



Calculation Choices when evaluating Cost of Production

Cost of production (COP) is the sum of resources that go into production, including land, hired labour, and capital, along with cash and non-cash expenses (unpaid labour and depreciation). Both financial and production records are needed to calculate COP (Larson, 2014). Financial details required for COP analysis are mainly located in an operation's accounting records. Go to: <http://www.beefresearch.ca/resources/recordkeeping/level-two.cfm> for more information about financial records. Production records required for COP analysis include: the number of females exposed, calves born, death loss, calves sold, prices, cattle weights, grazing details, winter-feeding program, etc. These production records will help calculate enterprise-specific COP. The challenge arises when splitting shared costs across enterprises.

There are several choices made when calculating the cost of production. These choices will be influenced by what you want to get out of the data. This fact sheet outlines several key choices that practitioners make with their associated trade-offs.

What do you want to get out of a COP analysis?

- Break-even price estimate on weaned calves for market
- Cash cost and net income for bank loan application
- Compare breeding stock groups for profitability
- Benchmark total farm costs to better understand trade-offs between enterprises
- Understand competitiveness in your region or production system
- Understand the reality cow-calf and beef producers face
- An industry benchmark that reflects the financial health of producers with that enterprise

One should evaluate why they want COP analysis done and match the methodology to best suit that objective. Historically cow-calf benchmarks and COP have been calculated by provincial organizations to establish regional comparisons for producers. For a list of these provincial methods, refer to Appendix A.

The methodologies used by Alberta Agriculture and Forestry's AgriProfit\$ and CDN COP Network for COP analysis have some fundamental differences. AgriProfit\$ uses an accrual adjusted COP framework where the income statement for the whole farm has adjustments for product inventory changes and accounts receivable in value of production. The variable costs also include the adjustments for changes in supply inventory and accounts payable. AgriProfit\$ primarily reflects benchmarks for the industry at market value then using economic costs methodology. In contrast, the CDN COP Network reflects the producers' benchmarks based on actual cost of production for feed. These are calculated based on feed requirements from the rations and animal inventories. Similar to AgriProfit\$ the income statement for the whole farm has adjustments for product inventory changes. However, the model assumes a stable herd and heifer retention is adjusted to achieve that. Overall, the CDN COP Network will have relatively higher opportunity costs, and AgriProfit\$ will have relatively higher production cash costs. Further discussion on the differences is in later sections of this fact sheet.

Whole Farm and Enterprise Analysis

Cost of production can be calculated on both a whole farm and individual enterprise basis (Larson, 2014).

The whole farm analysis summarizes the operations' total income and management return. For producers, these values are often enough to summarize the farming operation cash flows and profits. This whole farm perspective is important when considering the resilience of the operation to demand or supply shocks in the market. Diversification, the use of multiple commodities as a risk management tool, means that farms with more than one commodity may expect periods of losses from certain enterprises. However, those enterprises are not necessarily removed if the objective of financial stability for the family is achieved in the long run. Therefore, starting from the perspective of the whole farm and the overarching objective of the operations is important when starting cost of production analysis. Evaluating what percentage of revenue comes from each enterprise can be informative about if the farm is specializing in a single commodity, relying on income from off-farm or other enterprises. However, there is so much variation in how farming operations are set up that beyond basic information about net income, there is limited benchmarking capabilities.

Enterprise analysis (e.g. cow-calf, backgrounding enterprises) allocates the whole farm expenses and opportunity costs to the enterprises generating those expenses. Operations using enterprise analysis can better understand the success of individual enterprises. The producer will then know which enterprises are making or losing money and if they should then invest their capital in a different enterprise. For further explanation of allocation, refer to the "Three Methods of Allocation" section. In addition, enterprise analysis allows for greater ability to both benchmark as well as understand the potential opportunities of a certain enterprise. There are many ways that an operation or enterprise can be profitable. Many choices come down to producer preference, environmental limitations and local opportunities to utilize resources close at hand.

Cost of Production

Cash Costs

Cash costs are the outlays over the course of the year, including machine and building repairs, paid labour, veterinary products and services, costs of feed production, and purchased feed. The CDN COP Network bases cash costs on actual cost of production for feed and land. AgriProfit\$ uses the market value for feed and land, treating them as cash costs. In this way, AgriProfit\$ uses the market value for feed as a proxy for the feed opportunity cost.

Feed Costs

Feed costs can be reflected in two ways; using the market value of the feed (AgriProfit\$) or based on the cost of production (CDN COP Network).

The first method evaluates winter feed and summer pasture costs at a market value reflecting the market value costs of the beef industry and treating them like cash costs. This provides a fair market value back to the feed and land enterprises. It allows producers to evaluate if it is more profitable to sell feed and rent out pasture or utilize them in the cow-calf enterprise. Some feeds do not have a robust pricing system available such as silage, aftermath grazing, by-products, etc. In these cases, an opportunity costs approach can be used for evaluating feed costs using the market values as proxies. By asking by answering the question “How much does it cost me to feed a particular ingredient to cattle instead of selling it on the market?” or for pasture by asking, “How much does it cost me to use my pasture to graze my cattle instead of renting the pasture out to a neighbour?”. An alternative for pasture is to use the pasture renting market (\$/acre). These costs are then treated like cash costs in the analysis.

Winter Feed Costs: the cost of all feeds used by the cow/calf enterprise, purchased or homegrown, based on the market value of these feeds (not the cost of growing the feed).

Pasture Costs: the value of grazing used by the cow/calf enterprise (exclusive of any other retained ownership / backgrounding uses). Pasture is valued into the cow/calf enterprise at market value (not cost) and is treated as a “cash” cost.

(AgriProfits, 2019)

Problems arise when mature producers have fully paid off their land and only have tax and land improvement expenses. Using the market value of their pasture results in a higher feed cost when, in reality, these costs can be lower due to the advantage of being produced on mortgage-free land. AgriProfit\$ can also calculate the cost of grown feed using in farm costs gross margin for comparison if needed.

The second method uses the cost of producing the feed on-farm and the purchased feed costs as used in that year to reflect the experience and situation of producers. Production inputs, land and any purchased feeds utilized that year are included. Rations for each type of animal and

inventories are used to calculate total feed requirements. Any shortfall in production is assumed to be covered by feed purchases at market value. Feed rations and yields are provided “as fed” to balance the model. Below are the included costs for feed production:

Feed: Calculated as feed cost (purchase feed + fertilizer, seed and pesticides for own feed production) + machinery cost (machinery maintenance + depreciation + contractor) + fuel, energy, lubricants and water + land cost (land rents paid + opportunity cost own land)

Land: separated into owned and rented land, includes both crop and pastureland. Land costs = Rents paid + calculated land rents for own land (opportunity cost).

By using the cost of land, the advantage that mature operations have is clearly shown as their cost structure is lower when land has been fully paid off. However, the opportunity cost of not doing something different with the land does not show. While the CDN COP Network can make adjustments to use market value for feed, results are not shown that way.

Table 1. Pros and Cons of Feed Calculation methods

Method	Pros	Cons
Market Value	<p>Provides a margin back to feed and land enterprises.</p> <p>Shows true cost of production if purchases were required in a drought year.</p> <p>It shows the economic results for the specific year.</p>	<p>Does not reflect the producer’s cash reality. As opportunity costs are treated like cash costs.</p>
Cost of Production	<p>Reflects the producer’s cash reality.</p> <p>Clearly shows differences between producers with land paid off vs. those still making payments.</p> <p>Reflects timing of feed purchases matching them to when they are utilized by the herd.</p>	<p>It does not account for the opportunity of selling those feeds into the market.</p> <p>Can inflate margins to the cow-calf enterprise by include margins that belong to land and feed production enterprises.</p>

Timing of bulk feed purchases

Timing of bulk feed purchases can become an issue if multiple years’ worth of supply is purchased at once. In AgriProfit\$, the feed cost will reflect the feed used that year. For example, if a producer purchases two years’ worth of feed, the feed expenses will only be listed in year one, and the unused feed will be counted as an asset in the operation and added to the feed inventory. This removes the extra feed purchase cost from that years expenses. In year two, the value of feed inventory used will be used with any adjustment for changes in market prices. This happens

because the economic report is for the specific year, and the market value reflects the conditions of that year.

Year one, purchasing two years' worth of feed:
 Feed purchased (two years cash expense) minus the value of feed inventory

Year two, using year ones purchased feed:
 Value of feed inventory used (adjusted for changes in market price)

In the CDN COP network, the purchased feed costs will be based on the usage during that year. The current markets cash price will apply in both years (essentially adjusting for changes in market price); therefore the benefit to the producer of bulk purchasing will not show up in the cost of production benchmarks.

Depreciation

Depreciation on buildings and machinery is a non-cash cost that reveals the ability of the farm to continue operating if an asset needs replacement.

$$\text{Straight-line Annual depreciation} = (\text{purchase value} - \text{salvage value}) / \text{lifetime}$$

An alternative to using exact purchase and salvage values is to use a proxy such as the current market value found on a net worth statement or the insured values¹; or the replacement cost. By utilizing the current market value for depreciation, there will be loss put aside for asset replacement at a set rate depending on the expected life of the asset (e.g. 10 years would be 10%, 20 years 5%, etc.). However, when inflation results in replacement costs rising over time, the current market value may underestimate what is needed to replace an asset at the end of its lifetime.

Table 2. Pros and Cons of Depreciation Calculation Methods

Method	Pros	Cons
Current Market Value	<ul style="list-style-type: none"> Can underestimate the costs leaving less cash put aside for replacement in case of a breakdown. Requires less data (available on the balance sheet). 	<ul style="list-style-type: none"> When replacement values inflate, it can be short of what is needed to continue operating.
Replacement Cost	<ul style="list-style-type: none"> Can over-estimate the cost, inflating real depreciation. Can require more data. 	<ul style="list-style-type: none"> Can be less accurate as it requires a moving adjustment for inflation.

¹ Insured values are expected to reflect current market value.

Utilizing replacement cost to calculate depreciation can be less reliable depending on data sources used, sets aside the ability of the farm to continue operation if an asset needs replacement. In all cases, the consistency of the method is important to make the interpretation meaningful.

Differences in depreciation costs between AgriProfit\$ and the CDN COP Network primarily comes from the use of specific (AgriProfit\$) versus generic (CDN COP Network) allocation; see description below. Where generic allocation results in machinery depreciation used for feed production to show up in the cow-calf enterprise as that is where revenue is generated. In contrast, specific allocation removes that cost, and since feed is treated at market value, machinery depreciation for feed production is treated as a cash cost. This results in the CDN COP Network typically having lower cash costs and higher depreciation costs than what is reported in AgriProfit\$.

Opportunity Costs

Opportunity costs are the non-cash costs that represent the forgone opportunity of using different resources. These costs can include unpaid labour, renting out land, the opportunity of selling or buying feed production, and return to own capital.

Land

The Opportunity costs of land are the rents for new contracts if the farm rents out owned land. It reflects the future cost of renting land. If the producers' profits of utilizing the land outweigh the profits of renting the land, utilizing owned land for production should be preferred and vice-versa. This shows up as part of the opportunity cost in the CDN COP Network. In AgriProfit\$, the opportunity cost of land shows up in the forage or pasture enterprise. The transfer cost at market value shows up in the cow-calf enterprise under land or feed.

Labour

The opportunity costs of labour are the calculated wage for family labour, either off-farm salary or farm manager salary. It is important to note that the opportunity cost of labour reflects the income you can receive for the same type of labour. Below is an example of the opportunity cost for a full-time unpaid ranching job:

Hours for full-time ranching: 40 hours per week x 52 weeks in a year = 2080 hours

Farm labourer salary: (75% of hours) = \$20 per hour x (2080 hours x 75%) = \$31,200

Farm manager salary: (25% of hours) = \$30 per hour x (2080 x 25%) = \$15,600

Total estimated full time ranching salary: \$46,800

Source: Cost of Production | AniSci 410 Lab (Larson, 2019)



Capital

The opportunity cost of capital is the interest rate for long-term government bonds multiplied by the equity without land (values of machinery, buildings, livestock, operating capital, less total loans). If the producer's return on capital through farm and ranch production of an enterprise is greater than the return possible from investing elsewhere, continuous production should be preferred.

Accrual Adjustments

Accrual adjustments for changes in inventory value as prices for cattle change from year to year may be included in the cost of production analysis. These typically show up on an accrual net income statement under revenue.

Cash flow Analysis Timeline

Before calculating the cost of production, one must choose the time period that will be examined.

Calendar or Agricultural year

A calendar or agricultural year timeline follows a specific set period (e.g. January to December or a crop year August to July). It reflects revenue and expenses that a producer experiences over that period. Producers who want a cash flow analysis typically use a calendar or agricultural year. This method is often preferred by lenders when getting evaluated for a line of credit or a loan.

Animal life period

An animal life period timeline follows a group of animals from placement through to sale to determine if that group or pen is profitable or not. Costs are determined through association with a complete production cycle, even if it covers multiple years or only a fraction of a year. Producers with retained earnings often benefit from this timeline as they can see the profitability of a specific group (i.e. backgrounding or finishing animals) and compare to other groups to determine the characteristics that make it profitable and duplicate that performance through animal selection and management.

COP Calculations used in CDN COP Network

Cost of Production = Cash Cost + Depreciation + Opportunity Costs

Where,

Cash Costs = Cash cost for purchased feed, fertilizer, seeds, fuel, maintenance, land rents, interest on liabilities, wages paid, veterinary costs plus medicine, water, insurance, accounting, etc. (excl. tax)

Depreciation = Linear depreciation on machinery and buildings, calculated on replacement values



Opportunity Costs = Calculated cost for using own production factors like labour (family working hours x wage for qualified local labour, land (own land x regional land rents) and capital (non-land equity x long-term government bonds interest rate)

Source: Agri benchmark training Part 10: Cost allocation (Braunschweig, 2016)

Units for Reporting Results

Often cow-calf COP is expressed as dollars per cow wintered (\$/cow wintered). When evaluating overall cost structure to identify areas for improvement, or comparing to a benchmark, this is sufficient.

Cost of production (\$/cow wintered) = Total production costs / Cows wintered
(Government of Alberta, 2020)

However, a per-unit cost provides producers with their break-even cost on weaned calves, allowing them to compare with posted market prices for their calves' average weight category (Larson, 2014). This break-even price will depend on the percentage of calves weaned that year from the cow herd. The higher the percent weaned, the lower per pound the break-even price will be (Larson, 2014).

Cow-calf per unit cost of production = Total production costs / Total pounds of calf weaned
(Beef Cattle Research Council, 2021b)

Three methods of Allocation

To evaluate costs by enterprise, allocation of shared costs is needed. Three methods of COP allocation across different enterprises or commodities are described below. Table 3 summarizes the pros and cons of each method.

Table 3. Pros and Cons of the Three Different Allocation Methods

Allocation Method	Pros	Cons
Specific Allocation	<ul style="list-style-type: none"> Can more easily evaluate which enterprises are making or losing money 	<ul style="list-style-type: none"> Separation of enterprises takes time and effort Need proper allocations to avoid double counting Highest response burden
Generic Allocation	<ul style="list-style-type: none"> Prices are not allocated based on use by enterprise but by the ability to cover overhead costs 	<ul style="list-style-type: none"> Enterprise's success is easily evaluated by ability to cover overhead costs Need proper allocation to avoid double counting

Gross Margin Analysis

- Lowest response burden
- Avoids allocating part of an asset to an enterprise that if removed would result in a higher cost structure for the remaining enterprises.
- More difficult to evaluate individual enterprises success

Specific Allocation

Specific allocation allocates overhead costs to specific enterprises based on use or hours. Separating enterprises to have their own COP per enterprise is often recommended to producers; for example, a producer can have a cow-calf operation, keep calves for backgrounding, and have their own replacement heifers (Beef Cattle Research Council, 2021b). Allocation of assets, depreciation, and expenses across the appropriate enterprises is done through splitting (or allocating) the total costs to each. The allocation is often done on an enterprise percentage use basis, adding up to a total of one hundred percent.

Specific Allocation Calculation Example

Expense	\$ Total	Cow-calf	Repl Hfr	Bckgrdr	Hay	Pasture
Fuel	\$5,000	25%	10%	10%	50%	5%
Calculation		5000 x 25%	5000 x 10%	5000 x 10%	5000 x 50%	5000 x 5%
Total Allocated		\$1,250	\$500	\$500	\$2,500	\$250

Source: Cost of Production | AniSci 410 Lab (Larson, 2019)

Detailed numbers for assets are required. This method requires the highest response burden for operations. However, this allows for yardage to be calculated. Yardage for winter feeding cows and calves can be a significant cost. Monitoring yardage can be a motivation to do specific allocation. Specific Allocation is used by AgriProfit\$ when calculating COP for the cow-calf enterprise.

Generic Allocation

Generic allocation uses percent revenues from each commodity to cover overheads and utilizes accounting data for the overhead costs. This takes the approach that overheads and fixed costs will be covered by something grown on the farm and recognizes the commodity price cycles where grains and livestock tend to be opposite. This method is not concerned about each enterprise paying their way, but rather that all overheads are covered by the mix of commodities grown.

It should be recognized that as commodity prices fluctuate and revenues to each enterprise fluctuate, the shifting shares will change the cost structure for each enterprise from year to year. Table 4 illustrates the physical and financial allocation factors.

Table 4. Physical and Financial Allocation Factors

Physical Allocation factors	Financial Allocation factors
<ul style="list-style-type: none"> • Labour hours, machinery hours • Acreage used • The surface of buildings, no. of places • Share in weight (beef finishing) • Share in the total number of animals (cow-calf and beef finishing) 	<ul style="list-style-type: none"> • Share in returns • Share in gross margin (variable cost)

Source: Agri benchmark training Part 10: Cost allocation (Braunschweig, 2016)

CDN COP Network uses Generic Allocation to calculate Whole farm, Cow-Calf and Retained Earnings COP information. Some items such as variable costs of land (e.g. corn for silage) only used for cattle will be allocated 100% to the beef enterprise. Costs are also allocated by shared returns.

Allocation of labour, land, machinery and buildings should be done as much as possible at the input data level, for example:

- Pastureland should be split into pasture for cow-calf and pasture for beef finishing.
- Workers should be split into milkers (dairy) and cattlemen (beef finishing).
- Machinery and buildings should be split as much as possible to the respective enterprises.

Generic Allocation Calculation Example

Total depreciation on machinery = \$10.00

Depreciation matrix (% of total depreciation)

Cow-calf	35%
Retained ownership	20%
Crop and forage production	30%
Other enterprises	15%
Total	100%

Machinery depreciation of the beef finishing enterprise

Cow-calf	10.00 x 35% = \$3.50
Retained ownership	10.00 x 20% = \$2.00
Crop and forage production	10.00 x 30% = \$3.00
Other enterprises	10.00 x 15% = \$1.50
Total	\$10.00

Source: Agri benchmark training Part 10: Cost allocation (Braunschweig, 2016)

Gross Margin Analysis

A gross margin refers to the total income derived from an enterprise less the variable costs incurred in the enterprise. This can be reported for the whole enterprise or can be adjusted to

per unit of output. It is frequently used to compare the opportunity of how to use farm resources, such as land between enterprises, but can also be within an enterprise such as to develop replacement heifers or purchase, to purchase or lease cows, etc.

The benefit of the gross margin is the fact that you do not have to allocate fixed/overhead costs to each enterprise. These fixed costs are assumed to be part of the operation and gross margin analysis helps find which enterprise will contribute the most to covering them. However, when an operation has fixed costs that are strongly associated with a single enterprise the gross margin analysis can be misleading. Therefore, capital and labour which are excluded from the gross margin need to be taken into consideration prior to making concrete decisions. (Beef Cattle Research Council, 2020)

Evaluating Retained Ownership

Margin Over Operation Cost Versus Enterprise Analysis

Enterprise analysis separates the expenses utilized for retained ownership to evaluate COP and net income. In the CDN COP Network, the COP and revenue are expressed as dollars per head sold for retained earnings.

Margin over operating costs expresses the dollars gained or loss per head sold from retained earnings. Margin over operating costs is often more positive than the cash enterprise analysis due to excluding any costs that require allocation between enterprises (e.g. machine repair, etc.).

Margin = sale price \$/head – Purchase price \$/head

Operating costs = direct costs excluding any costs that require allocation between enterprises (e.g. machine repair, etc.)

Retained Ownership Analysis	Pros	Cons
Enterprise Analysis	<ul style="list-style-type: none"> All costs are included in the COP for the producer's retained ownership analysis exhibiting the true total costs of the enterprise 	<ul style="list-style-type: none"> Separation of enterprises takes time and effort; therefore is rarely done when determining to retain ownership or not Need proper allocations
Margin over Operating Costs	<ul style="list-style-type: none"> Lowest response burden, able to be quickly done when determining to retain ownership or not Avoids allocating part of an asset to an enterprise that if removed would result in a higher cost structure for the remaining enterprises. 	<ul style="list-style-type: none"> Potential to exclude expenses misleading Investment decisions More difficult to evaluate individual enterprises success

Financial Ratios

AgriProfit\$ collects detailed financial information to report common financial ratios including, Debt to Equity which indicates the ability of equity to cover all outstanding debt and the Current Ratio to measure the ability to meet current financial obligations (Beef Cattle Research Council, 2021a).

Debt to Equity Ratio = Total Liabilities / Total Equity

Current Ratio = Current Assets / Current Liabilities

Many of these financial ratios help producers apply and get accepted for loans. Information such as current and non-current assets and liabilities, total equity, net income, and debt serviced are needed to calculate various financial ratios for a farming operation.

In the CDN COP Network, these details were not collected from focus group participants, and therefore, financial ratios are not reported. Instead, the network's focus is representing the cash, depreciation and opportunity costs reality of different types of operations, reflecting their profitability and economic efficiency.

Producers should evaluate why they want COP analysis done and match the methodology to best suit their operation's goals.

Appendix A

Provincial methods of COP Analysis

Provincial data collection established many past benchmarks and tools for cow-calf producers. Illustrated in Table 5 are the COP calculations used by different provinces.

Table 5. COP for Canadian Provinces

Province	COP Calculation	Data Collection	Source
British Columbia	<p>COP (Cow-calf) = Direct expenses + Projected indirect expenses</p> <p>*Direct expenses = seed + Fertilizer, soil testing & chemicals + twine & tarps + Crop & Price insurance + Custom work + irrigation + Feed Supplies + land rental + pasture fee + other feed purchases + Trucking + livestock other supplies + vet & medicine + breeding fees + equipment operating, repairs & maintenance</p> <p>*Projected indirect expenses = Depreciation + interest + other (e.g. operator labour, office expenses)</p>	COP (enterprise) budget done in 2013 and in 2019	https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/business-market-development/agrifood-business-management/running-a-farm-business/enterprise-budgets
Alberta	<p>COP = Value of Production + Variable Costs</p> <p>*Value of Production = total revenue produced - livestock purchases and adjustments for product inventory changes</p> <p>*Variable costs = Winter Feed + Bedding + Pasture + Veterinary & Medicine + Breeding Fees/Bull Rental + Trucking & Marketing Charges + Fuel + Repairs for Machine, Corrals, & Buildings + Utilities & Miscellaneous Expenses + Custom Work & Specialized Labour + Operating Interest Paid + Paid Labour & Benefits + Unpaid Labour</p> <p>*Capital costs = Share or Lease Cattle Payments + Taxes, Water Rates, Lic & Insurance + Equipment & Building Depreciation + Lease Payments + Paid Capital Interest</p>	AgriProfit\$ Collects producer data annually through a survey for benchmark generation.	https://open.alberta.ca/dataset/781f2072-bdb5-40be-a7df-a0a44a760017/resource/59c634bf-0961-4212-a27c-118ad797e228/download/af-economic-productive-financial-performance-alberta-cow-beef-2015-2019.pdf
Saskatchewan	<p>COP = Variable Costs + Capital Costs</p> <p>*Variable costs = Winter Feed + Bedding + Salt & Mineral + Pasture + Vet & Medicine + Breeding Fees or Bull Rental + Trucking, Marketing, Levies + Fuel + Repairs for Machinery, Buildings, Corrals & Fence + Utilities & Miscellaneous + Custom Work + Operating Interest & Bank Charges + Paid Labour & Benefits</p> <p>*Capital costs = Land Rent, Livestock Share + Taxes, Insurance, Licenses + Equipment & Building Depreciation & Lease Payments + Capital Interest</p>	CowProfit\$ Collected data from an average sample size of 25 operations each year. Saskatchewan released cow-calf COP benchmarks from 2001 through 2012. Data collection ceased after 2012.	http://westernbeef.org/cowprofits.html
Manitoba	<p>COP = Operating Costs + Fixed Costs + Labour</p> <p>*Operating Costs = feed costs + straw + Veterinary & Medicine & Supplies + Breeding costs + Fuel, Maintenance & Repairs + Utilities + Marketing & Transportation + Death Loss + Manure Removal + Insurance + herd</p>	The cost of Production calculators are updated every year.	https://www.gov.mb.ca/agriculture/farm-management/product-ion-economics/pubs/cop-

	<p>replacement + Pasture Rental + Miscellaneous Subtotal Operating Costs + Operating Interest *Fixed Costs = Depreciation + Investment</p>		<p>beef-feedlot-finishing.pdf This is the link to the cow-calf cost of production worksheet https://www.gov.mb.ca/agriculture/farm-management/product-ion-economics/pubs/cop-beef-300-cow-calf.xlsm These are calculators and displayed as a preset example, but all inputs are changeable parameters</p>
Ontario	<p>COP = Grazing Costs + Feed Costs + Operating Costs *Grazing costs = Annual fencing + water systems costs + seed costs *Feed Costs = Grown Hay + Purchased Hay + Straw + other feed + Concentrates + silage *Operating costs = Vet & Health costs + Fuel + Fixed Costs + Other Costs</p>	Cost of Production calculator.	<p>https://www.ontariobeef.com/markets/profitability-calculator.aspx http://www.omafr.gov.on.ca/english/busdev/bear2000/Budgets/livestock/cattle/cow-calf.xlsx</p>
Quebec	<p>OP = Operating Costs + Capital Costs + Labour *Operating Costs = Average expenses (variable and fixed) as seen in the accounting. *Capital Costs = Depreciation (linear) and opportunity cost of owner's equity *Labour = paid labour + opportunity cost of unpaid labour</p>	Data collected from a sample of 60 farms every five years. Results are indexed every year.	<p>https://www.cecpa.gc.ca/?rub=2&typeProduction=5&typeRapport=&datePublication=#liste</p>
PEI	<p>COP = Operating Costs + Fixed Costs *Operating Costs = Total feed, pasture & bedding + Veterinary, Medicine & Supplies + Breeding Stock Purchases + Fuel + Paid Labour + Unpaid Labour + Machinery and Building Repairs + Custom and Contract Work + Insurance + Utilities + Heifer development + Community pasture fee + Marketing and trucking + Heifer replacement + Accounting & legal fees + Membership fees + Property taxes + Shop supplies + Office expenses + Registration and licenses + Lease/rent + Interest on operating loans + Bank charges + Farm safety audit + Other costs *Fixed Costs = Depreciation + Interest on capital + Land + Owner equity opportunity cost</p>	Data collected though one on one interview on the farm in 2011. Fifty-one producers participates and forty-eight are included on the sample averages.	<p>http://www.peicattleproducers.com/userfiles/file/PEI%20Cattle%20Producers%20COP%20Report.pdf</p>



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