

# *AgriProfit\$*

Benchmarks for Alberta Cattlemen

**Economics & Competitiveness**

## Economic, Productive & Financial Performance Of Alberta Cow/Calf Operations

Boreal Transition

Production Year - 2001

Nov-03



## Foreword

This *AgriProfit\$ Cost & Returns Report* presents the productive, economic & financial performance of Alberta cow/calf producers in the Boreal Transition Region for the 2001 production year.

Field research was undertaken through Alberta Agriculture's *AgriProfit\$ Business Analysis & Research* program with the cooperation of producers in the region. Readers should be cautioned that the results for 2001 focused primarily on the Northern Alberta grass types (ecoregions) of "Peace Lowland", "Boreal Transition" & "Aspen Parkland". As such, they are not completely indicative of performance by cow/calf operations province-wide. Provincial level comparables are therefore noted as "N. Alta."

The intent of this report is to benchmark three specific management groupings:

- a regional average including all participating producers in the Boreal Transition grass type.
- an average of the "top performers" within this region. These include the lower 50%\* of producers in the region as ranked by unit costs.
- an average (or Northern Alberta Total) of all producers in the research pool.

The primary value of this report is to enable producers to gauge their productive, economic and financial performance relative to their peers locally and provincially. Benchmark analysis, comparing to one's own detailed cost and returns analysis, is the first critical step in identifying operational strengths and weaknesses in a cow/calf operation.

Cost and returns profiles for common forage and grazing crops in the grass type / region are included in this benchmark report in order to put these profit centers into context with the cow herd profiles they support. A list of definitions for common terms employed in this benchmark report is also appended.

The map above illustrates the location of each grass type region within Alberta. This package only reports the results of one specific grass type region, along with comparisons to the provincial total. If you are interested in obtaining information on other regions, please contact the Economics Unit at:

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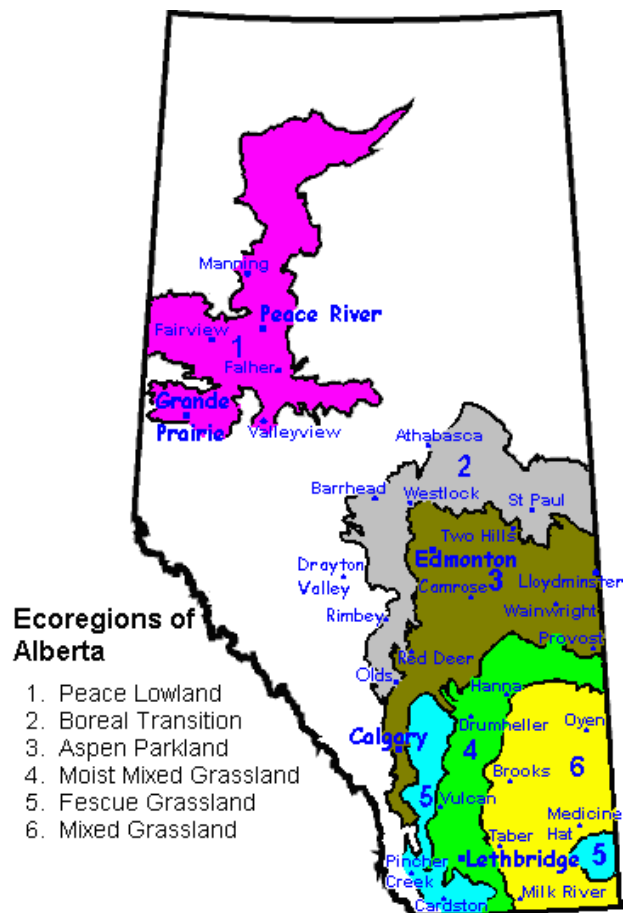
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\* For this analysis, total production cost per lb. weaned was the sole criteria for identifying the top management ("**Low Cost**") herds within the region. It should be noted, however, that there are several other factors that may contribute to the success of a cow/calf operation.

\*\***Note:** The bulk of each of the regional and top 1/2 group provided sufficient information to develop the farm financial benchmarks ... only these are used in the summary of farm financial performance. The productive & economic information is developed based upon the whole regional sample.

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## 2001 Cow/Calf Enterprise Overview

Economic & Physical Performance Comparisons

Benchmark Comparables: Boreal Transition Average & Low Cost Groups; Northern Alberta Total

Enterprise Type: Weaned-Calf

### Economic Performance Indicators:

	\$ / Lb. Weaned		
	Grass Type	Low Cost	N.Alta Total
Production Stock Sales	1.332	1.350	1.368
<b>Value of Production</b>	<b>1.227</b>	<b>1.287</b>	<b>1.297</b>
Winter Feed Costs	0.516	0.352	0.498
Bedding Costs	0.019	0.018	0.023
Pasture Costs	0.282	0.291	0.298
Labour Costs	0.120	0.121	0.119
Other Variable Costs	0.195	0.169	0.200
Depreciation & Capital Lease Payments	0.060	0.046	0.062
Other Fixed Costs	0.042	0.034	0.045
<b>Total Cash Costs</b>	<b>1.106</b>	<b>0.919</b>	<b>1.098</b>
<b>Total Production Costs</b>	<b>1.235</b>	<b>1.031</b>	<b>1.245</b>
<b>Contribution Margin</b>	<b>0.094</b>	<b>0.336</b>	<b>0.159</b>
<b>Gross Margin</b>	<b>0.121</b>	<b>0.368</b>	<b>0.199</b>
<b>Return to Investment</b>	<b>0.016</b>	<b>0.280</b>	<b>0.081</b>
<b>Return to Equity &amp; Management</b>	<b>(0.008)</b>	<b>0.256</b>	<b>0.051</b>
<b>Total Investment (\$ / cow wintered)</b>	<b>1,791</b>	<b>1,699</b>	<b>1,863</b>

### Physical Performance Indicators:

	Grass Type	Low Cost	N.Alta Total		Grass Type	Low Cost	N.Alta Total
Conception Rate (%)	89.6	90.9	90.9	Cows Wintered	251.7	292.9	217.6
Calving Rate (%)	99.2	99.9	98.3	Cows per Bull	27.3	27.2	26.4
Weaning Rate (%)	95.6	96.4	96.7	Labour Hours per Cow	6.6	6.3	6.3
Calf Crop (%)	85.0	87.5	86.0	AUM's/Cow Wintered	8.8	8.9	8.8
% Calved - 1st 2 Cycles	81.7	84.6	84.8	Feeding Season Days	184.6	174.5	186.2
Lbs. Weaned/Cow Exposed	502.7	502.2	484.2	Tonnes Fed per Cow			
Lbs. Weaned/Cow Wintered	562.4	544.2	531.8	- as-fed	5.7	4.1	5.5
Wean Wt as a % of Cow Wt.	47.6	46.3	45.2	- dry matter			
Weight per Day of Age (lbs.)	2.58	2.84	2.60				

	Grass Type	Low Cost	N.Alta Total
<b>G</b> rowth (weaning weight)	591.3	573.8	562.7
<b>O</b> pen Cows (%)	10.1	8.8	8.7
<b>L</b> ength of Calving Period	115.6	118.4	108.6
<b>D</b> eath Loss of Calves (%)	3.5	3.4	2.9

## 2001 Cow/Calf Enterprise Overview

### Economic & Financial Performance Comparisons

Benchmark Comparables: Boreal Transition Average & Low Cost Groups; Northern Alberta Total

Enterprise Type: Weaned-Calf

#### Economic Performance Indicators:

	<i>\$ / Cow Wintered</i>		
	<b>Grass Type</b>	<b>Low Cost</b>	<b>N.Alta Total</b>
Production Stock Sales	749.06	734.54	727.34
<b>Value of Production</b>	<b>689.84</b>	<b>700.50</b>	<b>689.56</b>
Winter Feed Costs	290.22	191.60	265.05
Bedding Costs	10.62	9.65	12.06
Pasture Costs	158.81	158.55	158.23
Labour Costs	67.74	65.71	63.44
Other Variable Costs	109.58	92.21	106.16
Depreciation & Capital Lease Payments	33.75	25.20	33.07
Other Fixed Costs	23.75	18.23	24.15
<b>Total Cash Costs</b>	<b>622.07</b>	<b>500.33</b>	<b>583.71</b>
<b>Total Production Costs</b>	<b>694.46</b>	<b>561.15</b>	<b>662.18</b>
<b>Contribution Margin</b>	<b>52.88</b>	<b>182.78</b>	<b>84.60</b>
<b>Gross Margin</b>	<b>67.77</b>	<b>200.17</b>	<b>105.84</b>
<b>Return to Investment</b>	<b>8.93</b>	<b>152.33</b>	<b>42.81</b>
<b>Return to Equity &amp; Management</b>	<b>(4.62)</b>	<b>139.35</b>	<b>27.38</b>

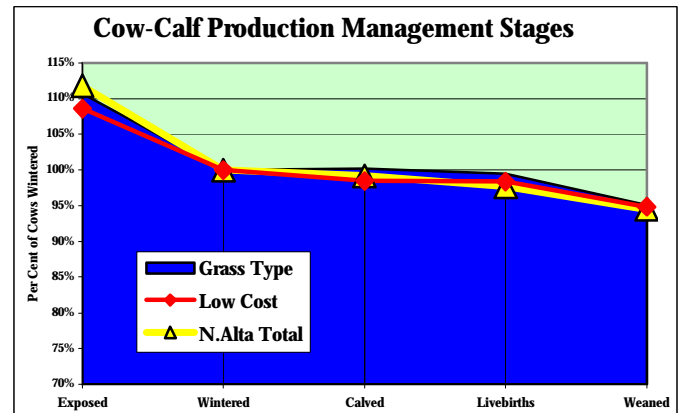
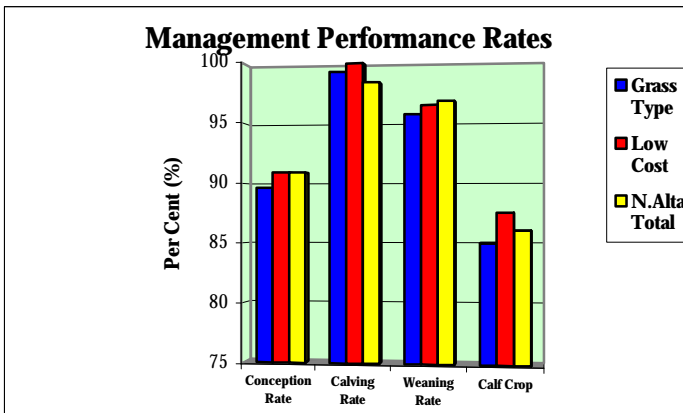
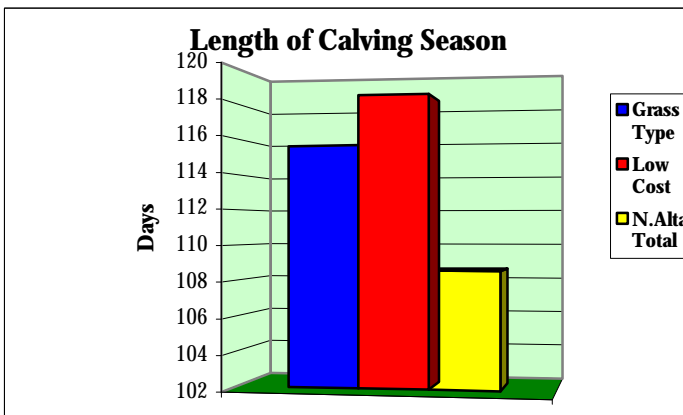
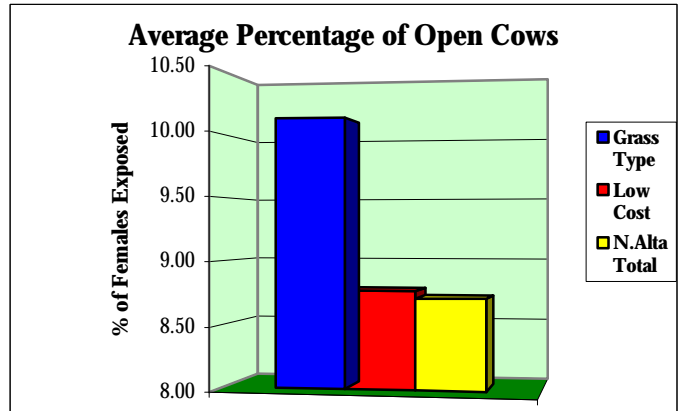
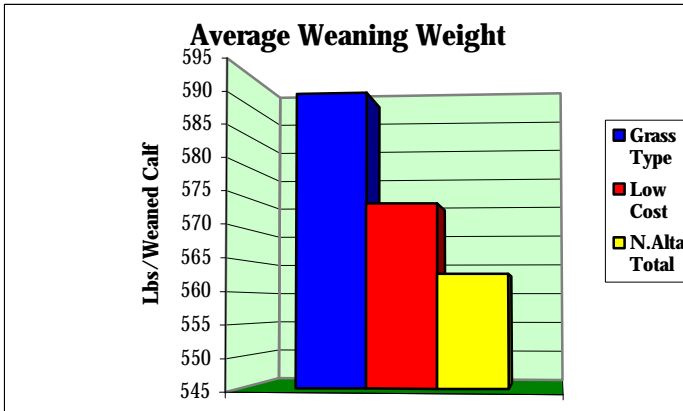
#### Farm Financial Performance Indicators:

<b>ROAD to Profitability</b>	<b>Grass Type</b>	<b>Low Cost</b>	<b>N.Alta Total</b>	
Risk (Debt to Asset Ratio)	0.16	0.25	0.21	= Total Liabilities / Total Assets
Operating Expense Ratio	0.59	0.53	0.56	= Operating Expenses / Value of Production
Asset Return	0.05	0.09	0.05	= Return on Assets / Total Farm Assets
Debt Payout	3.32	2.77	4.02	= Total Liabilities / Net Farm Income
to Profitability	111,652.77	182,723.09	97,941.22	= Net Farm Income
<b>The "3-C's"</b>				
Current Ratio	2.36	1.96	1.99	= Current Assets / Current Liabilities
Calif. Working Cap. Ratio	0.83	0.74	0.76	= Working Capital / Total Expenses
Capital Turnover Ratio	0.18	0.21	0.19	= Value of Production / Total Farm Assets
Farm Size (Acres)	5,514	3,745	3,578	= Total Acres in crops, forages & grazing (includes all acres owned, rented & leased)

## 2001 Cow/Calf Enterprise Overview

### Physical Performance Comparisons

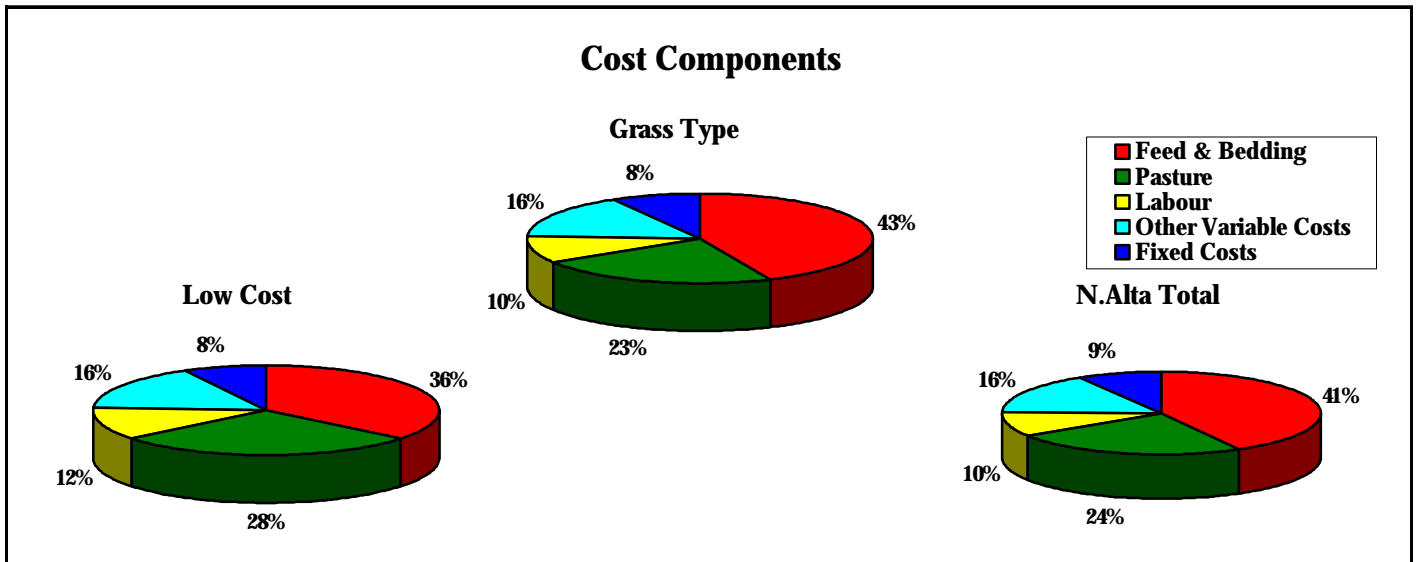
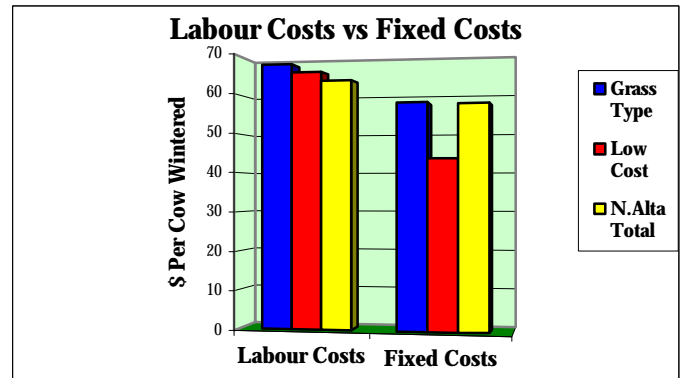
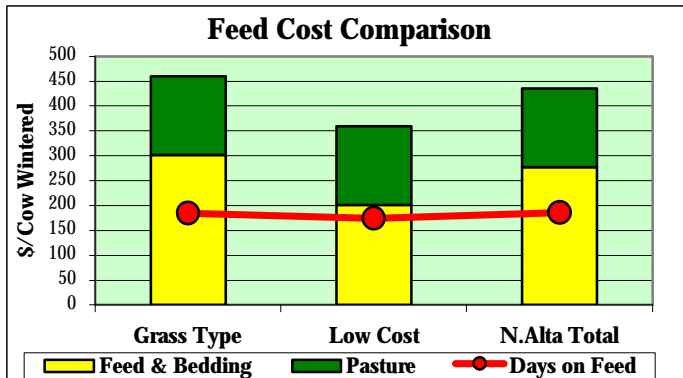
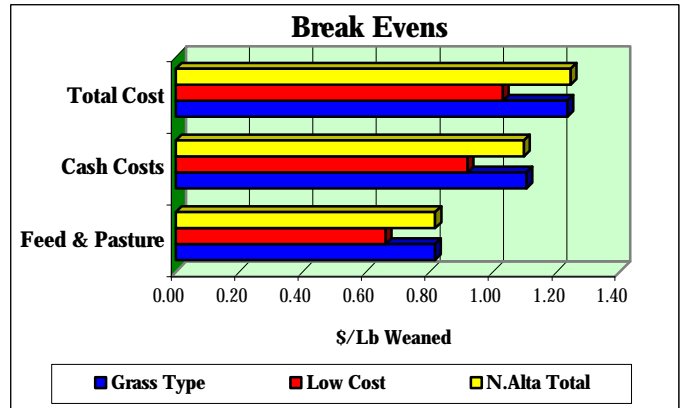
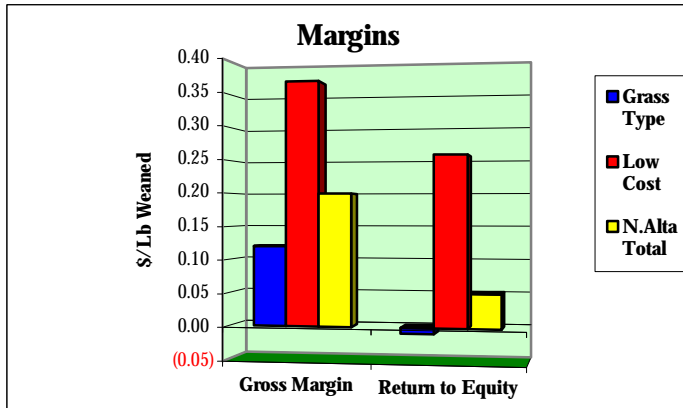
Benchmark Comparables: Boreal Transition Average & Low Cost Groups; Northern Alberta Total



# 2001 Cow/Calf Enterprise Overview

## Economic Performance Comparisons

Benchmark Comparables: Boreal Transition Average & Low Cost Groups; Northern Alberta Total



**2001 Cow/Calf Enterprise Unit Cost & Returns Detail**  
**Economic Performance Comparisons**

	<u>Grass</u> <u>Type</u>	<u>Low</u> <u>Cost</u>	<u>N.Alta</u> <u>Total</u>
	----- \$/Lb Weaned -----		
<b>(A)</b>			
1. Weaned Calves	1.33	1.35	1.37
2. Feeder Calves	0.00	0.00	0.00
3. Slaughter Cattle	0.00	0.00	0.00
4. Purebred Calves	0.00	0.00	0.00
5. Baby Calves	0.00	0.00	0.00
6. Cull Cows/Open Heifers	0.27	0.31	0.25
7. Bulls	0.05	0.05	0.04
8. Bred Cows/Bred Heifers	0.09	0.12	0.10
9. Miscellaneous Receipts	0.01	0.00	0.01
10. Government Programs	0.00	0.00	0.00
11. Inventory Adjustment	0.04	0.10	0.15
12. Less: Cattle Purchases	0.56	0.64	0.61
<b>Value of Production</b>	<b>1.23</b>	<b>1.29</b>	<b>1.30</b>
<b>(B)</b>			
1. Winter Feed	0.52	0.35	0.50
2. Bedding	0.02	0.02	0.02
3. Pasture	0.28	0.29	0.30
4. Veterinary & Medicine	0.04	0.03	0.04
5. Breeding Fees/Bull Rental	0.01	0.01	0.00
6. Trucking & Marketing Charges	0.02	0.01	0.03
7. Fuel	0.02	0.02	0.02
8. Repairs - Machine	0.03	0.03	0.03
9. Repairs - Corrals & Buildings	0.01	0.01	0.01
10. Utilities & Miscellaneous Expenses	0.03	0.03	0.04
11. Custom Work & Specialized Labour	0.02	0.02	0.01
12. Operating Interest Paid	0.01	0.01	0.01
13. Paid Labour & Benefits	0.04	0.05	0.03
14. Unpaid Labour	0.08	0.07	0.09
<b>Variable Costs</b>	<b>1.13</b>	<b>0.95</b>	<b>1.14</b>
<b>(C)</b>			
1. Share/Lease Cattle Payments	0.01	0.00	0.01
2. Taxes, Water Rates, Lic. & Insurance	0.01	0.01	0.01
3. Equipment & Building	0.05	0.04	0.06
a) Depreciation			
b) Lease Payments	0.01	0.01	0.01
4. Paid Capital Interest	0.02	0.02	0.03
<b>Total Capital Costs</b>	<b>0.10</b>	<b>0.08</b>	<b>0.11</b>
<b>(D) Cash Costs</b>	<b>(B+C-B14-C3)</b>	<b>1.11</b>	<b>0.92</b>
<b>(E) Total Production Costs</b>	<b>(B+C)</b>	<b>1.23</b>	<b>1.03</b>
<b>(F) Gross Margin</b>	<b>(A-D)</b>	<b>0.12</b>	<b>0.37</b>
<b>Return to Unpaid Labour</b>	<b>(A-D+B14)</b>	<b>0.07</b>	<b>0.33</b>
<b>Return to Investment</b>	<b>(A-E+C4)</b>	<b>0.02</b>	<b>0.28</b>
<b>Return to Equity</b>	<b>(A-E)</b>	<b>(0.01)</b>	<b>0.26</b>
<b>Total Investment</b>		<b>3.18</b>	<b>3.12</b>
		<b>3.12</b>	<b>3.50</b>

**2001 Cow/Calf Enterprise Unit Cost & Returns Detail****Economic Performance Comparisons**

	<u>Grass</u>	<u>Low</u>	<u>N.Alta</u>
	<u>Type</u>	<u>Cost</u>	<u>Total</u>
	----- \$/Cow Wintered -----		
<b>(A)</b>			
1. Weaned Calves	747.17	733.45	726.33
2. Feeder Calves	0.00	0.00	0.00
3. Slaughter Cattle	0.00	0.00	0.00
4. Purebred Calves	0.00	0.00	0.00
5. Baby Calves	1.88	1.09	1.01
6. Cull Cows/Open Heifers	153.13	169.51	131.88
7. Bulls	26.55	28.34	21.98
8. Bred Cows/Bred Heifers	51.09	62.82	51.06
9. Miscellaneous Receipts	4.27	1.14	2.82
10. Government Programs	0.00	0.00	0.00
11. Inventory Adjustment	21.78	52.26	77.84
12. Less: Cattle Purchases	316.04	348.10	323.35
<b>Value of Production</b>	<b>689.84</b>	<b>700.50</b>	<b>689.56</b>
<b>(B)</b>			
1. Winter Feed	290.22	191.60	265.05
2. Bedding	10.62	9.65	12.06
3. Pasture	158.81	158.55	158.23
4. Veterinary & Medicine	20.45	17.69	19.66
5. Breeding Fees/Bull Rental	4.58	7.10	2.57
6. Trucking & Marketing Charges	13.86	8.08	14.43
7. Fuel	13.31	11.29	12.93
8. Repairs - Machine	14.78	14.43	15.87
9. Repairs - Corrals & Buildings	8.35	4.51	7.44
10. Utilities & Miscellaneous Expenses	18.81	14.26	19.29
11. Custom Work & Specialized Labour	8.47	8.36	7.73
12. Operating Interest Paid	6.98	6.50	6.25
13. Paid Labour & Benefits	22.40	26.92	14.68
14. Unpaid Labour	45.34	38.79	48.76
<b>Variable Costs</b>	<b>636.96</b>	<b>517.72</b>	<b>604.95</b>
<b>(C)</b>			
1. Share/Lease Cattle Payments	5.84	1.43	4.10
2. Taxes, Water Rates, Lic. & Insurance	4.35	3.82	4.63
3. Equipment & Building	27.06	22.03	29.70
a) Depreciation			
b) Lease Payments	6.69	3.16	3.37
4. Paid Capital Interest	13.55	12.98	15.43
<b>Total Capital Costs</b>	<b>57.50</b>	<b>43.43</b>	<b>57.22</b>
<b>(D) Cash Costs (B+C-B14-C3)</b>	<b>622.07</b>	<b>500.33</b>	<b>583.71</b>
<b>(E) Total Production Costs (B+C)</b>	<b>694.46</b>	<b>561.15</b>	<b>662.18</b>
<b>(F) Gross Margin (A-D)</b>	<b>67.77</b>	<b>200.17</b>	<b>105.84</b>
<b>Return to Unpaid Labour (A-D+B14)</b>	<b>40.72</b>	<b>178.14</b>	<b>76.14</b>
<b>Return to Investment (A-E+C4)</b>	<b>8.93</b>	<b>152.33</b>	<b>42.81</b>
<b>Return to Equity (A-E)</b>	<b>(4.62)</b>	<b>139.35</b>	<b>27.38</b>
<b>Total Investment</b>	<b>1,791.17</b>	<b>1,699.18</b>	<b>1,862.69</b>

**2001 Forage & Pasture Enterprise Cost & Returns Analysis**  
**Boreal Transition**

	----- Forages -----			----- Pastures -----		
	Alfalfa /Grass Hay	Greenfeed	Grain Silage	Alfalfa /Grass	Tame Grass	Tame /Native Mixed
Average field size (acres)	109.7	63.8	78.6	211.0	124.2	336.6
Number of Observations	24	9	24	5	67	48
	-----\$/Tonne-----			-----\$/AUM-----		
<b>(A)</b> 1. Crop Sales	94.02	66.81	34.69	27.57	17.10	17.50
2. Crop Insurance Receipts	7.11	0.00	0.42	0.00	0.00	0.00
3. Miscellaneous Receipts	0.96	1.29	0.11	0.47	0.48	1.10
4. Government Programs	1.32	0.08	0.06	0.00	0.21	0.28
5. Straw / Aftermath Grazing	8.55	0.65	0.37	0.00	0.00	0.00
<b>Gross Return</b>	<b>111.96</b>	<b>68.84</b>	<b>35.65</b>	<b>28.04</b>	<b>17.80</b>	<b>18.89</b>
<b>(B)</b> 1. Seed	0.66	5.96	2.58	0.46	0.07	0.00
2. Fertilizer	5.99	12.21	3.92	1.00	2.64	3.83
3. Chemicals	0.19	6.42	0.59	0.27	0.09	0.06
4. Crop Insurance Premiums	0.74	0.65	0.45	0.00	0.00	0.00
5. Trucking & Marketing	0.09	0.00	0.35	0.00	0.05	0.29
6. Fuel	4.05	6.66	2.06	0.33	0.63	0.88
7. Irrigation Fuel & Electricity	0.00	0.00	0.00	0.00	0.00	0.00
8. Repairs - Machinery	7.39	3.91	1.39	0.26	0.48	1.05
9. Repairs - Buildings	1.62	0.70	0.19	0.49	1.04	1.64
10. Utilities & Misc. Expenses	2.49	2.07	1.03	0.53	0.43	1.09
11. Custom Work & Specialized Labour	0.50	5.38	5.62	1.78	0.55	0.68
12. Operating Interest Paid	0.33	0.19	0.39	0.24	0.13	0.45
13. Paid Labour & Benefits	1.67	0.33	0.93	0.14	0.70	0.86
14. Unpaid Labour	5.33	3.29	1.39	0.72	0.91	1.83
<b>Variable Costs</b>	<b>31.05</b>	<b>47.77</b>	<b>20.90</b>	<b>6.21</b>	<b>7.75</b>	<b>12.65</b>
<b>(C)</b> 1. Cash/Share Rent & Land Lease	9.26	4.51	2.16	0.00	3.74	7.53
2. Taxes, Water Rates, Lic. & Insurance	1.71	1.89	0.43	0.47	0.83	0.84
3. Equip. & Bldg. a) Depreciation	11.40	10.00	2.62	0.78	0.46	1.32
b) Lease Payments	0.33	0.19	0.01	0.00	0.02	0.23
4. Paid Capital Interest	2.59	1.28	1.09	0.81	1.48	1.27
<b>Total Capital Costs</b>	<b>25.29</b>	<b>17.87</b>	<b>6.31</b>	<b>2.06</b>	<b>6.53</b>	<b>11.21</b>
<b>(D) Cash Costs (B+C-B14-C3)</b>	<b>39.60</b>	<b>52.34</b>	<b>23.20</b>	<b>6.77</b>	<b>12.90</b>	<b>20.71</b>
<b>(E) Total Production Costs (B+C)</b>	<b>56.34</b>	<b>65.63</b>	<b>27.21</b>	<b>8.27</b>	<b>14.28</b>	<b>23.86</b>
<b>(F) Gross Margin (A-D)</b>	<b>72.35</b>	<b>16.50</b>	<b>12.45</b>	<b>21.26</b>	<b>4.89</b>	<b>(1.83)</b>
<b>Return to Unpaid Labour (A-E+B14)</b>	<b>60.95</b>	<b>6.50</b>	<b>9.83</b>	<b>20.49</b>	<b>4.43</b>	<b>(3.15)</b>
<b>Return to Investment (A-E+C4)</b>	<b>58.21</b>	<b>4.48</b>	<b>9.52</b>	<b>20.58</b>	<b>5.00</b>	<b>(3.70)</b>
<b>Return to Equity (A-E)</b>	<b>55.62</b>	<b>3.21</b>	<b>8.43</b>	<b>19.77</b>	<b>3.52</b>	<b>(4.98)</b>
<b>Return on Investment (%)</b>	<b>17.6</b>	<b>1.1</b>	<b>10.4</b>	<b>1.4</b>	<b>2.6</b>	<b>(1.6)</b>
<b>Total Investment (\$/acre)</b>	<b>476.23</b>	<b>720.72</b>	<b>567.38</b>	<b>3,090.37</b>	<b>354.36</b>	<b>175.74</b>
<b>Management</b>						
Yield per Acre (tonnes or AUM's)	1.44	1.69	6.21	2.08	1.84	0.78
Expected Market Price (\$/unit)	94.02	66.81	34.69	27.57	17.10	17.50

\* Cost and returns profiles include/combine all tenure types ... owned, rented & leased.

## **Definitions & Explanations to Accompany the Cow/Calf Enterprise Overview**

**Production Stock Sales** - revenues associated with the sale of weaned calves & other **non-breeding stock** related sales.

**Value of Production (VOP)** - the value of what was produced by the cow/calf enterprise over the course of the production year. Includes cash & non-cash values of:

- g** cull & breeding stock sales, revenues from miscellaneous sources (eg. program payments, patronage refunds, etc.) as allocated to the cow/calf enterprise,
- g** inventory adjustments relating changes in the number & value of stock included in the enterprise,
- g** an adjustment for livestock purchases (value is added only from the point of purchase forward)

**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 raising the feeds).

**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) & is treated as a "cash" cost.

**Labour Costs** - a sum of paid & contributed labour, as allocated to the cow/calf enterprise. Paid labour is valued at cost, while unpaid labour is valued at a standard or base cost.

**Depreciation & Capital Lease Payments** - sum of depreciation & mach./equip't/ bldg. lease payments on assets allocated to the cow/calf enterprise.

**Other Fixed Costs** - total cash overheads, as allocated to the cow/calf enterprise (share/lease cattle payments, property taxes, insurances, licences & term loan interest).

**Total Cash Costs** - sum of enterprise cash costs, considering home grown feeds, bedding & pasture as cash costs.

**Total Production Costs** - sum of all variable & fixed production costs.

**Contribution Margin** - VOP less Variable Costs

**Gross Margin** - VOP less Total Cash Costs

**Return to Investment** - VOP less Total Production Costs plus Term (Capital) Interest Paid

**Return to Equity & Management** - VOP less Total Production Costs

**Investment** - sum of assets allocated to the enterprise. includes: breeding stock, machinery, equipment, buildings/facilities & building site (only).

### **Breeding Performance Rates**

*(adjusted for sales & purchases of bred cattle)*

**Conception Rate (%)** - # Bred / # Exposed

**Calving Rate (%)** - # Livebirths / # Bred Females

**Weaning Rate (%)** - # Weaned / # Livebirths

**Calf Crop (%)** - # Weaned / # Exposed

**Calved in 1<sup>st</sup> 2 Cycles (%)** -  $\frac{\# \text{ Calved Cycle 1 \& 2}}{\text{Total Calved}}$

**Lbs. Weaned/Cow Exposed** -  $\frac{\text{Total Lbs. Weaned}}{\# \text{ Females Exposed}}$

**Lbs. Weaned/Cow Wintered** -  $\frac{\text{Total Lbs. Weaned}}{\# \text{ Bred Females Wintered}}$

**Wean Wt. as % of Cow Wt.** -  $\frac{\text{Avg. Lbs. Weaned}}{\text{Avg. Mature Cow Wt.}}$   
*(adjusting bred heifer wts.)*

**Weight per Day of Age (lbs.)** -  $\frac{\text{Avg. Lbs. Weaned}}{\text{Wtd Avg Wean Age}}$

**Cows Wintered** - Open Inventory of Bred Cows & Heifers

**Cows / Bull** - # Cows & Heifers Exposed / # Bulls Used

**Labour Hours / Cow** - Total Labour Hrs. / Cows Wintered

**AUM's / Cow Wintered** -  $\frac{\text{Total Enterprise AUM's}}{\text{Cows Wintered}}$

**Feeding Season Days** - Days Fed (in yard)

**Tonnes Fed per Cow** -

*as-fed*  $\frac{\text{Tonnes Total Feed (As-Fed)}}{\# \text{ Cows Wintered}}$

*dry matter*  $\frac{\text{Tonnes Total Feed (Dry Matter)}}{\# \text{ Cows Wintered}}$

### **GOLD Indicators**

**Growth (wean wt.)** -  $\frac{\text{Total Lbs. Weaned}}{\# \text{ Calves Weaned}}$

**Open Cows (%)** -  $\frac{\# \text{ Open Cows \& Heifers}}{\# \text{ Exposed}}$

**Length of Calving Period** - Days from 1<sup>st</sup> to last calf

**Death Loss of Calves (%)** -  $\frac{\# \text{ Calves Died}}{\# \text{ Livebirths}}$