

## Farm Characteristics

CA-BC-4

<b>Farm Description</b>	A cow-calf operation with 88 head of beef cows, producing predominantly homegrown feed on irrigated land and sell hay.
<b>Winter Feeding Ration (lbs/cow/day as fed)</b>	195 days of winter feeding on mixed grass hay (35 lb)
<b>Retained Ownership/Replacement Ration (lb/head/day as fed)</b>	Replacement heifers: 195 days of winter feeding on alfalfa grass hay (10 lb) and 50/50 corn barley protein ration (5 lb)
<b>Disclaimer:</b>	This benchmark is based on 4 farms of data; outliers were excluded as required.

Environment	
Average Annual Temperature	3 C
Average Annual Precipitation (mm)	250-600
Ecoregion	Fraser Plateau Ecoregion
Stocking Rate (Animal Unit days per acre)	34
Fertilize Hay (yes/no)	Yes
Fertilize Pasture (yes/no)	No
Typical Hay Yield (tonnes/acre)	2.7
Grassland Acres (owned+rented)	756
Crop Acres (includes hay) (owned+rented)	131
Bush and other acres	0

Physical Performance Indicators	
Breed	Angus, Limousin, Hereford
Cow:Bull Ratio	21:1
Bull Culling Rate (%)	22%
Mature Cow Weight (lb)	1,500
Heifer Retention for a steady herd (%)	10%
Cow Death Loss (%)	0.5%
Cow Culling Rate (%)	9.8%
Calves alive after 24hr/100 Cows exposed	95
Calf Death Loss (%) 24 hr to weaning	1%
Calves weaned per 100 cows exposed	95
Total Liveweight Sold per Cow (lb)	637
Weaning Weight (lb)	549
205 day adjusted Weaning Weight (lb)	518
Average Daily Gain pre-weaning (lb)	2.14
Weaning Weight as % of Cow Weight	37%

Production System	
Herd size	88
Days on field feeding (e.g. swath grazing)	0
Days supplemented on pasture	0
Days on full winter feed	195
Calving Start date	March 12
Weaning date	November 05
Sale date	November 05
Retained ownership	Replacements
% of feed purchased	2.9%
% of land in crops	15%
Annual sales Retained Cattle (head)	N/A
Placement weight (lbs)	N/A
Sale Weight (lbs)	N/A
Days on feed	0
Days on grass	0

### Footnotes:

Cost of Production: Cash Cost + Depreciation + Opportunity Costs

Cash Costs = Cash cost for purchased feed, fertiliser, seeds, fuel, maintenance, land rents, animal purchases, 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 \* wage for qualified local labour, land (own land \* regional land rents) and capital (non-land equity \* long-term government bonds interest rate)

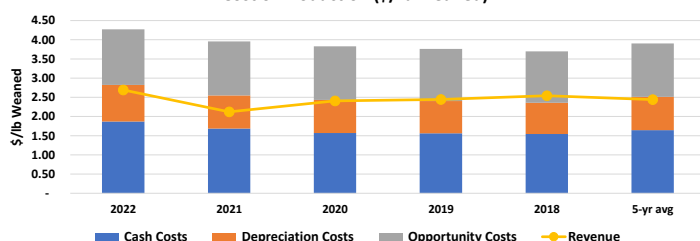
Whole Farm Profitability = Market returns (+ coupled payments) (+ decoupled payments) - whole-farm costs +/- changes in inventory +/- capital gains/losses.

Whole Farm Net Income = Whole farm profitability + depreciation + changes in inventory + capital gains/losses. Known as: 'Net farm income' (Agri Profits, 2018)

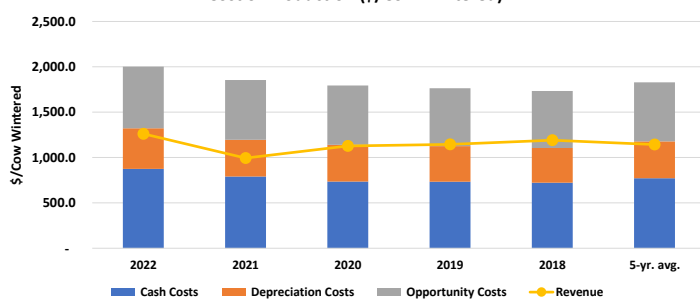
Revenue = sales of calves, cull cows, breeding stock, government payments and other revenue applicable to the specific enterprise

NOTE: Feed costs are based on cost of production if homegrown.

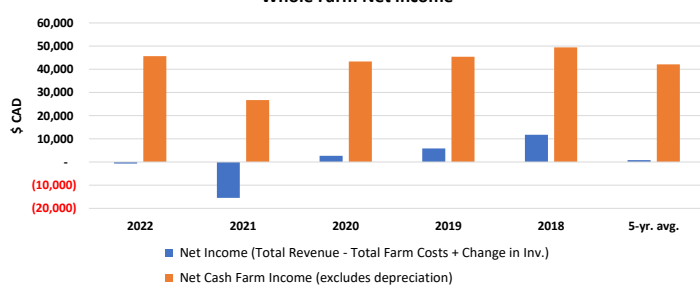
Cost of Production (\$/lb Weaned)



Cost of Production (\$/Cow Wintered)



Whole Farm Net income



## Whole Farm Overview Page

Overview							
Operation Maturity	Mature						
Herd Size	88						
Paid Labour (livestock only) (hours)	-			Beef Animals Sold from Retained Ownership	N/A		
Unpaid Labour (livestock only) (hours)	1,165						
Average wages - paid and unpaid (\$/hr)	25.02						
Revenue		2022	2021	2020	2019	2018	5-yr. avg.
<b>Market Revenue</b>	<b>5-yr avg</b>	<b>128,935</b>	<b>101,584</b>	<b>111,183</b>	<b>113,333</b>	<b>115,705</b>	<b>114,148</b>
Cow-Calf	87%	111,018	87,498	99,266	100,826	104,829	100,687
Cash Crops	12%	17,917	14,086	11,917	12,507	10,876	13,460
Retained Ownership	0%	-	-	-	-	-	-
<b>Government Payments</b>	0%	-	-	-	-	-	-
<b>Other Farm Revenue †</b>	2%	1,926	1,925	1,925	1,926	1,926	1,925
<b>Total Revenue</b>	<b>100%</b>	<b>130,861</b>	<b>103,509</b>	<b>113,108</b>	<b>115,258</b>	<b>117,631</b>	<b>116,073</b>
Change in Inventory		-	-	-	-	-	-
Expenses		2022	2021	2020	2019	2018	5-yr. avg.
<b>Depreciation</b>		<b>46,335</b>	<b>42,186</b>	<b>40,692</b>	<b>39,555</b>	<b>37,706</b>	<b>41,295</b>
Machinery		31,438	28,256	27,282	26,373	24,850	27,640
Buildings		14,897	13,930	13,410	13,182	12,856	13,655
Quota econ. Accounting		-	-	-	-	-	-
<b>Overhead costs</b>		<b>41,634</b>	<b>35,277</b>	<b>31,558</b>	<b>33,448</b>	<b>33,350</b>	<b>35,054</b>
Land improvement		3,596	3,411	3,277	3,270	3,190	3,349
Machinery Maintenance		7,237	7,209	6,976	6,897	6,788	7,021
Buildings Maintenance		2,329	2,108	2,011	2,024	1,958	2,086
Contract labour		-	-	-	-	-	-
Diesel, Gasoline, Natural Gas		14,562	9,706	7,024	9,280	9,897	10,094
Electricity		975	591	435	425	390	563
Water		218	218	218	218	218	218
Farm insurance		4,651	4,416	4,259	4,132	3,952	4,282
Disability and accident insurance		-	-	-	-	-	-
Farm taxes and duties		2,673	2,538	2,448	2,375	2,271	2,461
Advisor costs		211	200	193	187	179	194
Accountant & legal fees		2,056	1,952	1,883	1,827	1,747	1,893
Phone & utilities		2,749	2,574	2,491	2,473	2,425	2,542
Other overhead costs		379	355	344	341	335	351
<b>Wages, rent and interest payments</b>		<b>13,183</b>	<b>14,010</b>	<b>12,882</b>	<b>12,108</b>	<b>11,037</b>	<b>12,644</b>
Paid Labour		-	-	-	-	-	-
Total land rents		7,570	7,570	7,570	7,570	7,570	7,570
Total Interest on debt		5,613	6,440	5,312	4,538	3,468	5,074
<b>Cow-Calf</b>		<b>19,750</b>	<b>18,488</b>	<b>17,137</b>	<b>15,944</b>	<b>15,585</b>	<b>17,381</b>
Animal purchases		5,625	5,625	5,625	5,625	5,625	5,625
Purchased feed		6,213	5,700	4,947	4,354	4,390	5,121
Other fixed and var. costs *		7,912	7,163	6,565	5,965	5,569	6,635
<b>Retained Ownership</b>		<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Animal purchases		-	-	-	-	-	-
Purchased feed		-	-	-	-	-	-
Other fixed and var. costs *		-	-	-	-	-	-
<b>Crop and forage</b>		<b>10,637</b>	<b>9,008</b>	<b>8,164</b>	<b>8,340</b>	<b>8,178</b>	<b>8,865</b>
Seed		1,547	1,397	1,347	1,329	1,319	1,388
Fertilizer		8,757	7,299	6,516	6,711	6,565	7,170
Herbicide		-	-	-	-	-	-
Fungicide & Insecticide		-	-	-	-	-	-
Irrigation		-	-	-	-	-	-
Contract labour		-	-	-	-	-	-
Fuel costs (crop & forage)		-	-	-	-	-	-
Other crop and forage		333	312	302	299	294	308
<b>Total Farm Costs (excludes unpaid labour)</b>		<b>131,539</b>	<b>118,969</b>	<b>110,432</b>	<b>109,394</b>	<b>105,856</b>	<b>115,238</b>
Cash Costs (Total Farm Costs - Depreciation)		85,204	76,783	69,740	69,840	68,150	73,943
Depreciation & Opportunity Costs (including unpaid labour)		75,467	71,318	69,825	68,687	66,838	70,427
Total Economic Costs (cash, depr, opportunity)		160,671	148,101	139,564	138,527	134,988	144,370
Profits		2022	2021	2020	2019	2018	5-yr. avg.
<b>Net Income (Total Revenue - Total Farm Costs + Change in Inv.)</b>		<b>(678)</b>	<b>(15,460)</b>	<b>2,676</b>	<b>5,864</b>	<b>11,775</b>	<b>836</b>
<b>Net Cash Farm Income (excludes depreciation)</b>		<b>45,656</b>	<b>26,726</b>	<b>43,368</b>	<b>45,418</b>	<b>49,480</b>	<b>42,130</b>

† Other Farm Revenue includes: Other enterprises, capital gains and losses as well as calculated interest on savings based on the models previous year profits.

\* Other fixed and var. costs includes: veterinary, medicine, maintenance and spare parts, and other/miscellaneous



<b>Cow-Calf Enterprise (\$/Cow Wintered)</b>	<b>2022</b>	<b>2021</b>	<b>2020</b>	<b>2019</b>	<b>2018</b>	<b>5 yr. avg.</b>
Cows Wintered *	88	88	88	88	88	88
Average male and female calf price (\$/head)	1,297	1,028	1,172	1,182	1,240	1,184
<b>REVENUE</b>						
Cow Calf	1,262	994	1,128	1,146	1,191	1,144
Cull animals and slaughter receipts	142	107	119	129	125	124
Breeding livestock receipts	-	-	-	-	-	-
Calf Sales and transfer to retained ownership enterprise	1,120	888	1,009	1,017	1,066	1,020
Government payments	-	-	-	-	-	-
Other returns	-	-	-	-	-	-
<b>Total Cow-Calf Revenue</b>	<b>1,262</b>	<b>994</b>	<b>1,128</b>	<b>1,146</b>	<b>1,191</b>	<b>1,144</b>
<b>VARIABLE COSTS</b>						
Animal purchases	63.9	63.9	63.9	63.9	63.9	64
Feed (purchase feed, fertiliser, seed, pesticides)	213.1	189.2	174.2	168.8	168.4	183
Machinery (maintenance, depreciation, contractor)	372.8	340.7	341.7	330.7	320.4	341
Fuel, energy, lubricants, water	157.9	104.5	79.1	101.1	108.6	110
Vet & medicine	57.0	52.6	47.8	41.4	37.7	47
Other inputs cow calf enterprise	79.0	74.0	73.2	71.9	70.8	74
<b>Labour</b>						
Paid Labour	-	-	-	-	-	-
Unpaid Labour	323.8	306.3	306.7	296.6	289.0	304
<b>Total Variable Costs</b>	<b>1,267.4</b>	<b>1,131.3</b>	<b>1,086.6</b>	<b>1,074.5</b>	<b>1,058.8</b>	<b>1,124</b>
<b>CAPITAL COSTS</b>						
Insurance, taxes	74.5	70.6	69.8	67.6	65.4	70
Buildings (maintenance, depreciation)	166.1	154.1	153.8	151.2	150.0	155
Land Cost	-	-	-	-	-	-
Rented Land	84.1	84.1	84.5	84.4	84.6	84
Own Land	231.8	226.7	218.3	214.3	212.4	221
Capital Costs	-	-	-	-	-	-
Liabilities	54.1	61.9	53.0	45.1	35.1	50
Own capital	124.5	125.8	128.6	126.4	127.3	127
<b>Total Capital Costs</b>	<b>735.0</b>	<b>723.1</b>	<b>707.9</b>	<b>689.0</b>	<b>674.9</b>	<b>706</b>
<b>COSTS</b>						
Cash Costs	875.8	790.3	735.1	733.0	723.2	771
Depreciation Costs	446.7	405.2	405.8	393.2	381.8	407
Opportunity Costs	680.0	658.8	653.6	637.4	628.7	652
<b>Total Production Costs</b>	<b>2,002.5</b>	<b>1,854.4</b>	<b>1,794.6</b>	<b>1,763.6</b>	<b>1,733.7</b>	<b>1,830</b>
<b>Profits</b>						
<b>Short-term profit (cash costs)</b>	<b>385.8</b>	<b>204.0</b>	<b>392.9</b>	<b>412.8</b>	<b>468.1</b>	<b>373</b>
<b>Medium-term profit (cash + depreciation)</b>	<b>(60.9)</b>	<b>(201.3)</b>	<b>(12.9)</b>	<b>19.6</b>	<b>86.2</b>	<b>(34)</b>
<b>Long-term profit (cash + depreciation + opportunity)</b>	<b>(740.9)</b>	<b>(860.1)</b>	<b>(666.6)</b>	<b>(617.8)</b>	<b>(542.5)</b>	<b>(686)</b>

\*Model Maintains a stable herd size

Costs and revenue are reported for a calendar (e.g. January to December). 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. The model maintains a stable herd, retention rates were adjusted to ensure that.

#### Cash Costs

Cash costs are the outlays over the course of the year, including machine repairs, paid labour, costs of feed production, and purchased feed. CDN COP Network bases cash costs on actual costs of production. Agri Profit\$ uses the market value for some cash costs, including feed.

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 are assumed to be purchased 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.

#### 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 that there are commodity price cycles where grains and livestock tend to be opposite. It is not so much concerned about each enterprise paying their way as 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.

#### 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.

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. 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 reveal the 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.

**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.

**Capital:** The opportunity cost of capital is the interest rate for long-term government bonds multiplied by the equity without land (values of machines, buildings, livestock, circulating capital, less total loans). If the producers' return on capital through farm and ranch production of an enterprise is greater than investing elsewhere then, continuous production should be preferred.

#### Unit Reported

Often cow-calf COP is expressed as dollars per cow wintered (\$/cow wintered) which adjusts the calf price per head for the number of calves sold per 100 cows. When evaluating overall cost structure to identify areas for improvement, or comparing to a benchmark, this is sufficient.

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



<b>Cow-Calf Enterprise (\$/lb Weaned)</b>	<b>2022</b>	<b>2021</b>	<b>2020</b>	<b>2019</b>	<b>2018</b>	<b>5 yr. avg.</b>
<b>Pounds Weaned</b>	41,242	41,242	41,242	41,242	41,242	41,242
Average male and female weaning weight (lbs)	549	549	549	549	549	
Average male and female calf price at weaning (\$/lb)	2.36	1.87	2.14	2.15	2.26	2.16
<b>REVENUE</b>						
Cow Calf Operation	2.69	2.12	2.41	2.44	2.54	2.44
Cull animals and slaughter receipts	0.30	0.23	0.25	0.27	0.27	0.27
Breeding livestock receipts	-	-	-	-	-	-
Calf Sales and transfer to retained ownership enterprise	2.39	1.89	2.15	2.17	2.27	2.18
Government payments	-	-	-	-	-	-
Other returns	-	-	-	-	-	-
<b>Total Cow-Calf Revenue</b>	<b>2.69</b>	<b>2.12</b>	<b>2.41</b>	<b>2.44</b>	<b>2.54</b>	<b>2.44</b>
<b>VARIABLE COSTS</b>						
Animal purchases	0.14	0.14	0.14	0.14	0.14	0.14
Feed (purchase feed, fertiliser, seed, pesticides)	0.45	0.40	0.37	0.36	0.36	0.39
Machinery (maintenance, depreciation, contractor)	0.80	0.73	0.73	0.71	0.68	0.73
Fuel, energy, lubricants, water	0.34	0.22	0.17	0.22	0.23	0.24
Vet & medicine	0.12	0.11	0.10	0.09	0.08	0.10
Other inputs cow calf enterprise	0.17	0.16	0.16	0.15	0.15	0.16
Labour						
Paid Labour	-	-	-	-	-	-
Unpaid Labour	0.69	0.65	0.65	0.63	0.62	0.65
<b>Total Variable Costs</b>	<b>2.7</b>	<b>2.4</b>	<b>2.3</b>	<b>2.3</b>	<b>2.3</b>	<b>2.4</b>
<b>CAPITAL COSTS</b>						
Insurance, taxes	0.16	0.15	0.15	0.14	0.14	0.15
Buildings (maintenance, depreciation)	0.35	0.33	0.33	0.32	0.32	0.33
Land Cost						
Rented Land	0.18	0.18	0.18	0.18	0.18	0.18
Owned Land	0.49	0.48	0.47	0.46	0.45	0.47
Capital Costs						
Liabilities	0.12	0.13	0.11	0.10	0.07	0.11
Own capital	0.27	0.27	0.27	0.27	0.27	0.27
<b>Total Capital Costs</b>	<b>1.6</b>	<b>1.5</b>	<b>1.5</b>	<b>1.5</b>	<b>1.4</b>	<b>1.5</b>
<b>COSTS</b>						
Cash Costs	1.87	1.69	1.57	1.56	1.54	1.65
Depreciation Costs	0.95	0.86	0.87	0.84	0.81	0.87
Opportunity Costs	1.45	1.41	1.39	1.36	1.34	1.39
<b>Total Production Costs</b>	<b>4.27</b>	<b>3.96</b>	<b>3.83</b>	<b>3.76</b>	<b>3.70</b>	<b>3.90</b>
<b>Profits</b>	<b>2022</b>	<b>2021</b>	<b>2020</b>	<b>2019</b>	<b>2018</b>	<b>5-yr. avg.</b>
<b>Short-term profit (cash costs)</b>	0.82	0.44	0.84	0.88	1.00	0.80
<b>Medium-term profit (cash + depreciation)</b>	(0.13)	(0.43)	(0.03)	0.04	0.18	(0.07)
<b>Long-term profit (cash + depreciation + opportunity)</b>	(1.58)	(1.84)	(1.42)	(1.32)	(1.16)	(1.46)

Costs and revenue are reported for a calendar (e.g. January to December). 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. The model maintains a stable herd, retention rates were adjusted to ensure that.

#### Cash Costs

Cash costs are the outlays over the course of the year, including machine repairs, paid labour, costs of feed production, and purchased feed. CDN COP Network bases cash costs on actual costs of production. Agri Profit\$ uses the market value for some cash costs, including feed.

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 are assumed to be purchased 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.

#### 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 that there are commodity price cycles where grains and livestock tend to be opposite. It is not so much concerned about each enterprise paying their way as 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.

#### 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.

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. 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 reveal the 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.

**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.

**Capital:** The opportunity cost of capital is the interest rate for long-term government bonds multiplied by the equity without land (values of machines, buildings, livestock, circulating capital, less total loans). If the producers' return on capital through farm and ranch production of an enterprise is greater than investing elsewhere then, continuous production should be preferred.

#### Unit Reported

Open cow-calf COP is expressed as dollars per cow wintered (\$/cow wintered) which adjusts the calf price per head for the number of calves sold per 100 cows. When evaluating overall cost structure to identify areas for improvement, or comparing to a benchmark, this is sufficient.

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

