

Consumer Dairy Product Expenditures and Preferences for Dairy Products Made With Tennessee Milk



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Introduction

The dairy industry in Tennessee has experienced changes over the past few decades. As of August 2019, the number of dairy operations licensed to sell Grade “A” milk in the state was 196, down from 271 in 2018. A potential market opportunity for Tennessee’s dairy producers may lie in selling value-added dairy products to consumers who prefer local foods. In 2018, the Tennessee Department of Agriculture, Business Development Division, instituted the Tennessee Milk Logo (Figure 1). This logo was designed to help consumers identify fluid milk sourced, processed, and bottled in Tennessee. However, no such logo exists for dairy products, including cheese, ice cream, butter, sour cream and yogurt. Thus, we created and examined a hypothetical logo – “Made with Tennessee Milk” – to assess consumer preferences for dairy products, as shown in Figure 2.



Figure 1. Tennessee Milk logo

The market potential for dairy products made with Tennessee Milk is unknown, and Tennessee consumer preferences and attitudes toward dairy products are not well documented. The goal of this publication is to convey results of a consumer survey regarding Tennessee consumer expenditures and preferences for dairy products to producers, retailers and policy makers. This study presents:

- Willingness to pay for dairy products made with Tennessee Milk;
- Potential consumer purchases of dairy products made with Tennessee Milk;
- Locations where consumers would purchase dairy products;
- Consumer attitudes toward dairy products that are made with Tennessee Milk;
- Distance traveled for dairy products to be considered local;
- Current consumer purchase patterns for dairy products; and
- Respondent demographics.



Figure 2. Made with Tennessee Milk logo

Survey

In June 2019, an online survey was conducted to obtain responses regarding Tennessee consumers’ attitudes toward dairy product expenditures and preferences for dairy products that are made with Tennessee Milk. The survey participants were limited to those 18 years or older, Tennessee residents, and primary food shoppers for the household. The respondents also were

limited to households with at least one or more members who consumed dairy products. A total of 410 responses were obtained. The survey contained several sections, including consumer preferences for dairy products made with Tennessee Milk, attitudes toward dairy products, consumer dairy product expenditures, attitudes toward local foods and demographics.

Before asking consumers about their preferences for dairy products made with Tennessee Milk, respondents were shown the “Made with Tennessee Milk” logo (Figure 2) and were provided the following information:

The Made with Tennessee Milk logo appears on processed dairy products and would indicate that these products use milk that is entirely sourced and processed in Tennessee. This means that milk used in making the processed dairy products (for example: cheese, yogurt, sour cream or ice cream) with this logo is 100% from Tennessee dairy farms.

To examine whether consumers would pay more for dairy products made with Tennessee Milk, consumers were first asked how much they typically spent per week on dairy products and then were asked if they would increase their weekly expenditure by either 5 percent, 8 percent, 10 percent, 15 percent, 20 percent, or none if the dairy products were made with Tennessee Milk. Consumers could choose that they spent either \$1-\$3, \$3-\$5, \$5-\$10, \$10-\$15, \$15-\$20, or \$20 or more for dairy products. The midpoint of each of those selected categories was then used as the base dairy products weekly expenditure. For example, if consumers stated they spent \$1-\$3 per week on dairy products, the midpoint of that range, \$2, was offered as the base dairy products weekly expenditure. Consumers then were randomly selected to either pay weekly premiums of 5 percent, 8 percent, 10 percent, 15 percent and 20 percent for dairy products made with Tennessee Milk. Figure 3 provides an example of a question consumers would face had they selected the \$1-\$3 weekly dairy product expenditures range and been selected to pay an 8 percent premium for dairy products made with Tennessee Milk.

Given the weekly amount of around \$2 you indicated that you spend on processed dairy products, would you be willing to pay 8% more for these dairy products if they had the Made With Tennessee Milk logo? This would make your weekly expenditures about \$2.16.

Yes

No

The logo for "Made With Tennessee Milk" features a red circular border. Inside the circle, the words "TENNESSEE" and "MILK" are written in white, uppercase letters at the top and bottom respectively. In the center of the circle is a white silhouette of a milk bottle with a blue label that contains a white outline of the state of Tennessee.

Figure 3. Example choice screen for dairy products that are made with Tennessee Milk

After completing the dairy product expenditures question, participants were asked a series of questions about their demographics and questions pertaining to dairy products made with Tennessee Milk. For example, respondents with a preference for Tennessee Milk were asked about the retail outlets where they might purchase those products.

Respondents were also asked to rate their level of agreement (ranging from 1 = strongly disagree to 5 = strongly agree) that dairy products made with Tennessee Milk would likely:

- Be fresher;
- Be safer;
- Be better for the environment;
- Help support Tennessee dairy farmers' incomes;
- Help support the state's economy; and
- Taste better.

Finally, respondents were asked how far they would travel to purchase dairy products made with Tennessee Milk and the maximum distance dairy products could travel to be considered local.

Results

Survey Participants

A summary of the survey demographics is provided in Table 1. The average age of the respondents was 44 years old as compared to the state average of 39 years old. Eighty-two percent of the respondents were female, which is expected since the sample was limited to primary food shoppers. Average household income was \$45,977, which is below the state average of \$51,340. About 38 percent of the households have children under 12 years old. In the state of Tennessee, 18 percent of the households have children under 13 years old. Thus, our sample slightly overestimates households with children. Just under a quarter of the respondents were college graduates, which is comparable to the state average.

Table 1. Survey Respondent Demographics

Measure	Mean (N = 389)	Tennessee Average
Age in Years	43.6	38.6
% Female Population	82%	51% ¹
Household Income	\$45,977	\$51,340 ¹
Children Under Age 12	38%	18% ^{1,2}
College Graduates	24%	26% ¹
Rural Residents ³	17%	33% ¹
Eastern TN Residents	47%	36% ¹
Middle TN Residents	36%	40% ¹
Western TN Residents	17%	24% ¹

¹ 2013-2017 American Community Survey, U.S. Census Bureau, 2017.

² Tennessee average number is for children under age 13.

³ Survey Respondents self-identified as rural residents.

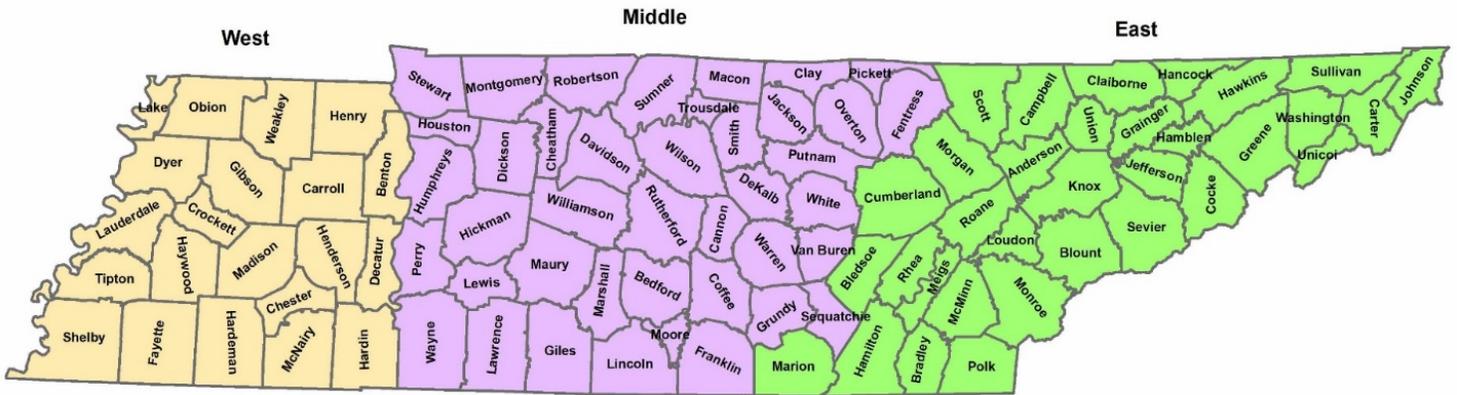


Figure 4. Map of Tennessee counties and regions

Around 17 percent considered themselves to live in a rural area as compared to 33 percent of the rural population across the state. About 47 percent of the respondents resided in East Tennessee, 36 percent in Middle Tennessee, and 17 percent in West Tennessee, which is somewhat representative of Tennessee residents. A map of the three regions is shown in Figure 4.

Dairy Products Expenditures and Consumption Patterns

Almost every respondent indicated that their household members consumed dairy products (for example, cheese, ice cream, sour cream, yogurt or butter) on a regular basis. Table 2 presents the relative frequency of household dairy products consumption. Butter (44 percent) and cheese (42 percent) were the most frequently consumed dairy products on a daily basis, followed by yogurt (23 percent), ice cream (11 percent) and sour cream (3 percent). The dairy products that were most frequently consumed one or more times a week included cheese (47 percent), ice cream (43 percent) and butter (40 percent), whereas sour cream (32 percent) and yogurt (31 percent) were less frequently consumed. Ice cream (22 percent), sour cream (18 percent) and yogurt (14 percent) were the most frequently consumed dairy products every two weeks, followed by butter (7 percent) and cheese (6 percent). Sour cream (20 percent), ice cream (15 percent) and yogurt (13 percent) were most frequently consumed on a monthly basis, followed by cheese (4 percent) and butter (4 percent). On a yearly basis, sour cream (21 percent), yogurt (10 percent) and ice cream (8 percent) were the most frequently consumed dairy products, followed by butter (4 percent) and cheese (<1 percent). The two dairy products that were never consumed by certain households were yogurt (9 percent) and sour cream (6 percent), whereas cheese, ice cream and butter were almost always consumed at least a few times a year.

Table 2. Frequency of Household Dairy Products Consumption

Category	Percent Respondents (n = 402)				
	Sour Cream	Cheese	Yogurt	Ice Cream	Butter
Daily	3%	42%	23%	11%	44%
One or more times a week	32%	47%	31%	43%	40%
Every two weeks	18%	6%	14%	22%	7%
Once a month	20%	4%	13%	15%	4%
A few times a year	21%	<1%	10%	8%	4%
Never	6%	<1%	9%	1%	1%
Total	100%	100%	100%	100%	100%

As shown in Figure 5, 29 percent of respondent households spent \$5-\$10 on dairy products in a week, followed by 28 percent in the \$10-\$15 range. Around 13 percent spent both \$15-\$20 and more than \$20 on dairy products. Only 10 percent of the respondents spent in the \$3-\$5 range, and 6 percent spent \$1- \$3 on dairy products.

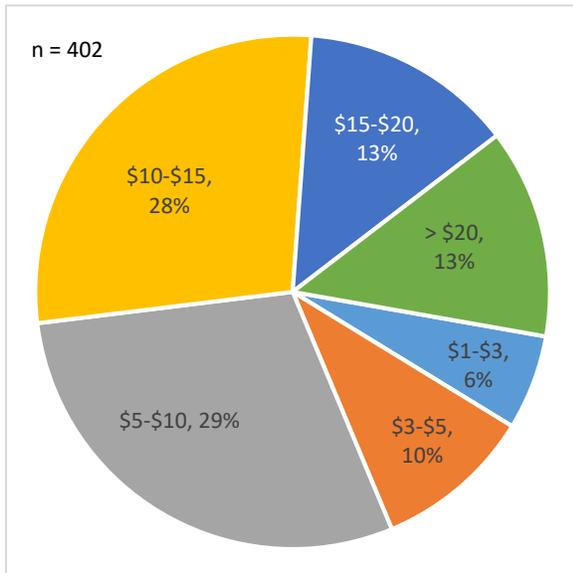


Figure 5. Consumer weekly expenditure on dairy products

Willingness to Purchase Dairy Products Made With Tennessee Milk

The average weekly expenditure on dairy products was \$11.22. We estimated that respondents were willing to pay an extra \$1.79 weekly for dairy products that had the “Made with Tennessee Milk” logo (Table 3), which is a 16 percent premium.

Table 3. Average Household Dairy Product Expenditure Characteristics

Variable	Amount	Units	Respondents (N)
Average expenditure on dairy products	\$11.22	Dollars per week	406
Premium for dairy products	\$1.79	Dollars per week	379

Anticipated Purchase Patterns for Dairy Products Made With Tennessee Milk

Twenty-nine percent of the respondents indicated that they would be willing to travel more than 5 miles to purchase local dairy products (Figure 6). Around 21 percent of respondents were willing to travel a distance of both 3-4 miles and 1-2 miles, followed by 18 percent of respondents willing to travel 2-3 miles, and 11 percent of respondents willing to travel less than 1 mile.

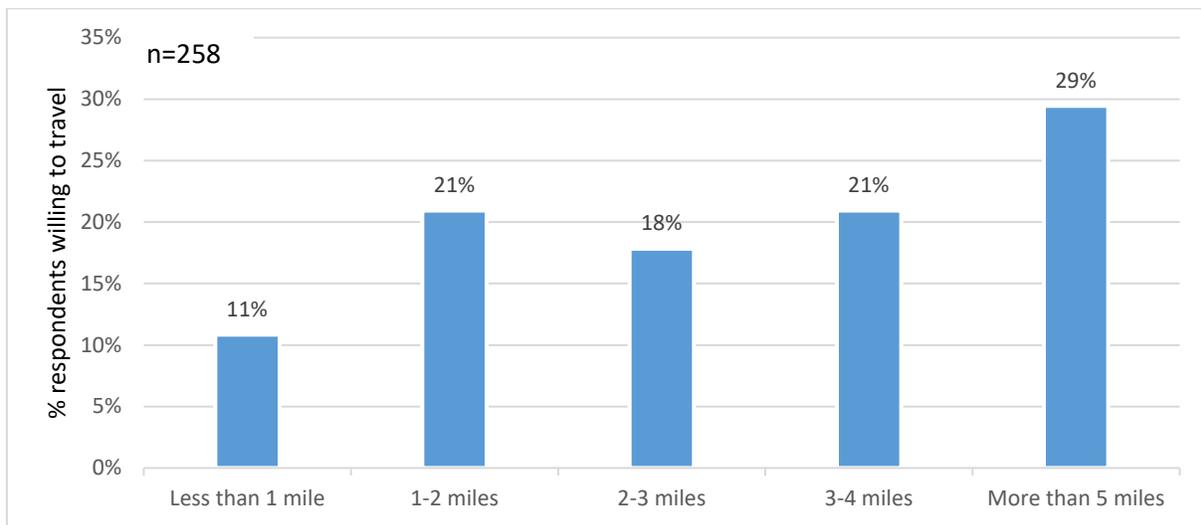


Figure 6. Maximum distance customers would travel to purchase local dairy products

Respondents specified the maximum distance that dairy products should travel to be considered locally produced (Figure 7). Cheese was selected to travel the farthest distance at 78 miles, ice cream and yogurt at 65 miles, sour cream at 64 miles, and butter at 67 miles. The results indicate that, on average, dairy products should travel less than 68 miles to be considered locally produced.

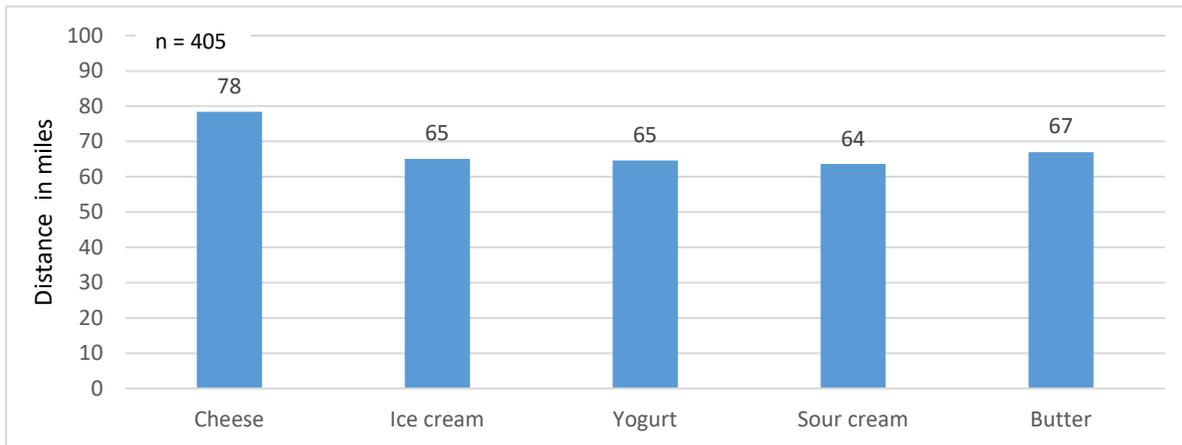


Figure 7. Maximum distance dairy products should travel to be considered local dairy products

As shown in Table 4, respondents who indicated they would purchase dairy products made with Tennessee Milk stated they would purchase it at a variety of retailer types. The most commonly cited was retail grocery stores at 79 percent, followed by big box stores (58 percent), limited assortment discount stores (23 percent), farmers markets (17 percent), and convenience stores (17 percent). Around 14 percent reported they would shop at wholesale clubs, and 10 percent chose specialty/organic stores. Two percent or less indicated they would purchase dairy products at on-farm stores, other stores, food cooperatives, or have them home delivered.

Table 4. Retailer Type Where Consumers Would Purchase Dairy Products

Retailer Type	Percent consumers who would purchase dairy products with “Made with Tennessee Milk” Label (N = 258)*
Retail grocery stores (e.g., Kroger, Publix)	79%
Big box stores (e.g., Walmart, Target)	58%
Limited assortment discount (e.g., Dollar General, Aldi)	23%
Farmers market	17%
Convenience stores (e.g., Weigel’s, Pilot)	17%
Wholesale club (e.g., Sam’s Club, Costco)	14%
Specialty/organic store (e.g., Whole Foods, Trader Joe’s)	10%
On-farm store	2%
Home delivery	2%
Other	2%
Food cooperative	1%

*Respondents could select more than one option.

Respondent Perceptions of Dairy Products

The majority of survey respondents believed that dairy products made with Tennessee Milk would support Tennessee’s dairy farmers and help support Tennessee’s economy, as shown in Table 5. When compared to other dairy products, consumers perceived dairy products made with Tennessee Milk to be fresher, better for the environment, taste better and be safer.

Table 5. Respondent Perceptions of Dairy Products

Compared with other Dairy Products, Dairy Products made with Tennessee Milk will likely:	Mean Rating (out of 5)	Percent Respondents (n = 402)				
		Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
Be fresher	3.9	4%	4%	21%	37%	35%
Be safer	3.5	7%	4%	40%	27%	22%
Be better for the environment	3.6	5%	5%	41%	25%	24%
Help support Tennessee dairy farmers’ incomes	4.4	4%	2%	7%	24%	64%
Help support the state’s economy	4.3	3%	2%	10%	29%	56%
Taste better	3.5	7%	6%	41%	26%	21%

Conclusions and Implications for Tennessee’s Dairy Product Industry

Results from this study show that the average household weekly expenditure for dairy products is \$11.12, and consumers are willing to pay an average premium of \$1.72 for dairy products made with Tennessee Milk, which is a 16 percent premium. Around 80 percent of respondents indicated they would purchase dairy products made with Tennessee Milk. The results from this study also show that consumers believe dairy products made with Tennessee Milk will help support dairy farmers’ incomes, the state’s economy, and would be fresher. Cheese, butter and ice cream are the top three dairy products consumed by Tennessee residents; thus, the dairy industry should target these dairy products to use the “Made with Tennessee Milk” logo to earn a 16 percent premium and increase their market share. Dairy farms that supply Tennessee Milk to dairy product manufacturers could also earn a higher premium. Results also suggest that consumers prefer local dairy products that are obtained within an average distance of 68 miles. Consumers would be willing to purchase dairy products made with Tennessee Milk at a variety of retail outlets; however, most would look for them at grocery retail and big box stores.

This study provides valuable information on consumer preferences and perceptions of dairy products (cheese, ice cream, butter, sour cream and yogurt) made with Tennessee Milk. The Tennessee dairy industry, retailers and policy makers can use the results to help market dairy products made with Tennessee Milk.

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