

# **CANADIAN DAIRY COMMISSION**

COST OF PRODUCTION

DRAFT RESULT BASED ON 2019 SURVEY DATA  
INDEXED TO THREE MONTHS ENDING AUGUST 2020

*Revised December 2020*

Policy and Economics

## 2019 COP Highlights

### Results

- The cost of production for one standard hectolitre of milk in 2019 was \$83.13, an increase of 3.4% compared to the 2018 cost of production (COP). The table below shows that the \$2.75/hl increase in the total COP in 2019 is mainly attributable to increases in producer labour costs \$1.49/hl and cash costs of \$0.89/hl.

	2019 COP	2018 COP	% change
Cash Costs	47.09	46.21	1.9%
Capital Costs	16.18	15.87	2.0%
Labour Costs	20.27	18.78	7.9%
<b>Total COP</b>	<b>83.13</b>	<b>80.37</b>	<b>3.4%</b>

### Highlights

- Most of the cash cost components increased slightly from last year's costs. Artificial insemination; machinery/equipment repairs; fertilizer, herbicides, and pesticides; the dairy inventory value adjustment; land and building (repairs and maintenance); and property taxes also showed a moderate increase in comparison with the previous year.
- Purchased feed increased by \$0.02/hl (0.1%) when standardized.
- Animal costs, hired labour, and the purchase/sale of animals decreased.
- Capital costs increased significantly, with interest paid being the greatest change. This increase in capital costs was anticipated due to significant investments made over the last few years to meet growing demand.
- Overall producer labour costs increased over the previous year by 7.9%, or \$1.49/hl; direct labour increased by \$1.12/hl. An increase in average hourly earnings across Canada, a shift from employee labour to owner labour, and a decrease in volume produced contributed to the increase in labour costs per hectolitre.

### Indexation

- The period of the most recent three months ending August 2020 was used, according to industry decision made in 2019.
- COP 2018 indexed to August 2019 was used as the reference period for this calculation.
- Indexed to the most recent three months ending August 2020, the estimated COP is \$81.62 per hectolitre. This represents an increase of 0.4% over the 2018 COP indexed to August 2019.
- Statistics Canada indices have overall been indexed slightly downward, contributing to a somewhat lower COP after indexation. Fuel/oil index decreased significantly; most other indices have seen a marginal decrease (See Appendix 1). Covid-19 likely played a large role in the decrease in indices for the period of June to August 2020.

## Methodology

### Sample

- The sample is selected to be representative of the dairy farm population at the Canadian level only.
- Producers in the sample are randomly selected. For the year 2019, a total of 220 farms were sampled.

### Calculation and efficiency measures

- Reported costs cover the milking herd plus replacement animals.
- Any farm with a COP that is outside of two standard deviations is considered an outlier and is therefore excluded from the final sample. For the year 2019, 7 farms were excluded. The data and information collected from the remaining 221 farms were used to calculate the national COP.
- Each farm is given a weight that ensures that it accurately reflects its stratum, based on size (S, M, L, XL) and region.

### Indexation

The following components are used to index the 2019 COP to the most recent three months ending August 2020:

- a) Cash costs are indexed using Statistics Canada indices (see Appendix 1);
- b) The interest component is indexed using the Bank of Canada five-year mortgage rate (see Appendix 1);
- c) Producer labour and remaining components of the capital costs are not indexed.

### Standardization

- The cost of production data is provided to the CDC based on actual figures. Standardization is only performed at the end of the process using the most recent component standards.
- The following standards were used in the 2018 COP calculations:

	Butterfat	SNF
Allocation of costs <sup>(1)</sup>	43%	57%
Milk standard composition	3.6 kg/hl	8.9177 kg/hl
Sample milk composition <sup>(2)</sup>	4.162 kg/hl	9.116 kg/hl

<sup>(1)</sup> The allocation between butterfat and SNF is determined by the rolling three-year average share of butterfat portion of total revenues and SNF portion of total revenues, which together equal 100% of revenues.

<sup>(2)</sup> Weighted average composition of all eligible farms.

## National Cost of Production Calculation

2019 Results

	2019 COP	2019 COP Indexed to August 2020	2018 COP Indexed to August 2019	% change August 2020/August 2019
	\$/hl	\$/hl	\$/hl <sup>(2)</sup>	
<b>CASH COSTS</b>				
Purchased feed	18.80	18.16	19.50	-6.9%
Artificial insemination*	3.36	3.36	3.23	4.1%
Transportation, fees & promotion	5.15	4.98	5.21	-4.5%
Machinery, equipment repairs	3.03	3.05	2.92	4.5%
Fuel & oil	1.90	1.38	1.72	-19.7%
Custom work	2.58	2.60	2.58	0.9%
Fertilizer & herbicides	1.86	1.83	1.73	6.1%
Seed & plants*	1.22	1.22	1.12	9.1%
Other (Misc): Professional fees	0.78	0.75	0.69	9.5%
Other (Misc): Animal costs	1.72	1.67	1.89	-11.6%
Other (Misc): Crops costs	0.52	0.50	0.50	-0.3%
Land & building repairs	2.94	2.94	2.81	4.4%
Property taxes & insurance	2.11	2.14	1.99	7.7%
Hydro & telephone	1.57	1.56	1.55	0.3%
Hired labour	3.22	3.35	3.36	-0.2%
Purchase/sale of animals*	-3.24	-3.24	-2.84	14.1%
Dairy Inventory Value adjustm	-0.43	-0.43	-0.84	-49.2%
<b>Total Cash Costs</b>	<b>47.09</b>	<b>45.84</b>	<b>47.13</b>	<b>-2.7%</b>
<b>CAPITAL COSTS</b>				
Interest paid	3.77	3.51	3.46	1.6%
Building depreciation*	3.36	3.36	3.28	2.3%
Machinery & equipment depr*	4.46	4.46	4.58	-2.5%
Return on equity*	4.60	4.60	4.55	1.1%
<b>Total Capital Costs</b>	<b>16.18</b>	<b>15.93</b>	<b>15.86</b>	<b>0.4%</b>
<b>PRODUCER LABOUR</b>				
Direct labour*	14.74	14.74	13.62	8.2%
Return to management* <sup>(1)</sup>	5.53	5.53	5.16	7.1%
<b>Total Producer Labour</b>	<b>20.27</b>	<b>20.27</b>	<b>18.78</b>	<b>7.9%</b>
<b>GOV'T REBATES &amp; OTHERS*</b>	<b>-0.42</b>	<b>-0.42</b>	<b>-0.49</b>	<b>13.6%</b>
<b>RESULT OF COP FORMULA</b>	<b>83.13</b>	<b>81.62</b>	<b>81.29</b>	<b>0.4%</b>

## Appendix 1

### Description of indices used to update cash costs and interest component

COST COMPONENTS	2019	August 2020	% change August 2020 / 2019
Dairy Ration	117.3	113.3	-3.4%
Transportation,fees & promotion	2.78	2.7	-3.4%
Mach,Equip Repairs	131.9	132.7	0.6%
Fuel &Oil	119.4	86.9	-27.2%
Custom Work	136.0	137.1	0.8%
Fertilizer & Herbicides	132.5	130.7	-1.4%
Other (Misc)	117.8	114.3	-3.0%
Land & Building Repairs	141.7	141.4	-0.2%
Property Taxes & Insurance	164.5	167.2	1.6%
Hydro & Phone	140.4	139.2	-0.9%
Hired Labour	37.6	39.2	4.2%
Interest	5.3	4.9	-6.9%

Dairy Ration	v79309229	Table 329-0075: IPPI, by North American Product Classification System (NAPCS); Canada; Complete cattle feed
Transportation		P5 Transportation Pooling Figures/Chiffres du pooling P5 pour le transport
Mach,Equip Repairs	v79309850	Table 329-0075: IPPI, by North American Product Classification System (NAPCS); Canada; Agricultural, lawn and garden machinery and equipment
Fuel &Oil	v79309138	Table 329-0075: IPPI, by North American Product Classification System (NAPCS); Canada; Energy and petroleum products
Custom Work	v41690973	Table 326-0020 Consumer price index, 2005 basket; Canada; All-items (2002=100)
Fertilizer & Herbicides	v79309411	Table 329-0075: IPPI, by North American Product Classification System (NAPCS); Canada; Fertilizers, pesticides and other chemical products
Other (Misc)	v79309137	Table 329-0075: IPPI, by North American Product Classification System (NAPCS); Canada; Total, Industrial product price index (IPPI)
Land & Building Repairs	v41691060	Table 326-0020 Consumer price index (CPI), 2005 basket; Canada; Homeowners' maintenance and repairs (2002=100 unless otherwise noted)
Property Taxes & Insurance	v41691058	Table 326-0020: Consumer price index (CPI), 2005 basket, Property taxes (including special charges) , monthly (2002=100 unless otherwise noted)
Electricity	v41691063	Table 326-0020: Consumer price index (CPI), 2005 basket, Electricity, monthly (2002=100 unless otherwise noted). The indice accounts for 80% in the indexation of the Hydro and Phone.
Telephone	v41691070	Table 326-0020: Consumer price index (CPI), 2005 basket, Telephone services, monthly (2002=100 unless otherwise noted). The indice accounts for 20% in the indexation of the Hydro and Phone.
Hired Labour	v1602417	Table 281-0035: Average hourly earnings for salaried employees (paid a fixed salary) (SEPH); Canada; Industrial aggregate excluding unclassified (Dollars)
Interest		The interest component is indexed using the Bank of Canada 5-year mortgage rate.

**Appendix 2**

**Farms number and total production share**

	<b># of farms <sup>(1)</sup></b>	<b>National production share (litres)</b>
		<b>2019</b>
Maritimes	17	5.55%
Quebec	89	36.35%
Ontario	67	34.04%
West	48	24.06%
Canada	221	100.00%

<sup>(1)</sup> Excluding outliers