



U.S. Dairy
Sustainability Awards
Innovation Center for U.S. Dairy®

2022 WINNERS

NOVEMBER 15 | GLENDALE, AZ

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The strength of the U.S. Dairy Sustainability Awards has been the unprecedented collaboration with leaders and experts from the whole supply chain. The Innovation Center for U.S. Dairy® is pleased to recognize the following organizations for their support of the 2022 Awards program:



BUILDING A SUSTAINABLE FUTURE

The U.S. Dairy Sustainability Awards program - celebrating its eleventh year - recognizes and honors outstanding dairy farms, businesses and partnerships for socially responsible, economically viable and environmentally sound practices. These practices, large and small, are steps that add up to promote the health and well-being of consumers, communities, cows, employees, the planet and businesses.

2022 winners are recognized in the following categories:

- Outstanding Community Impact
- Outstanding Dairy Processing and Manufacturing
- Outstanding Supply Chain Collaboration
- Outstanding Dairy Farm Sustainability

An independent panel of judges, which included leading experts on the economic and environmental issues and opportunities of today's dairy industry, evaluated nominations on the following criteria:

- Program or project results as measured by triple bottom line success: economic, environmental and social
- Evidence of shared learning, innovation and improvement
- Potential for adoption by other dairy farms and businesses

For more information, visit [USDairy.com/Awards](https://www.usdairy.com/awards)

OUTSTANDING COMMUNITY IMPACT

MARYLAND & VIRGINIA MILK PRODUCERS COOPERATIVE ASSOCIATION

Chesapeake Bay Watershed

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Clean Water Partnership Model Delivers Triple Bottom Line Benefits

Maryland & Virginia Milk Producers Cooperative Association (MDVA) is a community of more than 900 dairy farm families, 90% of which are within the Chesapeake Bay watershed. Home to more than 18 million people, the watershed faces significant challenges such as a 'dead zone' in summer months due to pollution, some of which is from agricultural runoff.

The cooperative recognizes its responsibility to be a leader in bringing environmental solutions to its dairy farm members and their communities. To accomplish that, it has leveraged supply chain and community partnerships with corporations, customers and conservation non-profits to bring in over \$45 million in funds to make meaningful sustainability investments on member farms. These investments will create a more economically sustainable future for dairy.

Following up on the success of the Turkey Hill Clean Water Partnership, which earned the Outstanding Supply Chain Collaboration Award in 2020, two new programs bring the dairy supply chain and the communities within the Chesapeake Bay watershed closer together. The new programs include:

- The Maola Clean Water Partnership (MCWP): Volunteers from MDVA and the Alliance for the Chesapeake Bay planted more than 600 trees on two acres, forming a buffer against a creek that is part of the Susquehanna River Basin, and ultimately the Chesapeake Bay.
- The Giant Clean Water Partnership (GCWP): Volunteers planted trees on local dairy farms and cleaned up trash along three miles of the Anacostia River. The GCWP was showcased to 50,000 Giant households in Maryland, telling the story of dairy's commitment to healthy communities and a healthy planet. MDVA and the Alliance also received a \$10,000 donation from Giant, earned through reusable bag sales at the grocery store chain, to help fund environmental best practices on local dairy farms.

Participation in these events instills a sense of community and philanthropy. Additionally, the volunteers - many of whom have never been on a farm - gain first-hand experience to better understand the impact they can have to support clean water.

Meanwhile, the tree plantings create a riparian buffer which stabilizes streambanks and filters sediment, nutrients, pesticides and animal waste from water runoff.

MDVA will continue to expand its clean water partnership model to include more corporate and environmental non-profit partners with a goal to offer sustainability support to every farmer member - including those outside the Chesapeake Bay watershed. With an average herd size of 125 cows, the MCWP and GCWP provide an opportunity for MDVA farms to make an impact in their communities, no matter the size.



MDVA's clean water partnership is a replicable model for other dairy cooperatives. In just over four years, their clean water partnerships have:

- Raised more than \$19 million to invest in sustainability practices on member farms
- Planted more than 3,000 trees on dairy farms
- Shared the story of sustainable dairy with nearly 100,000 households via mail, social media and video

OUTSTANDING DAIRY PROCESSING AND MANUFACTURING

MILK SPECIALTIES GLOBAL

Monroe, Wisconsin

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A Winning Solution for Farmers, Cheesemakers, Consumers and the Community

A whey processing expansion at Milk Specialties Global (MSG) demonstrates how sourcing locally and making one change in the processing cycle can deliver sustainability benefits throughout the supply chain, from farm to fork.

With demand for dairy protein surging, Minnesota-based MSG saw an opportunity to build on its heritage of converting milk and cheese by-products into high value, high performance products. Whey is a by-product of the cheesemaking process that can contribute a rich nutritional profile to drinks and foods in the form of whey protein isolate and/or concentrate.

MSG acquired an old cheese plant in Monroe, Wisconsin, strategically located in a major hub of small- to medium-sized cheese producers known for producing some of the most respected and award-winning artisan cheeses in the world. For most of them, though, whey processing is either cost-prohibitive or simply out of their wheelhouse. Without that capability, the leftover whey becomes waste and goes unused.

MSG planned to use the plant as a staging site to collect and process the whey. However, the whey supply far outweighed processing capacity.

While the easy solution would have been to truck the excess whey 120 miles to Fond du Lac, Wisconsin, for processing, the smarter solution turned out to be a retrofit project that doubled capacity at the Monroe plant without increasing the facility's footprint. This included modifying the filtration system and adding surface area to the liquid processing equipment.

The liquid whey is concentrated and the facility annually produces more than 53,000 pounds of whey protein isolate for use in a range of high-protein drinks and foods. In the process, more than 2.8 million gallons of water is reclaimed and used to pre-rinse equipment and clean silos before being returned to the local watershed. That is enough water to fill the Monroe municipal swimming pool four times over.

The increased production capacity led to a reduction, rather than an increase, in heavy truck traffic and related diesel fuel use, something that didn't go unnoticed in the small community of Monroe.

When fully implemented, MSG will have an annual expense savings of \$957,616 in truck expenses, with a financial payback of 1.8 years. Economic benefits are delivered to the cheesemakers, too – what used to be a waste product has been turned into a valuable new revenue stream.

MSG aims to lead by example, and the company is exploring a variety of options to further expand this model to other locations.



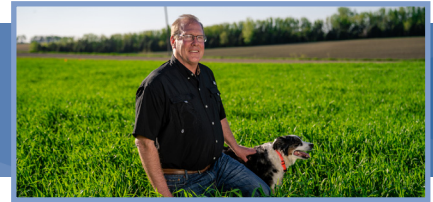
- Reduced the equivalent of 2,504 trucks passing through the area annually
- Reduced truck miles traveled by 237,232 miles, saving 47,446 gallons of diesel fuel and reducing GHG emissions by 486 metric tons
- Saved 377,826 lbs of whey solids from disposal annually

OUTSTANDING SUPPLY CHAIN COLLABORATION

BEL BRANDS, LAND O'LAKES, BOADWINE DAIRY

South Dakota

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Shared Goals Drive Investment in On-Farm Improvements

Bel Brands and Land O'Lakes began this multi-year program in 2021 to demonstrate the value of on-farm practices that benefit soil health and reduce greenhouse gas (GHG) emissions. The program supports their shared ambitions to improve sustainable farming practices and reduce dairy's overall environmental footprint, and is aligned with U.S. dairy's Net Zero Initiative.

The key to the program is the removal of cost barriers to test and measure the impact of different practices. It focuses on the production of feed for dairy cows, which is responsible for approximately 26% of on-farm greenhouse gas emissions. Changes to feed production are complicated and need to be managed and measured carefully. The partnership provides cost incentives, access to resources and expertise, and the use of the Truterra™ Insights Engine to farmers in the Bel supply chain.

The first pilot was implemented at Boadwine Dairy in Baltic, South Dakota, where efforts to improve soil health have been ongoing for more than ten years. As Lynn Boadwine points out, "The more I learn about soil health, the more I see that I need to learn. But not every farmer is in a position to invest in testing and learning, so support from partners like Land O'Lakes and Bel Brands further up the supply chain is critical."

Boadwine is a member-owner of Land O'Lakes, which, in 2021, made a commitment that all dairy farmer-owners will complete an intensive on-farm sustainability assessment. Land O'Lakes formed a Dairy 2025 Commitment team, who partnered with Truterra – Land O' Lakes' sustainability business – and Boadwine Dairy to benchmark, track and evaluate changes to the on-farm footprint related to feed production. The tool delivers precise, field-by-field, acre-by-acre performance data covering profitability, sheet and rill erosion, wind erosion, soil quality trend, net GHG, nitrogen use, and an overall sustainability score.

Boadwine Dairy's score for the 2021 season was ten points higher than the national average, but they have more to do. "The overall goal is pretty simple: more cover crops, less tillage, more soil armor. But we have a whole new strategy for next year based on what I'm learning," says Lynn Boadwine.

For Land O'Lakes, the partnership with Bel Brands and Boadwine Dairy serves as another proof point in the cooperative's commitment to a sustainable future that respects farmers' independence, privacy and ability to make a living. Their goal is for all Land O'Lakes dairy farmer-owners to complete a Dairy 2025 assessment, and the co-op recently delivered more than \$4 million in cash payments to farmers for sequestering nearly 200,000 metric tons of carbon.

Bel Brands is in it for the long haul. They hope to make the program self-sustaining and available to all growers of dairy cow feed in their supply chain. In the coming year, the pilot will include five dairies ranging in size from 450 to 2,000 cows, as well as a non-dairy cooperative that produces feed for dairy cows.



- Bel Brands has established a goal of net 25% reduction in GHG throughout the value chain by 2035.
- The estimated net GHG emissions on Boadwine Dairy shows a carbon sink of 784 lbs of CO₂e/year, indicating that the practices in place – including cover crops – are providing significant carbon sequestration for the operation.
- Boadwine Dairy's score for efficient nitrogen use benchmarked well above farmers in the nearby geographical area.

OUTSTANDING DAIRY FARM SUSTAINABILITY



BAR 20 DAIRY

Kerman, California

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Unique Partnership Pioneers Cow-to-Car Climate Solution

On their Kerman, California dairy, the Shehadey family lives by a four-generation sustainability ethic that puts people, the planet and animals first.

“When I was young, my grandfather told me that we make milk for people’s children,” said Steve Shehadey. “That has always stuck with us on the farm. We can’t offer anything but our best for children and the families who buy our milk.”

Steve’s grandfather, Larry Shehadey, started in the dairy business bottling milk with Producers Dairy in Fresno, California. To improve milk quality for his plant, Larry opened Bar 20 Dairy in the 1950s with a small herd of Holsteins. The dairy farm has grown to 7,000 cows today – still rooted in family values and a commitment to sustainability.

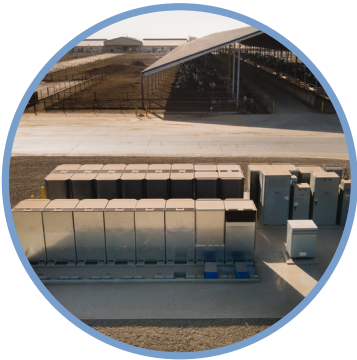
“We try to create a family atmosphere for our 125 employees,” Steve said. “We want them to be with us for the long-term – 33 of our employees have been with us for more than 20 years. We’re all working together to do more with less, to get a little better every day.”

On-farm energy investments have added up for the environment and the dairy. LED bulbs now provide lighting in all the barns, reducing demand for electricity by 75%. A one megawatt solar array produces electricity for the dairy barn, while a second megawatt system offsets power usage of the farming operation.

In November 2021, the Shehadey family installed a first-of-its-kind, climate-smart dairy solution – fuel cells that convert methane, captured via a dairy digester, into renewable electricity. Through a partnership with BMW North America, the combustion-free, dairy-derived electricity is transmitted via the utility grid to power electric vehicles. The methane emission reductions at the farm, when combined with the renewable energy generation, result in carbon emission reductions equivalent to providing clean power to over 17,000 electric vehicles per year.

Electricity from the fuel cell also powers a new feed mixing system, replacing diesel and reducing emissions by 90%. With the fuel cells and solar array, the Shehadey family has built a clean energy, self-sustaining microgrid expected to produce more than 12 million kilowatt-hours of power annually – more energy than the dairy uses – making it a net-exporter of energy.

Other sustainability initiatives include a partnership with the Audubon Society and USDA’s Natural Resources Conservation Service (NRCS) to set aside 50 acres to protect endangered tricolored blackbirds; water conservation practices to grow forage crops; and upcycling of agricultural byproducts, such as almond hulls and cotton seed, as cow feed.



- Bar 20 Dairy’s anaerobic manure digester captures more than 25,000 tons of carbon dioxide equivalent greenhouse gas (GHG) emissions annually.
- The annual capture of GHG is equivalent to the carbon sequestered by more than 30,629 acres of U.S. forests in one year.
- The fuel cell system delivered an average of 23,000 kilowatt hours to the electrical grid every day in its first full month of operation.
- The electricity supplied by Bar 20 Dairy to BMW is expected to earn a carbon intensity score from CARB of -550. By comparison, average electricity in California scores +75.93.

OUTSTANDING DAIRY FARM SUSTAINABILITY

DEER RUN DAIRY, LLC

Kewaunee, Wisconsin

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Partners Advocate for Conservation and Continuous Learning

Partners Duane Ducat and Dale Bogart joined forces in 2008 to build a modern dairy, growing from 800 to 1,850 milking cows over the years. Duane counts Mother Nature, son Derek, and 8-year old grandson Clay, along with their employees, as indispensable partners.

The Kewaunee County, Wisconsin, location poses water quality challenges due to the region's topography, shallow soils and proximity to Lake Michigan, and the partners have implemented numerous conservation practices to protect the water and to improve soil health.

The team approaches farming as a continuous learning process, with active participation in the Demonstration Farms Network and Discovery Farms® program. Setting goals is part of the process. As big believers in the value of cover crops, they set and achieved a goal to seed 100% of their cropland with cover crops – like buckwheat and turnips – in the fall of 2021. Improving soil health remains a big focus at Deer Run, and they are working with Peninsula Pride Farms to measure the effect of practices like no-till, plant diversity for cover crops and the integration of manure via low disturbance application.

The partners' goals encompass the entire operation, from crop to cow, including minimal antibiotic use and feeding trials to reduce methane gas production in the rumen of the cow through the use of feed additives. A methane digester produces clean, low carbon compressed natural gas (CNG), and they are working on a plan to bring in manure from neighboring farms to increase gas production.

All goals ladder up to the ability to be a profitable business on land that is sustained for generations to come.

Visitors to the farm sometimes express surprise at the level of cow comfort that a bigger dairy can provide, and how hard they work to constantly improve the farm's sustainability. The Deer Run partners make an effort to reach people who are unfamiliar with farming, hosting thousands for farm tours, Breakfast on the Farm and a "Farm Meets Fork" gala to share the story of agriculture with neighbors.

The Deer Run team is committed to being an advocate for conservation on dairy farms, and they believe in collaboration and communication. As Duane says "what works on one farm doesn't necessarily work on another, but you keep trying until you find what works best for you."



- Planted cover crops on 100% of cropland in Fall 2021
- Four years of soil sampling showed a steady increase in organic matter due to implementation of conservation practices
- Produces 120,000 cubic feet per day of renewable CNG for the transportation market - an amount equivalent to providing energy for 568 homes
- Hosted more than 5,000 people at Breakfast on the Farm

OUTSTANDING DAIRY FARM SUSTAINABILITY



GRAYHOUSE FARMS, INC.

Stony Point, North Carolina

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New Dairy is “Conservation and Efficiency by Design”

Jimmy Gray and his dad, Reid, have both spent many years serving as Soil and Water Conservation District (SWCD) supervisors, so when Jimmy says that they utilize just about every best management practice they can for soil and water, he knows what he’s talking about.

The Stony Point, North Carolina, farm spans two watersheds, and the local topography is known for hill erosion. When it came time to build a new dairy five years ago, Jimmy and his brother, Andy, did extensive research, consulted with experts and toured other dairies. As a result, the new dairy is, as Jimmy calls it, “conservation and efficiency by design.” Jimmy is quick to point out that these choices weren’t made just for environmental reasons; they also provide an economic return.

They settled on a ventilated freestall barn and a flush manure management system with a sand separator and four-stage lagoon. Conservation factored into every decision, big and small – the flush system uses gravity, not electricity, for example – it is flushed three times a day, catching 95% of sand to be stacked and reused for bedding. The 4-stage lagoon system provides irrigation water and nutrients for nearby cropland via a drag-line system that minimizes energy use.

The new facility for their 1,120 cows was also built for cow comfort, from ventilation and fans to rubber matting, sprinklers and sand bedding.

Beginning early on with terraces, soil conservation practices have evolved to include GPS placement of nutrients, cover crops and no-till practices. Additionally, the Grays utilize best management practices like fencing livestock off from streams and upgrading fence lines and bunk feeding lines to reduce mud and soil impact.

Land that is not well-suited for farming is cared for with an equal amount of attention to wildlife conservation. 740 acres of forest are managed with controlled burns to generate lush growth in mid-story trees and turn ground litter into fertilizer for large pines.

As a host for Wildlife Conservation Days for more than twenty years, Grayhouse Farms gives youth and their parents the chance to experience first-hand the benefits of good land and wildlife conservation practices. They rotate through ten supervised stations to enjoy fishing, canoeing, firearm safety, skeet shooting and wildlife conservation.

“We understand that we hold the title of this property, but we are the caretakers, and we must be vigilant in *how* we farm,” says Jimmy.

- 45 conservation practices including 100% no-till
- 95 new oaks planted in 2021
- Four acres of switch grass provides a living environment for small mammals and insects
- Sand separation system allow for the sand to be recycled nearly 100 times

OUTSTANDING DAIRY FARM SUSTAINABILITY

SCHLANGEN DAIRY FARM

Albany, Minnesota

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Schlengen Dairy Provides Blueprint for Sustainability on Smaller Farms

Steve and Cheryl Schlangen's mindset of continuous improvement is a way of life on their 60-cow, 200-acre farm in Stearns County, MN.

When they started farming in the late 1980s, they began their conservation journey with the basics: crop rotation and applying manure as fertilizer. Over the years, they have tested and tried many other things in an ongoing effort to improve production, reduce costs, care for their cows and steward their land.

"Not everyone can do everything, but everyone can do something," Steve notes.

They have participated in the USDA's Conservation Stewardship Program (CSP) since 2005, working with Natural Resource Conservation Service (NRCS) staff to implement and utilize cover crops, vegetative buffer strips, grassed waterways, water-and-sediment control basins, reduced tillage, no-till and variable-rate manure application. A recently installed manure-stacking slab prevents nutrient leaching into the water and a manure injection system uses less time, less fuel and has virtually eliminated the need for commercial fertilizer on their crops. Adding a shelter belt around their farm has provided protection and a place for wildlife habitat.

The Schlangens were the sole farmer participants on the start-up committee that became the Headwaters Agriculture Sustainability Partnership (HASP), which promotes peer-to-peer sharing among farmers about the connection between conservation efforts and farm profitability, while also developing and testing voluntary and market-based incentives for accelerating conservation adoption.

The dairy is an active participant in HASP's Conservation Return on Investment project. The goal is to develop on-farm business and environmental ROIs for different conservation practices. Schlengen was one of the first dairies to volunteer to open up their books and publicly share how they are employing conservation practices on their farm.

Their willingness and enthusiasm for sharing ideas and results with others has earned them a national reputation. They are recognized leaders in regenerative agriculture by organizations ranging from The Nature Conservancy to the Stearns County Soil and Water Conservation District (SWCD), which honored them as the 2021 Outstanding Conservationists in Stearns County.

As agriculture experiences more and more consolidation, Schlengen Dairy provides a blueprint for beginning farmers and generational farms to follow.



- All four crop enterprises outperform their peers: corn by 22 bushels per acre; soybeans by 12 bushels per acre; corn silage by 2 tons per acre; and alfalfa by 0.7 tons per acre
- Reduced nitrogen use per bushel of corn produced from 1 pound to 0.1 pound
- 70 acres of cover crops have produced 7,500 pounds of forage for the herd and saved 9.8 tons of soil

MEET OUR EXPERT JUDGING PANEL

An objective judging panel assessed the nominations and selected this year's winners. This panel included experts from government, dairy science organizations, nongovernmental organizations, business and trade media, and environmental and dairy industry leaders.

Julie Adamchick, World Wildlife Fund

Deb Atwood, AGree

Steve Ballard, 2013 Dairy Farmer and Award Winner

Kathie Canning, Dairy Foods

Michael Dykes, International Dairy Foods Association

Jim Eckberg, General Mills

Andy Harig, The Food Industry Association

Holly Jones, Agropur

Jerod Matthews, Feeding America

Joan Maxwell, 2019 Dairy Farmer and Award Winner

Dave Natzke, Progressive Dairy

Coralie Pierre, Field to Market

Yin Rani, MilkPEP

Denise Skidmore, Hilmar Cheese Company

Jenni Tilton-Flood, Dairy Farmer

Carrie Vollmer-Sanders, The Nature Conservancy

Venus Welch-White, U.S. Environmental Protection Agency

Lisa Zwack, The Kroger Co.

SHARE THESE STORIES

What's the secret to sustainability? According to research conducted on behalf of the Innovation Center for U.S. Dairy, sustainability isn't about the size, age or location of a dairy operation. It's the management practices that make the difference. The most sustainable aspects of the dairy industry come from the way we run our businesses every day. And as more people are interested in learning where their food comes from, telling our stories of good stewardship helps ensure they can continue to feel good about choosing their favorite dairy foods and beverages.

Visit USDairy.com/Awards to learn more about how others are implementing sustainable practices and help spread the word by sharing these successes – and yours – with customers, communities and consumers.

