

SPRING 2022

SOYBEAN NEBRASKA

A Publication of the Nebraska Soybean Association and the Nebraska Soybean Board



TARGETING RESEARCH

From soil health to weed pressure, NSB remains committed to research that matters to Nebraska farmers. Learn more on pages 12-21.

10 | Take advantage of this new credit program when you fill up with biodiesel.

24-25 | Learn more about Nebraska's newest soybean processing plants.

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The Nebraska Soybean Association (NSA) and the Nebraska Soybean Board (NSB) are proud to share the FY22 Spring edition of this publication with you—members of our shared community.

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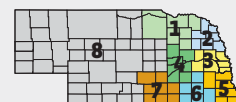


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The Nebraska Soybean Board is a private, nonprofit checkoff board responsible for the research and promotion of soybeans in an effort to increase the profitability of the state's 22,000 soybean producers.

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- District 2**
Jason Penke (Treasurer), Craig
- District 3**
Ruth Ready, Scribner
- District 4**
Eugene Goering, Columbus
- District 5**
Brent Steinhoff (Secretary), Syracuse
- District 6**
Larry Tonniges, Utica
- District 7**
Doug Saathoff (Chairman), Trumbull
- District 8**
Clay Govier (Vice Chairman), Broken Bow
- At-Large**
Greg Anderson, Newman Grove



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- Tony Johanson, Oakland
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- Ron Pavelka, Glenvil

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- Lois Ronhovde
- Teri Zimmerman

On The Cover

Dean Stevens and Nate Thompson load soybean seed to plant a soybean benchmarking study, which looked at seeding rate, seeding date, and fungicide and insecticide use near Falls City, Nebraska.

Image Credit: Laura Thompson, Extension Educator, UNL

Note from the **EXECUTIVE DIRECTOR**



By Scott Ritzman

As I write this column, we are experiencing abnormally warm temperatures for March, along with moderate to severe drought due to the lack of precipitation this winter. This edition of SoybeanNebraska is focused on research, where we continue to invest your checkoff into production research, breeding programs, biotechnology, pest and disease research.

We've developed a strong breeding program with our partners at the University of Nebraska-Lincoln that has yielded high returns, with varieties and lines being licensed by seed companies. Coincidentally, we've helped fund a winter nursery so those lines can grow through replication multiple times a year. We help fund unbiased research to present to our producers to learn and determine how that might work in their farm management. Those activities include UNL Extension Weed School, Eastern Nebraska Soil Health Conference (formerly Cover Crop Conference) and Soybean Management Field Days.

We always welcome producer feedback and issues they might be facing, so please reach out to your district board member or call the soybean office. We want to hear about your problems and how the Nebraska Soybean Board could better direct checkoff dollars toward innovative research.

View from the Chair

SPRING PLANNING

By Doug Saathoff
Nebraska Soybean Board Chairman, Trumbull



I am writing this during the last week in February, and it seems like winter will finally arrive with some cold temperatures and maybe some snow. We could definitely use some moisture before spring planting. In my area, it hardly seemed like winter with the warm, dry weather which has allowed a lot of outside projects to get done. With the dryer weather, farmers in my district are hauling their crops out of their bins, doing a little field work, working on equipment and planning for the coming growing season.

The Nebraska Soybean Board is also prepping and planning for the years to come. March will find board members busy studying and rating research proposals that are looking for funding from various researchers for the 2023 fiscal year. We have an outstanding relationship with many UNL researchers who are looking to build a better bean, a more resistant bean plant to gall midge, stem borer and drought, how to better fight weeds and many other great projects. We must always look to the future to see what might be an issue and start now to prepare to help the soybean farmers.

NSB will fund roughly \$1,700,000 worth of research projects. All nine board members will study and evaluate each project, both continuing and new. We have an expert advisory team that will do the same thing. They help us understand if each proposal is worth the time and funding and, more importantly, if the project will benefit Nebraska soybean farmers.

March was a busy month for NSB board members. Along with our research meeting held on March 22, we had a regular board meeting on the 22nd and 23rd and many members attended Commodity Classic in New Orleans. At Commodity Classic, meetings take place with the various organizations that we help fund. For example, I will attend the Soy Transportation Coalition meetings held during that time.

As spring approaches, things need to be done both on the farm and in the boardroom. Just remember to take extra precautions to be safe.

I hope everyone has a good planting season.

From the Association

GROWING OUR FUTURE

By Doug Bartek, Wahoo, NSA President



It is my pleasure to be elected to serve as president of the Nebraska Soybean Association. My name is Doug Bartek, and I farm irrigated soybeans and corn in Saunders County along with my wife, son and daughter near Wahoo.

As I take the helm in 2022 to serve as then next president of the Nebraska Soybean Association, I want to thank Shane Greving, past president, for his two years of service. It takes every effort of all of us working together to represent soybean growers' interests when it comes to policy. Shane represented our industry many times, and I learned a lot by working alongside him. Spending time away from the farm operation is hard to do, but Shane made the time a priority. His dedication to our industry deserves recognition.

We are well into a busy 2022 working on policy issues at the state and national levels. In the past month, NE soybean directors and I spent several hours joining national Zoom calls discussing policy issues. At the national level, issues for ASA center around protecting the crop input registrations upon EPA reviews, making sure they take our supply chain disruptions into account and using sound science when making these reviews. Nebraska has been hit hard with the Endangered Species Act restrictions on the use of Enlist and Enlist Duo. We continue to push this within EPA to review these tolerances in hopes of lifting some of the restricted counties. Support of the biodiesel tax credit, supply chain issues, infrastructure funding, crop protection matters as well as keeping our international markets viable were topics NE soybean leaders and I discussed with our Senate and House delegation during our D.C. visits in early March.

In the Nebraska Legislature our focus continues on the property tax relief and reform bills. We are making sure agriculture interests are included in the appropriations of funds from the covid relief American Rescue Plan Act. Our asks include funding for broadband, rural housing, ag research, precision ag and cybersecurity. April 20th is the last day for the 60-day session. A lot of work has yet to be done.

Your voluntary membership dues help support our advocacy efforts. Think of it as an insurance policy to protect your farming interests when you can't always be there. You can contact our office at 402-441-3239 to check on the status of your membership.

Have a safe planting season in the weeks to come.



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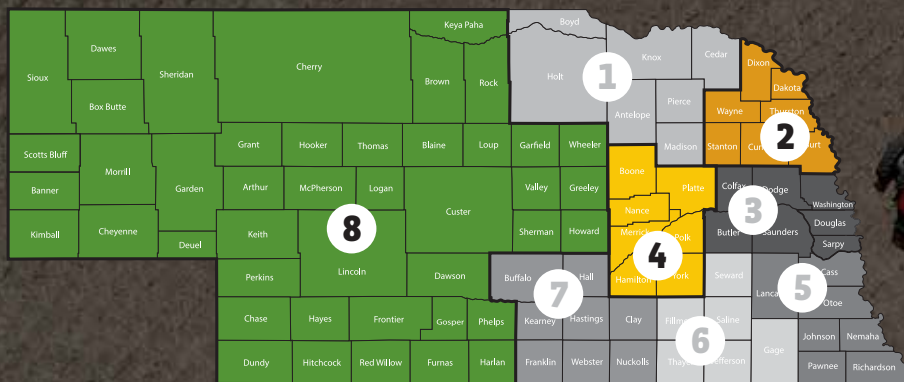
NSA officers, District Directors Elected



During the NSA annual meeting held in January, delegates elected new board member Daryl Obermeyer of Brownville to a 3-year term. Re-elected district directors to serve another term were Brent Svoboda, Pender; Clint Hostler, Grand Island and Doug Bartek, Wahoo. Board members elected officers for the 2022 calendar year. Officers elected include Doug Bartek, president; Kent Grotelueschen, vice president; Brent Svoboda, secretary; Wade Walters, treasurer; and Shane Greving, chairman.

SOYBEAN FARMERS: LET YOUR VOICE BE HEARD

Apply for candidacy and cast your vote in the 2022 district elections.
Districts 2, 4 & 8



Nebraska Soybean Board District Map

ELECTION SCHEDULE

2023

Districts 5, 7 & At-Large

2024

Districts 1, 3 & 6

The election is conducted by mail-in ballot in July for Districts 2, 4 and 8. Soybean farmers who reside in counties that are up for election in 2022 will receive ballots and candidate information regarding NSB's election process via direct mail.

Election districts and counties are:

- ✓ District 2: Counties of Burt, Cuming, Dakota, Dixon, Stanton, Thurston and Wayne
- ✓ District 4: Counties of Boone, Hamilton, Merrick, Nance, Platte, Polk and York
- ✓ District 8: Counties of Arthur, Banner, Blaine, Box Butte, Brown, Chase, Cherry, Cheyenne, Custer, Dawes, Dawson, Deuel, Dundy, Frontier, Furnas, Garden, Garfield, Gosper, Grant, Harlan, Hayes, Hitchcock, Hooker, Howard, Keith, Keya Paha, Kimball, Lincoln, Logan, Loup, McPherson, Morrill, Perkins, Phelps, Red Willow, Rock, Scotts Bluff, Sheridan, Sherman, Sioux, Thomas, Valley and Wheeler

To apply for a candidacy in District 2, 4 or 8 you must:

- ✓ Obtain an NSB Candidacy Petition by contacting NSB's executive director at (402) 432-5720
- ✓ Complete the petition and collect the signatures of at least 50 soybean farmers in their district
- ✓ Return petition to NSB office on or before April 15, 2022

Nebraska Residents Cast the Deciding Vote

Our shared soybean farmer community determines electoral winners. These voters must be:

- ✓ Nebraska residents
- ✓ District 2, 4 or 8 residents
- ✓ Soybean farmer who owns or shares the ownership and risk of loss for such soybeans, by reason of being a partner in a partnership, or is a shareholder in a corporation or is a member of a limited liability company during the current or immediately preceding calendar year.

ELECTION CALENDAR:

APRIL 15, 2022

Candidacy petitions due to NSB office

JULY 2022

Ballots mailed to eligible voters

JULY 31, 2022

Final day to return ballots for consideration

OCTOBER 1, 2022

Newly elected board members' terms begin

GET TO KNOW YOUR *Board Members*



LARRY TONNIGES
District 6 Board Member | Utica, Nebraska

What does your farming operation look like? (Crops, livestock, who you farm with, how long the farm has been around, etc.)

I am a 5th generation family farmer, still farming part of the original homestead. I have been farming since

1982. At the present time, the operation has scaled back to crops only including corn, soybeans and seed corn production.

How has your operation adapted over the years, and how is it approaching the upcoming years? (Sustainability, weed pressure...etc.)

In the early years, we did a lot of conventional farming and gated irrigation. Now we have moved to primarily ridgetill and pivot irrigation. We have advanced to auto-steer and updated monitors and technology across our operation and have changed to direct delivery to grain processors.

What is an important benefit that the Nebraska Soybean Board has for farmers/farms across the state?

I feel that NSB has benefitted the soybean farmer by finding new uses of our soybeans to improve value. Researching new solutions for new pests and disease problems across the state have also directly benefited the Nebraska soybean farmer.

As a board member, what is a goal or area of the checkoff that you are excited about getting involved in?

My main goal as a NSB board member and as chairman of the research committee is to continue to promote research on several levels regarding soybean weeds, insects and disease pressures. Looking over a weed-free, disease-free soybean crop has always been a big reward for me.

What is one thing that amazes you about the power of soy/growing soybeans?

I am always amazed at all the different uses of our soybean products: Biodiesel, fish meal, high oleic oil and the list goes on.



RUTH READY
District 3 Board Member | Scribner, Nebraska

What does your farming operation look like? (Crops, livestock, who you farm with, how long the farm has been around, etc.)

My husband Sid and I have farmed near Scribner for 35 years. We live on a farm that has been in my family since it was homesteaded in the 1870's. At present, we raise soybeans, corn and alfalfa. We try to make use of cover crops as well. We also have a 30-head cow/calf mostly Shorthorn herd. All of the calves are raised on our farm, and the beef is marketed directly

to consumers. We also raise and direct market meat chickens and some turkeys.

How has your operation adapted over the years, and how is it approaching the upcoming years? (Sustainability, weed pressure...etc.)

Our farm has changed over the years as we previously had a farrow to finish hog operation, this changed as the needs of swine production changed. In crop production we moved to complete no-till almost 25 years ago. Not long after the switch to no-till, we began testing out some ideas with cover crops. We have continued both no-till and cover crop use and have seen improvements in soil health including better soil structure, better water infiltration and reduced weed pressure. All of these have led to less variability in crop performance and yield. As we move into the future, we anticipate increasing our use of cover crops to help reduce the level of crop nutrients that will be supplied by commercial fertilizer products.

What is an important benefit that the Nebraska Soybean Board has for farmers/farms across the state?

Since the NSB are all soybean producers we understand what the opportunities and challenges are that soybean producers face. The practical experience of the board is a great benefit to all producers. This

experience drives the NSB to make decisions that provide opportunities for producers to be successful in growing and marketing their soybeans.

As a board member, what is a goal or area of the checkoff that you are excited about getting involved in?

Singling out a goal or area of the checkoff that I am most excited about is difficult. This is due to the fact that all of the areas and goals are very connected to each other. One in particular that I want to highlight is the goal of ensuring that Nebraska soybeans, farms and farmers are widely supported and accepted. Nebraska has amazing farmers who work smart and hard to get the most out of their farms. As a farmer, I know that this task is never easy and often goes unnoticed. It is my hope that I can help other farmers know that what they are doing is important and has far reaching results. Nebraska soybeans are used around the world, and because of the dedication of farmers, this use will continue to increase.

What is one thing that amazes you about the power of soy/growing soybeans?

Versatility, whether it is exhibited in how soybeans are grown or in how soybeans are used, the versatility of the soybean is incredible. There is still so much to be learned and discovered about soybeans that soy's versatility will only be enhanced.

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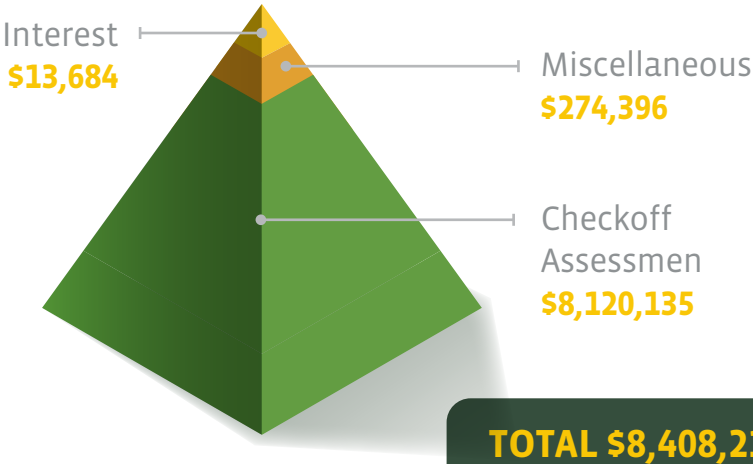


WISHH is a program of the American Soybean Association and is funded in part by the United Soybean Board and state soybean board checkoff programs.

NEBRASKA SOYBEAN BOARD
FUNDING & EXPENDITURES

Fiscal Year 2021

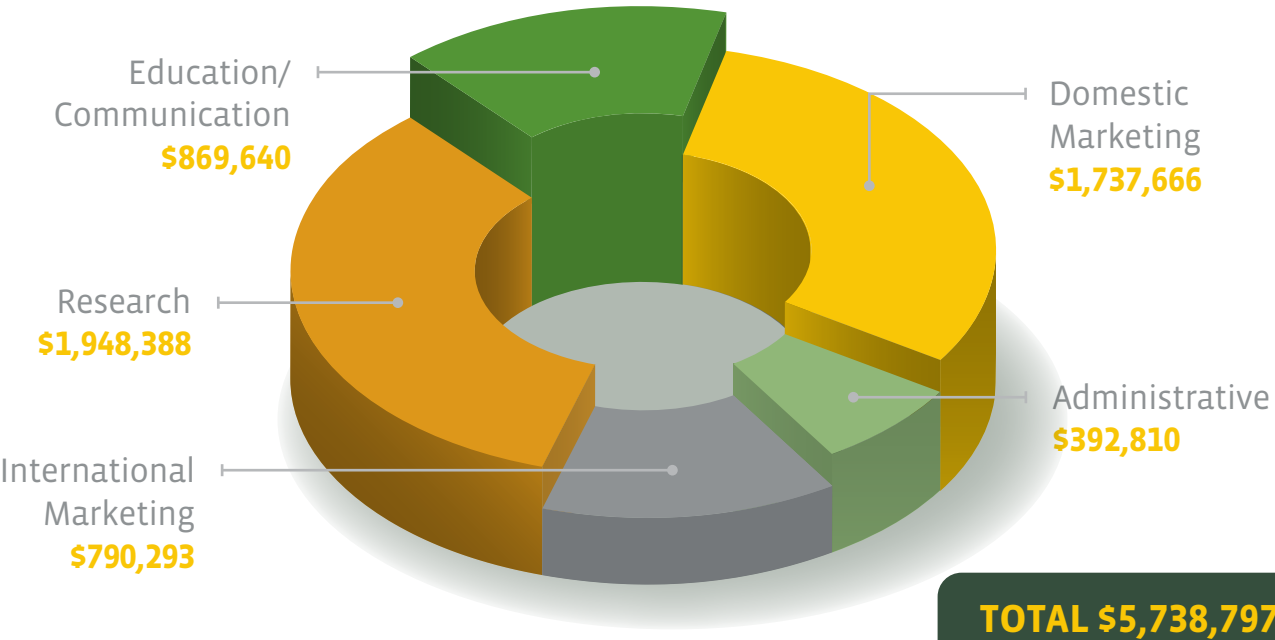
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EXPENDITURES



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TARGETING RESEARCH

Funding critical research and exploring topics that matter to Nebraska farmers is a top priority for the Nebraska Soybean Board.



13 | Soybean Gall Midge and a 2022 Pest Outlook
With support from NSB and NCSRP, significant progress in research has been done to manage this new pest.

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The Nebraska On-Farm Research Network is providing research on topics that impact farm productivity and profitability.

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Connect with recently published findings on soil health demonstration projects.

18-19 | 6 Questions with Jessica Groskopf
Learn how Nebraska Farmers should approach 2022 from Agriculture Economics Cropping Systems Extension Educator & Director at the University of Nebraska-Lincoln.

20-21 | Factors to Consider When Multiple Herbicide-Resistant Soybean Traits Coexist
Uncover which soybean trait is resistant to what herbicide(s).

RESEARCH COMMITTEE



Larry Tonniges
(chair)

Brent Steinhoff

Eugene Goering

Clay Govier

Greg Anderson

SOYBEAN GALL MIDGE AND A 2022 PEST OUTLOOK

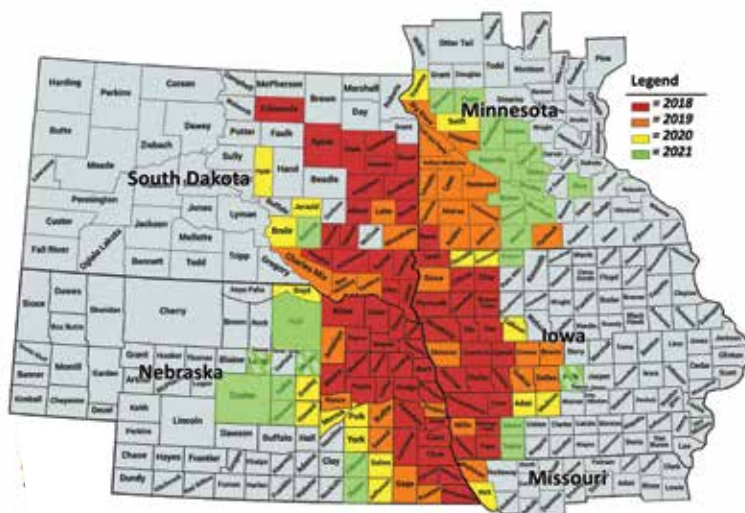
By Justin McMechan, Assistant Professor, Department of Entomology, University of Nebraska-Lincoln

Since its discovery in 2018, soybean gall midge (SGM) has caused concern for soybean growers across Nebraska. For some farmers, this new pest has shown its devastating potential to reduce yields. Such yield losses are hard to bear, but the situation has allowed for significant progress in research in understanding and managing this new pest. With support from the Nebraska Soybean Board (NSB) and North Central Soybean Research Program (NCSRP), field surveys have uncovered its distribution and some of the risk factors for increased pressure. Since 2019, 7-8 new counties have been found each year with the continued presence of the pest in its historical range. Field surveys have found that the proximity to last year's soybean field and dense vegetation (trees, shrubs, tall grass) along field borders increased pest presence and plant injury.

In cooperation with Nebraska soybean farmers, research sites showed potential with cultural, chemical and host plant resistance to mitigate SGM. An NSB funded planting date study showed a

significant yield reduction due to pest pressure when soybeans were planted on May 2nd or 12th compared to April 22nd, May 22nd or June 1st. The reduction in yields for early and mid-May likely reflects significant adult activity that coincided with soybeans at the V2 stage. In general, foliar chemistries struggled to provide control in 2021. However, the use of drop nozzles to spray the base of the plants where the adults lay eggs showed greater SGM suppression compared to overhead applications. An NCSRP funded host plant resistance work made significant progress with the identification of potential sources of resistance through field studies. These results are promising but will need further studies. Monitoring of adult SGM emergence from overwintering studies through NSB and NCSRP has afforded the opportunity to conduct several field projects. Of these projects, using a hilling, a cultural control practice, was found to be highly effective against SGM. Although hilling isn't a commonly used strategy, it highlights the importance of the base of the stem for infestation.

Map showing the counties within soybean gall midge in 2018 (red), 2019 (orange), 2020 (yellow) and 2021 (green).



No hilling (blue stakes) next to hilled soybeans near Syracuse, NE, research site.



Soybean gall midge larvae on soybean stem in Lancaster County, NE, during the 2021 season.

As growers prepare for the 2022 growing season, many may wonder how a winter with a lack of snow might impact the pests that overwinter in Nebraska. Although nothing is certain, the lack of snow will have reduced the insulation or buffer these insects have to cold temperatures. Exposure to more extreme cold temperatures may reduce their survival.



For the latest information on gall midge and to get alerts, go to soybeangallmidge.org.

GET ON BOARD WITH ON-FARM RESEARCH

The Nebraska On-Farm Research Network is providing a great avenue to accelerate learning about topics that impact farm productivity and profitability.

Planting season is coming up fast. Are you wanting to try something new in your operation this year?

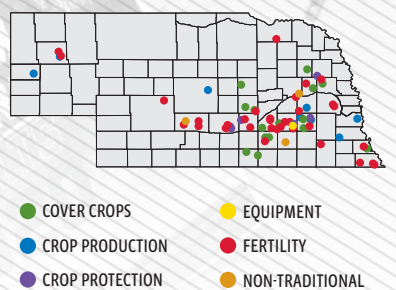
The Nebraska On-Farm Research Network (NOFRN) approaches topics that are critical to farmer productivity, profitability and sustainability. In 2021, there were 84 studies completed in Nebraska.

It is research that you do in your fields, using your own equipment. This means the research is directly applicable to your operation. Each field and operation is unique and therefore needs to be treated as such.

Producer involvement is essential to ensure their goals and objectives are met. The question many producers ask though is, how much time do I need to delegate toward doing on-farm research? It really depends on how involved they want to be. Extension professionals are there to help.

Studies and topics include nutrient management, pest control, irrigation strategies, conservation programs, new technologies, soil amendments, cultural practices and hybrid and variety selection. Research comparisons are identified and designed to answer producers' production questions. Project protocols are developed first and foremost to meet individual cooperator needs.

2021 STUDY LOCATIONS



Things to Know About NOFRN

- ▶ Replicated and randomized treatments will be implemented using grower equipment.
- ▶ Experimental design will be used to manage natural and man-made field variables.
- ▶ Statistical analysis will be used to determine the significance of treatment differences.
- ▶ Training and consultation will prepare soybean (and corn) producers to implement high quality research and leverage precision ag technologies in conducting research.
- ▶ Producers will gain skills in drawing valid conclusions and sharing research results with peers.
- ▶ Research results will be made broadly available and easily accessible using digital technologies.

2021 Nebraska On-Farm Research Results:

Apply last year's findings to this year's growing with the 2021 Nebraska On-Farm Research Results report. Read up on:

- Impact of soybean seeding rate (pages 18-19)
- Impact of soybean seeding rate, planting date and foliar fungicide and insecticide applications (pages 20-22)
- Soybean maturity groups (pages 23-24)
- Interseeding cover crops into soybeans (pages 132-133)
- Impact of rye cover crop on soybeans and corn (5 year study) (pages 118-119)
- Soybean seed treatments for sudden death syndrome (pages 194-195)
- Fungicide and insecticide application on soybeans (page 193)

The 2021 Nebraska On-Farm Research Results booklet, videos about the projects and over 1000 reports from past on-farm research studies, are available at: on-farm-research.unl.edu or scan QR code:



WHEN COMPARING THIS PROGRAM TO OTHER EDUCATIONAL OPPORTUNITIES, 89% RATED IT ONE OF THE BEST OR ABOVE AVERAGE.



If you are interested in participating in the NOFRN, contact your local Nebraska Extension educator or Laura Thompson, extension educator and on-farm research coordinator, at 402-245-2224 or laura.thompson@unl.edu.



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USDA FUNDS NEBRASKA SOIL HEALTH INITIATIVE

Nebraskans are encouraged to connect with recently published findings from 5 year-long soil health demonstration projects to experience soil health firsthand.

By Aaron Hird, State Soil Health Specialist with USDA/NRCS

Profitability with less risk is the objective in agriculture production, and the health of the soil is fundamental to meeting that goal. Measurement of the ecosystem dynamics and the functions of soil are necessary to provide an indication of successful Soil Health Management Systems.

Soil Health Demonstration Farms and Ranch Initiatives established in cooperation between Nebraska landowners and the USDA's Natural Resources Conservation Service are capturing these measurements. The information gathered from these soil health demonstration projects are providing vital evidence Nebraskan's can use to build and grow healthy soil on their land.

NRCS is participating in a state-wide effort to enhance the adoption of soil health and rangeland health management systems through the Soil Health Demonstration Farms and Ranch Initiatives. These initiatives established in-field management comparisons across the state to showcase grazing management and cropping system comparisons. Landowners and managers interested in the comparison treatments and the investigation and monitoring efforts established on these demonstration sites should contact their local NRCS office for more information or navigate to the University of Nebraska-Lincoln's (UNL) CropWatch website.

The farmers approved under this initiative conducted strip trials of various cover crops, crop rotations

and/or management techniques in a field-wide comparison treatment. The purpose of these efforts is to demonstrate applicable techniques to improve soil health in the various regions of Nebraska. Farmers across the state have a local opportunity to experience the results of soil health focused management firsthand.

Data pertaining to the economics and soil resiliency were tracked throughout each five-year project for the cropland soil health projects. Snapshots of change have been developed and distributed as case studies as the comparisons were under way. Those case studies and final information have now been developed into full 5-year case study reports for dissemination. These reports showcase the analysis and highlight the short-



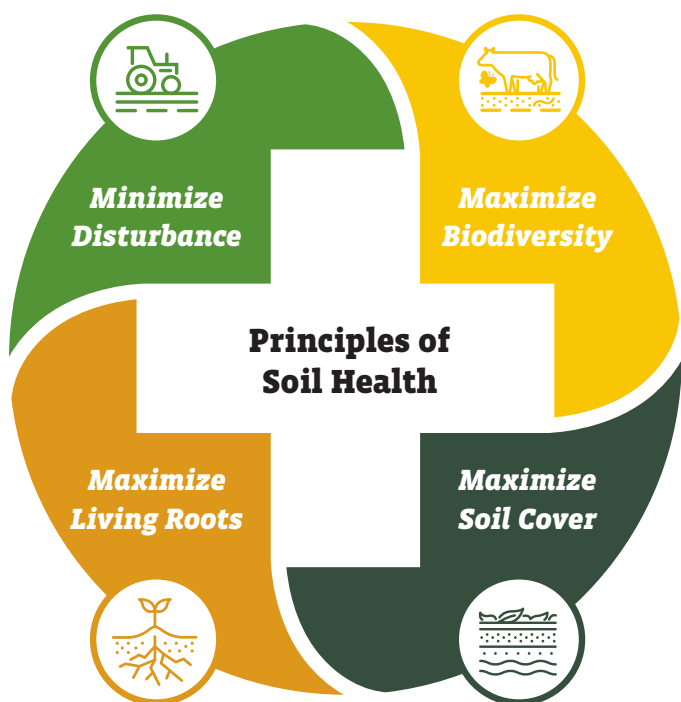
Comparison treatments on farm fields tend to stick out on the landscape, and the NRCS hopes to make it more common through the next offering of the 2022 Soil Health Initiative. The targets are conservation benefits for all Nebraskans! (Photo credit: USDA/NRCS Employee)

and long-term costs and benefits of building soil health. Navigate to UNL's CropWatch website to find the Nebraska On Farm Research Networks page and each of the final reports.

The ranchers involved with this initiative will each be conducting a side-by-side comparison of a new rangeland management strategy versus their traditional strategies. In addition to the adoption of new management activities on a portion of their ranch, the ranchers will also implement adaptive grazing management. Adaptive grazing management employs flexible grazing management techniques based on proactive decisions utilizing all available information. In addition to providing information for management

decisions, monitoring data will increase knowledge about the impact of the selected management strategies on rangeland health, as well as monitor success toward the ranchers' resource management objectives.

NRCS' Environmental Quality Incentive Program (EQIP) is funding demonstration projects again in 2022. As part of participating in the Nebraska Soil Health Advanced Cover Crop Initiative, producers will host field days to share with their neighbors what they have been learning and experiencing on their farms during their project timeframe. Soil testing and yield measurements will help track change in the system throughout the project.



“

This unique opportunity to monitor and experience the changes in the soil and rangeland health related to each comparison over time is exactly what it takes when working with and learning about soil and other natural resource management. Dig in your soil and check it out.

— AARON HIRD, NEBRASKA NRCS SOIL HEALTH SPECIALIST

”

RECENT FINDINGS

On-farm Research Indicates Importance of Cover Crops for Soil Health in Nebraska
Nebraska Extension in collaboration with USDA Natural Resources Conservation Service (NRCS) employees collected soil samples at 10 on-farm fields comparing a range of soil health management practices.



SCAN TO READ MORE

Questions

WITH JESSICA GROSKOPF

Q&A With Jessica Groskopf – Agriculture Economics Cropping Systems Extension Educator & Director at the University of Nebraska–Lincoln

Nebraska Soybean Board (NSB): Last fall, farmers started to see a shortage and increasing cost for nitrogen and other fertilizers. Where does that market stand currently, and how might that impact planting decisions by farmers?

Jessica Groskopf (JG): Many farmers have already “locked-in” their fertilizer decisions for 2022. Many prepaid expenses in late 2021. Farmers are doing everything they can to offset these higher costs and work around product shortages. Some have made the decision to switch to different crops. However, we won’t know the full implications of these challenges on planting decisions until the USDA Prospective Plantings Report comes out March 31.

NSB: Glyphosate is already in short supply heading into the 2022 planting

Jessica Groskopf



season, and Bayer recently announced the shortage could be even tighter. What impact will this have on the 2022 soybean crop, and how might the quality be impacted?

JG: Product shortages for glyphosate, and other products, are forcing producers to be resourceful. They are looking for alternatives, relying on pre-emergence herbicides and terminating cover crops earlier. Although the shortages are a challenge, farmers are looking for ways to optimize yield and preserve grain quality.

NSB: We've seen soybean prices go above \$16.00 recently. What do you think has been the driver for higher prices while input costs continue to rise steadily?

JG: You hit the nail on the head. No one can predict where prices will go. Farmers need to be watching both sides of the profit equation: costs and revenue. They need to consider their personal financial position, current costs and have a plan to market at prices that will provide them a profit.

NSB: Last year, we saw container ports backlogged due to COVID-related issues. Do you think the container market for soybean exports will rebound, or will container availability continue to be tight with high export costs to shippers?

JG: Shipping costs are always a consideration in export markets. Increased transportation costs

are not just an issue for soybeans. The question will be how badly do our buyers need soybeans, and what are they willing to pay to get them?

NSB: How will the political unrest in Ukraine and Russia impact farmers? Russia is a prominent exporter of fertilizer products, and will sanctions impact this growing season and possibly into the fall?

JG: It is a little early to say what all of the ramifications of Russia's actions in the Ukraine will mean for U.S. farmers. Don't forget that Russia has had limited fertilizer exports since November of 2021. We already have restricted access to Russia's fertilizer.

NSB: Overall, how should Nebraska farmers approach 2022?

JG: Farmers need to be spending time in the office, analyzing their input alternatives and reviewing their financial standing. No two farmers have the same financial standing, they need to take into consideration what they can afford and cannot. Four good management practices (1) write a grain marketing plan, (2) review your balance sheet, looking at current assets and current liabilities critically, (3) focus on optimizing production based on current input costs not maximizing yield and (4) shop around for inputs and services and look for opportunities to manage costs where you can.

FACTORS TO CONSIDER WHEN MULTIPLE HERBICIDE-RESISTANT SOYBEAN TRAITS COEXIST



By Amit J. Jhala, Nebraska Extension Weed Management Specialist

Soybean is the second most important crop in Nebraska, which is grown on 5 to 6 million acres annually. A number of herbicide-resistant soybean traits are available commercially in the market, making it complicated for growers to understand which soybean trait is resistant to what herbicide(s). Because of continuous and repeated use of glyphosate in glyphosate-resistant corn-soybean cropping systems, glyphosate-resistant weeds have evolved. For example, six broadleaf weeds (common ragweed, giant ragweed, kochia, marehail, Palmer amaranth, and waterhemp) have evolved resistant to glyphosate in Nebraska. Management of glyphosate-resistant weeds is a challenge for soybean growers not only in Nebraska but also in several states. Several recommendations have been provided for management of glyphosate-resistant weeds including use of multiple herbicide-resistant crops. For instance, several traits of multiple herbicide-resistant soybeans have been developed by industry primarily for management of glyphosate-resistant weeds (Table 1).

Factors to Consider:

Because of coexistence of multiple herbicide-resistant soybeans with conventional soybeans, there are a number of factors to consider.

- Pre-emergence herbicides are a foundation for early season weed control in soybeans. All labeled pre-emergence herbicide(s) in soybeans can be applied in all type of multiple herbicide-resistant soybean traits,

except isoxaflutole (Alite™ 27)—can only be applied in LibertyLink®GT27™ soybeans.

- Growers and certified pesticide applicators have to be careful when selecting and applying post-emergence herbicides in multiple herbicide-resistant soybeans. Post-emergence herbicides must be selected depending on which soybean trait you have planted. For example, when Roundup Ready 2 Xtend® soybeans are planted, dicamba-based herbicides such as XtendiMax®, Engenia®, FeXapan®, or Tavium® can be applied.
- Several growers rely on certified pesticide applicators for their herbicide application. Therefore, good communication is needed between the owners or leaseholder of the field and the certified applicator to make sure the applicator knows which soybean trait is planted in which field and what herbicide(s) to spray.
- There are some conventional/organic soybean growers in Nebraska. Care must be taken when conventional and organic soybean fields are in proximity to avoid off-target injury from post-emergence herbicides applied in multiple herbicide-resistant soybeans. Organic and specialty crop growers should register on Drift Watch (<https://ne.driftwatch.org/>). This site is a voluntary communication tool that enables organic and specialty crop producers and pesticide applicators to work together to protect from off-target injury through use of mapping programs.

Table 1. Herbicide-resistant soybean traits available in the market place.

#	Soybean Trait	Resistant to herbicide(s)	Manufacturer
1	Roundup Ready®	Glyphosate	Bayer Crop Science
2	Roundup Ready 2 Xtend®	Glyphosate/dicamba	Bayer Crop Science
3	LibertyLink®	Glufosinate	BASF
4	LibertyLink® GT27™	Glyphosate/glufosinate/isoxaflutole	BASF
5	Enlist E3™	Glyphosate/glufosinate/2,4-D choline	Corteva Agriscience
6	BOLT®	Glyphosate/thifensulfuron/rimsulfuron	Corteva Agriscience
7	XtendFlex®	Glyphosate/glufosinate/dicamba	Bayer Crop Science

What **NOT** To Do When Multiple Herbicide-Resistant Soybeans Coexist:

- While it is good to have the opportunity of planting different multiple herbicide-resistant soybean traits for management of glyphosate-resistant weeds, it is critically important **NOT** to spray the wrong herbicide on your crops. Additionally, it is vitally important to pay attention to the soybean trait planted, and select post-emergence herbicides accordingly.

Case Study # 1

- If LibertyLink soybeans are planted, do **NOT** spray dicamba-based herbicides because LibertyLink soybeans are **NOT** resistant to dicamba. A significant damage could occur with this type of mistake (**Figures 1A–B**). Additionally, do **NOT** apply Liberty herbicide on Roundup Ready 2 Xtend® soybeans (**Figures 2A–B**).

Case Study # 2

- Do **NOT** apply 2,4-D choline in Roundup Ready 2 Xtend® soybeans because Roundup Ready 2 Xtend® soybean are **NOT** resistant to 2,4-D (**Figures 3A–B**).

Herbicide-Resistant Weed Management in Multiple Herbicide-Resistant Soybeans:

- While multiple herbicide-resistant soybean traits are providing opportunities to use additional herbicide(s) for management of glyphosate-resistant weeds, their use should be carefully managed to avoid the same herbicide in corn-soybean cropping systems. For example, with the availability of Roundup Ready 2 Xtend® soybeans, growers can use dicamba-based herbicides; however, dicamba is also a labeled herbicide in corn. Therefore, when dicamba is applied in Roundup Ready 2 Xtend® soybeans, another herbicide should be selected the following year for corn to avoid selection pressure of dicamba.
- Residual premix herbicide with multiple effective sites of action should be used in corn and soybeans for effective control of weeds. This will reduce reliance on a single or sequential post-emergence herbicide application and the number of weeds exposed to post-emergence herbicides.
- Do **NOT** apply a reduced rate or more than the labeled rate of any herbicide in a single application or in multiple applications. Carefully read and follow herbicide labels. Concerning herbicide options, refer to the University of Nebraska–Lincoln Extension's *Guide for Weed, Disease, and Insect Management in Nebraska*, which is updated annually.



Figures 1 A–B

What **NOT to Do:** Apply dicamba (XtendiMax®) on LibertyLink® soybeans. Both photos were taken on June 25, 2018, in a project conducted at South Central Agriculture Lab near Clay Center, Nebraska.
(Photo credit: Amit Jhala)



Figures 2 A–B

What **NOT to Do:** Apply glufosinate (Liberty®) on Roundup Ready 2 Xtend soybeans. These photos were taken June 25, 2018, in a project conducted at South Central Agriculture Lab near Clay Center, Nebraska.
(Photo credit: Amit Jhala)



Figure 3 A–B

What **NOT to Do:** Apply 2,4-D choline (Enlist One®) on Roundup Ready 2 Xtend® soybeans. These photos were taken June 25, 2018, in a project conducted at South Central Agriculture Lab near Clay Center, Nebraska.
(Photo credit: Amit Jhala)




unitedsoybean.org

RESEARCHING A BETTER BEAN

Whether you're dealing with drought, flood, heat or other climate-related stress, the soy checkoff is working behind the scenes to diversify U.S. soybean genetics and increase stress tolerance. We're looking inside the bean, beyond the bushel and around the world to keep preference for U.S. soy strong. And it's helping make a valuable impact for soybean farmers like you.

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

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NEW REPORT HIGHLIGHTS NORTHERN U.S. SOYBEAN QUALITY

The 2021 U.S. Soybean Quality Report is now published, showcasing current foreign material (FM) percentage and quality data of soybeans grown in northern U.S. states.

Funded in part by soybean checkoff dollars and administered by University of Minnesota Soybean Extension Agronomist Seth Naeve, the report is intended to provide new crop quality data to aid international customers with their purchasing decisions.

“

This Soy Quality Report is a critical resource when promoting our soybeans overseas. It's just one more supporting document we can use to highlight the true quality of our beans.

— **PATRICK O'LEARY, CHAIR OF NORTHERN SOY MARKETING**

”

“Typically, whole soybeans and soybean meal have been valued largely on crude protein quantity,” says Patrick O’Leary, chair of Northern Soy Marketing (NSM), a farmer-led board formed by the soybean checkoff organizations of Minnesota, North Dakota, South Dakota and Nebraska. “But through the use of checkoff funds, we’re working to change the language of soybean quality, focusing more on essential amino acids and its impact on our customers.”

O’Leary says this research is being communicated to international customers and end-users through NSM.

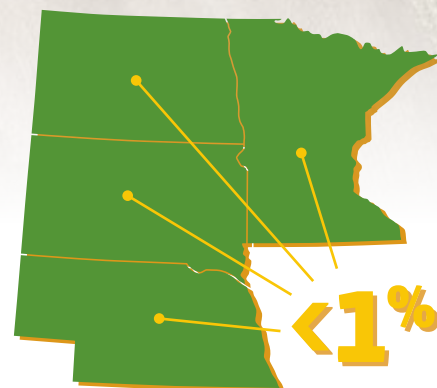
One of the goals of the group is to shift the soybean value paradigm from crude protein to nutritional value. The report states Minnesota and North Dakota soybean farmers averaged 0.2 percent foreign material (FM) in 2021 while Nebraska and South Dakota farmers averaged 0.3 percent foreign material. Scott Ritzman, executive director of the Nebraska Soybean Board, says this number is critical when exporting internationally, especially to China.

“The major export route for Nebraska soybeans is via Pacific Northwest ports, and 90 percent of PNW soybean exports go to China, which has a maximum allowed FM content rule of less than one percent FM,” Ritzman says.

In December 2017, China announced the country would only allow No. 2 soybeans from the U.S. with less than 1 percent FM present, which was formerly set at less than 2 percent. Fortunately, northern-U.S. soybean farmers were already producing soybeans under the new criteria and have continued to do so year after year.

Along with foreign material, the quality report shows the protein and oil percentage, along with amino acid levels for soybeans.

Amino acids are the “building block” organic compounds required to synthesize the proteins animals need for health and growth.



Minnesota, North Dakota, South Dakota and Nebraska soybean farmers averaged less than 1% foreign material in 2021.

“A higher crude protein does not necessarily equate to a better nutritional value in feeding monogastric animals,” O’Leary says. “True protein quality is based on the presence and balance of essential amino acids.”

“Northern U.S. soybeans typically have a lower crude protein when compared to the rest of the country,” Ritzman says. “But lower crude protein usually translates to a higher proportion of the five most critical essential amino acids, which is more beneficial to the overall health, fetal development, muscle growth and production of meat, milk and eggs in monogastric livestock, poultry and farm raised fish.”

According to the 2021 Soybean Quality Report, the sum of the five essential amino acids, expressed as a percentage, was 15.0 in soybeans grown in each of the four NSM member states.

**View the full 2021
Soy Quality Report**



CRUSHING *for the* COMMUNITY

When it comes to benefiting the local community, Norfolk Crush is set to, quite literally, crush it. Beginning this spring, N Bowdish Company, LLC is backing Nebraska's first soybean processing plant in Madison County near Norfolk, NE.

The state-of-the-art 480-acre soybean crush site (pending state and local approvals) will provide ample benefits for the Norfolk farming community, as well as statewide. Not only will the site create job opportunities, but it will also provide efficiency for area farmers and create partnerships with local railways to transport the product.

“

Norfolk Crush offers a viable opportunity to transform a bulk commodity into valuable products the market wants. This creates long-term benefits that will increase the amount of income flowing into the region and boost Nebraska's economy for years to come.

— **NICK BOWDISH, PRESIDENT AND CEO OF N BOWDISH COMPANY LLC**

”

Nick Bowdish, President and CEO of N Bowdish Company, said the new facility will boost Nebraska's economy now and further into the future.

“Norfolk Crush offers a viable opportunity to transform a bulk commodity into valuable products the market wants,” Bowdish said. “This creates long-term benefits that will increase the amount of income flowing into the region and boost Nebraska's economy for years to come.”

The plant will crush 38.5 million bushels of soybeans annually, or 110,000 bushels daily, creating more than 50 jobs in the community. Norfolk Crush will bring more business to the local economy and bring new market options, like renewable diesel, to farmers in the area.

Currently, farmers near Norfolk might have to wait hours at their nearest plant. However, Norfolk Crush will be able to unload trucks at 60,000 bushels per hour. This means area farmers and truckers can spend less time sitting and waiting and more time farming or with their loved ones.

Norfolk Crush will partner with Union Pacific Railroad and the Nebraska Central Railroad Company. Union Pacific Vice President of Marketing and Sales Bulk Jason Hess notes that their network will open up Norfolk Crush to both domestic and export markets, meaning Norfolk Crush will be able to compete on a global scale.

Nebraska Governor Pete Ricketts praised the work of Nick Bowdish for the Nebraska farming community.

“Under his leadership, value-added projects have enhanced our agriculture sector by better enabling our farmers,

ranchers and feeders to do what they do best: feed and fuel the world,” Ricketts said. “Norfolk Crush will be a great addition to support our soybean production in the state.”

Norfolk Mayor Josh Moenning said the value add for the agriculture industry and Norfolk community would benefit Norfolkers for years to come.

The engineering, procurement and construction contractor for the new plant, Fagen, Inc., began engineering efforts in October 2021. They hope for an operational plant by 2024, according to Fagen, Inc. President and CEO Chris Howard.

The Soybean Breakdown: How Crushed Soybeans Will Be Used

- **Livestock Feed Markets**
847,000 tons of soybean meal per year (2,420 tons per day)
- **Crude Soybean Oil**
Used for rapidly expanding renewable diesel industry
450 million pounds of crude soybean oil per year (1.28 million pounds per day)
- **Soymeal and Soybean Hulls**
Used for livestock feed rations
77,000 tons of pellet soybean hulls per year (220 tons per day)





Nebraska's premier soybean processing plants to provide endless community benefits.

Ag Processing Inc. a cooperative (AGP®) has its sights set on building the second soybean crushing plant in Nebraska. The new plant would help benefit area farmers, create new jobs and build a sustainable future.

AGP's Chairman of the Board Lowell Wilson said the new soybean processing plant would benefit area farmers and cooperative members.

"The soybean processing industry is experiencing tremendous growth, and we believe a facility in East Central Nebraska is strategically located to serve our cooperative members and their farmer-owners," Wilson said. "Maintaining a strong cooperative system is vital to agricultural producers and our rural communities."

The plant, located near David City, NE, would have the capacity to process more than 50 million bushels of soybeans per year and would create around 60 jobs for the community. AGP said they expected the David City location to be operational by 2025.

When searching for a location, David City rose to the top of the list. Quality soybeans in the area, coupled with the available access to railways, made the David City area a prime candidate for the new soybean processing plant.

According to AGP's Chief Executive Officer Chris Schaffer, the demand for soybean meal and soybean oil continues to rise, both domestically and globally.

"The soybean processing industry is experiencing tremendous growth, and we believe a facility in East Central Nebraska is strategically located to serve our cooperative members and their farmer-owners. Maintaining a strong cooperative system is vital to agricultural producers and our rural communities.

— **AGP CHAIRMAN OF THE BOARD**
LOWELL WILSON

"The David City location will also improve the company's ability to market soybean meal to the Pacific Rim through AGP's export terminal in Aberdeen, Washington," Schaffer said. "AGP is currently considering investments that will significantly increase our export capabilities to meet the expected growth in domestic protein supply."

Above all, Schaffer said sustainability is on his mind moving forward.

"We are committed to working with local and state officials to develop and invest in sustainable projects to better serve our customers while also benefiting our members, their farmer owners and the surrounding communities," said Schaffer.



PROPOSED PROCESSING PLANTS IN NEBRASKA

**NORFOLK
CRUSH
LLC**

**AG PRO-
CESSING
INC.**

ANNUAL BUSHELS PROCESSED

38.5M

50M

JOBS CREATED

50-55

60

PROPOSED COMPLETION DATE

2024

2025

LOCATION

NORFOLK

DAVID CITY

ANNOUNCEMENT DATE

FEB. 3, 2022

JAN. 28, 2022

Source: N Bowdich Co. and Ag Processing Inc.



NEBRASKA.

TODAY,



By Terry Zimmerman, Director of Education & Outreach

Positioned in the middle of the U.S., powered by agriculture and home to a vast number of company headquarters, Nebraska stakes its claim as a very important part of our nation's agricultural industry. With much to offer and COVID-19 restrictions lingering, Nebraska became the destination for this year's "See for Yourself" tour. On March 1, eight soybean farmers gathered in Omaha for a unique three-day opportunity to see behind-the-scenes of numerous soybean-related industries.

Many are aware that exports are especially important to Nebraska's economy, and a visit to Ag Processing Inc. (AGP) in Hastings proved just that. This soy processing facility is a major player in West Coast soybean crush exports. Their role in this industry has contributed to

one of two newly announced Nebraska soy-processing plants that will help fill the demand for soy protein and oil. The tour of AGP's crush plant and oil refinery generated great discussion and new knowledge for all attendees.

Another stop supplementing the export conversation was The DeLong Company.

“

As a grower, I've always had a general idea of what's going on there (AGP), but to see it and learn about the level of detail required to process soybeans is astounding.

— **TOM CAMERON, PARTICIPATING FARMER FROM LYONS**

”

The Omaha location specializes in exporting container shipments of grain including corn, soybeans and wheat. Participating farmers were able to view the on-site storage facilities as well as shipping containers being prepped and filled with soybeans. The containers were then loaded onto rail to be transported to end-users outside the United States.

The agenda also allowed the group to make educational visits to the Syngenta Crop Protection plant and Sapp Bros. Petroleum – Carter Lake facility. Syngenta's Crop Protection facility in Omaha formulates and packages a variety of products including herbicides, insecticides, fungicides and seed treatments. Participants learned about receiving and shipments of ingredients for these on-farm products and viewed

TOMORROW,



2



4



4



THE WORLD.

1: Port of Blencoe; 2: Henry Doorly Zoo; 3: DeLong Co.; 4: Ag Processing Inc.

the formulation tanks, bulk storage and packaging of final products.

Next, it was on to the Sapp Bros. terminal where a variety of products are moved in and out. However, of specific interest was the biodiesel blender pump, which can provide any blend of biodiesel and petroleum diesel that customers request. Farmer participants were presented with information on the demand for biodiesel blends, technical specs of its use in vehicles and the checkoff's role in building demand for soy-based fuel.

A couple unique stops on the tour included Darling Ingredients near Wahoo and the Henry Doorly Zoo in Omaha. Darling Ingredients is a company that turns waste products into feed and fuel. While product from this particular location is used for pet food,

the company uses rendered animal fats from their various locations as a feedstock for renewable diesel—a trending topic in energy conversations. Transitioning the conversation from fuel to food, the Henry Doorly Zoo gave way to a backstage tour of their dietary kitchen, where food is prepared for the animal residents. It may or may not be surprising that corn and soybeans are frequent ingredients in the diets of many exotic species.

The See for Yourself tour concluded at the Port of Blencoe, near Blencoe, Iowa. This barge port stands to be the furthest northern port on the Missouri River. This location opens a whole new market for many products, including soybeans. The group saw first hand the important link between land and water exporting and what it can do for the industry.

Dan Gehring, farmer from Platte Center, commented on the program. “The See for Yourself tour was a great opportunity to see the different uses of soybeans and the various ways our product is transported and utilized at its final destinations.”

The See for Yourself program is open to all soybean producers in the state and designed to help soybean farmers learn and experience many aspects of the soybean industry, as well as the soybean checkoff. This long-standing program has provided various opportunities for soybean farmers for 11 consecutive years, with the exception of 2021. Past program highlights have included travel to Mexico, the Pacific Northwest (PNW) and the Gulf Coast of the United States.



If you're interested in learning more or participating in future programs, contact the Nebraska Soybean Board office at 402-441-3240.



Nebraska farmer Greg Anderson and his dog, Buddy, both enjoy the soy-backed grass in December 2021. Anderson's lawn previously turned brown by summer.

THE YARD A FARMER CAN LOVE

No more mowing, weeding, fertilizing or watering.

Decades of successfully growing acres of soybeans, alfalfa, hay and corn bear witness to Nebraska farmer Greg Anderson's proficiency with plants. Until 2021, it was the bluegrass in his south-facing, downward-sloping front yard that gave his green thumb a tough time.

"Typically, it would look good in the spring and then in the summer it took a beating with the sun," says the Nebraska Soybean Board Director from Newman Grove. "The bluegrass tended to suffer when it turned dry. It was either install underground sprinklers and re-seed or even purchase new sod or do something else."

That something else was to install SYNlawn's soy-backed grass in 2021. "I

have seen SYNlawn in other parts of the country, even in Central Park in New York City. The variety of applications and landscape options is endless. It looks great wherever it is placed."

"I like the fact that SYNlawn's EnviroLoc backing system replaces up to 60% of petroleum-based polyol with a plant-based polyol made from soybeans. As a soybean farmer, that is important to me to be able to use a renewable, sustainable product," says Anderson, who is past chair of the United Soybean Board where he helped oversee soybean checkoff investments in new uses for soy as well as its sustainability.

Anderson praised the Omaha-based SYNlawn distributor, Practice Sports, which worked with him through the

entire process, including discussions of how the soy-backed grass would perform at the same time it reduces the environmental impact of maintaining the yard. "No more mowing, weeding, fertilizing or watering," says Anderson. "It's virtually maintenance free. Rain and snow drain and melt off just like a normal lawn would."

"The look and feel of the grass is so natural," adds Anderson who chose SYNBlue 949 from the many options. "People have commented that they can't believe it isn't real grass. With SYNlawn now installed, I have a perfect lawn to enjoy from here on out!"

"It's great to live in Nebraska and have green grass year-round!" says Anderson.

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WISHH is a program of the American Soybean Association and is funded in part by the United Soybean Board and state soybean board checkoff programs.



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And the engine. And the interior.**

All soybean farmers, including you, are busy replacing petroleum with your soy oil. How? By pooling your resources through your soy checkoff. Learn how your soy checkoff is bringing tangible returns back to you and your operation at unitedsoybean.org/hopper.



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Moving You Forward.





THE FUTURE OF LOW-CARBON, CLEAN FUELS HAS ARRIVED

Alan Weber



SCAN TO WATCH VIDEO

By Liz McCune, Director of Communications at Clean Fuels Alliance America

On March 18, we celebrated National Biodiesel Day and honored Rudolph Diesel on his birthday. This year, it was especially meaningful as our industry celebrates 30 years of clean fuels innovation and recognizes how far we have come since the early days of biodiesel. Today, we are witnessing an explosion in demand for low-carbon fuels like biodiesel, renewable diesel and sustainable aviation fuel. It is because of that growth and diversification that the National Biodiesel Board recently announced a new name and new brand — Clean Fuels Alliance America.

During our annual conference in January, the organization formally transitioned to Clean Fuels Alliance America to help further our position as a proven, innovative part of America's clean energy mix and better represent all industry members: biodiesel, renewable diesel and sustainable aviation fuels. The goal of Clean Fuels is to continue connecting people to accelerate America's clean fuel future and drive industry growth, with biodiesel remaining the foundation on which the industry was built.

Alan Weber, an economist and farmer from Missouri, has been involved with biodiesel from the beginning, helping a once nascent industry soar to heights never imagined 30 years ago. Weber's story is unique, and his passion for the industry is contagious.

"I've been involved in the biodiesel industry for essentially 30 years now," Weber said. "The first 10 years were focused on research and answering

baseline questions and then the focus shifted and for about twenty years that focus has been on the commercial phase."

As a student at the University of Missouri in the early 1990s, Weber approached the agricultural economics chair with a concern that had been plaguing him for some time: "The cash flows on our farm were terrible, and I wanted to do something that helped create demand," he said.

The chair suggested Weber talk to another professor who had some ideas about taking vegetable oils and turning them into fuel. At the time, Europe was already doing just that, but it was not yet happening in the United States. Weber was excited about the prospect and started working alongside the professor analyzing this new opportunity. He traveled to Europe to learn more about their process, spent time in underground coal mines in Kentucky and with urban bus fleets looking at tailpipe emission reductions with biodiesel.

Fast forward to today and Weber said, "Carbon is very much on the forefront of people's minds. We can actually, through our farming practices, have an impact on the carbon intensity score of the fuels that we use such as biodiesel and renewable diesel, and that is something we can do right now. I've been involved for approximately 30 years in this industry and in some ways, I think we're just starting to get to some of the exciting stuff, and I'm all in!"

The clean fuels industry has seen, and will continue to see, significant growth

as the world further prioritizes clean energy. We're excited to be an integral part of the solution for sustainable energy that's not only affordable but also scalable and available now. We are grateful for our origins on the farm and those who had the vision to develop the biodiesel industry over the last three decades. Now, we enter the next phase of growth and diversification with biodiesel continuing to lead the way.

Weber is excited to still be a part of the Clean Fuels story.

"I continue to be involved in this industry for probably one simple reason," he said. "This is the nexus of agriculture and the environment. I can't think of anyplace I'd rather be. How do I have a bigger impact on our economy, the environment and the planet all at one time? Simple as that."

About Clean Fuels Alliance America

Made from an increasingly diverse mix of resources such as recycled cooking oil, soybean oil and animal fats, the clean fuels industry is a proven, integral part of America's clean energy future. Clean Fuels Alliance America is the U.S. trade association representing the entire biodiesel, renewable diesel and sustainable aviation fuel supply chain, including producers, feedstock suppliers and fuel distributors. Clean Fuels receives funding from a broad mix of private companies and associations, including the United Soybean Board and state checkoff organizations.

NEBRASKA, YOUR SEED QUALITY AND PERFORMANCE HAVE ARRIVED.



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