

# **CANADIAN DAIRY COMMISSION**

COST OF PRODUCTION

DRAFT RESULT BASED ON 2017 SURVEY DATA

INDEXED TO MOST RECENT THREE MONTHS ENDING MAY 2018

July 2018

Policy and Economics

# 2017 COP Highlights

## Results

- The cost of production for one standard hectolitre of milk in 2017 was \$75.76, a decrease of -1% compared to the 2016 cost of production (COP). The table below shows that the \$0.79/hL decrease in the total COP in 2017 is mainly attributable to decreases in capital costs of \$0.96/hL.

	2017 COP	2016 COP	% change
Cash Costs	43.09	42.90	0.4%
Capital Costs	13.49	14.45	-6.6%
Labour Costs	19.26	19.34	-0.4%
<b>Total COP</b>	<b>75.76</b>	<b>76.55</b>	<b>-1.0%</b>

## Highlights

- Most of the cash cost components decreased from last year's costs, with the most significant decreases seen in fertilizer/herbicides and machinery/equipment repairs.
- Purchased feed, veterinary costs, and land/building repairs were the most significant cash cost components showing an increase in comparison with the previous year.
- Capital costs decreased significantly, with interest paid and machinery/equipment depreciation being the main drivers of this decrease.
- Overall producer labour costs remained almost unchanged over the previous year.
- An average increase in production per farm across Canada is the main reason for the decrease in overall costs.

## Indexation

- Indexed to most recent three months ending May 2018,<sup>1</sup> the estimated COP is \$79.59 per hectolitre. This represents an increase of 5.1% over the 2016 COP indexed to 3<sup>rd</sup> quarter of 2017.
- Statistics Canada indices have overall been indexed upward, contributing to a higher COP after indexation. Purchased feed costs, a large element of cash costs, were indexed upward, as well as fuel and oil, electricity, fertilizer, and machine repairs.

## 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 2017, a total of 229 farms were sampled.

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<sup>1</sup> Hired Labour indexation data was unavailable for May; thus, April data was used as a proxy for May.  
DD# 1903574

### **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 2017, 9 farms were excluded. The data and information collected from the remaining 220 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 2017 COP to most recent three months ending May 2018:

- 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 2017 COP calculations:

	Butterfat	SNF
Allocation of costs <sup>(1)</sup>	39%	61%
Milk standard composition	3.6 kg/hl	8.9177 kg/hl
Sample milk composition <sup>(2)</sup>	4.073 kg/hl	9.013 kg/hl

<sup>(1)</sup> The allocation between butterfat and SNF is determined by the share of the estimated producer returns at P10 target prices.

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

- It is important to note that the CDC support price is no longer used to determine the allocation of revenue between BF and SNF. Due to the decoupling of support prices from producer target revenue on February 1, 2017, the P10 target price is used to determine a more accurate reflection of the share of revenue between components.

## National Cost of Production Calculation

2017 Results

	2017 COP	2017 COP Indexed to May 2018	2016 COP Indexed to Q3 2017	\$ change May 2018/Q3 2017	% change May 2018/Q3 2017
CASH COSTS	\$/hl	\$/hl	\$/hl <sup>(2)</sup>		
Purchased feed	18.58	21.23	16.40	4.83	29.5%
Artificial insemination*	3.42	3.42	3.17	0.25	7.7%
Transportation, fees & promotion	5.23	5.61	5.02	0.59	11.7%
Machinery, equipment repairs	2.62	2.67	2.95	-0.28	-9.4%
Fuel & oil	1.50	1.74	1.64	0.10	6.0%
Custom work	2.18	2.23	2.42	-0.19	-7.9%
Fertilizer & herbicides	1.55	1.53	1.92	-0.39	-20.2%
Seed & plants*	1.07	1.07	1.05	0.02	2.3%
Other (Misc): Professional fees	0.63	0.65	0.68	-0.03	-4.8%
Other (Misc): Animal costs	1.86	1.92	2.01	-0.08	-4.1%
Other (Misc): Crops costs	0.82	0.85	0.83	0.01	1.7%
Land & building repairs	2.86	2.89	2.44	0.45	18.4%
Property taxes & insurance	1.84	1.88	2.05	-0.18	-8.5%
Hydro & telephone	1.62	1.61	1.61	0.00	0.1%
Hired labour	3.06	3.14	2.98	0.15	5.0%
Purchase/sale of animals*	-2.62	-2.62	-3.29	0.67	-20.4%
Dairy Inventory Value adj*	-3.13	-3.13	-1.97	-1.16	59.3%
<b>Total Cash Costs</b>	<b>43.09</b>	<b>46.68</b>	<b>41.92</b>	<b>4.77</b>	<b>11.4%</b>
CAPITAL COSTS					
Interest paid	2.66	2.90	3.34	-0.45	-13.3%
Building depreciation*	2.79	2.79	2.82	-0.03	-1.2%
Machinery & equipment depr*	4.20	4.20	4.52	-0.32	-7.1%
Return on equity*	3.84	3.84	3.90	-0.06	-1.4%
<b>Total Capital Costs</b>	<b>13.49</b>	<b>13.73</b>	<b>14.58</b>	<b>-0.86</b>	<b>-5.9%</b>
PRODUCER LABOUR					
Direct labour*	13.95	13.95	14.09	-0.14	-1.0%
Return to management* <sup>(1)</sup>	5.32	5.32	5.25	0.07	1.4%
<b>Total Producer Labour</b>	<b>19.27</b>	<b>19.27</b>	<b>19.34</b>	<b>-0.07</b>	<b>-0.3%</b>
GOV'T REBATES & OTHERS*	-0.09	-0.09	-0.13	0.04	30.8%
<b>RESULT OF COP FORMULA</b>	<b>75.76</b>	<b>79.59</b>	<b>75.71</b>	<b>3.88</b>	<b>5.1%</b>

\* Not indexed

(1) The rate of \$45.25 per hour was used. It represents the mid-range AG3 salary in 2017 .

## Appendix 1

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

COST COMPONENTS	2017	May 2018	% change May 2018 / 2017
Dairy Ration	101.6	116.1	14.3%
Transportation,fees & promotion	2.62	2.8	7.3%
Mach,Equip Repairs	126.2	128.8	2.0%
Fuel &Oil	108.6	126.1	16.1%
Custom Work	130.4	133.2	2.1%
Fertilizer & Herbicides	129.6	128.0	-1.2%
Other (Misc)	113.6	117.5	3.5%
Land & Building Repairs	137.0	138.4	1.0%
Property Taxes & Insurance	158.0	161.3	2.1%
Hydro & Phone	138.7	137.7	-0.8%
Hired Labour	35.8	36.7	2.5%
Interest	4.8	5.2	8.9%

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.