

## Overview

*Recent trends in production and herd sizes may be pointing toward a fundamental change taking place in the collective calculus of producing milk, a shift from*

*repeated spurts of dairy herd and output expansion in the face of persistently low milk prices since 2014.*

*USDA data through September shows the fastest four-month drop in milk and milk solids production growth in two decades, a dramatic turnaround from spring months, when cow numbers and production were growing the fastest in more than a decade. This trend has continued in October. The unwinding of dairy cow expansion over the same period has equalled that of the great collapse of cow numbers at the height of the 2009 milk price debacle. Media reports of herd dispersals, particularly among the larger herds that have driven previous expansions, supports this thesis. High feed costs, other cost inflation and labor availability this year may also be playing a role in this turn of events.*

*Amid this backdrop, milk prices nationally this year have oscillated around the low \$18/cwt range and thus have not yet reflected any unusual developing supply tightness. Cheese production continues to claim much of the available milk increase, keeping a damper on cheddar prices. But production of other key dairy products that affect milk prices has been shrinking and their prices rising, buoyed by rapid escalation in world prices. Milk production and exportable supplies of dairy products have tightened considerably in Europe and Oceania in recent months, and import demand remains strong. Fourth-quarter data will be closely watched, with the sense that each month could shed a lot more light on this developing situation.*

## Commercial Use of Dairy Products

Domestic commercial use of most dairy products, as well as milk in all dairy products, was not particularly robust during the

third quarter of 2021, except for butter and yogurt. Continued strong export growth improved total use of cheese, compared with domestic use only, but growth in total use still fell short of increased cheese production.

Domestic Commercial Use	Jul–Sept 2021	Jul–Sept 2020	2020–2021 Change	Percent Change
		(million pounds)		
Total Fluid Milk Products	10,744	11,088	-344	-3.1%
Yogurt	1,198	1,142	56	4.9%
Butter	535	486	49	10.1%
American-type Cheese	1,299	1,317	-18	-1.4%
All Other Cheese	1,959	1,927	32	1.7%
Total Cheese	3,258	3,244	14	0.4%
Dry Skim Milk	197	245	-48	-19.8%
All Products (milk equiv., milkfat basis)	56,239	55,887	352	0.6%
All Products (milk equiv., skim solids basis)	45,100	45,410	-310	-0.7%
All Products (milk equiv., total solids basis)	48,487	48,576	-88	-0.2%

## U.S. Dairy Trade

The 17.8 percent of total milk solids production the United States exported during July–September was the highest such volume of exports during the same period ever recorded. The next highest was 17.1 percent during 2013, while the highest for a full year was 16.0 percent last year. July–September exports have historically been considerably higher than full year exports by this measure, but this pattern has changed over the past half-decade, keeping calendar year 2021 exports on track to exceed 2020 full-year exports, by perhaps as much as an entire percentage point.

Recently-revised import data from USDA shows July–September butter, cheese, and casein imports ahead of same-period imports in 2020 by low double-digit percentages, while MPC imports were down from a year earlier by a similar amount, but total imports were little changed as a percent of U.S. milk solids production.

## Milk Production

Revisions by USDA's National Agricultural Statistics Service to third quarter data show an even faster reduction in milk production and cow numbers than previous reports had indicated. U.S. national milk production was 4.7 percent higher than a year earlier in May but essentially flat over a year ago in September and down by half a percent in October. This market-driven drop was almost as dramatic as the March-to-May reduction effected by the operation of stringent cooperative base plans in the onset months of the pandemic. The cow-number trend is similar. In June, U.S. milk cow numbers were 148,000 higher than a year earlier, as large a one-year herd buildup as has occurred in at least two decades – but by September, the year-over-year numbers were up only 19,000 head and were down by 14,000 in October. Annual growth in national average milk production per cow was 3 percent in May but slightly negative in September and October. And national milk solids production was 5.5

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U.S. Dairy Exports	Jul–Sept 2021	Jul–Sept 2020	2020–2021 Change	Percent Change
	(metric tons)			
Butter	9,895	5,162	4,733	92%
Anhydrous Milk Fat / Butteroil	6,236	1,369	4,867	356%
Cheddar Cheese	15,951	10,913	5,038	46%
American–type Cheese	16,036	10,979	5,057	46%
All Other Cheese	91,444	77,733	13,711	18%
Total Cheese	107,480	88,712	18,768	21%
Dry Skim Milk	221,999	205,597	16,402	8%
Whole Milk Powder	9,601	8,062	1,539	19%
Dry Whey	53,304	58,575	-5,270	-9%
Whey Protein Concentrate/Isolate	53,729	52,235	1,493	3%
Lactose	94,589	91,807	2,782	3%
Percent of U.S. Milk Solids Exported	17.8%	16.4%	1.4%	9%

  

U.S. Dairy Imports	Jul–Sept 2021	Jul–Sept 2020	2020–2021 Change	Percent Change
	(metric tons)			
Butter	13,604	11,807	1,797	15%
Cheese	51,016	43,476	7,540	17%
Dry Skim Milk	116	191	-75	-39%
MPC (all protein levels)	9,799	12,045	-2,246	-19%
Casein	15,713	13,848	1,865	13%
Percent of U.S. Milk Solids Imported	3.3%	3.2%	0.1%	3%

**Milk Production** *from page 2*

percent higher than a year ago in May but just 0.7 percent above 2020 in September. On a state basis, milk production growth was either negative or dropping, or both, in all but a few states in September.

## Dairy Products

The rapid easing in milk and milk solids production over the past two quarters has shown up in lower production than a year ago of most key dairy products except cheese. Production growth of other than American-type cheese has dropped from 9.6 percent in April to 2.2 percent in September, but American-

type cheese production annual growth has risen during the months of the third quarter, to 5.1 percent in September.

## Dairy Product Inventories

This year's milk and dairy product production growth trends are, in turn, reflected in dairy product inventory levels. Stocks of major dairy products except cheese continued to drop from a month earlier in September, both in actual volume and in days of total commercial use in stock. Inventories of other than American-type cheese were up slightly in September but were below recent trends in stock level indicators. American-type cheese stocks, on the other hand, are becoming increasingly excessive by these same indicators.

Milk and Dairy Products Production	Jul–Sept 2021	Jul–Sept 2020	2020–2021 Change	Percent Change
<b>Milk Production</b>				
Cows (1,000 head)	9,451	9,380	71	0.8%
Per Cow (pounds)	5,913	5,908	5	0.1%
Total Milk (million pounds)	55,880	55,419	461	0.8%
Total Milk Solids (million pounds)	7,155	7,037	117	1.7%
<b>Dairy Products Production</b>		(million pounds)		
<b>Cheese</b>				
American Types	1,379	1,330	49	3.7%
Cheddar	957	949	8	0.8%
Italian Types	1,455	1,370	84	6.2%
Mozzarella	1,135	1,092	43	4.0%
Total Cheese	3,431	3,306	125	3.8%
Butter	442	455	-13	-2.8%
<b>Dry Milk Products</b>				
Nonfat Dry Milk	402	440	-38	-8.5%
Skim Milk Powder	176	212	-36	-17.1%
Dry Whey	233	238	-5	-2.0%
Whey Protein Concentrate	122	121	2	1.5%

Dairy Product Inventories	Sept 2021	Aug 2021	Sept 2020	2020–2021 Change
		(million pounds)		
Butter	324	363	344	-6%
American Cheese	844	827	773	9%
Other Cheese	614	606	581	6%
Dry Skim Milk	253	294	248	2%
Dry Whey	64	68	80	-20%

## Dairy Product and Federal Order Class Prices

Monthly average survey prices for all NDPSR dairy products moved up in October from a month earlier. The change in monthly barrel cheese prices was particularly pronounced, as it reflected the strong upsurge in daily CME spot market prices that ran through the third week in October. Due to the lag between the CME and the NDPSR, the subsequent plunge in the CME barrel cheese prices will be reflected in

the November NDPSR price. Federal order prices moved up in all classes, reflecting these product price movements.

The difference in monthly retail prices reported for October by the Bureau of Labor Statistics for whole and lowfat fluid milk was its highest since BLS resumed reporting monthly retail prices for lowfat fluid milk in April 2018. Whole milk and butter prices showed the largest retail price gains in October, but dairy product price inflation continues to lag well behind inflation in the broader economy. The annual rise in the overall Consumer Price Index was 6.2 percent in

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Dairy Product and Federal Order Prices	Oct 2021	Sept 2021	Oct 2020	2020–2021 Change
<b>NDPSR Dairy Product Prices</b>	(per pound)			
Butter	\$1.775	\$1.773	\$1.525	\$0.250
Cheddar Cheese	\$1.770	\$1.641	\$2.292	-\$0.522
40-Pound Blocks	\$1.807	\$1.776	\$2.569	-\$0.762
500-Pound Barrels	\$1.701	\$1.487	\$1.964	-\$0.263
Nonfat Dry Milk	\$1.360	\$1.282	\$1.067	\$0.293
Dry Whey	\$0.545	\$0.534	\$0.348	\$0.197
<b>Federal Order Class Prices for Milk</b>	(per hundredweight)			
Class I Mover	\$17.08	\$16.59	\$15.20	\$1.88
Class II	\$17.08	\$16.89	\$13.63	\$3.45
Class III	\$17.83	\$16.53	\$21.61	-\$3.78
Class IV	\$17.04	\$16.36	\$13.47	\$3.57
<b>Retail Dairy Product Prices</b>				
Fluid Whole Milk (per gallon)	\$3.663	\$3.585	\$3.448	\$0.215
Lowfat Fluid Milk (per gallon)	\$3.187	\$3.165	\$3.017	\$0.170
Cheddar Cheese (per pound)	\$5.396	\$5.387	\$5.611	-\$0.215
Butter (per pound)	\$3.652	\$3.568	\$3.570	\$0.082

Milk and Feed Prices	Sept 2021	Aug 2021	Sept 2020	2020–2021 Change
<b>Producer Prices</b>				
All Milk (per cwt.)	\$18.40	\$17.70	\$17.90	\$0.50
<b>Feed Prices</b>				
Corn (per bushel)	\$5.45	\$6.32	\$3.41	\$2.04
Soybean Meal (per ton)	\$344	\$358	\$321	\$23
Alfalfa Hay (per ton)	\$227	\$222	\$182	\$45
DMC Feed Cost (per cwt.)	\$11.47	\$12.45	\$8.50	\$2.97
DMC Margin (per cwt.)	\$6.93	\$5.25	\$9.40	-\$2.47

## Dairy Product and Federal Order Class Prices *from page 4*

October, while the CPI for all food and beverages was up 5.1 percent. But dairy rose just 1.8 percent, driven heavily by a 4.3 percent annual rise in the CPI for fresh whole milk.

## Milk and Feed Prices

The September margin for the Dairy Margin Coverage program rose by \$1.68/cwt from a month earlier to \$6.93/cwt. The jump was driven by a mostly corn price-driven \$0.98/cwt drop in the feed cost formula and an \$0.80/cwt increase in the all-milk price, to \$18.40/cwt. The resulting \$2.58/cwt September DMC payment for \$9.50/cwt coverage will be the ninth consecutive such payment well in excess of two dollars a hundredweight this year, with the nine-month average totaling \$3.08/cwt. When USDA eventually tops up the payments for this year and last with the full dairy-quality alfalfa price figured into the feed cost calculation, the 2021 average payment for the first nine months will be \$3.31/cwt. USDA is expected to pair the announced regulation on the alfalfa price change with that for the separate Supplemental DMC program.

USDA reported that, as of Nov. 1, the 19,044 operations enrolled in this year's DMC program are expected to receive \$1,080,286,151 in payments, for an average of \$56,7266 per enrolled operation, based on previously announced margins. This represents payments for January through August and does not include the eventual top-up payments from the alfalfa price change.

## Looking Ahead

As of mid-November the dairy futures were again strongly indicating there will be significant DMC payments to \$9.50/cwt coverage every month of 2021. But at the same time, the futures were also indicating that U.S. monthly average all-milk prices would stay next year mostly at or above \$21/cwt, which has not occurred since 2014. Over just the past two months, USDA has raised its forecast of the 2022 calendar year U.S. average all-milk price by an unusually large \$1.85/cwt. Again, fourth quarter data will be closely watched for signs of further developments.

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The **National Milk Producers Federation (NMPF)** is a farm commodity organization representing most of the dairy marketing cooperatives serving the U.S.