

CANADIAN DAIRY COMMISSION

COST OF PRODUCTION

DRAFT RESULT BASED ON 2018 SURVEY DATA
INDEXED TO THREE MONTHS ENDING AUGUST 2019

October 2019

Policy and Economics

2018 COP Highlights

Results

- The cost of production for one standard hectolitre of milk in 2018 was \$80.73, an increase of 6.6% compared to the 2017 cost of production (COP). The table below shows that the \$4.97/hl increase in the total COP in 2018 is mainly attributable to increases in cash costs of \$3.32/hl and in capital costs of \$2.45/hl.

	2018 COP	2017 COP	% change
Cash Costs	46.41	43.09	7.7%
Capital Costs	15.94	13.49	18.2%
Labour Costs	18.87	19.26	-2.0%
Total COP	80.73	75.76	6.6%

Highlights

- Most of the cash cost components increased slightly from last year's costs, with the most significant increase seen in the dairy inventory value adjustment. Given that the cost of raising animals (heifers) is not taken into account in the total cost of production, a debit is applied to the cash cost (line: dairy inventory value adjustment). Given that farm size did not increase as much in 2018 as in 2016, the debit is not as important.
- Purchased feed, machinery/equipment repairs, fuel and oil, custom work, and hired labour also showed a moderate increase in comparison with the previous year.
- Capital costs increased significantly, with interest paid and return on equity being the greatest changes, but the other components, building and machinery/equipment depreciation, also contribute notably to this increase. 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 decreased slightly over the previous year.
- Large increases in capital cost components, as well as slight to modest increases in most cash components across Canada best explain the noteworthy increase in overall costs.

Indexation

- The period of most recent three months ending August 2019 was used for indexation due to industry requests for earlier results. It is expected that, henceforth, yearly indexation for pricing will be to most recent three months ending August to continue on the same schedule.
- Due to exceptional circumstances in 2018, COP 2016 indexed to Q3 2017 was used as the reference period for this calculation.
- Indexed to the most recent three months ending August 2019, the estimated COP is \$81.65 per hectolitre. This represents an increase of 7.8% over the 2016 COP indexed to the 3rd quarter of 2017.

- Statistics Canada indices have overall been indexed slightly upward, contributing to a somewhat higher COP after indexation. Fuel/oil was the only index that decreased slightly; all other indices have seen a marginal increase (See Appendix 1).

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 2018, a total of 219 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 2018, 8 farms were excluded. The data and information collected from the remaining 219 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 2018 COP to the most recent three months ending August 2019:

- 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 ⁽¹⁾	38%	62%
Milk standard composition	3.6 kg/hl	8.9177 kg/hl
Sample milk composition ⁽²⁾	4.074 kg/hl	9.006 kg/hl

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

⁽²⁾ Weighted average composition of all eligible farms.

National Cost of Production Calculation

2018 Results

	2018 COP	2018 COP Indexed to Jun-Aug	2016 COP Indexed to Q3 2017	% change Jun-Aug/Q3 2017
	\$/hl	\$/hl	\$/hl ⁽²⁾	
CASH COSTS				
Purchased feed	18.86	19.59	16.40	19.5%
Artificial insemination*	3.25	3.25	3.17	2.3%
Transportation, fees & promoti	5.17	5.23	5.02	4.2%
Machinery, equipment repairs	2.88	2.94	2.95	-0.3%
Fuel & oil	1.83	1.73	1.64	5.4%
Custom work	2.52	2.59	2.42	7.1%
Fertilizer & herbicides	1.71	1.74	1.92	-9.5%
Seed & plants*	1.12	1.12	1.05	7.2%
Other (Misc): Professional fees	0.69	0.69	0.68	1.1%
Other (Misc): Animal costs	1.91	1.90	2.01	-5.3%
Other (Misc): Crops costs	0.51	0.51	0.83	-39.3%
Land & building repairs	2.81	2.82	2.44	15.8%
Property taxes & insurance	1.98	2.00	2.05	-2.7%
Hydro & telephone	1.54	1.56	1.61	-2.8%
Hired labour	3.33	3.37	2.98	13.0%
Purchase/sale of animals*	-2.86	-2.86	-3.29	-13.2%
Dairy Inventory Value adjust	-0.84	-0.84	-1.97	-57.2%
Total Cash Costs	46.41	47.35	41.92	13.0%
CAPITAL COSTS				
Interest paid	3.48	3.46	3.34	3.5%
Building depreciation*	3.30	3.30	2.82	16.8%
Machinery & equipment depr*	4.60	4.60	4.52	1.7%
Return on equity*	4.57	4.57	3.90	17.2%
Total Capital Costs	15.94	15.92	14.58	9.2%
PRODUCER LABOUR				
Direct labour*	13.68	13.68	14.09	-2.9%
Return to management* ⁽¹⁾	5.19	5.19	5.25	-1.2%
Total Producer Labour	18.87	18.87	19.34	-2.4%
GOV'T REBATES & OTHERS	-0.49	-0.49	-0.13	-276.6%
RESULT OF COP FORMULA	80.73	81.65	75.71	7.8%

* Not indexed

(1) The rate of \$45.25 per hour was used. It represents the mid-range AG-3 salary in 2018 .

Appendix 1

Description of indices used to update cash costs and interest component

COST COMPONENTS	2018	Jun-Aug	% change
			Jun-Aug / 2018
Dairy Ration	114.2	118.6	3.9%
Transportation,fees & promotion	2.70	2.7	1.2%
Mach,Equip Repairs	129.9	132.6	2.1%
Fuel &Oil	125.5	118.8	-5.4%
Custom Work	133.4	136.7	2.5%
Fertilizer & Herbicides	129.1	131.2	1.6%
Other (Misc)	118.0	117.5	-0.4%
Land & Building Repairs	139.6	140.5	0.7%
Property Taxes & Insurance	161.9	163.6	1.1%
Hydro & Phone	138.2	140.4	1.6%
Hired Labour	36.7	37.2	1.4%
Interest	5.3	5.2	-0.6%

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

	# of farms ⁽¹⁾	National production share (litres)
		2018
Maritimes	18	5.55%
Quebec	87	36.35%
Ontario	65	34.04%
West	49	24.06%
Canada	219	100.00%

⁽¹⁾ Excluding outliers