Economics of Milk Production
in Alberta, 2019

# The Dairy Cost Study

An annual account of the costs and returns of milk production in Alberta

AGRICULTURE AND FORESTRY

Alberta

Alberta Agriculture and Forestry, Government of Alberta
July, 2020
The Economics of Milk Production, 2019
Volume 79, AGDEX 821-1
ISSN 1707-5084 (print), 1927-0674 (pdf)

Pauline Van Biert
Research Analyst, Economics Section
Economics and Competitiveness Branch
Phone: (780) 415-2153
pauline.vanbiert@gov.ab.ca



For more information regarding this content visit: www.alberta.ca/agriprofits-dairy.aspx

# Acknowledgments

We acknowledge and appreciate the participation of 37 milk producers in Alberta who provided detailed information for the 2019 Dairy Cost Study. Their participation was supported and encouraged by Alberta Milk which provided a financial honorarium to participants. The Economics Section, as well as fellow producers, appreciate the time and effort the participants gave in providing timely and accurate information. Without their participation, publication of this report would not have been possible.

Assistance provided by Alberta Milk in promotion of the Dairy Cost Study and providing milk statements for those producers participating on the program is gratefully acknowledged.

# Table of Contents

# 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 that can be directly compared to the provincial profiles (e.g. average, top-third, and bottom-third). Other dairy producers in the province can also compare their own records and analysis with the provincial profiles/benchmarks. In addition, the Dairy Cost Study provides vital information to other dairy industry partners such as financial institutions, market analysts and policy analysts.

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 personalized business analysis for use in making profitable management decisions,
- 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 complete survey forms regarding their dairy production activities: dairy herd inventory, capital purchases, milk production, feed usage and purchase costs, labour hours and wages (if applicable), and other expenses related to the dairy enterprise, as well as an annual form on their dairy investments (See Appendix F). From this database, weighted sample averages are calculated representing benchmarks for all dairy producers in the province. Study participants receive a confidential economic analysis of their farm including graphs, charts and a 5-year average with a 5-year historical breakdown that can be compared with the provincial benchmarks.

Milk production in Canada is directed towards two categories, fluid milk and industrial milk, which comprises milk used for all dairy products. In 2019, approximately 41 per cent 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. In August 2008, Alberta moved to a total production quota (TPQ) system and no distinction was made between fluid and industrial milk production at the farm level. The cost profiles in this report therefore represent all milk production in Alberta. Effective August 2019 there was a name change to Continuous Daily Quota (CDQ) to be more descriptive and specify that quota management is daily and continuous.

# The survey group

Thirty-seven dairy producers across the province submitted monthly business information for the 2019 calendar year (approximately seven per cent of the 507 dairy producers in Alberta at the end of 2019). Two regional sub-groups are identified as Northern Alberta (north of Ponoka) and Southern Alberta. Northern Alberta was represented by 12 producers while Southern Alberta had 25 participants complete the study.

The study is designed to represent a cross section of dairy farms by the size of their milk quota. Through active promotion of the benefits of having a cost of production profile, dairy farmers voluntarily join the Dairy Cost Study. Efforts are made to select study participants by systematic random sampling to provide representation of the total population.  Some characteristics of the sample are shown in Table 1.

**Table 1: 2019 Sample Characteristics**

| Years in Dairy | Total Sample | Indebtedness | | Herd Size (# of cows) | |
|---|---|---|---|---|---|
| | % | <30% | ≥30% | <75 | ≥75 |
| <10 | 14 | 3 | 2 | 1 | 4 |
| ≥10 | 86 | 21 | 11 | 1 | 31 |
| **Total (%)** | **100** | **65** | **35** | **5** | **95** |

# Study methodology

## Enterprise identification

There are several different approaches for calculating the farm cost of producing 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 producing the home-grown feeds 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.

## 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.

## 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 Statistics and Data Development Section at Alberta Agriculture and Forestry. 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.

## 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.

## 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 number of operator's labour hours' by 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.

## Interest on capital

The actual interest paid on existing liabilities is included in the capital cost. To obtain this value, participating producers are 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 per cent return to equity can be compared with the returns from alternative investment opportunities such as Canada Savings Bonds or term deposits.

### 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 22 per cent or $21.06 per hectolitre (hL) lower than the bottom 1/3, and 10 per cent lower than the provincial average. The categories most affecting this gap are: total feed costs, and more significantly the cost of labour at a 69 per cent difference. See tables 5-10 for further breakdown of top and bottom 1/3 as sorted by different categories.

Table 3 compares the average costs and returns for 2018 and 2019. In 2019 the total cost of producing a hectolitre of milk was $82.54. This is a three per cent increase from $79.82 in 2018 or $2.72 per hectolitre sold. Some observations of the 2019 Dairy Cost Study are:

- Milk price increased from $79.41 in 2018 to $81.76 in 2019. This is about three per cent or a difference of $2.35 per hectolitre sold. These gains were enough to offset increased input costs and debt obligations.
- There was a significant jump of approximately 17 per cent in investment dollars per cow. Operations are investing to expand production capacity, efficiencies and sustainability to meet the market quota requirements.
- Total feed costs remain the highest contributor to total production costs. Prices for forages (especially hay) and barley grain continue to be high through 2019 as it was a challenging growing and harvest season.
- The average herd size increased slightly, however, total milk production increased 15 per cent with production per cow showing a five per cent increase in average litres/year (see Table 3 in Appendix A). This is a reflection of positive herd management in health/nutrition, comfort and efficiencies by Alberta dairy farmers.

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

**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 | 81.82 | 81.73 | 82.34 |
| **Gross Income** | **85.39** | **87.01** | **87.19** |
| Feed Cost | 38.09 | 36.01 | 33.60 |
| Grain | 3.64 | 4.33 | 4.40 |
| Complete Feed | 14.31 | 12.63 | 11.80 |
| Roughage | 14.76 | 13.50 | 13.18 |
| Labour Costs | 17.31 | 12.24 | 10.27 |
| Other Variable Costs | 22.69 | 20.53 | 18.53 |
| Depreciation | 11.53 | 10.12 | 9.23 |
| Other Capital Costs | 5.75 | 3.65 | 2.69 |
| **Total Production Costs** | **95.37** | **82.54** | **74.31** |
| Total Cash Costs | 67.68 | 64.35 | 58.82 |
| **Gross Margin** | **17.71** | **22.66** | **28.37** |
| **Contribution Margin** | **7.30** | **18.23** | **24.79** |
| **Return to Investment** | **(7.42)** | **6.51** | **14.33** |
| **Return to Equity** | **(9.98)** | **4.47** | **12.88** |
| **Return to Investment (%)** | **(3.5)** | **3.3** | **8.5** |
| **Return to Equity (%)** | **(7.3)** | **3.3** | **10.3** |

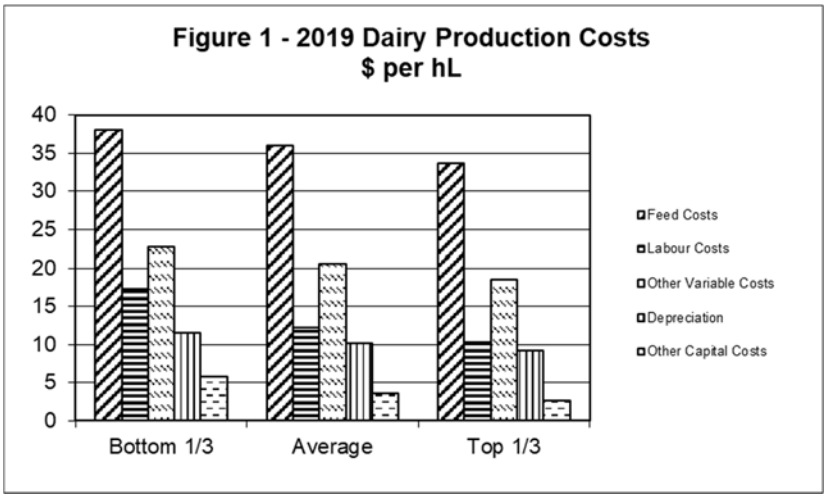


**Table 3: Dairy Enterprise Costs and Returns - $ Per hL Sold**
**2 Year Comparison - 2018 and 2019**

| | 2018 (40 producers) | 2019 (37 producers) |
|---|---|---|
| Milk Sales | 79.32 | 81.73 |
| **Gross Income** | **84.74** | **87.01** |
| Feed Costs | 35.45 | 36.01 |
| Grain | 5.14 | 4.33 |
| Complete Feed | 12.02 | 12.63 |
| Roughage | 12.91 | 13.50 |
| Labour Costs | 12.08 | 12.24 |
| Other Variable Costs | 20.24 | 20.53 |
| Depreciation | 8.93 | 10.12 |
| Other Capital Costs | 3.12 | 3.65 |
| **Total Production Costs** | **79.82** | **82.54** |
| Total Cash Costs | 62.32 | 64.35 |
| **Gross Margin** | **22.42** | **22.66** |
| **Contribution Margin** | **16.97** | **18.23** |
| **Return to Investment** | **6.36** | **6.51** |
| **Return to Equity** | **4.92** | **4.47** |
| **Return to Investment (%)** | **3.7** | **3.3** |
| **Return to Equity (%)** | **3.8** | **3.3** |

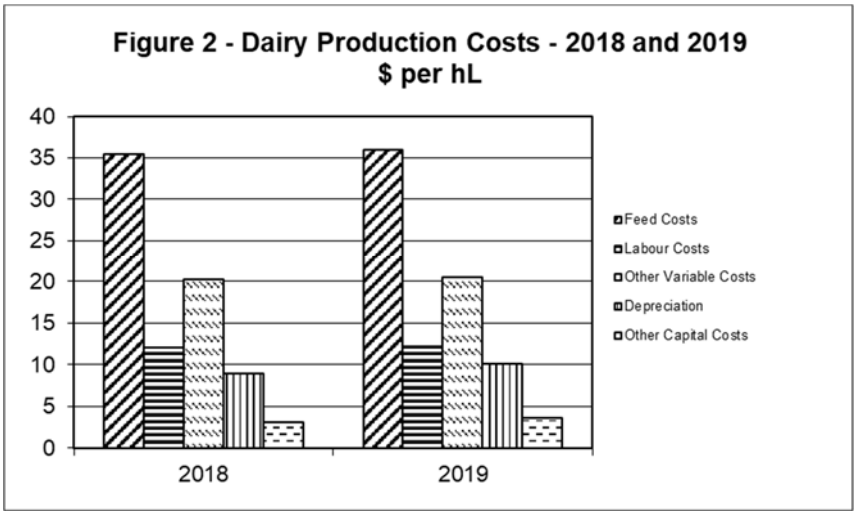
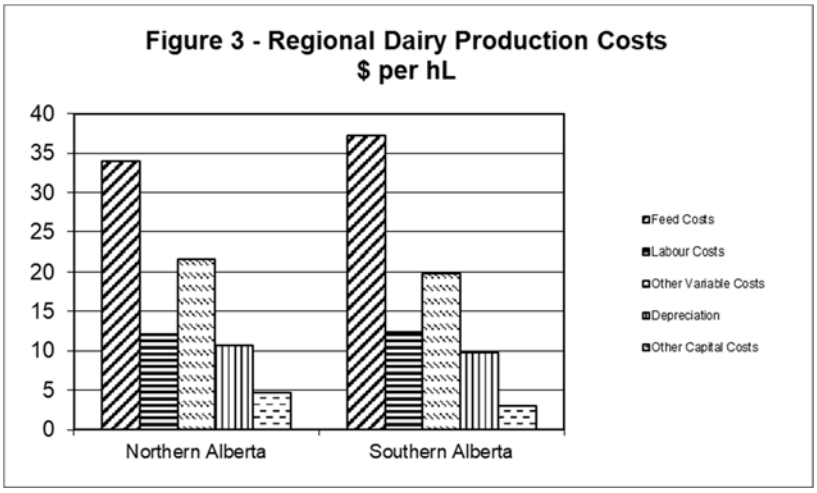


**Table 4: Average Dairy Enterprise Costs and Returns - $ Per hL Sold**
**Northern and Southern Alberta**

| | North (12 producers) | South (25 producers) |
|---|---|---|
| Milk Sales | 81.83 | 81.67 |
| **Gross Income** | **88.88** | **85.82** |
| Feed Costs | 34.02 | 37.27 |
| Grain | 4.52 | 4.21 |
| Complete Feed | 12.39 | 12.78 |
| Roughage | 11.80 | 14.56 |
| Labour Cost | 12.05 | 12.35 |
| Other Variable Costs | 21.66 | 19.82 |
| Depreciation | 10.72 | 9.74 |
| Other Capital Costs | 4.63 | 3.02 |
| **Total Production Costs** | **83.08** | **82.20** |
| Total Cash Costs | 66.66 | 62.89 |
| **Gross Margin** | **22.21** | 22.93 |
| **Contribution Margin** | **21.15** | **16.38** |
| **Return to Investment** | **8.51** | **5.24** |
| **Return to Equity** | **5.80** | **3.62** |
| **Return to Investment (%)** | **4.0** | **2.8** |
| **Return to Equity (%)** | **4.6** | **2.6** |



# Definitions

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 (examples: colostrum sales, BSE test cow payments, environmental compliance and milk quality).
- inventory adjustments relating to changes in the number & value of livestock included in the enterprise, and
- net cattle sales.

Feed costs - the cost of all feed used by the dairy enterprise, purchased or home-grown. (Home-grown 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, licenses 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 (also called net farm income).

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

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). Fluid quota and Industrial quota (MSQ) were merged into total production quota.

Continuous Daily Quota (CDQ) – name change only (effective August, 2019). Meant to be more descriptive/specific that quota management is daily and continuous. No policy change.

Dry matter equivalent - conversion to dry matter from silage at 60 per cent moisture and haylage at 56 per cent 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

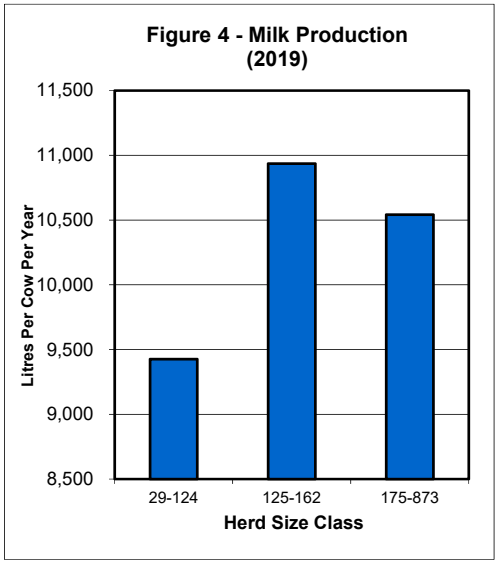
Herd size ranged from 29 to 873 milking cows. For this analysis, the sample group was split into the following three size classes:

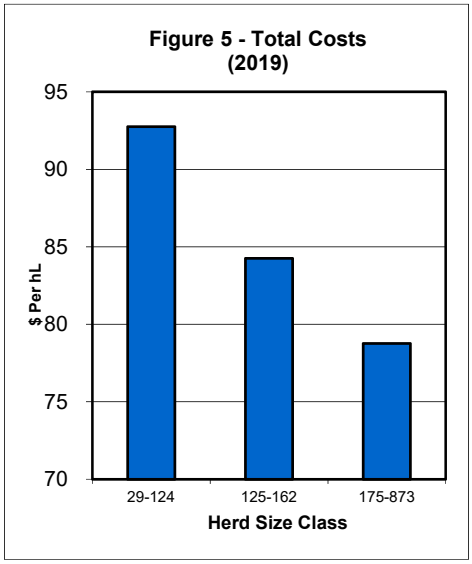
Bottom 1/3: 29 – 124 Middle 1/3: 125 – 162 Top 1/3: 175 - 873

Table 5 - Dairy Enterprise Characteristics by Herd Size Class

| | Bottom 1/3 | Middle 1/3 | Top 1/3 |
|---|---|---|---|
| | 29- 124 | 125- 162 | 175- 873 |
| Years in Dairy | 27.38 | 24.69 | 27.71 |
| **Milk Production (litres/yr)** | **9,425.59** | **10,936.31** | **10,541.20** |
| Home Grown Feed (%) | 53.8 | 70.8 | 58.5 |
| Butterfat Test (kg/hL) | 4.31 | 4.16 | 4.13 |
| Gross Income ($/hL) | 87.26 | 86.12 | 87.99 |
| **Total Costs ($/hL)** | **92.75** | **84.26** | **78.76** |
| Feed Costs ($/hL) | 35.64 | 38.93 | 34.77 |
| Labour (hrs/cow) | 70.75 | 62.66 | 46.53 |
| Investment ($/cow) | 19,974.70 | 19,791.65 | 20,533.70 |
| Return to Equity (%) | (5.4) | 2.6 | 7.6 |
| Return to Investment (%) | (4.2) | 1.9 | 5.2 |
| Debt/Capital Ratio | 0.27 | 0.13 | 0.31 |

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

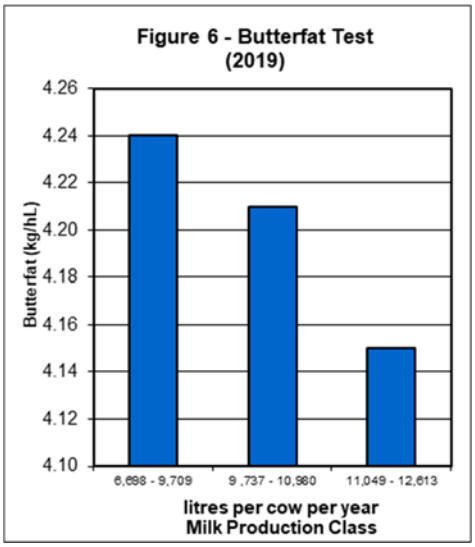
Milk production ranged between 6,698 and 12,613 litres per cow per year. For this analysis, the sample group was split into the following three classes:

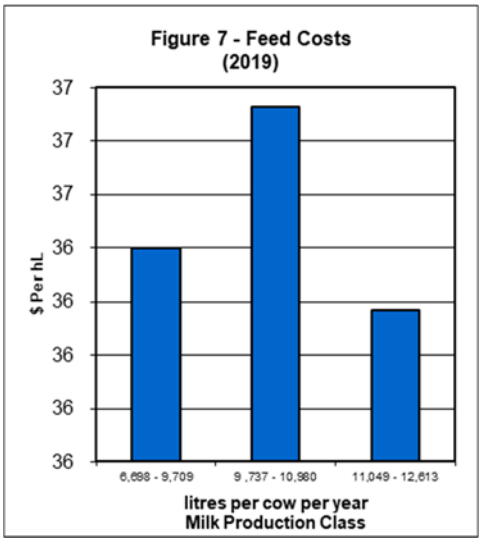
Bottom 1/3: 6,698 – 9,709 Middle 1/3: 9,737 – 10,980 Top 1/3: 11,049 – 12,613

Table 6 - Dairy Enterprise by Milk Production Class

| | Bottom 1/3 | Middle 1/3 | Top 1/3 |
|---|---|---|---|
| | 6,698 - 9,709 | 9,737 - 10,980 | 11,049 - 12,613 |
| Years in Dairy | 29.38 | 24.58 | 25.83 |
| Herd Size | 191 | 178 | 199 |
| Home Grown Feed (%) | 62.8 | 56.8 | 64.6 |
| **Butterfat Test (kg/hL)** | **4.24** | **4.21** | **4.15** |
| Gross Income ($/hL) | 87.85 | 87.84 | 85.54 |
| Total Costs ($/hL) | 88.24 | 86.05 | 81.33 |
| **Feed Costs ($/hL)** | **36.40** | **36.93** | **36.17** |
| Labour (hrs/cow) | 61.03 | 60.81 | 58.25 |
| Investment ($/cow) | 15,639.50 | 22,309.05 | 22,141.60 |
| Return to Equity (%) | (1.9) | 1.4 | 5.3 |
| Return to Investment (%) | (18.2) | 2.4 | 2.4 |
| Debt/Capital Ratio | 0.19 | 0.25 | 0.26 |

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

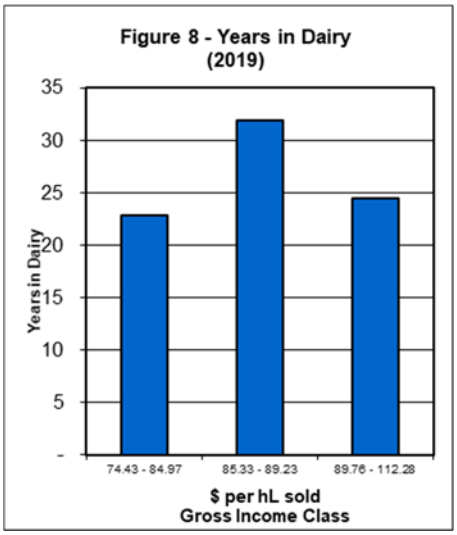
Gross income ranged between $74.43 and $112.28 per hectoliter sold. For this analysis, the sample group was split into the following three classes:

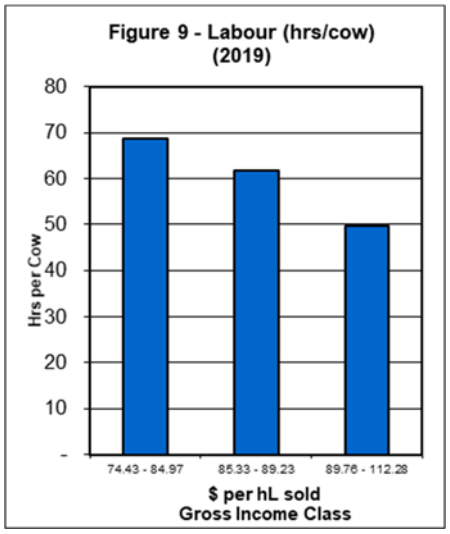
Bottom 1/3: 74.43 – 84.97 Middle 1/3: 85.33 – 89.23 Top 1/3: 89.76 – 112.28

Table 7 - Dairy Enterprise by Gross Income Class

| | Bottom 1/3 | Middle 1/3 | Top 1/3 |
|---|---|---|---|
| | 74.43 - 84.97 | 85.33 - 89.23 | 89.76 - 112.28 |
| **Years in Dairy** | **22.79** | **31.92** | **24.46** |
| Herd Size | 151 | 244 | 168 |
| Milk Production (litres/yr) | 10,482.30 | 10,208.21 | 10,273.20 |
| Home Grown Feed (%) | 49.2 | 70.2 | 63.8 |
| Butterfat Test (kg/hL) | 3.99 | 4.16 | 4.45 |
| Total Costs ($/hL) | 88.30 | 83.89 | 83.61 |
| Feed Costs($/hL) | 38.52 | 37.17 | 33.80 |
| **Labour (hrs/cow)** | **68.55** | **61.84** | **49.61** |
| Investment ($/cow) | 21,054.00 | 17,453.46 | 21,987.40 |
| Return to Equity (%) | (3.9) | 2.1 | 6.5 |
| Return to Investment (%) | (4.2) | 1.8 | 5.3 |
| Debt/Capital Ratio | 0.20 | 0.20 | 0.31 |

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

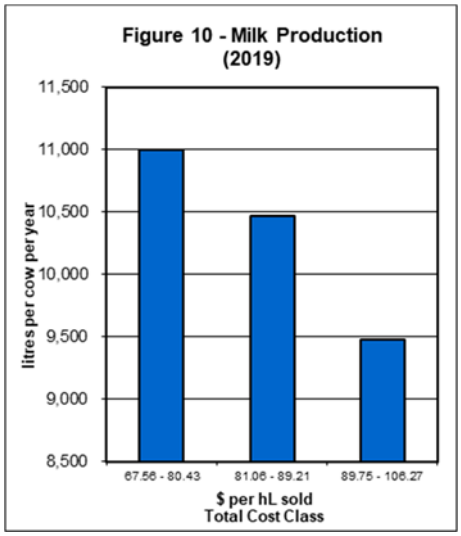
Total cost ranged between $67.56 and $106.27 per hectoliter sold. For this analysis, the sample group was split into the following three classes:

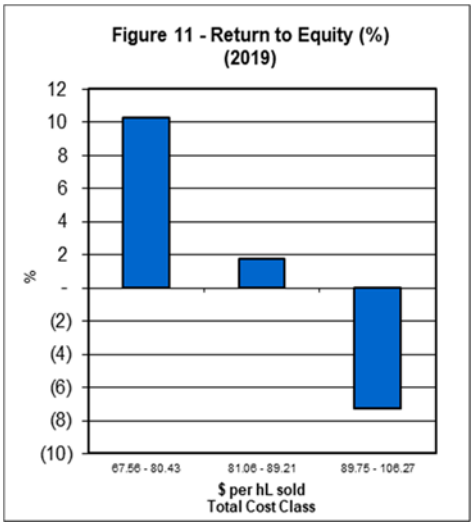
Top 1/3: 67.56 – 80.43 Middle 1/3: 81.06 – 89.21 Bottom 1/3: 89.75 – 106.27

Table 8 - Dairy Enterprise by Total Cost Class

| | Top 1/3 | Middle 1/3 | Bottom 1/3 |
|---|---|---|---|
| | 67.56 - 80.43 | 81.06 - 89.21 | 89.75 - 106.27 |
| Years in Dairy | 28.08 | 23.88 | 27.88 |
| Herd Size | 242 | 214 | 109 |
| **Milk Production (litres/yr)** | **10,998.00** | **10,470.55** | **9,473.35** |
| Home Grown Feed (%) | 58.7 | 70.0 | 54.5 |
| Butterfat Test (kg/hL) | 4.13 | 4.29 | 4.16 |
| Gross Income ($/hL) | 87.19 | 88.59 | 85.39 |
| Feed Costs ($/hL) | 33.60 | 37.76 | 38.09 |
| Labour (hrs/cow) | 47.84 | 65.31 | 66.57 |
| Investment ($/cow) | 17,954.50 | 20,204.42 | 22,106.70 |
| **Return to Equity (%)** | **10.3** | **1.8** | **(7.3)** |
| Return to Investment (%) | 7.7 | (0.3) | (4.4) |
| Debt/Capital Ratio | 0.22 | 0.20 | 0.28 |

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

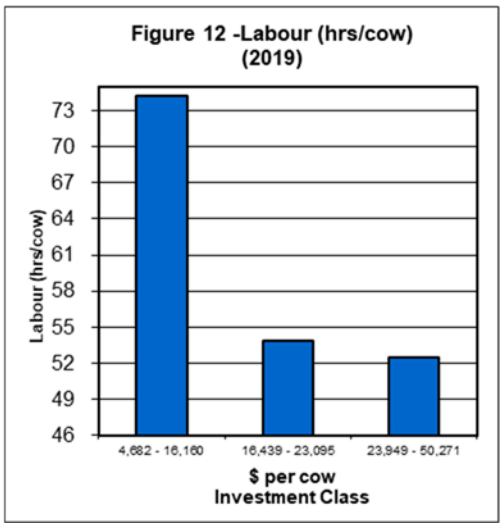
Investment per cow ranged between $4,682 and $50,271. For this analysis, the sample group was split into the following three classes:

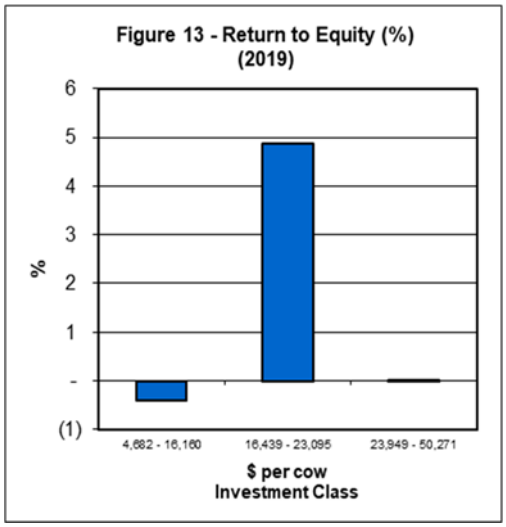
Bottom 1/3: 4,682 – 16,160 Middle 1/3: 16,439 – 23,095 Top 1/3: 23,949 – 50,271

Table 9 - Dairy Enterprise by Investment Class

| | Bottom 1/3 | Middle 1/3 | Top 1/3 |
|---|---|---|---|
| | 4,682 - 16,160 | 16,439 - 23,095 | 23,949 - 50,271 |
| Years in Dairy | 28.46 | 24.81 | 26.50 |
| Herd Size | 192 | 175 | 201 |
| Milk Production (litres/yr) | 9,828.78 | 10,268.89 | 10,861.00 |
| Home Grown Feed (%) | 65.9 | 49.3 | 69.7 |
| Butterfat Test (kg/hL) | 4.09 | 4.38 | 4.11 |
| Gross Income ($/hL) | 84.92 | 90.84 | 85.22 |
| Total Costs ($/hL) | 84.42 | 82.96 | 88.51 |
| Feed Costs ($/hL) | 36.58 | 36.15 | 36.84 |
| **Labour (hrs/cow)** | **74.27** | **53.90** | **52.50** |
| **Return to Equity (%)** | **(0.4)** | **4.9** | **0.0** |
| Return to Investment (%) | (0.7) | 4.0 | (0.6) |
| Debt/Capital Ratio | 0.08 | 0.25 | 0.37 |

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

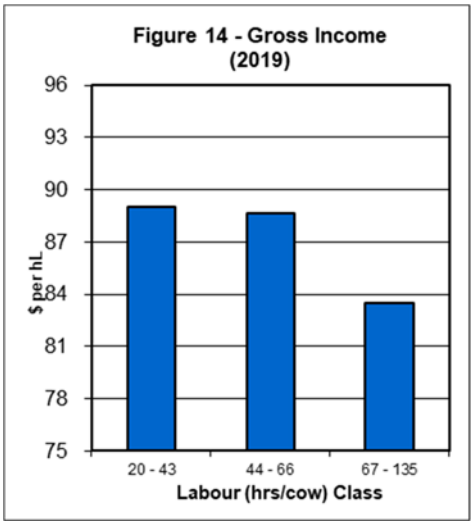
Labour (hrs/cow) ranged between 20 and 135. For this analysis, the sample group was split into the following three classes:

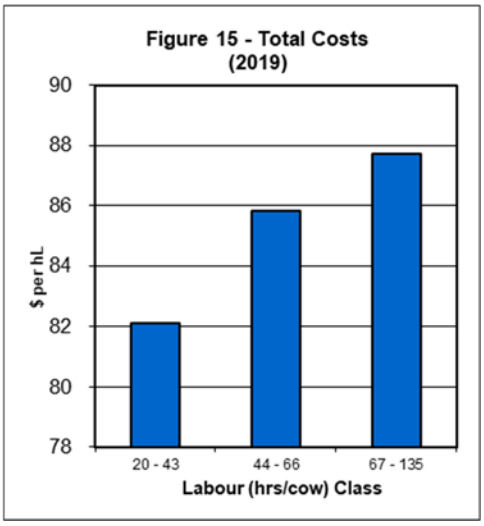
Bottom 1/3: 20 – 43 Middle 1/3: 44 – 66 Top 1/3: 67 – 135

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

| | Bottom 1/3 | Middle 1/3 | Top 1/3 |
|---|---|---|---|
| | 20 - 43 | 44 - 66 | 67 - 135 |
| Years in Dairy | 25.33 | 30.00 | 24.00 |
| Herd Size | 200 | 249 | 113 |
| Milk Production (litres/yr) | 10,245.40 | 10,280.21 | 10,432.10 |
| Home Grown Feed (%) | 69.8 | 53.1 | 61.7 |
| Butterfat Test (kg/hL) | 4.34 | 4.17 | 4.09 |
| **Gross Income ($/hL)** | **88.99** | **88.65** | **83.53** |
| **Total Costs ($/hL)** | **82.13** | **85.81** | **87.71** |
| Feed Costs ($/hL) | 37.75 | 35.12 | 36.79 |
| Investment ($/cow) | 24,030.20 | 20,059.24 | 16,188.30 |
| Return to Equity (%) | 6.3 | 2.2 | (3.7) |
| Return to Investment (%) | 4.2 | 2.3 | (3.7) |
| Debt/Capital Ratio | 0.34 | 0.33 | 0.02 |

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).



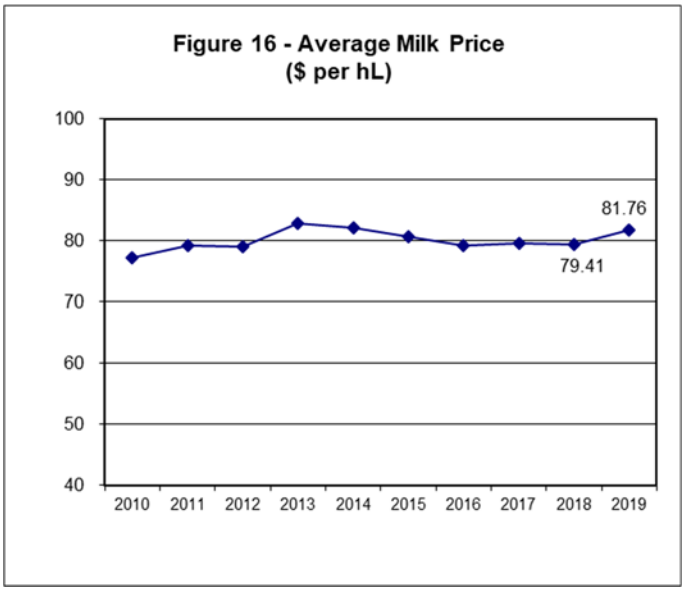
# Detailed management factors

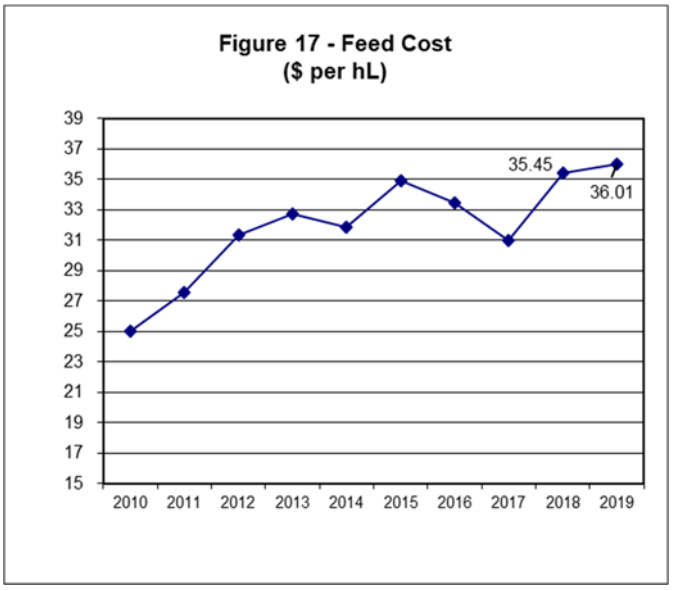
Table 11 provides a further examination of regional differences from a management perspective.

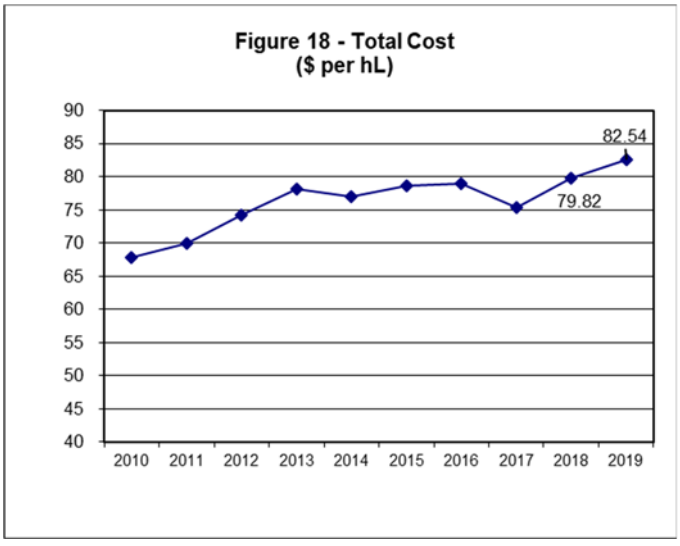
**Table 11: Detailed Management Factors, Northern and Southern Alberta, 2019**

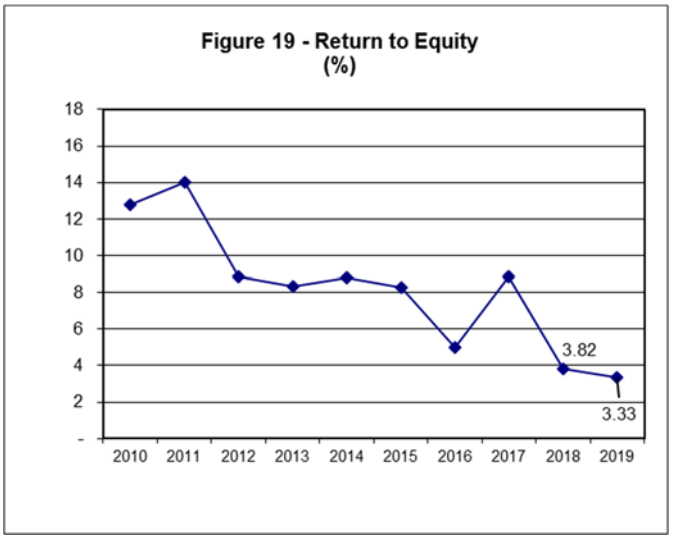
| | Northern Alberta | Southern Alberta |
|---|---|---|
| Herd Size | 246 | 162 |
| Milk Production (litres/cow/year) | 9,455.45 | 10,912.04 |
| Feed Conversion (litres/kg concentrates) | 2.05 | 2.34 |
| Labour Productivity (litres/hr) | 197.77 | 191.15 |
| Labour Hours/Cow (hrs) | 47.81 | 57.09 |
| Investment/Cow ($/cow) | 19,427.92 | 19,899.26 |
| Milk Production/$ Invest (litres/$) | 0.49 | 0.55 |
| Feed Costs ($/cow) | 3,132.96 | 3,969.88 |
| Purchased Barley ($/tonne) | 211.47 | 241.57 |
| Cost of Purchased Hay ($/tonne) | 180.65 | 222.52 |
| Home Grown Roughage (%) | 61.1 | 59.61 |
| Butterfat Test (kg/hL) | 4.31 | 4.14 |
| Protein (kg/hL) | 3.27 | 3.17 |
| LOS (kg/hL) | 5.87 | 5.88 |
| Total Costs ($/hL) | 83.08 | 82.20 |
| Contribution Margin ($/hL) | 21.15 | 16.38 |
| Return to Investment (%) | 4.0 | 2.8 |
| Return to Equity ($/hL) | 5.80 | 3.62 |
| Return to Equity (%) | 4.6 | 2.6 |
| Debt to Capital Ratio | 0.40 | 0.25 |

# Historical economic trends



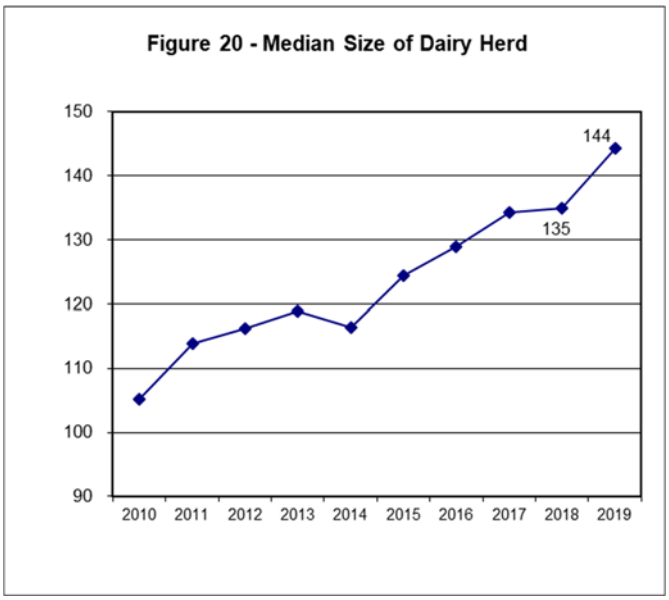


Figure 20 - Median Size of Dairy Herd
150
140
130
120
110
100
90
144
135
2010 2011 2012 2013 2014 2015 2016 2017 2018 2019

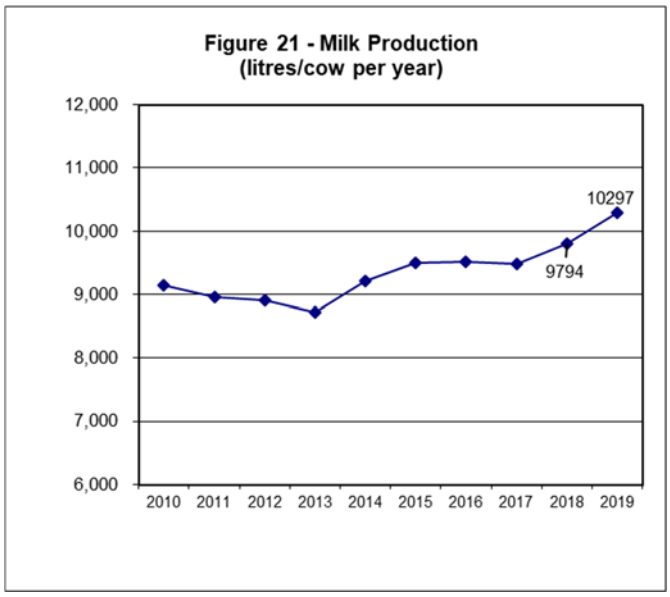


Figure 21 - Milk Production
(litres/cow per year)
12,000
11,000
10,000
9,000
8,000
7,000
6,000
10297
9794
2010 2011 2012 2013 2014 2015 2016 2017 2018 2019

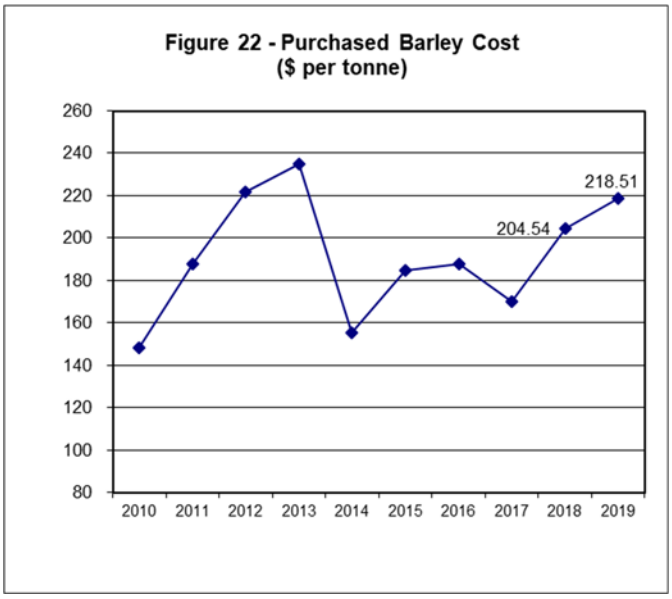


Figure 22 - Purchased Barley Cost
($ per tonne)
260
240
220
200
180
160
140
120
100
80
218.51
204.54
2010 2011 2012 2013 2014 2015 2016 2017 2018 2019

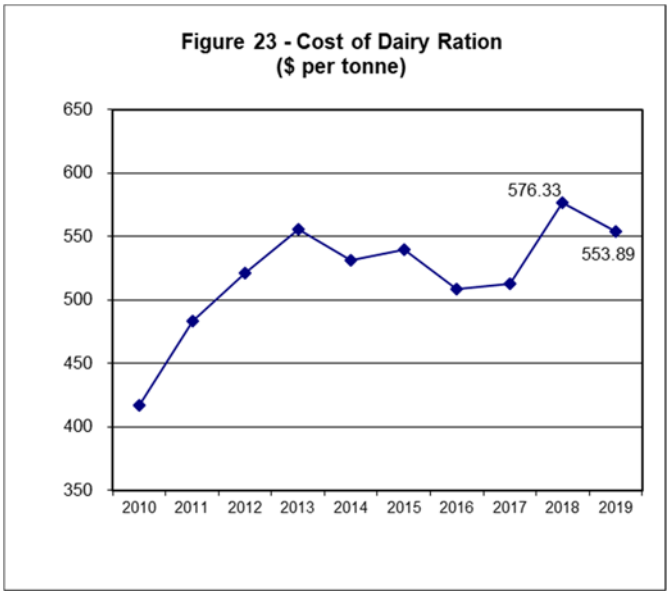


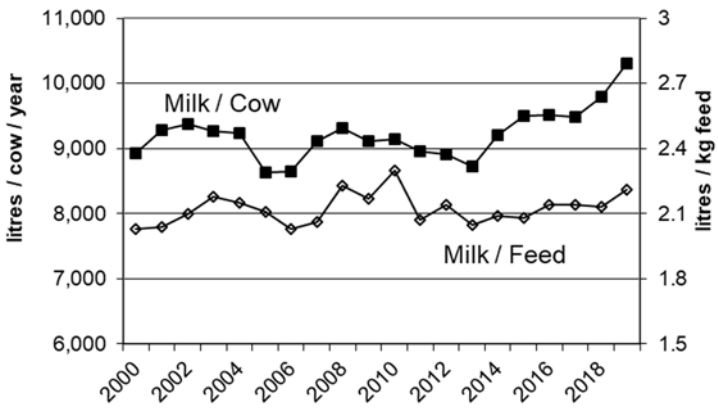
Figure 23 - Cost of Dairy Ration
($ per tonne)
650
600
550
500
450
400
350
576.33
553.89
2010 2011 2012 2013 2014 2015 2016 2017 2018 2019

# 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 milk productivity per cow over the last decade. Increased consumer demand for dairy products began in 2014 and has remained strong through 2019. Producers have responded to this demand with milk production at an average of 10,297 litres/cow/year in 2019. Farmers concentrate on cow health and nutrition to increase productivity. Advancements in technology and the introduction of voluntary milking systems also increases the milking frequency per cow resulting in increased production levels.

**Figure 24 - Animal and Feed Productivity**




Demand for milk is holding steady with highest consumption in fluid milk products, cheese and butter. In 2019, dairy farmers were issued a four per cent quota increase in February and a total of 14 incentive day credits[1] to encourage and enable increased milk production.

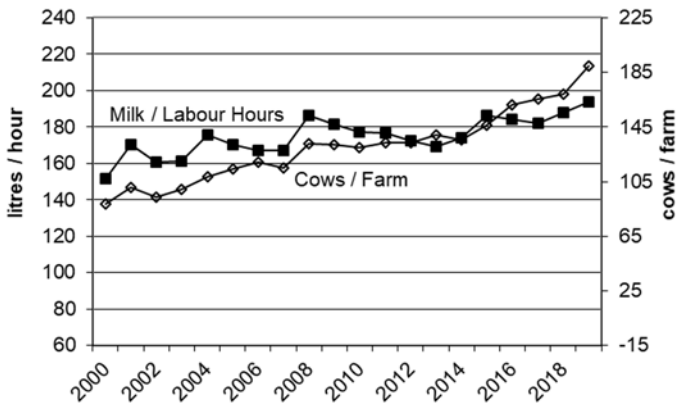
The feed conversion rates (or productivity) have varied over time. After a spike in 2010, feed conversion rates have levelled off and remained fairly flat at 2.2 litres of milk produced per kilogram of feed concentrates with a slight increase in 2019. This would indicate that it is a combination of factors at the farm contributing to increase in milk production. Producers work closely with their nutritionist to maintain feeding regimes and feed stability to optimize production.

Figure 25 shows the amount of milk produced for each hour of labour on dairy farms. Through the years spanning 1998 to 2007 there was a matching increase in labour productivity to

[1] Incentive credits are used before underproduction credits, so all producers who ship over their quota holdings will get a benefit in the months they are issued (regardless of their cumulative position). Incentive credits are issued to encourage milk production at a specific time of year or demand.

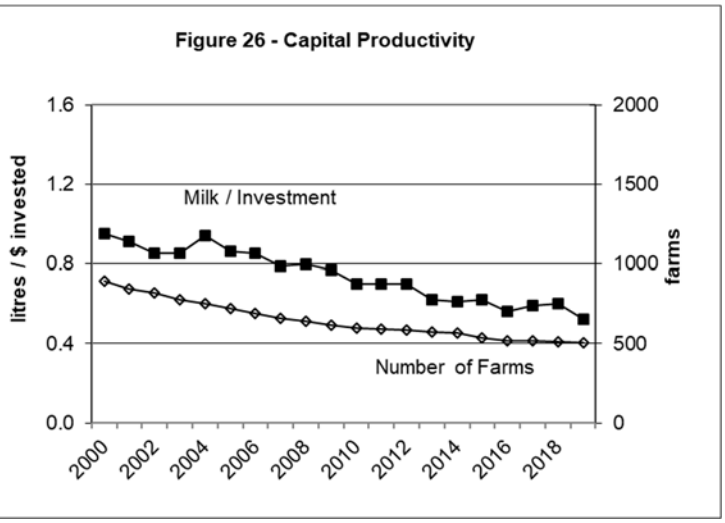
increases in herd size, coming to a peak in 2008. The levelling off period from 2008 to 2013 took the dairy industry through a period of time where farm labourers were hard to find. With the growing number of voluntary milking systems on dairy farms (VMS, also called milk robots), labour efficiency saw steady improvement. Herd size has steadily increased since 2016, indicating employees were able to manage a larger number of dairy cows. In 2019, the average herd size increased to an average of 189 cows.

**Figure 25 - Labour Productivity**




Capital investment has been on a slow decline over the past several years. This may be due to the uncertainty in the world trade environment beginning in 2015. There are fewer farms needing to produce higher volumes of milk to meet the consumer demand and continued advancements in technology and efficiencies are crucial. Although investment dollars per cow increased in 2019, at times increases in production do not offset the dollars invested indicating some investments are made to maintain rather than increase production.

**Figure 26 - Capital Productivity**

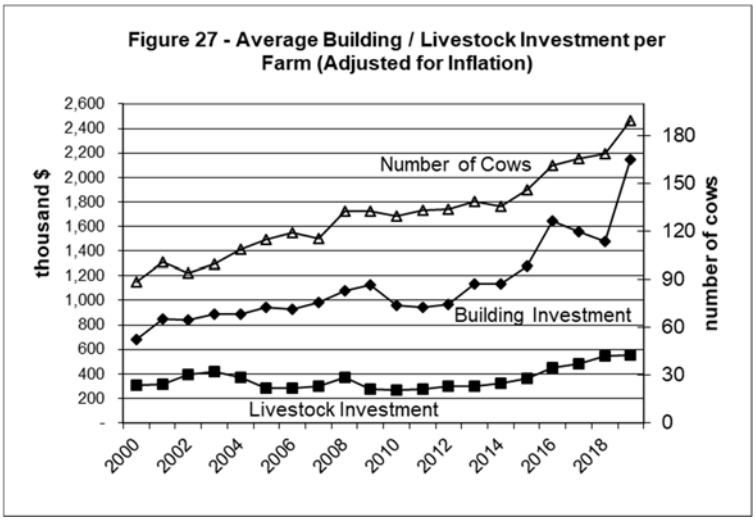



# Capital investment trends

## Per farm

Trends in capital intensity are shown more directly in Figures 27 and 28. The average value of dairy buildings (adjusted for inflation) remained fairly constant until a big jump between 2012 and 2013. There has been a steady increase in building investment since 2013. The largest increases

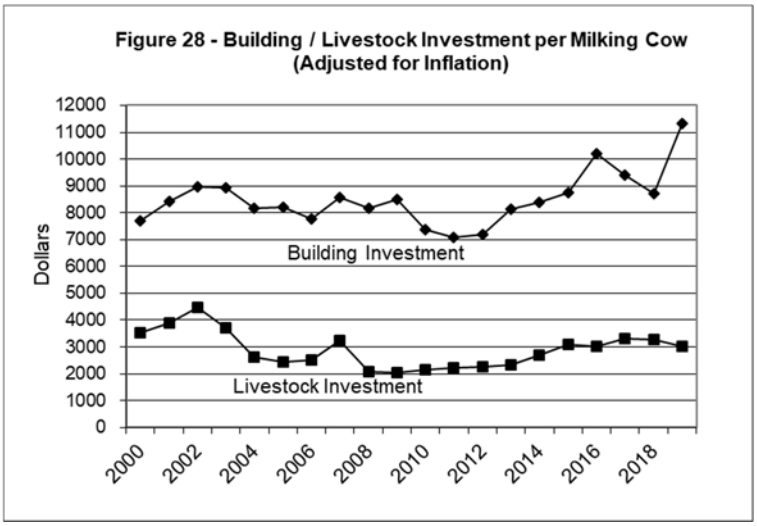
began in 2016. As herd sizes continued to grow and farm labour still hard to find, the use of various robotic systems became more popular. The large increase between 2018 and 2019 would indicate there are still improvements being made and confidence in continued positive demand for milk production.




The total value of livestock per farm (adjusted for inflation) has been flat with the exception of the drop in 2003 in the wake of the BSE crisis. It took several years for livestock values to rebound. As the increased demand for milk increased, starting in 2013, livestock values rose as producers needed inventory to meet production quota requirements. Livestock values remain stable between 2018 and 2019.

## Per milking cow

Figure 28 shows average building and livestock investments per milking cow. This figure indicates that the average building investment values per cow steadily increased starting in 2012 with a large increase seen in 2016 and again in 2019.




Demand for milk remains high. Farmers are at the point of needing to invest in infrastructure in order to maintain production levels while keeping in mind cow comfort and health and demands on labour efficiencies. The uncertainty of how trade decisions may affect the market place may have influenced the drop in investment in 2017. Even though there are fewer dairy producers in the province at 507 at the end of 2019, the industry has been successful in supplying the increased demand for milk production.

# Investment and debt levels

Total dairy farm investment (excluding quota) was considerably higher at $3,735,701 per farm in 2019, compared to an average of $2,761,237 in 2018. On a per cow basis, this works out to $19,700 (Table 12) which is only a 14 per cent increase from the previous year. Of this total investment amount, 77 per cent was comprised of buildings and equipment investments, 17 per cent referred to livestock investments, the remaining 6 per cent was invested in land and supplies.

**Table 12**

**Annual Investment and Debt on Dairy Farms**

| | 2017 | 2018 | 2019 |
|---|---|---|---|
| | - - - $ Per Cow - - - | | |
| Land | 790 | 677 | 919 |
| Buildings and Equipment | 11,578 | 11,923 | 15,243 |
| Livestock | 3,624 | 3,637 | 3,437 |
| Supplies | 97 | 106 | 101 |
| **TOTAL** | **16,089** | **16,343** | **19,700** |
| Debt | 4,107 | 4,064 | 6,206 |
| Equity | 11,982 | 12,279 | 13,494 |
| **TOTAL** | **16,089** | **16,343** | **19,700** |

The debt/capital ratio measures the extent of external financing on dairy farms in Alberta. This ratio increased to 32 per cent in 2019, up from 25 per cent in 2018. The greatest increase in investment levels is seen in buildings and equipment. This increase reflects a positive environment where farmers are continuing to expand their farms and making improvements. Debt load has increased, however, as the need for outside financing in evident.

# Debt repayment capacity

The acceptable debt load or repayment capacity of a dairy enterprise can be measured by the contribution margin. The contribution margin is the difference between gross income and variable costs. It represents the amount of money available to pay for capital assets, such as: 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 2017, 2018 and 2019 is presented in Table 13.

**Table 13**

**Summary of Average Costs and Returns in Alberta**
**2017 – 2019**

| | 2017 | 2018 | 2019 | 2017-2019 |
|---|---|---|---|---|
| | | - - - - - - $ Per Cow - - - - - - | | |
| **A. Gross Income** | 8006 | 8079 | 8739 | 8275 |
| **B. Feed Costs** | 2860 | 3380 | 3617 | 3286 |
| **C. Variable Costs** | 2943 | 3082 | 3291 | 3105 |
| **Contribution Margin (A - B - C)** | 2203 | 1617 | 1831 | 1884 |

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 2017 and 2019. (An assumption behind the analysis is that feed costs vary directly with the level of production and market values.) The contribution margin increased by about 12 per cent from 2018 mostly due to the higher gross income achieved in 2019. The increase in gross income was enough to offset increases in feed and other variable costs. Feed costs remained high once again due to a challenging growing season, harvest conditions and the availability of good quality forages.

**Table 14**

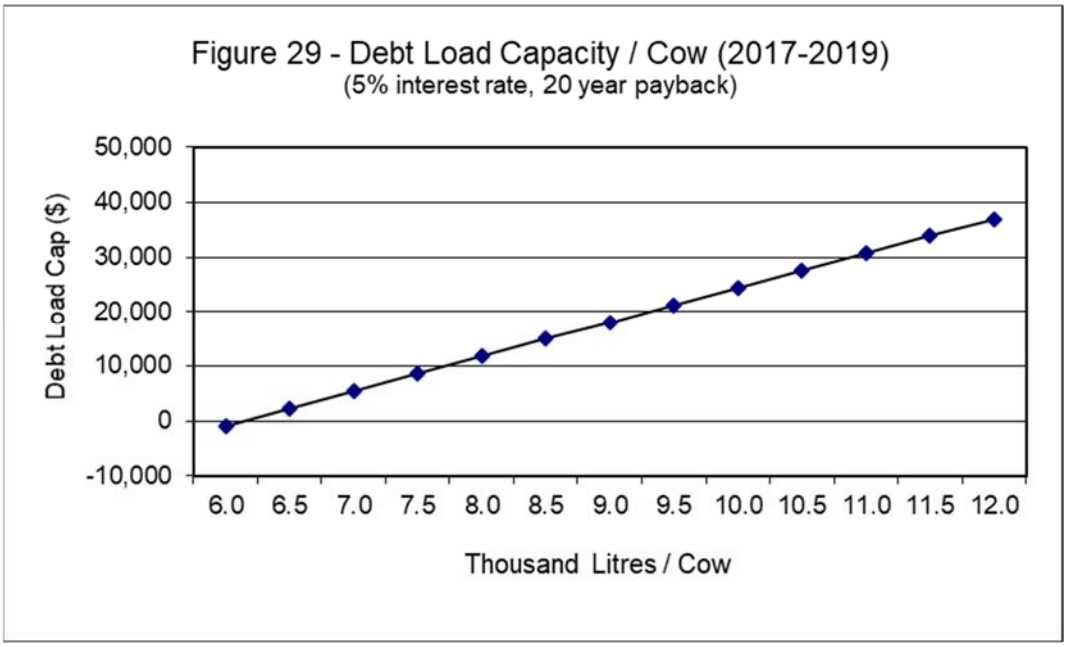
**Acceptable Total Debt-Load per Cow in Alberta, 2017-2019**

| Milk Productivity (litres/cow) | Interest Rates 3% | 4% | 5% | 6% | 7% | 8% |
|---|---|---|---|---|---|---|
| 6000 | -1,017 | -929 | -852 | -784 | -724 | -671 |
| 6500 | 2,748 | 2,510 | 2,302 | 2,119 | 1,957 | 1,814 |
| 7000 | 6,513 | 5,950 | 5,456 | 5,021 | 4,638 | 4,298 |
| 7500 | 10,278 | 9,389 | 8,610 | 7,924 | 7,319 | 6,783 |
| 8000 | 14,043 | 12,828 | 11,763 | 10,827 | 10,000 | 9,267 |
| 8500 | 17,808 | 16,267 | 14,917 | 13,729 | 12,681 | 11,752 |
| 9000 | 21,573 | 19,706 | 18,071 | 16,632 | 15,362 | 14,237 |
| 9500 | 25,338 | 23,146 | 21,224 | 19,534 | 18,043 | 16,721 |
| 10000 | 29,103 | 26,585 | 24,378 | 22,437 | 20,724 | 19,206 |
| 10500 | 32,868 | 30,024 | 27,532 | 25,340 | 23,405 | 21,691 |
| 11000 | 36,633 | 33,463 | 30,686 | 28,242 | 26,086 | 24,175 |
| 11500 | 40,398 | 36,903 | 33,839 | 31,145 | 28,766 | 26,660 |
| 12000 | 44,163 | 40,342 | 36,993 | 34,048 | 31,447 | 29,144 |

* With a 20 year repayment period

For example, at a milk production level of 10,000 litres per cow (which is close to the average litres/cow in 2019), the contribution margin would be $1,956 per cow. This margin, if amortized over 20 years at five per cent interest, results in a debt carrying capacity of $24,378 per cow.

Figure 29 shows the impact of milk productivity on the debt load carrying capacity of dairy enterprises given an interest rate of five per cent. 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 five per cent, this amount of debt per cow would be supported at production levels of about 9,250 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 $43,690 per cow[2] is added to the current debt of $6,205 per cow which would mean the total amount of debt load per cow would be $49,895. 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 upwards of 12,000 litres per cow, even at a rate of three per cent. In 2019 the average interest rate on capital debt was 3.3 per cent. Figure 29 gives a target production level, however, producer payment is based on components (butterfat, protein, other solids) and not volume.

[2] The average value of quota for one cow in the 2019 Dairy Cost Study

# Impact of quota values on dairy returns

The cost and return analysis in this study does not include any value for the milk quota. However, new entrants into the dairy business would have to purchase quota if they are not entering the industry through the New Entrant Program. When the financing of these quota purchases are taken into account (at the 2019 Dairy Cost Study average quota price), the average rate of return for new entrants would be negative 7.4 per cent (Table 15). This means that the borrowing costs of capital used to purchase all the necessary quota in 2019 exceeded the financial returns obtained from producing milk. The assumption in this analysis was that all funds needed to purchase quota are borrowed. Dairy farmers are making use of the monthly credit transfer mechanism, where quota credits can be transferred in or out on a per month basis, to manage production levels rather than purchasing quota.

**Table 15: Impact of Quota Value on Dairy Returns, 2019**

| | 2019 Study Average | Including Quota Value* |
|---|---|---|
| | **- - - $ per Farm - - -** | |
| Dairy Investment | 3,735,701 | 12,020,621 |
| Debt | 1,176,757 | 9,461,676 |
| Equity | 2,558,944 | 2,558,944 |
| | **- - - $ per hL Sold - - -** | |
| Equity | 134.36 | 134.36 |
| Gross Income | 87.01 | 87.01 |
| Production Costs | 82.54 | 82.54 |
| Interest Cost for Quota | | 14.36 |
| Potential Total Cost | 82.54 | 96.90 |
| Return to Equity($ per hL) | 4.47 | (9.89) |
| Return to Equity (%) | 3.3 | (7.4) |

*Applicable to new entrants who borrow 100 per cent of funds needed to purchase total production quota at the average value from the 2019 Dairy Cost Study of $43,690 per kg/day.

# Appendix A
# 2019 Dairy Cost Study
# Alberta Average

## Alberta
## 2019 Dairy Cost Study - Business Analysis
## 37 Participants
## Table 1 Dairy Enterprise Costs and Returns

| | TOTAL ENTERPRISE | PER COW | PER HL SOLD | PERCENT FROM INCOME |
|---|---|---|---|---|
| **INCOME:** | | | | |
| MILK SALES | 1,556,534.89 | 8,208.44 | 81.73 | |
| POOL ADJUSTMENTS (+ -) | 485.33 | 2.56 | .03 | |
| MISCELLANEOUS RECEIPTS | 7,313.70 | 38.57 | .38 | |
| NET CATTLE SALES ( + - ) | 70,085.36 | 369.60 | 3.68 | |
| NET INVENTORY CHANGE ( + - ) | 22,698.49 | 119.70 | 1.19 | |
| **GROSS INCOME - - - - - - - - - - - - - - -** | **1,657,117.77** | **8,738.87** | **87.01** | **100.00** |
| **EXPENSES:** | | | | |
| GRAIN | 82,464.46 | 434.88 | 4.33 | |
| COMPLETE FEED | 240,457.31 | 1,268.06 | 12.63 | |
| SUPPLEMENT | 78,526.48 | 414.11 | 4.12 | |
| MINERALS & VITAMINS | 20,077.06 | 105.88 | 1.05 | |
| ROUGHAGE | 257,016.86 | 1,355.39 | 13.50 | |
| PROCESSING COSTS | 7,253.47 | 38.25 | .38 | |
| **TOTAL FEED COSTS - - - - - - - - - - - -** | **685,795.64** | **3,616.57** | **36.01** | **41.38** |
| BEDDING AND SUPPLIES | 64,175.49 | 338.43 | 3.37 | |
| BREEDING | 21,483.92 | 113.30 | 1.13 | |
| VET. AND MEDICINE | 39,898.71 | 210.41 | 2.09 | |
| MILK HAULING | 69,540.01 | 366.72 | 3.65 | |
| PRODUCER'S FEES | 41,127.91 | 216.89 | 2.16 | |
| UTILITIES | 33,592.47 | 177.15 | 1.76 | |
| FUEL, OIL, LUBE | 21,893.58 | 115.46 | 1.15 | |
| BLDG. & MACH. REPAIRS | 46,743.31 | 246.50 | 2.45 | |
| MISCELLANEOUS | 52,553.04 | 277.14 | 2.76 | |
| **TOTAL OTHER VARIABLE COSTS - - - -** | **391,008.44** | **2,062.00** | **20.53** | **23.60** |
| HIRED LABOUR | 79,294.71 | 418.16 | 4.16 | |
| FAMILY LABOUR | 153,741.74 | 810.76 | 8.07 | |
| **TOTAL LABOUR COSTS - - - - - - - - - - -** | **233,036.45** | **1,228.93** | **12.24** | **14.06** |
| **TOTAL VARIABLE COSTS** | **1,309,840.53** | **6,907.49** | **68.78** | **79.04** |
| RENT | 3,270.26 | 17.25 | .17 | |
| TAXES AND INSURANCE | 27,317.99 | 144.06 | 1.43 | |
| DEPRECIATION | 192,707.09 | 1,016.25 | 10.12 | |
| INTEREST ( CAP.DEBT) | 38,861.91 | 204.94 | 2.04 | |
| **TOTAL CAPITAL COSTS - - - - - - - - - -** | **262,157.26** | **1,382.50** | **13.77** | **15.82** |
| **TOTAL PRODUCTION COSTS** | **1,571,997.78** | **8,289.99** | **82.54** | **94.86** |
| CONTRIBUTION MARGIN ($) | 347,277.24 | 1,831.38 | 18.23 | |
| RETURN TO EQUITY ($) | 85,119.99 | 448.88 | 4.47 | 5.14 |
| MILK PRICE | | | 81.76 | |
| INVENTORY ADJUSTMENT | | | 5.26 | |
| RETURN TO EQUITY (%) | | | 3.33 | |
| AVERAGE CAP. DEBT INTEREST RATE (%) | | | 3.30 | |

## Alberta
## 2019 Dairy Cost Study - Business Analysis
## 37 Participants
## Table 2 Statement of Investment

| LAND BUILDINGS & EQUIPMENT | AGE | DEPRECIATION | DAIRY INVESTMENT |
|---|---|---|---|
| DAIRY BUILDINGS | 10.45 | 100,006.66 | **2,449,084.16** |
| POWER MACHINERY | 8.96 | 32,670.68 | 209,232.99 |
| DAIRY EQUIPMENT | 13.29 | 37,065.00 | 134,114.56 |
| OTHER EQUIPMENT | 9.35 | 22,964.75 | 98,164.13 |
| **TOTAL EQUIPMENT** | **10.47** | **92,700.43** | **441,511.67** |
| LAND | | | 174,244.59 |
| SUPPLIES | | | 19,085.81 |
| ** SUBTOTAL ** | | **192,707.09** | **3,083,926.24** |

| DAIRY LIVESTOCK | --- BEGIN YEAR --- NUMBER | VALUE | --- END OF YEAR --- NUMBER | VALUE | AVERAGE VALUE |
|---|---|---|---|---|---|
| COWS | 189.51 | 420,351.24 | 193.62 | 429,463.25 | 424,907.24 |
| BRED HEIFERS | 59.24 | 118,486.49 | 65.27 | 130,540.54 | 124,513.51 |
| OPEN HEIFERS | 61.76 | 74,108.11 | 63.05 | 75,664.86 | 74,886.49 |
| HEIFER CALVES | 53.73 | 21,491.89 | 52.19 | 20,875.68 | 21,183.78 |
| BULL CALVES | 14.51 | 2,177.03 | 18.19 | 2,728.38 | 2,452.70 |
| BULLS | 2.54 | 3,810.81 | 2.57 | 3,851.35 | 3,831.08 |
| ** SUBTOTAL ** | **381.30** | **640,425.56** | **394.89** | **663,124.06** | **651,774.81** |

| | |
|---|---|
| **TOTAL DAIRY INVESTMENT** | **3,735,701.05** |
| CAPITAL LOANS | 1,176,756.77 |
| OPERATOR EQUITY | 2,558,944.28 |
| INVESTMENT PER COW | 19,700.35 |
| DEBT/CAPITAL RATIO | .32 |
| CAPITAL TURNOVER ( YR ) | 2.25 |

| HERD SIZE | Average | Median |
|---|---|---|
| NUMBER OF DAIRY COWS | 189.63 | 144.25 |
| NUMBER OF ANIMAL UNITS | 301.20 | 224.42 |
| DRY COWS ( % ) | 18.80 | |
| CALF CROP ( % ) | 107.21 | |
| PASTURE PER COW ( AC. ) | .20 | |

| CATTLE SALES & PURCHASES | NUMBER SOLD | SELLING PRICE | NUMBER PURCHASED | PURCHASE PRICE |
|---|---|---|---|---|
| COWS | 54.41 | 1,143.63 | 2.16 | 2,401.25 |
| BRED HEIFERS | 2.32 | 1,442.05 | 2.32 | 2,423.26 |
| OPEN HEIFERS | 5.62 | 1,093.86 | .73 | 749.26 |
| HEIFER CALVES | 3.41 | 270.44 | .00 | .00 |
| BULL CALVES | 56.27 | 181.09 | .00 | .00 |
| BULLS | 1.49 | 1,665.92 | 1.38 | 2,794.12 |
| **TOTAL VALUE** | | **85,307.79** | | **15,222.43** |

**Alberta**
**2019 Dairy Cost Study - Business Analysis**
**37 Participants**
**Table 3 Labour and Management**

**LABOUR**

| | HOURS | VALUE | HOURLY RATE |
|---|---|---|---|
| OPERATOR LABOUR | 3,504.31 | 81,335.05 | 23.21 |
| HIRED LABOUR | 3,438.30 | 79,294.71 | 23.06 |
| FAMILY UNPAID LABOUR | 3,139.72 | 72,406.69 | 23.06 |
| **TOTAL** | **10,082.33** | **233,036.45** | **23.11** |

| | |
|---|---|
| RETURN TO FAMILY LABOUR | (6.42) |
| MAN EQUIVALENTS | 4.03 |
| LABOUR HOURS PER COW | 53.17 |
| YEARS FARMING | 26.54 |

**MILK PRODUCTION**

| | HL. | % OF TOTAL | VALUE | AVERAGE PRICE / HL |
|---|---|---|---|---|
| MILK SALES | 19,044.83 | 97.54 | 1,556,534.89 | 81.73 |
| OTHER MILK PRODUCED | 481.22 | 2.46 | | |
| **TOTAL** | **19,526.05** | **100.00** | | |

| | | AVERAGE COMPONENT PRICES ($ / KG) |
|---|---|---|
| BUTTERFAT TEST | 4.20 KG / HL | 16.75 |
| PROTEIN | 3.20 KG / HL | 2.58 |
| L.O.S. | 5.88 KG / HL | .70 |

MILK PRODUCTION PER COW 10,297.13 LITRES / YEAR

**QUOTA INFORMATION**

| | |
|---|---|
| CDQ HOLDINGS | 210.37 KG / DAY |
| CDQ PRICE | 39,382.61 $ / KG / DAY |
| CREDIT PRICE | 6.53 $ / KG |

**MANAGEMENT FACTORS**

| | |
|---|---|
| COST PER HL | 82.54 |
| MILK/FEED (KG) RATIO | 2.21 LITRES |
| MILK/LABOUR (HR) RATIO | 193.67 LITRES |
| MILK/CAPITAL ($) RATIO | .52 LITRES |

**Alberta**
**2019 Dairy Cost Study - Business Analysis**
**37 Participants**
**Table 4 Feed Report**

| | --- PURCHASED --- | | --- HOMEGROWN--- | |
|---|---|---|---|---|
| **CONCENTRATES** | **QUANTITY (TONNES)** | **PRICE** | **QUANTITY (TONNES)** | **PRICE** |
| OATS | .05 | 223.00 | .00 | .00 |
| BARLEY | 140.00 | 218.51 | 67.21 | 238.76 |
| WHEAT | .03 | 220.00 | 5.57 | 222.24 |
| MIXED GRAIN | .00 | .00 | .00 | .00 |
| BREW GRAIN (DRY EQ. ) | 8.71 | 187.71 | | |
| BEET PULP | 2.43 | 252.02 | | |
| OTHER PURCHASED | 88.57 | 365.01 | | |
| DAIRY RATION | 392.57 | 553.89 | | |
| CALF FEED | 19.08 | 681.61 | | |
| MILK REPLACER | 2.91 | 3,437.23 | | |
| SUPPLEMENT | 123.20 | 598.30 | | |
| MOLASSES | 14.99 | 321.19 | | |
| SALT | 2.12 | 687.43 | | |
| MINERALS & VITAMINS | 14.13 | 1,317.54 | | |
| **SUBTOTAL - - - - - - - - -** | **808.78** | **404,241.42** | **72.77** | **17,283.89** |
| **ROUGHAGE** | | | | |
| HAY (ALL VARIETIES) | 268.97 | 210.90 | 108.80 | 218.47 |
| ALFALFA PELLETS | .00 | .00 | | |
| STRAW FED | 35.35 | 68.61 | 24.89 | 85.81 |
| GREENFEED | .00 | .00 | 3.91 | 165.37 |
| SILAGE/HAYLAGE (DRY EQ.) | 270.24 | 148.59 | 732.87 | 178.97 |
| **SUBTOTAL - - - - - - - - -** | **574.56** | **99,305.49** | **870.47** | **157,711.37** |
| GRINDING & PROCESSING | | 7,253.47 | | |
| **GRAND TOTAL FEED COSTS - - - - - - - - -** | | **510,800.38** | | **174,995.25** |
| BEDDING | 275.68 | 79.51 | 52.88 | 76.08 |

| | | | |
|---|---|---|---|
| AV. PRICE: | CONCENTRATE | 478.16 | $/TONNE |
| | ROUGHAGE | 177.86 | $/TONNE |
| FED PER COW: | CONCENTRATE | 4.65 | TONNES |
| | ROUGHAGE | 7.62 | TONNES |
| % HOME GROWN: | CONCENTRATE | 8.26 | % |
| | ROUGHAGE | 60.24 | % |

# Appendix B
# 2019 Dairy Cost Study
# Northern Alberta Average

## Northern Alberta
## 2019 Dairy Cost Study - Business Analysis
## 12 Participants
## Table 1 Dairy Enterprise Costs and Returns

| | TOTAL ENTERPRISE | PER COW | PER HL SOLD | PERCENT FROM INCOME |
|---|---|---|---|---|
| **INCOME:** | | | | |
| MILK SALES | 1,860,114.60 | 7,536.13 | 81.83 | |
| POOL ADJUSTMENTS (+ -) | 526.37 | 2.13 | .02 | |
| MISCELLANEOUS RECEIPTS | 9,408.38 | 38.12 | .41 | |
| NET CATTLE SALES ( + - ) | 107,065.39 | 433.77 | 4.71 | |
| NET INVENTORY CHANGE ( + - ) | 43,260.04 | 175.27 | 1.90 | |
| **GROSS INCOME - - - - - - - - - - - - - - -** | **2,020,374.78** | **8,185.41** | **88.88** | **100.00** |
| **EXPENSES:** | | | | |
| GRAIN | 102,797.96 | 416.48 | 4.52 | |
| COMPLETE FEED | 281,549.80 | 1,140.68 | 12.39 | |
| SUPPLEMENT | 90,817.67 | 367.94 | 4.00 | |
| MINERALS & VITAMINS | 10,913.84 | 44.22 | .48 | |
| ROUGHAGE | 268,344.77 | 1,087.18 | 11.80 | |
| PROCESSING COSTS | 18,873.66 | 76.47 | .83 | |
| **TOTAL FEED COSTS - - - - - - - - - - - -** | **773,297.70** | **3,132.96** | **34.02** | **38.27** |
| BEDDING AND SUPPLIES | 71,561.51 | 289.93 | 3.15 | |
| BREEDING | 28,152.79 | 114.06 | 1.24 | |
| VET. AND MEDICINE | 52,283.74 | 211.82 | 2.30 | |
| MILK HAULING | 81,996.18 | 332.20 | 3.61 | |
| PRODUCER'S FEES | 49,013.92 | 198.58 | 2.16 | |
| UTILITIES | 44,098.26 | 178.66 | 1.94 | |
| FUEL, OIL, LUBE | 22,762.80 | 92.22 | 1.00 | |
| BLDG. & MACH. REPAIRS | 68,980.26 | 279.47 | 3.03 | |
| MISCELLANEOUS | 73,462.95 | 297.63 | 3.23 | |
| **TOTAL OTHER VARIABLE COSTS - - - -** | **492,312.41** | **1,994.57** | **21.66** | **24.37** |
| HIRED LABOUR | 144,476.03 | 585.33 | 6.36 | |
| FAMILY LABOUR | 129,441.02 | 524.42 | 5.69 | |
| **TOTAL LABOUR COSTS - - - - - - - - - - -** | **273,917.04** | **1,109.76** | **12.05** | **13.56** |
| **TOTAL VARIABLE COSTS** | **1,539,527.15** | **6,237.29** | **67.72** | **76.20** |
| RENT | 6,728.19 | 27.26 | .30 | |
| TAXES AND INSURANCE | 37,028.38 | 150.02 | 1.63 | |
| DEPRECIATION | 243,701.93 | 987.34 | 10.72 | |
| INTEREST ( CAP.DEBT) | 61,538.31 | 249.32 | 2.71 | |
| **TOTAL CAPITAL COSTS - - - - - - - - - -** | **348,996.80** | **1,413.94** | **15.35** | **17.27** |
| **TOTAL PRODUCTION COSTS** | **1,888,523.95** | **7,651.22** | **83.08** | **93.47** |
| CONTRIBUTION MARGIN ($) | 480,847.63 | 1,948.12 | 21.15 | |
| RETURN TO EQUITY ($) | 131,850.83 | 534.18 | 5.80 | 6.53 |
| MILK PRICE | | | 81.85 | |
| INVENTORY ADJUSTMENT | | | 7.03 | |
| RETURN TO EQUITY (%) | | | 4.59 | |
| AVERAGE CAP. DEBT INTEREST RATE (%) | | | 3.21 | |

## Northern Alberta
## 2019 Dairy Cost Study - Business Analysis
## 12 Participants
## Table 2 Statement of Investment

| LAND BUILDINGS & EQUIPMENT | AGE | DEPRECIATION | DAIRY INVESTMENT |
|---|---|---|---|
| DAIRY BUILDINGS | 10.51 | 133,974.95 | **3,282,555.48** |
| POWER MACHINERY | 9.35 | 36,073.62 | 229,594.84 |
| DAIRY EQUIPMENT | 13.65 | 42,674.45 | 151,816.89 |
| OTHER EQUIPMENT | 9.02 | 30,978.90 | 134,119.09 |
| **TOTAL EQUIPMENT** | **10.62** | **109,726.97** | **515,530.83** |
| LAND | | | 160,816.67 |
| SUPPLIES | | | 26,569.16 |
| ** SUBTOTAL ** | | **243,701.93** | **3,985,472.13** |

| DAIRY LIVESTOCK | --- BEGIN YEAR --- NUMBER | VALUE | --- END OF YEAR --- NUMBER | VALUE | AVERAGE VALUE |
|---|---|---|---|---|---|
| COWS | 246.25 | 523,396.80 | 254.33 | 540,577.68 | 531,987.24 |
| BRED HEIFERS | 73.33 | 146,666.67 | 85.50 | 171,000.00 | 158,833.33 |
| OPEN HEIFERS | 62.58 | 75,100.00 | 65.67 | 78,800.00 | 76,950.00 |
| HEIFER CALVES | 92.33 | 36,933.33 | 83.92 | 33,566.67 | 35,250.00 |
| BULL CALVES | 35.00 | 5,250.00 | 42.75 | 6,412.50 | 5,831.25 |
| BULLS | .58 | 875.00 | .75 | 1,125.00 | 1,000.00 |
| ** SUBTOTAL ** | **510.08** | **788,221.80** | **532.92** | **831,481.84** | **809,851.82** |

| | |
|---|---|
| **TOTAL DAIRY INVESTMENT** | **4,795,323.96** |
| CAPITAL LOANS | 1,920,011.89 |
| OPERATOR EQUITY | 2,875,312.07 |
| INVESTMENT PER COW | 19,427.92 |
| DEBT/CAPITAL RATIO | .40 |
| CAPITAL TURNOVER ( YR ) | 2.37 |

| HERD SIZE | Average | Median |
|---|---|---|
| NUMBER OF DAIRY COWS | 246.83 | 143.08 |
| NUMBER OF ANIMAL UNITS | 390.58 | 217.50 |
| DRY COWS ( % ) | 23.23 | |
| CALF CROP ( % ) | 106.76 | |
| PASTURE PER COW ( AC. ) | .15 | |

| CATTLE SALES & PURCHASES | NUMBER SOLD | SELLING PRICE | NUMBER PURCHASED | PURCHASE PRICE |
|---|---|---|---|---|
| COWS | 64.17 | 1,261.87 | .00 | .00 |
| BRED HEIFERS | 3.25 | 1,945.67 | 2.67 | 2,700.00 |
| OPEN HEIFERS | 11.00 | 1,169.51 | .00 | .00 |
| HEIFER CALVES | 9.17 | 270.96 | .00 | .00 |
| BULL CALVES | 67.83 | 168.83 | .00 | .00 |
| BULLS | .25 | 1,451.67 | .08 | 2,300.00 |
| **TOTAL VALUE** | | **114,457.06** | | **7,391.67** |

**Northern Alberta**
**2019 Dairy Cost Study - Business Analysis**
**12 Participants**
**Table 3 Labour and Management**

**LABOUR**

| | HOURS | VALUE | HOURLY RATE |
|---|---|---|---|
| OPERATOR LABOUR | 3,090.50 | 71,730.51 | 23.21 |
| HIRED LABOUR | 6,204.99 | 144,476.03 | 23.28 |
| FAMILY UNPAID LABOUR | 2,505.21 | 57,710.51 | 23.04 |
| **TOTAL** | **11,800.70** | **273,917.04** | **23.21** |

| | |
|---|---|
| RETURN TO FAMILY LABOUR | (9.83) |
| MAN EQUIVALENTS | 4.72 |
| LABOUR HOURS PER COW | 47.81 |
| YEARS FARMING | 29.13 |

**MILK PRODUCTION**

| | HL. | % OF TOTAL | VALUE | AVERAGE PRICE / HL |
|---|---|---|---|---|
| MILK SALES | 22,732.37 | 97.40 | 1,860,114.60 | 81.83 |
| OTHER MILK PRODUCED | 606.17 | 2.60 | | |
| **TOTAL** | **23,338.54** | **100.00** | | |

| | | AVERAGE COMPONENT PRICES ($ / KG) |
|---|---|---|
| BUTTERFAT TEST | 4.31 KG / HL | 16.75 |
| PROTEIN | 3.27 KG / HL | 2.56 |
| L.O.S. | 5.87 KG / HL | .70 |

MILK PRODUCTION PER COW 9,455.45 LITRES / YEAR

**QUOTA INFORMATION**

| | |
|---|---|
| CDQ HOLDINGS | 253.25 KG / DAY |
| CDQ PRICE | 39,264.86 $ / KG / DAY |
| CREDIT PRICE | 6.38 $ / KG |

**MANAGEMENT FACTORS**

| | |
|---|---|
| COST PER HL | 83.08 |
| MILK/FEED (KG) RATIO | 2.05 LITRES |
| MILK/LABOUR (HR) RATIO | 197.77 LITRES |
| MILK/CAPITAL ($) RATIO | .49 LITRES |

**Northern Alberta**
**2019 Dairy Cost Study - Business Analysis**
**12 Participants**
**Table 4 Feed Report**

| | --- PURCHASED --- | | --- HOMEGROWN--- | |
|---|---|---|---|---|
| **CONCENTRATES** | **QUANTITY (TONNES)** | **PRICE** | **QUANTITY (TONNES)** | **PRICE** |
| OATS | .00 | .00 | .00 | .00 |
| BARLEY | 330.71 | 211.47 | 32.69 | 217.44 |
| WHEAT | .00 | .00 | 16.82 | 221.85 |
| MIXED GRAIN | .00 | .00 | .00 | .00 |
| BREW GRAIN (DRY EQ. ) | 6.39 | 199.73 | | |
| BEET PULP | 7.29 | 251.94 | | |
| OTHER PURCHASED | 72.09 | 262.31 | | |
| DAIRY RATION | 468.07 | 573.81 | | |
| CALF FEED | 12.86 | 744.94 | | |
| MILK REPLACER | 1.03 | 3,282.92 | | |
| SUPPLEMENT | 179.25 | 498.66 | | |
| MOLASSES | 4.22 | 338.95 | | |
| SALT | 3.07 | 914.93 | | |
| MINERALS & VITAMINS | 5.33 | 1,521.23 | | |
| **SUBTOTAL - - - - - - - - -** | **1,090.32** | **475,239.04** | **49.51** | **10,840.23** |
| **ROUGHAGE** | | | | |
| HAY (ALL VARIETIES) | 230.18 | 180.65 | 78.28 | 152.74 |
| ALFALFA PELLETS | .00 | .00 | | |
| STRAW FED | 59.75 | 50.86 | 2.82 | 63.92 |
| GREENFEED | .00 | .00 | .00 | .00 |
| SILAGE/HAYLAGE (DRY EQ.) | 426.50 | 157.93 | 1,045.33 | 137.98 |
| **SUBTOTAL - - - - - - - - -** | **716.42** | **111,977.75** | **1,126.43** | **156,367.02** |
| GRINDING & PROCESSING | | 18,873.66 | | |
| **GRAND TOTAL FEED COSTS - - - - - - - - -** | | **606,090.44** | | **167,207.26** |
| BEDDING | 331.31 | 76.98 | 80.20 | 63.41 |

| | | | |
|---|---|---|---|
| AV. PRICE: | CONCENTRATE | 426.45 | $/TONNE |
| | ROUGHAGE | 145.61 | $/TONNE |
| FED PER COW: | CONCENTRATE | 4.62 | TONNES |
| | ROUGHAGE | 7.47 | TONNES |
| % HOME GROWN: | CONCENTRATE | 4.34 | % |
| | ROUGHAGE | 61.12 | % |

# Appendix C
# 2019 Dairy Cost Study
# Southern Alberta Average

## Southern Alberta
## 2019 Dairy Cost Study - Business Analysis
## 25 Participants
## Table 1 Dairy Enterprise Costs and Returns

| | TOTAL ENTERPRISE | PER COW | PER HL SOLD | PERCENT FROM INCOME |
|---|---|---|---|---|
| **INCOME:** | | | | |
| MILK SALES | 1,410,816.63 | 8,699.62 | 81.67 | |
| POOL ADJUSTMENTS (+ -) | 465.64 | 2.87 | .03 | |
| MISCELLANEOUS RECEIPTS | 6,308.25 | 38.90 | .37 | |
| NET CATTLE SALES ( + - ) | 52,334.94 | 322.72 | 3.03 | |
| NET INVENTORY CHANGE ( + - ) | 12,618.53 | 77.81 | .73 | |
| **GROSS INCOME - - - - - - - - - - - - - - -** | **1,482,543.98** | **9,141.91** | **85.82** | **100.00** |
| **EXPENSES:** | | | | |
| GRAIN | 72,704.39 | 448.32 | 4.21 | |
| COMPLETE FEED | 220,732.91 | 1,361.12 | 12.78 | |
| SUPPLEMENT | 72,626.70 | 447.84 | 4.20 | |
| MINERALS & VITAMINS | 24,475.41 | 150.92 | 1.42 | |
| ROUGHAGE | 251,579.46 | 1,551.33 | 14.56 | |
| PROCESSING COSTS | 1,675.77 | 10.33 | .10 | |
| **TOTAL FEED COSTS - - - - - - - - - - - -** | **643,794.65** | **3,969.88** | **37.27** | **43.42** |
| BEDDING AND SUPPLIES | 60,630.20 | 373.87 | 3.51 | |
| BREEDING | 18,282.87 | 112.74 | 1.06 | |
| VET. AND MEDICINE | 33,953.89 | 209.37 | 1.97 | |
| MILK HAULING | 63,561.05 | 391.94 | 3.68 | |
| PRODUCER'S FEES | 37,342.62 | 230.27 | 2.16 | |
| UTILITIES | 28,549.70 | 176.05 | 1.65 | |
| FUEL, OIL, LUBE | 21,476.35 | 132.43 | 1.24 | |
| BLDG. & MACH. REPAIRS | 36,069.57 | 222.42 | 2.09 | |
| MISCELLANEOUS | 42,516.29 | 262.17 | 2.46 | |
| **TOTAL OTHER VARIABLE COSTS - - - -** | **342,382.53** | **2,111.26** | **19.82** | **23.09** |
| HIRED LABOUR | 48,007.68 | 296.03 | 2.78 | |
| FAMILY LABOUR | 165,406.09 | 1,019.95 | 9.57 | |
| **TOTAL LABOUR COSTS - - - - - - - - - - -** | **213,413.77** | **1,315.99** | **12.35** | **14.40** |
| **TOTAL VARIABLE COSTS** | **1,199,590.95** | **7,397.12** | **69.44** | **80.91** |
| RENT | 1,610.46 | 9.93 | .09 | |
| TAXES AND INSURANCE | 22,657.00 | 139.71 | 1.31 | |
| DEPRECIATION | 168,229.56 | 1,037.37 | 9.74 | |
| INTEREST ( CAP.DEBT) | 27,977.25 | 172.52 | 1.62 | |
| **TOTAL CAPITAL COSTS - - - - - - - - - -** | **220,474.27** | **1,359.53** | **12.76** | **14.87** |
| **TOTAL PRODUCTION COSTS** | **1,420,065.22** | **8,756.65** | **82.20** | **95.79** |
| CONTRIBUTION MARGIN ($) | 282,953.03 | 1,744.79 | 16.38 | |
| RETURN TO EQUITY ($) | 62,478.76 | 385.27 | 3.62 | 4.21 |
| MILK PRICE | | | 81.70 | |
| INVENTORY ADJUSTMENT | | | 4.13 | |
| RETURN TO EQUITY (%) | | | 2.60 | |
| AVERAGE CAP. DEBT INTEREST RATE (%) | | | 3.41 | |

## Southern Alberta
## 2019 Dairy Cost Study - Business Analysis
## 25 Participants
## Table 2 Statement of Investment

| LAND BUILDINGS & EQUIPMENT | AGE | DEPRECIATION | DAIRY INVESTMENT |
|---|---|---|---|
| DAIRY BUILDINGS | 10.40 | 83,701.88 | **2,048,980.73** |
| POWER MACHINERY | 8.71 | 31,037.27 | 199,550.22 |
| DAIRY EQUIPMENT | 13.07 | 34,372.46 | 125,619.44 |
| OTHER EQUIPMENT | 9.61 | 19,117.96 | 80,902.60 |
| **TOTAL EQUIPMENT** | **10.38** | **84,527.68** | **406,072.26** |
| LAND | | | 180,690.00 |
| SUPPLIES | | | 15,493.81 |
| ** SUBTOTAL ** | | **168,229.56** | **2,651,236.79** |

| DAIRY LIVESTOCK | --- BEGIN YEAR --- NUMBER | VALUE | --- END OF YEAR --- NUMBER | VALUE | AVERAGE VALUE |
|---|---|---|---|---|---|
| COWS | 162.28 | 370,922.43 | 164.48 | 375,950.95 | 373,436.69 |
| BRED HEIFERS | 52.48 | 104,960.00 | 55.56 | 111,120.00 | 108,040.00 |
| OPEN HEIFERS | 61.36 | 73,632.00 | 61.80 | 74,160.00 | 73,896.00 |
| HEIFER CALVES | 35.20 | 14,080.00 | 36.96 | 14,784.00 | 14,432.00 |
| BULL CALVES | 4.68 | 702.00 | 6.40 | 960.00 | 831.00 |
| BULLS | 3.48 | 5,220.00 | 3.44 | 5,160.00 | 5,190.00 |
| ** SUBTOTAL ** | **319.48** | **569,516.43** | **328.64** | **582,134.95** | **575,825.69** |

| | |
|---|---|
| **TOTAL DAIRY INVESTMENT** | **3,227,062.48** |
| CAPITAL LOANS | 819,994.32 |
| OPERATOR EQUITY | 2,407,068.16 |
| INVESTMENT PER COW | 19,899.26 |
| DEBT/CAPITAL RATIO | .25 |
| CAPITAL TURNOVER ( YR ) | 2.18 |

| HERD SIZE | Average | Median |
|---|---|---|
| NUMBER OF DAIRY COWS | 162.17 | 144.25 |
| NUMBER OF ANIMAL UNITS | 258.30 | 224.42 |
| DRY COWS ( % ) | 15.56 | |
| CALF CROP ( % ) | 107.54 | |
| PASTURE PER COW ( AC. ) | .24 | |

| CATTLE SALES & PURCHASES | NUMBER SOLD | SELLING PRICE | NUMBER PURCHASED | PURCHASE PRICE |
|---|---|---|---|---|
| COWS | 49.72 | 1,070.38 | 3.20 | 2,401.25 |
| BRED HEIFERS | 1.88 | 1,024.15 | 2.16 | 2,259.26 |
| OPEN HEIFERS | 3.04 | 962.47 | 1.08 | 749.26 |
| HEIFER CALVES | .64 | 266.88 | .00 | .00 |
| BULL CALVES | 50.72 | 188.95 | .00 | .00 |
| BULLS | 2.08 | 1,678.28 | 2.00 | 2,804.00 |
| **TOTAL VALUE** | | **71,316.14** | | **18,981.20** |

**Southern Alberta**
**2019 Dairy Cost Study - Business Analysis**
**25 Participants**
**Table 3 Labour and Management**

**LABOUR**

| | HOURS | VALUE | HOURLY RATE |
|---|---|---|---|
| OPERATOR LABOUR | 3,702.94 | 85,945.24 | 23.21 |
| HIRED LABOUR | 2,110.29 | 48,007.68 | 22.75 |
| FAMILY UNPAID LABOUR | 3,444.28 | 79,460.85 | 23.07 |
| **TOTAL** | **9,257.51** | **213,413.77** | **23.05** |

| | |
|---|---|
| RETURN TO FAMILY LABOUR | (5.16) |
| MAN EQUIVALENTS | 3.70 |
| LABOUR HOURS PER COW | 57.09 |
| YEARS FARMING | 25.30 |

**MILK PRODUCTION**

| | HL. | % OF TOTAL | VALUE | AVERAGE PRICE / HL |
|---|---|---|---|---|
| MILK SALES | 17,274.81 | 97.62 | 1,410,816.63 | 81.67 |
| OTHER MILK PRODUCED | 421.24 | 2.38 | | |
| **TOTAL** | **17,696.05** | **100.00** | | |

| | | AVERAGE COMPONENT PRICES ($ / KG) |
|---|---|---|
| BUTTERFAT TEST | 4.14 KG / HL | 16.75 |
| PROTEIN | 3.17 KG / HL | 2.59 |
| L.O.S. | 5.88 KG / HL | .70 |
| MILK PRODUCTION PER COW | 10,912.04 LITRES / YEAR | |

**QUOTA INFORMATION**

| | |
|---|---|
| CDQ HOLDINGS | 189.79 KG / DAY |
| CDQ PRICE | 40,671.84 $ / KG / DAY |
| CREDIT PRICE | 6.75 $ / KG |

**MANAGEMENT FACTORS**

| | |
|---|---|
| COST PER HL | 82.20 |
| MILK/FEED (KG) RATIO | 2.34 LITRES |
| MILK/LABOUR (HR) RATIO | 191.15 LITRES |
| MILK/CAPITAL ($) RATIO | .55 LITRES |

**Southern Alberta**
**2019 Dairy Cost Study - Business Analysis**
**25 Participants**
**Table 4 Feed Report**

| | --- PURCHASED --- | | --- HOMEGROWN--- | |
|---|---|---|---|---|
| **CONCENTRATES** | **QUANTITY (TONNES)** | **PRICE** | **QUANTITY (TONNES)** | **PRICE** |
| OATS | .07 | 223.00 | .00 | .00 |
| BARLEY | 48.46 | 241.57 | 83.77 | 242.76 |
| WHEAT | .04 | 220.00 | .17 | 241.09 |
| MIXED GRAIN | .00 | .00 | .00 | .00 |
| BREW GRAIN (DRY EQ. ) | 9.82 | 183.96 | | |
| BEET PULP | .10 | 255.00 | | |
| OTHER PURCHASED | 96.48 | 401.84 | | |
| DAIRY RATION | 356.32 | 541.34 | | |
| CALF FEED | 22.07 | 663.90 | | |
| MILK REPLACER | 3.82 | 3,457.27 | | |
| SUPPLEMENT | 96.29 | 687.34 | | |
| MOLASSES | 20.16 | 319.40 | | |
| SALT | 1.67 | 487.25 | | |
| MINERALS & VITAMINS | 18.35 | 1,289.15 | | |
| **SUBTOTAL - - - - - - - - -** | **673.65** | **370,162.57** | **83.94** | **20,376.84** |
| **ROUGHAGE** | | | | |
| HAY (ALL VARIETIES) | 287.59 | 222.52 | 123.46 | 238.47 |
| ALFALFA PELLETS | .00 | .00 | | |
| STRAW FED | 23.63 | 90.15 | 35.49 | 86.65 |
| GREENFEED | .00 | .00 | 5.78 | 165.37 |
| SILAGE/HAYLAGE (DRY EQ.) | 195.24 | 138.79 | 582.88 | 214.25 |
| **SUBTOTAL - - - - - - - - -** | **506.47** | **93,222.81** | **747.61** | **158,356.65** |
| GRINDING & PROCESSING | | 1,675.77 | | |
| **GRAND TOTAL FEED COSTS - - - - - - - - -** | | **465,061.16** | | **178,733.49** |
| BEDDING | 248.98 | 81.13 | 39.77 | 88.35 |

| | | | |
|---|---|---|---|
| AV. PRICE: | CONCENTRATE | 515.50 | $/TONNE |
| | ROUGHAGE | 200.61 | $/TONNE |
| FED PER COW: | CONCENTRATE | 4.67 | TONNES |
| | ROUGHAGE | 7.73 | TONNES |
| % HOME GROWN: | CONCENTRATE | 11.08 | % |
| | ROUGHAGE | 59.61 | % |

# Appendix D
# Dairy Cost Study
# Alberta 5 Year Average
## (2015 – 2019)

## Alberta Dairy Cost Study
## Business Analysis (2015 - 2019)
## Average 42 Participants
## Table 1 Dairy Enterprise Costs and Returns

| | TOTAL ENTERPRISE | PER COW | PER HL SOLD | PERCENT FROM INCOME |
|---|---|---|---|---|
| **INCOME:** | | | | |
| MILK SALES | 1,263,682.19 | 7,572.70 | 80.02 | |
| POOL ADJUSTMENTS (+ -) | 1,295.62 | 8.26 | .09 | |
| MISCELLANEOUS RECEIPTS | 6,457.19 | 38.84 | .41 | |
| NET CATTLE SALES ( + - ) | 71,759.47 | 438.15 | 4.66 | |
| NET INVENTORY CHANGE ( + - ) | 22,682.51 | 136.19 | 1.44 | |
| **GROSS INCOME - - - - - - - - - - - - - - -** | **1,365,876.97** | **8,194.14** | **86.62** | **100.00** |
| **EXPENSES:** | | | | |
| GRAIN | 72,964.56 | 437.98 | 4.63 | |
| COMPLETE FEED | 182,688.48 | 1,090.18 | 11.50 | |
| SUPPLEMENT | 63,513.08 | 381.81 | 4.04 | |
| MINERALS & VITAMINS | 15,447.35 | 91.73 | .97 | |
| ROUGHAGE | 200,981.71 | 1,205.56 | 12.73 | |
| PROCESSING COSTS | 4,785.97 | 28.26 | .30 | |
| **TOTAL FEED COSTS - - - - - - - - - - - -** | **540,381.15** | **3,235.53** | **34.16** | **39.45** |
| BEDDING AND SUPPLIES | 49,101.40 | 293.17 | 3.09 | |
| BREEDING | 16,806.35 | 100.42 | 1.06 | |
| VET. AND MEDICINE | 31,211.79 | 186.49 | 1.97 | |
| MILK HAULING | 55,089.39 | 329.54 | 3.48 | |
| PRODUCER'S FEES | 34,234.20 | 205.24 | 2.17 | |
| UTILITIES | 26,337.60 | 157.56 | 1.66 | |
| FUEL, OIL, LUBE | 18,306.82 | 109.99 | 1.16 | |
| BLDG. & MACH. REPAIRS | 38,751.48 | 232.58 | 2.46 | |
| MISCELLANEOUS | 48,881.37 | 294.26 | 3.12 | |
| **TOTAL OTHER VARIABLE COSTS - - - -** | **318,720.39** | **1,909.25** | **20.17** | **23.30** |
| HIRED LABOUR | 57,330.29 | 341.25 | 3.60 | |
| FAMILY LABOUR | 131,944.71 | 792.61 | 8.38 | |
| **TOTAL LABOUR COSTS - - - - - - - - - - -** | **189,274.99** | **1,133.86** | **11.98** | **13.83** |
| **TOTAL VARIABLE COSTS** | **1,048,376.53** | **6,278.64** | **66.32** | **76.58** |
| RENT | 3,606.41 | 21.94 | .23 | |
| TAXES AND INSURANCE | 24,692.09 | 148.66 | 1.57 | |
| DEPRECIATION | 147,524.14 | 881.19 | 9.30 | |
| INTEREST ( CAP.DEBT) | 26,345.59 | 156.84 | 1.65 | |
| **TOTAL CAPITAL COSTS - - - - - - - - - -** | **202,168.23** | **1,208.63** | **12.76** | **14.74** |
| **TOTAL PRODUCTION COSTS** | **1,250,544.76** | **7,487.27** | **79.08** | **91.32** |
| CONTRIBUTION MARGIN ($) | 317,500.44 | 1,915.50 | 20.31 | |
| RETURN TO EQUITY ($) | 115,332.21 | 706.87 | 7.54 | 8.68 |
| MILK PRICE | | | 80.11 | |
| INVENTORY ADJUSTMENT | | | 6.51 | |
| RETURN TO EQUITY (%) | | | 5.85 | |
| AVERAGE CAP. DEBT INTEREST RATE (%) | | | 3.39 | |

## Alberta Dairy Cost Study
## Business Analysis (2015 - 2019)
## Average 42 Participants
## Table 2 Statement of Investment

| LAND BUILDINGS & EQUIPMENT | AGE | DEPRECIATION | DAIRY INVESTMENT |
|---|---|---|---|
| DAIRY BUILDINGS | 11.91 | 69,279.42 | **1,714,084.05** |
| POWER MACHINERY | 8.49 | 27,440.12 | 181,126.92 |
| DAIRY EQUIPMENT | 12.42 | 32,530.51 | 122,239.27 |
| OTHER EQUIPMENT | 9.43 | 18,274.09 | 77,970.62 |
| **TOTAL EQUIPMENT** | **9.98** | **78,244.72** | **381,336.81** |
| LAND | | | 137,225.69 |
| SUPPLIES | | | 17,165.60 |
| ** SUBTOTAL ** | | **147,524.14** | **2,249,812.15** |

| DAIRY LIVESTOCK | --- BEGIN YEAR --- NUMBER | VALUE | --- END OF YEAR --- NUMBER | VALUE | AVERAGE VALUE |
|---|---|---|---|---|---|
| COWS | 164.46 | 371,532.70 | 170.03 | 384,244.19 | 377,888.45 |
| BRED HEIFERS | 49.30 | 98,591.65 | 54.05 | 108,090.91 | 103,341.28 |
| OPEN HEIFERS | 57.32 | 78,776.56 | 57.41 | 78,778.34 | 78,777.45 |
| HEIFER CALVES | 46.96 | 16,606.56 | 46.86 | 16,646.13 | 16,626.34 |
| BULL CALVES | 10.37 | 1,685.55 | 12.43 | 2,050.14 | 1,867.85 |
| BULLS | 2.20 | 3,303.89 | 2.25 | 3,369.72 | 3,336.80 |
| ** SUBTOTAL ** | **330.61** | **570,496.92** | **343.01** | **593,179.43** | **581,838.17** |

| | |
|---|---|
| **TOTAL DAIRY INVESTMENT** | **2,831,650.33** |
| CAPITAL LOANS | 781,932.14 |
| OPERATOR EQUITY | 2,049,718.18 |
| INVESTMENT PER COW | 16,908.97 |
| DEBT/CAPITAL RATIO | .27 |
| CAPITAL TURNOVER ( YR ) | 2.06 |

| HERD SIZE | Average | Median |
|---|---|---|
| NUMBER OF DAIRY COWS | 166.36 | 133.37 |
| NUMBER OF ANIMAL UNITS | 262.67 | 206.53 |
| DRY COWS ( % ) | 19.22 | |
| CALF CROP ( % ) | 103.33 | |
| PASTURE PER COW ( AC. ) | .23 | |

| CATTLE SALES & PURCHASES | NUMBER SOLD | SELLING PRICE | NUMBER PURCHASED | PURCHASE PRICE |
|---|---|---|---|---|
| COWS | 45.60 | 1,360.73 | 2.42 | 2,679.78 |
| BRED HEIFERS | 2.86 | 1,966.61 | 1.39 | 2,491.40 |
| OPEN HEIFERS | 3.73 | 1,578.99 | .73 | 1,328.99 |
| HEIFER CALVES | 1.91 | 404.54 | .28 | 314.71 |
| BULL CALVES | 47.92 | 223.29 | .00 | .00 |
| BULLS | 1.27 | 1,877.70 | 1.26 | 2,867.83 |
| **TOTAL VALUE** | | **86,404.20** | | **14,644.74** |

## Alberta Dairy Cost Study
## Business Analysis (2015 - 2019)
## Average 42 Participants
## Table 3 Labour and Management

**LABOUR**

| | HOURS | VALUE | HOURLY RATE |
|---|---|---|---|
| OPERATOR LABOUR | 3,285.81 | 72,451.77 | 22.04 |
| HIRED LABOUR | 2,581.50 | 57,330.29 | 22.12 |
| FAMILY UNPAID LABOUR | 2,792.73 | 59,492.94 | 21.22 |
| **TOTAL** | **8,660.04** | **189,274.99** | **21.80** |

| | |
|---|---|
| RETURN TO FAMILY LABOUR | 4.00 |
| MAN EQUIVALENTS | 3.46 |
| LABOUR HOURS PER COW | 52.00 |
| YEARS FARMING | 26.30 |

**MILK PRODUCTION**

| | HL. | % OF TOTAL | VALUE | AVERAGE PRICE / HL |
|---|---|---|---|---|
| MILK SALES | 15,777.75 | 97.34 | 1,263,682.19 | 80.02 |
| OTHER MILK PRODUCED | 427.96 | 2.66 | | |
| **TOTAL** | **16,205.70** | **100.00** | | |

| | | AVERAGE COMPONENT PRICES ($ / KG) |
|---|---|---|
| BUTTERFAT TEST | 4.13 KG / HL | 13.84 |
| PROTEIN | 3.30 KG / HL | 3.23 |
| L.O.S. | 5.76 KG / HL | 2.19 |
| MILK PRODUCTION PER COW | 9,718.17 LITRES / YEAR | |

**QUOTA INFORMATION**

| | |
|---|---|
| CDQ HOLDINGS | 169.37 KG / DAY |
| CDQ PRICE | 38,216.98 $ / KG / DAY |
| CREDIT PRICE | 7.52 $ / KG |

**MANAGEMENT FACTORS**

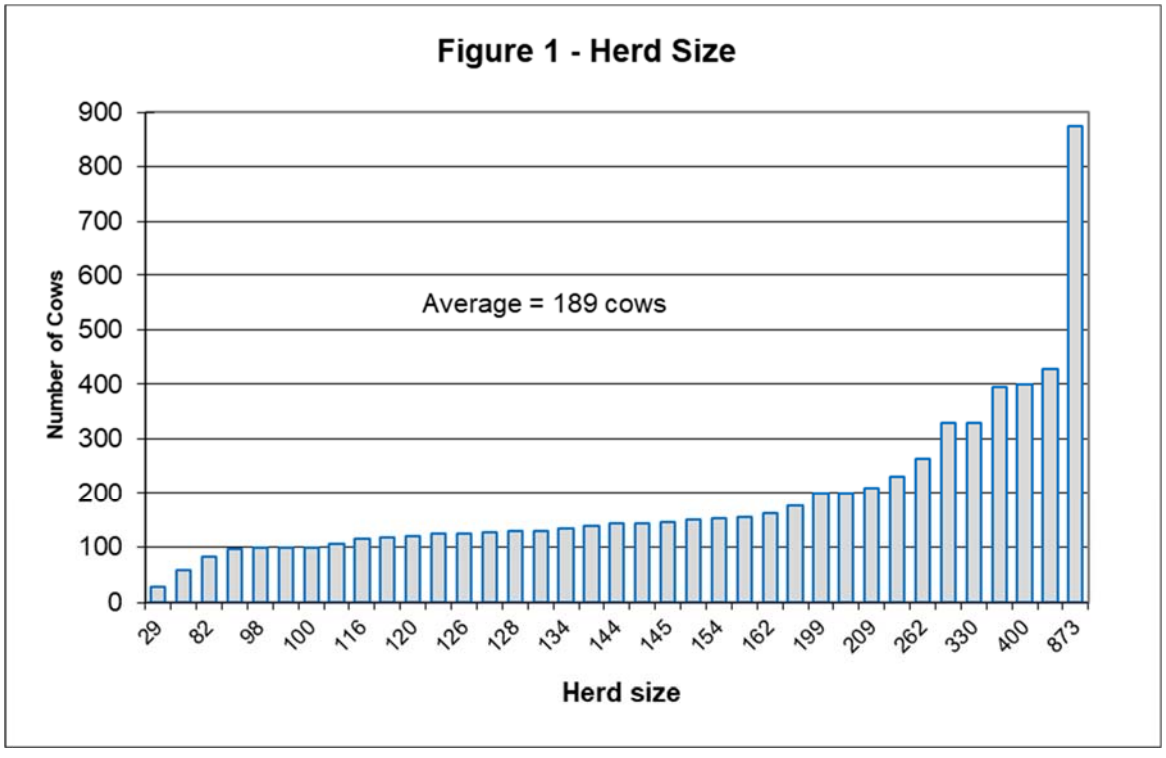
| | |
|---|---|
| COST PER HL | 79.08 |
| MILK/FEED (KG) RATIO | 2.14 LITRES |
| MILK/LABOUR (HR) RATIO | 186.87 LITRES |
| MILK/CAPITAL ($) RATIO | .58 LITRES |

## Alberta Dairy Cost Study
## Business Analysis (2015 - 2019)
## Average 42 Participants
## Table 4 Feed Report

| | --- PURCHASED --- | | --- HOMEGROWN--- | |
|---|---|---|---|---|
| **CONCENTRATES** | **QUANTITY (TONNES)** | **PRICE** | **QUANTITY (TONNES)** | **PRICE** |
| OATS | 1.98 | 159.06 | .60 | 108.93 |
| BARLEY | 106.85 | 193.07 | 101.42 | 201.12 |
| WHEAT | .02 | 90.68 | 2.23 | 205.06 |
| MIXED GRAIN | 6.95 | 92.82 | .00 | .00 |
| BREW GRAIN (DRY EQ. ) | 11.53 | 228.51 | | |
| BEET PULP | 4.88 | 256.79 | | |
| OTHER PURCHASED | 66.45 | 359.49 | | |
| DAIRY RATION | 304.28 | 538.32 | | |
| CALF FEED | 19.66 | 570.63 | | |
| MILK REPLACER | 2.13 | 3,430.26 | | |
| SUPPLEMENT | 102.24 | 595.46 | | |
| MOLASSES | 8.31 | 327.34 | | |
| SALT | 1.76 | 582.96 | | |
| MINERALS & VITAMINS | 13.71 | 1,139.63 | | |
| **SUBTOTAL - - - - - - - - -** | **650.75** | **313,893.95** | **104.26** | **20,719.52** |
| **ROUGHAGE** | | | | |
| HAY (ALL VARIETIES) | 186.60 | 186.09 | 131.58 | 191.43 |
| ALFALFA PELLETS | .00 | .00 | | |
| STRAW FED | 14.40 | 62.03 | 21.46 | 70.72 |
| GREENFEED | 1.87 | 96.08 | 2.78 | 145.00 |
| SILAGE/HAYLAGE (DRY EQ.) | 235.29 | 137.77 | 647.25 | 164.16 |
| **SUBTOTAL - - - - - - - - -** | **438.16** | **68,785.36** | **803.07** | **132,196.35** |
| GRINDING & PROCESSING | | 4,785.97 | | |
| **GRAND TOTAL FEED COSTS - - - - - - - - -** | | **387,465.28** | | **152,915.87** |
| BEDDING | 220.94 | 70.20 | 58.97 | 65.34 |

| | | | |
|---|---|---|---|
| AV. PRICE: | CONCENTRATE | 441.06 | $/TONNE |
| | ROUGHAGE | 161.83 | $/TONNE |
| FED PER COW: | CONCENTRATE | 4.53 | TONNES |
| | ROUGHAGE | 7.45 | TONNES |
| % HOME GROWN: | CONCENTRATE | 14.13 | % |
| | ROUGHAGE | 64.79 | % |

# Appendix E
# 2019 Dairy Cost Study
# Individual Participant Results
## (37 Participants)



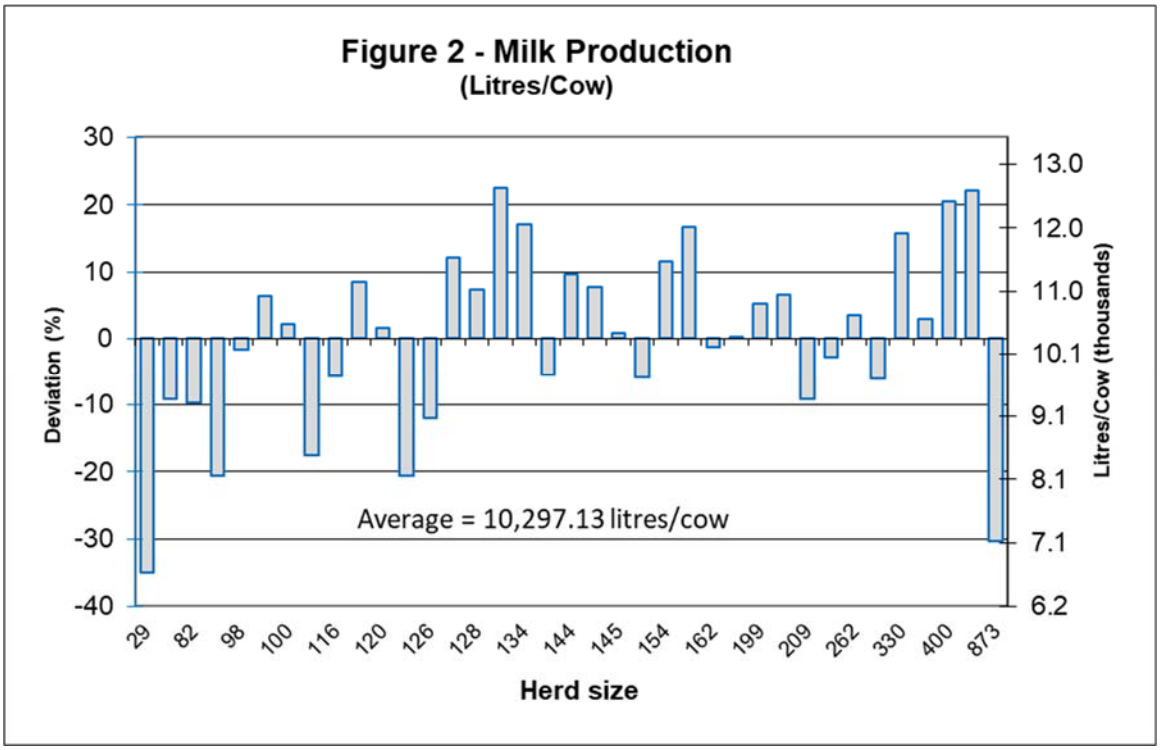


Figure 2 - Milk Production
(Litres/Cow)
Deviation (%)
Litres/Cow (thousands)
Average = 10,297.13 litres/cow
Herd size
30
20
10
0
-10
-20
-30
-40
13.0
12.0
11.0
10.1
9.1
8.1
7.1
6.2
29
82
98
100
116
120
126
128
134
144
145
154
162
199
209
262
330
400
873

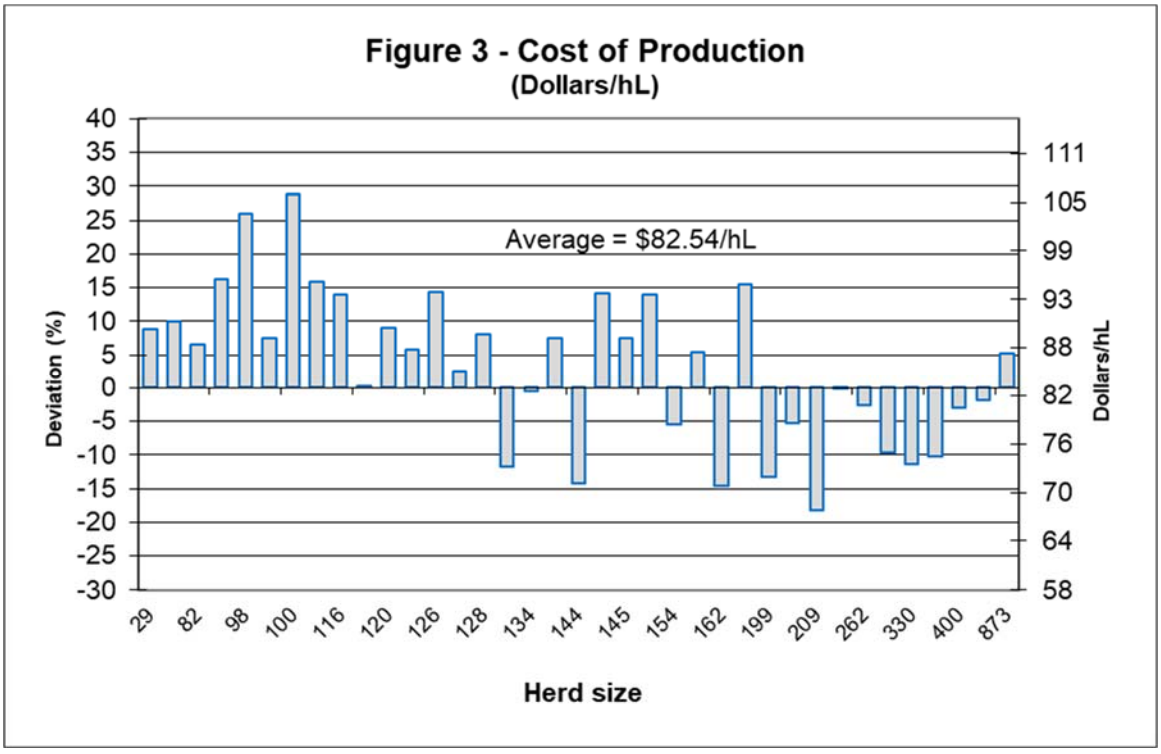


Figure 3 - Cost of Production
(Dollars/hL)
Deviation (%)
Dollars/hL
Average = $82.54/hL
Herd size
40
35
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
111
105
99
93
88
82
76
70
64
58
29
82
98
100
116
120
126
128
134
144
145
154
162
199
209
262
330
400
873

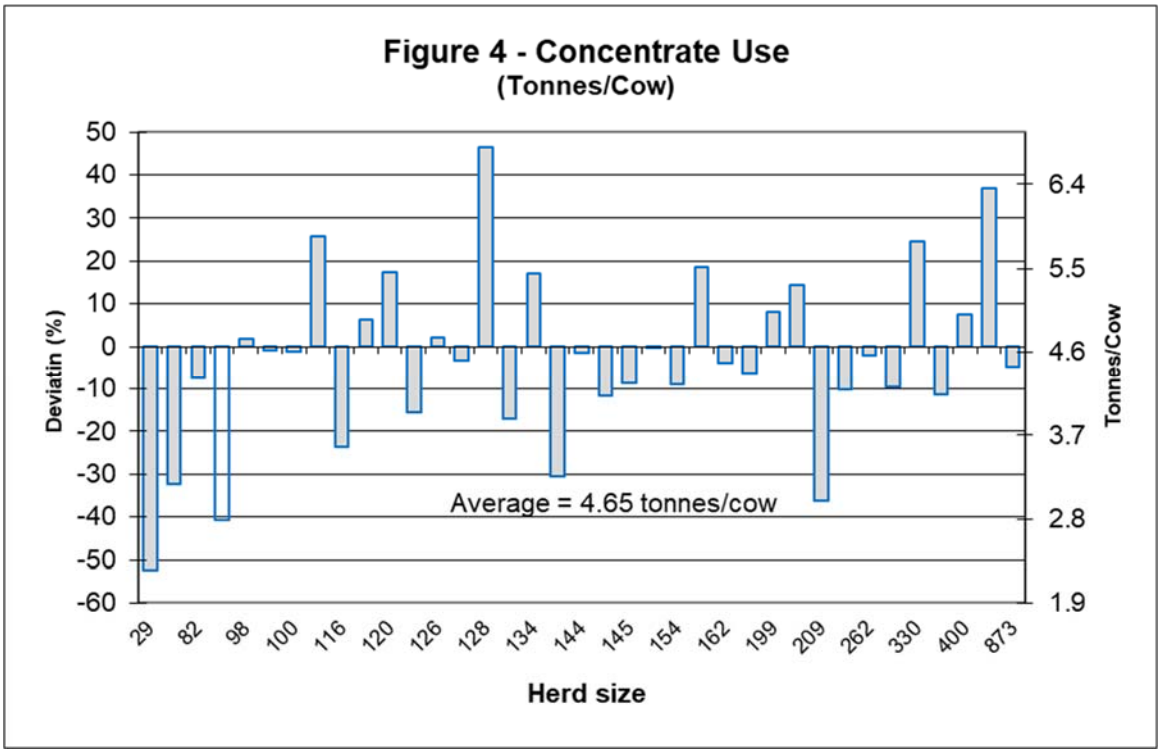


Figure 4 - Concentrate Use
(Tonnes/Cow)
Deviatin (%)
Tonnes/Cow
Average = 4.65 tonnes/cow
Herd size
50
40
30
20
10
0
-10
-20
-30
-40
-50
-60
6.4
5.5
4.6
3.7
2.8
1.9
29
82
98
100
116
120
126
128
134
144
145
154
162
199
209
262
330
400
873

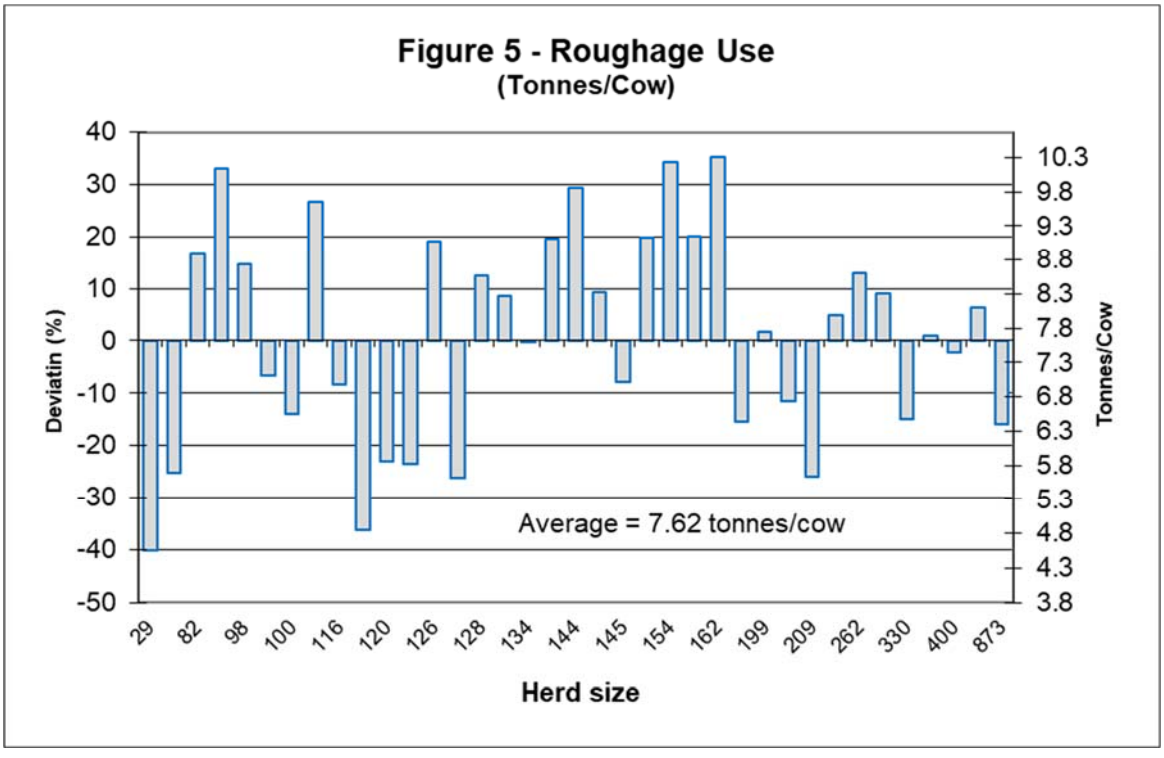


Figure 5 - Roughage Use
(Tonnes/Cow)
Deviatin (%)
Tonnes/Cow
Average = 7.62 tonnes/cow
Herd size
40
30
20
10
0
-10
-20
-30
-40
-50
10.3
9.8
9.3
8.8
8.3
7.8
7.3
6.8
6.3
5.8
5.3
4.8
4.3
3.8
29
82
98
100
116
120
126
128
134
144
145
154
162
199
209
262
330
400
873

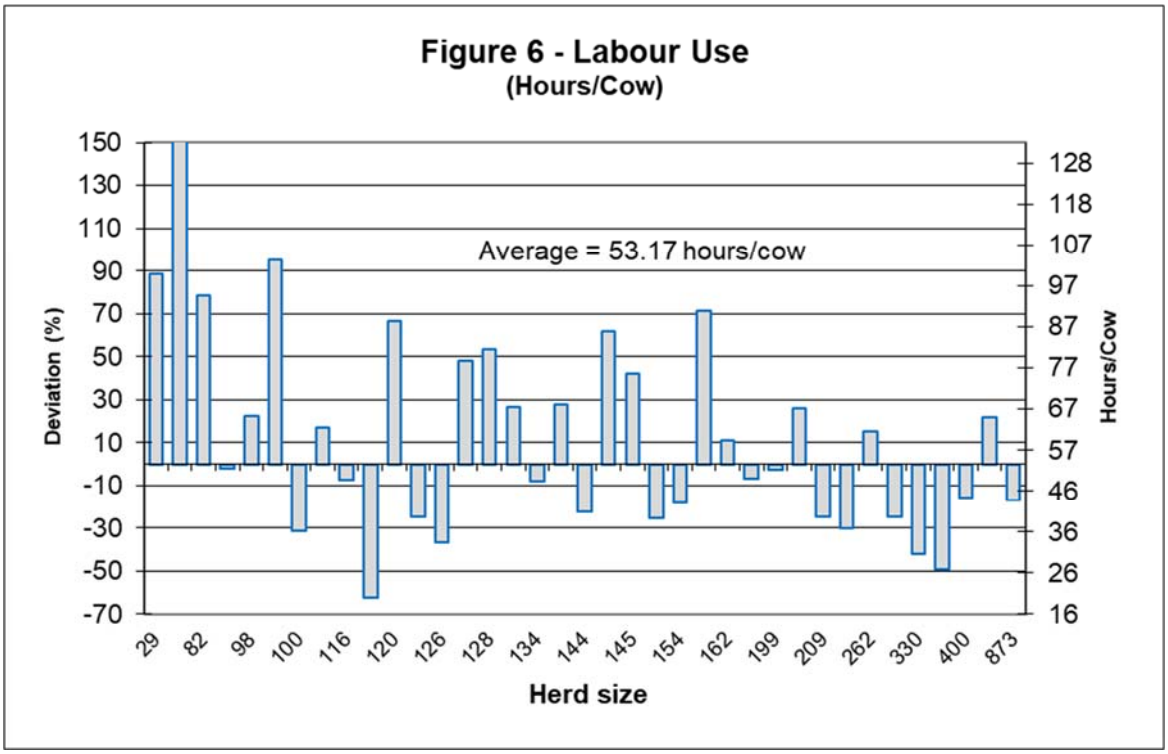


Figure 6 - Labour Use
(Hours/Cow)
Average = 53.17 hours/cow
Deviation (%)
Hours/Cow
Herd size
150
130
110
90
70
50
30
10
-10
-30
-50
-70
128
118
107
97
87
77
67
57
46
36
26
16
29
82
98
100
116
120
126
128
134
144
145
154
162
199
209
262
330
400
873

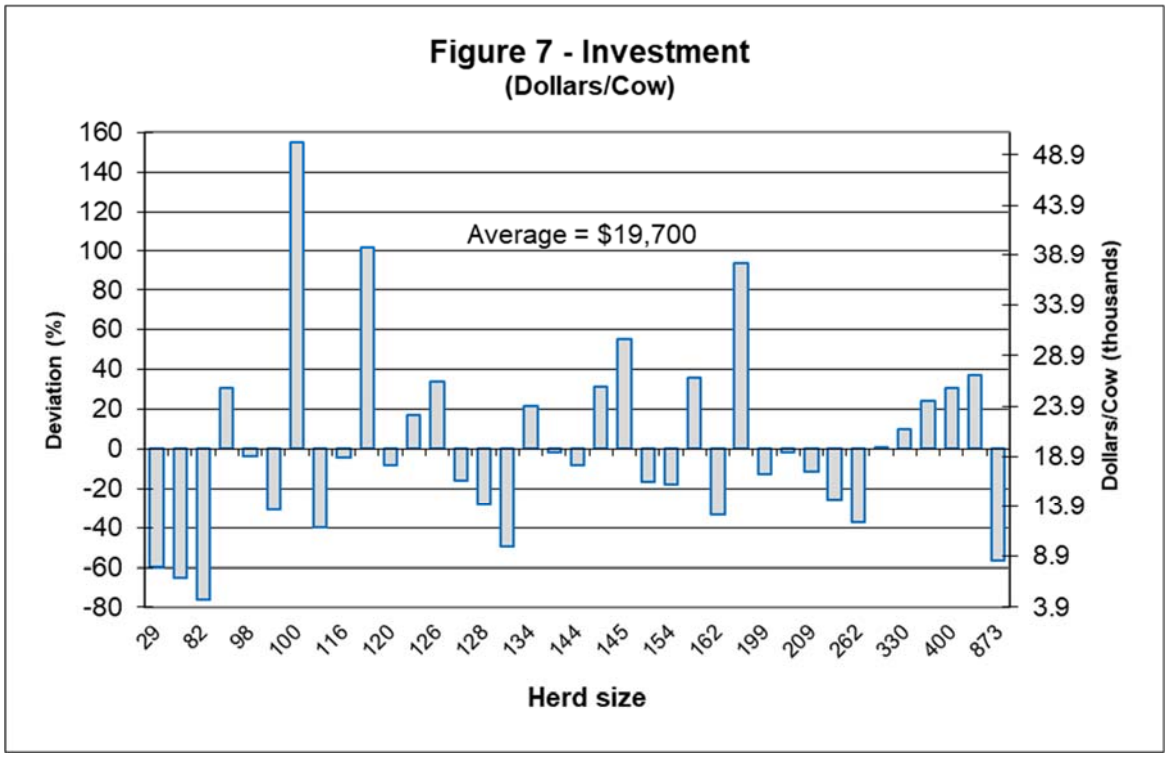


Figure 7 - Investment
(Dollars/Cow)
Average = $19,700
Deviation (%)
Dollars/Cow (thousands)
Herd size
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
48.9
43.9
38.9
33.9
28.9
23.9
18.9
13.9
8.9
3.9
29
82
98
100
116
120
126
128
134
144
145
154
162
199
209
262
330
400
873

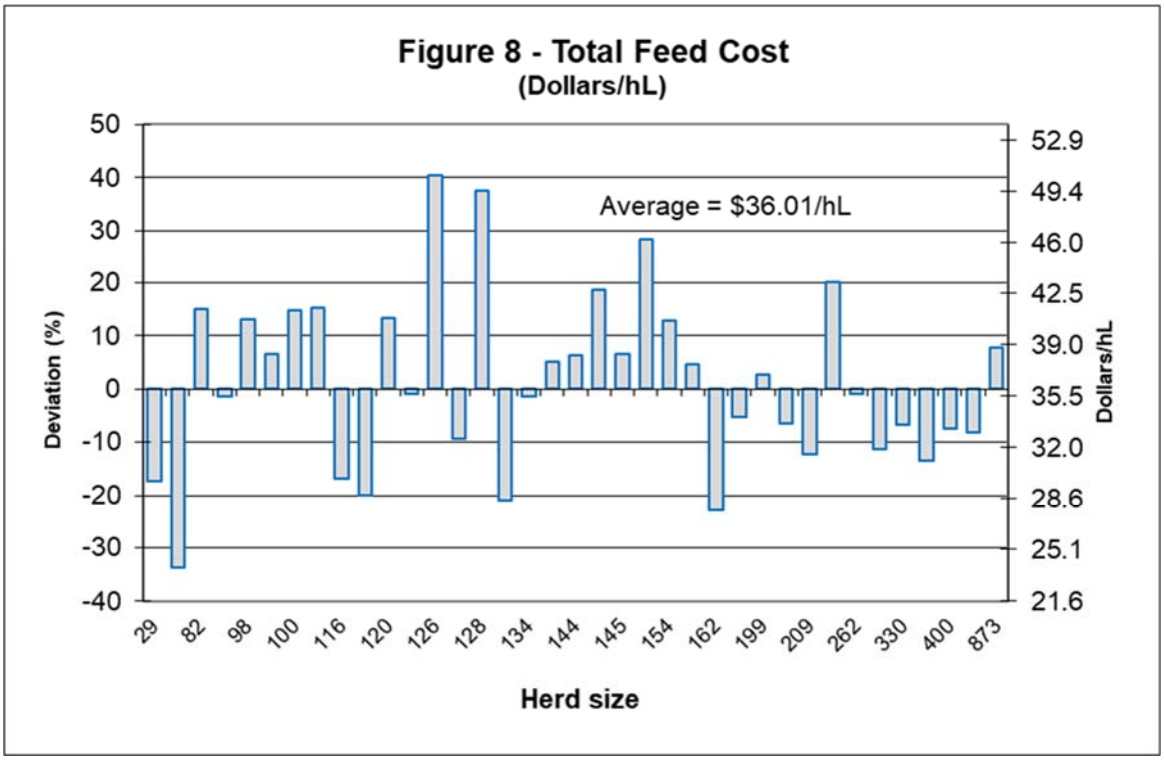


Figure 8 - Total Feed Cost
(Dollars/hL)
Average = $36.01/hL
Deviation (%)
Dollars/hL
50
40
30
20
10
0
-10
-20
-30
-40
52.9
49.4
46.0
42.5
39.0
35.5
32.0
28.6
25.1
21.6
29
82
98
100
116
120
126
128
134
144
145
154
162
199
209
262
330
400
873
Herd size

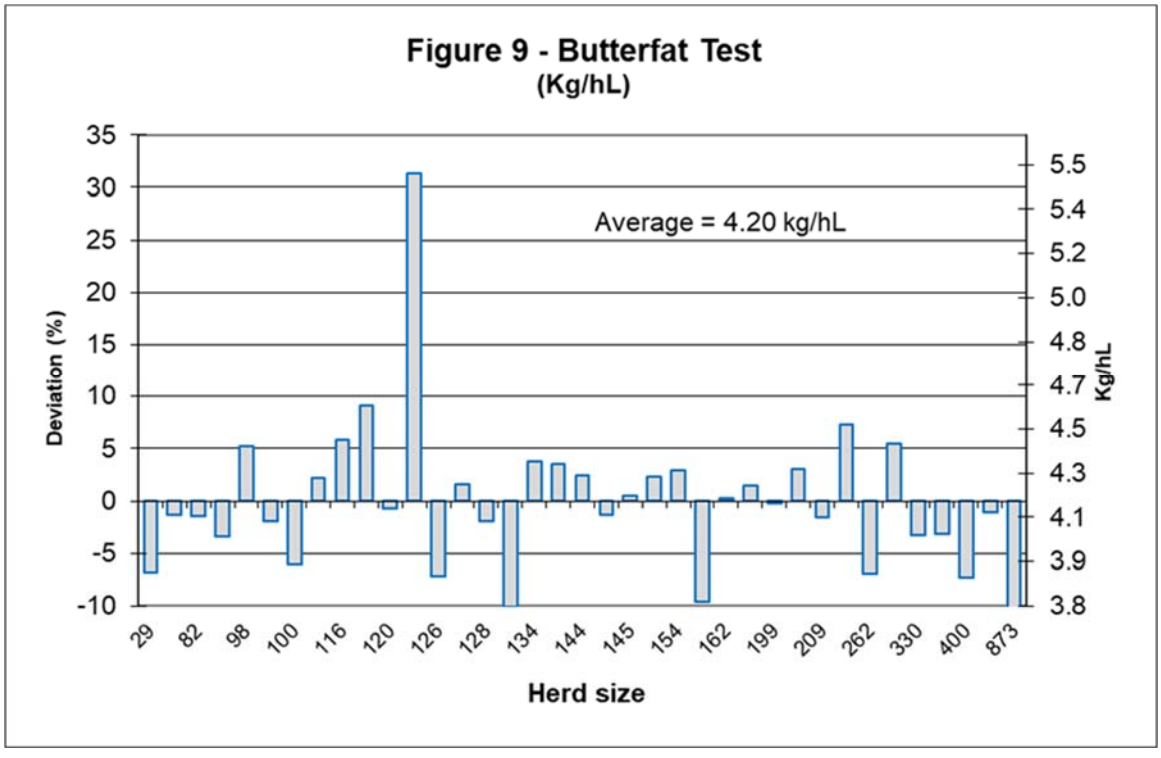


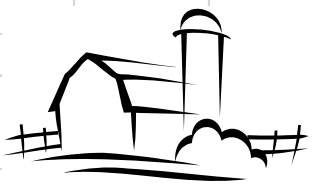
Figure 9 - Butterfat Test
(Kg/hL)
Average = 4.20 kg/hL
Deviation (%)
Kg/hL
35
30
25
20
15
10
5
0
-5
-10
5.5
5.4
5.2
5.0
4.8
4.7
4.5
4.3
4.1
3.9
3.8
29
82
98
100
116
120
126
128
134
144
145
154
162
199
209
262
330
400
873
Herd size

# Appendix F
# 2019 Dairy Cost Study
# Data Collection Forms

# DAIRY COST STUDY, 2019

**Confidential**

## Investments and Liabilities



### General Information

| | | | |
|---|---|---|---|
| Contact Name: | | TPQ Holdings kg/day: (January 2019) | |
| 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, 2019 | Interest Rate | % to Dairy | % to Other Farm |
|---|---|---|---|---|---|
| 1 | Land: | | | | |
| 1 | | | | | |
| 2 | Building: | | | | |
| 2 | | | | | |
| 3 | Livestock: | | | | |
| 3 | | | | | |
| 4 | Machinery: | | | | |
| 4 | | | | | |
| 5 | Other: | | | | |

**Notice of Collection:**

The personal information, on this form, is being collected for the purpose of conducting research on the costs and returns of agricultural production in Alberta. The collection is under the authority of section 33 of the *Freedom of Information and Protection of Privacy* (FOIP) *Act* and is subject to the provisions of the Act. Only aggregated, non-identifying, information will be published and made available to the general public or organizations for research purposes.

If you have any questions about the collection or use of the information, please contact the Director, Economics Section, Alberta Agriculture and Forestry, #300, 7000 - 113 Street, Edmonton, Alberta, T6H 5T6 or phone: 780-422-3771

# DAIRY COST STUDY, 2019

**Name: _____**

## Supplies Inventory, Machinery and Buildings, January 1, 2019

| | **Supplies Inventory** | Value: Jan. 1, 2019 | % 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.) | | | |

| | **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 | | | | | |

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


see over

| | | | | | |
|---|---|---|---|---|---|
| **Dairy Equipment:** | | | | | |
| 3 | | | | | |
| 3 | | | | | |
| 3 | | | | | |
| 3 | | | | | |
| 3 | | | | | |
| 3 | | | | | |
| 3 | | | | | |
| 3 | | | | | |
| 3 | | | | | |
| 3 | | | | | |
| | Examples: bulk tank, pipeline, milk meters, washer, vacuum pump, generator, buckets | | | | |

| | | Purchased | Year | % to Dairy | % to Other |
|---|---|---|---|---|---|
| **Other Equipment Used for Dairy:** | | Price | Purchased | | Farm |
| 4 | | | | | |
| 4 | | | | | |
| 4 | | | | | |
| 4 | | | | | |
| 4 | | | | | |
| 4 | | | | | |
| 4 | | | | | |
| 4 | | | | | |
| 4 | | | | | |
| 4 | | | | | |
| 4 | | | | | |
| 4 | | | | | |
| 4 | | | | | |
| 4 | | | | | |
| 4 | | | | | |
| 4 | | | | | |
| 4 | | | | | |

Examples: manure spreader, barn cleaner, manure pump, cattle trailer, quad, bale feeders, silo unloader, scraper, feed mixers, sawdust blowers, semen tank, fencers, fans, crowd gate, small tools (table saw, drill press, welder, power tools), fuel tanks, wheel barrows, computer feeding system, home computer

# DAIRY COST STUDY, 2019

## Monthly Reporting Sheet

**Confidential**

**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. | Purchases Total Value | No. Born | Died or Trans/Out | Sales No. | Sales Total Value | End No. |
|---|---|---|---|---|---|---|---|---|---|
| 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** | | Specify | Total Value ($) | % to Dairy | % to Other Farm |
|---|---|---|---|---|---|---|
| 1 | Equipment | *Purchases:* | | | | |
| 2 | | *Sales:* | | | | |
| 3 | Tractor/Truck | *Purchases:* | | | | |
| 4 | | *Sales:* | | | | |
| 5 | Buildings | *Purchases/Const:* | | | | |
| 6 | | *Sales:* | | | | |
| 13 | TPQ | *Purchased:* | (kgs/day) | | | |
| 14 | | *Sold:* | (kgs/day) | | | |
| 16 | Credit Transfers | | ($/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) | Cd | | Office Use | Unit Type * | Amount Used | Unit Price |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Barley | | | | | | 21 | Dairy Ration | | | | |
| 2 | Oats | | | | | | 22 | Supplement | | | | |
| 3 | Wheat | | | | | | 23 | Brew Grain | | | | |
| 5 | Hay (homegrown) | | | | | | 24 | Beet Pulp | | | | |
| 6 | Hay (purchased) | | | | | | 25 | Alfalfa Pellets | | | | |
| 7 | Silage | | | | | | 26 | Calf Feed | | | | |
| 8 | Haylage | | | | | | 27 | Milk Replacer | | | | |
| 9 | Greenfeed | | | | | | 28 | Salt | | | | |
| 10 | Straw - Fed | | | | | | 29 | Min. & Vit. | | | | |
| 11 | 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 * | | 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 | | 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