

Dairy Cost Study

The Economics of
Milk Production
in Alberta
2014



**DAIRY COST STUDY:
THE ECONOMICS OF MILK PRODUCTION
IN ALBERTA
2014**

Volume 74

by

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Introduction

The Dairy Cost Study is a valuable benchmark of cost and return information for individual dairy producers in Alberta. Participants in the study receive a detailed analysis of their farming operation which can be directly compared to the provincial profiles (e.g. average, top-third, bottom-third). Other dairy producers in the province can compare their own records and analysis with the provincial profiles. The Dairy Cost Study also provides vital information to other dairy industry participants, such as financial institutions, market analysts and policy analysts.

The Dairy Cost Study was introduced during World War II. Since then, the Economics Branch has added cost and return assessments for a wide range of crop and livestock production in Alberta.

In summary, the objectives of the study are as follows:

- to provide an annual account of the costs and returns of milk production in Alberta;
- to provide the participating dairy farmers with a personal business analysis for management purposes;
- to provide a benchmark for the evaluation of milk pricing; and
- to provide economic information for farm management, extension education, and service providers.

The Dairy Cost Study

The Dairy Cost Study is an economic analysis of the costs and returns of a sample of Alberta dairy producers for a given production year. Study participants are required to complete monthly survey forms regarding their dairy production activities - dairy herd inventory, capital purchases, milk sales and farm use, feed use and purchase costs, labour costs, and other expenses related to the dairy enterprise - and an annual form on their dairy investments. (The survey forms are shown in Appendix F.) From this database, weighted sample averages are calculated which represent benchmarks for all dairy producers in the province. As well, study participants receive a confidential report on their dairy operation which can be compared with these provincial benchmarks.

Milk production in Canada is directed towards two categories, fluid milk and industrial milk, which comprises milk used for all dairy products such as cheese and yogurt. In 2014, approximately 47 percent of Alberta's total milk production was for fluid milk. In the past, dairy producers had separate quota allocations for fluid and industrial milk production. However, in August 2008, Alberta moved to a total production quota (TPQ) system and no distinction is made between fluid and industrial milk production at the farm level. The cost profiles in this report therefore represent all milk production in Alberta. Also, in August 2009, it became mandatory for Alberta milk producers to participate on the Canadian Quality Milk Program.

The Survey Group

Forty-nine dairy producers across the province submitted monthly business information for the 2014 calendar year. Two regional sub-groups were also identified for Northern Alberta (north of Ponoka) and Southern Alberta. Northern Alberta was represented by 17 producers while Southern Alberta had 32 participants complete the study.

The study was designed to represent a cross section of dairy farms by the size of their milk quota. Efforts were made to select study participants by systematic random sampling to provide better representation of the total population. Some characteristics of the sample are shown in Table 1. Appendix E presents charts showing individual results for the 49 dairy cost study participants.

Table 1
2014 Sample Characteristics

Years in Dairy	Total Sample %	<u>Indebtedness</u>		<u>Herd Size (# of cows)</u>	
		<30%	≥30%	<75	≥75
<10	8	2	2	1	3
≥10	92	33	12	7	38
Total (%)	100	71	29	16	84

Study Methodology

1. **Enterprise identification:** There are several different approaches for calculating the farm cost of producing fluid milk. Some studies use the total farm approach, which combines the dairy costs with those of other enterprises. This Alberta study examines only the dairy enterprise, which is defined as all activities associated with both milking cows and maintaining dry cows and young dairy stock. In most cases, the dairy operator uses home-grown feed in association with purchased feed. The costs of production of the homegrown feed are allocated to the crop enterprise portion of the farm, and are not considered in the dairy enterprise. Consequently, the final costs outlined in this report are only those associated with milk production.

2. **Inventory adjustment:** Since the cost of raising young dairy stock is included in the cost of milk production, the total income includes net cattle sales and net inventory changes. Cattle inventory changes, or herd growth, are determined by subtracting the beginning-year inventory value from the year-end inventory value. Gross income is thus composed of milk sales, net cattle sales, and the value of this net inventory adjustment. The net inventory adjustment may be negative or positive.

3. **Home grown feed:** Hay that is grown on the farm and fed to dairy livestock is priced at the regional market value of stacked hay on the farm. Similarly, feed grain is valued at regional elevator prices provided by the Alberta Canola Producers Commission. In other words, the

dairy enterprise is charged the current market value for these home-grown inputs, just as if they were purchased from the cropping enterprise. The total value of home-grown feed is determined by multiplying the regional value or price by the actual quantity fed. This procedure adequately compensates for the production cost of home-grown feed.

Alternatively, where feed is purchased, the actual purchase cost is used in the analysis.

4. **Value of investment and depreciation:** The information presented in this report is intended to reflect the average yearly production conditions in the dairy industry. Depreciation estimates are based on the original value of buildings and machinery. Current market value of owned assets is also estimated by updating the original value of the dairy investment with appropriate inflation factors, and then depreciating each item accordingly, based on the number of years in use. Original values and years in use are obtained from participants' farm records. With the exception of acreage for pasture, house, dairy buildings and corral location, farmland is not considered to be a dairy investment. The dairy livestock inventory is valued using the average annual market price. Value of investment is used for calculating the return to equity, and for determining the equity position of the dairy operation.
5. **Operator and family labour:** The operator's actual labour may vary from almost none on some dairy farms to the total input of labour on other farms. The procedure used in this study to put a value to operator labour is to multiply the operator's labour hours times the average hourly wage rate paid for dairy labour reported by the participants on the study. (All type of paid labour is included in this category from strictly feeding, to all general chores, to relief milking.) Assigning a value to operator labour is preferred over leaving it as unpaid labour because of the great variability in labour time between operators. Family labour is evaluated similar to the above, but a lower wage rate is applied to family members under the age of 16. Partners, spouses and other family members (16 years of age or older) receive the same wage rate as the operator.
6. **Interest on capital:** The actual interest paid on existing liabilities is included in the capital cost. To obtain this value, participating producers were asked to report their outstanding liabilities (excluding quota) and the interest rates charged. This method is more accurate than reporting the total annual interest paid. When both the total variable cost and the capital

cost for the dairy enterprise are subtracted from gross income, the bottom line residual is the return to equity and management. When this residual is expressed as a percentage of the equity capital, then the percent return to equity can be compared with the returns from alternative investment opportunities such as Canada Savings Bonds or term deposits.

7. **Rent:** Rent charges are included in the cost of capital. The capital cost in this context represents the cost of ownership of resources. If resources are rented, there is a charge for their use. If, on the other hand, resources are owned, the owner must bear the cost of depreciation and interest on debt.

Dairy Enterprise Economic Overview

Tables 2 through 4 provide a summary of the costs and returns for dairy producers in Alberta. (More detailed results are presented in Appendices A, B, and C.) In Table 2, the average results for the entire survey sample are listed in the centre column. Costs and returns are provided for two sub-groups of dairy producers based on their total production costs. The bottom 1/3 are the highest cost producers and the top 1/3 the lowest cost producers. The total cost for the top 1/3 group was 26 percent or \$23.82 per hL lower than the bottom 1/3. This is one percent lower than 2013. “Other variable costs” (bedding, vet./medicine, milk hauling, utilities, etc.) had the biggest difference, \$7.54 per hL (44 percent) higher for the bottom 1/3 group. Feed costs were also considerably lower for the top 1/3 group, \$6.18 per hL lower, or 22 percent.

Table 3 compares the average costs and returns for 2013 and 2014. Overall, the 2014 cost profile is very similar to the 2013 cost profile. In 2014, total cost of production was \$76.98 per hL, a decrease of 2 percent or \$1.21 per hL compared to 2013. Feed costs declined by just under \$1 per hL. The higher cost of forages was offset by lower costs for complete feed (dairy ration and calf feed) and grain. Labour, depreciation and “other capital costs” (taxes, interest) all declined marginally in 2014, while “other variable costs increased \$1.22 per hL. Milk sales were stable, only 16 cents higher than in 2013.

Finally, Table 4 compares average costs and returns for Northern and Southern Alberta.

Changing Table 2

Dairy Enterprise Costs and Returns - \$ Per hL Sold

Bottom 1/3 (Highest Cost Producers), Average Cost, Top 1/3 (Lowest Cost Producers)

	Bottom 1/3	Average	Top 1/3
Milk Sales	82.51	82.01	82.04
Gross Income	87.85	88.28	88.24
Feed Cost	34.91	31.78	28.73
Main Feed Components:			
Grain	1.59	3.97	5.28
Complete Feed	14.90	11.06	7.77
Roughage	12.84	11.52	11.28
Labour Costs	16.77	12.85	12.87
Other Variable Costs	24.49	20.13	16.95
Depreciation	11.26	8.88	7.27
Other Capital Costs	4.34	3.34	2.13
Total Production Costs	91.76	76.98	67.95
<hr/>			
Total Cash Costs	65.89	58.80	49.69
<hr/>			
Gross Margin	21.96	29.49	38.55
Contribution Margin	11.68	23.52	29.69
Return to Investment	-1.52	12.91	20.71
Return to Equity	-3.91	11.30	20.29
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Return to Investment (%)	-0.8	7.7	15.7
Return to Equity (%)	-1.1	8.9	17.7

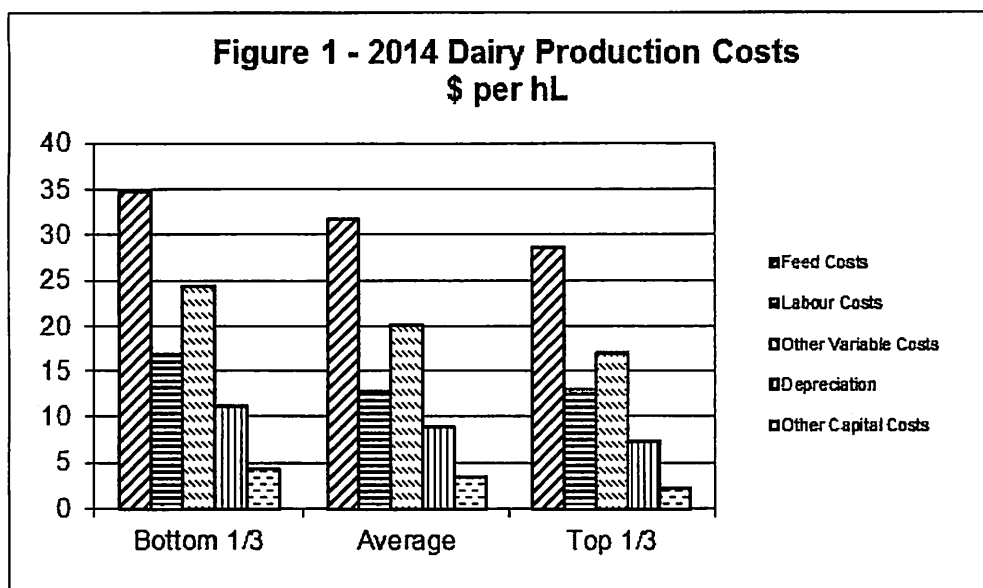


Table 3
Dairy Enterprise Costs and Returns - \$ Per hL Sold
2013 and 2014

	2013 (50 producers)	2014 (49 producers)
Milk Sales	81.85	82.01
Gross Income	88.22	88.28
Feed Costs	32.72	31.78
Main Feed Components:		
Grain	5.19	3.97
Complete Feed	12.58	11.06
Roughage	10.24	11.52
Labour Costs	13.41	12.85
Other Variable Costs	18.91	20.13
Depreciation	9.17	8.88
Other Capital Costs	3.98	3.34
Total Production Costs	78.19	76.98
Total Cash Costs	58.96	58.80
Gross Margin	29.26	29.49
Contribution Margin	23.19	23.52
Return to Investment	12.16	12.91
Return to Equity	10.04	11.30
Return to Investment (%)	7.3	7.7
Return to Equity (%)	8.3	8.9

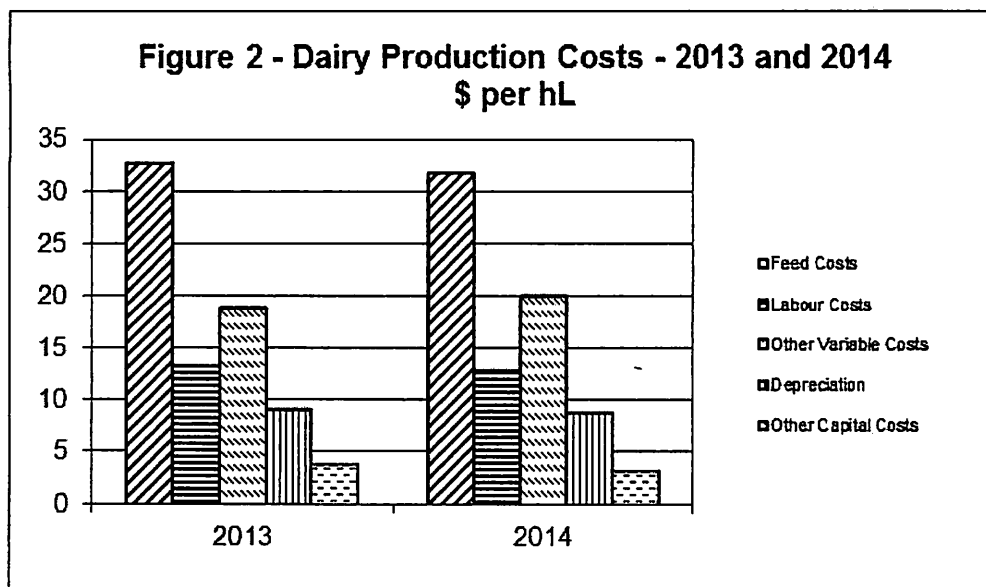
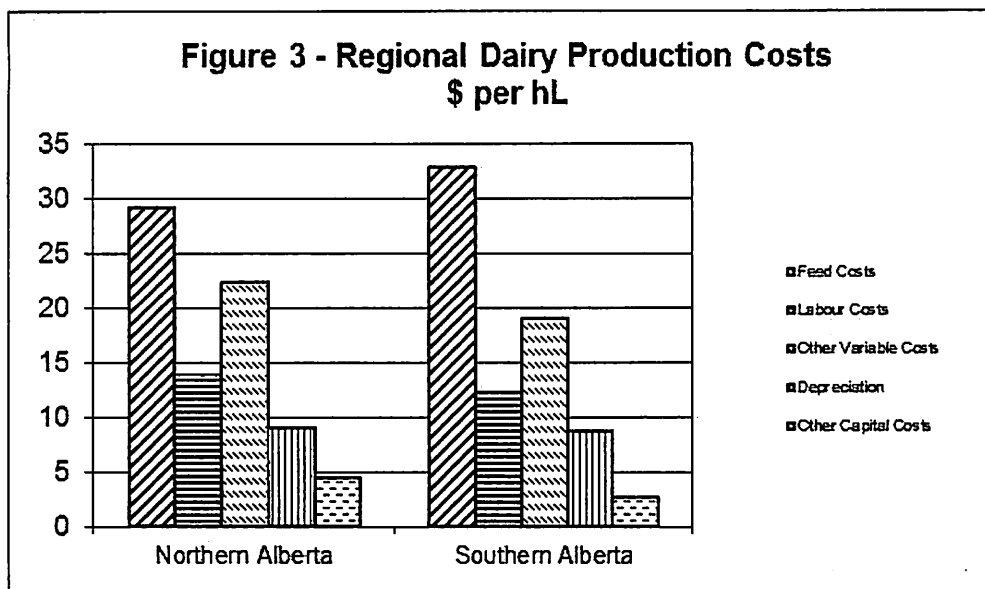


Table 4
Average Dairy Enterprise Costs and Returns - \$ Per hL Sold
Northern and Southern Alberta

	Northern Alberta (17 Producers)	Southern Alberta (32 Producers)
Milk Sales	82.26	81.89
Gross Income	89.91	87.53
Feed Costs	29.30	32.93
Main Feed Components:		
Grain	4.90	3.53
Complete Feed	9.66	11.72
Roughage	9.80	12.33
Labour Cost	13.94	12.34
Other Variable Costs	22.47	19.04
Depreciation	9.12	8.77
Other Capital Costs	4.53	2.78
Total Production Costs	79.38	75.86
Total Cash Costs	60.65	57.93
Gross Margin	29.26	29.60
Contribution Margin	24.19	23.21
Return to Investment	12.89	12.92
Return to Equity	10.53	11.66
Return to Investment (%)	7.3	7.9
Return to Equity (%)	9.2	8.7



Definitions for the Dairy Cost Study

Net Cattle Sales - revenues associated with the purchase and sale of dairy livestock (milking / dry cows, replacement heifers, bulls and young stock).

Gross Income - the value of what was produced by the dairy enterprise over the course of the production year. Includes cash and non-cash values of:

- ◆ milk sales,
- ◆ revenues from miscellaneous sources eg. colostrum sales, BSE test cow payments, environmental compliance and a milk quality bonus (if applicable),
- ◆ inventory adjustments relating to changes in the number & value of stock included in the enterprise, and
- ◆ net cattle sales.

Feed Costs - the cost of all feed used by the dairy enterprise, purchased or homegrown. (Homegrown feed is valued on the market value of the feed, **not** the cost of growing the feed.)

Complete Feed - includes all feed values given under dairy ration, calf feed and milk replacer.

Labour Costs - the sum of paid and contributed labour, as allocated to the dairy enterprise. Paid labour is valued at cost, while unpaid labour is valued at a standard or base cost per hour.

Other Variable Costs - total variable costs (such as bedding and supplies, veterinary and medicine, utilities, fuel, repairs) less feed and labour costs.

Depreciation - sum of depreciation and machinery/equipment/building lease payments on assets allocated to the dairy enterprise.

Other Capital Costs - total cash overheads, as allocated to the dairy enterprise (rent, property taxes, insurances, licences and term loan interest).

Total Cash Costs - total production costs less depreciation and family labour.

Total Production Costs - sum of all variable and capital production costs.

Contribution Margin - gross income less variable costs.

Gross Margin - gross income less total cash costs.

Return to Equity (\$) - gross income less total production costs.

Investment - sum of assets allocated to the enterprise. Includes: dairy livestock, machinery, equipment, buildings/facilities and building site.

Return to Investment (\$) - gross income less total production costs plus capital interest.

Debt/Capital Ratio - measures the extent of external financing on dairy farms and is calculated as the farm's debt divided by its total capital.

Median - the value of the middle item of a data set that has been arranged in an increasing order (lowest to highest).

Total Production Quota (TPQ) - single quota system (effective August, 2008).

Dry Matter Equivalent - conversion to dry matter from silage at 60% moisture and haylage at 56% moisture.

Production Factor Analysis

This section provides a detailed analysis of the survey group based on six specific production factors:

- herd size
- milk production
- gross income
- total cost
- investment
- labour

For each analysis, the survey group was sorted into three separate classes (bottom 1/3, middle 1/3, top 1/3) based on the production factor being evaluated. For instance, on the next page the survey group was divided into three sub-groups based on herd size. The bottom 1/3 group consists of the smallest dairy enterprises while the top 1/3 group consists of the largest producers. Production and management results are shown for each sub-group in the accompanying table and figures.

Dairy Characteristics by Herd Size Class

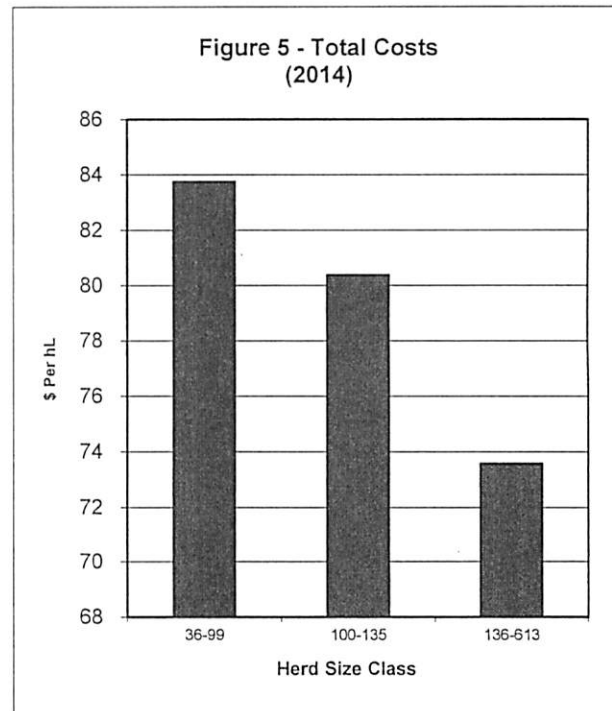
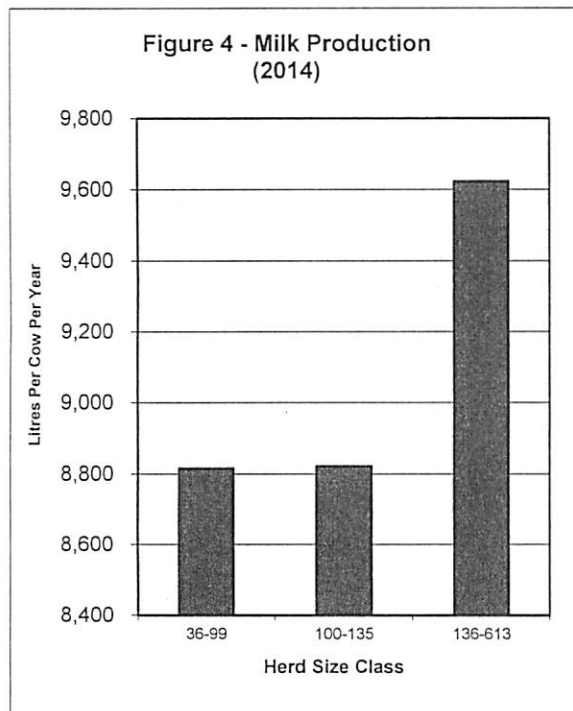
Table 5 - Dairy Enterprise Characteristics by Herd Size Class

Herd Size ranged from 36 to 613 milking cows. For this analysis, the sample group was split into the following three size classes:

Bottom 1/3 36 - 99
 Middle 1/3 100 - 135
 Top 1/3 136 - 613

	Bottom 1/3 36-99	Middle 1/3 100-135	Top 1/3 136-613
Years in Dairy	23.16	24.50	23.75
Milk Production (litres/yr)	8,815.32	8,821.66	9,623.09
Home Grown Feed (%)	69.5	71.6	81.5
Butterfat Test (kg/hL)	4.00	3.99	3.95
Gross Income (\$/hL)	88.12	87.94	88.05
Total Costs (\$/hL)	83.75	80.38	73.56
Feed Costs (\$/hL)	30.55	33.48	31.50
Labour (hrs/cow)	71.76	53.38	47.69
Investment (\$/cow)	16,259.42	13,672.32	15,301.45
Return to Equity (%)	4.9	5.6	13.8
Return to Investment (%)	3.9	5.2	10.6
Debt/Capital Ratio	0.20	0.17	0.22

Figures 4 and 5 illustrate Milk Production and Total Costs results for the bottom, middle and top 1/3 groups (sorted by Herd Size Class).



Dairy Characteristics by Milk Production Class

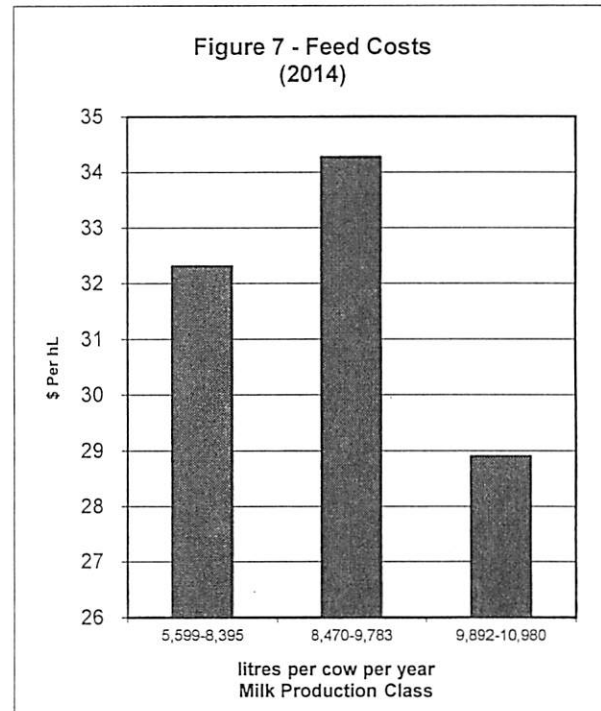
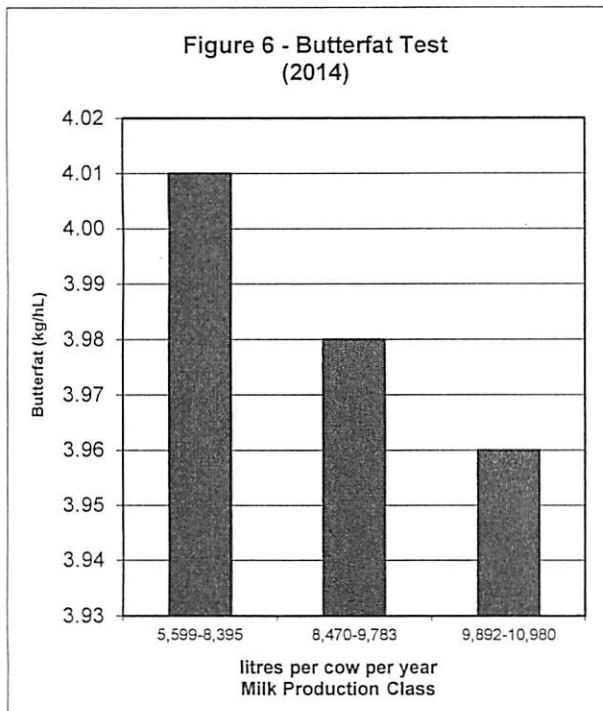
Table 6 - Dairy Enterprise by Milk Production Class

Milk Production ranged between 5,599 and 10,980 litres per cow per year. For this analysis, the sample group was split into the following three classes:

Bottom 1/3 5,599 - 8,395
 Middle 1/3 8,470 - 9,783
 Top 1/3 9,892 - 10,980

	Bottom 1/3 5,599-8,395	Middle 1/3 8,470-9,783	Top 1/3 9,892-10,980
Years in Dairy	23.63	24.35	23.44
Herd Size	127.66	133.34	146.84
Home Grown Feed (%)	87.3	59.6	76.5
Butterfat Test (kg/hL)	4.01	3.98	3.96
Gross Income (\$/hL)	89.05	87.17	87.95
Total Costs (\$/hL)	81.80	81.40	74.42
Feed Costs (\$/hL)	32.31	34.27	28.90
Labour (hrs/cow)	55.62	56.19	60.85
Investment (\$/cow)	14,244.95	14,741.58	16,179.83
Return to Equity (%)	5.8	5.3	13.2
Return to Investment (%)	4.9	4.2	10.7
Debt/Capital Ratio	0.12	0.24	0.21

Figures 6 and 7 illustrate Butterfat Test and Feed Costs results for the bottom, middle and top 1/3 groups (sorted by Milk Production Class).



Dairy Characteristics by Gross Income Class

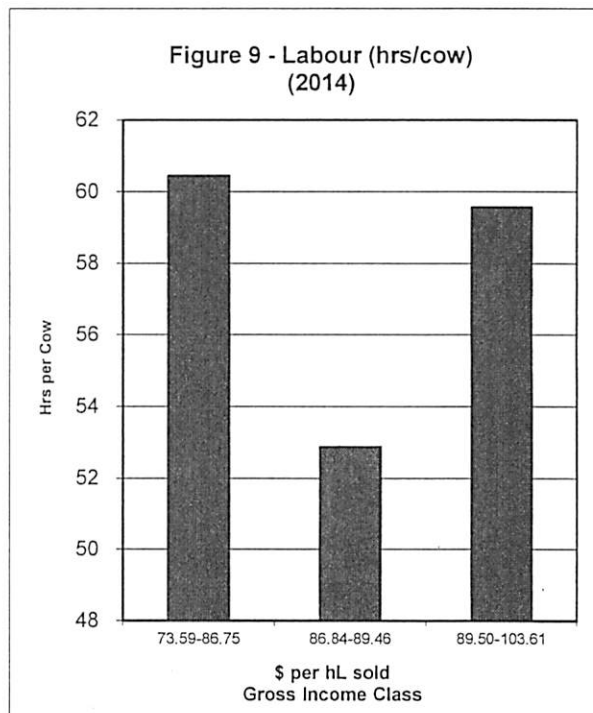
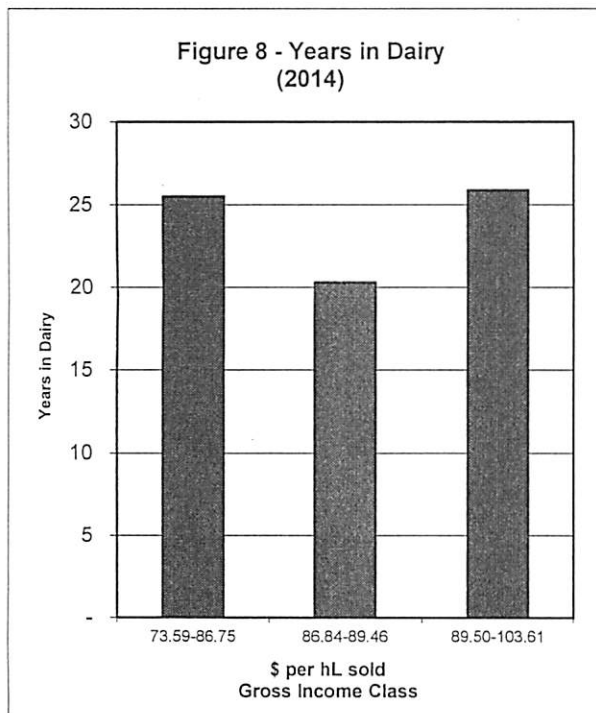
Table 7 - Dairy Enterprise by Gross Income Class

Gross Income ranged between \$73.59 and \$103.61 per hL sold. For this analysis, the sample group was split into the following three classes:

Bottom 1/3 73.59 - 86.75
 Middle 1/3 86.84 - 89.46
 Top 1/3 89.50 - 103.61

	Bottom 1/3 73.59-86.75	Middle 1/3 86.84-89.46	Top 1/3 89.50-103.61
Years in Dairy	25.50	20.29	25.88
Herd Size	119.51	132.11	156.30
Milk Production (litres/yr)	9,079.02	8,920.61	9,254.27
Home Grown Feed (%)	72.3	78.6	71.3
Butterfat Test (kg/hL)	3.87	3.95	4.13
Total Costs (\$/hL)	79.81	80.31	77.57
Feed Costs(\$/hL)	34.54	31.45	29.67
Labour (hrs/cow)	60.44	52.87	59.56
Investment (\$/cow)	14,183.28	16,183.57	14,709.39
Return to Equity (%)	3.2	6.3	14.8
Return to Investment (%)	3.6	5.3	10.8
Debt/Capital Ratio	0.12	0.21	0.24

Figures 8 and 9 illustrate Years in Dairy and Labour results for the bottom, middle and top 1/3 groups (sorted by Gross Income Class).



Dairy Characteristics by Total Cost Class

Table 8 - Dairy Enterprise by Total Cost Class

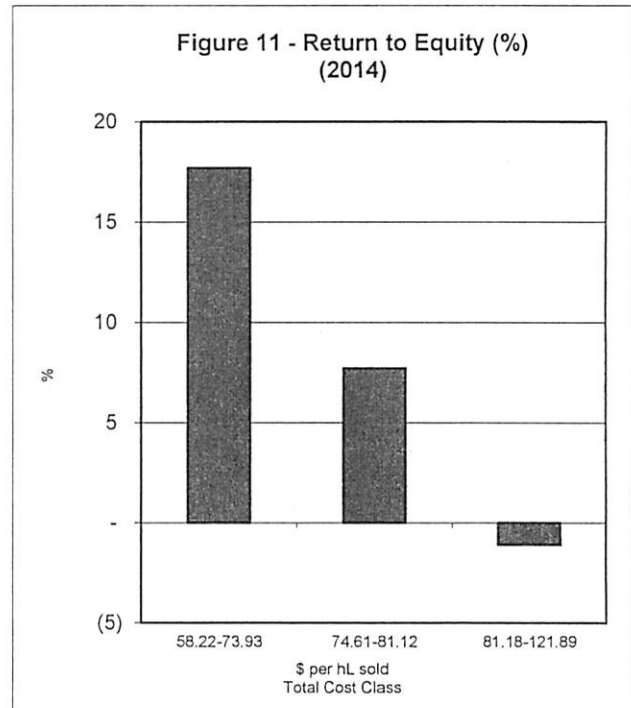
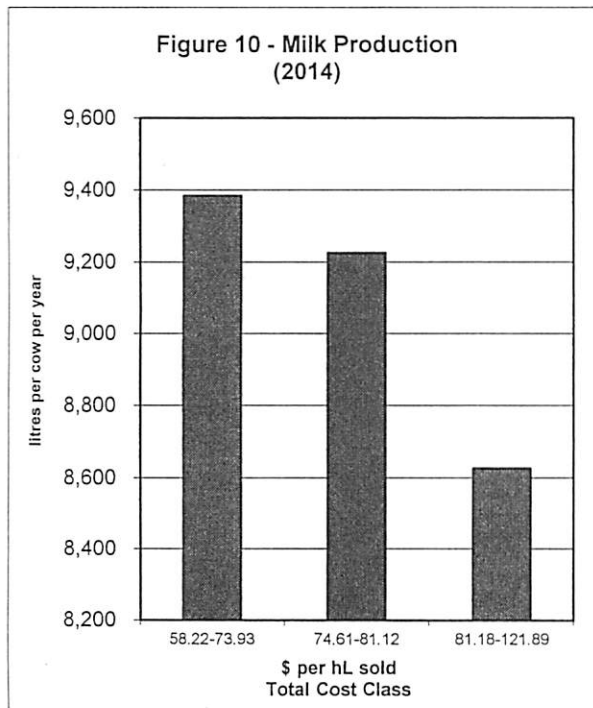
Total Cost ranged between \$58.22 and \$121.89 per hL sold. For this analysis, the sample group was split into the following three classes:

Top 1/3 58.22 - 73.93
 Middle 1/3 74.61 - 81.12
 Bottom 1/3 81.18 - 121.89

In this situation the top 1/3 are the lower cost producers and the bottom 1/3 are the higher cost producers.

	Top 1/3 58.22-73.93	Middle 1/3 74.61-81.12	Bottom 1/3 81.18-121.89
Years in Dairy	22.91	25.47	22.97
Herd Size	143.61	148.06	115.25
Milk Production (litres/yr)	9,384.29	9,224.61	8,625.99
Home Grown Feed (%)	76.9	77.4	68.0
Butterfat Test (kg/hL)	3.95	3.99	4.01
Gross Income (\$/hL)	88.24	88.02	87.85
Feed Costs (\$/hL)	28.73	31.98	34.91
Labour (hrs/cow)	52.77	57.69	62.09
Investment (\$/cow)	13,005.03	15,000.15	17,145.02
Return to Equity (%)	17.7	7.7	(1.1)
Return to Investment (%)	15.4	6.2	(1.9)
Debt/Capital Ratio	0.09	0.20	0.29

Figures 10 and 11 illustrate Milk Production and Return to Equity results for the top, middle and bottom 1/3 groups (sorted by Total Cost Class).



Dairy Characteristics by Investment Class

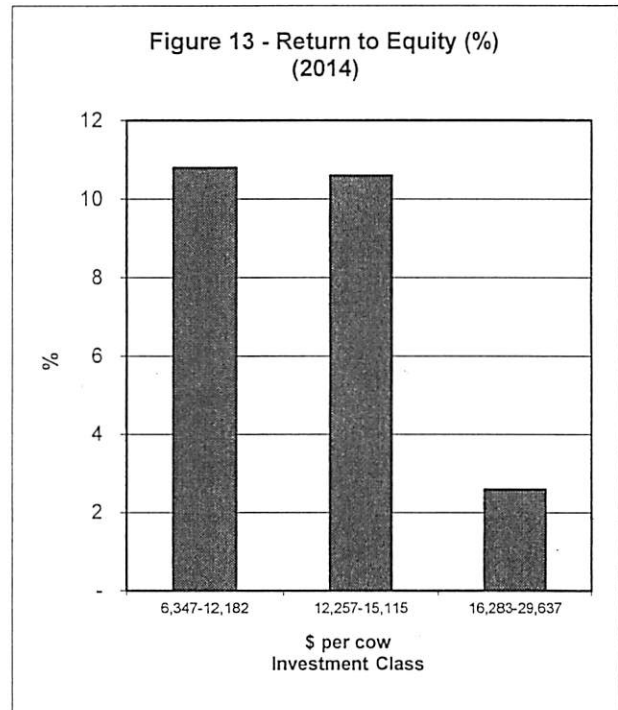
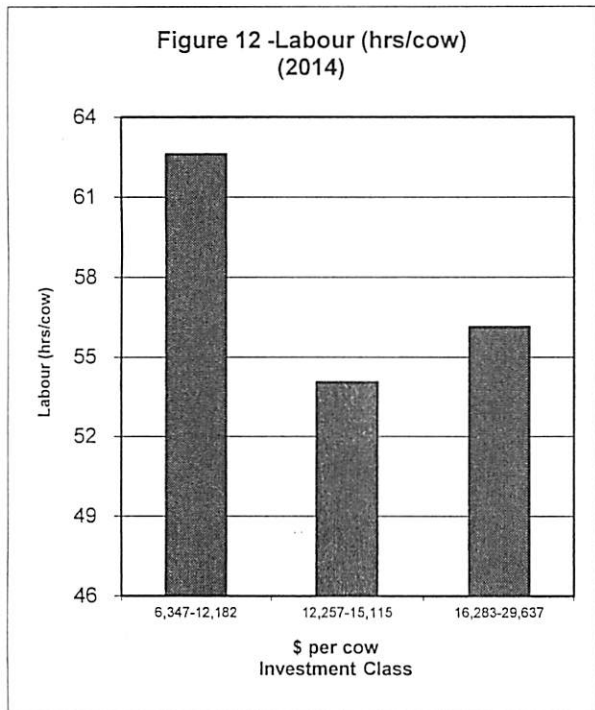
Table 9 - Dairy Enterprise by Investment Class

Investment per cow ranged between \$6,347 and \$29,637. For this analysis, the sample group was split into the following three classes:

Bottom 1/3 6,347 - 12,182
 Middle 1/3 12,257 - 15,115
 Top 1/3 16,283 - 29,637

	Bottom 1/3 6,347-12,182	Middle 1/3 12,257-15,115	Top 1/3 16,283-29,637
Years in Dairy	25.03	21.06	25.53
Herd Size	157.99	127.20	123.03
Milk Production (litres/yr)	8,825.81	9,211.46	9,198.46
Home Grown Feed (%)	72.9	76.8	72.8
Butterfat Test (kg/hL)	3.92	4.03	3.99
Gross Income (\$/hL)	86.78	88.90	88.38
Total Costs (\$/hL)	77.37	75.04	85.61
Feed Costs (\$/hL)	32.21	29.88	33.67
Labour (hrs/cow)	62.61	54.05	56.13
Return to Equity (%)	10.8	10.6	2.6
Return to Investment (%)	9.0	9.0	1.6
Debt/Capital Ratio	0.13	0.24	0.21

Figures 12 and 13 illustrate Labour and Return to Equity results for the bottom, middle and top 1/3 groups (sorted by Investment Class).



Dairy Characteristics by Labour (hrs/cow) Class

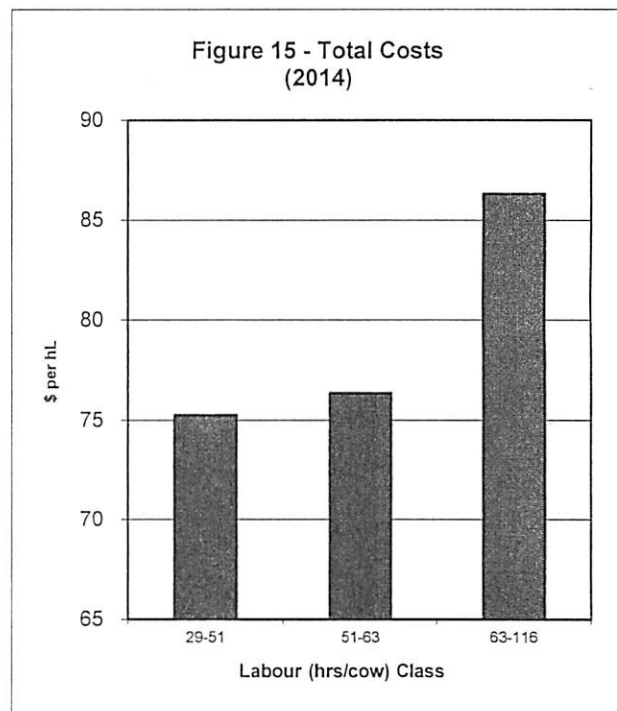
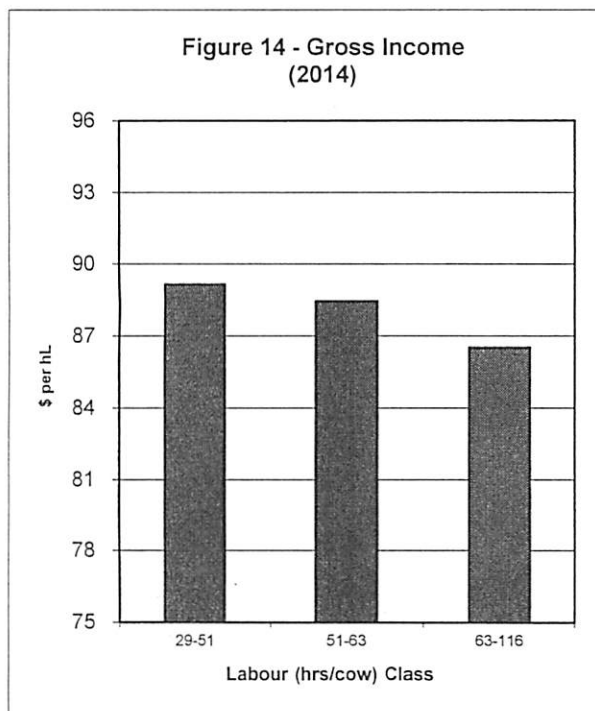
Table 10 - Dairy Enterprise by Labour (hrs/cow) Class

Labour (hrs/cow) ranged between 29 and 116. For this analysis, the sample group was split into the following three classes:

Bottom 1/3 29 - 51
 Middle 1/3 51 - 63
 Top 1/3 63 - 116

	Bottom 1/3 29-51	Middle 1/3 51-63	Top 1/3 63-116
Years in Dairy	26.63	21.82	23.13
Herd Size	204.97	117.75	86.09
Milk Production (litres/yr)	9,179.05	8,959.66	9,112.75
Home Grown Feed (%)	81.2	78.0	63.1
Butterfat Test (kg/hL)	4.05	3.97	3.93
Gross Income (\$/hL)	89.14	88.44	86.51
Total Costs (\$/hL)	75.25	76.36	86.32
Feed Costs (\$/hL)	32.34	30.10	33.31
Investment (\$/cow)	16,496.53	14,192.28	14,511.88
Return to Equity (%)	12.2	10.5	1.3
Return to Investment (%)	9.2	8.5	1.8
Debt/Capital Ratio	0.24	0.16	0.18

Figures 14 and 15 illustrate Gross Income and Total Costs results for the bottom, middle and top 1/3 groups (sorted by Labour hrs/cow Class).



Detailed Management Factors, Northern and Southern Alberta

Table 11 provides a further examination of regional differences from a management perspective.

Table 11
Detailed Management Factors, Northern and Southern Alberta, 2014

	Northern Alberta	Southern Alberta
Herd Size	133	138
Milk Production (litres/cow/year)	8,713.74	9,458.69
Feed Conversion (litres/kg concentrates)	1.99	2.14
Labour Productivity (litres/hr)	157.76	182.97
Labour Hours/Cow (hrs)	55.23	51.70
Investment/Cow (\$/cow)	14,907.94	15,029.17
Milk Production/\$ Invest (litres/\$)	0.58	0.63
Feed Costs (\$/cow)	2,466.22	3,035.92
Purchased Barley (\$/tonne)	158.42	148.87
Cost of Purchased Hay (\$/tonne)	118.84	156.68
Home Grown Roughage (%)	53.9	77.5
Butterfat Test (kg/hL)	4.05	3.95
Protein (kg/hL)	3.36	3.28
LOS (kg/hL)	5.71	5.71
Total Costs (\$/hL)	79.38	75.86
Contribution Margin (\$/hL)	24.19	23.21
Return to Investment (%)	7.3	7.9
Return to Equity (\$/hL)	10.53	11.66
Return to Equity (%)	9.2	8.7
Debt to Asset Ratio	0.35	0.18

Historical Economic Trends

Figure 16 - Average Milk Price (\$ per hL)

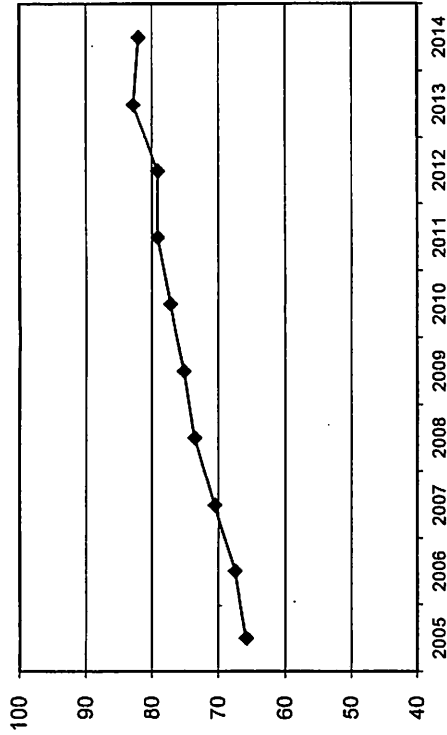


Figure 17 - Feed Cost (\$ per hL)

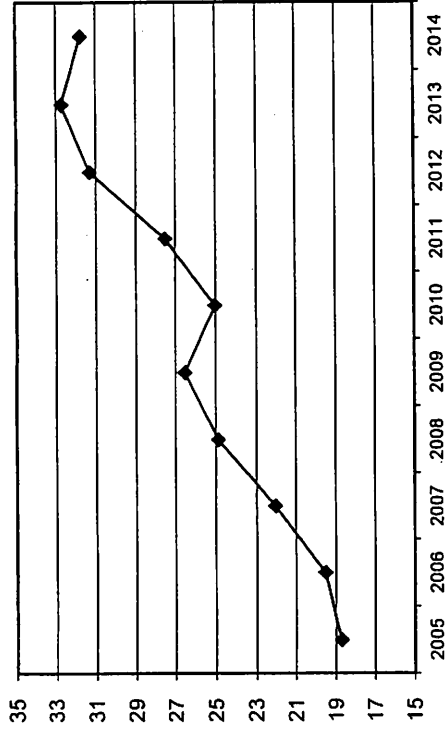


Figure 18 - Total Cost (\$ per hL)

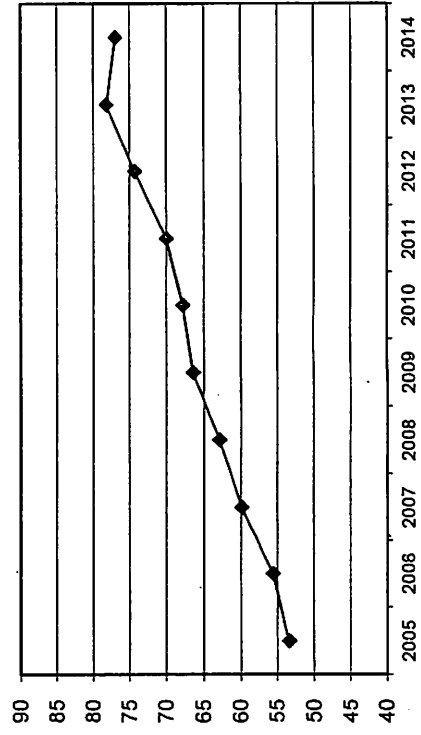


Figure 19 - Return to Equity (%)

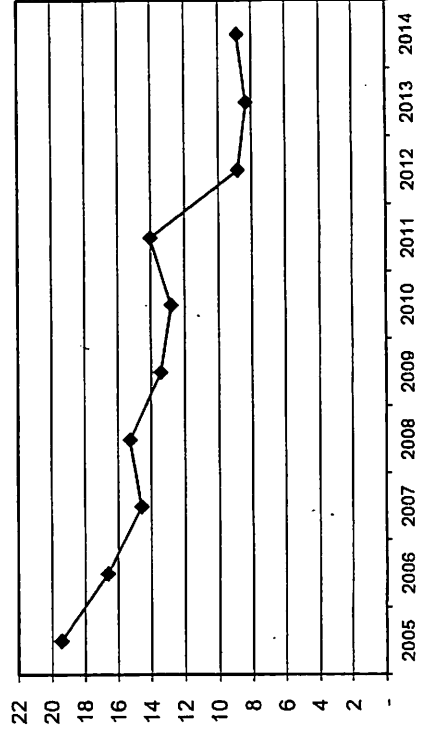


Figure 21 - Milk Production
(litres/cow per year)

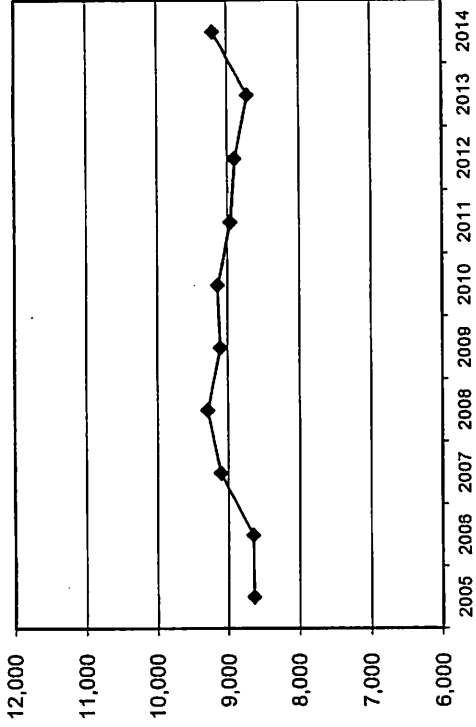


Figure 23 - Cost of Dairy Ration
(\$ per tonne)

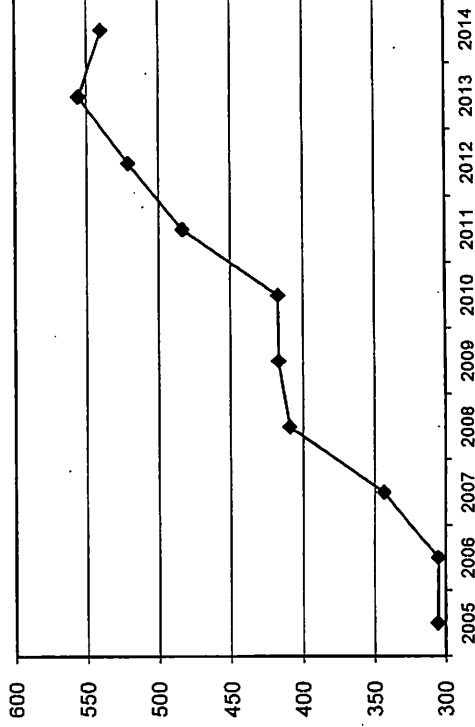


Figure 20 - Median Size of Dairy Herd

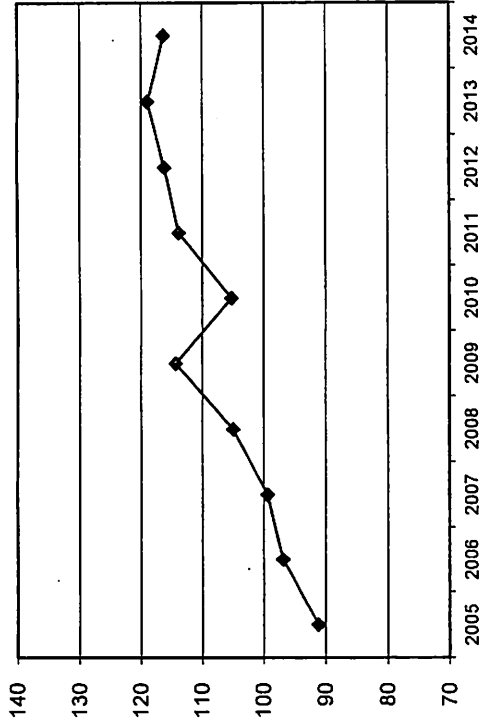
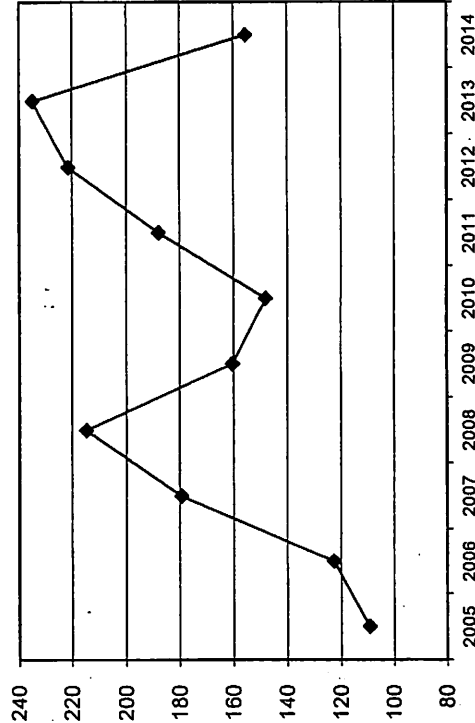


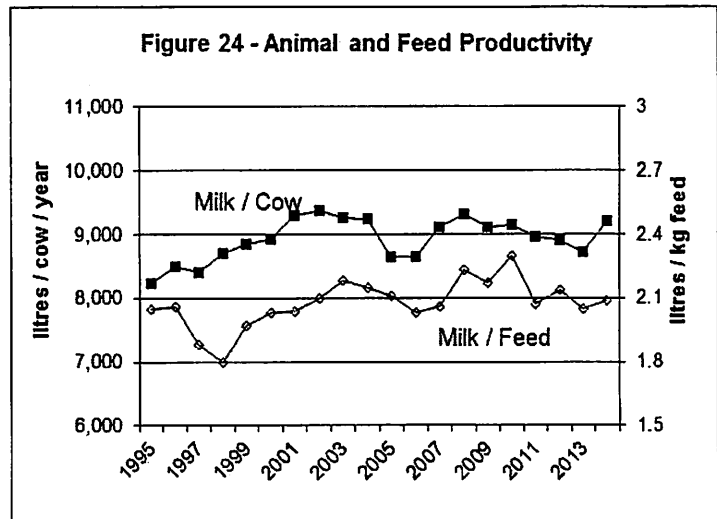
Figure 22 - Purchased Barley Cost
(\$ per tonne)



Milk Productivity Factors

A number of management factors related to milk production are reported in Table 3 of Appendix A. They relate the amount of milk produced to three management inputs: feed, labour and capital. While these results reflect the participants in the study group, which changes over time, they are a fair representation of provincial averages.

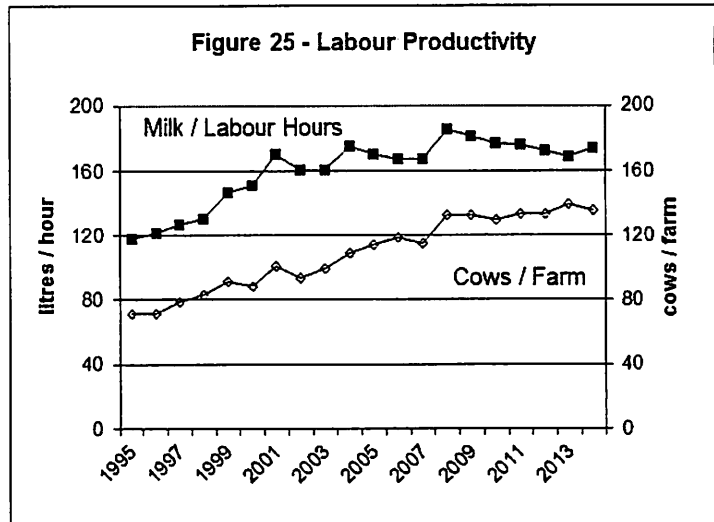
Figure 24 shows that milk productivity per cow increased steadily from 1995 to 2001, with a total gain of 14 percent. After levelling off for four years, productivity dipped in 2005, rebounding in 2007. In 2014, productivity jumped 5.6 percent following a period of slow decline. Many factors can affect milk productivity, including poor feed quality, housing changes, temperature/weather



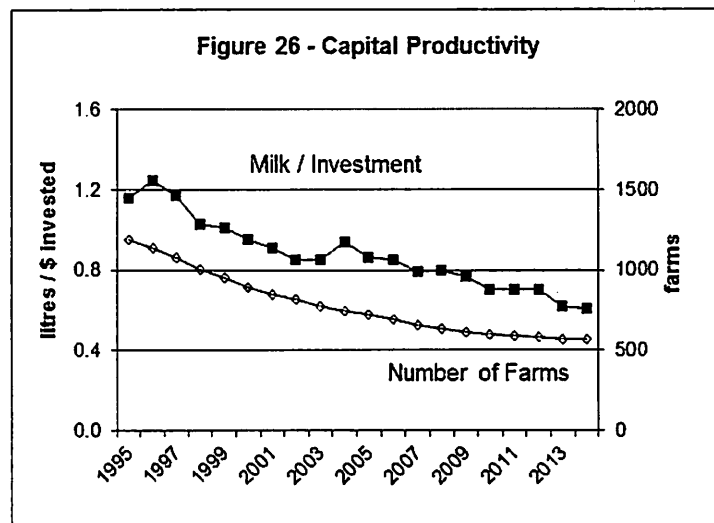
fluctuations and cow stress. A decrease in quota allotment or adjusting to the daily quota system could also lead to management decisions to lower production for a period of time. In 2014, however, there was a six percent increase in quota allotment driven by an increase in consumption. Although there was a slight decrease in herd size, the milk production per cow increased to meet the demand.

The feed conversion rates (or productivity) have varied over time. In previous Dairy Cost Study reports, feed conversion rates appeared to generally improve over the 20-year assessment period, resulting in slightly higher milk production per unit of feed. However, the current feed conversion profile can be interpreted differently; that feed conversion rates have been fairly flat around 2.1 litres per kg of feed concentrates, with two big exceptions – a decline in the rate between 1997 and 1999, and an increase in the rate between 2008 and 2010.

Figure 25 shows the amount of milk produced for each hour of labour on dairy farms. Labour productivity increased dramatically from 1994 to 2001. The figure also shows how the scale of dairy farms has increased. As farm size increased, each employee was able to manage a larger number of dairy cows. However, between 2001 and 2014, labour productivity rates have been relatively flat.



During the 1994 to 2001 period, labour intensity was gradually traded for capital intensity (Figure 26). While labour productivity increased through 2001, capital productivity declined. Dairy producers were investing in more capital equipment, which allowed them to handle greater herd sizes per employee. Between 2001 and 2009, capital investment rates were more stable. In recent years, capital intensity has again started to increase with more farms investing in voluntary milking systems and other types of robotics.

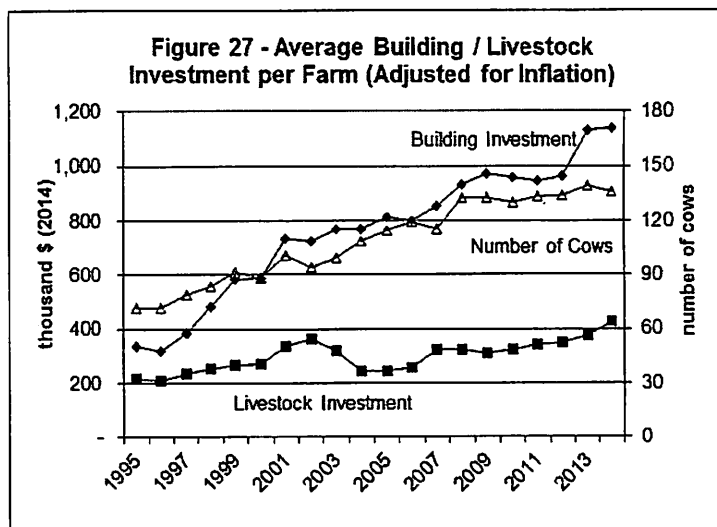


Capital Investment Trends

Per Farm

Trends in capital intensity are shown more directly in Figures 27 and 28. The average value of dairy buildings (adjusted for inflation) climbed dramatically between 1996 and 2001, increasing by 132 percent.

During this time, there was an increase in construction of new facilities, either by those already in Alberta or by those moving to the province from abroad. This was also the time of the first installation of robotic milkers on Alberta farms. This period coincided with a slightly higher rate in the expansion of herd sizes. After 2001, the average value of dairy buildings rose more

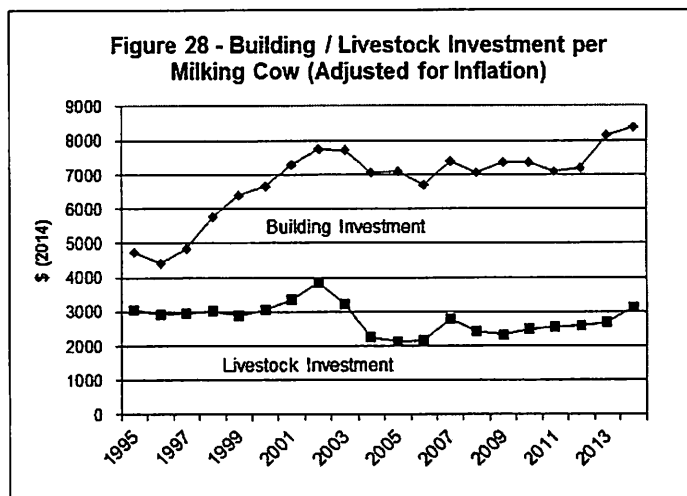


slowly, in line with continued growth in the average herd size. Total building values rose again from 2007 to 2009, partly due to a significant jump in the Dairy Cost Study average herd size in 2008. In 2013, building values again increased substantially.

The total value of livestock per farm (adjusted for inflation) was flat during the mid 1990s. Livestock inventory values grew significantly through 2002. However, they dropped by one-third in the wake of the BSE crisis despite an increase in cows per farm. They rebounded in 2007 and 2008 and have remained fairly stable until 2013 when they rose due to the increase in beef prices.

Per Milking Cow

Figure 28 shows average building and livestock investments per milking cow. It clearly shows how average building values per cow increased dramatically in the early years, remained quite flat for a number of years, and then rose in 2013.



Between 1994 and 2001, livestock values (adjusted for inflation) were generally flat. They gained in value briefly in 2002. However, after the appearance of BSE in 2003, livestock values, especially for cull cows and replacement heifers, dropped dramatically. Livestock values increased in 2007 but continue to be slightly lower than the previous decade.

Dairy Enterprise Investment and Debt Levels

Total dairy farm investment (excluding quota) remained relatively stable at \$2,036,707 per farm in 2014, compared to an average of \$1,942,209 in 2013. On a per cow basis, this works out to \$14,988 (Table 12). Of this total amount, 71 percent was comprised of buildings and equipment investment, 21 percent referred to livestock investment, the remaining 8 percent being invested in land and supplies.

Table 12
Annual Investment and Debt on Dairy Farms

	2012	2013	2014
	--- \$ Per Cow ---		
Land	662	749	1,082
Buildings and Equipment	9,317	10,369	10,674
Livestock	2,687	2,749	3,115
Supplies	115	110	117
TOTAL	12,779	13,972	14,988
Debt	4,070	3,876	3,577
Equity	8,709	10,093	11,411
TOTAL	12,779	13,972	14,988

The debt/capital ratio measures the extent of external financing on dairy farms in Alberta. This ratio has decreased in 2014 to 24 percent from 28 percent in 2013. Total investment per cow increased substantially in 2014, with an increase of about \$1,000 per cow compared to 2013. The increase in 2014 was equally distributed between land, buildings and livestock.

Debt Repayment Capacity

The acceptable debt load or repayment capacity of a dairy enterprise can be measured by the contribution margin. Contribution margin is the difference between gross income and variable costs. Therefore, it represents the amount of money available to pay for capital assets - rent, mortgage payments (principle and interest), and taxes. The amount of cash remaining after capital assets payments is the producer's return to owner equity, or profit. A summary of contribution margins for the dairy years 2012, 2013, and 2014 is presented in Table 13.

Table 13

Summary of Average Costs and Returns in Alberta				
2012 – 2014				
	2012	2013	2014	2012-2014
	----- \$ Per Cow -----			
A. Gross Income	7174	7404	7899	7492
B. Feed Costs	2703	2746	2843	2764
C. Variable Costs	2663	2714	2951	2776
Contribution Margin	1808	1944	2104	1952
(A - B - C)				

The contribution margin can be used to determine the amount of debt load that a farm enterprise can carry. Table 14 shows the total debt load that a farm enterprise can carry on a per cow basis at various interest rates and various cow productivity levels. It is based on the average costs and returns between 2012 and 2014. An assumption behind the analysis is that feed costs vary directly with the level of production and market values. The higher costs for forages in 2014 more than offset the reduction in grain prices compared to 2013.

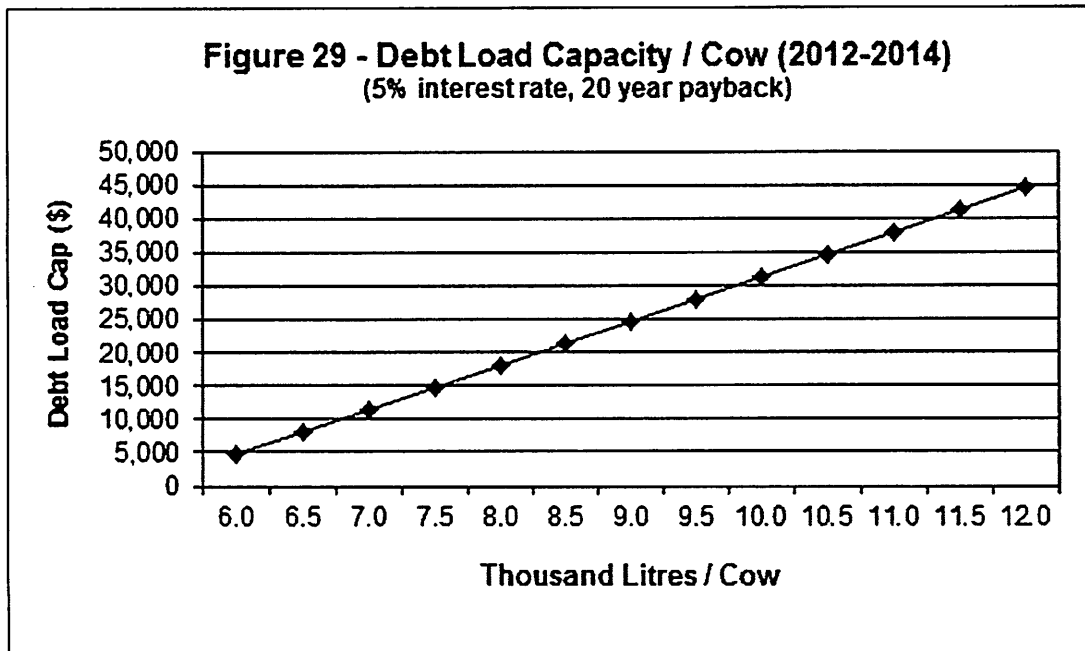
Table 14
Acceptable Total Debt-Load per Cow in Alberta, 2012-2014

Milk Productivity (litres/cow)	Interest Rates					
	3%	4%	5%	6%	7%	8%
6000	5,896	5,386	4,939	4,546	4,199	3,891
6500	9,829	8,979	8,233	7,578	6,999	6,486
7000	13,762	12,571	11,528	10,610	9,800	9,082
7500	17,695	16,164	14,822	13,642	12,600	11,677
8000	21,628	19,756	18,116	16,674	15,401	14,273
8500	25,560	23,349	21,411	19,706	18,201	16,868
9000	29,493	26,942	24,705	22,738	21,002	19,464
9500	33,426	30,534	28,000	25,770	23,802	22,059
10000	37,359	34,127	31,294	28,802	26,603	24,655
10500	41,292	37,720	34,588	31,834	29,403	27,250
11000	45,225	41,312	37,883	34,866	32,204	29,845
11500	49,158	44,905	41,177	37,899	35,004	32,441
12000	53,091	48,497	44,472	40,931	37,805	35,036

* With a 20 year repayment period

For example, at a milk production level of 8,500 litres per cow, the contribution margin would be \$1,454 per cow. This margin, if amortized over 20 years at 5 percent interest, results in a debt carrying capacity of \$21,411 per cow.

Figure 29 shows the impact of milk productivity on the debt load carrying capacity of dairy enterprises given an interest rate of 5 percent. As productivity declines, the debt carrying capacity of each cow also declines. Conversely, the debt carrying capacity rises as productivity increases.



Another way to use this information is to measure the minimum level of productivity required to carry a given debt load at a specific interest rate. As an example, if a farm has a debt of \$20,000 per cow, then at an interest rate of 5 percent, this amount of debt per cow would be supported at production levels of about 8,400 litres per cow and above (Table 14). In general, as productivity increases and/or interest rates fall, debt repayment or financing capacity increases.

To this point, the value of quota has not been included in the analysis. If externally financed quota valued at \$34,522 per cow (the average value of total production quota for one cow in the 2014 Dairy Cost Study) is added to current debt of \$3,577 per cow, the total amount of debt load per cow would be \$38,100. The ability to carry this amount of debt per cow depends upon the prevailing interest rate and the productivity of each cow carrying debt. As illustrated in Table 14, this level of debt would require a production level of around 11,000 litres per cow, assuming an interest rate of 5 percent.

Impact of Quota Values on Dairy Returns

The cost and return analysis in this study does not include any value for milk quota. However, new entrants into the dairy business would have to purchase quota. When the financing of these quota purchases (at the 2014 Dairy Cost Study average quota price) is taken into account, the average rate of return for new entrants would be a negative 3.3 percent (Table 15). This means that the borrowing costs of capital used to purchase quota exceeded the financial returns obtained from producing milk. The assumption in this analysis was that all funds needed to purchase quota were borrowed at 4.0 percent, the average interest rate in the study.

Table 15

Impact of Quota Value on Dairy Returns, 2014

	2014 Study Average	Including Quota Value*
--- \$ per Farm ---		
Dairy Investment	2,036,708	6,727,948
Debt	486,013	5,177,253
Equity	1,550,696	1,550,696
--- \$ per hL Sold ---		
Equity	127.54	127.54
Gross Income	88.28	88.28
Production Costs	76.98	76.98
Interest Cost for Quota		15.51
Potential Total Cost	76.98	92.49
Return to Equity(\$ per hL)	11.30	-4.21
Return to Equity (%)	8.9	-3.3

*Applicable to new entrants who borrow 100 percent of funds needed to purchase total production quota at the average value from the 2014 Dairy Cost Study of \$37,897 per kg/day.

APPENDIX A

2014 Dairy Cost Study Provincial Average

Alberta
2014 Dairy Cost Study - Business Analysis
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Table 1 Dairy Enterprise Costs and Returns

	TOTAL ENTERPRISE	PER COW	PER HL SOLD	PERCENT FROM INCOME
INCOME:				
MILK SALES	997,108.53	7,337.46	82.01	
POOL ADJUSTMENTS (+ -)	921.86	6.78	.08	
MISCELLANEOUS RECEIPTS	5,388.85	39.66	.44	
NET CATTLE SALES (+ -)	56,799.03	417.97	4.67	
NET INVENTORY CHANGE (+ -)	13,174.90	96.95	1.08	
GROSS INCOME -----	1,073,393.16	7,898.82	88.28	100.00
EXPENSES:				
GRAIN	48,221.08	354.85	3.97	
COMPLETE FEED	134,511.12	989.83	11.06	
SUPPLEMENT	51,248.24	377.12	4.22	
MINERALS & VITAMINS	9,729.93	71.60	.80	
ROUGHAGE	140,088.09	1,030.87	11.52	
PROCESSING COSTS	2,566.63	18.89	.21	
TOTAL FEED COSTS -----	386,365.09	2,843.16	31.78	35.99
BEDDING AND SUPPLIES	34,122.72	251.10	2.81	
BREEDING	12,210.26	89.85	1.00	
VET. AND MEDICINE	22,676.21	166.87	1.87	
MILK HAULING	37,834.15	278.41	3.11	
PRODUCER'S FEES	26,010.65	191.41	2.14	
UTILITIES	21,957.60	161.58	1.81	
FUEL, OIL, LUBE	20,075.77	147.73	1.65	
BLDG. & MACH. REPAIRS	28,553.37	210.12	2.35	
MISCELLANEOUS	41,333.02	304.16	3.40	
TOTAL OTHER VARIABLE COSTS -----	244,773.74	1,801.23	20.13	22.80
HIRED LABOUR	43,151.84	317.54	3.55	
FAMILY LABOUR	113,126.02	832.46	9.30	
TOTAL LABOUR COSTS -----	156,277.86	1,150.01	12.85	14.56
TOTAL VARIABLE COSTS	787,416.69	5,794.39	64.76	73.36
RENT	2,786.82	20.51	.23	
TAXES AND INSURANCE	18,236.88	134.20	1.50	
DEPRECIATION	107,983.48	794.62	8.88	
INTEREST (CAP.DEBT)	19,547.14	143.84	1.61	
TOTAL CAPITAL COSTS -----	148,554.32	1,093.17	12.22	13.84
TOTAL PRODUCTION COSTS	935,971.00	6,887.57	76.98	87.20
CONTRIBUTION MARGIN (\$)	285,976.48	2,104.43	23.52	
RETURN TO EQUITY (\$)	137,422.16	1,011.25	11.30	12.80
MILK PRICE			82.09	
INVENTORY ADJUSTMENT			6.20	
RETURN TO EQUITY (%)			8.86	
AVERAGE CAP. DEBT INTEREST RATE (%)			4.02	

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2014 Dairy Cost Study - Business Analysis
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Table 2 Statement of Investment

LAND BUILDINGS & EQUIPMENT

	AGE	DEPRECIATION	DAIRY INVESTMENT
DAIRY BUILDINGS	12.67	45,671.24	1,138,763.72
POWER MACHINERY	7.91	22,946.95	153,960.74
DAIRY EQUIPMENT	11.89	25,785.44	99,316.60
OTHER EQUIPMENT	9.18	13,579.85	58,429.26
TOTAL EQUIPMENT	9.39	62,312.24	311,706.61
LAND			147,025.01
SUPPLIES			15,840.15
** SUBTOTAL **		107,983.48	1,613,335.49

DAIRY LIVESTOCK

	--- BEGIN YEAR ---		--- END OF YEAR ---		AVERAGE VALUE
	NUMBER	VALUE	NUMBER	VALUE	
COWS	135.98	276,917.58	141.69	288,554.52	282,736.05
BRED HEIFERS	41.04	73,873.47	42.41	76,334.69	75,104.08
OPEN HEIFERS	55.02	55,020.41	53.76	53,755.10	54,387.76
HEIFER CALVES	38.47	7,693.88	40.27	8,053.06	7,873.47
BULL CALVES	5.90	707.76	6.27	751.84	729.80
BULLS	1.71	2,571.43	1.67	2,510.20	2,540.82
** SUBTOTAL **	278.12	416,784.52	286.06	429,959.42	423,371.97

TOTAL DAIRY INVESTMENT	2,036,707.46
CAPITAL LOANS	486,012.82
OPERATOR EQUITY	1,550,694.64
INVESTMENT PER COW	14,987.60
DEBT/CAPITAL RATIO	.24
CAPITAL TURNOVER (YR)	1.90

HERD SIZE

	Average	Median
NUMBER OF DAIRY COWS	135.89	116.33
NUMBER OF ANIMAL UNITS	217.19	181.08
DRY COWS (%)	19.99	
CALF CROP (%)	106.75	
PASTURE PER COW (AC.)	.29	

CATTLE SALES & PURCHASES

	NUMBER SOLD	SELLING PRICE	NUMBER PURCHASED	PURCHASE PRICE
COWS	38.31	1,415.10	2.53	2,345.16
BRED HEIFERS	1.14	1,994.38	1.12	2,025.45
OPEN HEIFERS	1.57	1,983.24	.59	1,941.38
HEIFER CALVES	.55	306.97	.41	1,000.00
BULL CALVES	42.94	175.71	.00	.00
BULLS	1.06	2,037.54	1.02	2,856.35
TOTAL VALUE		69,478.98		12,679.95

Alberta
2014 Dairy Cost Study - Business Analysis
49 Participants

Table 3 Labour and Management

<u>LABOUR</u>	HOURS	VALUE	HOURLY RATE
OPERATOR LABOUR	2,780.44	61,169.65	22.00
HIRED LABOUR	1,983.20	43,151.84	21.76
FAMILY UNPAID LABOUR	2,424.13	51,956.37	21.43
TOTAL	7,187.78	156,277.86	21.74
RETURN TO FAMILY LABOUR	15.37		
MAN EQUIVALENTS	2.88		
LABOUR HOURS PER COW	52.89		
YEARS FARMING	23.82		

<u>MILK PRODUCTION</u>	HL.	% OF TOTAL	VALUE	AVERAGE PRICE / HL
MILK SALES	12,158.42	97.18	997,108.53	82.01
OTHER MILK PRODUCED	352.73	2.82		
TOTAL	12,511.16	100.00		

	AVERAGE COMPONENT PRICES (\$ / KG)
BUTTERFAT TEST	3.98 KG / HL 11.44
PROTEIN	3.31 KG / HL 4.62
L.O.S.	5.71 KG / HL 3.80
MILK PRODUCTION PER COW	9,206.63 LITRES / YEAR

<u>QUOTA INFORMATION</u>	
TPQ HOLDINGS	123.79 KG / DAY
TPQ PRICE	37,896.76 \$ / KG / DAY
CREDIT PRICE	7.51 \$ / KG

<u>MANAGEMENT FACTORS</u>	
COST PER HL	76.98
MILK/FEED (KG) RATIO	2.09 LITRES
MILK/LABOUR (HR) RATIO	174.06 LITRES
MILK/CAPITAL (\$) RATIO	.61 LITRES

Alberta
 2014 Dairy Cost Study - Business Analysis
 49 Participants
 Table 4 Feed Report

<u>CONCENTRATES</u>	-- PURCHASED --		-- HOMEGROWN --	
	QUANTITY (TONNES)	PRICE	QUANTITY (TONNES)	PRICE
OATS	4.58	107.35	4.20	162.93
BARLEY	76.48	155.61	112.11	166.43
WHEAT	.21	211.00	.21	159.09
MIXED GRAIN	.00	.00	.00	.00
BREW GRAIN (DRY EQ.)	15.26	185.33		
BEET PULP	8.39	153.76		
OTHER PURCHASED	28.99	423.97		
DAIRY RATION	223.16	539.85		
CALF FEED	20.79	496.58		
MILK REPLACER	1.00	3,733.38		
SUPPLEMENT	88.05	567.46		
MOLASSES	4.59	279.61		
SALT	1.59	399.36		
MINERALS & VITAMINS	8.40	1,082.26		
SUBTOTAL	481.48	224,334.00	116.52	19,376.36
<u>ROUGHAGE</u>				
ALFALFA HAY	132.53	143.64	174.29	152.56
ALFALFA PELLETS	.00	.00		
STRAW FED	2.65	64.55	14.87	54.75
GREENFEED	.00	.00	1.06	112.24
SILAGE/HAYLAGE (DRY EQ.)	180.38	124.87	531.01	133.40
SUBTOTAL	315.56	41,730.75	721.22	98,357.34
GRINDING & PROCESSING		2,566.63		
GRAND TOTAL FEED COSTS		268,631.39		117,733.70
BEDDING	139.97	59.97	80.47	51.38
AV. PRICE:	CONCENTRATE	407.54 \$/TONNE		
	ROUGHAGE	135.12 \$/TONNE		
FED PER COW:	CONCENTRATE	4.40 TONNES		
	ROUGHAGE	7.63 TONNES		
% HOME GROWN:	CONCENTRATE	19.48 %		
	ROUGHAGE	69.56 %		

APPENDIX B

2014 Dairy Cost Study Northern Alberta

Northern Alberta
2014 Dairy Cost Study - Business Analysis
17 Participants
Table 1 Dairy Enterprise Costs and Returns

	TOTAL ENTERPRISE	PER COW	PER HL SOLD	PERCENT FROM INCOME
INCOME:				
MILK SALES	917,510.12	6,923.07	82.26	
POOL ADJUSTMENTS (+ -)	965.90	7.29	.09	
MISCELLANEOUS RECEIPTS	5,268.74	39.76	.47	
NET CATTLE SALES (+ -)	73,946.21	557.96	6.63	
NET INVENTORY CHANGE (+ -)	5,139.77	38.78	.46	
GROSS INCOME -----	1,002,830.74	7,566.85	89.91	100.00
EXPENSES:				
GRAIN	54,681.33	412.60	4.90	
COMPLETE FEED	107,784.45	813.29	9.66	
SUPPLEMENT	41,298.77	311.62	3.70	
MINERALS & VITAMINS	6,648.78	50.17	.60	
ROUGHAGE	109,264.49	824.45	9.80	
PROCESSING COSTS	7,169.12	54.09	.64	
TOTAL FEED COSTS -----	326,846.94	2,466.22	29.30	32.59
BEDDING AND SUPPLIES	32,519.78	245.38	2.92	
BREEDING	13,122.74	99.02	1.18	
VET. AND MEDICINE	24,370.81	183.89	2.18	
MILK HAULING	35,036.15	264.37	3.14	
PRODUCER'S FEES	23,909.69	180.41	2.14	
UTILITIES	20,835.16	157.21	1.87	
FUEL, OIL, LUBE	16,274.29	122.80	1.46	
BLDG. & MACH. REPAIRS	29,558.91	223.04	2.65	
MISCELLANEOUS	55,048.59	415.37	4.94	
TOTAL OTHER VARIABLE COSTS -----	250,676.13	1,891.48	22.47	25.00
HIRE LABOUR	48,421.49	365.36	4.34	
FAMILY LABOUR	107,117.03	808.25	9.60	
TOTAL LABOUR COSTS -----	155,538.52	1,173.62	13.94	15.51
TOTAL VARIABLE COSTS	733,061.59	5,531.31	65.72	73.10
RENT	4,853.64	36.62	.44	
TAXES AND INSURANCE	19,432.02	146.62	1.74	
DEPRECIATION	101,756.93	767.81	9.12	
INTEREST (CAP.DEBT)	26,258.70	198.13	2.35	
TOTAL CAPITAL COSTS -----	152,301.29	1,149.19	13.65	15.19
TOTAL PRODUCTION COSTS	885,362.88	6,680.50	79.38	88.29
CONTRIBUTION MARGIN (\$)	269,769.15	2,035.54	24.19	
RETURN TO EQUITY (\$)	117,467.86	886.35	10.53	11.71
MILK PRICE			82.34	
INVENTORY ADJUSTMENT			7.56	
RETURN TO EQUITY (%)			9.17	
AVERAGE CAP. DEBT INTEREST RATE (%)			3.78	

Northern Alberta
2014 Dairy Cost Study - Business Analysis
17 Participants

Table 2 Statement of Investment

LAND BUILDINGS & EQUIPMENT

	AGE	DEPRECIATION	DAIRY INVESTMENT
DAIRY BUILDINGS	11.30	46,601.42	1,149,157.08
POWER MACHINERY	9.57	17,614.85	115,251.90
DAIRY EQUIPMENT	9.77	26,045.55	109,506.83
OTHER EQUIPMENT	10.45	11,495.10	47,026.09
TOTAL EQUIPMENT	9.80	55,155.51	271,784.82
LAND			119,330.74
SUPPLIES			17,813.44
** SUBTOTAL **		101,756.93	1,558,086.08

DAIRY LIVESTOCK

	-- BEGIN YEAR --		-- END OF YEAR --		AVERAGE VALUE
	NUMBER	VALUE	NUMBER	VALUE	
COWS	137.82	275,917.40	143.71	287,693.64	281,805.52
BRED HEIFERS	33.94	61,094.12	33.88	60,988.24	61,041.18
OPEN HEIFERS	64.71	64,705.88	57.29	57,294.12	61,000.00
HEIFER CALVES	55.65	11,129.41	56.82	11,364.71	11,247.06
BULL CALVES	8.35	1,002.35	10.06	1,207.06	1,104.71
BULLS	.82	1,235.29	1.12	1,676.47	1,455.88
** SUBTOTAL **	301.29	415,084.46	302.88	420,224.23	417,654.34

TOTAL DAIRY INVESTMENT -----	1,975,740.42
CAPITAL LOANS	695,185.27
OPERATOR EQUITY	1,280,555.15
INVESTMENT PER COW	14,907.94
DEBT/CAPITAL RATIO	.35
CAPITAL TURNOVER (YR)	1.97

HERD SIZE

	Average	Median
NUMBER OF DAIRY COWS	132.53	98.75
NUMBER OF ANIMAL UNITS	216.73	145.33
DRY COWS (%)	23.26	
CALF CROP (%)	110.12	
PASTURE PER COW (AC.)	.33	

CATTLE SALES & PURCHASES

	NUMBER SOLD	SELLING PRICE	NUMBER PURCHASED	PURCHASE PRICE
COWS	40.12	1,367.49	.47	2,462.50
BRED HEIFERS	2.06	2,271.43	.00	.00
OPEN HEIFERS	3.88	2,121.94	.12	2,650.00
HEIFER CALVES	.59	497.00	.00	.00
BULL CALVES	45.71	161.49	.00	.00
BULLS	.59	1,810.66	.47	2,331.25
TOTAL VALUE		76,513.86		2,567.55

**Northern Alberta
2014 Dairy Cost Study - Business Analysis
17 Participants**

Table 3 Labour and Management

LABOUR

	HOURS	VALUE	HOURLY RATE
OPERATOR LABOUR	2,662.65	58,578.24	22.00
HIRED LABOUR	2,376.19	48,421.49	20.38
FAMILY UNPAID LABOUR	2,281.12	48,538.79	21.28
TOTAL	7,319.96	155,538.52	21.25
RETURN TO FAMILY LABOUR	16.94		
MAN EQUIVALENTS	2.93		
LABOUR HOURS PER COW	55.23		
YEARS FARMING	26.74		

MILK PRODUCTION

	HL.	% OF TOTAL	VALUE	AVERAGE PRICE / HL
MILK SALES	11,154.11	96.59	917,510.12	82.26
OTHER MILK PRODUCED	394.16	3.41		
TOTAL	11,548.26	100.00		

AVERAGE COMPONENT PRICES (\$ / KG)

BUTTERFAT TEST	4.05 KG / HL	11.43
PROTEIN	3.36 KG / HL	4.62
L.O.S.	5.71 KG / HL	3.80
MILK PRODUCTION PER COW	8,713.74 LITRES / YEAR	

QUOTA INFORMATION

TPQ HOLDINGS	112.63 KG / DAY
TPQ PRICE	37,941.45 \$ / KG / DAY
CREDIT PRICE	7.85 \$ / KG

MANAGEMENT FACTORS

COST PER HL	79.38
MILK/FEED (KG) RATIO	1.99 LITRES
MILK/LABOUR (HR) RATIO	157.76 LITRES
MILK/CAPITAL (\$) RATIO	.58 LITRES

Northern Alberta
2014 Dairy Cost Study - Business Analysis
17 Participants
Table 4 Feed Report

<u>CONCENTRATES</u>	— PURCHASED —		— HOMEGROWN—	
	QUANTITY (TONNES)	PRICE	QUANTITY (TONNES)	PRICE
OATS	1.25	49.00	1.44	144.00
BARLEY	155.57	158.42	83.26	145.69
WHEAT	.61	211.00	.61	159.09
MIXED GRAIN	.00	.00	.00	.00
BREW GRAIN (DRY EQ.)	16.74	187.17		
BEET PULP	6.21	246.49		
OTHER PURCHASED	27.40	465.29		
DAIRY RATION	192.99	529.75		
CALF FEED	6.71	581.90		
MILK REPLACER	.41	3,984.42		
SUPPLEMENT	77.53	523.29		
MOLASSES	2.51	289.93		
SALT	2.61	392.40		
MINERALS & VITAMINS	4.90	1,147.34		
SUBTOTAL -----	495.44	197,978.87	85.31	12,434.46
 <u>ROUGHAGE</u>				
ALFALFA HAY	131.60	118.84	103.53	102.69
ALFALFA PELLETS	.00	.00		
STRAW FED	2.99	63.21	8.29	43.24
GREENFEED	.00	.00	.24	71.89
SILAGE/HAYLAGE (DRY EQ.)	328.44	130.23	428.51	92.55
SUBTOTAL -----	463.02	58,598.92	540.58	50,665.57
GRINDING & PROCESSING		7,169.12		
GRAND TOTAL FEED COSTS -----		263,746.92		63,100.03
 BEDDING	144.52	73.24	96.00	42.82
 AV. PRICE:	CONCENTRATE	362.31 \$/TONNE		
	ROUGHAGE	108.87 \$/TONNE		
 FED PER COW:	CONCENTRATE	4.38 TONNES		
	ROUGHAGE	7.57 TONNES		
 % HOME GROWN:	CONCENTRATE	14.69 %		
	ROUGHAGE	53.86 %		

APPENDIX C

2014 Dairy Cost Study Southern Alberta

Southern Alberta
 2014 Dairy Cost Study - Business Analysis
 32 Participants
 Table 1 Dairy Enterprise Costs and Returns

	TOTAL ENTERPRISE	PER COW	PER HL SOLD	PERCENT FROM INCOME
INCOME:				
MILK SALES	1,039,395.18	7,549.37	81.89	
POOL ADJUSTMENTS (+ -)	898.46	6.53	.07	
MISCELLANEOUS RECEIPTS	5,452.65	39.60	.43	
NET CATTLE SALES (+ -)	47,689.60	346.38	3.76	
NET INVENTORY CHANGE (+ -)	17,434.98	126.63	1.37	
GROSS INCOME -----	1,110,870.88	8,068.52	87.53	100.00
EXPENSES:				
GRAIN	44,789.07	325.31	3.53	
COMPLETE FEED	148,709.66	1,080.11	11.72	
SUPPLEMENT	56,533.89	410.62	4.45	
MINERALS & VITAMINS	11,366.78	82.56	.90	
ROUGHAGE	156,463.13	1,136.43	12.33	
PROCESSING COSTS	121.56	.88	.01	
TOTAL FEED COSTS -----	417,984.10	3,035.92	32.93	37.63
BEDDING AND SUPPLIES	34,974.28	254.03	2.76	
BREEDING	11,725.51	85.17	.92	
VET. AND MEDICINE	21,775.95	158.16	1.72	
MILK HAULING	39,320.58	285.59	3.10	
PRODUCER'S FEES	27,126.79	197.03	2.14	
UTILITIES	22,553.90	163.81	1.78	
FUEL, OIL, LUBE	22,095.31	160.48	1.74	
BLDG. & MACH. REPAIRS	28,019.18	203.51	2.21	
MISCELLANEOUS	34,046.62	247.29	2.68	
TOTAL OTHER VARIABLE COSTS -----	241,638.10	1,755.07	19.04	21.75
HIRED LABOUR	40,352.33	293.09	3.18	
FAMILY LABOUR	116,318.30	844.85	9.16	
TOTAL LABOUR COSTS -----	156,670.63	1,137.94	12.34	14.10
TOTAL VARIABLE COSTS	816,292.83	5,928.93	64.32	73.48
RENT	1,688.82	12.27	.13	
TAXES AND INSURANCE	17,601.96	127.85	1.39	
DEPRECIATION	111,291.33	808.34	8.77	
INTEREST (CAP.DEBT)	15,981.63	116.08	1.26	
TOTAL CAPITAL COSTS -----	146,563.74	1,064.53	11.55	13.19
TOTAL PRODUCTION COSTS	962,856.57	6,993.45	75.86	86.68
CONTRIBUTION MARGIN (\$)	294,578.05	2,139.59	23.21	
RETURN TO EQUITY (\$)	148,014.31	1,075.06	11.66	13.32
MILK PRICE			81.96	
INVENTORY ADJUSTMENT			5.56	
RETURN TO EQUITY (%)			8.74	
AVERAGE CAP. DEBT INTEREST RATE (%)			4.26	

**Southern Alberta
2014 Dairy Cost Study - Business Analysis
32 Participants
Table 2 Statement of Investment**

LAND BUILDINGS & EQUIPMENT

	AGE	DEPRECIATION	DAIRY INVESTMENT
DAIRY BUILDINGS	13.44	45,177.08	1,133,364.73
POWER MACHINERY	7.24	25,779.62	174,684.63
DAIRY EQUIPMENT	13.02	25,647.26	93,943.42
OTHER EQUIPMENT	8.68	14,687.37	64,428.23
TOTAL EQUIPMENT	9.22	66,114.25	333,056.27
LAND			161,737.59
SUPPLIES			14,791.84
** SUBTOTAL **		111,291.33	1,642,950.44

DAIRY LIVESTOCK

	-- BEGIN YEAR --		-- END OF YEAR --		AVERAGE VALUE
	NUMBER	VALUE	NUMBER	VALUE	
COWS	135.00	277,304.61	140.63	288,858.97	283,081.79
BRED HEIFERS	44.81	80,662.50	46.94	84,487.50	82,575.00
OPEN HEIFERS	49.88	49,875.00	51.88	51,875.00	50,875.00
HEIFER CALVES	29.34	5,868.75	31.47	6,293.75	6,081.25
BULL CALVES	4.59	551.25	4.25	510.00	530.63
BULLS	2.19	3,281.25	1.97	2,953.13	3,117.19
** SUBTOTAL **	265.81	417,543.36	277.13	434,978.34	426,260.85

TOTAL DAIRY INVESTMENT	2,069,211.30
CAPITAL LOANS	374,889.96
OPERATOR EQUITY	1,694,321.34
INVESTMENT PER COW	15,029.17
DEBT/CAPITAL RATIO	.18
CAPITAL TURNOVER (YR)	1.86

HERD SIZE

	Average	Median
NUMBER OF DAIRY COWS	137.68	125.25
NUMBER OF ANIMAL UNITS	217.43	208.00
DRY COWS (%)	18.32	
CALF CROP (%)	105.02	
PASTURE PER COW (AC.)	.27	

CATTLE SALES & PURCHASES

	NUMBER SOLD	SELLING PRICE	NUMBER PURCHASED	PURCHASE PRICE
COWS	37.34	1,442.27	3.63	2,337.07
BRED HEIFERS	.66	1,532.63	1.72	2,025.45
OPEN HEIFERS	.34	1,151.06	.84	1,888.89
HEIFER CALVES	.53	195.19	.63	1,000.00
BULL CALVES	41.47	184.03	.00	.00
BULLS	1.31	2,091.56	1.31	2,956.37
TOTAL VALUE		65,741.70		18,052.11

**Southern Alberta
2014 Dairy Cost Study - Business Analysis
32 Participants**

Table 3 Labour and Management

LABOUR

	HOURS	VALUE	HOURLY RATE
OPERATOR LABOUR	2,843.02	62,546.34	22.00
HIRED LABOUR	1,774.43	40,352.33	22.74
FAMILY UNPAID LABOUR	2,500.11	53,771.95	21.51
TOTAL	7,117.55	156,670.63	22.01
RETURN TO FAMILY LABOUR	14.59		
MAN EQUIVALENTS	2.85		
LABOUR HOURS PER COW	51.70		
YEARS FARMING	22.27		

MILK PRODUCTION

	HL.	% OF TOTAL	VALUE	AVERAGE PRICE / HL
MILK SALES	12,691.97	97.46	1,039,395.18	81.89
OTHER MILK PRODUCED	330.73	2.54		
TOTAL	13,022.69	100.00		

AVERAGE COMPONENT PRICES (\$ / KG)

BUTTERFAT TEST	3.95 KG / HL	11.44
PROTEIN	3.28 KG / HL	4.62
L.O.S.	5.71 KG / HL	3.79
MILK PRODUCTION PER COW	9,458.69 LITRES / YEAR	

QUOTA INFORMATION

TPQ HOLDINGS	129.72 KG / DAY
TPQ PRICE	37,848.45 \$ / KG / DAY
CREDIT PRICE	7.37 \$ / KG

MANAGEMENT FACTORS

COST PER HL	75.86
MILK/FEED (KG) RATIO	2.14 LITRES
MILK/LABOUR (HR) RATIO	182.97 LITRES
MILK/CAPITAL (\$) RATIO	.63 LITRES

Southern Alberta
 2014 Dairy Cost Study - Business Analysis
 32 Participants
 Table 4 Feed Report

<u>CONCENTRATES</u>	— PURCHASED —		— HOMEGROWN—	
	QUANTITY (TONNES)	PRICE	QUANTITY (TONNES)	PRICE
OATS	6.35	113.44	5.66	165.49
BARLEY	34.46	148.87	127.44	173.63
WHEAT	.00	.00	.00	.00
MIXED GRAIN	.00	.00	.00	.00
BREW GRAIN (DRY EQ.)	14.48	184.21		
BEET PULP	9.55	121.72		
OTHER PURCHASED	29.83	403.80		
DAIRY RATION	239.18	544.18		
CALF FEED	28.26	485.82		
MILK REPLACER	1.31	3,691.31		
SUPPLEMENT	93.64	586.88		
MOLASSES	5.69	277.19		
SALT	1.04	408.64		
MINERALS & VITAMINS	10.27	1,065.76		
SUBTOTAL	474.06	238,335.16	133.10	23,064.25
<u>ROUGHAGE</u>				
ALFALFA HAY	133.02	156.68	211.88	165.50
ALFALFA PELLETS	.00	.00		
STRAW FED	2.48	65.40	18.36	57.52
GREENFEED	.00	.00	1.49	115.71
SILAGE/HAYLAGE (DRY EQ.)	101.72	115.67	585.46	149.28
SUBTOTAL	237.22	32,769.54	817.18	123,693.59
GRINDING & PROCESSING		121.56		
GRAND TOTAL FEED COSTS		271,226.26		146,757.84
BEDDING	137.55	52.56	72.23	57.42
AV. PRICE:	CONCENTRATE	430.52 \$/TONNE		
	ROUGHAGE	148.39 \$/TONNE		
FED PER COW:	CONCENTRATE	4.41 TONNES		
	ROUGHAGE	7.66 TONNES		
% HOME GROWN:	CONCENTRATE	21.92 %		
	ROUGHAGE	77.50 %		

APPENDIX D

Dairy Cost Study Alberta 5 Year Average (2010-2014)

**Alberta Dairy Cost Study
Business Analysis (2010 - 2014)
Average 51 Participants**

Table 1 Dairy Enterprise Costs and Returns

	TOTAL ENTERPRISE	PER COW	PER HL SOLD	PERCENT FROM INCOME
INCOME:				
MILK SALES	932,530.78	6,939.52	79.72	
POOL ADJUSTMENTS (+ -)	4,198.09	31.08	.36	
MISCELLANEOUS RECEIPTS	6,270.80	46.81	.54	
NET CATTLE SALES (+ -)	36,047.71	266.84	3.06	
NET INVENTORY CHANGE (+ -)	13,600.36	101.20	1.16	
GROSS INCOME -----	992,647.75	7,385.45	84.85	100.00
EXPENSES:				
GRAIN	48,381.70	359.00	4.14	
COMPLETE FEED	130,807.37	971.61	11.18	
SUPPLEMENT	40,419.04	300.43	3.45	
MINERALS & VITAMINS	8,447.97	62.69	.72	
ROUGHAGE	116,713.31	868.13	9.97	
PROCESSING COSTS	2,424.55	18.06	.21	
TOTAL FEED COSTS -----	347,193.95	2,579.92	29.66	34.90
BEDDING AND SUPPLIES	30,700.49	228.39	2.62	
BREEDING	11,217.14	83.50	.96	
VET. AND MEDICINE	20,831.83	155.07	1.78	
MILK HAULING	33,609.00	250.00	2.87	
PRODUCER'S FEES	22,762.98	169.30	1.94	
UTILITIES	20,076.02	149.29	1.72	
FUEL, OIL, LUBE	16,359.37	121.48	1.40	
BLDG. & MACH. REPAIRS	27,451.30	204.61	2.35	
MISCELLANEOUS	36,635.00	272.86	3.13	
TOTAL OTHER VARIABLE COSTS ----	219,643.13	1,634.50	18.77	22.12
HIRED LABOUR	40,331.12	300.49	3.45	
FAMILY LABOUR	105,090.94	781.02	8.98	
TOTAL LABOUR COSTS -----	145,422.06	1,081.51	12.43	14.64
TOTAL VARIABLE COSTS	712,259.14	5,295.93	60.86	71.67
RENT	1,683.80	12.51	.14	
TAXES AND INSURANCE	19,211.68	143.15	1.64	
DEPRECIATION	100,723.36	749.44	8.61	
INTEREST (CAP.DEBT)	25,057.00	186.95	2.15	
TOTAL CAPITAL COSTS -----	146,675.84	1,092.05	12.55	14.81
TOTAL PRODUCTION COSTS	858,934.97	6,387.97	73.41	86.48
CONTRIBUTION MARGIN (\$)	280,388.61	2,089.53	23.99	
RETURN TO EQUITY (\$)	133,712.77	997.48	11.44	13.52
MILK PRICE			80.08	
INVENTORY ADJUSTMENT			4.76	
RETURN TO EQUITY (%)			10.86	
AVERAGE CAP. DEBT INTEREST RATE (%)			4.54	

**Alberta Dairy Cost Study
Business Analysis (2010 - 2014)
Average 51 Participants
Table 2 Statement of Investment**

LAND BUILDINGS & EQUIPMENT

	AGE	DEPRECIATION	DAIRY INVESTMENT
DAIRY BUILDINGS	11.43	41,598.77	1,027,331.16
POWER MACHINERY	7.82	20,681.34	138,910.86
DAIRY EQUIPMENT	10.48	25,581.20	104,594.44
OTHER EQUIPMENT	8.03	12,862.05	57,785.00
TOTAL EQUIPMENT	8.74	59,124.59	301,290.31
LAND			95,300.11
SUPPLIES			15,388.49
** SUBTOTAL **		100,723.36	1,439,310.08

DAIRY LIVESTOCK

	--- BEGIN YEAR ---		--- END OF YEAR ---		AVERAGE VALUE
	NUMBER	VALUE	NUMBER	VALUE	
COWS	133.99	251,755.10	137.65	258,735.87	255,245.49
BRED HEIFERS	37.72	62,000.62	39.25	258,735.87	63,246.84
OPEN HEIFERS	43.50	43,503.27	47.30	258,735.87	45,402.15
HEIFER CALVES	39.80	7,960.70	42.12	258,735.87	8,192.49
BULL CALVES	7.47	544.11	6.18	258,735.87	476.85
BULLS	1.48	2,213.29	1.48	258,735.87	2,213.44
** SUBTOTAL **	263.96	367,977.08	273.97	258,735.87	374,777.26

TOTAL DAIRY INVESTMENT -----	1,814,087.34
CAPITAL LOANS	550,117.53
OPERATOR EQUITY	1,263,969.81
INVESTMENT PER COW	13,490.97
DEBT/CAPITAL RATIO	.31
CAPITAL TURNOVER (YR)	1.83

HERD SIZE

	Average	Median
NUMBER OF DAIRY COWS	134.35	114.11
NUMBER OF ANIMAL UNITS	209.62	174.14
DRY COWS (%)	18.93	
CALF CROP (%)	101.60	
PASTURE PER COW (AC.)	.26	

CATTLE SALES & PURCHASES

	NUMBER SOLD	SELLING PRICE	NUMBER PURCHASED	PURCHASE PRICE
COWS	38.42	970.41	2.67	1,990.81
BRED HEIFERS	1.02	1,442.24	.78	2,018.58
OPEN HEIFERS	.74	1,143.13	.28	1,505.52
HEIFER CALVES	.64	243.65	.16	389.52
BULL CALVES	39.02	99.89	.00	.00
BULLS	.97	1,655.05	.89	2,603.21
TOTAL VALUE		45,605.24		9,557.53

**Alberta Dairy Cost Study
Business Analysis (2010 - 2014)
Average 51 Participants
Table 3 Labour and Management**

LABOUR

	HOURS	VALUE	HOURLY RATE
OPERATOR LABOUR	2,942.76	62,054.69	21.10
HIRED LABOUR	1,919.59	40,331.12	21.04
FAMILY UNPAID LABOUR	2,080.20	43,036.25	20.55
TOTAL	6,942.55	145,422.06	20.92
RETURN TO FAMILY LABOUR	20.17		
MAN EQUIVALENTS	2.78		
LABOUR HOURS PER COW	51.67		
YEARS FARMING	22.51		

MILK PRODUCTION

	HL.	% OF TOTAL	VALUE	AVERAGE PRICE / HL
MILK SALES	11,692.88	96.85	932,530.78	79.72
OTHER MILK PRODUCED	379.75	3.15		
TOTAL	12,072.87	100.00		

AVERAGE COMPONENT PRICES (\$ / KG)

BUTTERFAT TEST	3.91 KG / HL	11.49
PROTEIN	3.29 KG / HL	4.16
L.O.S.	5.69 KG / HL	3.73
MILK PRODUCTION PER COW	8,988.68 LITRES / YEAR	

QUOTA INFORMATION

TPQ HOLDINGS	120.01 KG / DAY
TPQ PRICE	36,996.02 \$ / KG / DAY
CREDIT PRICE	8.55 \$ / KG

MANAGEMENT FACTORS

COST PER HL	73.41
MILK/FEED (KG) RATIO	2.14 LITRES
MILK/LABOUR (HR) RATIO	173.96 LITRES
MILK/CAPITAL (\$) RATIO	.67 LITRES

**Alberta Dairy Cost Study
Business Analysis (2010 - 2014)
Average 51 Participants
Table 4 Feed Report**

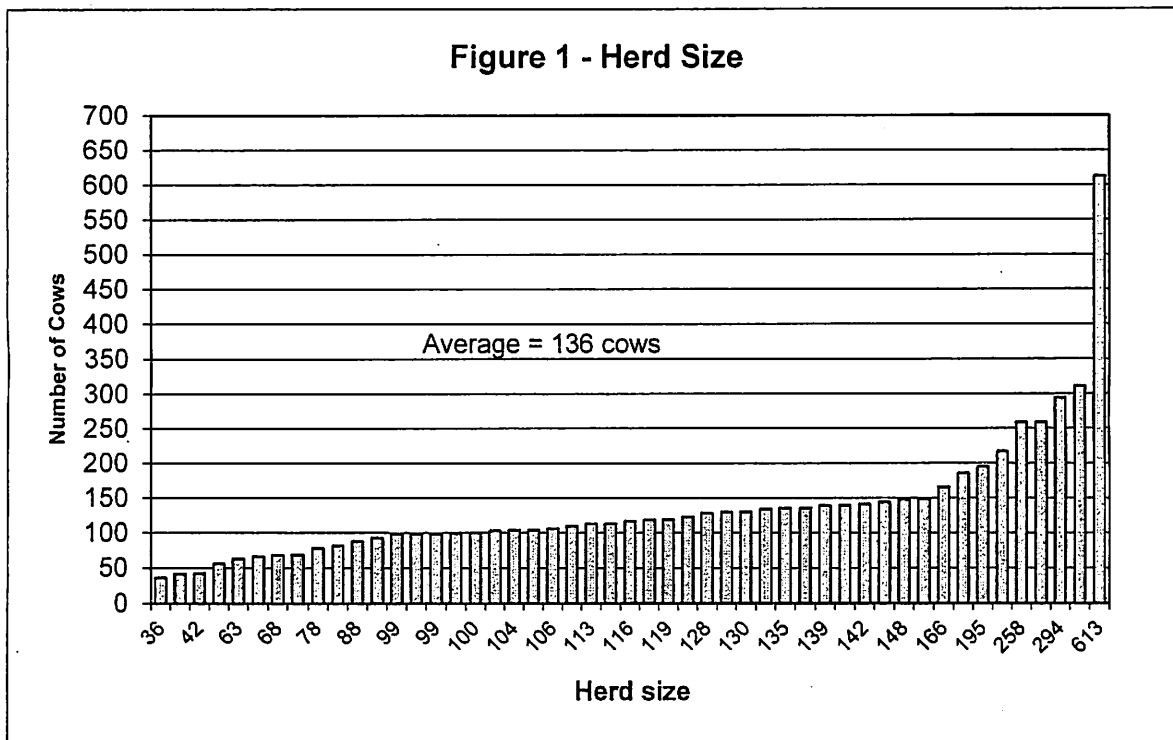
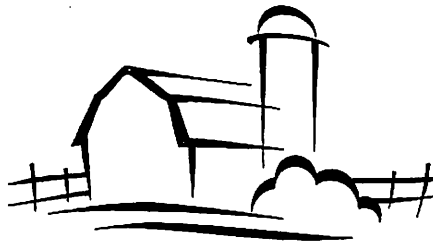
	-- PURCHASED --		-- HOMEGROWN--	
<u>CONCENTRATES</u>	QUANTITY (TONNES)	PRICE	QUANTITY (TONNES)	PRICE
OATS	2.16	152.08	2.98	183.49
BARLEY	63.36	189.69	93.62	193.61
WHEAT	1.21	114.20	2.33	178.65
MIXED GRAIN	.07	57.60	.00	.00
BREW GRAIN (DRY EQ.)	10.99	180.26		
BEET PULP	5.14	186.72		
OTHER PURCHASED	43.66	326.69		
DAIRY RATION	235.59	503.94		
CALF FEED	18.96	478.16		
MILK REPLACER	.78	3,298.11		
SUPPLEMENT	74.80	531.88		
MOLASSES	2.43	320.87		
SALT	.86	457.49		
MINERALS & VITAMINS	7.75	1,044.21		
SUBTOTAL -----	467.74	208,361.98	98.93	19,694.10
 <u>ROUGHAGE</u>				
ALFALFA HAY	132.85	133.85	143.59	124.26
ALFALFA PELLETS	.00	.00		
STRAW FED	5.58	57.45	18.92	52.77
GREENFEED	.15	4.60	3.81	90.51
SILAGE/HAYLAGE (DRY EQ.)	194.42	120.61	493.53	112.92
SUBTOTAL -----	333.00	41,400.43	659.85	75,312.89
GRINDING & PROCESSING		2,424.55		
GRAND TOTAL FEED COSTS -----		252,186.96		95,006.99
BEDDING	139.55	60.41	66.01	49.80
AV. PRICE:	CONCENTRATE	401.01 \$/TONNE		
	ROUGHAGE	117.29 \$/TONNE		
FED PER COW:	CONCENTRATE	4.22 TONNES		
	ROUGHAGE	7.39 TONNES		
% HOME GROWN:	CONCENTRATE	17.26 %		
	ROUGHAGE	66.36 %		

APPENDIX E

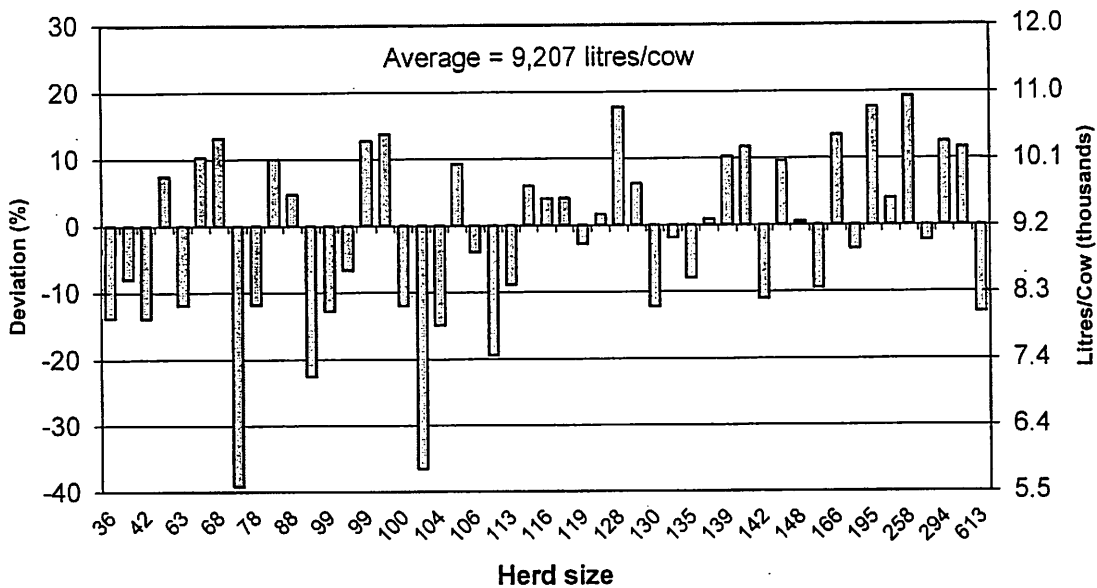
2014 Dairy Cost Study Individual Results (49 Participants)

Dairy Cost Study 2014

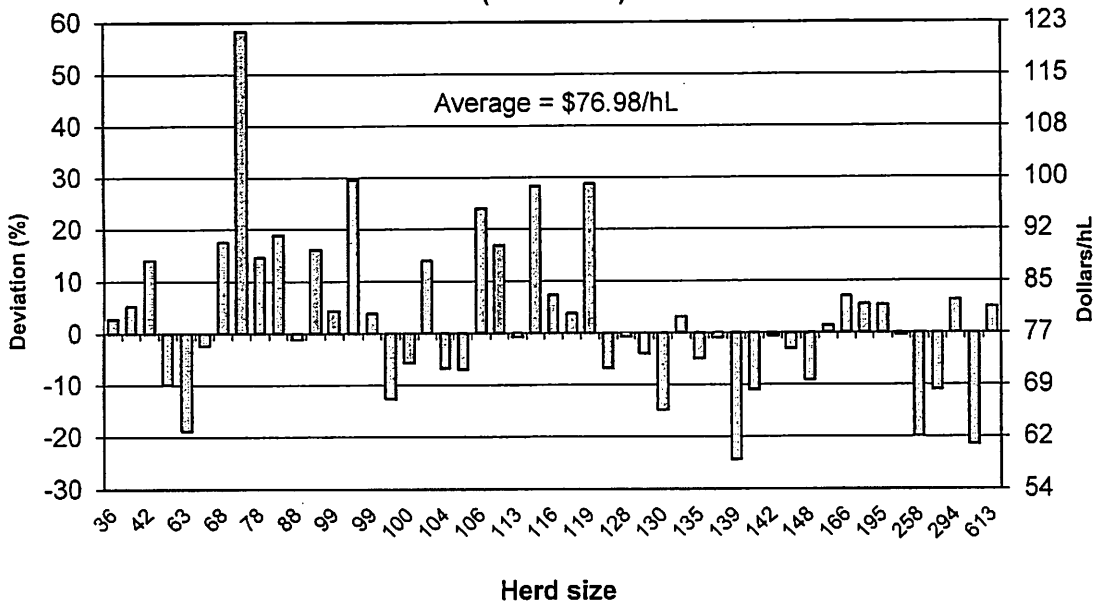
Individual Results (49 Participants)



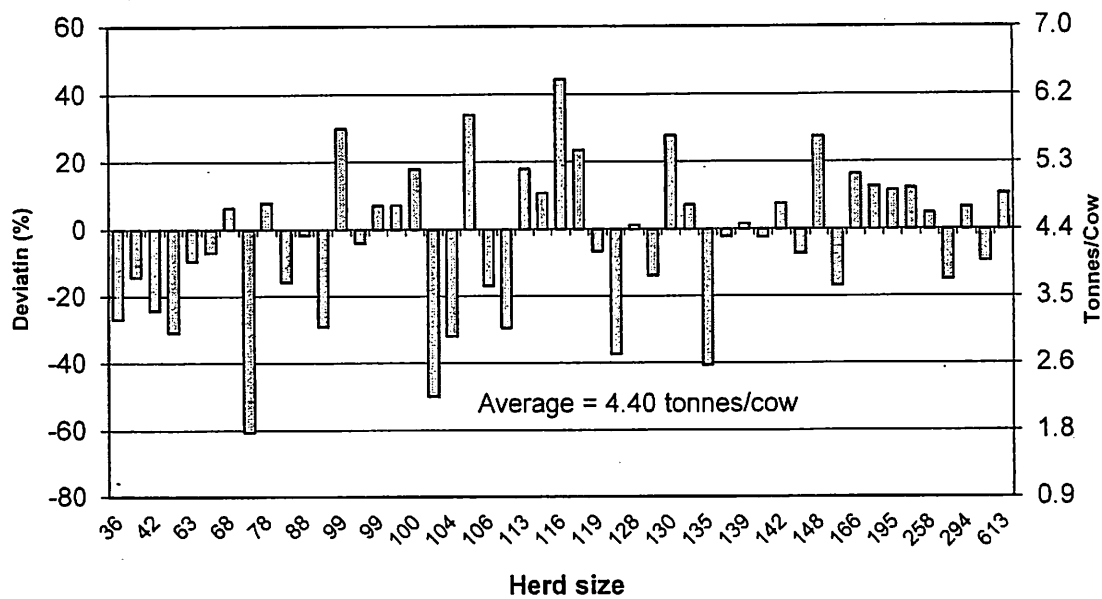
**Figure 2 - Milk Production
(Litres/Cow)**



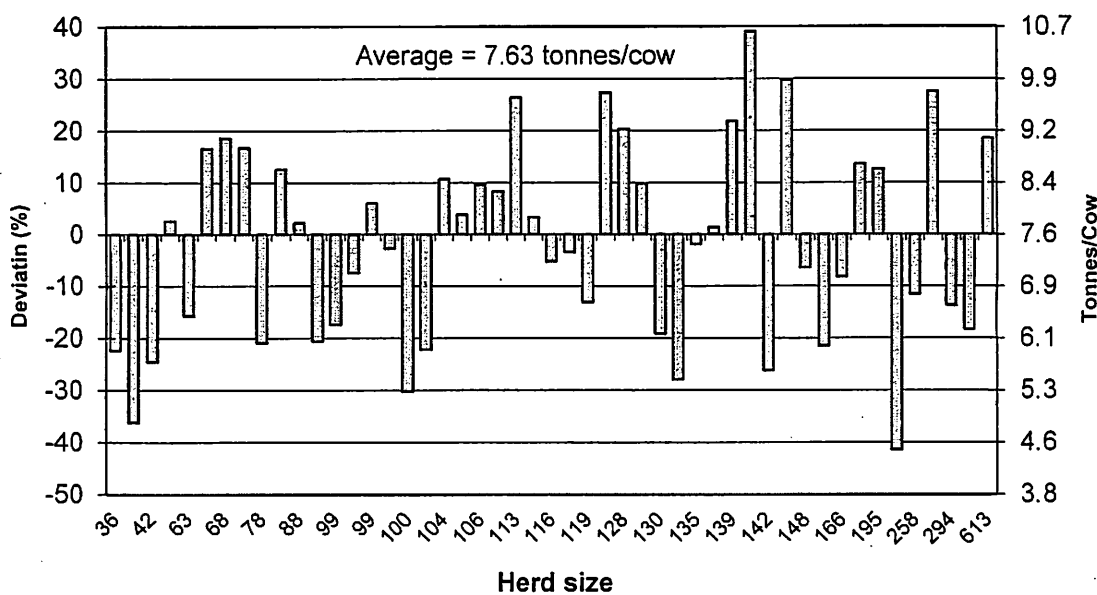
**Figure 3 - Cost of Production
(Dollars/hL)**



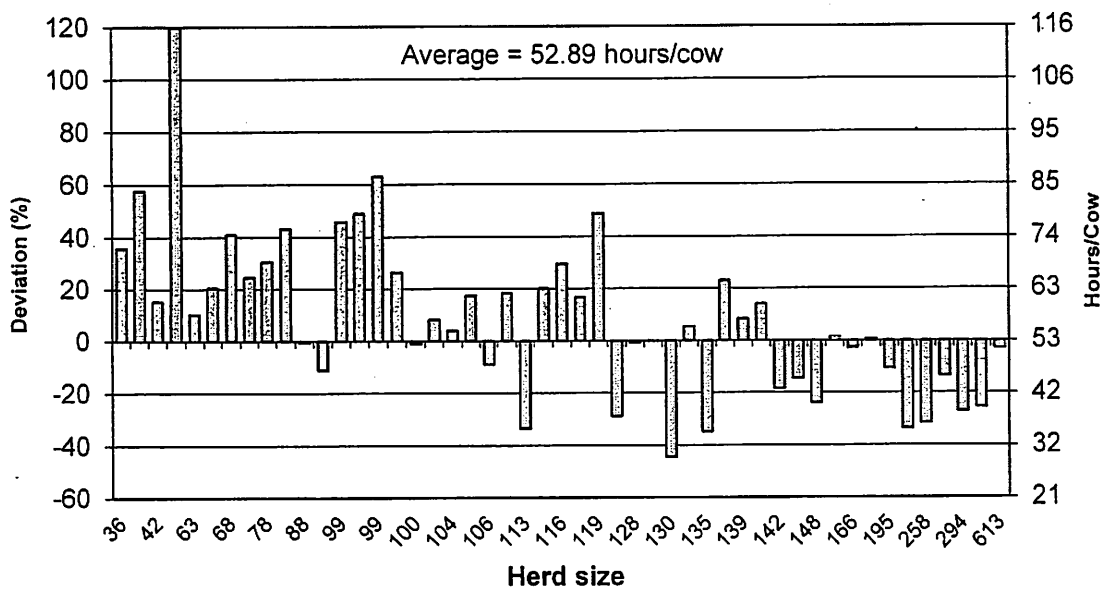
**Figure 4 - Concentrate Use
(Tonnes/Cow)**



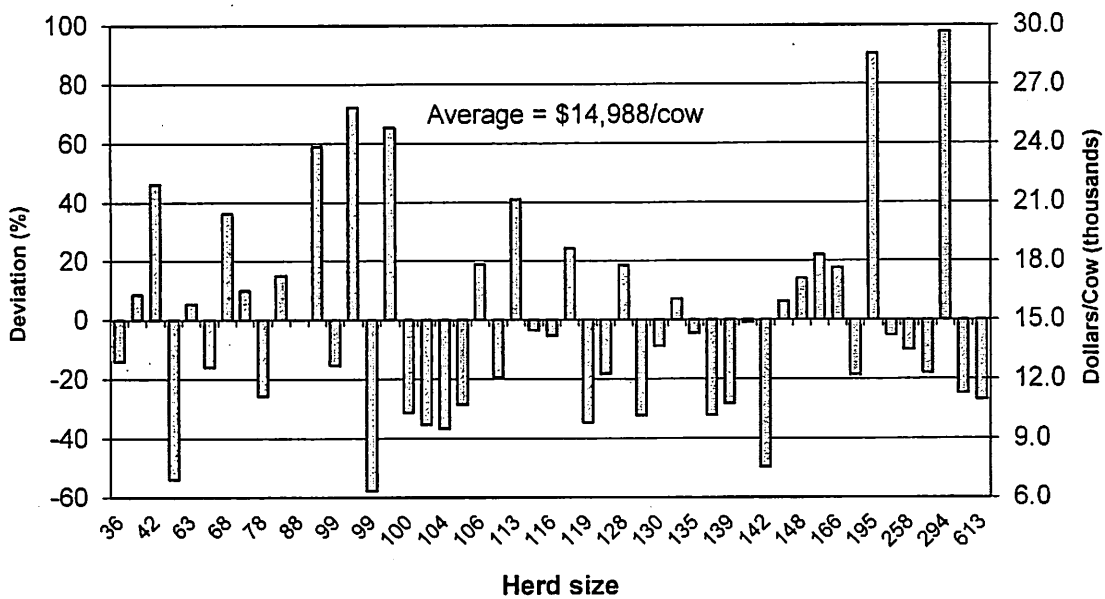
**Figure 5 - Roughage Use
(Tonnes/Cow)**



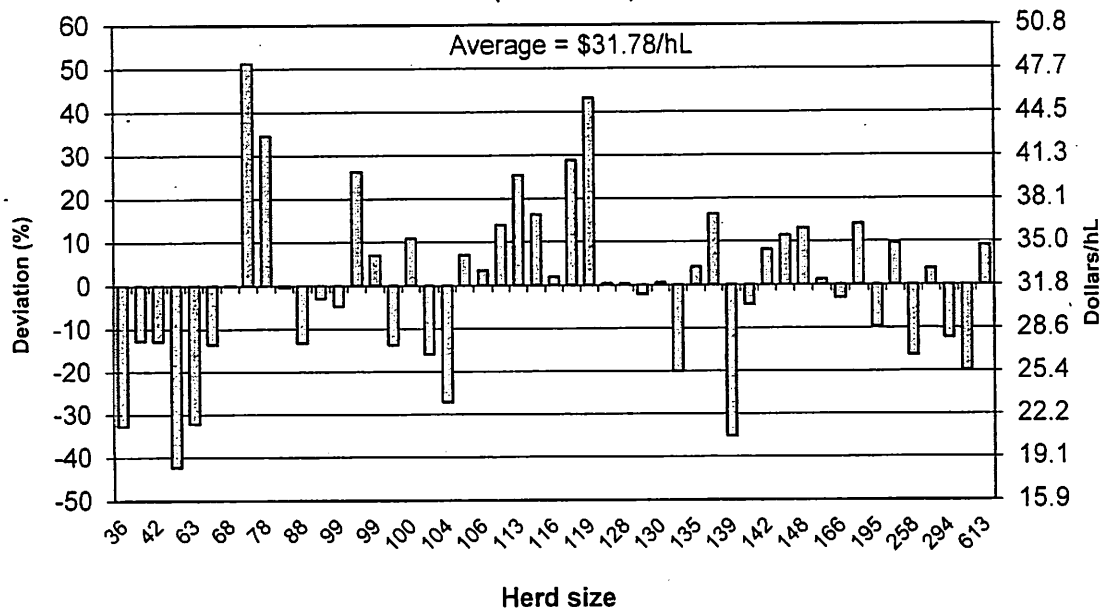
**Figure 6 - Labour Use
(Hours/Cow)**



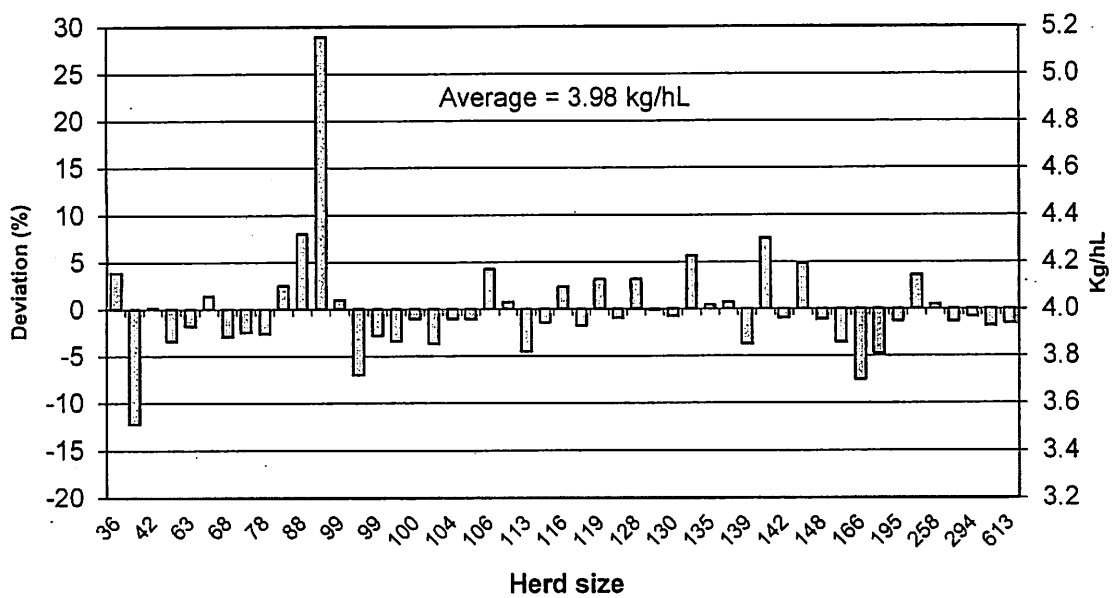
**Figure 7 - Investment
(Dollars/Cow)**



**Figure 8 - Total Feed Cost
(Dollars/hL)**



**Figure 9 - Butterfat Test
(Kg/hL)**



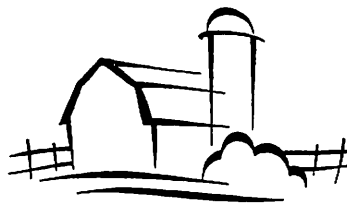
APPENDIX F

2014 Dairy Cost Study Data Collection Forms

DAIRY COST STUDY, 2014

Investments and Liabilities

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General Information

Name:	TPQ Holdings kg/day: (January 2014)	
E-Mail:	Number of Years in Dairy	
Fax:		

Land Information

	Total Acres	\$ per Acre	% to Dairy	% to Other Farm
Building Site				
Pasture				
Crop / Hay Land				

Farm Loans

		Balance: Jan. 1, 2014	Interest Rate	% to Dairy	% to Other Farm
1	Land:				
1					
2	Building:				
2					
3	Livestock:				
3					
4	Machinery:				
4					
5	Other:				

Supplies Inventory

		Value: Jan. 1, 2014	% to Dairy	% to Other Farm
1	Gas, Oil & Grease			
2	Vet., Semen, Etc			
3	Bedding			
4	Dairy Livestock Supplies (ie. pails)			
5	Rations & Supplements			
6	Other Supplies (ie. filters, soaps, etc.)			

If you have any questions, please call Pauline Van Biert at 780-415-2153, toll free by first dialing 310-0000

DAIRY COST STUDY, 2014

Machinery and Buildings on Jan.1, 2014

Name: _____

Buildings Used for Dairy:		Purchased Price	Year Purchased	% to Dairy	% to Other Farm
1					
1					
1					
1					
1					
1					
1					
1					
1					

Examples: barns, machine shed, hay sheds, bunkers, shop, calf hutches, corrals

Tractors & Trucks Used for Dairy:

2					
2					
2					
2					
2					
2					
2					
2					
2					

Dairy Equipment:

3					
3					
3					
3					
3					
3					
3					
3					
3					
3					

Examples: bulk tank, pipeline, milk meters, washer, vacuum pump, generator, buckets



DAIRY COST STUDY, 2014

Monthly Reporting Sheet

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Name: _____

Month: _____

If you have any questions, please call Pauline Van Biert at 780-415-2153, toll free by first dialing 310-0000

Dairy Herd	Beginning No.	Purchases		No. Born	Died or Trans/Out	Sales		End No.
		No.	Total Value			No.	Total Value	
1. Milking Cows								
2. Dry Cows								
3. Bred Heifers								
4. Open Heifers								
5. Heifer Calves								
6. Bull Calves*								
7. Herd Bulls								

*less than 6 months

Capital Purchases			Total Value (\$)	% to Dairy	% to Other Farm
Specify					
1. Equipment	Purchases:				
2.	Sales:				
3. Tractor/Truck	Purchases:				
4.	Sales:				
5. Buildings	Purchases/Const:				
6.	Sales:				
13. TPQ	Purchased:	(kgs/day)			
14.	Sold:	(kgs/day)			
16. Credit Transfers		(\$/kg)			

Milk Produced / Sold *	Litres	Total \$ Value
2. Milk Fed To Livestock		
3. Milk Used in the Home		
4. Unuseable Milk (dumped)		
5. Miscellaneous Dairy Income (i.e. colostrum sales, BSE program pmts.)		

* All Plant Sales will be recorded from Milk Statement provided by Alberta Milk

FEED Used by Dairy Herd		Office Use	Unit Type*	Bale Weight	Amount Used	Unit Price (if purchased)	Code		Office Use	Unit Type *	Amount Used	Unit Price
1	Barley						21	Dairy Ration				
2	Oats						22	Supplement				
3	Wheat						23	Brew Grain				
4	Hay (homegrown)						24	Beet Pulp				
5	Hay (purchased)						25	Alfalfa Pellets				
6	Silage						26	Calf Feed				
7	Haylage						27	Milk Replacer				
8	Greenfeed						28	Salt				
9	Straw - Fed						29	Min. & Vit.				
10	Straw-Bedding											
11	Sawdust											
12	Other:						31	Grinding & Processing				

* T = Imperial Ton, t = Metric tonne, bu = bushels, kg = kilograms, ba = bales (please provide bale weight), bags (20 or 25 kg)



LABOUR for Dairy Activities *

LABOUR for Dairy Activities *			Total Hours	
1	Operator			
2	Wife, Partner, 2nd Operator			
3	Family Labour	16 yrs and Over		
4		Under 16		Wages & Board
5	Hired Labour	1		
5		2		

* do not include hours doing fieldwork

EXPENSES

EXPENSES		Total Farm (\$)	% to Dairy	% Other Farm
1	Veterinary and Medicine			
1	Breeding			
2	Livestock & Barn Supplies			
3	Building & Fence Repair			
4	Machinery & Equipment Repair			
5	Fuel, Oil, Lube (for equipment, not heating)			
13	Natural Gas			
14	Electricity			
15	Other Utilities (phone, propane, heating oil, etc.)			
7	Insurance, Licences & Taxes			
8	Cash Rental (pasture, equipment, leases, etc.)			
9	Operating Loan Interest			
10	Custom Work (i.e. manure hauling, parlour cleaning)			
11	Silage Bags (hay tarps, plastic, etc.)			
12	Misc. (legal, acct, D.H.I., hooftrimming, etc)			

Confidential when Completed