



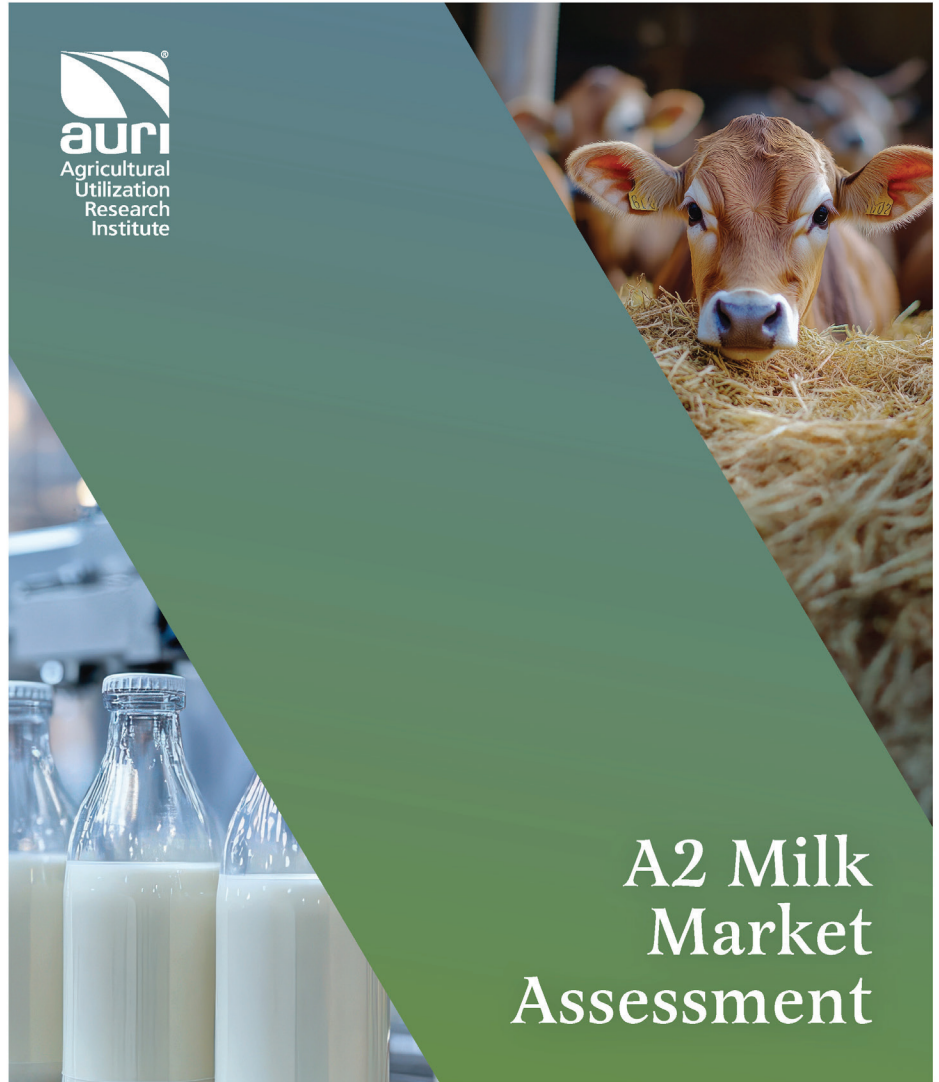
Ag Innovation News

TODAY'S INSIGHTS • OPPORTUNITIES • IDEAS

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A2 Milk Market Assessment

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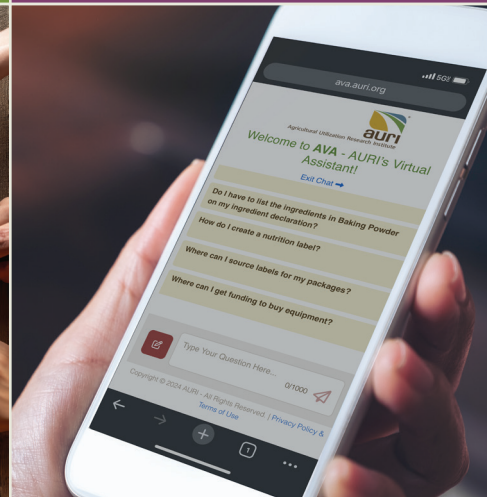
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Program Helps
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Where Are They
Now? Hoyo



EXECUTIVE DIRECTOR'S COLUMN

“AURI continues to be a unique and affordable resource to help commercialize new product innovations and catalyze market opportunities.”

I am extremely proud of the return that our 34-person organization delivers to the agriculture industry and state economy. For the past fiscal year, AURI attributed \$187 million in new annual sales and helped create/retain 717 jobs due in part to our assistance to producers, entrepreneurs, and agribusinesses. These client projects come to us in all shapes and sizes, from established multi-million dollar farmer cooperatives to small cottage food producers who are just beginning their value-added journey. Regardless of entity or project size, AURI continues to be a unique and affordable resource to help commercialize new product innovations and catalyze market opportunities.

Since its founding in 1989 through forward-looking leaders and legislators in Saint Paul, AURI continues to evolve to push key opportunities forward. As we look to the years ahead, that same drive for ingenuity and impact is foundational to our decision-making and resource allocations. It has been exciting to see new products develop and grow, but there are always challenges that exist in the commercialization journey, be it costs, scale, market awareness, financing, or understanding regulatory compliance, to name a few. AURI takes a two-prong approach to assist clients in their commercialization endeavors, addressing technical challenges and assisting in the business viability of the effort.

As we look to the future, AURI is well positioned to advance value-added opportunities through its expertise and programs, especially in the following areas, which we believe can create valuable impacts for the agriculture industry and state economy.

- *Renewable Natural Gas and Anaerobic Digestion Using Ag Feedstocks*
- *Coproduct and Byproduct Valorization of Ag-Derived Products*
- *Food Ingredients*
- *Scale-Up Food and Beverage Manufacturing*
- *Biobased Products*

This is not an exhaustive list as there are many other opportunity areas in which AURI collaborates with other organizations to support market expansion opportunities.

While this Ag Innovation News (AIN) edition highlights AURI's recent work, it is nearly impossible to share the multitude of AURI activities and impacts. I invite you to look at AURI's annual report for more insights at bit.ly/AURIAnnualReport2024. We look forward to engaging with individuals and organizations that can help drive the value-added agriculture sector forward and to furthering impactful collaborative approaches in the year ahead.

A handwritten signature in black ink, appearing to read 'Shannon M. Schlecht'.

Shannon M. Schlecht
Executive Director



Board Spotlight

KENT HEINS

This issue of Ag Innovation News (AIN) highlights AURI's first-term Board Director, Kent Heins. Kent represents the Minnesota Beef Council and helps lead the Minnesota Hereford Breeders Association. He is a third-generation cattle breeder. In this edition of AIN's Board Q&A, he shares his belief that combining high-tech innovation and agricultural expertise is key to addressing global food challenges.

Please tell our readers a little about your background.

I was born and raised on a small cattle farm near Hewitt, Minnesota, where my family raised Hereford cattle. I participated in 4-H, FFA [Future Farmers of America], and the American and Minnesota Junior Hereford associations along with several sports and activities that most small-town kids do. My summers were filled with showing cattle, and this is where my passion for cattle started. Always being a little nerdy, I gravitated toward math and science, where I graduated from Bertha Hewitt High School. I then went to the University of Minnesota Duluth to wrestle and study engineering. The wrestling was tough and so were the engineering professors. I ended up with a bachelor's degree in Industrial Engineering and a great experience in a great Minnesota town!

After I graduated, I started working at Seagate Technology. My 27-year career at Seagate has taken me from Bloomington, Minnesota to Bangkok, Thailand to Singapore to Beijing, China and back. It has given me the opportunity to work in a high-volume manufacturing setting, designing and implementing automated equipment in the high-tech sector, and then switching to the customer-facing end of the process, assisting customers in implementing their data storage business. Currently, I am an engineering director of Seagate's systems business.

Outside of my professional life, my family and I have continued to raise Hereford cattle. I have remained very active in the Minnesota Hereford Breeders Association as a two-time director while being the president for six years. This is when AURI board member John Schafer introduced the Minnesota Hereford Breeders to AURI.

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

I love the intersection of technology and agriculture. AURI is the perfect blend of those two sectors, which are both essential in our current environment. I've always loved agriculture; it's part of who I am and has never left me. I've also always loved continuous improvement. The concept of aiding the State of Minnesota's agricultural sector and its adoption of new ag technology is truly exciting!

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

Minnesota farmers face significant challenges from all sides. The capital cost of staying ahead of technology is a challenge that

most family farms battle regardless of which area of agriculture they participate in. As we know, technology continues to change, and Minnesota farmers and agribusinesses need to be diligent in their search for the technologies that will benefit their operations as they look to pass their business and passion to the next generation.

How can Minnesota best support its agricultural industry?

By being aware of the great resources that are produced and available in this great state. Minnesota has a long history of being a global food/ag innovator. It is truly unique to live in a state where many of the food giants got their start. This was all done by innovation. We need to keep innovating and investing in the people and ideas that brought us to this point in our history to keep us ahead of the innovation curve.

What are your goals as a new board member?

First, my goal is to learn. I want to understand how I can help this organization. Second, I want to fill the shoes of the board member that I'm replacing. John Schafer is very passionate about agriculture, the beef industry, and Hereford cattle. I intend to use my background in engineering to add to John's passion for these subjects.

Which ag-related issues are most important to you?

Since I have a passion for beef cattle and am representing Minnesota Beef Council, the issues that are most important to me are to ensure that beef and beef production are viewed in a positive light. Beef is an excellent protein source that is part of a well-balanced diet. The beef industry feels pressure from many sides, much like all of agriculture does, and cattle producers go to great lengths to ensure they produce a great quality product in the most efficient, environmentally safe manner while looking to maintain the land for future generations.

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

I love to cook. My Grandma Heins was my favorite person, and I was her favorite (no, really, you can ask anyone!). She and I share a passion that providing great food to people you care about is one of the greatest simple pleasures a person can have.



By Dan Lemke

Soybean meal has been a staple ingredient in livestock diets for decades. Beyond feeding pigs and poultry, soybean meal, soy hulls, and other soy products could find new opportunities, providing Bowser and Fido the nutrition they need.

The Agricultural Utilization Research Institute (AURI) spearheaded a study of the potential for including soy in dog food and dog treats. The assessment was supported by the Minnesota Soybean Research and Promotion Council (MSR&PC).

In recent years, many dog food brands have promoted “no grains, no corn, no wheat, no soy,” which effectively stigmatized those ingredients and pushed pet owners away from the omnivore diet from which dogs can benefit. Many premium pet

food brands consider grains to be cheap filler ingredients with low nutritional value.

Because many pet owners view their animals as family members, some want to feed them human-grade food, viewing their dogs’ dietary needs similarly to human needs. As a result, meat-only dog foods have proliferated. Given the popularity of plant proteins in human foods, soy may also have new opportunities in pet food.

“There’s a lot of potential in different areas of soy that fit great for dog foods,” says Ben Swanson, AURI food and nutrition scientist and principal investigator for this study. “Soy is high in protein and it has oil and fiber. There’s a lot of potential to use soy in a number of areas within the pet food category.”

Changing Dynamics

AURI's assessment showed that post-pandemic, premium meat-based dog food sales slowed. Higher costs due to inflation are causing some pet owners to pull back on premium meat-based dog foods.

"Swings are happening now where the cost of protein may be getting out of reach for some people, and everyone is more aware of their pocketbooks," says Mike Youngerberg, senior director of product development and commercialization for the MSR&PC. "It appears that people are looking for products that are available that don't cost as much but still provide the same nutrition."

The market assessment showed that dog food manufacturers presently see soy products as a source of protein that can balance nutritional formulations. Soy protein is highly digestible and is used extensively in premium dog foods formulated for sensitive stomachs or dogs with digestive issues. Soy is also used in lower-cost dog foods.

"There is research that shows that dogs can live off of plant-based diets provided that they're appropriately formulated," Swanson says. "Soybean definitely has a place in these plant diets, mirroring some of the great benefits that meat products currently have in the market."

Specialty Products

In addition to ingredients in dog food, soybean meal could be used to create healthier, high-protein special occasion treats. Soybean meal can be an alternative for chicken, beef, lamb, and feather meal.

The market study showed that pet owners aren't overly price sensitive for special occasion treats. Healthy, high protein baked treats may be an opportunity area for soy products.

Soy oils with flavorings could be positioned to coat kibble, potentially extending the shelf life of dry dog food longer than products coated with beef or chicken fat. Soy oils are also rich in Omega 3 and Omega 6 fatty acids and could be positioned as an anti-inflammatory ingredient benefiting skin, hair, and joint health. Soy oil could also potentially replace chicken fat, beef tallow, and fish oil.

"There could be some expanded opportunities in several areas, including using the fiber and the oil," Swanson says. "Rendered poultry fat is often used to coat dry kibble for energy, flavor, or nutrients, and due to supply issues resulting from various sources, I see an opportunity for soybean oil in formulations that rely heavily on rendered poultry fat."

Soy hulls could be positioned as a fiber ingredient that produces less abdominal gas in pets. Hulls contain additional protein and sugars that could function as a prebiotic to stimulate canine gut flora. Rich in magnesium, soybean meal could also be used as a calming agent in supplements.

"There's continuing interest in the gut microbiome and gut health in the pet industry that mirrors the human side of things," Swanson explains. "Soy hulls could have an opportunity as a prebiotic or a supplement to fortify formulations or as a standalone ingredient."

Education Needed

Soybean meal used to command a larger portion of the pet food ingredient market, but changing dynamics and the push toward more meat diets took its toll. Mike Reiber, CEO of Axiom Marketing Communications, Inc., who conducted the market assessment, believes there's an opportunity for soy to take back a bigger share of the pet food market.

"Soy is an ingredient that the dog food formulators need to learn," Reiber says. There's been a lot of technological changes that have happened in the last five to seven years that make soy a better ingredient. We need to re-educate them about why soy is an appropriate ingredient for dog food formulations."

Reiber says pet food formulators likely don't recognize that the products now available from soy processing could help them make healthy and potentially lower cost pet food products.

"Most of these formulators aren't thinking about hulls, and hulls are also a byproduct of the crushing process which is creating all of the soy meal that is on the market and lowering overall prices," Reiber says. "Soy hulls have amino acids and soy hulls have fiber. They have a lot of benefits to a dog's diet. Very few, if any, manufacturers are using soy as a protein source for treats. This whole issue of healthy treats is going to be on the horizon."

Soy Opportunity

The dynamics of the region's soybean processing industry have changed dramatically in recent years as soybean crushing capacity has grown to produce oil for low-carbon fuels like renewable diesel. For years, soybean meal was the focus and oil was a byproduct. Now, abundant soybean meal supplies have industry leaders examining opportunities to utilize and valorize the meal and hull supplies at their highest value.

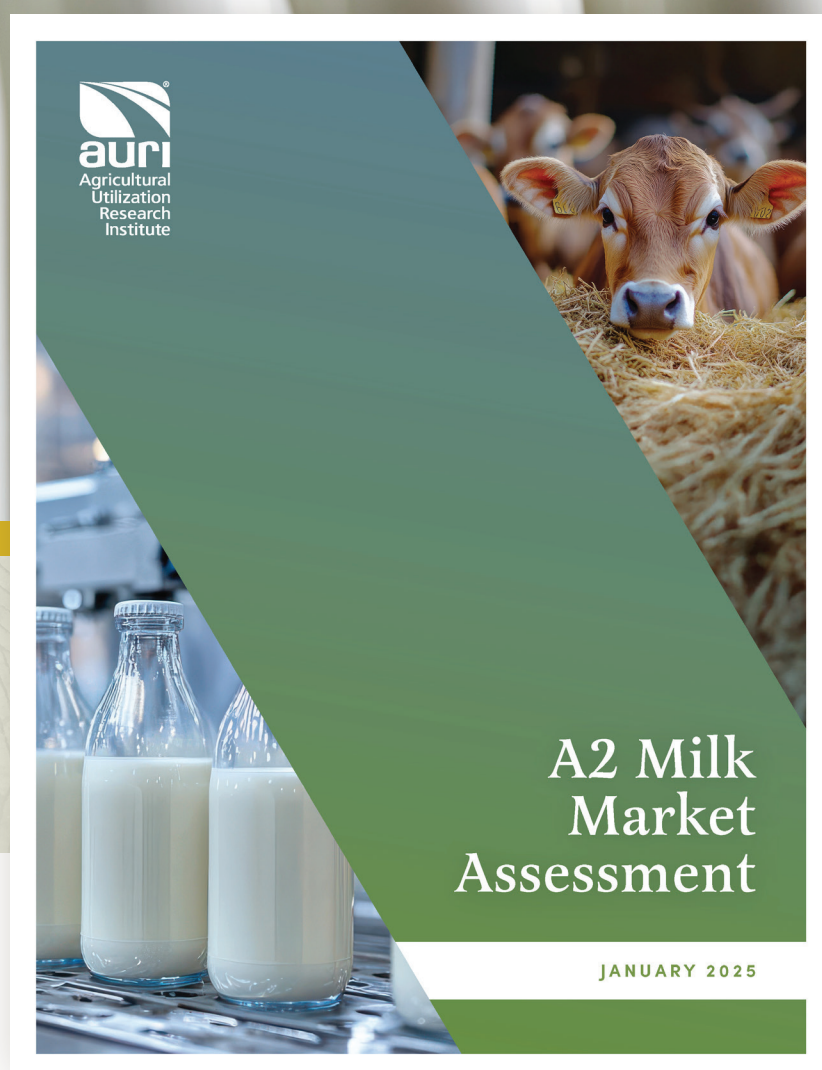
"Meal is 80% of the bean," Youngerberg says. "We're trying to make sure that we can utilize that additional capacity for whatever purpose there is, and it appears there's an opportunity for selling meal into the pet food and treat market."

Before soybean plants and industry proponents could move products into the market, they needed to know the terrain, which the pet food assessment provided.

"First you need that overall view of the marketplace and what are the dynamics and variables that are changing that view," Youngerberg explains. "It's like any other company doing market research."

Feed for pigs and poultry will likely remain the top feed use for soybean meal but pet food applications could help take a bite out of the growing meal supplies.

"Minnesota is consistently near the top in the country in soybean production and we have the soybean processing facilities to produce a lot of these ingredients and pet food manufacturing to produce market ready products," Swanson says. "Everyone from the smaller producers to the larger businesses could utilize crops grown here in Minnesota for the pet food and treat market."



A gallon of milk in a display case at a grocery store contains whey and casein protein. There are two common forms of beta-casein: A1 and A2. A1 milk is the most common milk made and sold in the world today. It contains a mix of the A1 and A2 proteins, whereas A2 milk exclusively contains the A2 beta-casein protein.

AURI Publishes A2 Milk Market Assessment

The product was first developed in New Zealand in the 1990s. Since then, the A2 variety of milk has grown in popularity, bolstered by health effect claims related to digestive issues around A1 protein intolerance in milk. However, there is no scientific consensus on the health benefits of A2 milk.

Minnesota's dairy industry generated more than \$29 billion in economic impact in 2023. The market for A2 milk is small, representing less than 1.5 percent of all U.S. dairy product sales in 2024. However, according to research from the IMARC Group, North American sales of A2 milk are expected to grow by more than 16% between 2024 and 2032.

No studies have been conducted on the market potential of A2 milk in Minnesota. To address this gap, the Agricultural Utilization Research Institute (AURI) recently published the “A2 Milk Market Assessment” to help inform industry stakeholders about the supply and demand of A2 milk. The report is intended to help dairy producers, genetic companies, processors, and retailers make data-informed business decisions about A2 milk. To compile the report, AURI distributed a survey to dairy farmers in Minnesota and analyzed public data from leading genetics companies.

AURI conducted a survey of dairy producers to understand the supply of A2 milk in Minnesota and collect data on their interest in producing it. A total of 75 producers replied to the survey, representing 4% of Minnesota’s dairy producers.

THE SURVEY PROVIDED SEVERAL INTERESTING RESULTS. AS OF 2024:

- *44% of respondents had converted cows to A2 genetics (35% were in the process of converting and 9% had finished the process).*
- *48% of respondents had not converted cows in their herd into A2 genetics and 8% of respondents were unaware of A2 milk.*
- *About a quarter of the cows in the sample size had been converted to A2 (4,062 of 17,512 cows).*

AURI also asked producers why they converted their herds to A2 genetics. Eighty-two percent of respondents converted because of perceived consumer interest, 76% converted for market opportunities, and 64% responded that A2 milk is trending. Forty-two percent of respondents said they converted because they believe A2 milk is healthier. Only 15% said they converted due to current consumer demand for A2 milk products and a higher selling price for A2 milk products.

One survey respondent described the reason for converting as “I think everything will be A2 soon. [The] protein is more digestible. Non-A2 milk will be discounted.”

AURI also asked non-A2 dairy farmers if they were interested in converting their herds to A2 cattle and 31% of respondents said they were.

One dairy farmer interested in converting responded that the decision may be guided by changing consumer preferences.

Of the non-A2 farmers not interested in converting their herds, the most popular reasons were the lack of market opportunities (60%) and the additional expense for conversion (50%). One dairy producer not interested in converting said that market price would dictate the decision.

“Currently, I do not know of a market for A2 milk. I don’t see the need to switch without market or premium prices.”

To convert to A2 milk, farmers must breed or buy cows that produce the A2 protein. Converting a herd to A2 milk can take many generations according to researchers at the University of Minnesota-Morris.

Dairy genetics companies in the U.S. indicated an increase in A2A2 protein designated sires. In 2024, a review of the STgenetics directory showed that 75% of Holstein, 86% of Jersey, and 100% of Guernsey sires were A2. Furthermore, Select Sires, the leading dairy genetics company in the North American market, indicated that in 2023, 70% of its Holstein bulls were A2.

In addition to surveying producers, AURI analyzed market data and interviewed two regional retail chains to further understand the demand for A2 milk products in Minnesota.

Retailers provided four main reasons for carrying A2 products: market trends, price premium, consumer requests, and brand support. The retailers confirmed that conventional milk sales far outpace A2 milk (A2 represented less than 1 percent of total sales) and that A2 milk is sold at a 60% to 70% premium. Further, conventional milk sells much faster than A2 milk (15-18 times faster), but A2 milk sales have grown 15 percent annually over the past five years.

The retailers said the future for A2 milk is strong. They expect the product to share more space on grocery store shelves with conventional milk as consumers’ interest in wellness drives demand for A2 products. Retailers also identified increased demand for A2-based dairy products like ice cream, sour cream, cheese, and yogurt.

As part of the research, AURI interviewed Ten Finns Creamery in Menahga, Minnesota. The business was among the first adopters of A2 milk in the state. They started converting their herd in 2014 and finished approximately three years later. Owner Joel Hendrickson told researchers that he decided to switch to A2 milk because he believes it is healthier for consumers. Today, the creamery sells milk directly to 10 Minnesota school districts and retailers in Minnesota and surrounding states. He says that selling directly to schools and retailers, rather than through a co-op, helped start and grow the business. The farm is exploring adding A2 ice cream and A2 butter.

Sanchez Philocles, AURI’s market research analyst, is the study’s lead author. He says the survey results are strong indicators that producers will convert more cows to A2 in the next five years and that the market report will play an important role in guiding the industry. Philocles says connecting with Ten Finns Creamery and learning more about the challenges the business faced, especially with getting into the market and introducing the A2 brand to consumers, helped improve the finished report.

Philocles states that one of the report’s most interesting findings is the potential for growth in non-fluid milk A2 products like yogurt, butter, and ice cream. He says the number of farmers interested in converting their herds to A2 and the overall familiarity with A2 milk among producers are also notable results of the report. “Dairy producers are looking for insights into A2 milk and whether the investment to convert their herd is worth it,” Philocles says. “With this report, we can bring awareness around where the market stands and what market opportunities exist for producers.”

The report also identified some important next steps for future research, but Philocles says more conversation is needed amongst dairy processing cooperatives and farmers to further define the market opportunities for A2 milk.



MBOLD
MINNESOTA: LEADING THE WAY
TO THE FUTURE OF FOOD

Naturally
MINNESOTA

auri.

BOLD GROWTH PROGRAM HELPS COMPANIES SUCCEED

By Dan Lemke

Business growth is rarely linear. Companies can find themselves at a crossroads in their growth journey that can influence their future trajectory.

Months ago, Thousand Hills Lifetime Grazed, based in Becker, Minnesota, found itself in that position. Thousand Hills produces 100% grass-fed beef using regenerative ag practices. The brand already had a national presence, with products on store shelves in every state, but it was looking to further differentiate itself in the marketplace. An opportunity came in the form of an innovative program called Bold Growth.

“Bold Growth came along at a pivotal time and in a growth period where Thousand Hills was on the shelves at retailers in every state, and consumer recognition and awareness of the benefits of grass-fed beef had increased during the pandemic and beyond,” says Melissa Larsen with Thousand Hills. “We could see that there was an opportunity to enhance the way we were positioning the Thousand Hills brand, and we welcomed help in that space.”

TAILORED SUPPORT

Bold Growth is a program of MBOLD, a coalition of leading food and agriculture companies and innovators working together to accelerate solutions to big challenges facing food and agriculture. MBOLD has executive leadership from some of Minnesota’s biggest food and agriculture companies, including General Mills, Cargill, Target, Schwan’s, and Compeer Financial, as well as leading innovators like the Agricultural Utilization Research Institute (AURI), Naturally Minnesota, the University of Minnesota, and others.

The Bold Growth program is co-led by MBOLD members AURI and Naturally Minnesota, and supported, in part, by the State of Minnesota through a grant from The Office of Small Business Development, Department of Employment and Economic Development (DEED).

“AURI has been involved with MBOLD since the beginning, working with some of the major food and ag companies in the state of Minnesota,” says Jennifer Wagner-Lahr, AURI senior director of business development and commercialization. “Those companies created a coalition to try to tackle some of the world’s grand challenges in food and agriculture. One of the goals is to set Minnesota apart as an innovative place to solve these issues and attract talent and new businesses.”



“At MBOLD, we recognize the critical importance of small businesses in driving both innovation and our economy. The Bold Growth program provides selected small businesses with unprecedented access to corporate leaders who have the business acumen they most need,” says JoAnne Berkenkamp, MBOLD managing director. “This mentorship is oriented around the specific needs that selected companies have on their growth journey.” To date, Bold Growth mentors have provided guidance on topics including new product development, navigating the U.S. regulatory environment, national distribution through refrigerated and frozen food channels, brand development, manufacturing scale-up, and marketing strategy, among others.

Companies apply to the Bold Growth program based on their self-identified needs. Those selected are then matched with two to three advisors from the MBOLD coalition. Throughout the mentorship, they meet regularly to tackle each company’s key strategic needs and participate in cohort educational opportunities.

“Applicants indicate their goals and where some areas of challenge and opportunity may be,” explains Tamara Downs Schwei, MBOLD project manager. “We target the mentorship to address one to three key goals. Then we look across our corporate network to find leaders with the expertise and experience that can really help these small businesses set a strategy and make the right decisions at the right time.”

Recently, MBOLD has focused Bold Growth on companies that are driving innovation in the protein space, whether driving sustainability in animal agriculture or advancing plant and alternative proteins. The program focuses on post-accelerator companies with annual revenue of \$5 million to \$50 million and strong potential for growth.

“One thing we have learned is that help from our larger corporate players is most impactful when companies have some momentum, have stabilized, and are poised for rapid growth,” Berkenkamp says.

Bold Growth mentorship is provided at no cost to participating companies, no equity is taken, and there’s no exchange of funds. “We provide it completely free to help emerging businesses on their growth journey,” Berkenkamp says. “It is confidential. It is sustained. It is quite a unique and valuable resource for the companies who are part of the program.”

UNPARALLELED ACCESS

Cohort participants are aware of the benefits of having access to high-level knowledge from some of the nation’s top food and ag businesses.

“Just having access to people who have such deep expertise and have ‘been there, done that’ for what we’re trying to do was incredible,” says Barry Robins, brand stewardship director for Thousand Hills. “Because of Minnesota’s rich history in agriculture and food production, I don’t think this exists or would be possible in any other place. We are very lucky to have access to this resource.”

“Their willingness to participate is a testament to Minnesota’s very strong social capital in the business community,” Berkenkamp says. “Minnesota is unusual in that we have business leaders who are willing to put their time and energy on the line to help our small businesses be successful. That’s a rare and very valuable thing.”

SPRINGBOARD TO SUCCESS

Eric Hall is CEO of Minneapolis-based So Good So You, the #1 functional juice shot brand. Already an up-and-coming company with nationwide distribution, Hall and his wife (company co-founder), Rita, applied and were selected to the Bold Growth cohort in 2021. A key motivation was wanting to ensure they were maximizing their contact with business mentors.

“We wanted to ensure we were strategic in our requested support,” Eric Hall recalls. “This had to be something that our company clearly needed, and through limited but focused support, we can have success upon getting it.”

So Good So You was gaining traction in the marketplace but still faced hurdles.

“We had phenomenal velocities, but we were continually running into barriers nationally from category managers basically saying, this is great, but how big can your category be? Our ask was to help us create a data and consumer-driven pitch to national retailers to show how big the category could be and the path to get there,” Eric Hall says. “What that pitch did was create an unlock at the buyer level as well as support above the buyer to lean in with our brand and ultimately open up more doors and more SKUs.”

Participants say being selected for the Bold Growth program is hard work, but the rewards are tremendous in helping them grow their businesses.

“We were questioning it upfront if we had the bandwidth to get the most out of this,” Larsen recalls. “They told us from the start that what you put into it is what you get out of it. It really is true, but leveraging this type of opportunity is unbelievable and unheard of in most places.”

*More information on the Bold Growth program is available at [MBOLD.org](https://www.mbold.org).
The next opportunity to apply for the program will take place in the summer/fall of 2025.*



AURI LAUNCHES AVA

a Food Business AI Tool for Entrepreneurs and Producers

The Agricultural Utilization Research Institute (AURI) works with entrepreneurs, farmers, founders, and home cooks alike to provide valuable knowledge and insight into starting and growing a food or beverage business.

The team has vast experience in providing businesses with consulting and technical services for product and process development, regulatory compliance, labeling, food safety, and sourcing materials and equipment.

The number of new food businesses in Minnesota has exploded over the past decade. As an example, the number of registered cottage food producers, oftentimes the starting point for aspiring food entrepreneurs, has grown to over 10,000 since the first Minnesota Cottage Foods Law was passed in 2015. To help meet demand, serve more businesses, and broaden its reach, AURI launched AVA, AURI's Virtual Assistant, in the fall of 2024. The tool is free for agricultural producers, food entrepreneurs, and innovators across the food chain to find answers to common food business, food science, and food safety questions anytime they want. AVA functions similarly to other generative artificial intelligence tools like ChatGPT and Microsoft CoPilot with one key difference: its knowledge library relies on information curated by AURI's science and business experts to provide answers. Unlike other AI tools, AVA does not "learn" from previous interactions with users. AURI's Director of Business Development for Food, Jason Robinson, notes that AVA provides responses only from pre-vetted information by AURI's team that users can trust.

"AVA doesn't confuse food philosophy with food science," Robinson says.

Because of its sophistication, AVA encourages people to ask questions "in their own words," making it easy and intuitive to use, Robinson says.

Another advantage is that users can freely provide the details of their product or business plans without the fear that sensitive, confidential information will be used to update AVA's knowledge library and thus appear in future responses. Plus, the service is available 24 hours a day, seven days a week.

"I had a chance to play a bit with the new AI tool you [AURI] launched and wanted to congratulate you on a job well done," says Ephi Eyal, President of TAL Management. "I was impressed with the layout, the level of detail and depth it provides, and its ability to make reference to specific resources and with individuals within the organization. I also liked your selection of frequently asked questions as a good starting point for those less handy with large language models."

The key to maximizing the effectiveness of AVA is for users to provide as much context and specificity as possible in the questions asked, Robinson states. People unsure where to begin can select from a series of "commonly asked questions" to get started. Robinson encourages people to take the time to provide feedback on AVA's performance, using the thumbs up and thumbs down functions available after each answer to further refine and improve AVA's effectiveness. So far, the most common questions for AVA include information on obtaining a universal product code (UPC Code), creating a nutrition label, measuring shelf life, and licensing and regulations.

"The challenge for users is in asking effective questions. This is not a keyword search engine. I tell people to approach AVA like you are talking to a mechanic about the problems you are having with your car – provide background and as much context as you can," Robinson notes.

Since the launch, AURI staff have monitored how users are using AVA. Robinson says that AURI will add more content, research, and articles to the tool to address specific topics and knowledge gaps that develop. AURI is also partnering with other stakeholders and ag focused organizations to increase awareness and boost engagement. AVA was funded by the United States Department of Agriculture Rural Development—Cooperative Services Agriculture Innovation Center program. The goal of AVA is to connect agricultural producers and entrepreneurs to the information they need around new value-added food opportunities to start or expand a food business.

To learn more about AVA, visit <https://auri.org/ava/>.

WHERE ARE THEY NOW?

Launched in 2015, Hoyo embarked on a journey to fill an important employment and cultural food gap in Minnesota's economy. The state is home to the largest population of Somalis in the country, but at the time, statistics indicated that Somali refugees had a 21% unemployment rate in the state.

To help address this shortfall, Hoyo ("mother" in Somali) was founded by three Somali sisters and a family friend. It provides refugees and other new immigrants with job experience in food production and also offers Somalis a chance to share their culture with the Twin Cities community through a traditional and beloved food product: the sambusa.

This handcrafted triangle is a flaky pastry with a savory filling of ground beef or lentils, vegetables, and spices. One Hoyo customer said it was "the best-tasting triangle I've ever had." In addition to this handheld meal, Hoyo launched a line of sauces to accompany the sambusas at the request of local customers. Flavors included basbaas, tamarind, and dates.

Ghita Worcester, interim CEO of Hoyo, says the Agricultural Utilization Research Institute (AURI) has been a "foundational supporter" of the company since its beginning.

"Lolly [AURI's senior scientist, food], in particular, has been a great resource for Hoyo's team to fully understand the certifications required for a food production company to move from a farmer's market stall to producing products for Minnesota's schools and retail stores," she says.

AURI's Food Team also assisted Hoyo with nutrition facts for its packaging, lentil sambusas, and sauces, as well as with educational training programs, product launches, grant opportunities, networking in Minnesota's food sector, and product formulation statements. "AURI is Hoyo's 'go-to' organization for support as we develop new products for the marketplace," Worcester explains.

Additionally, AURI added value to Hoyo's business model by identifying numerous manufacturers of locally sourced ingredients for Hoyo's products. Purchasing local ingredients is a staple of Hoyo's mission and values and supports its community-based focus as a Social Benefit Corporation.



Where Are They Now?

In 2021, Hoyo began producing sambusa for school lunch programs, the first of which was in Rochester, Minnesota. School sales increased from \$7,000 in 2021 to \$750,000 in 2024.

Hoyo recently signed a lease to create the Hoyo Food Production Facility on the lower level of the Midtown Global Market in South Minneapolis. This new facility will provide 40-50 jobs.

"The Midtown Global Market is positioned well for Hoyo to engage in community revitalization and offer a 'cultural destination' food option, showcasing a Somali meal and sauce options," Worcester says. "The increasing momentum with Hoyo's growth is formulating a long-term goal for Hoyo to become a food production company that revitalizes local communities in the Midwest by developing and producing culturally differentiated food with new immigrant groups."

The plant is scheduled to open in May 2025, and in the fall, Hoyo plans to release a new chicken sambusa and a coconut-lime sauce.

Today, Hoyo serves 27 school districts (comprising 270,000 students) and aims to increase that number.

"We plan to extend our market reach to many more schools and stores in the Midwest in 2025-2027 by making up to 2 million sambusas a year," Worcester says. "We currently make approximately 70,000 sambusas a month (by hand) and will bring that number up to 167,000 per month (by hand and semi-automatic machinery)."

Along with school lunches, Hoyo sambusas can be found in the frozen food section of several Twin Cities metro grocery stores and co-ops, while its sauces can be found next to the salsas. This year, Worcester hopes to have products available in more grocery stores and at the Minnesota State Fair.

ABOUT AG INNOVATION NEWS

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Lolly Occhino to Retire from AURI



This June, the Agricultural Utilization Research Institute (AURI) will congratulate Lolly Occhino on her retirement after nine years of service as AURI's senior food scientist. Occhino first gained interest in food science after taking a food chemistry class in college at the University of Wisconsin, Madison, and went on to earn a master's degree in food science at the University of Minnesota.

She joined AURI in 2016 after working for a small research and development company that provided services to medium—and large-sized food companies. Occhino states she was drawn to AURI's mission and the opportunity to work for a nonprofit organization.

“After going through the interview process at AURI, I felt that it was a perfect fit and decided to make the transition,” Occhino says. “It was one of the best decisions I have ever made!”

As a senior food scientist, Occhino is a member of the technical team and co-leads the food focus area. She has provided strategic leadership to align industry trends with AURI's goals to create impactful outcomes. She also offers direct assistance to food clients in many areas, such as food safety, product development, and optimization.

“My favorite memories over the years include AURI staff gatherings and opportunities to connect with colleagues; visits to client facilities to learn more about their products and operations and how AURI contributed to their successes; participating in ecosystem activities; running into a client selling at a farmer's market and getting a big hug; and working closely with my food team colleagues to solve technical challenges and collaborate on the best ways to make an impact for scaling food businesses,” Occhino reflects.

“Lolly has been such an integral contributor to AURI's success since she joined the organization in 2016,” says AURI Executive Director Shannon Schlecht. She has had a major positive impact on the food ecosystem that has grown exponentially during her time at AURI. It is always enjoyable to learn about the assistance

Lolly provided a food client and then later see those products on grocery store shelves and know that she and AURI had a part in their market success.”

In retirement, Occhino plans to participate in activities she enjoys, such as walking, hiking, tap dancing, and reading. She also wants to travel internationally and domestically.

“There is no doubt that I will miss connecting regularly with my colleagues at AURI and the many friends and acquaintances I have made through work with partner organizations,” Occhino notes. “I will also miss working with clients that have so much passion for what they do.”