

CDE DAIRY MARKETS & MANAGEMENT UPDATE

All prices — APRIL 13, 2022 — except where noted

Heifer Inventory: There are many factors that influence dairy markets. Sometimes those factors are not as obvious as others. The most obvious factors, of course, are milk supply and demand. The most recent drastic example of this relationship was experienced in 2019 when the pandemic hit and virtually all food service was shut down, creating a huge shift in demand to retail that sent Class III and IV milk prices tumbling to their lowest since 2009. Subsequently, the Farmers to Families Food Box Program created huge demand for cheese and sent Class III skyrocketing, leaving Class IV behind by sometimes as much as \$10 per cwt less. Other factors are not as easily seen or defined and take longer for the effects to materialize. Heifer inventory is one of these factors.

The advent of gender selected semen and the commercialization of sales in the early 2000s was seen by many as a detriment to milk price because the result would be a flood of heifers that would eventually mature, calve, and enter the milking herd. I am sure sexed semen has influenced heifer inventories at times. However, over the last 6 years, the general trend has been a shrinking heifer herd. This has likely been driven more by extended periods of poor milk prices and the declining value in heifers coupled with the expense to raise them from birth to first calving.

With fewer heifers needed by U.S. dairy operations, another management tool has arisen that can also affect the dairy replacement inventory. The practice of breeding dairy animals to beef bulls has been around for several years but has really taken off since 2017. Breeding cows to beef bulls can be a tool to keep reproductive performance up and improve genetic advancement while keeping heifer numbers in check. Candice Dotterer White recently shared how they have been integrating beef into their herd in the Center's "Cow-Side Conversations" podcast at www.centerfordairyexcellence.org/podcast.

When you look at the data, the U.S. heifer herd has been declining since a high of 4.8 million head in 2016. The U.S. heifer inventory has decreased 4.3% (-209,000 head) since 2016 to 4.6 million head as of January 1, 2022. The reduction in the availability of heifers this year is seen

Prices change daily. This market information is an example for educational purposes. The market data below are compiled weekly by Farmshine, via CME & USDA reports

as a limiting factor in the national dairy industry's ability to rapidly increase production that normally occurs when milk price is increasing, as it is expected to do through much of this year.



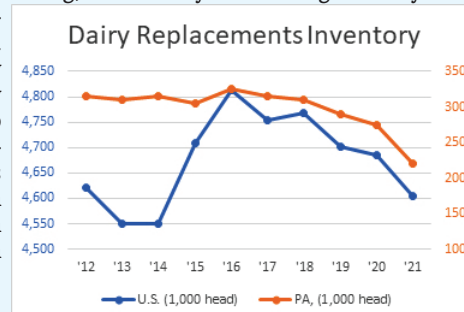
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During the same timeframe, the same trend has existed within Pennsylvania but much more drastically. Over the last 6 years, heifer inventory across the state has fallen 32% (-105,000 head) to 220,000. In addition to the reasons explained above, cow numbers across the Commonwealth have also been decreasing. The reduction of cow numbers is probably a large contributor to the reduced heifer inventory in Pennsylvania that is compounded by changing heifer management. An alarming way to look at the current national and state heifer inventory trend is to see that Pennsylvania's heifer inventory decline is responsible for nearly half of the total decline across the country.

For many years, the goal was to have a replacement heifer for each mature cow. This is no longer the case. There is no magic ratio for each dairy operation as to how many heifers are needed to meet individual herd size goals. It depends on several factors such as dairy cow cull rate, calf mortality rate, and expansion plans. If you do not know how many heifers you need to be raising, chances are you are raising too many heifers and possibly cutting into cash flow.

The stud company you work with likely has someone who can help you determine heifer numbers needed, or you can contact your Penn State Dairy Extension agent for help.



CME DAILY FUTURES & OPTIONS TRADING — APRIL 13, 2022 AT THE CLOSE

	APR-22	MAY-22	JUN-22	JUL-22	AUG-22	SEP-22	OCT-22	NOV-22	DEC-22	JAN-23	FEB-23	MAR-23	TREND			
*AVG = Average basis for North- East and Mid-East	CLASS III MILK FUTURES (\$/CWT) vs. wk ago: Firm to \$0.35 higher across the board, except Feb. 2023 \$0.09 lower. 12-Month Avg. 23.74 ↑↑															
	24.22	25.17	25.10	24.90	24.49	24.40	23.95	23.60	23.31	22.41	21.81	21.46	↑↑			
	CLASS IV MILK FUTURES (\$/CWT) vs. wk ago: \$0.05-0.20 higher across the board; except Jan. 2023 \$0.05 lower 12-Month Avg. 24.31 ↑↑															
	25.25	25.00	25.02	25.07	25.14	25.10	24.75	24.35	24.00	23.10	22.70	22.25	↑↑			
	----- HIGHEST & LOWEST DAILY SETTLE PRICE FOR CL. III CONTRACTS OVER LIFE OF CONTRACT & MONTH/DATE OF OCCURRENCE -----															
*MARGIN = Milk Price over Feed Cost per cwt. YELLOW = payment triggered	24.26 03/22	25.17 04/22	25.10 04/22	24.90 04/22	24.49 04/22	24.40 04/22	23.95 04/22	23.80 03/22	23.43 03/22	23.43 03/22	22.20 03/22	22.08 03/22				
	11.20 04/20	11.12 04/20	11.20 05/20	11.20 04/20	11.12 05/20	11.20 05/20	11.12 04/20	11.31 04/20	11.20 05/20	11.20 05/20	11.20 05/20	11.72 05/20				
	CLASS III MILK (\$/CWT) OPTIONS — PUTS — Daily Strike Price / Premium															
	24.25 0.11	25.25 0.67	25.00 1.01	25.00 1.33	24.50 1.52	24.50 1.46	24.00 1.58	23.50 1.54	23.25 1.60	22.50 1.76	21.75 1.71	21.50 1.79				
	MILK BASIS (\$/CWT) — PA BASIS & 2016-19 AVG OF PA/NY/VT/OH — YOUR INDIVIDUAL BASIS WILL VARY (MAILBOX - CLASS 3)															
	PA 2.29	1.82	1.58	0.99	1.03	0.95	0.79	0.60	0.79	1.17	0.62	1.53				
	*AVG 2.15	1.66	1.45	1.25	1.31	1.15	0.67	0.74	1.38	0.85	1.67	2.55				
	DMC OFFICIAL GROSS MARGINS per cwt. (USDA All-Milk, com/alfalfa & Ill. soybean, feed for all classes of dairy cattle on the farm) Updated with NEW prem. alfalfa feed cost															
	DMC	DEC-20	JAN-21	FEB-21	MAR-21	APR-21	MAY-21	JUN-21	JUL-21	AUG-21	SEP-21	OCT-21	NOV-21	DEC-21	JAN-22	*FEB-22
		8.54	6.90	5.97	6.26	6.77	6.67	6.03	5.47	5.03	6.69	8.54	9.14	9.53	11.54	*10.98 ↑↑

	U.S. AVG MILK MARGIN per 100 lbs milk based on 75-lb herd avg & USDA's All-Milk price, USDA-reported com & alfalfa hay & Ill. soybean prices (lactating feed only)																
	OCT-20	NOV-20	DEC-20	JAN-21	FEB-21	MAR-21	APR-21	MAY-21	JUN-21	JUL-21	AUG-21	SEP-21	OCT-21	NOV-21	*DEC-21	*JAN-22	
	14.44	15.47	12.51	11.25	10.51	10.66	11.31	11.53	10.77	10.19	9.79	10.94	12.46	14.11	*13.55	*15.65	↑↑
	PA AVG MILK MARGIN per 100 lbs milk based on 75-lb herd average and USDA's PA All-Milk price, USDA com & alfalfa hay & Buff., NY soybean prices (lactating feed only)																
	OCT-20	NOV-20	DEC-20	JAN-21	FEB-21	MAR-21	APR-21	MAY-21	JUN-21	JUL-21	AUG-21	SEP-21	OCT-21	NOV-21	*DEC-21	*JAN-22	
	10.91	11.31	12.36	10.53	8.56	8.15	9.24	9.37	9.76	10.20	10.04	11.07	12.26	12.78	*14.70	*16.98	↑↑

CORN FUTURES (\$/BU)													TREND
MAY-22	JUL-22	SEP-22	DEC-22	MAR-23	MAY-23	JUL-23	SEP-23	DEC-23	MAR-24	MAY-24	JUL-24		
7.834	7.780	7.470	7.356	7.380	7.382	7.340	6.830	6.604	6.666	6.684	6.644	↑↑	
----- WEEK AGO -----													
7.564	7.470	7.156	7.046	7.072	7.072	7.032	6.512	6.284	6.356	6.330	5.820		

SOYMEAL FUTURES (\$/TON)													TREND
MAY-22	JUL-22	AUG-22	SEP-22	OCT-22	DEC-22	JAN-23	MAR-23	MAY-23	JUL-23	AUG-23	SEP-23		
458.2	454.3	444.2	432.5	421.9	421.0	416.6	408.1	404.4	403.6	397.1	389.7	↑↑	
----- WEEK AGO -----													
461.8	454.5	444.0	430.7	417.3	415.3	410.9	401.1	397.6	396.6	391.7	383.7		

* = NEW FEED = \$/CWT. IOFC = \$/COW	PA MILK MARGIN & IOFC—LATEST PSU VALUES — *JAN. 2022				CME DAIRY CASH-SETTLED FUTURES (\$/LB) 04/13/22										SPOT CASH TREND
	FEED COST (\$/CWT milk)	IOFC (\$/COW @ 75 lbs milk)	PA MILK MARGIN (\$/CWT milk)		APR	MAY	JUN	JUL	AUG	SEP	OCT				04/13/22
	*JAN (estimated)	*7.94 ↓↓	*12.74 ↑↑	*16.98 ↑↑	NFDM	1.810	1.820	1.825	1.850	1.862	1.860	1.827	↑↑	1.8200	↑↑
	PREV MO	8.01	11.03	14.70	WHEY	0.748	0.695	0.680	0.660	0.652	0.655	0.638	↑↑	0.6350	↑↑
	YR AGO	8.74	6.42	8.56	BUTTER	2.776	2.765	2.755	2.720	2.703	2.689	2.660	↑↑	2.7750	↑↑
					CHEESE	2.262	2.390	2.405	2.380	2.355	2.331	2.335	↑↑	See Below	
	CME SPOT CHEESE: BARRELS 2.3800 / 40 LB BLOCKS 2.3300 ↑↑ / ↑↑														

* = NEW ANNOUNCED FEDERAL ORDER PRICES (\$/CWT)													* CURRENT FEDERAL ORDER VALUES (\$/LB) * = NEW			
*CL I ADV	*CL II	*CL III	*CL IV	*ALL-MILK-U.S.	*ALL-MILK-PA	WEIGHTED AVG. 4-WK		MAR. 1-26, 2022		*MAR. 2022 COMPONENTS						
*24.38 (APR)	*24.76 (MAR)	*22.45 (MAR)	*24.82 (MAR)	*24.70 (FEB)	*25.70 (FEB)	PRODUCT	VALUE	MAKE ALLOW	NET	*PROT	2.7182	↑↑				
				4.18F	4.11F	*CHEESE	2.0548	0.2003	1.8545	↑↑	*B.FAT	3.0935	↑↑			
						*BUTTER	2.7260	0.1715	2.5545	↑↑	*N.FAT	1.6113	↑↑			
						*NFDM	1.7954	0.1678	1.6276	↑↑	*OTHER	0.6131	↑↑			
						*DRYWHEY	0.7943	0.1991	0.5952	↑↑						

CATTLE - DAIRY PURPOSES (\$/HD) NORTHEAST (Avg. April 6, 2022 sale New Holland, PA)													FED HOLSTEIN STEERS (\$/CWT LIVELWEIGHT)			
COWS: Fresh Bred Springing				HEIFERS: Bred Springing Beef x				Open:	300-600 lbs	Beef X	600-900 lbs	Beef X	900-1100 lbs	BULLS (1000+ lbs)		
1450	1285	1475		1275	1400	N/A		850	N/A	860	N/A	910	1375			
----- WEEK AGO COMPARISON -----																
1325	1200	1500		1200	1375	1000		650	300	860	N/A	N/A	1000			
Avg. of prices reported by USDA Market News for PA Auction Markets Apr. 7-12, 2022																
CULL MARKET COWS (\$/CWT LIVELWEIGHT)																
Premium White	Breakers	Boners	Lean	BULL CALVES: No. 1 & 2, 90-130 lbs												
86.15 ↓↓	80.75 ↓↓	69.35 ↓↓		70-85 lbs				115.00	116.00	175.00	300	120.00	↓↓			
								165.00	460.00	185.00	400	90.00	↓↓			