

Butterfat Production Is Increasing Despite Milk Production Declines

One of the dairy industry’s most anticipated monthly reports from USDA is the Milk Production report compiled by the National Agricultural Statistics Service (NASS). This report contains the number of milk cows, production per cow, and total milk production for each of the 24 major milk producing states along with the U.S. totals. The data for the report is obtained via surveys from samples of producers from individual states, combined with estimates based on state and federal administrative data. The Milk Production report is used extensively by the dairy industry in planning, pricing, and projecting supplies of milk and milk products.

For many years the Milk Production report was also indicative of butterfat and protein production. In 2000 milk pooled in the Federal Milk Marketing Orders (FMMO) averaged 3.69% butterfat and 3.02% protein. Ten years later the averages were virtually unchanged, 3.66% butterfat and 3.05% protein. A high correlation

existed between milk production and component production. However, as producers responded to market economics, during 2013 FMMO component content increased to 3.76% butterfat and 3.12% protein, and by 2023 the averages were 4.11% butterfat and 3.26% protein.

In 2001 U.S. milk production was approximately 165 billion pounds with 46 billion used for beverage milk. The Class I utilization rate was 28%, and 72% of production, 119 billion pounds, was used in manufactured products. By 2023 milk production had grown to 226 billion pounds but fluid consumption fell to 40 billion pounds. Class I utilization was 18%, ten percent less than in 2001. Lower Class I utilization combined with higher total production meant that 186 billion pounds of milk was used in manufactured products, an increase of 67 billion pounds from 2001. Yields of cheese, whey, butter, nonfat dry milk, yogurt, ice cream, and other manufactured

	Year	Month	Milk Production (million pounds)	% Fat	Fat Production (Million Pounds)	YOY Change in Milk Production	YOY Change in Fat Test	YOY Change in Fat Production	Monthly Fat Production vs. Milk Production
	2014	January	17,284	3.84%	663.7				
	2014	July	17,435	3.61%	629.4				
	2015	January	17,680	3.84%	678.9	2.2%	0.00%	2.3%	0.1%
	2015	July	17,666	3.60%	636.0	1.3%	-0.01%	1.0%	-0.3%
	2016	January	17,693	3.89%	688.3	0.1%	0.05%	1.4%	1.3%
	2016	July	17,908	3.65%	653.6	1.4%	0.05%	2.8%	1.4%
	2017	January	18,145	3.92%	711.3	2.5%	0.03%	3.3%	0.9%
	2017	July	18,269	3.69%	674.1	2.0%	0.04%	3.1%	1.2%
	2018	January	18,437	3.97%	731.9	1.6%	0.05%	2.9%	1.3%
	2018	July	18,329	3.71%	680.0	0.3%	0.02%	0.9%	0.5%
	2019	January	18,600	4.02%	747.7	0.9%	0.05%	2.2%	1.3%
	2019	July	18,355	3.75%	688.3	0.1%	0.04%	1.2%	1.1%
	2020	January	18,877	4.03%	760.7	1.5%	0.01%	1.7%	0.3%
	2020	July	18,756	3.79%	710.9	2.1%	0.04%	3.3%	1.1%
	2021	January	19,330	4.10%	792.5	2.3%	0.07%	4.2%	1.8%
	2021	July	19,102	3.84%	733.5	1.8%	0.05%	3.2%	1.4%
	2022	January	19,050	4.21%	802.0	-1.5%	0.11%	1.2%	2.7%
	2022	July	19,180	3.91%	749.9	0.4%	0.07%	2.2%	1.8%
	2023	January	19,308	4.23%	816.7	1.3%	0.02%	1.8%	0.5%
	2023	July	18,999	3.98%	756.2	-1.0%	0.07%	0.8%	1.8%

products are dependent on milk components.

With over 80% of milk production used for manufacturing, the industry needs accurate component production data. FMMOs verify and audit producer component data. However, only 70% of U.S. production is regulated through FMMOs. The non-pooled milk includes virtually all of Idaho’s production and one-third of California’s. That milk accounts for about ten percent of U.S. production and can be expected to have high components.

The all-milk price published as part of the monthly NASS Agricultural Prices report includes butterfat tests for production in the states associated with the Milk Production report. National All-Jersey (NAJ) combined production data from the Milk Production report with butterfat test data from the Agricultural Prices report to calculate monthly butterfat production. NAJ selected January and July as proxies for high and low butterfat tests and analyzed 2014 through 2023. Table 1 shows that beginning in 2016 year-over-year butterfat tests began steadily increasing. As a result, butterfat production outpaced milk production. Furthermore, due to higher

butterfat tests, even months with lower milk production than the previous year posted gains in butterfat production.

Next NAJ conducted a month-by-month analysis of 2022 and 2023. As has been widely reported, milk production declined every month from July through December last year. However, due to higher butterfat tests, butterfat production increased in those months despite lower milk production. The long-held correlation between milk production and butterfat production is no longer valid.

USDA does not collect nationwide skim solids test data for protein and other solids. Each month the Economic Research Service (ERS) publishes the Supply and Utilization of Milk in All Products report which includes skim solids estimates based on FMMO data. The ERS analysis shows skim solids production increasing, too, but not to the extent that butterfat production is.

Even though milk production is declining with no rebound in sight, increases in component tests are leading to increases in butterfat and protein production. As a result, production of dairy commodities may increase despite the decline in milk production.

Month	Year	Milk Production (million pounds)	% Fat	Fat Production (Million Pounds)	Change in Milk Production	Change in Fat Test	Change in Fat Production	Change in Fat Production vs. Milk Production
Jan	2022	19,050	4.21%	802.0	1.4%	0.02%	1.8%	0.5%
	2023	19,308	4.23%	816.7				
Feb	2022	17,540	4.18%	733.2	1.0%	0.03%	1.8%	0.7%
	2023	17,724	4.21%	746.2				
Mar	2022	19,715	4.12%	812.3	0.5%	0.07%	2.3%	1.7%
	2023	19,823	4.19%	830.6				
Apr	2022	19,147	4.08%	781.2	0.4%	0.04%	1.3%	1.0%
	2023	19,217	4.12%	791.7				
May	2022	19,755	4.00%	790.2	0.7%	0.06%	2.2%	1.5%
	2023	19,884	4.06%	807.3				
Jun	2022	18,920	3.94%	745.4	0.2%	0.07%	2.0%	1.8%
	2023	18,953	4.01%	760.0				
Jul	2022	19,180	3.91%	749.9	-0.9%	0.07%	0.8%	1.8%
	2023	18,999	3.98%	756.2				
Aug	2022	19,016	3.93%	747.3	-0.8%	0.07%	0.9%	1.8%
	2023	18,857	4.00%	754.3				
Sep	2022	18,242	4.01%	731.5	-0.1%	0.07%	1.6%	1.7%
	2023	18,221	4.08%	743.4				
Oct	2022	18,809	4.14%	778.7	-0.8%	0.07%	0.9%	1.7%
	2023	18,666	4.21%	785.8				
Nov	2022	18,184	4.23%	769.2	-0.7%	0.09%	1.4%	2.1%
	2023	18,056	4.32%	780.0				
Dec	2022	18,904	4.27%	807.2	-0.3%	0.08%	1.5%	1.9%
	2023	18,843	4.35%	819.7				



Milk & Component Outlook - March 2024 Jersey Price Comparisons

<u>March '24 STATISTICAL BLEND PRICE</u>		<u>March '24 MONTHLY MILK VOLUME</u> (Million #)		<u>March '24 JERSEY REGULATED BLEND PRICE</u>	
Northeast (Boston)	\$20.18	Northeast (Boston)	2,342	Northeast (Boston)	\$23.82
Appalachian (Charlotte)	\$21.60	Appalachian (Charlotte)	468	Appalachian (Charlotte)	\$27.15
Southeast (Atlanta)	\$22.07	Southeast (Atlanta)	320	Southeast (Atlanta)	\$25.44
Florida (Tampa)	\$23.75	Florida (Tampa)	217	Florida (Tampa)	\$27.70
Midwest (Cleveland)	\$18.64	Midwest (Cleveland)	1,521	Midwest (Cleveland)	\$22.40
Upper Midwest (Chicago)	\$16.70	Upper Midwest (Chicago)	2,712	Upper Midwest (Chicago)	\$20.12
Central (Kansas City)	\$18.02	Central (Kansas City)	1,287	Central (Kansas City)	\$21.56
California (Los Angeles)	\$17.77	California (Los Angeles)	2,067	California (Los Angeles)	\$18.40
Southwest (Dallas)	\$18.48	Southwest (Dallas)	1,113	Southwest (Dallas)	\$22.11
Arizona (Phoenix)	\$19.63	Arizona (Phoenix)	414	Arizona (Phoenix)	\$23.19
Pacific Northwest (Seattle)	\$18.41	Pacific Northwest (Seattle)	621	Pacific Northwest (Seattle)	\$21.26
ALL FMMO MARKET AVERAGE	\$19.57	ALL FMMO MARKET TOTAL	13,082	ALL FMMO MARKET AVERAGE	\$23.01

Prices reflect Federal Order minimum blend prices for city shown.

March, '24 JERSEY BLEND WITH ESTIMATED PROTEIN OR CHEESE YIELD PREMIUMS

Northeast (Boston)	\$24.12	Northeast (Boston)	\$3.94	Northeast (Boston)	19.5%
Appalachian (Charlotte) (includes protein prem.)	\$27.56	Appalachian (Charlotte)	\$3.81	Appalachian (Charlotte)	16.0%
Southeast (Atlanta)	\$25.44	Southeast (Atlanta)	\$3.37	Southeast (Atlanta)	15.3%
Florida (Tampa)	\$27.70	Florida (Tampa)	\$3.95	Florida (Tampa)	16.6%
Midwest (Cleveland) (includes protein premium)	\$22.97	Midwest (Cleveland)	\$4.33	Midwest (Cleveland)	23.2%
Upper Midwest (Chicago) (includes cy premium)	\$20.44	Upper Midwest (Chicago)	\$3.74	Upper Midwest (Chicago)	22.4%
Central (Kansas City)	\$21.56	Central (Kansas City)	\$3.54	Central (Kansas City)	19.6%
California (Los Angeles)	\$18.40	California (Los Angeles)	\$0.63	California (Los Angeles)	3.6%
Southwest (Dallas)	\$22.11	Southwest (Dallas)	\$3.63	Southwest (Dallas)	19.7%
Arizona (Phoenix) (includes protein)	\$23.60	Arizona (Phoenix)	\$3.97	Arizona (Phoenix)	20.2%
Pacific Northwest (Seattle)	\$21.26	Pacific Northwest (Seattle)	\$2.85	Pacific Northwest (Seattle)	15.5%
ALL FMMO MARKET AVERAGE	\$23.20	ALL FMMO MARKET AVERAGE	\$3.43	ALL FMMO MARKET AVERAGE	17.4%

Includes a protein premium of \$0.05 for every 0.01% increase in protein over the market average.

ESTIMATED JERSEY MILK COMPOSITION

Butterfat	5.16	FMMO Milkfat	\$ 3.2385	FMMO Milkfat Adjustment	\$3.12
TRUE Protein	3.93	FMMO True Protein	\$ 1.1265	FMMO True Protein Adjustment	\$0.68
Other Solids	5.73	FMMO Other Solids	\$ 0.2881	FMMO Other Solids Adjustment	(\$0.01)
Solids Not Fat (SNF)	9.66				
Cheese Yield (90% Fat Recovery, 38% Moisture)	13.62				
CME Block Cheese Price	\$ 1.45				

Prices reflect difference between Jersey price with premiums, and the statistical blend price.

REGULATED MILK PRICES

	<u>Mar-24</u>	<u>Mar-24</u>	<u>Mar-24</u>
AVERAGE JERSEY PRICE ADJUSTMENT PER CWT:			

Percent difference in Jersey price with premiums, over the statistical blend price.

Total Grade A milk volume sold under FMMO during month.

March '24 DOLLAR DIFFERENCE: JERSEY MILK WITH PREMIUMS VS. STATISTICAL BLEND PRICE

Northeast (Boston)	\$3.94	Northeast (Boston)	19.5%
Appalachian (Charlotte)	\$3.81	Appalachian (Charlotte)	16.0%
Southeast (Atlanta)	\$3.37	Southeast (Atlanta)	15.3%
Florida (Tampa)	\$3.95	Florida (Tampa)	16.6%
Midwest (Cleveland)	\$4.33	Midwest (Cleveland)	23.2%
Upper Midwest (Chicago)	\$3.74	Upper Midwest (Chicago)	22.4%
Central (Kansas City)	\$3.54	Central (Kansas City)	19.6%
California (Los Angeles)	\$0.63	California (Los Angeles)	3.6%
Southwest (Dallas)	\$3.63	Southwest (Dallas)	19.7%
Arizona (Phoenix)	\$3.97	Arizona (Phoenix)	20.2%
Pacific Northwest (Seattle)	\$2.85	Pacific Northwest (Seattle)	15.5%
ALL FMMO MARKET AVERAGE	\$3.43	ALL FMMO MARKET AVERAGE	17.4%

Prices reflect FMMO minimum prices at Jersey component values.

March '24 PERCENT DIFFERENCE: JERSEY MILK WITH PREMIUMS VS. STATISTICAL BLEND PRICE



Milk & Component Outlook - 2024 Prices through March

2024 AVERAGE STATISTICAL BLEND PRICE FOR EACH FEDERAL ORDER		2024 MILK VOLUME (Million #)		2024 AVERAGE JERSEY REGULATED BLEND PRICE	
Northeast (Boston)	\$19.73	Northeast (Boston)	6,757	Northeast (Boston)	\$23.36
Appalachian (Charlotte)	\$21.24	Appalachian (Charlotte)	1,362	Appalachian (Charlotte)	\$25.25
Southeast (Atlanta)	\$21.74	Southeast (Atlanta)	912	Southeast (Atlanta)	\$25.70
Florida (Tampa)	\$23.22	Florida (Tampa)	662	Florida (Tampa)	\$27.14
Midwest (Cleveland)	\$18.18	Midwest (Cleveland)	4,287	Midwest (Cleveland)	\$21.91
Upper Midwest (Chicago)	\$16.23	Upper Midwest (Chicago)	7,886	Upper Midwest (Chicago)	\$19.68
Central (Kansas City)	\$17.63	Central (Kansas City)	3,765	Central (Kansas City)	\$21.16
California (Los Angeles)	\$17.33	California (Los Angeles)	6,100	California (Los Angeles)	\$18.30
Southwest (Dallas)	\$18.13	Southwest (Dallas)	3,221	Southwest (Dallas)	\$21.58
Arizona (Phoenix)	\$19.15	Arizona (Phoenix)	1,261	Arizona (Phoenix)	\$22.58
Pacific Northwest (Seattle)	\$17.92	Pacific Northwest (Seattle)	1,806	Pacific Northwest (Seattle)	\$20.71
ALL FMMO MARKET AVERAGE	\$19.14	ALL FMMO MARKET TOTAL	38,018	ALL FMMO MARKET AVERAGE	\$22.49

2024 AVERAGE JERSEY DOLLAR DIFFERENCE: JERSEY MILK WITH PREMIUMS VS. STATISTICAL BLEND PRICE		2024 AVERAGE PERCENT DIFFERENCE: JERSEY MILK WITH PREMIUMS VS. STATISTICAL BLEND PRICE	
Northeast (Boston)	\$23.67	Northeast (Boston)	20.0%
Appalachian (Charlotte) (includes protein prem.)	\$25.67	Appalachian (Charlotte)	17.0%
Southeast (Atlanta)	\$25.70	Southeast (Atlanta)	15.7%
Florida (Tampa)	\$27.14	Florida (Tampa)	16.8%
Midwest (Cleveland) (includes protein premium)	\$22.50	Midwest (Cleveland)	23.8%
Upper Midwest (Chicago) (includes cy premium)	\$20.01	Upper Midwest (Chicago)	23.3%
Central (Kansas City)	\$21.16	Central (Kansas City)	20.0%
California (Los Angeles)	\$18.30	California (Los Angeles)	5.7%
Southwest (Dallas)	\$21.58	Southwest (Dallas)	19.0%
Arizona (Phoenix) (includes protein)	\$23.01	Arizona (Phoenix)	20.1%
Pacific Northwest (Seattle)	\$20.71	Pacific Northwest (Seattle)	15.5%
ALL FMMO MARKET AVERAGE	\$22.68	ALL FMMO MARKET AVERAGE	17.9%

ESTIMATED JERSEY MILK COMPOSITION		REGULATED MILK PRICES	
Butterfat	5.21	FMMO Milkfat	\$3.1060
TRUE Protein	3.96	FMMO True Protein	\$1.1595
Other Solids	5.73	FMMO Other Solids	\$0.2679
Solids Not Fat (SNF)	9.69		
Cheese Yield (90% Fat Recovery, 38% Moisture)	13.73		
CME Block Cheese Price	\$1.52		

2024 AVERAGE DOLLAR DIFFERENCE: JERSEY MILK WITH PREMIUMS VS. STATISTICAL BLEND PRICE		2024 AVERAGE PERCENT DIFFERENCE: JERSEY MILK WITH PREMIUMS VS. STATISTICAL BLEND PRICE	
Northeast (Boston)	\$3.95	Northeast (Boston)	20.0%
Appalachian (Charlotte)	\$3.72	Appalachian (Charlotte)	17.0%
Southeast (Atlanta)	\$3.49	Southeast (Atlanta)	15.7%
Florida (Tampa)	\$3.91	Florida (Tampa)	16.8%
Midwest (Cleveland)	\$4.33	Midwest (Cleveland)	23.8%
Upper Midwest (Chicago)	\$3.78	Upper Midwest (Chicago)	23.3%
Central (Kansas City)	\$3.53	Central (Kansas City)	20.0%
California (Los Angeles)	\$0.97	California (Los Angeles)	5.7%
Southwest (Dallas)	\$3.45	Southwest (Dallas)	19.0%
Arizona (Phoenix)	\$3.85	Arizona (Phoenix)	20.1%
Pacific Northwest (Seattle)	\$2.79	Pacific Northwest (Seattle)	15.5%
ALL FMMO MARKET AVERAGE	\$3.43	ALL FMMO MARKET AVERAGE	17.9%

Prices reflect Federal Order minimum blend prices for city shown.

Total Grade A milk volume sold under FMMO.

Prices reflect FMMO minimum prices at Jersey component values.

Includes a protein premium of \$0.05 for every 0.01% increase in protein over the market average.

Prices reflect difference between Jersey price with premiums, and the statistical blend price.

Percent difference in Jersey price with premiums, over the statistical blend price.