

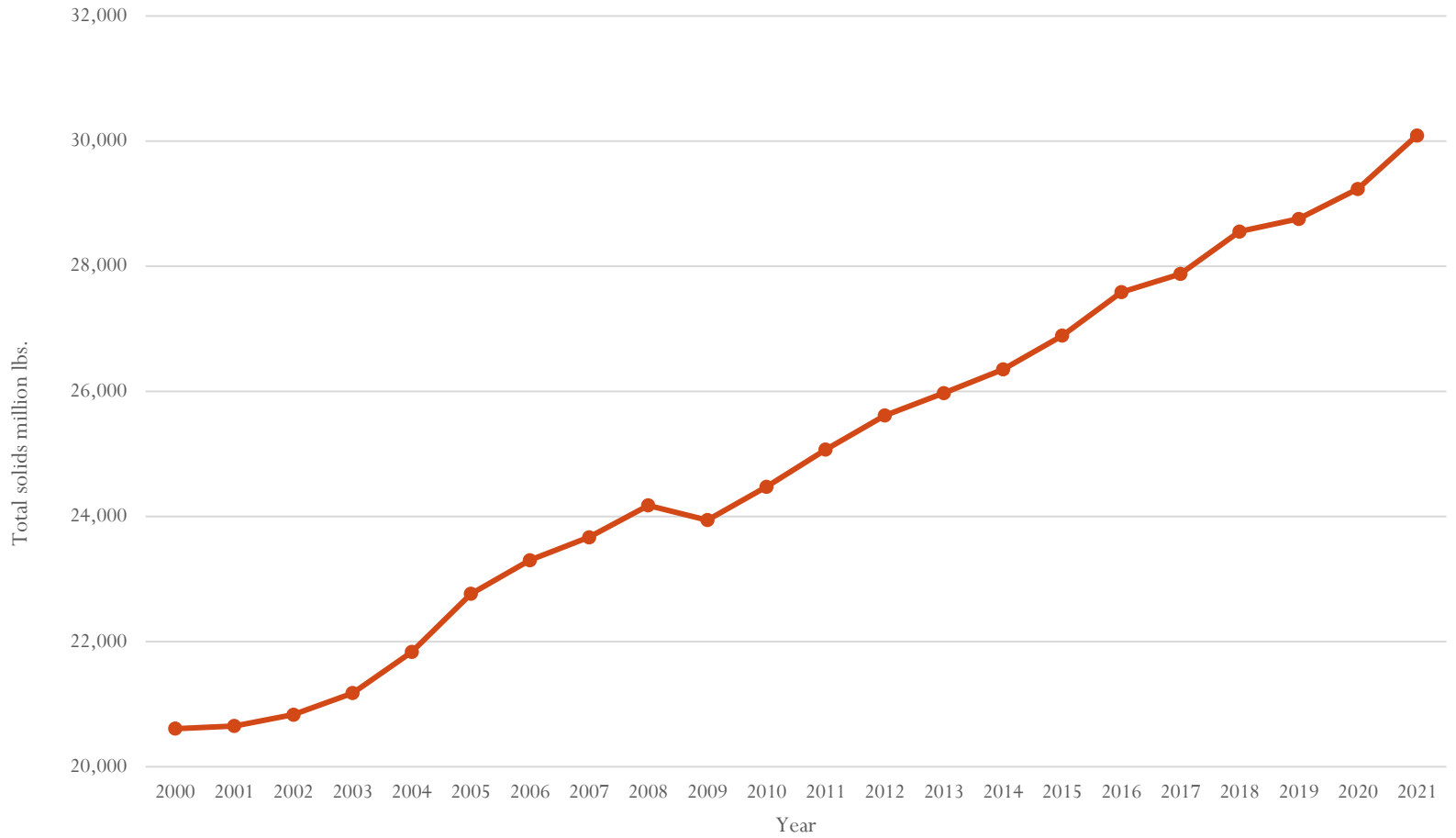
DAIRY ECONOMICS

Presented to
National Association of Dairy Regulatory Officials
Franklin, Tennessee
July 12, 2022
by
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THREE AREAS (Past and Current)

- DEMAND - how much and what dairy products are consumers purchasing.
- SUPPLY – how much milk are dairy farmers producing.
- PRICE – milk prices dairy farmers are receiving.

DAIRY DEMAND (2000-2021)



INCREASING DEPENDENCE on INTERNATIONAL MARKET

<u>Year</u>	<u>Domestic %</u>	<u>Export %</u>
2000	96.1%	3.9%
2005	92.7%	7.3%
2010	87.9%	12.1%
2015	86.5%	13.5%
2016	86.3%	13.7%
2017	85.7%	14.3%
2018	84.7%	15.3%
2019	85.9%	14.1%
2020	84.3%	15.7%
2021	83.2%	16.8%

ANNUAL DEMAND CHANGE

Past 5 years

Year	Domestic	Export	Total
	(percent)		
2017	0.4%	5.1%	1.1%
2018	1.2%	9.9%	2.4%
2019	2.2%	-7.2%	0.7%
2020	-0.2%	12.8%	1.7%
2021	1.6%	10.3%	2.9%
Average	1.0%	6.7%	1.8%

HOW is the MILK BEING UTILIZED

Product	2000	2020
	(Percent of Milk Solids)	
Cheese & Whey	36.5%	45.3%
Fluid Milk	35.1%	22.3%
Frozen Products	8.2%	5.9%
Dry Milk	6.7%	11.1%
Butter	6.0%	7.6%
Evaporated & Condensed Milk	2.5%	2.4%
Source: USDA-ERS		

LESS FLUID MILK PLANTS (Southeast Federal Orders)

Federal Order	2000	Today
Appalachian	26	16
Florida	12	8
Southeast	32	16
Total	70	40

DAIRY PRODUCT CONSUMPTION CHANGING

Year	All Dairy	Fluid Milk	Am. Cheese	Other Cheese	Butter	Ice Cream	Yogurt
	(pounds per capita)						
2000	590	196	12.7	16.9	4.5	22.7	6.5
2005	603	185	12.6	18.7	4.5	21.1	10.3
2010	603	177	13.3	19.4	4.9	20.4	13.4
2015	628	155	14.0	21.1	5.6	19.4	14.4
2016	644	153	14.4	22.1	5.7	19.3	13.7
2017	643	149	15.1	21.9	5.7	19.0	13.7
2018	644	145	15.4	22.6	6.0	18.6	13.6
2019	652	141	15.5	22.8	6.2	19.1	13.4
2020	655	141	15.6	22.6	6.3	19.6	13.8

TODAY

Higher Retail Prices and Demand?

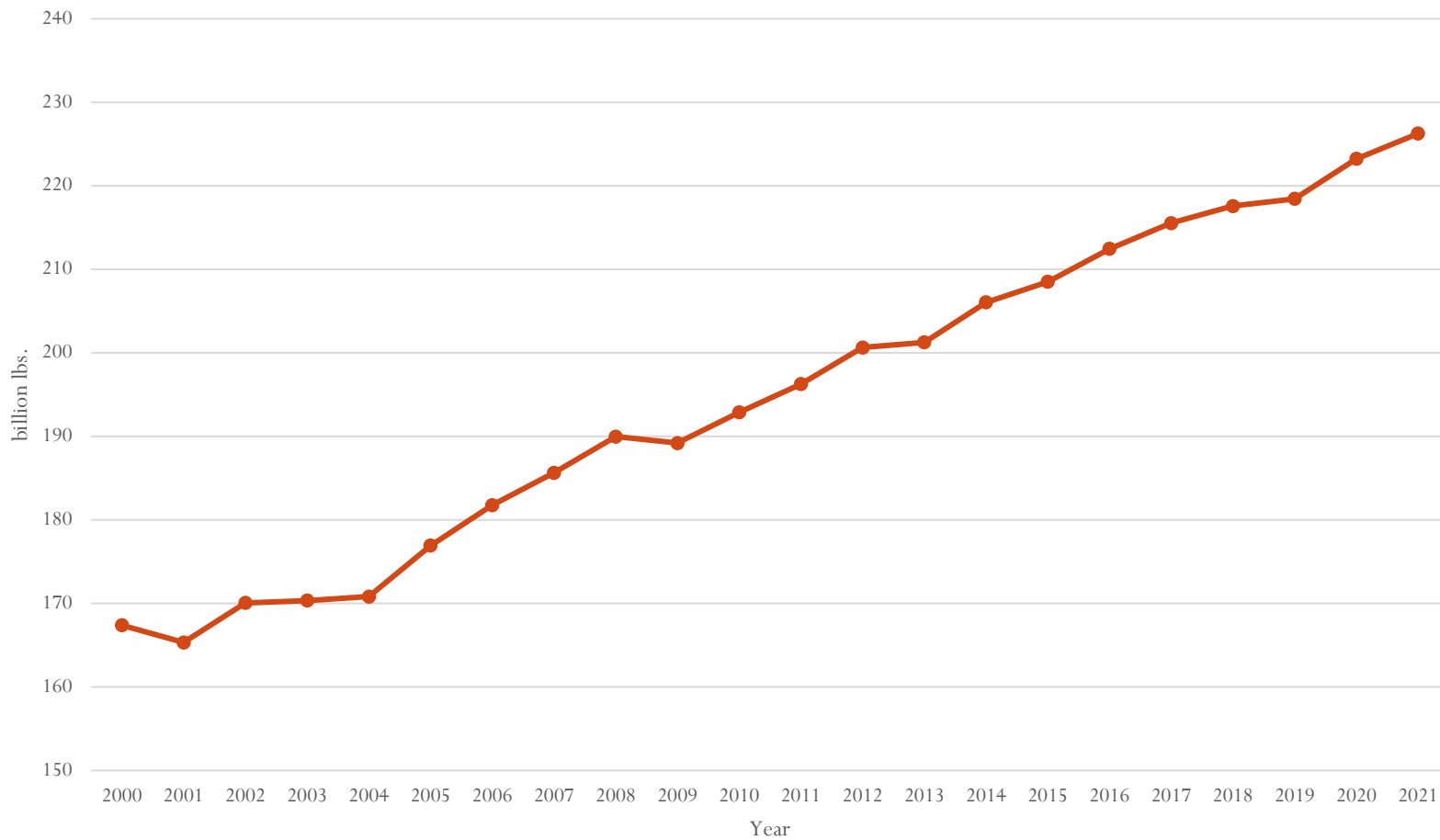
Month	2021	2022	Difference
	(\$/gallon)		
January	\$3.61	\$3.82	+\$0.21
February	\$3.59	\$3.88	+\$0.29
March	\$3.59	\$4.02	+\$0.43
April	\$3.58	\$4.21	+\$0.63
May	\$3.60	\$4.33	+\$0.73
June	\$3.69	\$4.41	+\$0.72
Source : USDA Whole Milk National Avg.			

TODAY

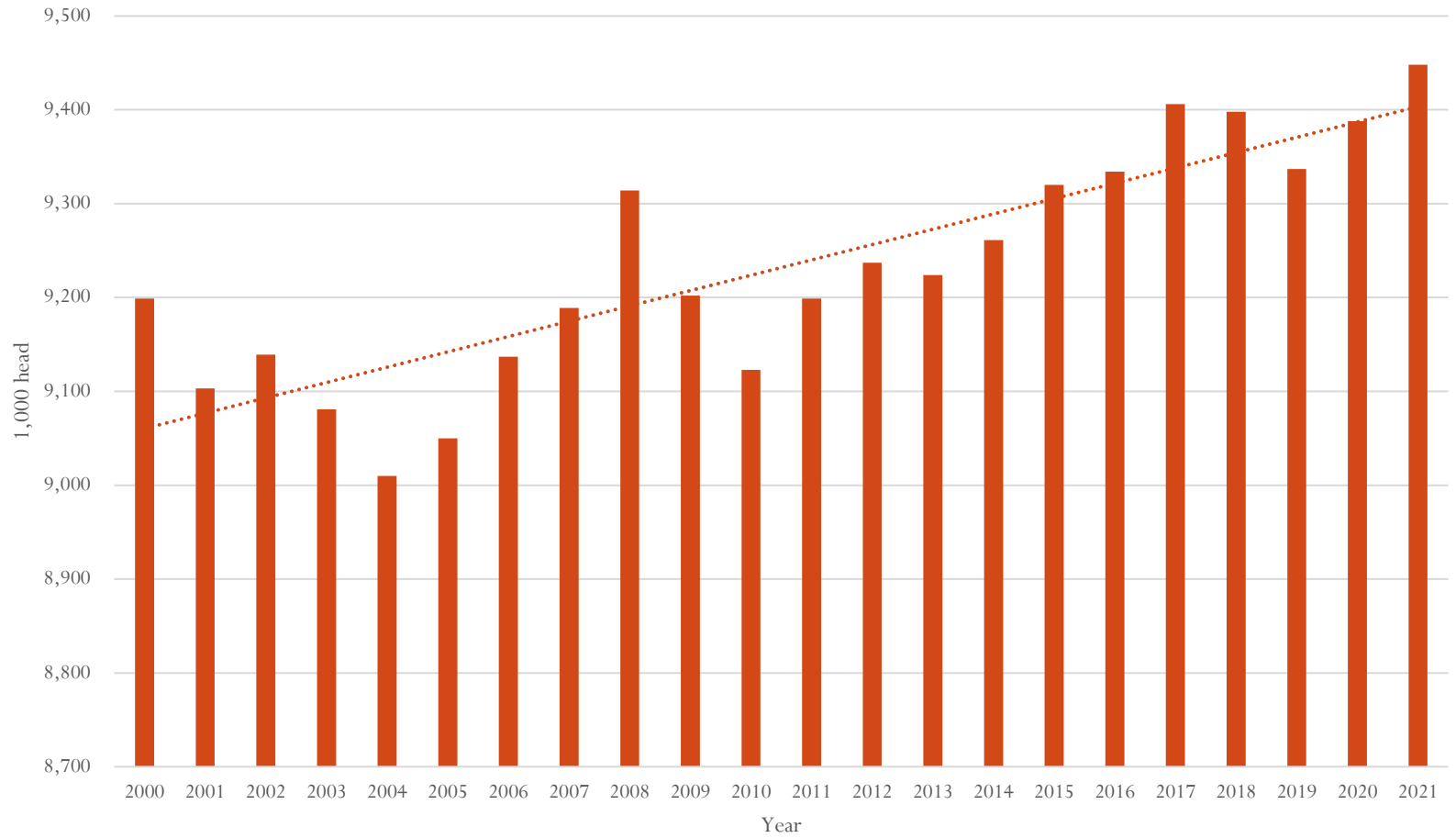
DEMAND WEAKENING

Month-2022	Domestic	Export	Total
	(Change from Previous Year)		
January	3.4%	-2.3%	2.6%
February	0.3%	-1.0%	0.0%
March	-1.5%	-1.0%	-1.4%
April	-1.2%	-0.3%	-0.9%

MILK PRODUCTION (2000-2021)



DAIRY COWS



MILK PRODUCTION PER COW

Year	Annual Milk Per Cow (lbs.)	Milk Fat (%)	Milk Protein (%)	Estimated Cheddar Cheese lbs. per cwt.
1980	11,891	3.65		
1990	14,782	3.65		
2000	18,197	3.69	3.02	10.06
2005	19,550	3.66	3.03	10.03
2010	21,142	3.66	3.05	10.06
2015	22,372	3.74	3.12	10.29
2019	23,395	3.90	3.16	10.60
2020	23,777	3.92	3.17	10.65
2021	23,948	3.97	3.21	10.78

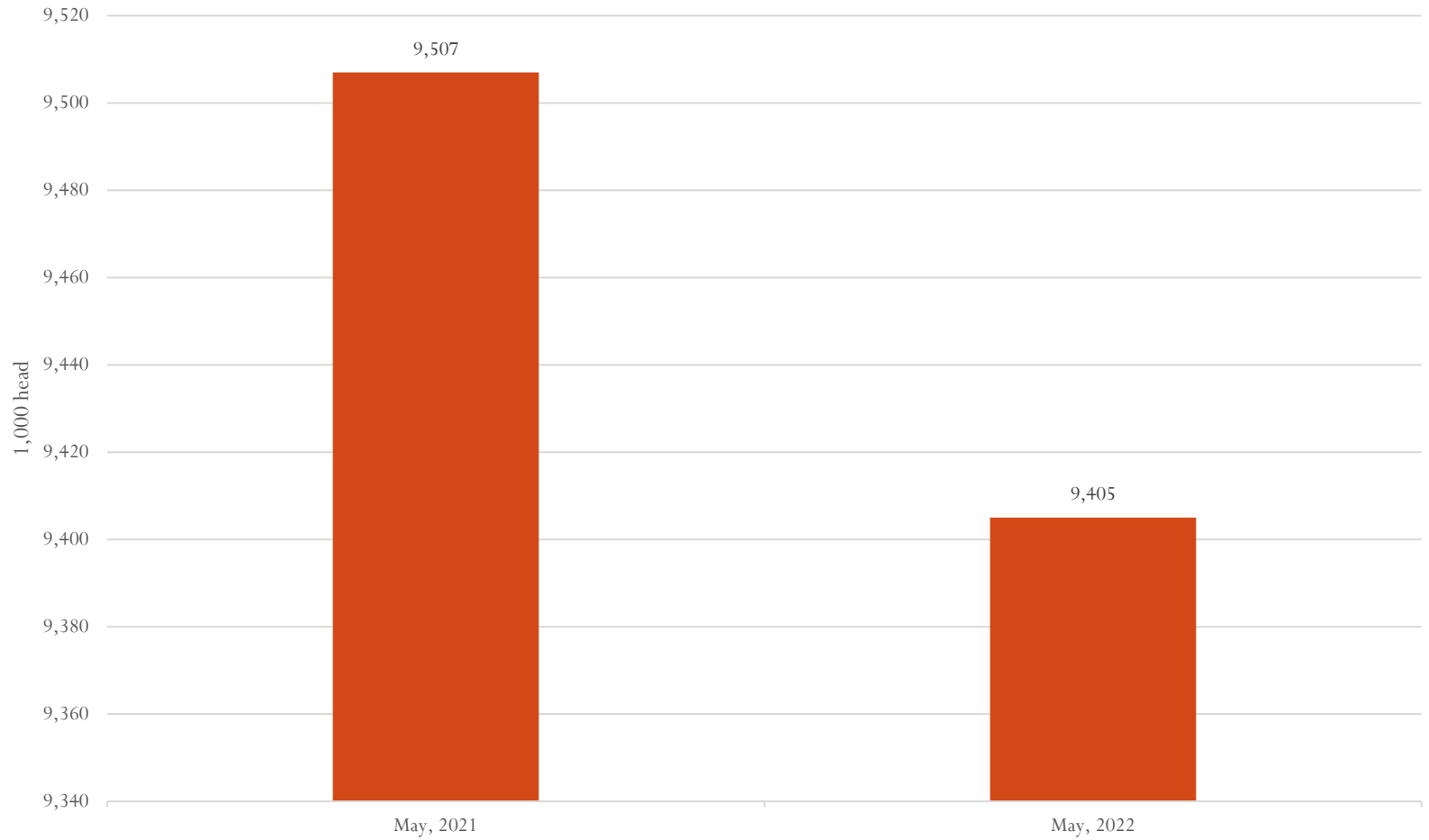
MILK LOCATION

Area	2016	2021
	(Percent of U.S. Milk Production)	
Midwest	31.7%	31.7%
California	19.0%	18.5%
Northeast	14.7%	13.6%
Northwest	14.6%	15.2%
Southwest	11.3%	12.8%
Southeast	4.4%	3.6%
Plains	4.2%	4.6%

NUMBER of LICENSED DAIRY FARMS

Year	United States	Southeast States	Tennessee
1995	111,932 (Mfg. 18,757)	8,604 (Mfg. 624)	1,544 (Mfg. 218)
2000	82,937	6,105	999
2005	64,540	4,290	710
2010	53,132	3,260	490
2015	43,584	2,540	350
2020	31,652	1,650	180
2021	29,858	1,495	160

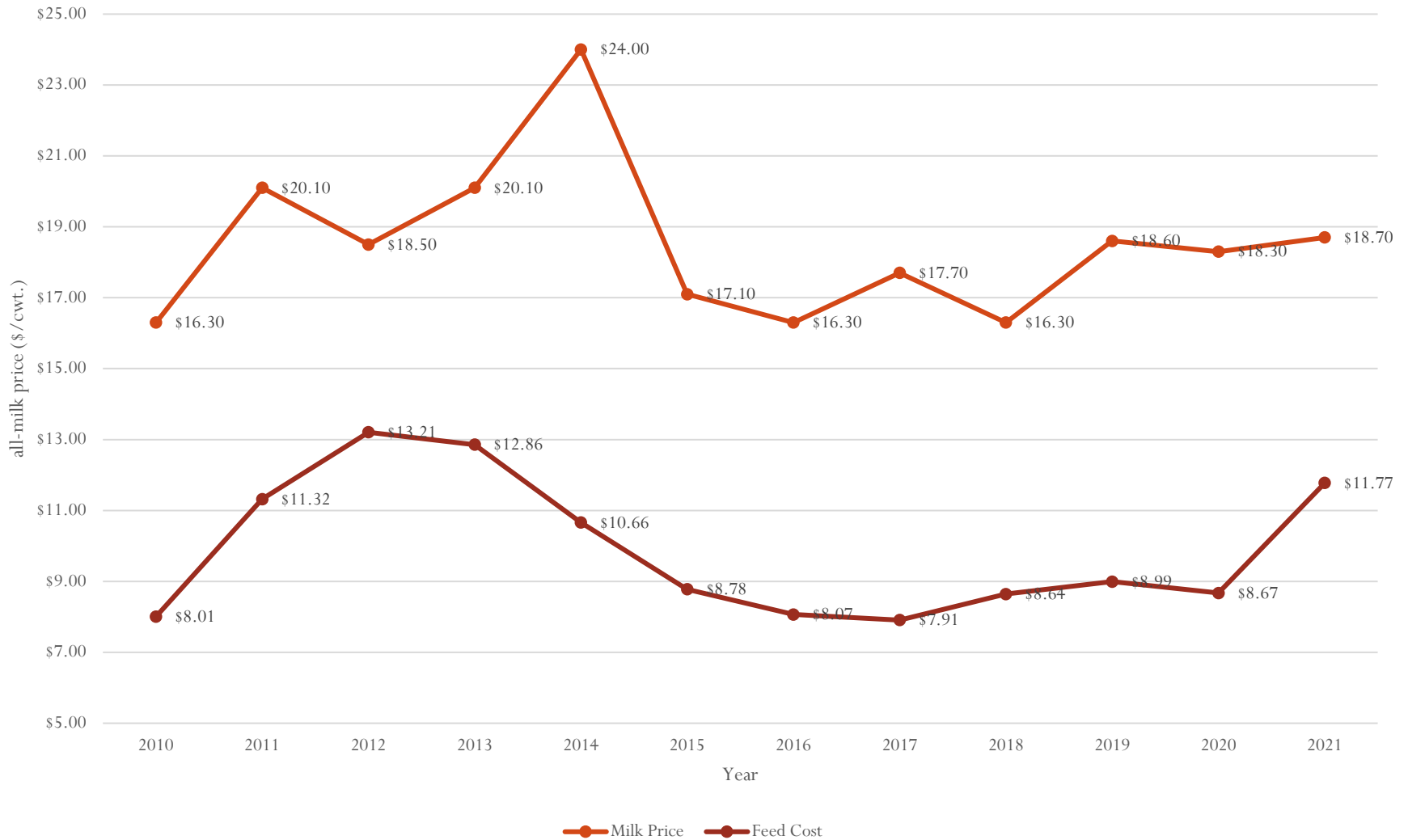
100,000 less Dairy Cows TODAY Versus A YEAR AGO



TODAY

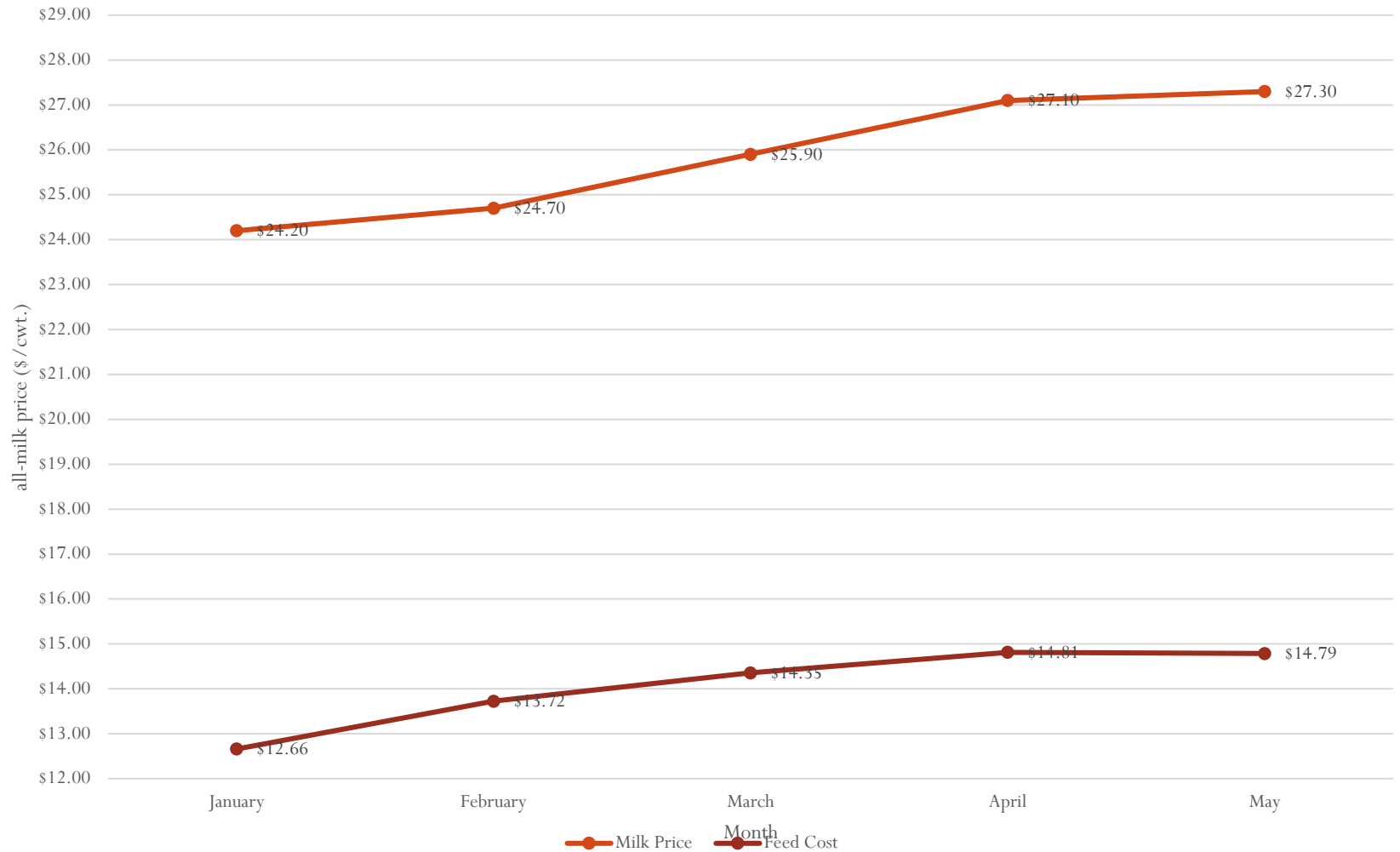
- Through May, seven (7) consecutive months of lower milk production.
- Through May, production 1% lower than last year.
- 2001 and 2009, only time so far in 21st century milk production lower than previous year.

ALL MILK PRICE vs. FEED COST (2010-2021)



ALL MILK PRICE vs. FEED COST

January-May 2022



Looking Ahead

- Do not expect any significant increase in dairy cow numbers. Any growth in milk production will come from more milk per cow.
- Demand for dairy products, both domestic and export, key factor impacting milk prices.
- Continuing decline in number of dairy farms. Within ten years – 10,000 or less dairy farms.
- Dairy farms and cheese plants, converging to center of the U.S. From Great Lakes Region to Eastern South Dakota and Western Iowa to Western Kansas to Panhandle of Texas.
- Consumers will continue to “eat” more and “drink” less dairy products.