



Ag Innovation News

Aug-Oct 2024, Vol. 34, No.4

The newspaper of the Agricultural Utilization Research Institute

INDUSTRIAL HEMP HOLDS ITS OWN FOR EROSION CONTROL



Pages 6-7



**Bioforge:
A New Generation of
Biomanufacturing**
Pages 4-5



**AURI Publishes Report on
the Critical Need for Additional
Cold Storage Space in the
Upper Midwest**
Pages 8-9



**Minnesota Brands Stand
Out at the National Restaurant
Association Show**
Page 10



**Where Are They Now:
Clo Clo Vegan Foods**
Page 11



AURI Receives \$225,000 to Serve Minnesota Food Producers

“

I AM GRATEFUL
FOR A STATE THAT
RECOGNIZES ITS
WEALTH OF ARABLE
LAND, CAPABILITIES
TO GROW AND ADD
VALUE TO CROPS,
AND OPPORTUNITIES
TO FOSTER
ENTREPRENEURS
AND THEIR
VENTURES.

”

Minnesota's food ecosystem continues to expand, resulting in additional support needs to commercialize opportunities. The Agricultural Utilization Research Institute (AURI) is well-positioned to assist food entrepreneurs on various aspects of their journey while also partnering with several collaborators to further grow our local food businesses.

In 2015, Minnesota passed the Cottage Food Law, allowing individuals to sell products under a licensing exemption as long as sales don't exceed a certain threshold (among other restrictions). In its initial year, roughly 400 individuals registered as cottage food producers. In 2023, that number jumped to almost 9,000 and is likely to exceed 10,000 registered producers in 2024. This flood of entrepreneurs requires both new services and the expansion of current services to help ensure food safety needs and to answer questions related to new food products and production.

To meet this need, AURI expanded its food services. Since 2015, it has hired food scientists and a business development director focused specifically on food. AURI also increased its laboratory staff capabilities to handle new analytical testing requests related to the commercialization of new food ingredient or finished product applications.

The explosive growth in cottage foods has exposed gaps in needed support. The 2024 Minnesota Legislative Session allocated \$225,000 in one-time funding to AURI to spend over the next two years to help fill these gaps. AURI will apply these additional funds to specific work areas.

One area of focus will be to conduct a business model feasibility study and local demand analysis on a regional scale-up contract manufacturing facility. The study would identify a business model and demand for a facility specifically designed to support scaling food businesses with production needs greater than a commercial kitchen can provide, but not quite large enough to meet the commitment required for a traditional contract manufacturer.

Food safety training is another gap and focus area AURI will address. Starting a packaged foods business is perceived to have a low barrier to market entry, but manufacturing food products meant to be eaten by unknown consumers weeks, or even months, later introduces complexity requiring expertise to address. Finally, AURI is developing a groundbreaking, artificial intelligence-powered digital assistant to efficiently connect the growing food community to trustworthy, credible information. The tool is desperately needed to educate large numbers of Minnesota food businesses effectively and efficiently, providing 24/7, common language access to AURI's food science knowledge base that does NOT require the user to be a scientist. The visionary nature of the tool is already attracting attention from significant national ecosystem partners.

Thank you to Chair Vang, Chair Putnam, and other members of the Agriculture Committee for supporting Minnesota's growing food ecosystem. The one-time funds help ensure we can create the tools needed today and into the future to grow the state's food ecosystem.



This quarter, Ag Innovation News (AIN) highlights AURI's first-term Board Director, Minnesota Wheat Research & Promotion Council member Mikayla Tabert. In this edition of AIN's Board Q&A, Tabert shares her experience with regenerative farming practices and plans for best serving Minnesota farmers.



Please tell our readers a little about your background.

I grew up on the farm where my husband and I currently farm with my parents in Red Lake Falls, MN. My dad switched the operation to no-till and strip till when I was born, and we also raised beef cattle. I completed my undergraduate degrees in Animal Science and Crop & Weed Science at North Dakota State University (NDSU) and returned to the farm. We have slowly added more uses of cover crops, phased out strip tillage, and expanded to a more diverse crop rotation. I also completed an M.S. in Plant Sciences from NDSU while farming. My husband Benjamin and I have two children, Liam (4) and Thea (2). I have been a director of the Minnesota Wheat Research & Promotion Council (MNWRPC) since 2020 and am also a member of the Minnesota Association of Wheat Growers, the Minnesota Soybean Growers Association, the Minnesota Corn Growers Association, and the Northwest Stockmen's Association.



Why did you want to join AURI's board of directors?

As treasurer of MNWRPC, I have seen how crops such as wheat have struggled to be profitable options for farmers. The bottom line continues to pressure farmers into less sustainable cropping systems, such as two-crop rotations, increased tillage, and an increase in farm inputs. I hope to add value to crops like wheat to reverse this trend and improve farm sustainability and net profitability.



What do you think is the biggest challenge facing farmers today?

I think the widening divide between the farmers and the end consumers is a big challenge. Farmers feel the pressure from the public to farm differently, but the problem is that the consumer is generally unwilling to pay the premium needed to cover the financial cost and risk of changing practices. Without the two sides listening to each other to find agreeable terms, little progress can be made.



How can Minnesota best support its agricultural industry?

The investment the Minnesota State Legislature makes in AURI is invaluable, and the dollar impact it makes for every dollar spent impresses me! I think it is a balance of considering the agricultural products already produced and how to enhance that, paired with new products that have the potential to increase farm profitability and environmental sustainability.



What are your goals as a new board member?

I still have so much to learn! My hope is to represent wheat and the Minnesota agricultural sector as a whole to help discern meaningful ways to add value to the state's agriculture. AURI also has a bold and exciting strategic plan that I look forward to helping bring to reality.



Which ag-related issues are most important to you?

With my no-till background, I am definitely a soil health junkie! I have worked with many farmers and understand the difficulty in making changes, but all farmers know that we wouldn't have a job without the soil. I have a passion for helping other farmers make changes that help their farm's overall profitability and environmental sustainability. That may include adding in a third crop, such as wheat, or integrating cover crops to stop erosion. Every operation is different, and it is neat to learn about and think critically about what can move the needle positively.



What is something people would be surprised to learn about you?

I am musically inclined! I don't have much time for hobbies at my current life stage, but when I do, I enjoy playing piano and guitar and am (slowly) learning the violin.

Bioforge: A New Generation of Biomanufacturing

By Dan Lemke

Ground has broken on a unique biomanufacturing facility in Marshall, Minnesota that will turn corn into chemicals.

Bioforge Marshall will use a novel chemoenzymatic technology to sustainably manufacture biobased chemicals for use in concrete, cleaning, agricultural, and energy industries. The 500,000-square-foot biomanufacturing facility, developed by Houston-based Solugen, is being constructed on a 34-acre parcel adjacent to an ADM corn processing facility. The facility will utilize dextrose from the ADM plant to manufacture low-carbon organic acids for a wide range of applications.

Solugen Chief Technology Officer Sean Hunt, a chemical engineer, says he and co-founder Gaurab Chakrabarti developed the process on a small

scale nearly 10 years ago. While in medical school, Chakrabarti, a pancreatic cancer physician, found an enzyme that was very efficient at producing chemicals.

“We wondered what it would look like if you took the best elements of fermentation, which would be these engineered enzymes, and the best elements of petrochemistry, which are the heterogeneous metal catalysts, and you combined the two,” Hunt recalls. “That’s really what our process is. We’re a hybrid approach to making chemicals. It’s the best of both worlds, and it’s a new outlet for agricultural feedstocks. We’ve pitched it very simply—it’s corn to chemicals.”

Hunt says the pair built a small reactor out of parts from a home improvement store. They would operate the reactor at night and on weekends making water treatment chemicals from corn sugar.

“Then we took our water treatment chemicals that we had made from corn sugar, and we drove around the Dallas area, and we poured the chemicals in people’s hot tubs to treat their water,” Hunt explains.

Solugen built a bigger pilot unit about five years ago and then constructed its first commercial Bioforge facility, in Houston, Texas. That facility produces 10,000 tons of chemicals per year. Bioforge Marshall will be ten times larger than the Houston plant and is expected to utilize 150 million pounds of dextrose from the ADM corn processing facility each year.

Efficiency Benefits

Hunt says part of the beauty of the Solugen process is its efficiency. He says Solugen is able to get 94% yield, while traditional petrochemistry is closer to a 60% yield. Fermentation, like what occurs in an ethanol plant, is typically about a 40% yield.



“If you can have an over 90% integrated yield from your corn feedstock to the product you’re trying to make, that’s really game-changing,” Hunt notes. “This process creates a whole new outlet for corn that can be really massive and exceptionally valuable.”

Hunt says Solugen is commercializing a range of organic acids. Customers use the chemicals for water treatment in facilities like ethanol mills, soybean crush plants, schools, hospitals, and municipal water treatment. In agriculture, Hunt says Solugen also produces complexing agents that enable higher nutrition absorption that leads to higher crop yield potential.

“It’s essentially a bio-stimulant for agriculture,” Hunt explains.

The same chemical can also be used in concrete for flowability in lieu of petrochemicals. Government agencies like the Department of Defense are also interested in it as a corrosion inhibitor.

Not only is the Solugen process more efficient than fermentation but it’s also estimated to reduce 18 million kilograms of carbon dioxide per year compared to traditional petrochemicals and fermentation-based processes.

“As the demand for sustainable products continues to rise, we look forward to partnering with our customers in their decarbonization efforts,” Chakrabarti says.

Innovation Recognized

Hunt participated in the ‘Scaling Up for the Future’ panel at this year’s New Uses Forum, which was hosted by the Agricultural Utilization Research Institute (AURI) and focused on bioindustrial processing.

“This is a key industry sector that we believe has potential in Minnesota to drive many new markets for our agricultural feedstocks,” says Shannon Schecht, AURI executive director. “The focus also coincides with the recent Department of Defense investments in biomanufacturing through BioMADE which has a presence in Minnesota.”

The U.S. Department of Energy’s Loan Programs Office announced a conditional commitment to Solugen Bioforge Marshall for a \$213.6 million loan guarantee to finance the construction of the facility. This commitment is the single largest U.S. government investment in bioindustrial manufacturing since President Joe Biden signed an executive order on Advancing Biotechnology and Biomanufacturing Innovation for a Sustainable, Safe, and Secure American Bioeconomy.

Hunt says Solugen also has formed a partnership with Sasol Chemicals, one of the largest chemical companies in the world, to commercialize products in the cleaning space like chelating agents used in formulations for laundry detergent and industrial cleaning.

Gaining Momentum

Hunt says the path Solugen is currently on is just the beginning. He expects more innovation to occur.

“This is just the beginning,” Hunt states. “Each time we work with one of our customers on incorporating this chemistry, our customers then go and find all sorts of other applications that they want to incorporate our chemistry into. So, they really take us on some exciting journeys.”

“Solugen is at the forefront of the next wave of biological processing to create high-value biomolecules and chemicals using agricultural feedstocks. This is a step beyond ethanol fermentation using biological processes,” Schlecht says.

Schlecht says bioprocessing advancements like the one Solugen has developed, are among the next opportunity waves for agriculture.

“The reduction in research and development costs for bioindustrial manufacturing is very exciting and creates many new opportunities for biobased products made from agricultural feedstocks. It is exciting to see Solugen choose Marshall as the site of their Bioforge efforts to create organic acids to replace petroleum-based materials.”

The groundbreaking for Bioforge Marshall was in April 2024 and Hunt expects the facility to be operational by the end of 2025.



“It’s one chemical, but with all these different, diverse applications that you can build product portfolios into,” Hunt says. “That makes it pretty exciting, and it’s all going to come from Marshall area grown corn, which is the really cool part.”

The Bioforge Marshall footprint will be much smaller than most petrochemical refineries. Hunt says most traditional refineries create an alphabet soup of byproducts and then spend considerable time, equipment, and energy separating the individual molecules for different uses or to dispose of as waste. With Solugen’s process, there’s less capital expenditure and energy needed.

“You can just make the molecule that you want,” Hunt notes. “That’s what green chemistry and green manufacturing is. How do you increase the yield as much as possible while minimizing impacts to the environment.”

INDUSTRIAL HEMP HOLDS ITS OWN FOR EROSION CONTROL

By Dan Lemke

Minnesota's emerging hemp industry may be in a prime position to help one of the state's largest agencies solve a problem while also opening doors to potential new markets.

The Minnesota Department of Transportation (MnDOT) conducts dozens of road construction or repair projects each year. To minimize environmental impact, nearly every one of those projects requires some level of erosion control.

"Erosion control is an important piece for most of our construction projects," says Ken Graeve, MnDOT erosion and stormwater supervisor. "Any project that disturbs soil has to have some erosion control and sediment control work done."

Some of the products MnDOT has used, including erosion control mats, contain plastic netting, which is used to hold layers of materials like straw or wood fibers together. The mats hold soil in place while allowing water to pass through and plants to grow gradually through the material. Graeve says the plastic netting is problematic. Small animals like ducklings and snakes get tangled in the netting. Additionally, the netting tends to get wrapped up in mowing equipment, creating headaches for mowing crews and mechanics. The plastic also does not biodegrade so it eventually creates microplastics, contributing to other environmental problems. Some of the plastic netting has been replaced with jute, but that product must be shipped in from overseas. Graeve says MnDOT is looking for a local, more sustainable substitute.

ENTER HEMP

For the past three years, AURI has led a project supported by MnDOT and the Minnesota Department of Agriculture to explore the potential of using industrial hemp fiber in erosion and sediment control products. Funding for the project was provided by the Minnesota Environment and Natural Resources Trust Fund by the Legislative-Citizen Commission on Minnesota Resources (LCCMR). The Trust Fund is a permanent fund constitutionally established by the citizens of Minnesota to assist in the protection, conservation, preservation, and enhancement of the state's air, water, land, fish, wildlife, and other natural resources.

AURI has had a hemp initiative for several years, which is focused on developing a value chain for industrial hemp. For the erosion control project, AURI worked to develop methods for processing hemp stalks, separating the fibrous inner stalk from the woody outer core called the hurd.



At AURI's Bioindustrial Innovation Center in Waseca, Minnesota, hemp fibers were produced for testing in mats, hydromulch sprayed on the soil, erosion control logs, and silt fences. Fibers were even spun into yarn in an attempt to weave hemp fibers into the netting that holds mats together.

"We've done initial work on all of those products, but the ones that we think have the most opportunity based on research, field testing, and lab testing, are the blankets and the hydromulch," says Matthew Leiphon, AURI project manager. "We still think there's potential for the logs and potentially the silt fences, but the mats and hydromulch make the most sense right now."

AURI staff connected with several private industry partners to develop erosion control prototypes. The prototypes came in various thicknesses and blends of other ag-based materials with hemp fibers. Products were tested at several locations, including at MnDOT's MnROAD test site near Albertville, Minnesota.

"Our goal for this project was to find a biobased solution for MnDOT. They need an alternative to any synthetics being used in mats, but that still meets the necessary specifications and performs correctly,"

says AURI Business and Industry Development Director Harold Stanislawski. “The second part of that goal is to use industrial hemp, get acres of it planted, and develop value-added uses and end markets.”

Minnesota farmers planted about 1,100 acres of industrial hemp in 2023. Additional hemp processing capacity is coming online in Minnesota, so finding potential markets for hemp fibers would boost the industry.

MARKET POTENTIAL

Graeve says any alternative erosion control product must perform as well as what MnDOT currently uses. Most temporary erosion control items need to last between three and 18 months before decomposing. Price and convenience are also considerations.

The results of the hemp product tests are encouraging.

“There’s really good potential for hemp products,” Graeve explains. “With the demonstration that we did and the lab testing, it looks like the products perform similarly to the ones we currently use.”

Graeve says MnDOT-led construction projects use about 4 million pounds of products and \$6 million to \$10 million worth of erosion and sediment control materials that could incorporate or be replaced by hemp. Those are just MnDOT projects.

“Many Minnesota cities, counties, and private projects also use our specifications and, therefore, our materials,” Graeve says. “We have no way of knowing exactly how much is used, but our general rule of thumb based on conversations with vendors is that the overall use of these products is about five to ten times as much as what MnDOT itself uses.”



Because erosion control products do not require a high level of processing, Graeve sees them as a good entry point for Minnesota-grown hemp products.

“From the standpoint of the Upper Midwest and anywhere that erosion control products are needed, there’s a big market,” Stanislawski says.

NEXT PHASE

This project illustrated that erosion control items and mulch offer one viable market for hemp. Stanislawski adds that most hemp processing will use the seeds for food and industrial products, both key market opportunities. Utilizing fiber would offer growers and processors additional revenue sources.

“We’re going to harvest the seed, and we’re going to use that seed, likely for an industrial or a food process, so there’s revenue to be obtained there,” Stanislawski states. “You’ve still got the stalks and the hurd from the dual-purpose variety that you could monetize. In the case of erosion control, you’d be monetizing the fiber, and then you can monetize the hurd for other markets, such as hempcrete or bedding.”

AURI and MnDOT hosted a field day at the MnROAD facility in the fall of 2023. The event gave growers, vendors, and manufacturers an opportunity to learn about the research and to make connections for potential future developments.

AURI Senior Scientist for Coproducts Alan Doering says AURI’s next step is to share the information gathered through the project research with industry partners, growers, and processors.

“A priority for this project was to develop new markets for hemp fiber that benefit producers and processors in the state,” Doering says. “I foresee additional research in the area of erosion control mat refinement, focusing on cost and performance improvements, specifically related to promoting vegetation to grow through the mats.”

Doering expects another next step will involve producing a hemp-based thread on a larger scale, focusing on the cost and feasibility of hemp yarns compared to natural fiber-based yarns currently in the marketplace. He also anticipates expanding research on utilizing various hemp coproducts within erosion control products, such as hemp-filled erosion control logs, which is a fiber-filled mesh tube used to control water descending from slopes.



AURI Publishes Report on the
**Critical Need for Additional
Cold Storage Space in the
Upper Midwest**

Access to cold storage space is critical for the distribution of meat products worldwide. For meat processors, cold storage space is necessary to maintain quality, extend shelf life, and ensure food safety.

In 2021, the Agricultural Utilization Research Institute (AURI) and the United States Department of Agriculture, Agricultural Marketing Service (USDA-AMS) signed a multi-year cooperative agreement focused on the Upper Midwest's small meat and poultry processors. Among the goals of the project was to study financial barriers facing small meat processors and to develop solutions to help the industry overcome challenges that emerged during the COVID-19 pandemic. One of the issues that emerged from the study phase of this cooperative agreement was the dearth of cold storage space in the Upper Midwest.

For independent meat processors in the Upper Midwest, however, finding space in nearby cold storage facilities for their products is a constant challenge. Most cold storage space is located in large, metropolitan areas in the southeast and southwest regions of the United States. The cold storage facilities that do exist in the five-state area (Iowa, Minnesota, North Dakota, South Dakota, and Wisconsin) serve larger national processors. These factors can lead

to higher prices and postharvest losses for local and regional meat processors. Further, building new cold storage space is a tremendous expense and not enough capital investment is occurring on the public and private side to increase capacity.

To diagnose and understand the nuances and specifics of the region's lack of cold storage, AURI hired Axiom, a market research firm, to examine cold storage demand and bottlenecks in the five-state region. The recently published report, *Upper Midwest and Northern Minnesota Cold Storage Assessment Report: Empowering Local and Regional Meat Processing in the Upper Midwest Region*, is available at AURI.org.

The goals for the project were threefold:

- Validate the market need for additional cold storage in Iowa, Minnesota, North Dakota, South Dakota, and Wisconsin.
- Estimate the amount of existing commercial freezer space in the five-state region.
- Identify the need for additional cold storage in the next five to seven years.

Based on statistics from the U.S. Department of Agriculture, there are 158 cold storage facilities, with 641 million cubic feet of capacity, in Iowa, Minnesota,

North Dakota, South Dakota, and Wisconsin. This represents about 11% of the total cold storage capacity in the United States. The cold storage capacity is not spread evenly across the five states. Wisconsin has 92 cold storage facilities with more than 365 million cubic feet of storage while North Dakota only has three facilities with 7.8 million cubic feet of storage.

Mike Reiber, the CEO of Axiom and lead author of the report, says the study confirms that the Upper Midwest is woefully short of cold storage space. The study illustrates “cold storage deserts” exist across significant portions of the region for meat processors, explains Reiber. He says that the report crystallizes the negative impact the lack of cold storage facilities has on small rural communities.

For processors, the lack of available space hinders business growth and leads to increased costs. During busy times of the year, like the holidays, hunting season, and summer grilling season, cold storage space is even harder to find, so businesses are forced to cut back on the number of animals they process, which further limits revenue and the seasonal variety of meat available to consumers.

These factors further disrupt the supply chain for meat and poultry and, ultimately, impact grocery store prices. For business owners, this means increased operating costs and more headaches, notes Clay Newton, AURI’s meat innovation specialist.

“Many of the so-called ‘mom and pop’ processors that are making thousands of pounds of products simply don’t have anywhere to store it or freeze it or cool it,” says Newton. “Their onsite lockers simply cannot handle the volume. Compounding the problem, the majority of operations either do not have access to off-site cold storage and/or do not have the financial or logistical means [refrigerated transport or manpower] to take advantage of off-site storage when a facility is nearby.”

In addition to the challenges facing the processing industry, the report highlighted several important next steps, including:

- Catalog the support mechanisms for smaller processors that are not interested in using commercial cold storage yet experience on-site capacity constraints.
- Define the municipalities outside the areas of high cold storage penetration within the five-state region with the greatest demand and potential for developing cold storage capacity.
- Increase the understanding of high-volume independent processors serving diverse market channels as they are most likely candidates for commercial cold storage use.
- Identify cold storage consultants with experience developing successful shared cold storage facilities to advise the meat and poultry industry.
- Investigate regional and local electric utility rate plans and energy efficiency rebate structures.
- Identify private investors that are actively pursuing cold storage projects and development.

The report further underscores what many in the processing industry have known for a long time. Addressing the problem will

require the cooperation and forward-thinking of many stakeholders. One way that AURI can help is by providing technical expertise and guidance to businesses applying for government grants to build new cold storage facilities or expand and update existing ones.

Newton says the entire processing supply chain needs to address the issue in a timely manner. Many of the existing cold storage facilities in the Upper Midwest need modernization, and business owners say finding replacement parts is a big challenge.

Reiber acknowledges the solution to the problem is simple to identify but more difficult to address. The entire region, but especially the rural areas, needs more cold storage space, but economic factors are impeding the development of more capacity.

“The fact is that one isn’t going to build [new cold storage facilities] in these areas because there aren’t enough people that live there and it is a tremendous expense,” he says.

Reiber acknowledges the answer is a combination of seed grant money from state and local government and forward-looking, community-focused entrepreneurs. During the research, Reiber spoke with a business owner from South Dakota who recently used a small government subsidy to add additional cold storage space to his 250,000-square-foot processing center. The private market would not lend the business owner money for the project.



“The reality is that in order to build more cold storage in these rural areas, there needs to be investment from local, state, or federal governments through seed money or tax incentives,” Reiber explains.

Reiber stresses that there is a way to address the overarching issue and build additional cold storage capacity in the region. In his interviews and research for the report, Reiber says he identified a model that can be used on a larger scale. He found examples of groups of ranchers and microprocessors in the western plains states that have banded together to create a modular plant that processes, wraps, and freezes meat all on-site. By working together and pooling their resources they have been able to address a common challenge.

“The logistics companies understand that there is not enough cold storage space, but they don’t see the return on the investment they need to invest in these cold storage deserts yet,” Reiber notes. “There are enterprising people that are working to figure out how to use their own money and get the capital they need from the government and banks to expand and build new facilities. They will figure this out because they need to, however they are the outliers. To be successful in addressing this issue, you need someone with some money and some vision. Luckily, those people are out there working on this issue.”

MINNESOTA BRANDS STAND OUT AT THE NATIONAL RESTAURANT ASSOCIATION SHOW



Restaurant and food service industry professionals from across the United States and around the globe descend on Chicago for four days in May for the annual National Restaurant Association Show. It is one of the largest trade shows in the country, with the May 2024 show including more than 2,240 exhibitors and an estimated 58,000 attendees, representing 124 countries. This year, the show floor spanned over 723,400 square feet—over 12 football fields—offering attendees the opportunity to explore products and services across more than 900 categories. The show also features keynote addresses on a wide variety of topics, demonstrations of the latest equipment and technology, and lots of food and beverages to sample.

The Minnesota Department of Agriculture (MDA) organizes a Minnesota Pavilion at trade shows to showcase some of the most innovative food and beverage businesses and supporting organizations from the Land of 10,000 Lakes. The “Taste of the States Pavilion” at the National Restaurant Show is unique in that the Minnesota Pavilion is within the National Association of State Departments of Agriculture (NASDA), with several states represented.

The Amazing Chickpea, Captain Ken’s Compart Duroc, Grik, Nordic Waffles, Papa George, Tater Kegs, Stone Gate Foods, The Good Acre, Forever Green Initiative, Per SE, P&TY Granola, and the Humble Goat/Stickney Hill Dairy were the 2024 Minnesota Pavilion participants. Business leaders receive a cost-share from the MDA to exhibit and the chance to meet and connect with representatives from the food service industry. Foodservice attendees included restaurants, schools, government, health, wellness, hospitality, leisure, senior living facilities, the military, and more.

Brian Erickson is the marketing program manager at the Minnesota Department of Agriculture. This year’s Minnesota Pavilion was a mix of brands that have attended the show for many years as well as first-time attendees. Next year, MDA will have a bigger footprint at the show due to demand, he says.

“There is such a wide variety of buyers at this event. You have everything from golf courses to national restaurant chains. Breaking into retail can be difficult for new brands so to have so many different channels represented at the show can open additional avenues of growth and revenue,” Erickson explains.

Hally Turner is the founder and CEO of Per Se, a craft, alcohol-free beverage company. She says the experience was overwhelmingly positive. In years past, she ran out of printed marketing materials after the first day. This year, she met with several high-value contacts that can help grow her business. She is interested in expanding her product into new markets through partnerships with casinos, cruise ships, caterers, and others in the hospitality industry. She says that one of the best parts of attending the National Restaurant Association Show is that the connections she made underscore that there are several different paths to scaling her business.

“Growth is really driven by the right partners. I am serious about trying to get more alcohol-free options into the hands of consumers. It does not have to be a large business with hundreds of retail stores. If a partnership leads to more nonalcoholic choices in the market, I will happily work with anyone,” Turner says.

Lolly Occhino, AURI’s senior scientist for food, also attended the show with the Minnesota group. AURI’s food team works with many clients looking to expand into the food service industry so being at the show was a natural fit, Occhino says.

“We have clients who are looking to expand their products into places like school lunch programs. Participating with the Minnesota contingent as a resource, networking, and talking to people about the services we provide was important,” she explains.

Erickson said the MDA valued AURI’s attendance and involvement at this year’s show.

“To have Lolly attend and to be able to connect with companies and entrepreneurs and introduce AURI and what it can do and where they can assist was just so helpful. Together, we offered a good representation of the entire ecosystem that the state of Minnesota has to support our food and beverage brands,” he says.

Brit Williams is the founder of P&TY Granola Co., a gluten-free and dairy-free granola bar brand. She says MDA representatives did a remarkable job preparing Minnesota businesses to attend the show and maximize the opportunity.

“It is a massive show, so it is easy to feel overwhelmed. But when we were walking through, you could tell that people knew who we were, and that gave us instant credibility. It was also very positive to be with the other Minnesota food and beverage businesses and make those connections with entrepreneurs dealing with some of the same opportunities and challenges that I am,” she explains.

Williams says she brought about 1,500 bars to hand out as samples over the four-day show and received a lot of positive feedback on her brand story and the taste of the products.

“We had about 200 leads at the end of the four days. We met with a lot of people and had a lot of very good conversations on places where my bars could fit right in,” she notes.

“The food service industry opportunities for food companies have been strong since coming out of COVID. Attending the tradeshow opens up new doors for emerging Minnesota food companies and represents another market channel for these entrepreneurs that are poised for new growth,” says Occhino.



WHERE ARE THEY NOW:



Clo Clo
DELECTABLY VEGAN™

The origin of Clo Clo Vegan Foods is very personal for co-founders Wendy and Augie Hinnenkamp. Their daughter Chloe has eosinophilic esophagitis, a chronic allergic inflammatory disease of the esophagus that is triggered mainly by food proteins. Because of her condition, food options are extremely limited.

“We became frustrated with food allergies and autoimmune diseases because our daughter was missing out on family pizza nights, so we decided to do something,” Augie Hinnenkamp says. “She was being excluded at the family dinner table. She was being excluded in schools. We decided to make a brand that not only our Chloe could eat, but also for all of the other Chloes out there. We soon found out there’s quite a few like her across the country with food allergies and autoimmune diseases.”

The Hinnenkamps’ foray into operating a food business was a bit of a left turn. Wendy worked in fashion and Augie worked at 3M. They connected with 40-year culinary veteran and award-winning chef Robert Velarde to develop a line of vegan pizzas.

Making foods free from major food allergens was only part of the equation. The products’ flavor had to compete with traditional counterparts. Augie Hinnenkamp says Velarde worked on a thousand different renditions of cheese to find a formula that rivaled the real thing.

“Developing the cheese was pretty complicated, let alone the crust and the other areas of production,” Augie Hinnenkamp explains.

Hinnenkamp worked with Agricultural Utilization Research Institute (AURI) Food and Nutrition Scientist Ben Swanson on some formulations, scale-up issues, and nutrition labeling information. Swanson also helped connect Clo Clo Vegan Foods with other Minnesota businesses that could supply ingredients.

“AURI was absolutely fantastic on the first formulas and getting the nutritional labels made for retail,” Augie Hinnenkamp says.

WHERE ARE THEY NOW?

Clo Clo Vegan Foods was commercialized in March 2020. Today, they produce a line of eight pizzas, including Tuscan, Mediterranean, and Margherita, as well as two flatbreads that are vegan and free of the nine most common food allergens.

“Being free from common allergens was a big differentiator for them,” Swanson says, “and to top it off, it’s a phenomenal pizza.”

Clo Clo Vegan Foods products are currently available at Lunds & Byerlys, Target (37 stores in the Twin Cities), and a range of food co-ops in Minnesota and elsewhere. Augie Hinnenkamp notes the business is strong in Texas, through HEB stores, and spans nationwide through Sprouts Farmers Markets. The company just recently entered the market in Puerto Rico.

Hinnenkamp says the company utilizes food as a “utensil of inclusion” for all living souls. Their tagline is “vital for some, good for all.” Daughter Chloe, for whom the company is named, is the official taste tester and her signature of approval is on every box.

“The most rewarding part is when we receive customer emails, for example, from the mom in Philadelphia whose daughter, due to her autoimmune and other conditions, can only drink water and eat our pizza crusts,” Augie Hinnenkamp recounts. “When you get those powerful emails, it’s pretty rewarding knowing we’re helping not only our Chloe but others like her across the country. That’s the biggest satisfaction.”

Clo Clo Vegan Foods was recently accepted into the MBOLD Bold Growth program, which is co-led by AURI and Naturally MN, and supported by DEED’s Small Business Assistance Program. Through the program, MBOLD member companies provide in-kind mentorship and project teams for highly tailored cost-free technical assistance to high potential growth-based companies located in Minnesota.

To learn more, visit clocloveganfoods.com.

ABOUT AG INNOVATION NEWS

Jennifer Voegele, managing editor
Design by russellherder.com

Electronic pdf copies of current and previous Ag Innovation News issues are available on the website: auri.org.

Address correspondence or subscription requests to:

280 University Drive SW
Waseca, MN 56093

218-281-7600
news@auri.org

BOARD OF DIRECTORS

Federico A. Tripodi, Chair
At-Large Board Member

Ted Winter
Minnesota Farmers Union

Carolyn Olson, Secretary/Treasurer
Minnesota Farm Bureau

Sen. Aric Putnam
Minnesota Senate

Rep. Samantha Vang
Minnesota House of Representatives

Lauren McNamara
Agribusiness, SunOpta

Joe Serbus
Minnesota Soybean Research & Promotion Council

Mikayla Tabert
Minnesota Wheat Research & Promotion Council

Jon Veldhouse
Agribusiness, Qore

John Schafer
Vice Chair, Minnesota Beef Council

Jeff Grev
At-Large Board Member, Hormel Foods

CONTACT US

Crookston
510 County Road 71 Suite 120
Crookston, MN 56716

St. Paul
University of Minnesota
Andrew Boss Laboratory, Office 136G
1354 Eckles Avenue St. Paul, MN 55108

Marshall
1501 State Street
Marshall, MN 56258

Waseca
280 University Drive SW
Waseca, MN 56093



AG INNOVATION NEWS PODCAST



Listen Now

AURI launched its “Ag Innovation News” podcast in September 2022 to serve as an extension of the *Ag Innovation News* biannual newspaper. The podcast is hosted by former AURI Director of Government & Industry Relations Dan Skogen, who engages in conversation with some of the brightest minds and innovative individuals across Minnesota’s value-added agriculture ecosystem.

Each episode explores the topics, ideas, and individuals influencing Minnesota agriculture. If you are curious about value-added agriculture, upcoming events, and opportunities along the value chain, or the people who work behind the scenes to strengthen the state’s agriculture ecosystem, this is the podcast for you!

Previous topics include Hurricane Hunter Turned Cheese Maker, Exploring the Challenges and Opportunities of Biofuels and Sustainable Aviation Fuels, Stories from the Farm: Transitioning to Cover Crops, and Summer Cool Down with Virtual Ice Cream. New episodes are published twice a month.

The Ag Innovation News podcast is available on Apple Podcasts, Spotify, YouTube Music, and more.

For more information on the Ag Innovation News podcast, please visit AURI.org or scan the QR code.

Non-profit
Organization
U.S. Postage
PAID
Permit No. 14
Detroit Lakes,
MN 56501

 **AG INNOVATION NEWS**
The newspaper of the Agricultural Utilization Research Institute

510 County Road 71
Suite 120
Crookston, MN 56716
Change Service Requested