicle only if your life is threatened or you are instructed by a utility professional.





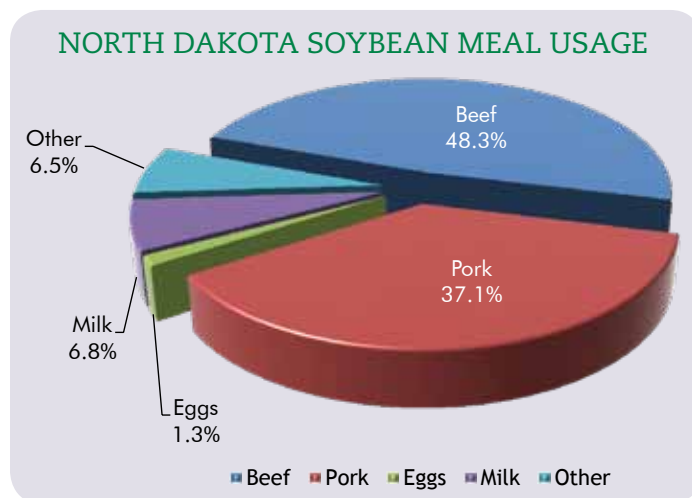
Animal Ag Continues to Feed North Dakota's Economy

CHECKOFF STUDY SHOWS POULTRY, LIVESTOCK FARMERS CONTRIBUTE TAX DOLLARS, JOBS

In North Dakota, cattle are drawn to soybean meal like people are drawn to the smell of lefse. That's a good thing because cattle production, in addition to being a successful animal agriculture sector overall, benefits the soybean farmers who depend on animal ag as the biggest market for U.S. soybean meal.

Beef cattle consume nearly 48 percent of the soybean meal feed in North Dakota, followed by hogs at approximately 37 percent and dairy cattle at 7 percent, according to the recent United Soybean Board soy-checkoff-funded Animal Agriculture Economic Analysis. In 2012, North Dakota's animal ag used an estimated 47,000 tons of soybean meal, or the meal from nearly 2 million bushels of soybeans.

Nationwide, poultry, swine and other livestock consume about 97 percent of the supply of U.S. soybean meal every year, making animal ag the largest user of soybean meal. Overall, U.S. poultry, livestock and fish farmers used more than 30 million tons of soybean



meal, or the meal from 1.26 billion bushels in the marketing year that ended in 2012. That amount was an increase of 1 million tons, or the meal from 42 million bushels, from the previous year.

The relationship between soybean farmers and the animal ag sector has lasted for generations. That partnership helps sustain local farms and produces safe, reliable food for the rest of the world.

"To ensure that we hold on to our top market, it's important that we continue to meet livestock and poultry farmers' needs for high-quality soybean meal," says Jared Hagert, United Soybean Board treasurer and a

soybean farmer from Emerado, N.D. "We are proud to offer a strong protein source for a sector that supports local economies and provides so many jobs."

Not only does the sector help improve soybean farmers' bottom lines, but animal agriculture also continues to help North Dakota's economy by supporting over 10,000 jobs, according to the study.

The report also outlines the economic benefits that the poultry and livestock sectors provide. In 2012, animal ag provided the following benefits to North Dakota's economy:

- Support for 10,500 jobs
- \$2.6 billion in total economic output

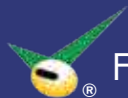
- A \$409-million impact on household incomes
- More than \$200 million from income and property taxes

In North Dakota, cattle production was 679 million pounds in 2012. Hog production stood at 57 million pounds, and milk production was 347 million pounds.

A successful animal agriculture sector benefits the soybean farmers who depend on animal ag as the biggest market for their soybean meal.

"The productivity of the animal ag sector affects everyone, not just the world of agriculture," Hagert says. "The support for the local economy and the employment opportunities livestock and poultry farmers provide to the state cannot be overestimated or forgotten."

Nationally, the animal ag industry supported 1.8 million jobs and provided \$346 billion in total economic output, according to the study. The sector also added \$60 billion to American household incomes and paid \$21 billion for income and property taxes.



NDSU Pest Management Application Now Available

The long-awaited NDSU Pest Management app for smartphones and tablets is now available from the Apple and Google Play stores. Simply type “NDSU Pest Management” in the search bar, and click enter. The NDSU Pest Management app will appear and can be downloaded.

The initial download will take more time to

transfer to devices due to the volume of data. Once downloaded, all the information is on your device, and a wireless connection will not be necessary to access information. After the app is downloaded, timely updates will automatically occur when connected to a wireless network while the application is opened.

The app is designed for ease of use, providing growers with another tool as they make field

decisions. The North Dakota Soybean Council is a proud supporter of this project, funding the soybean portion of the application.

The app is searchable within each category, giving users a quick way to find a pest or management aid quickly and efficiently. There are also special tools specifically designed for the weed section of the app to provide herbicide efficacy ratings about specific

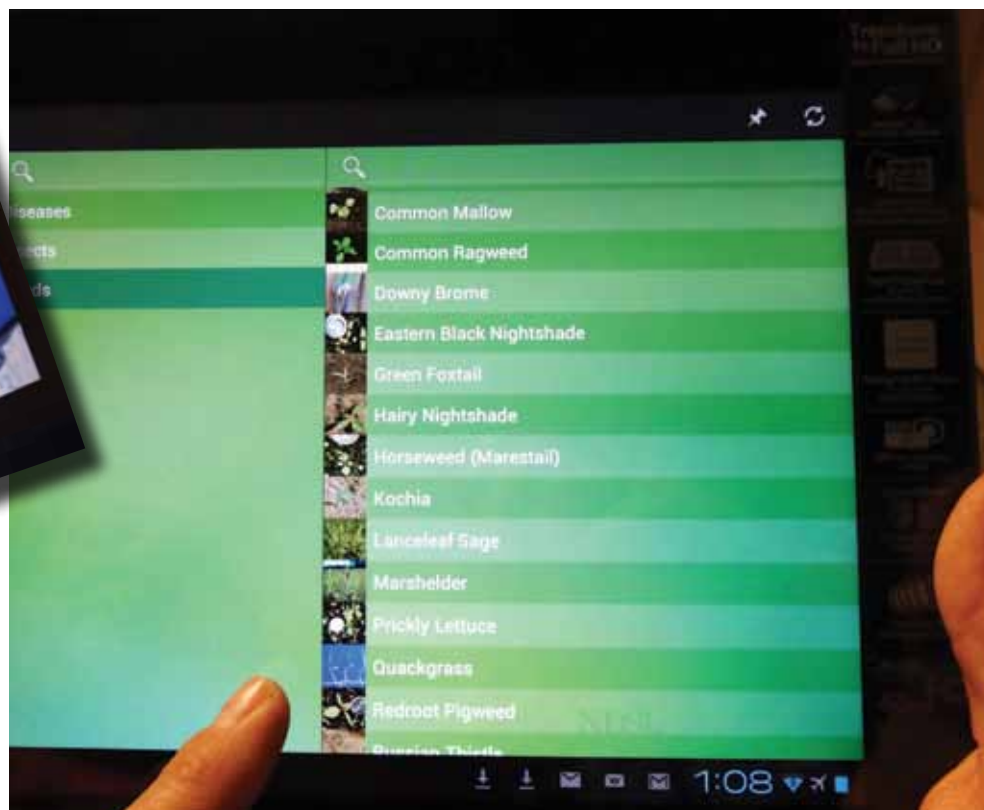
weeds and crop rotation restrictions for herbicides with residual properties.

The NDSU Pest Management app is a tool that combines select information from the North Dakota State University Weed Guide, Disease Management Guide and Insect Management Guide.

Questions or comments can be sent to nds.pest.management@nds.edu or to angela.kazmierczak@nds.edu.



The new easy-to-use NDSU Pest Management app helps identify weeds with color photos. The inset photo is prickly lettuce weeds.





Project Safe Send Dates and Locations Announced

Farmers, ranchers, pesticide dealers and applicators, government agencies and homeowners should bring any unusable pesticides to any of the 12 Project Safe Send collections in July.

The program accepts old, unusable or banned pesticides, including herbicides, insecticides, rodenticides and fungicides. The collected pesticides are shipped outside the state for incineration. Project Safe Send is funded through pesticide manufacturers' product registration fees.

"Check your storage areas for any unusable pesticides and safely set them aside for Project Safe Send," Agriculture Commissioner Doug Goehring said. "If the containers are deteriorating or leaking, pack them in larger containers with absorbent materials. Free heavy-duty plastic bags are available from the North Dakota Department of Agriculture."

People with more than 1,000 pounds of pesticides should pre-register at least two days prior to delivery. No other pre-registration is required. A maximum

of 20,000 pounds of pesticides per participant will be accepted. Pesticide rinse water and empty containers are no longer accepted.

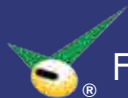
To pre-register, obtain

plastic bags or get more information, contact Jeremiah Lien at the North Dakota Department of Agriculture at (800) 242-7535 or jjlien@nd.gov.

The collections will run from 9 a.m. to 3 p.m. local time at the North Dakota Department of Transportation facilities in the following cities:

PROJECT SAFE SEND SCHEDULE

DATE	CITY	LOCATION
July 8	Forman	South Highway 11
July 9	Edgeley	U.S. Highway 281 & N.D. Highway 13
July 10	Steele	3840 25th Ave. SE
July 11	Mott	1/2 mile north of Mott on the west side of N.D. Highway 8
July 14	Belfield	Southeast corner of U.S. Highway 85 and Interstate 94
July 15	Bowbells	506 Centennial Drive
July 16	Garrison	515 Highway 37 SE
July 17	Rugby	617 1st St. NE
July 22	Carrington	6739 Highway 200
July 23	Michigan	519 South St.
July 24	Grafton	333 Commerce St.
July 25	Hillsboro	610 6th St. NW



Karolyn Zurn Recognized for Her Work with CommonGround North Dakota

The North Dakota Soybean Council (NDSC) thanked farmer Karolyn Zurn of Callaway, Minn., at its March 25th board meeting. She was recognized for her

outstanding efforts and dedication in leading the CommonGround North Dakota program from 2011-2014.

NDSC continues to support the Common-

Ground program in North Dakota. CommonGround is a grassroots movement to foster conversation among women — on farms and in cities — about the origin of our

food. The National Corn Growers Association, the United Soybean Board and their state affiliates developed CommonGround to give farm women the opportunity to interact with consumers through a wide range of activities. With the help of other volunteer farm women and the NDSU sorority sisters of Sigma Alpha, Zurn and her team organized many events and programs in North Dakota during the past three years. In March, Zurn officially “retired” from CommonGround N.D. Katie Pinke of Wishek, N.D., replaces Karolyn as CommonGround N.D. coordinator. Pinke is a consultant, advocate and speaker about food, family, farm and rural life.

CommonGround N.D. held a new-volunteer training seminar on April 30th at the North Dakota Soybean Council’s Fargo office. Pinke facilitated the training which brought in nine North Dakota farm women: Michele Bartholomay of Sheldon, Jennifer Tesch of Fargo, Annie Carlson of Mercer, Joey Tigges of Fargo, Val Wagner of



The North Dakota Soybean Council presented Karolyn Zurn (middle) an appreciation plaque for her dedication and hard work with CommonGround N.D. from 2011-2014. NDSC CEO Diana Beitelspacher (right) and NDSC Communications Director Suzanne Wolf (left) congratulated Zurn.



Monango, Jodi Buresh of West Fargo, Ronda Throener of Cogswell, Crystal Schaunaman of Ashley and Pamela Henningsen of Monango.

Missy Morgan from the national CommonGround program provided an overview about the movement and its history. Al Winmill of Titan Machinery's Outlet Store highlighted his successes on Facebook and social media. Sarah Nasello from Sarello's Restaurant spoke to the group about her experiences as a "city girl," having grown up in Fargo, and the importance of a program such as CommonGround.

During the last couple years, she, her husband and her son began traveling "west of Casselton" to see the rest of North Dakota and to experience the sights and attractions.



New CommonGround N.D. coordinator Katie Pinke.



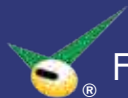
During the volunteer training seminar on April 30th, the volunteer farm women, who grow today's food, learned how to start conversations with the consumers who buy food. These conversations are based on their personal experience as farmers, and also on science and research. CommonGround's goal is to help consumers understand that their food is not grown by a factory.

She and her husband, Tony, write a weekly food column called "Home with The Lost Italian" which runs every Wednesday in The Forum newspaper. She also hosts a blog called "Home with The Lost Italian," a North Dakota blog about food, family and life.

New volunteers Val Wagner and Annie Carlson shared their farm-family blogging experiences with the group. The training seminar was also a great opportunity for the volunteers to network and to learn about CommonGround N.D.'s upcoming events and projects.



Sarah Nasello speaks to new CommonGround N.D. volunteers about the value of the CommonGround program. She affirmed that there are many people in North Dakota who have never visited a farm or talked to a farmer.



Smokin' Hot Soyfood Ideas for Barbecues this Summer

The summer is the height of grilling season, with scores of barbecues, outdoor parties and events. Take a look, and try the barbecue-friendly side-dish ideas that will complement your great grilled specialties. Meat and soy pair perfectly!

We are all looking for ways to boost our consumption of fruits; vegetables; and soyfoods such as tofu, soymilk, and edamame. Soyfoods offer a host of nutrition benefits that appeal to health-conscious consumers. Mark Messina, Ph.D., a leading soy expert and the executive director of the Soy Nutrition Institute, says, "Soyfoods provide ample amounts of protein and are low in saturated fat. There is also research indicating that soyfoods provide health benefits independent of their nutrient content. For example, there is evidence suggesting that soy may reduce the risk of prostate cancer and is protective against breast cancer if consumed during childhood and/or adolescence."

Check out the following sensational ideas for serving soyfoods this summer.

- Grilled Tofu Kebabs

start with extra-firm tofu chunks that are marinated in barbecue sauce and then threaded on a skewer with colorful vegetables. Grill them. Serve them as a side dish or appetizer.

- Chipotle Corn Casserole is another recipe that complements barbecue menus. This hearty dish is made with canned chipotles, corn, soymilk, silken tofu, cheddar cheese and corn-muffin mix.

- Fiesta Bean Relish is a colorful, flavorful side dish or appetizer. It incorporates edamame, onion, red and green bell peppers, canned black soybeans, canned black-eyed peas and corn. It is dressed with a light vinaigrette or Italian dressing. Fiesta Bean Relish is seasoned with cumin, chili powder and minced garlic.

- Favorite Burger with Grilled Tofu Fries showcases the pairing of meat and soy protein. The fries are an out-of-the-ordinary appetizer or barbecue side-dish idea. Take extra-firm tofu (drained), roll in cornstarch, and sauté in soybean oil or place on an oiled grill. Serve with your favorite burger, ketchup or

dipping sauce. For additional grilling-season ideas that feature soyfoods, visit the

Soyfoods Council website at www.thesoyfoodscouncil.com.

CHIPOTLE CORN CASSEROLE WITH TOFU AND SOYMILK

1 cup soft silken tofu
1 tablespoon + 1 teaspoon canned chipotle peppers, diced
One 15-ounce can corn, cream-style
One 16-ounce bag frozen sweet corn, thawed
½ cup plain soymilk
¼ cup butter, melted
½ cup egg substitute
2 tablespoons granulated sugar
1 cup shredded cheddar cheese
One 8.5-ounce box corn-muffin mix
1 cup shredded cheddar cheese
Preheat the oven to 350°F, and grease a 9x13 inch pan.

In a medium-sized mixing bowl, add tofu, whisking until smooth. Add all ingredients except the corn-muffin mix. Stir until well blended. Add the corn-muffin mix, and stir until combined. Pour the mixture into a 9x13 pan. Sprinkle with 1 cup of shredded cheese. Bake for 50 minutes or until a knife, inserted in the middle of the casserole, comes out clean. Serve immediately.

Yield: 12 servings



Roads No. 1 Legislative Priority in Bismarck

Rural roads continue to be a fundamental legislative goal of the North Dakota Soybean Growers Association. Prior to the 2013-2015 legislative session, the Upper Great Plains Transportation Institute (UGPTI) conducted a rural road analysis which showed the need for about \$833 million for reconstruction and renovation in North Dakota.

According to NDSGA Legislative Director Scott Rising, rural road funding in the 2009-2011 legislative session was limited to the Highway Tax Distribution Fund revenues, which served as the basic funding mechanism for years. Due to increased precipitation and frequent flooding, it became obvious that the state would need to alter its approach to funding these critical infrastructure needs.

Prior to the 2011-2013 legislative session, a transportation coalition was formed to look at infrastructure needs. The coalition included the state's major commodity organizations, county, township and city representatives, the North Dakota Petroleum Council, and several others. The UGPTI issued

two reports showing the need for nearly \$796 million for the biennium, and almost \$20 billion over the next 20 years for rural road infrastructure. The legislature partially funded the identified need and commissioned the UGPTI to conduct a more detailed study.

In response to that study, the executive and legislative branches responded with increased funding levels. The legislature also ordered another detailed study of rural roads and to identify bridge needs across the state. That study is scheduled to be released

this summer.

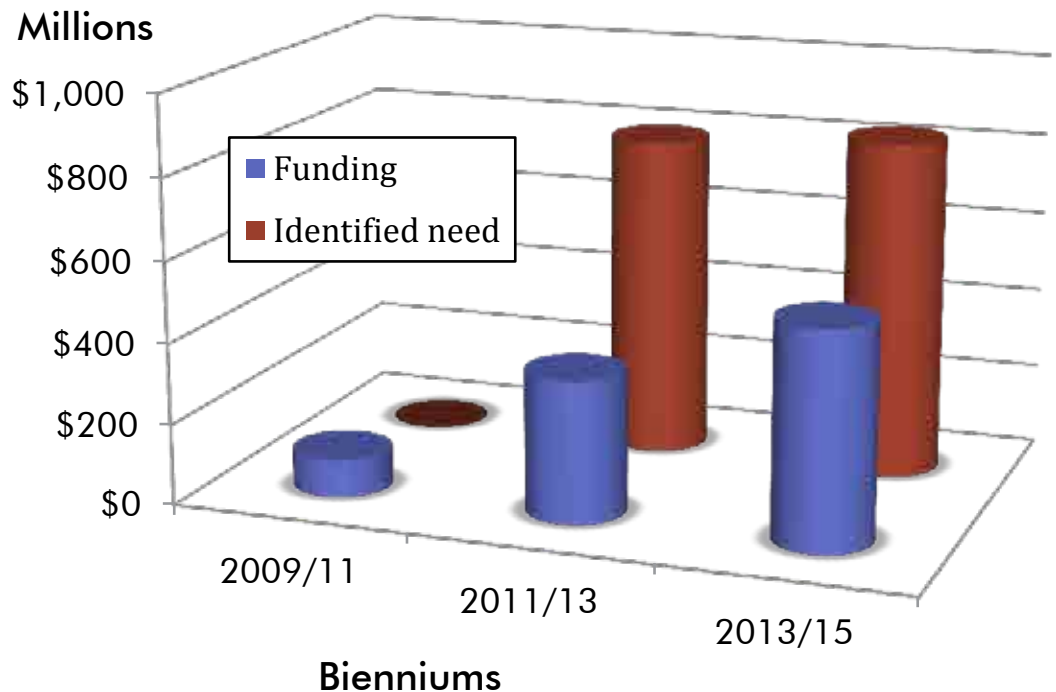
"We are grateful to the executive branch, as well as our legislative leaders and members, for their successful work to bring about this rural road renaissance," says Rising. "The progress has been positive, but our work is not done. We face difficult choices about roads and we know that the extent of our bridge issues is unknown."

Rising says soybean growers can help by contacting their local legislators to thank them for the progress that has been made, and to ask them to move these

important needs forward. "If you're in an odd-numbered legislative district, contact both incumbents and candidates about this critical issue."

Incumbent contact information is available on the legislature's home page, at www.legis.nd.gov. The revolving picture will cycle to a "Find My Legislator" option. Click that option and put in the requested information. Then a picture of your legislators will be displayed. Click on their name lines and you'll see a brief biography and their contact information.

ROAD FUNDING TRENDS



Soil Stewardship is a Winning Practice

Darrin Schmidt wants his acres to yield more than a profit. The row crop and wheat farmer is also striving to improve soil health.

Schmidt, Niagara, N.D., is incorporating minimum till and no-till into his crop production. He is also working to bring saline soils back to their original condition.

Schmidt, together with his brother, Cole, and father, Mike, Sr., grows soybeans, corn, edible beans and wheat.

The soils on their acres vary from loam, to sandy loam, to mostly sandy, Schmidt said. During the past several wet years, saline has become a problem on parts of their acreage, as it has for many northeastern North Dakota farmers. "Parts of our land are anywhere from 5 percent to 15 percent saline."

Schmidt sought the advice of the Natural Resources Conservation Service (NRCS) staff in



Darrin Schmidt

Grand Forks County in an effort to find ways improve the saline soils.

"I work with saline soils probably more than the average person," he said,

"What we're going to do is treat saline soil differently; leave that part, and then put barley and nitrogen on." After the barley is harvested, Schmidt will plant a cover crop and then do the same thing next year. If needed, the process will be repeated in subsequent years. Eventually, he hopes the soil will be

healthy.

Meanwhile, Schmidt is also enrolled in the Environmental Quality Incentives Program, a federal program that provides farmers with financial and technical assistance to address natural resource concerns and deliver environmental benefit. The benefits include improved water quality, and reduced soil erosion and sedimentation, according to the NRCS web site.

The American Soybean Association (ASA) also encourages farmers to be good stewards of the environment and, each year, encourages them to compete for the Conservation Legacy Award. The award is given to farmers who use practices that are profitable and friendly to the environment.

The ASA selects winners from the Midwest,

Northeast and Southern regions, and the overall winner is announced at Commodity Classic.

Winners from the three regions receive an all-expense paid trip for two to the February 2015 Commodity Classic conference and trade show in Phoenix.

Winners will also have their farms videotaped to produce features about the winning conservation practices. Regional winners will also be featured in the Corn and Soybean Digest magazine.

The North Dakota Soybean Growers Association is encouraging the state's soybean farmers to enter the competition. Entrants will be judged on soil, water and input management, farmstead protection, and conservation and environmental management.

Nominations will be evaluated by a national selection committee consisting of soybean farmers, conservationists and natural-resource professionals.

For Schmidt, participating in conservation programs and seeking to be a good soil steward are a win-win situation. "Improving the land and increased yield go hand-in-hand. You're always going to improve the yield if you improve the land."

2015
CONSERVATION LEGACY AWARDS
Recognizing U.S. Soybean farmers for outstanding environmental and conservation practices while farming profitably.
TELL US ABOUT CONSERVATION ON YOUR FARM.



MONSANTO



Our Soy Checkoff
Programs Powered by U.S. Farmers

CORN/SOYBEAN

Grain Storage Tips

As of March 1, on-farm corn stocks in North Dakota totaled 110 million bushels, up 41 percent from 2013.

Dr. Ken Hellevang, North Dakota State University Extension agricultural engineer, says more of last year's corn will likely be stored longer than usual. He reminds farmers to make sure the corn is dry enough to store in warm temperatures. "We can get by maybe at 15, 16, even 17 percent moisture as long as we're keeping temperatures cool," says Hellevang. "But, as we go into the summer, I really

encourage farmers to try to look at 14 percent moisture as the maximum safe moisture content."

The goal is to get the grain dry enough to prevent mold from growing, which typically happens in the 13.5 to 14 percent moisture range for corn and the 13 to 13.5 percent range for wheat.

Hellevang says a second goal is to manage the fan to keep that grain as cool as possible. Run the aeration fan periodically when we have cool temperatures and cover fans to keep warm air outside the bin.

Every three to four weeks, Hellevang says that fans should be run for a little while early in the morning to cool the top portion of the bin.

Also during the summer, there is increased potential for insect infestations in stored grain. Keeping the grain cool will limit the potential for insect infestation. Grain insects thrive at temperatures between 70 and 90 degrees, so keeping grain temperatures below 50 degrees will do a lot to prevent insect infestations.

Farmers thinking about adding additional storage

space on their farm should probably have already taken action. Trevor Meier, Superior Manufacturing's director of sales and marketing, recommends getting orders in as soon as possible. Meier has been telling farmers to talk to their local elevators. "I had one elevator manager say 'if you've ever thought of putting up bins, this is the year to do it.'"

Meier says that the more farmers talk to their elevators and see what the situation will look like this fall, the faster the orders are going to be filled.

I WILL KNOW MY WEEDS.

I will take action against herbicide-resistant weeds.

I will know my weeds. When they grow, when they pollinate, and I will stop them before they go to seed.

I will know their strengths, and I will exploit their weaknesses.

Troublesome weeds won't go down without a fight. Neither will I. Because it's worth the trouble.

Now is the time to take action against herbicide-resistant weeds. Visit www.TakeActionOnWeeds.com to learn about the most troublesome weeds.



Take ACTION
HERBICIDE-RESISTANCE
MANAGEMENT

Brought to you by the soy checkoff.

TPP CONCERNS

More than 60 members of the House have signed a letter to U.S. Trade Representative Michael Froman and Agriculture Secretary Tom Vilsack, urging the officials to advise Japan to eliminate tariff and non-tariff trade barriers for U.S. agricultural products as part of the ongoing Trans-Pacific Partnership (TPP) trade talks.

In the letter, the lawmakers expressed concern that Japan has yet to make a comprehensive offer on market access.

"TPP negotiations set an important standard for future trade agreements, and a positive outcome on agriculture products could mean billions in future exports and hundreds of thousands of jobs," the letter states.

The letter also emphasizes that, if Japan is allowed exemptions, it could lead other TPP countries to make similar demands, jeopardizing the entire agreement.

The members of Congress are seeking assurances from the Obama administration that the U.S. will not close TPP negotiations with Japan's participation unless Japan has agreed to eliminate tariff and non-tariff trade barriers to agriculture.

ASA WEIGHS IN ON TAX ISSUES

Prior to the House Ways and Means Committee

passage of the Tax Extender's bill, the American Soybean Association (ASA) sent a letter urging consideration of several components that would benefit the soybean community.

Issues that ASA showed support for include restoration of tax code Section 179 expensing, bonus depreciation to previous levels and continuation of the biodiesel tax credit. In the letter, ASA commends the committee for its efforts to advance comprehensive tax reform, but urges it to move forward quickly to minimize disruption and uncertainty.

Earlier, the Senate Finance Committee passed a tax extender package that included two items critical to soybean farmers. The package included a two-year extension of the \$1 per gallon biodiesel tax incentive and a reinstatement of the pre-2014 expensing amounts for farm infrastructure and equipment under Section 179.

CHINA MISSION INCLUDES DISCUSSION ABOUT BIOTECH APPROVALS

United Soybean Board Treasurer and Emerado, N.D., soybean grower Jared Hagert was part of the International Soy Grower Alliance's (ISGA) first mission to China, focusing discussion on the


importance of timely biotech approvals to meet food demands in China and across the globe.

It is estimated that China will require approximately 5 million more incremental metric tons per year of soybeans over the next decade to meet its food security needs. ISGA continues to stress that the only way to meet China's, and the rest of the world's, food needs is through the adoption of new technologies, including biotechnology.

ASA and other members of ISGA have asked their governments to conduct safety reviews of new biotech events in a timely,

science-based manner so that we have access to these new technologies and can meet world food needs. The group asks the same of China.

The group take-away from the meetings was as follows: Chinese policy makers understand that China needs to rely on imports to meet its food-security needs. They also seemed to understand and agree with the ISGA message that, to meet China's growing soy demand, our farmers need access to new technologies. The ISGA delegation was told that the Chinese approach to biotech would be "positive but cautious."




The Leader

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*in bringing
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to market*

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 Breckenridge, MN 56520
218-643-1791 | 701-640-2279
matt@richlandifc.com
www.richlandifc.com



ASA SETS 2014 POLICY

During the annual meeting of its voting delegates, the farmer members of the American Soybean Association plotted the organization's policy course for the coming year during the open resolution process. This year's delegates tackled multiple hot-button issues, including the use of drones in agricultural applications and the stewardship of massive amounts of data collected by an ever-advancing range of technological solutions on the farm.

During the meeting, new resolutions were adopted to call on the

Federal Aviation Administration to meet its September 2015 deadline for providing regulations about the use of unmanned aerial vehicles in farming operations as well as to encourage farm groups to work together to set industry standards for the collection, storage and stewardship of the data generated by precision agricultural instruments.

ASA also called for the timely determination of the FSA Form 1026 process that governs lands enrolled in wetlands protection and highly erodible land programs.

Finally, ASA delegates expressed their support

for the 2014 Farm Bill and called upon USDA to implement its provisions in a timely manner.

MONITOR SOYBEAN APHIDS ONLINE

Last year, growers across the Midwest utilized the innovative insect forecast tool at insectforecast.com to help predict migration patterns of corn earworm, western bean cutworm and corn rootworms. This year, users will also be able to monitor soybean aphids.

Due to daily monitoring of insect traps combined with weather patterns, the insect forecast tool is able to provide forecasts up to five days in advance.

Soybean and corn farmers can sign up at www.insectforecast.com to receive email alerts from March through September to learn when the insects pose a risk in their areas. Farmers can log on to learn when soybean aphids are on the move, to discover when corn rootworm larvae are hatching, and to track the migration and moth flights of two damaging above-ground insects: corn earworm and western bean cutworm.

For the fifth year, the insect forecast tool is being sponsored by Monsanto and is offered to farmers by its Genuity® brand.

I WILL
USE MULTIPLE HERBICIDE
SITES OF ACTION.

I will take action against herbicide-resistant weeds.

I will defend my crops with careful herbicide management. And I will use multiple herbicide sites of action because every action counts.

I will take action before weeds outgrow control. I will apply the right herbicide at the right rate at the right time.

I will take action. This time, for all time.

Now is the time to take action against herbicide-resistant weeds. Visit www.TakeActionOnWeeds.com to learn how you can preserve herbicide technology.



Take ACTION
HERBICIDE-RESISTANCE
MANAGEMENT
Brought to you by the soy checkoff.

A Deeper Look into Iron Deficiency Chlorosis

BY JERAD LIEBERG, TECHNICAL AGRONOMIST, ASGROW/DEKALB

Iron Deficiency Chlorosis (IDC) is a term that a lot of soybean growers in North Dakota are pretty familiar with. Every year growers who are blessed with soils

that have high pH's, soluble salts, and high percentage of calcium carbonates, usually experience that "magical time" when soybeans turn from green to yellow for a week or two.

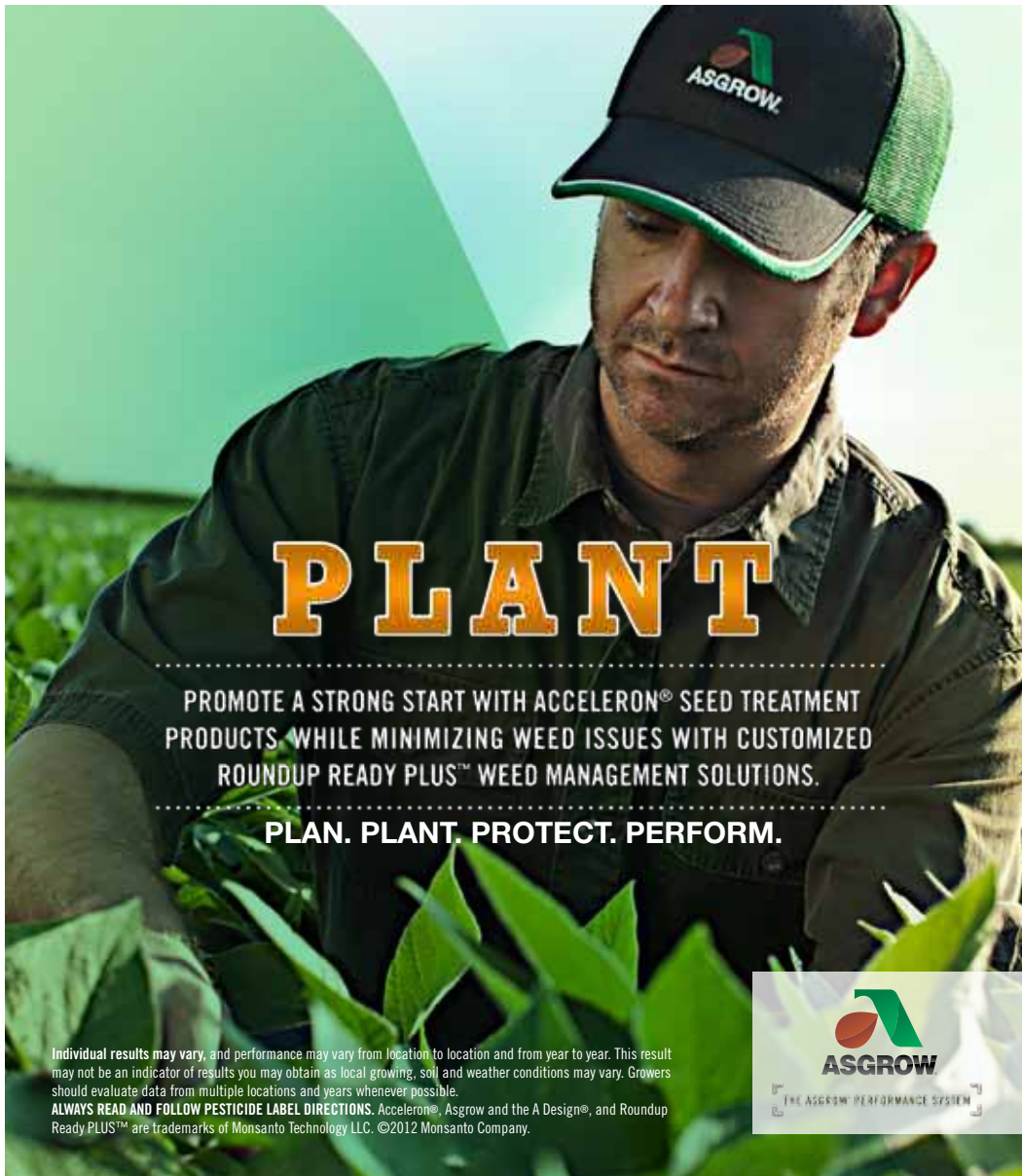
IRON'S ROLE IN SOYBEANS

When it comes to IDC in soybeans, it is not really so much about the lack of iron, but rather

its lack of availability to the plant. IDC is not like other deficiencies like potassium or phosphorus, as there is plenty of iron in the soil. Iron is a micro nutrient that plays a critical role in many plant processes and is needed for the development of chlorophyll which is what makes a plant green. It is also involved in energy transfer processes within the plant, plant respiration, and plant metabolism. A necessary component for root nodule formation, iron also has a role in N-fixation with in the soybean plant.

FACTORS ASSOCIATED WITH IDC DEVELOPMENT

One of the underlying causes of IDC is the concentration of bicarbonates in the soil. Soybean plants must convert iron into an available form. This is accomplished by soybean roots excreting acids and compounds to help make iron soluble to the plant. Those acids help to change the unavailable iron in the soil to a more soluble iron that the plant is able to uptake. Bicarbonates interfere with this



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conversion process. One management consideration of helping to manage IDC is increasing plant populations, the idea being that the more root mass associated with the high planting population, the more these root exudates can potentially help with iron uptake. In soils that have pH's above 7.5, carbonates naturally occurring in the soil can interfere with this process and actually neutralize the excreted acid.

Minimizing nitrate carryover from year to year can also be important as it relates to IDC. If nitrate levels are too high, it may increase the likelihood of development of IDC. This is also related to the soybean plant processes. When a soybean plant takes up nitrate, it releases bicarbonate. Over time, the bicarbonate levels interfere with the iron uptake process and IDC symptoms can appear.

Weather also plays a significant role in IDC symptoms and development. Let's say that you experience a significant rainfall event that saturates the soil profile for several days. When soils are wet, and cool growing conditions do not favor growth, carbon dioxide can build up in the soil. As the level of carbon dioxide

increases, so does the level of bicarbonate and you have the same problem of the neutralization of root exudates that helps your plant take up iron.

Oxygen is needed in the soil profile for plants to uptake iron. If a field is worked "a little too wet", has areas of compaction, or the crop was "muddled in" while seeding, the result can result in a poorly aerated soil. Poorly aerated soils do not contain adequate air pockets for healthy root growth and the soil profile can become saturated with water

more quickly. Because of those conditions, the environment is more conducive to restricted root growth and the development of IDC.

Usually we associate IDC becoming a major problem when we have a cool and wet period, but sometimes in a drier environment, IDC symptoms can be just as severe. This is because of the interactions of natural occurring salts and carbonates in the soil. When conditions are dry, water is used by the soybean plants (evapotranspiration) and

moves up through the soil profile and brings salt with it. The salt and carbonates are left to collect on or near the soil surface. Until the roots grow through this salt and carbonate area, or we receive rainfall that helps to leach them down, severe conditions for IDC can develop.

MANAGEMENT

Variety selection still remains the best management IDC strategy and soybean growers are very fortunate to have good, high-yielding varieties with excellent IDC tolerances. Other management considerations include using an Orth-ortho chelated iron product in-furrow, finding ways to minimize plant stress (a healthy plant is a happy one), increasing planting populations, and planting a companion crop such as oats with the soybean crop (to reduce nitrates in the soil).

IDC is not attributed to one single factor, but the result of complex interactions that include topography, soil characteristics, soybean physiology, and environmental conditions. Hopefully you can help manage your soybean fields this season to prevent them from turning yellow, but at least now you will know why they turn yellow.





MIKE APPERT
HAZELTON, N.D.

Tell us about your farm.

We raise soybeans, corn, sunflowers and some edible beans. We have a primarily no-till operation.

Why are you part of the N.D. Soybean Council? I have a love for agriculture and farming. I thought I should give something back. The soybean industry in North Dakota is of particular interest because of our strong exports and the big export business with Southeast Asia and China. We're in a unique position to fill that need going forward. It's in a growth mode. Logistically and geographically, we're so well positioned to move our product into China. It's very exciting for North Dakota at this time.

What other organizations are you involved in? I'm on my church finance council and on the board at Red Trail Energy, the ethanol plant at Richardton.

Why should other growers get involved in organizations such as the N.D. Soybean Council? You have to have participation from the people who are growing the crop and understand the needs from

their point of view. You can't exclude the growers because they feel all the impacts, whether it be freight issues or market issues or traits not being accepted in other countries.

Why are soybeans part of your crop mix? It's kind of a new crop here in western North Dakota. They've really taken off the last decade. We started planting soybeans about 1998. We started just playing with them. They offer a lot of solutions for us versus sunflowers. They're earlier, easier to harvest and have less bulk. When Roundup Ready came into soybeans, it offered us clean fields. It's an easy crop to raise. It's getting more consistent. The birds aren't an issue. Soybeans are a nice, easy crop to farm and a nice rotation, particularly for corn.

If you could add a new piece of equipment or new technology to your farm, what would it be? We're going to buy a drone this year and fly fields. I'm looking forward to the technology and how to apply it. It's nice to have that birds-eye view. We're struggling to build variable rate data with yield maps. I'm not sure where that's going to take us because the technology hasn't been fully applied to it. We're going to get started, start making some maps and see where it goes. I can see the value in that is going to be huge.

Hobbies? What do you do for fun? Pheasant hunting, deer hunting, motorcycle riding, snow skiing and snowmobiling

What is your favorite food? Pizza



MATT SWENSON
KINDRED, N.D.

Tell us about your farm.

We raise corn, soybeans, sunflowers, cattle and sheep.

Why are soybeans part of your crop mix? We've raised soybeans for quite some time, long before I started. It's a good crop rotation and a profitable crop.

Why are you part of the N.D. Soybean Growers Association board? The group does a lot of good things trying to make things better for farmers. I think it's good to be active in a group representing what I do.

What piece of equipment or technology on your farm could you NOT LIVE WITHOUT? Anything with precision technology. We use satellite imagery and yield maps, and make that into our variable-rate planting population and fertilizer maps.

Hobbies? What do you do for fun? My wife, Stacy, and I have three kids who keep us busy with activities.

What is your favorite food? Ham and cheese omelet with hash browns and bacon.



Terry Goerger, Mantador, N.D., (at podium) represented soybean growers during a May 15 Washington D.C., news conference on the Renewable Fuel Standard (RFS). He, along with N.D. Sen. Heidi Heitkamp, highlighted the need for reinstatement of the biodiesel tax credit and for EPA to increase the proposed 2014 RFS volumes for biodiesel. Six senators and others representing biodiesel and feedstock producers, outlined the negative impact that the lapse of the credit has had on the burgeoning industry. (Photo courtesy John C. Davis, DomesticFuel.com)



Graduates of the 2014 ASA Leadership at Its Best Program, sponsored by Syngenta, pose for a photo before their Capitol Hill visit in March. Craig Olson of Colfax represented North Dakota and is behind the left corner of the sign.

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U.S. soybean farmers grow versatile and renewable soybeans to help meet food, feed and fuel demand globally. Soybeans are one of many choices we have to meet a range of needs for protein, as well as fats and oils. That's good news, because when it comes to providing food or renewable alternatives to petroleum, we don't have to choose. Here's a look at how soybeans in the United States are being used.

80%

MEAL The primary component of soybeans is meal.

20% OIL

The other soybean component is oil.

97%

ANIMAL FEED

97% of U.S. soybean meal is used to feed poultry and livestock.



3%

FOOD PRODUCTS

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68% FOOD

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