OUTLOOK FOR THE U.S. DAIRY SECTOR IN 2021

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2020 Milk Production Higher...

- Despite sector uncertainties, factors were in play for expansion
  - Milk prices in 2019 and first quarter 2020 highest since 2014
  - Ration value lower than prior year in most of 2020
  - Replacement heifers readily available

- Production in 2020: 223.1 billion pounds
  - Slow increase in cows
  - More rapid than recent-year gains in milk per cow
  - Extra milking day due to leap year
…But Pressure in 2021

• Returns have weakened since late 2020
  • Milk prices lower
  • Feed prices higher
  • Producers holding fewer heifers for addition to the cow herd and expect to have fewer heifers calve.

• Production in 2021: 227.4 billion pounds
  • More cows, but inventory will decline during the year
  • Slightly more per-day rapid growth in milk per cow than 2020
Producers Holding Fewer Heifers For Cow Replacement

![Bar chart showing the number of replacement heifers per 100 cows from 2009 to 2021. The number of heifers has varied over the years, with a peak in 2017.](chart.png)
Weekly Dairy Cow Slaughter Near Last Year Levels

![Graph showing weekly dairy cow slaughter near last year levels from 1/9 to 11/20 with data points for 2016-20, 2020, and 2021.]
Quarterly Average U.S. Cow Herd

<table>
<thead>
<tr>
<th></th>
<th>2019</th>
<th>2020</th>
<th>2021*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan-March</td>
<td></td>
<td>9.350</td>
<td>9.450</td>
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<tr>
<td>Apr-June</td>
<td>9.300</td>
<td></td>
<td>9.400</td>
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<tr>
<td>July-Sept</td>
<td></td>
<td>9.350</td>
<td>9.400</td>
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<td>Oct-Dec</td>
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<td>9.400</td>
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*Forecast
Milk per Cow Growth
Adjusted for Leap Year

Percent

Jan-March | Apr-June | July-Sept | Oct-Dec | Annual

Average 2015-2019 | 2020 | 2021*

*Forecast
Quarterly U.S. Milk Production

<table>
<thead>
<tr>
<th>Quarter</th>
<th>2019</th>
<th>2020</th>
<th>2021*</th>
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<tbody>
<tr>
<td>Jan-Mar</td>
<td>54.1</td>
<td>55.0</td>
<td></td>
</tr>
<tr>
<td>Apr-Jun</td>
<td>58.0</td>
<td>56.0</td>
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<tr>
<td>Jul-Sep</td>
<td>55.0</td>
<td>56.0</td>
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<tr>
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</tbody>
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*Forecast
COVID-19 Caused Significant Shocks to Demand

- Domestic commercial use declined with stay-at-home orders and production constraints
  - Fat basis commercial use fell sharply in QII but rebounded to average 1 percent higher for the year
  - Skim solids commercial use fell in QII and never fully recovered, averaging 1 percent lower for the year.
- Prices were volatile.
Domestic Commercial Use of Cheese and Butter Declined, but Then Rebounded
Butter Price Movement Exceeded Post-9/11/2001 Volatility

Weekly NDPSR Price Change From Prior Week

Error bars equal 1 standard deviation from the 2010-19 average
Cheese Prices Exhibited Extended Volatility

Weekly NDPSR Price* Change From Prior Week

*Weighted Average, Blocks and Barrels
Error bars equal 1 standard deviation from the 2010-19 average
COVID-19 Caused Significant Shocks to Demand

- Domestic commercial use declined with stay-at-home orders and production constraints
  - Fat basis commercial use fell sharply in QII but rebounded to average 1 percent higher for the year
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  - Prices were volatile

- Exports responded differently
  - Fat basis exports remained strong in QII and were 2 percent higher in 2020
  - Skim-solids exports remained strong in QII and were 14 percent higher in 2020
  - Price competitiveness helped some product sales
Growth in 2020 Major Product Exports

- NDM/SMP
- Whey & Prods
- Lactose
- Cheese
- Butter & Milkfat

Percent

USDA
Butter Prices

$ per pound

Oceania
U.S.

Jan-19 Mar May Jul Sep Nov Jan-20 Mar May Jul Sep Nov Jan-21
Dried Whey Prices

The graph shows the price of dried whey from January 19 to January 21. The prices are measured in dollars per pound. The graph includes data for the EU (red line) and the U.S. (blue line). The prices fluctuate over time, with some periods of increase and decrease.
Growth in Both Domestic Demand and Exports in 2021

- Domestic use will increase through the year
  - Growth in the economy and declining unemployment
  - Reduction in current level of COVID-19 related restrictions
  - Lower prices for cheese and butter

- Exports will increase in 2021
  - Improving global economy
  - Increased price competiveness
  - Modest growth in milk production for most competing exporters
  - Logistical constraints may affect competition
Forecast Growth in 2021 Major Exporter Milk Production

![Bar chart showing milk production growth projections for Australia, New Zealand, EU, and U.S. with Australia having the highest growth and EU having the lowest.](chart.png)
Growth in Domestic Demand and Exports

**Fat Basis**

**Skim Solids Basis**

*Forecast*
…But Large Stocks Will Overhang the Market For Much of 2021

Fat Basis

Skim Solids Basis

*Billion pounds

*Forecast
2021 Dairy Prices Will Balance Larger Supplies vs Improving Demand

- Class III price to average $16.60 per cwt
  - Cheese price weaker: $1.695 per pound
  - Whey price higher: $0.480 per pound

- Class IV price to average $13.70 per cwt
  - Butter price lower: $1.455 per pound
  - Nonfat dry milk price higher: $1.125 per pound

- All milk price to average $17.15 per cwt
Quarterly Class Prices

$ per cwt

- Class III
- Class IV

*Forecast
Quarterly Average All Milk Prices

$ per cwt

2017 QI  QIII  2018 QI  QIII  2019 QI  QIII  2020 QI  QIII  2021 QI*  QIII*

*Forecast
Additional Information on the Outlook for 2021 is Available on the Following Websites:

- World Agricultural Supply and Demand Estimates

- Livestock, Dairy, and Poultry Situation and Outlook
  - [https://usda.library.cornell.edu/concern/publications/g445cd121?locale=en](https://usda.library.cornell.edu/concern/publications/g445cd121?locale=en)

- Dairy: World Markets and Trade