

CANADIAN DAIRY COMMISSION

COST OF PRODUCTION
FINAL RESULT BASED ON 2012 SURVEY DATA
INDEXED TO 3RD QUARTER OF 2013

November 2013

Policy and Economics Section

2012 COP Highlights

Changes to the COP calculations

- Following the October 17-18, 2012 CMSMC decision, all Cost of Production (COP) calculations are done using the actual production and the standardization is performed only at the end of the process. As a result, starting with the 2012 COP data, changes were made to the COP reporting template and to the methodology used to convert cost into a standard hectolitre (standardization). Details are explained in the methodology section.
- In order to remove any bias from the standardization process, the 2011 COP was recalculated using the new standardization methodology.
- Following a recommendation from the COP Technical Committee, the CDC decided to move some costs from cow depreciation to other cost items to better reflect the actual cost of raising replacement heifers on a dairy farm. These changes in the COP reporting template did not change the total COP before indexation. However, because the 2011 COP data did not have the necessary information for using the new reporting template, the COP calculation reported uses the previous template for the 2012 year (first page of the calculations). The difference per cost item between the previous and the new template is available in the second page and will be used starting next year.
- In 2012, Farm Credit Canada (FCC) discontinued the publication of his five year term loan. Since then, the interest component is indexed using the Bank of Canada five-year mortgage mortgage which is very close to the old FCC rate.

Results

- The cost of production for one standard hectolitre of milk in 2012 was \$77.79.
- Once indexed to the 3rd quarter of 2013, the estimated COP is \$78.00 per hectolitre. This represents an increase of 1.75% over the 2011 COP indexed to 3rd quarter of 2012 (figure used as a reference for the April 1, 2013 CDC support price adjustment).
- The total cash costs and the total capital costs increased respectively by 2.38% and by 3.69% while the total producer labour decreased by 1.54%. The main factors that explain this increase in the 2012 COP indexed to the 3rd quarter of 2013 are the transportation and fertilizer prices. The cow depreciation shows an increase of 16% in 2012, back to his 2010 level.

Methodology

Sample

- The sample is representative of the Canadian dairy farm population.
- Producers in the sample are randomly selected. For the year 2012, a total of 220 farms were sampled.

Calculation and efficiency measures

- 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 2012, 13 farms were excluded. The data and information collected from the remaining 207 farms was used to calculate the national COP.
- The national COP calculation is based on production-weighted COP per province, weighted nationally based on shares of total production.

Indexation

The following components are used to index the 2012 COP to the 3rd quarter of 2013:

- a) Cash costs are indexed to the 3rd quarter of 2013 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.

Reporting template

- In the second table on page 6, the line “Cow depreciation” was removed from the reporting template. This change was made to better reflect farming realities. Note that the new template won’t be used for the 2014 pricing. The results in page six will be used for next year (the 2015 pricing). The “Cow depreciation” is comprised of:
 1. The cost of raising replacement herd (only related to the dairy herd);
 2. The cost of purchasing herd (net of sales);
 3. The adjustment that offset any cost related to an increase in herd size (not eligible in COP).
- The new reporting template adds each cost element of raising replacement herd (1) into the cost of dairy herd (reported in labour, capital and cash costs)
- A line entitled “purchasing/selling” is added in the CDC template under the cash costs section in order to adjust the COP for changes in dairy herd size and to account for purchases of animals from outside the replacement herd.
- The previous line is adjusted with the “Dairy herd inventory value adjustment”. It accounts to the fact that any variation in the COP due to a change in the number of animal units is excluded. Changes are only based on the market value of animals.
- Those changes do not impact the total COP value.

Standardization

- Starting with the 2012 COP data, cost of production is provided to the CDC based on actual figures. Individual farm data is no longer converted in standard hectolitres by data collectors. Standardization is only performed at the end of the process using the most recent component standards.
- The use of standardization is performed to allow for a proper comparison with revenues which are expressed in standard hectolitres.
- April 2013 support prices were used to determine BF and SNF weight:
Butter: \$7.3379/kg
SMP: \$6.4170/kg
- Following are the standards used in the 2012 COP calculations:

	Butterfat	SNF
Weight	36%	64%
Standard	3.6 kg/hl	8.9177 kg/hl
COP standard	3.99 kg/hl	9.08 kg/hl

Appendix

Appendix 1 contains the different indices used to index cash costs and interest components to the 3rd quarter of 2013.

Appendix 2 shows the number of farms in the final sample and the total production share for each province.

National Cost of Production Calculation⁽³⁾

2012 Results

COST COMPONENTS:	2012 COP	2012 COP Indexed to Q3 2013	2011 COP Indexed to Q3 2012⁽²⁾	% change⁽⁴⁾ Q3 2013/Q3 2012
	\$/hl	\$/hl	\$/hl	
CASH COSTS				
Purchased feed	14.04	14.05	14.18	-0.90%
Artificial insemination*	2.69	2.69	2.75	-2.09%
Transportation, fees & promotion	4.92	5.01	4.74	5.64%
Machinery, equipment repairs	2.08	2.12	2.12	0.10%
Fuel & oil	1.68	1.74	1.64	6.64%
Custom work	1.93	1.96	1.69	15.70%
Fertilizer & herbicides	1.59	1.34	1.23	8.78%
Seed & plants*	0.97	0.97	0.88	10.92%
Other (Misc): Professional fees	0.72	0.72	0.70	3.96%
Other (Misc): Animal costs	1.81	1.83	1.72	6.75%
Other (Misc): Crops costs	0.52	0.53	0.52	1.10%
Land & building repairs	1.91	1.96	1.98	-1.23%
Property taxes & insurance	1.72	1.76	1.73	1.63%
Hydro & telephone	1.43	1.47	1.50	-1.76%
Hired labour	2.52	2.57	2.42	6.53%
Total Cash Costs	40.53	40.73	39.79	2.38%
CAPITAL COSTS				
Interest paid	2.50	2.50	2.65	-5.82%
Building depreciation*	1.76	1.76	1.86	-5.38%
Machinery & equipment depr*	3.64	3.64	3.34	9.08%
Return on equity*	3.12	3.12	3.77	-17.33%
Cow depreciation*	9.71	9.71	8.36	16.04%
Total Capital Costs	20.72	20.72	19.98	3.69%
PRODUCER LABOUR				
Direct labour*	12.84	12.84	13.02	-1.33%
Return to management* ⁽¹⁾	3.86	3.86	3.95	-2.24%
Total Producer Labour	16.70	16.70	16.97	-1.54%
GOV'T REBATES & OTHERS*	-0.15	-0.15	-0.08	-101.46%
RESULT OF COP FORMULA	77.79	78.00	76.66	1.75%

* Not indexed

⁽¹⁾ The management labour cost was \$33.63 per hour for the 2012 COP calculations

⁽²⁾ Versus 76.06 while using the old standardization methodology.

COP used as a reference for the April 1, 2013 CDC support price adjustment

⁽³⁾ Calculations are done using the new standardization method

⁽⁴⁾ Using the old standardization method would result to a +1.88% change

Note: Starting in 2012, all cash costs incurred in raising replacement herd are included in the Cash costs section. Please refer to the following page for details of the new template.

National Cost of Production Calculation (New template) ⁽¹⁾

2012 Results

COST COMPONENTS:	2012 COP	2012 COP	\$ change	2012 COP ⁽²⁾
	Previous template	New template	New/Previous	Indexed to Q3 2013
	\$/hl	\$/hl	\$/hl	\$/hl
CASH COSTS				
Purchased feed	14.04	16.34	2.30	16.35
Artificial insemination*	2.69	3.11	0.42	3.11
Transportation, fees & promotion	4.92	5.07	0.16	5.17
Machinery, equipment repairs	2.08	2.61	0.54	2.67
Fuel & oil	1.68	2.13	0.45	2.21
Custom work	1.93	2.42	0.48	2.45
Fertilizer & herbicides	1.59	1.95	0.36	1.64
Seed & plants*	0.97	1.18	0.21	1.18
Other (Misc): Professional fees	0.72	0.79	0.07	0.80
Other (Misc): Animal costs	1.81	1.86	0.05	1.88
Other (Misc): Crops costs	0.52	0.66	0.14	0.67
Land & building repairs	1.91	2.48	0.57	2.55
Property taxes & insurance	1.72	2.17	0.44	2.21
Hydro & telephone	1.43	1.49	0.07	1.55
Hired labour	2.52	3.02	0.50	3.09
Purchase/sale of animals*		-3.10	(3.10)	-3.10
Dairy Inventory Value adjustment*		-0.62	(0.62)	-0.62
Total Cash Cost	40.53	43.59	3.06	43.82
CAPITAL COSTS				
Interest paid	2.50	3.29	0.79	3.21
Building depreciation*	1.76	2.31	0.56	2.31
Machinery & equipment depr*	3.64	4.38	0.74	4.38
Return on equity*	3.12	4.41	1.29	4.41
Cow depreciation*	9.71		(9.71)	
Total Capital Costs	20.72	14.39	(6.33)	14.31
PRODUCER LABOUR				
Direct labour*	12.84	15.35	2.50	15.35
Return to management* ⁽¹⁾	3.86	4.62	0.76	4.62
Total Producer Labour	16.70	19.97	3.26	19.97
GOV'T REBATES & OTHERS*	-0.15	-0.15	0.00	-0.15
RESULT OF COP FORMULA	77.79	77.79	(0.00)	77.94

* Not indexed

⁽¹⁾ Calculations using the new template will not be used this year.

⁽²⁾ Results will be used for the 2015 pricing.

Appendix 1

Description of indexes used to update cash costs and interest component

COST COMPONENTS	2012	Q3 2013	% change
			Q3 2013 / 2012
Dairy Ration	150.5	150.7	0.1%
Transportation, fees & promotion	2.65	2.7	1.8%
Mach, Equip Repairs	109.0	111.5	2.3%
Fuel & Oil	227.0	235.3	3.7%
Custom Work	121.7	123.2	1.2%
Fertilizer & Herbicides	279.5	235.8	-15.6%
Other (Misc)	115.3	116.5	1.1%
Land & Building Repairs	124.5	127.8	2.7%
Property Taxes & Insurance	137.8	140.6	2.1%
Hydro & Phone	126.5	130.8	3.4%
Hired Labour	32.4	33.1	2.1%
Interest	2.5	2.5	0.1%

Dairy Ration	v53385296	Table 329-0059: IPI, meat, fish and dairy products, fruits, vegetables and feeds, beverages and tobacco; Canada; Complete feeds, dairy and beef cattle (index, 2002=100)
Transportation		P5 Transportation Pooling Figures/Chiffres du pooling P5 pour le transport
Mach, Equip Repairs	v53433976	Table 329-0064: IPI, machinery and equipment, motor vehicles and other transport equipment; Canada; Agricultural machinery (index, 2002=100)
Fuel & Oil	v53385172	Table 329-0058: IPI, by stage of processing; Canada; Gasoline and fuel oil, other (index, 2002=100)
Custom Work	v41690973	Table 326-0020 Consumer price index, 2005 basket; Canada; All-items (2002=100)
Fertilizer & Herbicides	v53385176	Table 329-0058: IPI, by stage of processing; Canada; Fertilizers, other (index, 2002=100)
Other (Misc)	v53384992	Table 329-0058: IPI, by stage of processing; Canada; Total, all commodities (index, 2002=100)
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)
Telephone	v41691070	Table 326-0020: Consumer price index (CPI), 2005 basket, Telephone services, monthly (2002=100 unless otherwise noted)
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⁾	P10 production share ⁽²⁾ (litres) 2012 production year
Prince Edward Island	4	1.31%
New Brunswick	6	1.75%
Nova Scotia	4	2.24%
Quebec	97	37.39%
Ontario	50	32.89%
Manitoba	7	4.23%
Saskatchewan	6	2.92%
Alberta	17	8.58%
British Columbia	16	8.69%
Canada	207	100.00%

⁽¹⁾ Excluding outliers

⁽²⁾ P10 production excluding food bank, contaminated milk and milk sold at fairs