



Small-scale Dairy Processing



Market Spotlight

Dairy farmers can diversify their income and capture more of the food dollar by investing in small scale value-added dairy processing. AURI used publicly available information to provide a market spotlight for producers interested in learning more about Minnesota’s market opportunities for small-scale dairy processing. This is part of a series of market spotlights from AURI on different ag and food industries in Minnesota.

Background

Milk production in Minnesota totaled 10.3 billion pounds in 2023, from roughly 450,000 milk cows (USDA-ESMIS, 2024). The milk processing industry in Minnesota consists of approximately 70 dairy facilities that manufacture milk into multiple value-added products. Most facilities produce at a large scale, although several are small ice cream processing plants. Many larger facilities are dairy processing cooperatives representing hundreds of producers who process, market, and distribute dairy products.

This analysis focuses on small-scale dairy processing plants. The Minnesota Department of Agriculture (MDA) defines a small dairy plant as processing less than 750,000 pounds of milk annually.

Small scale processing consists of three categories: farmstead, on-farm plants, and off-farm plants.

Farmstead plants manufacture and process their milk without receiving milk from other sources.

On-farm dairy plants are plants that process milk at the location where the milk is produced and can receive milk from other farms.

Off-farm plants are not located on farms, and process milk from one or more farms.

Currently, these three categories represent 25% of all processing plants in the state, yet they process less than 2% of Minnesota’s milk production.

Products Produced

Table 1 showcases the dairy products manufactured in small-scale dairy plants in Minnesota.

- Minnesota’s small dairy plants produce four main products: artisan cheese, conventional cheese, butter, and fluid milk.
- Conventional cheese is the only dairy product produced by all three categories of small-scale processors.
- No farmstead processors produce butter, no on-farm plants produce artisan cheese, and no off-farm plants sell fluid milk.

Type of small processing plant	Conventional Cheese	Artisan Cheese	Butter	Fluid Milk
Farmstead	25%	75%	-	25%
On-farm	57%	-	14%	43%
Off-farm	25%	50%	25%	-

Table 1 shows the percentage of small dairy plants in Minnesota producing conventional and artisan cheese, butter, and fluid milk. (Minnesota Department of Agriculture)

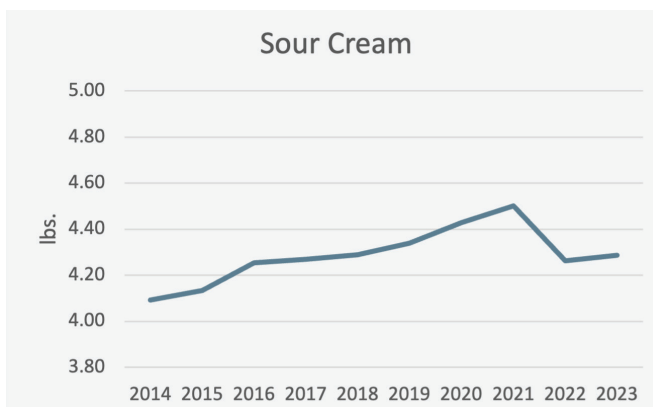
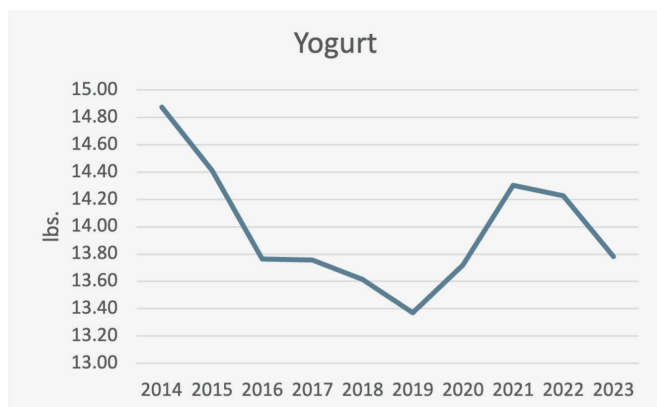
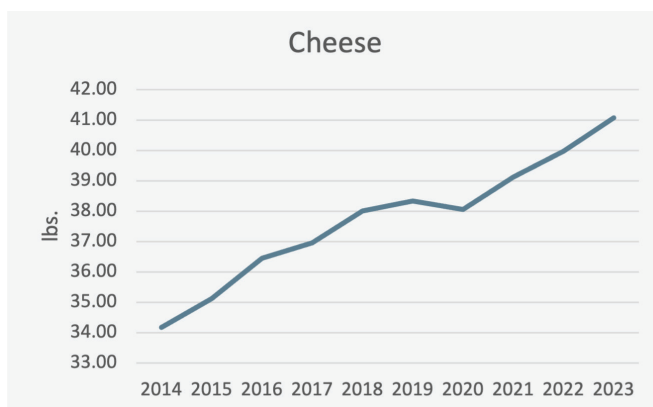
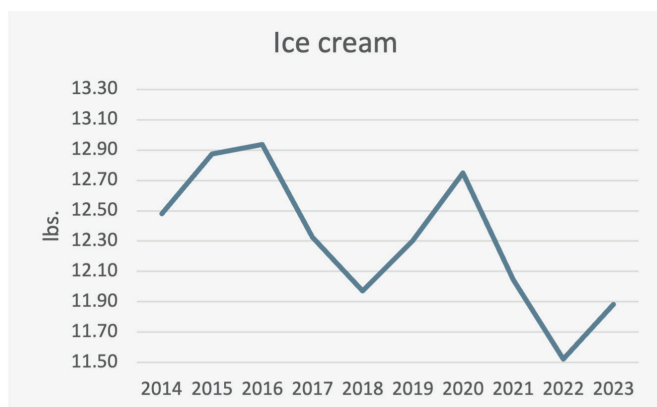
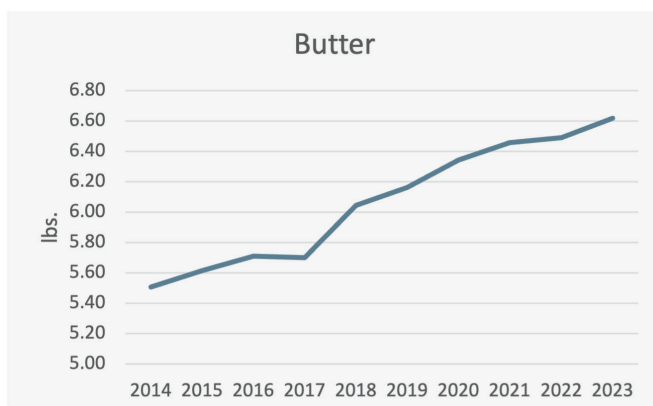
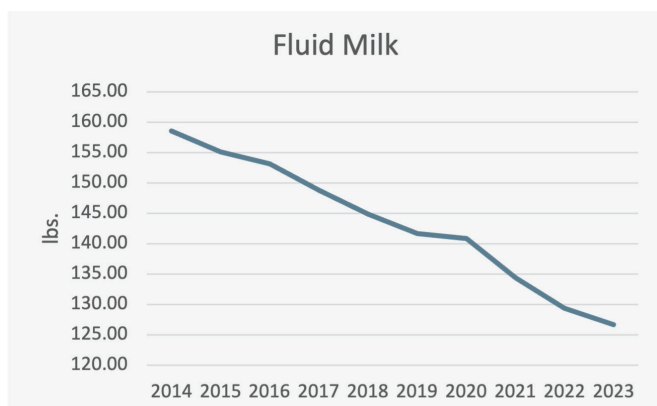
*There are many independent ice cream shops in Minnesota. These have been excluded from this document because the focus is on opportunities for farmers to add-value.

Consumption

AURI used national data (USDA-ERS) to estimate the consumption of dairy products since local dairy product consumption numbers were unavailable. While the numbers may differ slightly, producers may use them to estimate demand for a market category of interest. Producers can better define potential product demand by using location specific data (population trends, preferences, income, and food consumption).

- Over the last decade, fluid milk consumption decreased by 3% yearly. Recent data shows the average American consumes 126 lbs. of fluid milk annually.
- Cheese and butter consumption is increasing, representing exciting market opportunities for small dairy producers. Cheese and butter annual per capita consumption totaled 41 and 6.5 lbs. in 2023, respectively.
- Ice cream and yogurt had slight declines from 2014–2023. Ice cream consumption per capita totaled 12 lbs. in 2023, and yogurt totaled 13 lbs. in the same year.
- Sour cream per capita consumption in 2023 was 4.2 lbs.

Per Capita Consumption Numbers (USDA-ERS, 2024)



Marketing channels

There are many factors impacting the choice of marketing channels for small processors. These include the farm's location, the type of products sold, and consumer preferences in each of the channel types. Grocery stores can provide a large customer base and the potential for a high sales volume. In that case, working with a knowledgeable broker is critical, and challenges are often related to a particular outlet's policies and logistic requirements. Producers typically receive a higher price for their products when selling direct-to-consumer rather than the retail and wholesale markets. Research has shown that consumers shop at direct-to-consumer markets mainly because of food quality, price, and community atmosphere. Table 2 presents the market channels that small dairy processors use in Minnesota.

- The two most important outlets for small dairy producers in Minnesota are retail grocery and direct-to-consumer.
- Fewer small dairy producers use food coops and institutions to sell their products.

	Retail Grocery Stores	Direct-to-Consumer	Co-ops	Farmers Markets	Direct-to-Institutions
Farmstead	50%	75%	25%	75%	25%
On-farm	86%	43%	29%	29%	43%
Off-farm	75%	50%	25%	-	25%

Table 2. The percentage of small dairy plants in Minnesota using different market channels. (Minnesota Department of Agriculture)



Resources

Dairy processing plants must be approved and permitted before beginning operations. Information on licensing, regulations, fees, and inspections for all farmers interested in starting a dairy processing plant can be found on the Minnesota Department of Agriculture website (MDA) at this link:

www.mda.state.mn.us/sites/default/files/docs/2022-09/Starting-Operating-Small-Dairy-Processing-Plant.pdf

Takeaways

- 1 Small dairy plants hold a minor share of the Minnesota milk market. They represent 25% of all processing plants but use less than 2% of total milk production in the state.
- 2 Small processing plants in Minnesota produce conventional and artisan cheese, fluid milk, ice cream, and butter.
- 3 Small dairy processing plants sell their value-added products primarily to grocery stores and then directly to consumers.
- 4 Based on per capita consumption, fluid milk consumption has decreased for the last twenty years. Butter and cheese consumption is growing, representing interesting opportunities for small producers.



This document is part of the Agricultural Innovation Center at the Agricultural Utilization Research Institute (AURI) to provide market business development services to agricultural producers in Minnesota. The center assists farmers with market research, marketing plans, customer identification, and market intelligence issues. The center provides direct business, products, processes, and development services.

Questions or comments?

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