

## Farm Characteristics

CA-AB-4

<b>Farm Description</b>	A mixed farm with cow-calf and cash crop production.
<b>Winter Feeding Ration (lbs/cow/day as fed)</b>	20 days of swath grazing followed by 191 days on winter feed with hay (21 lb), straw (7 lb) and greenfeed (15 lb), with mineral and salt (100 g)
<b>Retained Ownership/Replacement Ration (lb/head/day as fed)</b>	n/a
<b>Disclaimer:</b>	This benchmark is based on 4 farms of data; outliers were excluded as required.

Environment	
Average Annual Temperature	3.5°C
Average Annual Precipitation (mm)	400-500 mm
Ecoregion	Fescue Grassland
Stocking Rate (Animal Unit days per acre)	40
Fertilize Hay (yes/no)	Yes
Fertilize Pasture (yes/no)	no
Typical Hay Yield (tonnes/acre)	2.0
Grassland Acres (owned+rented)	299
Crop Acres (includes hay) (owned+rented)	301
Bush and other acres	0

## Physical Performance Indicators

Breed	Angus, Gelbvieh
Cow:Bull Ratio	18:1
Bull Culling Rate (%)	33%
Mature Cow Weight (lb)	1,369
Heifer Retention for a steady herd (%)	9%
Cow Death Loss (%)	1.9%
Cow Culling Rate (%)	8.1%
Calves alive after 24hr/100 Cows exposed	95
Calf Death Loss (%) 24 hr to weaning	7%
Calves weaned per 100 cows exposed	87
Total Liveweight Sold per Cow (lb)	619
Weaning Weight (lb)	626
205 day adjusted Weaning Weight (lb)	551
Average Daily Gain pre-weaning (lb)	2.32
Weaning Weight as % of Cow Weight	46%

## Production System

Herd size	54
Days on field feeding (e.g. swath grazing)	20
Days supplemented on pasture	0
Days on full winter feed	191
Calving Start date	March 02
Weaning date	November 17
Sale date	November 17
Retained ownership	Replacements
% of feed purchased	0.5%
% of land in crops	50%
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)

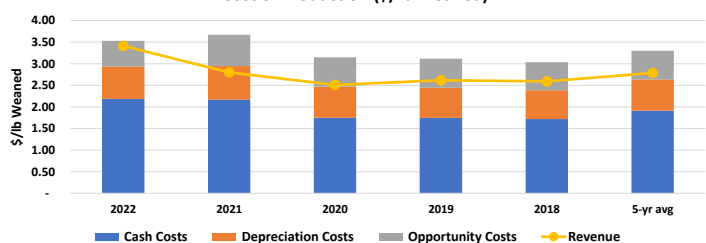
Whole Farm Profitability = Market returns (+ coupled payments) (+ decoupled payments) - whole-farm costs +/- changes in inventory +/- capital gains/losses.

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

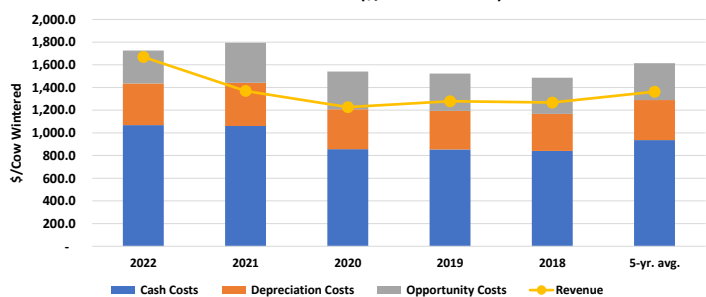
Revenue = sales of calves, cull cows, breeding stock, government payments and other revenue applicable to the specific enterprise

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

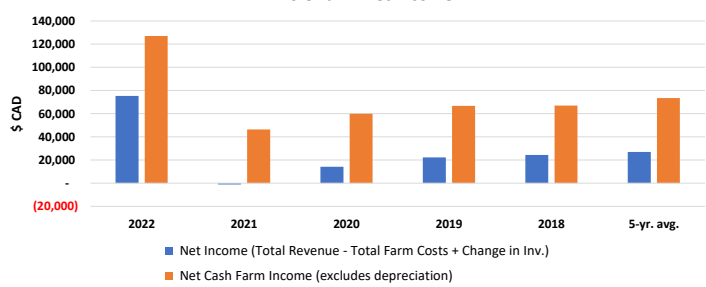
## Cost of Production (\$/lb Weaned)



## Cost of Production (\$/Cow Wintered)



## Whole Farm Net income



# Whole Farm Overview Page

Overview							
Operation Maturity	Mature						
Herd Size	54						
Paid Labour (livestock only) (hours)	-			Beef Animals Sold from Retained Ownership	N/A		
Unpaid Labour (livestock only) (hours)	409						
Average wages - paid and unpaid (\$/hr)	19.06						
Revenue		2022	2021	2020	2019	2018	5-yr. avg.
<b>Market Revenue</b>	<b>5-yr avg</b>	<b>225,952</b>	<b>139,698</b>	<b>145,758</b>	<b>154,003</b>	<b>151,331</b>	<b>163,349</b>
Cow-Calf	42%	84,426	68,878	66,262	69,079	68,456	71,420
Cash Crops	54%	141,526	70,820	79,497	84,924	82,875	91,928
Retained Ownership	0%	-	-	-	-	-	-
<b>Government Payments</b>	<b>1%</b>	<b>5,724</b>	<b>5,076</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>2,160</b>
<b>Other Farm Revenue †</b>	<b>3%</b>	<b>4,911</b>	<b>4,901</b>	<b>4,901</b>	<b>4,903</b>	<b>4,902</b>	<b>4,904</b>
<b>Total Revenue</b>	<b>100%</b>	<b>236,587</b>	<b>149,675</b>	<b>150,659</b>	<b>158,906</b>	<b>156,234</b>	<b>170,412</b>
Change in Inventory		-	-	-	-	-	-
Expenses		2022	2021	2020	2019	2018	5-yr. avg.
<b>Depreciation</b>		<b>51,807</b>	<b>47,447</b>	<b>45,747</b>	<b>44,580</b>	<b>42,717</b>	<b>46,460</b>
Machinery		27,459	24,680	23,829	23,035	21,704	24,141
Buildings		24,348	22,768	21,918	21,545	21,013	22,318
Quota econ. Accounting		-	-	-	-	-	-
<b>Overhead costs</b>		<b>7,910</b>	<b>7,309</b>	<b>6,996</b>	<b>6,934</b>	<b>6,713</b>	<b>7,173</b>
Land improvement		-	-	-	-	-	-
Machinery Maintenance		590	590	580	570	547	575
Buildings Maintenance		1,046	1,046	984	999	978	1,011
Contract labour		1,341	1,341	1,382	1,341	1,283	1,338
Diesel, Gasoline, Natural Gas		972	648	512	569	584	657
Electricity		367	223	164	160	147	212
Water		-	-	-	-	-	-
Farm insurance		2,190	2,080	2,006	1,946	1,861	2,017
Disability and accident insurance		-	-	-	-	-	-
Farm taxes and duties		93	88	85	82	79	85
Advisor costs		336	319	308	298	285	309
Accountant & legal fees		-	-	-	-	-	-
Phone & utilities		916	916	916	909	892	910
Other overhead costs		59	59	59	59	57	59
<b>Wages, rent and interest payments</b>		<b>10,687</b>	<b>10,673</b>	<b>11,684</b>	<b>12,751</b>	<b>11,523</b>	<b>11,463</b>
Paid Labour		-	-	-	-	-	-
Total land rents		7,085	6,743	6,625	6,438	6,338	6,646
Total Interest on debt		3,601	3,930	5,059	6,313	5,185	4,818
<b>Cow-Calf</b>		<b>39,099</b>	<b>38,779</b>	<b>28,246</b>	<b>27,608</b>	<b>27,899</b>	<b>32,326</b>
Animal purchases		4,013	4,013	4,013	4,013	4,013	4,013
Purchased feed		17,527	19,651	10,379	9,991	10,897	13,689
Other fixed and var. costs *		17,559	15,115	13,855	13,605	12,989	14,625
<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>51,823</b>	<b>46,618</b>	<b>43,836</b>	<b>44,825</b>	<b>43,083</b>	<b>46,037</b>
Seed		13,718	12,984	12,432	13,231	12,291	12,931
Fertilizer		21,881	17,825	15,649	16,192	15,786	17,466
Herbicide		4,397	3,983	3,804	3,633	3,562	3,876
Fungicide & Insecticide		-	-	-	-	-	-
Irrigation		-	-	-	-	-	-
Contract labour		4,063	4,063	4,188	4,063	3,886	4,053
Fuel costs (crop & forage)		-	-	-	-	-	-
Other crop and forage		7,763	7,763	7,763	7,707	7,559	7,711
<b>Total Farm Costs (excludes unpaid labour)</b>		<b>161,326</b>	<b>150,827</b>	<b>136,510</b>	<b>136,697</b>	<b>131,936</b>	<b>143,459</b>
Cash Costs (Total Farm Costs - Depreciation)		109,519	103,380	90,763	92,117	89,218	96,999
Depreciation & Opportunity Costs (including unpaid labour)		59,598	55,238	53,538	52,371	50,508	54,251
Total Economic Costs (cash, depr, opportunity)		169,117	158,618	144,301	144,488	139,727	151,250
Profits		2022	2021	2020	2019	2018	5-yr. avg.
<b>Net Income (Total Revenue - Total Farm Costs + Change in Inv.)</b>		<b>75,261</b>	<b>(1,152)</b>	<b>14,150</b>	<b>22,209</b>	<b>24,298</b>	<b>26,953</b>
<b>Net Cash Farm Income (excludes depreciation)</b>		<b>127,056</b>	<b>46,294</b>	<b>59,895</b>	<b>66,785</b>	<b>67,012</b>	<b>73,409</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 *	54	54	54	54	54	54
Average male and female calf price (\$/head)	1,761	1,373	1,380	1,436	1,426	1,475
<b>REVENUE</b>						
Cow Calf	1,669	1,370	1,227	1,279	1,268	1,363
Cull animals and slaughter receipts	173	194	142	149	144	160
Breeding livestock receipts	-	-	-	-	-	-
Calf Sales and transfer to retained ownership enterprise	1,390	1,081	1,085	1,130	1,124	1,162
Government payments	106.0	94.0	-	-	-	40.0
Other returns	-	-	-	-	-	-
<b>Total Cow-Calf Revenue</b>	<b>1,669</b>	<b>1,370</b>	<b>1,227</b>	<b>1,279</b>	<b>1,268</b>	<b>1,363</b>
<b>VARIABLE COSTS</b>						
Animal purchases	74.3	74.3	74.3	74.3	74.3	74
Feed (purchase feed, fertiliser, seed, pesticides)	472.8	496.3	315.5	312.7	324.3	384
Machinery (maintenance, depreciation, contractor)	287.4	304.0	283.6	272.7	258.8	281
Fuel, energy, lubricants, water	101.8	62.0	43.2	42.8	39.0	58
Vet & medicine	74.8	71.0	68.5	66.5	63.6	69
Other inputs cow calf enterprise	141.5	142.2	137.9	136.4	132.6	138
<b>Labour</b>						
Paid Labour	-	-	-	-	-	-
Unpaid Labour	122.4	151.4	134.9	129.3	124.7	133
<b>Total Variable Costs</b>	<b>1,275.0</b>	<b>1,301.2</b>	<b>1,057.9</b>	<b>1,034.7</b>	<b>1,017.3</b>	<b>1,137</b>
<b>CAPITAL COSTS</b>						
Insurance, taxes	41.0	43.1	40.3	38.9	37.3	40
Buildings (maintenance, depreciation)	134.4	134.4	126.6	124.2	121.4	128
Land Cost	-	-	-	-	-	-
Rented Land	82.1	78.2	76.8	74.7	73.5	77
Own Land	69.3	65.2	63.7	61.5	60.3	64
Capital Costs	-	-	-	-	-	-
Liabilities	25.4	36.0	41.2	50.8	42.1	39
Own capital	99.2	137.2	134.6	138.8	134.1	129
<b>Total Capital Costs</b>	<b>451.4</b>	<b>494.1</b>	<b>483.3</b>	<b>488.8</b>	<b>468.7</b>	<b>477</b>
<b>COSTS</b>						
Cash Costs	1,068.6	1,061.4	855.8	853.6	841.0	936
Depreciation Costs	366.9	380.1	352.1	340.4	325.9	353
Opportunity Costs	290.9	353.8	333.2	329.6	319.0	325
<b>Total Production Costs</b>	<b>1,726.4</b>	<b>1,795.3</b>	<b>1,541.1</b>	<b>1,523.6</b>	<b>1,485.9</b>	<b>1,614</b>
<b>Profits</b>						
<b>Short-term profit (cash costs)</b>	<b>600.8</b>	<b>308.1</b>	<b>371.2</b>	<b>425.6</b>	<b>426.7</b>	<b>427</b>
<b>Medium-term profit (cash + depreciation)</b>	<b>234.0</b>	<b>(72.0)</b>	<b>19.2</b>	<b>85.2</b>	<b>100.8</b>	<b>73</b>
<b>Long-term profit (cash + depreciation + opportunity)</b>	<b>(56.9)</b>	<b>(425.8)</b>	<b>(314.1)</b>	<b>(244.3)</b>	<b>(218.2)</b>	<b>(252)</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>	26,410	26,410	26,410	26,410	26,410	26,410
Average male and female weaning weight (lbs)	626	626	626	626	626	
Average male and female calf price at weaning (\$/lb)	2.81	2.19	2.20	2.29	2.28	2.35
<b>REVENUE</b>						
Cow Calf Operation	3.41	2.80	2.51	2.62	2.59	2.79
Cull animals and slaughter receipts	0.35	0.40	0.29	0.30	0.29	0.33
Breeding livestock receipts	-	-	-	-	-	-
Calf Sales and transfer to retained ownership enterprise	2.84	2.21	2.22	2.31	2.30	2.38
Government payments	0.22	0.19	-	-	-	0.08
Other returns	-	-	-	-	-	-
<b>Total Cow-Calf Revenue</b>	<b>3.41</b>	<b>2.80</b>	<b>2.51</b>	<b>2.62</b>	<b>2.59</b>	<b>2.79</b>
<b>VARIABLE COSTS</b>						
Animal purchases	0.15	0.15	0.15	0.15	0.15	0.15
Feed (purchase feed, fertiliser, seed, pesticides)	0.97	1.01	0.65	0.64	0.66	0.79
Machinery (maintenance, depreciation, contractor)	0.59	0.62	0.58	0.56	0.53	0.58
Fuel, energy, lubricants, water	0.21	0.13	0.09	0.09	0.08	0.12
Vet & medicine	0.15	0.15	0.14	0.14	0.13	0.14
Other inputs cow calf enterprise	0.29	0.29	0.28	0.28	0.27	0.28
Labour						
Paid Labour	-	-	-	-	-	-
Unpaid Labour	0.25	0.31	0.28	0.26	0.25	0.27
<b>Total Variable Costs</b>	<b>2.6</b>	<b>2.7</b>	<b>2.2</b>	<b>2.1</b>	<b>2.1</b>	<b>2.3</b>
<b>CAPITAL COSTS</b>						
Insurance, taxes	0.08	0.09	0.08	0.08	0.08	0.08
Buildings (maintenance, depreciation)	0.27	0.27	0.26	0.25	0.25	0.26
Land Cost						
Rented Land	0.17	0.16	0.16	0.15	0.15	0.16
Owned Land	0.14	0.13	0.13	0.13	0.12	0.13
Capital Costs						
Liabilities	0.05	0.07	0.08	0.10	0.09	0.08
Own capital	0.20	0.28	0.28	0.28	0.27	0.26
<b>Total Capital Costs</b>	<b>0.9</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>
<b>COSTS</b>						
Cash Costs	2.18	2.17	1.75	1.75	1.72	1.91
Depreciation Costs	0.75	0.78	0.72	0.70	0.67	0.72
Opportunity Costs	0.59	0.72	0.68	0.67	0.65	0.67
<b>Total Production Costs</b>	<b>3.53</b>	<b>3.67</b>	<b>3.15</b>	<b>3.12</b>	<b>3.04</b>	<b>3.30</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>	1.23	0.63	0.76	0.87	0.87	0.87
<b>Medium-term profit (cash + depreciation)</b>	0.48	(0.15)	0.04	0.17	0.21	0.15
<b>Long-term profit (cash + depreciation + opportunity)</b>	(0.12)	(0.87)	(0.64)	(0.50)	(0.45)	(0.51)

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**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.

