

# **CANADIAN DAIRY COMMISSION**

COST OF PRODUCTION

DRAFT RESULT BASED ON 2015 SURVEY DATA

INDEXED TO 3<sup>RD</sup> QUARTER OF 2016

November 2016

Policy and Economics

## 2015 COP Highlights

### Results

- The cost of production for one standard hectolitre of milk in 2015 was \$78.00, a decrease of -1.6% compared to the 2014 cost of production (COP). The table below shows that the decrease in the total COP in 2015 is mainly attributable to decreases in cash costs.

	2015 COP	2014 COP	% change
Cash Costs	42.61	43.61	-2.3%
Capital Costs	15.05	15.18	-0.8%
Labour Costs	20.38	20.60	-1.0%
<b>Total COP</b>	<b>78.00</b>	<b>79.24</b>	<b>-1.6%</b>

### Highlights

- Approximately half of the cash cost components decreased compared to last year, with the most significant decreases seen in fuel & lubricants and changes in dairy inventory value.
- Purchased feed costs and hired labour were the most significant cash cost components showing an increase compared to last year.
- Capital costs decreased slightly, with depreciation and return on equity being the main drivers of this decrease.
- There was a decrease in overall producer labour costs compared to last year.

### Indexation

- Once indexed to the 3<sup>rd</sup> quarter of 2016, the estimated COP is \$77.41 per hectolitre. This represents a decrease of -2.2% over the 2014 COP indexed to 3<sup>rd</sup> quarter of 2015.
- Statistics Canada indices have contributed to a lower COP after indexation. It is important to note that purchased feed costs, a large element of cash costs, were also indexed downward.

## 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 2015, a total of 240 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 2015, 8 farms were excluded. The

data and information collected from the remaining 232 farms were used to calculate the national COP.

- A COP for each region was calculated by weighting the cost of each producer against their share of regional production in the sample. This regional production cost was adjusted by a strata correction factor. The national COP was then calculated by weighting each regional COP against regional shares of total P9 production.

#### Indexation

The following components are used to index the 2015 COP to the 3<sup>rd</sup> quarter of 2016:

- a) Cash costs are indexed to the 3<sup>rd</sup> quarter of 2016 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. Individual farm data are not available in standard hectolitres. Standardization is only performed at the end of the process using the most recent component standards.
- The following standards were used in the 2015 COP calculations:

	Butterfat	SNF
Allocation of costs <sup>(1)</sup>	38.5%	61.5%
Milk standard composition	3.6 kg/hl	8.9177 kg/hl
Sample milk composition <sup>(2)</sup>	4.077 kg/hl	9.093 kg/hl

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

<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 partial decoupling of support prices from producer target revenue on February 1, 2016, the P10 target price was used to determine a more accurate reflection of the share of revenue between components.

# National Cost of Production Calculation

2015 Results

	2015 COP	2015 COP Indexed to 2016 Q3	2014 COP Indexed to Q3 2015	% change 2016 Q3/Q3 2015
CASH COSTS	\$/hl	\$/hl	\$/hl <sup>(2)</sup>	
Purchased feed	16.75	16.15	16.63	-2.9%
Artificial insemination*	2.98	2.98	3.13	-5.1%
Transportation, fees & promotior	5.26	5.09	5.02	1.4%
Machinery, equipment repairs	2.84	2.97	3.04	-2.2%
Fuel & oil	1.81	1.66	1.82	-8.5%
Custom work	2.52	2.56	2.54	0.7%
Fertilizer & herbicides	2.08	1.92	2.10	-8.4%
Seed & plants*	1.30	1.30	1.17	11.0%
Other (Misc): Profesionnal fees	0.76	0.76	0.80	-5.7%
Other (Misc): Animal costs	2.08	2.08	2.07	0.4%
Other (Misc): Crops costs	0.89	0.89	0.98	-9.4%
Land & building repairs	2.32	2.39	2.59	-7.8%
Property taxes & insurance	2.15	2.20	2.22	-1.0%
Hydro & telephone	1.76	1.86	1.91	-2.6%
Hired labour	3.15	3.23	3.04	6.1%
Purchase/sale of animals*	-4.23	-4.23	-4.16	1.6%
Dairy Inventory Value adjustm	-1.81	-1.81	-1.20	50.5%
<b>Total Cash Costs</b>	<b>42.61</b>	<b>42.00</b>	<b>43.71</b>	<b>-3.9%</b>
CAPITAL COSTS				
Interest paid	3.51	3.54	3.11	14.0%
Building depreciation*	2.85	2.85	2.67	7.0%
Machinery & equipment depr*	4.55	4.55	4.88	-6.7%
Return on equity*	4.14	4.14	4.36	-5.2%
<b>Total Capital Costs</b>	<b>15.05</b>	<b>15.08</b>	<b>15.01</b>	<b>0.4%</b>
PRODUCER LABOUR				
Direct labour*	15.04	15.04	15.95	-5.7%
Return to management* <sup>(1)</sup>	5.34	5.34	4.65	14.9%
<b>Total Producer Labour</b>	<b>20.38</b>	<b>20.38</b>	<b>20.60</b>	<b>-1.0%</b>
GOV'T REBATES & OTHERS*	-0.05	-0.05	-0.14	63.3%
<b>RESULT OF COP FORMULA</b>	<b>78.00</b>	<b>77.41</b>	<b>79.18</b>	<b>-2.2%</b>

\* Not indexed

(1) The rate of \$41.39 per hour was used. It represents the mid-range AG3 salary in 2016.

# Appendix 1

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

COST COMPONENTS	2015	2016 Q3	% change 2016 Q3 / 2015
Dairy Ration	113.0	108.9	-3.6%
Transportation,fees & promotion	2.61	2.5	-3.1%
Mach,Equip Repairs	115.8	121.2	4.6%
Fuel &Oil	105.6	97.1	-8.0%
Custom Work	126.6	128.8	1.8%
Fertilizer & Herbicides	130.1	120.3	-7.5%
Other (Misc)	110.3	110.2	-0.2%
Land & Building Repairs	131.9	135.4	2.7%
Property Taxes & Insurance	149.4	152.7	2.2%
Hydro & Phone	139.1	147.0	5.7%
Hired Labour	34.6	35.4	2.3%
Interest	4.7	4.7	0.8%

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

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

<b>COST COMPONENTS</b>	<b>2015</b>	<b>2016 Q3</b>	<b>% change 2016 Q3 / 2015</b>
Dairy Ration	113.0	108.9	-3.6%
Transportation, fees & promotion	2.61	2.5	-3.1%
Mach, Equip Repairs	115.8	121.2	4.6%
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Custom Work	126.6	128.8	1.8%
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Hired Labour	34.6	35.4	2.3%
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### Farms number and total production share

	<b># of farms <sup>(1)</sup></b>	<b>National production share (litres) 2015 production year</b>
Maritimes	17	5.48%
Quebec	98	36.96%
Ontario	68	34.28%
West	49	23.28%
Canada	232	100.00%

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