Maryland's Dairy Industry: 2021

A Report
To
Governor Larry Hogan

From

The Maryland Dairy Industry Oversight and Advisory Council

October 2021

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Summary

This report to Governor Larry Hogan is an assessment of the current state of the dairy industry in Maryland as well as policy recommendations to support the sector. It represents the recommendations of a committee that includes milk processors, dairy farmers, dairy cooperative leaders, Maryland Farm Bureau members, Maryland Grange members, and consumers, as well as representatives from state and local health departments, agriculture departments, the Maryland Department of Agriculture (MDA), the Maryland General Assembly, and University of Maryland officials.

The Governor's Maryland Dairy Industry Oversight and Advisory Council (Council) is charged with improving and sustaining the economic viability of Maryland's dairy industry and reporting annually to the Governor.

Recovering from COVID 19 impacts

Most of 2020 and the first half of 2021 saw a wave of ups and downs for dairy farmers in Maryland, first with milk prices, then with feed costs. Though feed costs remain at near high levels, there has been improvement in the price of milk paid to dairy farmers.

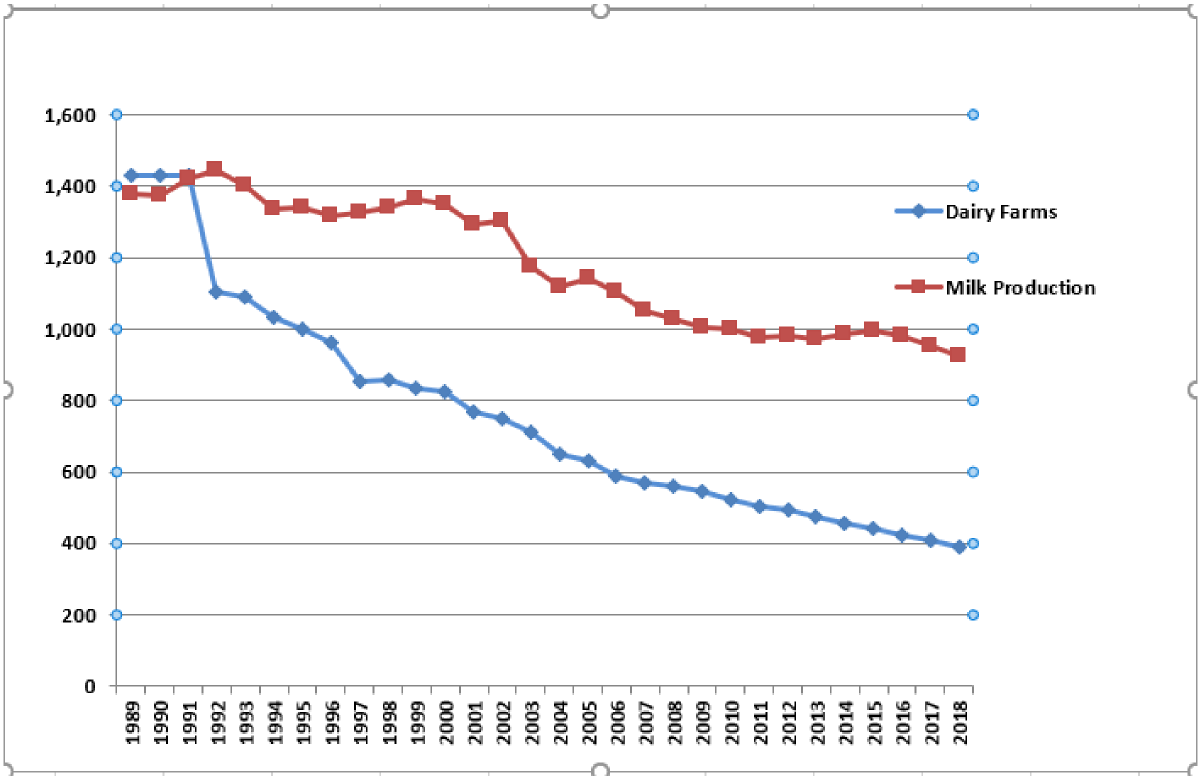
Governor Hogan - once again - supported dairy farmers with a commitment of $650,000 in MDA's budget to pay a cost share on producers' participation in the U.S. Department of Agriculture (USDA) Farm Service Agency's Dairy Margin Coverage program. This will be used for premium support for Calendar Year 2022.

Maryland's current milk processing capacity includes 41 operations (Attachment 2). There are six large, commercial dairy processors. The rest are smaller, on-farm processors. Since June 2016, Lance Dairy Farms Coop, LLC, based in Hagerstown, has been operating a dairy processing plant in Hancock, which is producing cheese, pasteurized condensed milk and cream. Processors in the state annually process more than 10 billion pounds of milk, according to the Maryland Department of Health (MDH) and the Federal Milk Market Order. More than 40,000 loads of milk are hauled from farms throughout the mid-Atlantic to Maryland processors each year. Final products of all types are shipped throughout the nation and the world from Maryland. One plant, Nestle Dreyer's Ice Cream in Laurel, is among the largest ice cream factories in the world.

The Advisory Council recommends that Governor Larry Hogan, the Maryland General Assembly and relevant state agencies:

1. Continue to prohibit the sale of raw milk for human consumption in Maryland.
2. Promote the importance of the Maryland dairy industry to the general public.
3. Oppose the marketing of plant-based beverages as "milk."
4. Encourage the use of flavored and full fat milk in schools.

Number of Maryland Dairy Farms, Production of Milk in State



The number of dairy farms in Maryland has continuously declined since 1992; there are now 322. Milk production has been in steady decline as well, though not as severe as productivity of existing dairy farms has made up some of the difference. In 2020 it was 878 million pounds, worth $151.9 million. In 2010, Maryland dairy farms produced more than 1 billion pounds, worth $184 million. As of June 2021, 458 million pounds have been produced this calendar year.

According to the University of Maryland's Farm Management Specialist Dale Johnson, "The main reason for the loss of dairy farms is that farm gate milk prices have plummeted from a high of $25 per hundredweight (cwt) (2014) to below $19 per cwt every year since then as national supply has outpaced demand." (Please see the attachment for more).

Since 2014 the average price of milk has been about $17.35. Costs of production on Maryland farms are about $20 per cwt, according to Johnson. This does not include family living withdrawals, principal payments on loans, or major capital improvements. Dairy farmers must try to make up the difference with cull and calf sales, crop sales, federal payments and other miscellaneous income.

Recommendations

Recommendation 1:

The Governor and the General Assembly should continue to prohibit the sale of raw milk directly to Maryland consumers for human consumption.

The Council is certain that the health risks associated with raw milk consumption are based on well-documented, sound science, and repeats its recommendation against allowing the sale of raw milk directly to consumers for public consumption. Pathogens in milk can cause very serious, sometimes life-altering conditions, and sometimes even death.

The only method proven to be reliable in reducing the level of pathogens in milk and milk products is proper pasteurization. Should raw milk be allowed for sale directly to the consumer, MDH anticipates an increase in the number of milk-related outbreaks, and will likely incur more costs and require additional staffing for the routine regulation of raw milk as well as in the investigation and control of these outbreaks.

Recommendation 2:

MDA and other state entities should promote the value and importance of the state's dairy industry to the general public.

MDA's Marketing program should continue to work with Maryland Public Television's Maryland Farm & Harvest to encourage episodes on the dairy industry. As of 2021, 25 segments of the program have featured dairy farmers.

Also, the state's Farm to School program should continue to celebrate dairy farming with the state's school children.

Recommendation 3:

MDA should work with the U.S. Food and Drug Administration (FDA) to ensure that plant-based beverages are not marketed as "milk."

FDA has been reviewing this issue since 2018. In a response letter to the National Association of the State Departments of Agriculture in October 2020, FDA said *"FDA has completed its review of the approximately 13,000 comments we received in response to the September 2018 notice. We are now reviewing the data, research, and information provided in those comments to provide clarity around the labeling of plant-based dairy alternatives, a priority for the FDA. FDA is also considering citizen petitions it has received related to this issue. We also note that there are First Amendment considerations that must be taken into account when providing clarity around the use of names of dairy foods in the names of plant-based dairy alternatives*."

Recommendation 4:

The State of Maryland should work to increase access to higher fat milk in schools, as higher fat milk is better tasting and more likely to be consumed by children.

Research published in February 2020 in the academic journal, *The American Journal of Clinical Nutrition*, concludes “Observational research suggests that high cow milk fat intake is associated with lower childhood adiposity. International guidelines that recommend reduced fat milk for children may not lower the risk of childhood obesity.” doi.org/10.1093/ajcn/nqz276

Attachment 1

2021 Maryland Dairy Economics

Dale M. Johnson
October 2021
Department of Agricultural and Resource Economics, University of Maryland

Dairy production is a significant agricultural enterprise in Maryland, generating average farm gate milk revenues of ~$155,000,600 average annually over the past five years (2017-2022). The relative importance of the dairy industry can be seen when comparing it to the revenues of other Maryland agricultural industries - beef cattle <$85,000,000, fruits and vegetables <$60,000,000, and hogs >$8,000,000 (USDA National Agricultural Statistics Service).

Dairy production is particularly important in central and western Maryland where it is concentrated because it is a value added product that utilizes hay, corn silage and grain, and soybean oil meal, thus increasing the importance of field crops that generate open space. It requires about 200,000 acres of cropland to generate feed for the >40,000 milk cows and replacement heifers. It is unlikely that the demise of the dairy industry would be offset by other value-added agricultural enterprises, and would result in a loss of agriculture in general and the associated jobs and economy. However, dairy production is contracting. Since 2014, about 130 of the 455 dairy farms (29%) have ceased operation.

2014-2021 Dairy statistics

Year	2014	2015	2016	2017	2018	2019	2020	2021 Projected
Number or Dairy farms	455	443	424	411	381	348	339	325
Cows per farm	110	111	113	117	118	124	124	125
Total number of cows	50,000	49,000	48,000	48,000	45,000	43,000	42,000	40,625
Lbs of milk sold per cow	19,680	20,000	19,854	19,750	20,378	19,349	20,714	21,000
Pounds of milk sold	984,000,000	980,000,000	953,000,000	948,000,000	917,000,000	832,000,000	870,000,000	853,125,000
Average price of milk/cwt	$ 25.00	$ 17.60	$ 16.40	$ 17.80	$ 16.20	$ 18.40	$ 17.30	17.75
Value of milk sold	$ 246,250,000	$ 172,656,000	$ 156,456,000	$ 168,922,000	$ 148,716,000	$ 153,272,000	$ 150,510,000	$ 151,429,688

USDA National Agricultural Statistics Service, Maryland Department of Agriculture (2021 projected - University of Maryland Extension)

Milk prices

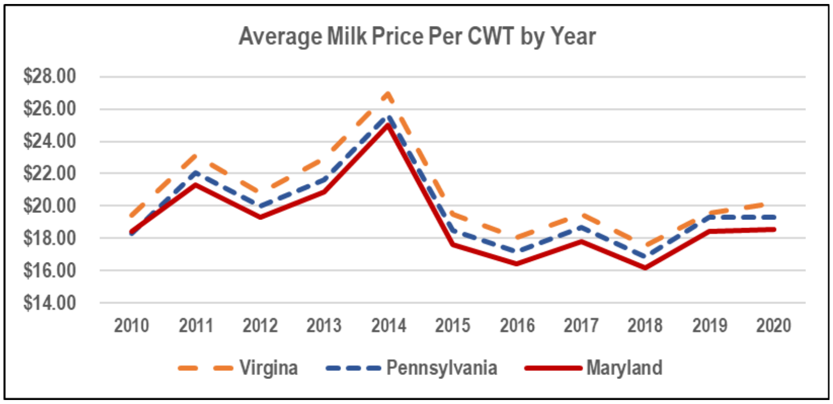
The main reason for the loss of dairy farms is that farm gate milk prices have plummeted from a high of $25 per cwt (2014) to below $19 per cwt every year since then as national supply has outpaced demand. Since 2014 the average price of milk has been ~$17.35. Costs of production on Maryland farms are about $20 per cwt (Johnson, University of Maryland), which does not include family living withdrawals, principal payments on loans, or major capital improvements. Dairy farmers must try to make up the difference with cull and calf sales, crop sales, federal payments and other miscellaneous income.

It is even more revealing to look at milk prices since 2010. The graph and chart below show average milk prices per cwt for Virginia, Pennsylvania and Maryland since 2010.

Average Milk Price Per CWT by Year

State/Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average
Virgina	$19.43	$23.10	$20.83	$22.93	$26.97	$19.46	$18.03	$19.46	$17.57	$19.58	$20.18	$ 20.69
Pennsylvania	$18.28	$22.09	$20.01	$21.63	$25.62	$18.48	$17.16	$18.66	$16.87	$19.28	$19.28	$ 19.76
Maryland	$18.40	$21.30	$19.30	$20.90	$25.00	$17.60	$16.40	$17.80	$16.20	$18.40	$18.52	$ 19.07

USDA National Agricultural Statistics Service, Maryland Department of Agriculture



Below are three observations about the Maryland price of milk.

1. The highest Maryland price per cwt ($18.40) of the recent five years (2015-2019), is the same as the lowest Maryland price per cwt ($18.40) of the previous five years (2010-2014).
2. The average Maryland price over this time period is $1.62 per cwt below Virginia price and $0.69 per cwt below the Pennsylvania price.
3. The Maryland annual price of milk will not go above $20 per cwt for the foreseeable future.

Milk price forecasts for the remaining months of 2021 are in the $18 per cwt average range. Forecasts for 2022 see an uptick in prices that could average closer to $18.50 per cwt.

Land Prices

Other economics work to the detriment of Maryland dairy farms. The average price of farm land and buildings in Maryland (2021) is much higher than the average price of land and buildings in Pennsylvania and Virginia as seen below.

Price of land including buildings

Maryland	$8,670 per acre
Pennsyvania	$6,800 per acre
Virgina	$4,700 per acre

USDA National Agricultural Statistics Service

While higher land values increase a farm owner's net worth and provides more collateral to borrow against, it makes it more difficult to buy additional land to expand operations. It also makes it almost impossible for young farmers to get into dairying since a dairy operation cannot economically justify those land values inflated from development encroachment.

Feed prices

Feed prices are also working against Maryland dairy farms. The following table shows the average national price for corn and soybeans for the past four marketing years (September 1 – August 31), and the estimate for the current marketing year.

Average price per bushel for the marketing year*

Year	2017/18	2018/19	2019/20	2020/21	2021/22 est.
Corn	$3.36	$3.61	$3.56	$4.40	$5.45
Soybeans	$9.33	$8.48	$8.57	$10.90	$12.90

USDA World Agriculture Demand and Supply Estimates
*Marketing year is September 1 - August 31

Prices have dramatically increased the last marketing year and the current marketing year. Analysts of the dairy farm sector began to put more attention on the threat of high feed costs. Dairy subsidy programs, which for decades had operated with the intention of keeping milk prices high, were modified to make payments based on a combination of relatively low milk prices and relatively high feed prices.

Farm Level Economics

Since 1994, Dale Johnson has collected farm level data on income and expenses from Maryland dairy farmers. This is done through farm visits so that Johnson does not have to take possession of confidential, personal, tax, and accounting information. This typically occurs during March to May after taxes have been filed and before farmers begin work in the fields.

The table below illustrates the income, expenses, and profit per hundred pounds of milk produced by 25 dairy farms (18 non-organic and seven organic) for the years 2018-2020. The average cost of production for non-organic farms for the years 2016-2018 is $20.41 per cwt (line 19). This does not include operator and family labor (family living), and debt principal payments. The average milk price per cwt for the same time period is $17.46 (line 4). This is $2.95 below the cost of production. While farmers have cattle sales and other income, which help return a profit, the profit is inadequate for many farms. For example, the average total profit per farm is $56,809 (line 21). Out of this profit, farmers must extract family living (often more than one family) and debt principal payments (land, equipment, livestock, and operating debt), which often results in a negative cash flow. There is a wide variability in farm financial performance and some farms are worse off than others. The third column under non-organic farms shows that the least profitable nine non-organic farms have a higher cost of production of $21.15/cwt (line 19) than average and lower income than average of $21.84/cwt (line 7). They barely break even at $0.70/cwt (line 20) or $15,755/farm (line21) before family living and debt principal payments are extracted.

The economics of organic farms are very different. Organic farms tend to be smaller at 86 cows compared to 134 (line 1). The production per cow is lower at 90 cwt/cow compared to 207 cwt/cow (line 2) because of several factors, including cattle breed and feeding systems that rely primarily on pasture. Milk price is higher at $33.80/cwt compared to $17.46/cwt (line 4). Costs are also higher at $31.69/cwt compared to $20.41/cwt (line 19). Profit per cwt is higher at $9.48/cwt compared to $2.05/cwt (line 20). During this period the seven organic farms did much better than the average non-organic farms. In comparing profit per farm, the organic farms average profit per farm of $75,777 was much higher than the average profit for non-organ farms of $56,809 (line 21). However, organic production is not an option for most dairy farms. Moat organic cooperative on not taking on new farms. Some organic cooperatives have limited the amount of milk they pay the organic price on.

	2018-2020 Average of Maryland Dairy Farms	Conventional (Non-Organic) Farms			Organic
	Income, Expenses, and Profit per CWT	Total 18 Farms	High 9 Farms	Low 9 farms	7 Farms
1	Average number of cows	134	158	112	86
2	CWT of milk sold per cow	207	212	201	90
3	Farm income				
4	Milk sales	17.46	17.84	16.97	33.80
5	Cattle sales	1.23	1.11	1.39	3.56
6	Other income	3.77	3.99	3.49	4.12
7	Total income	22.46	22.94	21.84	41.48
8	Farm expenses				
9	Feed purchased	5.81	5.58	6.12	10.40
10	Seed, fertilizer, chemicals	2.17	2.32	1.96	2.02
11	Depreciation and repairs	3.17	3.39	2.88	6.40
12	Labor	0.84	0.80	0.89	0.62
13	Medical and breeding	0.92	0.75	1.14	0.51
14	Car, Truck, Fuel, Hauling	1.92	1.95	1.88	2.29
15	Rent	1.01	0.98	1.05	1.62
16	Interest	0.75	0.62	0.93	1.10
17	Custom hire	1.32	1.15	1.55	1.90
18	Other expenses	2.49	2.31	2.73	4.83
19	Total Expenses	20.41	19.85	21.15	31.69
20	Profit per CWT	2.05	3.08	0.70	9.79
21	Net profit per farm	56,809	102,996	15,755	75,777

Dairy processing

There are six large scale dairy processors in Maryland processing almost 10 billion pounds of milk annually from farms in Maryland and the surrounding mid-Atlantic region. Dairy products from these processing plants are consumed in Maryland, and exported nationally and internationally. There are also ~35 on farm/small scale processing enterprises primarily for local sales.

Dairy processors have also faced difficult economic conditions as there is consolidation in the food processing sector and large retail grocery chains opening their own processing plants to supply dairy products for their stores.

Dairy statistics

Maryland Dairy Farm Numbers, Cow numbers, and Milk Production.

Year	Number of dairy farms	Number of dairy cows	Cows per farm	Milk sold (mill. lbs)	Milk pounds per cow
2003	710	77,000	108	1,177	15,286
2004	667	73,000	109	1,116	15,288
2005	649	71,000	109	1,143	16,099
2006	631	64,000	101	1,106	17,781
2007	582	58,000	100	1,051	18,121
2008	561	56,000	100	1,029	18,375
2009	555	54,000	97	1,004	18,255
2010	524	53,000	101	1,001	18,537
2011	505	52,000	103	970	18,654
2012	496	51,000	103	979	19,196
2013	482	50,000	104	972	19,440
2014	455	50,000	110	984	19,680
2015	443	49,000	111	980	20,000
2016	424	48,000	113	953	19,854
2017	411	48,000	117	948	19,750
2018	381	45,000	118	917	20,378
2019	348	43,000	124	832	19,349
2020	339	42,000	124	870	20,714
2021 est.	325	40,625	125	853	21,000

USDA National Agricultural Statisics Service

Attachment 2

Maryland Dairy Processors

ASTI ICE LLC	1752A APPLETON ROAD	ELKTON
BROOMS BLOOM DAIRY	1616 S FOUNTAIN GREEN RD	BEL AIR
BUTLER MANUFACTURING LLC	10711 RED RUN BLVD STE 113	OWINGS MILLS
CHESAPEAKE BAY DAIRY	4111 WHITESBURG RD	POCOMOKE
CLEAR SPRING CREAMERY	14322 ST PAUL RD	CLEAR SPRING
CLOVERLAND FARMS DAIRY	2701 LOCH RAVEN RD	BALTIMORE
CLOVER HILL DAIRY	27925 WOODBURN HILL RD	MECHANICSVILLE
CROSSROAD COMPANY LLC	208 S PULASKI ST	BALTIMORE
DAIRY MAID DAIRY LLC	259 E 7th ST	FREDERICK
DELITEFUL DAIRY	16230 LONG DELITE LN	WILLIAMSPORT
DUMSERS DAIRYLAND INC	501 S PHILADELPHIA AVE	OCEAN CITY
FRUMEX PALETAS	5921 MORAVIA PARK DRIVE, UNIT C-4	BALTIMORE
GEMMA GELATO	1088 TAFT ST	ROCKVILLE
ISLAND CREAMERY BERLIN	120 N MAIN ST	BERLIN
ITABERCO INC	1900 BAYARD ST STE 110	BALTIMORE
ITALIAN KITCHEN LTD	4521 KENILWORTH AVE	BLADENSBURG
KEYES CREAMERY	3712 ALDINO RD	ABERDEEN
KILBY CREAM	785 FIRETOWER RD	COLORA
LAKESIDE CREAMERY	20282 GARRET HWY	OAKLAND
LANCO DAIRY FARMS COOP LLC	14738 WARFORDSBURG ROAD	HANCOCK
MANY SWEETS LLC	1900 BAYARD ST	BALTIMORE
MARVA MAID / MAOLA LANDOVER	1805 SOUTH CLUB DR	LANDOVER
MARYLAND & VIRGINIA MILK PRODUCERS	8321 LEISHEAR RD	LAUREL
MISTY MEADOW FARM CREAMERY	14325 MISTY MEADOW RD	SMITHBURG
MOBY DICK HOUSE OF KABOB	3329 75TH AVE	HYATTSVILLE

NESTLE DREYERS ICE CREAM CO	9090 WHISKEY BOTTOM RD	LAUREL
NICE FARMS CREAMERY	25786 AUCTION ROAD	FEDERALSBURG
NORWOOD ICE CREAM & CANDY CO	7556 MAIN ST	SYKESVILLE
POTOMAC FARMS DAIRY	PO BOX 2189	CUMBERLAND
POTOMAC ICE CREAM LLC	19209 M CHENNAULT WAY	GAITHERSBURG
PRIGEL FAMILY CREAMERY	4851 LONG GREEN RD	GLEN ARM
QUEEN CITY CREAMERY & DELI LLC	108 HARRISON ST	CUMBERLAND
SACRED MOUNTAIN LLC DBA MOORENKO'S ICE CREAM	8810 BROOKVILLE ROAD	SILVER SPRING
SAPUTO DAIRY FOODS USA LLC	2711 N HASKELL AVE STE 3700	DALLAS
SCOTTISH HIGHLAND CREAMERY	314 TILGHMAN ST	OXFORD
SOUTH MOUNTAIN CREAMERY	8305 BOLIVAR RD	MIDDLETOWN
TAHARKA BROTHERS	3515A CLIPPER MILL RD	BALTIMORE
THE CHARMERY ICE CREAM	1700 W 41ST ST #400	BALTIMORE
THE SCOTTISH HIGHLAND CREAMERY	102-104 S MORRIS ST	OXFORD
TITO'S ICE CREAM	5351 46TH AVE	HYATTSVILLE
TOTALLY COOL INC	36-40 GWYNNS MILL CT	OWINGS MILLS
WOODBOURNE CREAMERY	28600 RIDGE RD	MOUNT AIRY
YORK CASTLE ICE CREAM CO INC	6771 MID CITIES AVE	BELTSVILLE