



# Prairieland Dairy

Firth, Neb.

**Winner: Outstanding Dairy Farm Sustainability**

## Dairy Focuses on Environment, Ushers in Next Generation

Founded in 1998, Prairieland Dairy, located in Firth, Neb., has adopted a multipronged approach that includes understanding and embracing social, economic and environmental impacts. The family farm operation has created a model with sustainability at its core – a farm that will thrive for generations to come.

Made up of four smaller family farms, Prairieland houses a total of 1,600 cows and produces 12,000 gallons of milk daily. Prairieland's cows produce meat, manure and milk, and they have two business extensions: Prairieland Foods, which delivers local-source-verified farm-direct milk and dairy products from Prairieland Dairy; and Prairieland Gold, the farm's composting operation, which utilizes by-products and biodegradable waste to create soil amendments sold regionally. These businesses ensure quality, source-verified products from a farm that prioritizes animal care, environmental stewardship, economic growth, social responsibility and community involvement.

## Best Practices

### 1 Composting Efforts

#### Summary

Composting at Prairieland Gold began with a desire to create enduring value and profit from waste, resulting in an odor-neutral enterprise that protects the environment and benefits the community. A lagoon with a multilayered screening process naturally separates sand, liquid and solid waste. Sand is recycled using a settling lane. The remaining acids are removed with an incline screen. Liquids move through the three settling basins to capture more nutrients, which are used as fertilizer. Solids are moved to the composting site and mixed with biodegradable community waste products to make various soil amendment profiles for commercial sale.

#### Key benefits

Composting decreases trucking by 75 percent and removes 5,000 tons of food waste from the community, and 8,000 tons of yard waste is diverted from the landfill annually. The operation's composting efforts also allow greenhouse, landscapers and the retail market to take advantage of the 20,000 tons of composted manure. All of the farm's waste solids are composted, amended and sold back into local and regional markets. The addition of Prairieland Gold created two full-time jobs and \$100,000 of income.



## Facility Design/Utilization of Gravity and Water

### Summary

Prairieland sought to design and build efficient, low-impact facilities and systems to amplify cow comfort and health, while minimizing energy use. All facilities are focused on conserving and renewing natural resources and energy, and capturing and controlling overhead and variable costs.

Milk is cooled immediately to below 35 F, then loaded into milk tankers, eliminating the energy required for cleaning and agitating bulk tanks. Ground water, averaging 60 F passes over the first plate cooler, chilling the milk quickly. When it hits the second plate cooler, two-thirds less energy has been used. A geothermal heating/air-conditioning system also helps to heat and cool the dairy offices.

Using gravity, Prairieland operates an entire cleaning and manure management system on only three wells and pumps where only one pump operates at a time, reducing costs and additional equipment. The freestall barns also slope away from the center of the building, and one barn is positioned at a higher elevation to create additional slope.

### Key benefits

Prairieland's sustainable design and operation allowed the management team to avoid the challenges associated with excess energy and water use. By automating the cooling, waste management and pest control systems, utilizing gravity, the geothermal properties of well water and the area's natural wind, they estimate savings of more than \$200,000 in energy, water and equipment repair.

Striving to continuously learn from others, Prairieland has looked to other dairy farmers, the community, consumers and regulation to create a long-term model for sustainability. The farm leaders consult with other dairy producers, meeting quarterly to discuss management ideas. Industry leadership also shares profit and loss statements to compare their work with other dairy farms.

Future plans include expanding Prairieland's recycling program and continuing the pilot programs with schools, hospitals and grocery stores to recycle more food waste. As the next generation steps up, Prairieland expects opportunities around agri-entertainment to expand. Prairieland leaders say much of their success can be credited to turning their thinking around to the preferences of their consumers and striving to be transparent with their operations.



The Sustainability Awards are part of the U.S. Dairy Sustainability Commitment, an industrywide effort to measure and improve the economic, environmental and social sustainability of the dairy industry. The award program recognizes dairy farms, businesses and collaborative partnerships for their contributions to healthy people, healthy products and a healthy planet and showcases that sustainability makes good business sense. An independent panel of judges evaluate all nominations based on the program's or project's results as measured by triple-bottom-line success – economic, environmental and social. For more information, please visit [USDAiry.com/Sustainability/Awards](http://USDAiry.com/Sustainability/Awards).