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DAIRY FARM BUSINESS SUMMARY

JUNE 2005 E.B. 2005-05

NEW YORK LARGE HERD FARMS, 300 COWS OR LARGER 2004

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2004 DAIRY FARM BUSINESS SUMMARY
LARGE HERD DAIRY FARMS
300 Cows or Larger

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2004 DAIRY FARM BUSINESS SUMMARY
LARGE HERD DAIRY FARMS[1]

INTRODUCTION

Dairy farmers throughout New York state have been participating in Cornell Cooperative Extension Farm Business Summary and Analysis Programs since the early 1950's. Managers of each participating farm business receive a comprehensive summary and analysis of the farm business.

Larger farms employ different technologies and management systems, and thus, achieve different efficiencies than smaller farms. This makes comparisons of a large farm's performance to the average of farms of all sizes not as meaningful as comparing to the average of similar sized farms. This report contains a summary and analysis of dairy farms with 300 or more cows. In addition, farms are sorted into three categories for many comparisons, 300 to 400 cows, 401 to 599 cows, and 600 and more cows per farm.

Farm managers should determine their business performance and then compare it with that of other similar farms. In this manner, strengths and areas for improvement can be identified. A goal that many managers set is to strive to be in the top 20 percent of farms for many of the production and financial benchmarks. Each manager should select and then revise annually the goals which their business strives to achieve.

Program Objective

The primary objective of the Dairy Farm Business Summary, DFBS, is to help farm managers improve the business and financial management of their dairy farm through appropriate use of historical farm data and the application of modern farm business analysis techniques. This information can also be used to track changes within the business, establish goals that will enable the business to better meet its objectives, compare the performance of the farm to other dairy producers, and establish a basis for financial projection of planned changes within the business.

Format

This report is comprised of six sections. The first section charts the progress of the large herd farm business over two years. Fifty-nine of the large herd farms participated in the summary the last two years. The averages of selected business factors are presented for these farms and the changes that occurred from 2003 to 2004 are calculated.

The second section contains charts for additional analysis of large herd farms. The top 20 percent large farms (by rate of return on assets without appreciation) are compared to the average for all 65 large herd farms that participated in the 2004 DFBS program. Also presented is information concerning dairy enterprise efficiency, and milking parlor efficiency.

The summary and analysis section lists the average data for the 65 large herd farms that participated in the 2004 DFBS program. The format follows that of the individual farm DFBS printout and contains a brief explanation of each table and chart with comparisons to the top 20 percent large farms.

The fourth section presents a condensed summary and selected business factors for farms with 300-400 cows, 401-599 cows, and farms with 600 and more cows.

The fifth section contains the income and expense profiles for the 300-400 cow farms, 401-599 cow farms, and 600 and more cow farms on a per cow and per hundredweight of milk basis.

The sixth section contains business charts for key measures of farm performance.

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[1] The large herd summary is comprised of farms with 300 or more cows. Albany, Cayuga, Chautauqua, Chenango, Clinton, Cortland, Erie, Genesee, Jefferson, Livingston, Madison, Montgomery, Niagara, Oneida, Orleans, Rensselaer, St. Lawrence, Saratoga, Washington, Wayne, Wyoming, and Yates counties had farms of this size participating in 2003. This report was written by Jason Karszes, Senior Extension Associate, Pro-Dairy and Wayne A. Knoblauch, Professor, Farm Management. Linda Putnam was in charge of data preparation. Faye Butts prepared the publication. Data were collected by Cornell Cooperative Extension educators across the state. We also acknowledge the cooperation of Western New York and First Pioneer Farm Credit Associations and Dehm Associates, for their assistance in data collection.

PROGRESS OF THE FARM BUSINESS

The 2004 business year for the New York State dairy industry saw a dramatic change from the low milk prices that started in the summer of 2002 and held through most of 2003. Milk prices continued to increase throughout the first part of the year and remained at high levels for the whole year, averaging $3.29 per cwt. higher than in 2003. Growing conditions followed a similar pattern as in 2003, starting out with a nice early spring, and then turning extremely wet into the summer. With the challenging growing conditions, feed costs increased during the year and forage quality continued to be a challenge. The combination of these factors led to a year that was significantly better than 2003, with increased profits and a large increase in farm net worth.

For both 2003 and 2004, 59 farms that averaged more than 300 cows in New York participated in the Dairy Farm Business Summary Program (DFBS), administered by Cornell Cooperative Extension and Cornell University. The table on the following page shows selected factors from the 59 farms that participated in the DFBS project each of the last two years. The table on page 4 shows the receipts and expenses per cow and per hundredweight for these 59 farms.

Comparing your business' performance with average data from these DFBS dairy farms can help you establish goals for your business. It is equally important to determine the progress your business has made over the past two or three years, to compare this progress to your goals, and to set goals for the future.

Milk Income. Gross milk prices increased 22.4 percent, or $3.29 per hundredweight. Milk marketing expenses increased 5 cents to $0.71 per hundredweight. These two changes led to an increase of 25.6 percent in net milk price received on farm, averaging $15.91 per hundredweight, the highest in the last ten years. With the challenging growing conditions in 2003 and 2004, forage quality has been a challenge on New York State dairy farms. Lower quality forage coupled with a decrease in rBst availability resulted in a decrease of 419 pounds of milk per cow in 2004. With milk production per cow decreasing, the increase in total milk shipped per farm of 3.9 percent was driven by the addition of 40 cows to the average herd size, which increased to 723 cows. The combination of increased herd size offsetting the decrease in milk per cow coupled with the large increase in milk price led to an increase in gross milk sales per farm of $623,233, an increase of 29.5 percent. While the early spring and high moisture levels increased corn yields to 18.1 tons per acre and hay yields to 3.7 tons of dry matter, quality continued to be a challenge.

Cost control. With the increase in herd size, worker equivalents increased by 7.0 percent. Since this increase was larger than the increase in herd size, labor efficiency decreased, with cows per worker falling 1 to 45 and milk sold per worked falling by 2.9 percent. Hired labor costs per worker equivalent increased 1.4 percent. With labor efficiency decreasing and the cost per worker equivalent increasing, hired labor costs increased. 5.9 percent, an increase of $0.16 per hundredweight.

With limited forage quality and increased feed prices, coupled with a decrease in milk production, purchased grain and concentrates per hundredweight increased to $4.54 per hundredweight, an increase of 14.4 percent.

With the higher milk price, farms moved ahead with repairs that may have been deferred in 2002 and 2003, leading to an increase in machinery repairs per hundredweight of 14 cents.

With the majority of expense categories staying the same or increasing on a per cow basis, coupled with a decrease in milk production per cow, total farm operating expenses per hundredweight increased $1.24, or 9.3 percent.

Dramatic Increase in Earnings. While farm operating costs did increase significantly over 2003 levels and milk production per cow fell, the combination of more cows and the increase in milk prices more than offset these changes and profitability increased significantly over the previous year. Net farm income without appreciation increased 533 percent to $438,484. Net farm income with appreciation increased 205 percent to $611,850.

- Labor and management income per operator/manager increased 785 percent to $137,383.
- Rate of return to all capital without appreciation increased 506 percent to 9.1 percent. Rate of return on equity capital without appreciation increased 1,233 percent to 13.6 percent.
- Farm net worth increased by 21.2 percent from the previous year.
- Debt to asset ratio fell 10 percent to 0.45.

Overall, 2004 was a successful year for the 300 cow and larger farms and a welcome relief to the difficult times in 2002 and 2003. While, on average, profits did increase from 2003, the changes on individual farms varied, with some farms actually doing the same in 2004 as they had in 2003. The importance of trend analysis is to identify what areas changed, ask why they changed, and look at what you can do differently in the future to influence that change. If you would like help in developing and looking at the trends in your business, contact your local extension service and become involved in a financial management education program.

PROGRESS OF THE FARM BUSINESS
Same 59 Large Herd Dairy Farms, 2003 & 2004

Selected Factors	Average of 59 Farms 2003	Average of 59 Farms 2004	Percent Change
Size of Business			
Average number of cows	683	723	5.9
Average number of heifers	534	567	6.2
Milk sold, lbs.	15,836,680	16,449,475	3.9
Worker equivalent	14.98	16.03	7.0
Total tillable acres	1,279	1,371	7.2
Rates of Production			
Milk sold per cow, lbs.	23,176	22,757	-1.8
Hay DM per acre, tons	3.5	3.7	5.7
Corn silage per acre, tons	17.8	18.1	1.7
Labor Efficiency & Costs			
Cows per worker	46	45	-2.2
Milk sold per worker, lbs.	1,057,188	1,026,168	-2.9
Hired labor cost per cwt.	$2.70	$2.86	5.9
Hired labor cost per worker	$33,872	$34,344	1.4
Hired labor cost as % of milk sales	20.3%	17.2%	-15.3
Cost Control			
Grain & concentrate purchased as % of milk sales	30%	27%	-10.0
Grain & concentrate per cwt. milk	$3.97	$4.54	14.4
Dairy feed & crop expense per cwt. milk	$4.86	$5.53	13.8
Labor & machinery costs per cow	$1,183	$1,269	7.3
Total farm operating costs per cwt. sold	$13.36	$14.60	9.3
Interest costs per cwt. milk	$0.57	$0.57	0.0
Milk marketing costs per cwt. milk sold	$0.66	$0.71	7.6
Operating cost of producing cwt. of milk	$11.68	$12.60	7.9
Net milk income over purchased feed cost per cow	$2,019	$2,589	28.2
Capital Efficiency(average for the year)			
Farm capital per cow	$6,387	$6,569	2.9
Machinery & equipment per cow	$1,045	$1,076	3.0
Asset turnover ratio	0.59	0.69	17.0
Income Generation			
Gross milk sales per cow	$3,091	$3,782	22.4
Gross milk sales per cwt.	$13.33	$16.62	24.7
Net milk sales per cwt.	$12.67	$15.91	25.6
Dairy cattle sales per cow	$220	$287	30.5
Dairy calf sales per cow	$49	$48	-2.0
Profitability			
Net farm income without appreciation	$69,231	$438,484	533.4
Net farm income with appreciation	$200,170	$611,850	205.7
Labor & mgt. income per operator/manager	$-20,053	$137,383	785.1
Rate of return on equity capital w/o appreciation	-1.2%	13.6%	1,233.3
Rate of return on all capital without appreciation	1.5%	9.1%	506.7
Financial Summary			
Farm net worth, end year	$2,270,314	$2,750,383	21.2
Debt to asset ratio	0.50	0.45	-10.0
Farm debt per cow	$3,213	$3,029	-5.7

RECEIPTS AND EXPENSES PER COW AND PER HUNDREDWEIGHT
Same 59 Large Herd Dairy Farms, 2003 & 2004

	2003		2004	
Item	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	683		723	
Cwt. of Milk Sold		158,367		164,495
Accrual Operating Receipts				
Milk	$3,091	$13.33	$3,782	$16.62
Dairy cattle	220	0.95	287	1.26
Dairy calves	49	0.21	48	0.21
Other livestock	5	0.02	8	0.03
Crops	93	0.40	59	0.26
Miscellaneous receipts	96	0.41	125	0.55
Total	$3,554	$15.32	$4,309	$18.93
Accrual Operating Expenses				
Hired labor	$626	$2.70	$650	$2.86
Dairy grain & concentrate	920	3.97	1,032	4.54
Dairy roughage	55	0.24	62	0.27
Nondairy feed	1	0.00	0	0.00
Professional nutritional services	2	0.01	2	0.01
Machine hire, rent & lease	59	0.26	56	0.25
Machine repairs & vehicle expense	136	0.59	166	0.73
Fuel, oil & grease	71	0.31	85	0.37
Replacement livestock	29	0.12	36	0.16
Breeding	42	0.18	45	0.20
Veterinary & medicine	133	0.58	136	0.60
Milk marketing	152	0.66	161	0.71
Bedding	61	0.26	65	0.29
Milking supplies	69	0.30	71	0.31
Cattle lease	3	0.01	2	0.01
Custom boarding	101	0.43	102	0.45
bST expense	64	0.27	41	0.18
Livestock professional fees	4	0.02	8	0.04
Other livestock expense	23	0.10	19	0.09
Fertilizer & lime	59	0.25	63	0.28
Seeds & plants	48	0.21	57	0.25
Spray & other crop expense	37	0.16	36	0.16
Crop professional fees	6	0.03	7	0.03
Land, building & fence repair	33	0.14	45	0.20
Taxes	40	0.17	42	0.18
Real estate rent/lease	52	0.22	52	0.23
Insurance	30	0.13	31	0.14
Utilities	71	0.31	76	0.33
Interest paid	132	0.57	129	0.57
Other professional fees	19	0.08	21	0.09
Miscellaneous	20	0.09	22	0.10
Total Operating Expenses	$3,098	$13.36	$3,322	$14.60
Expansion livestock	72	0.31	72	0.32
Extraordinary expense	2	0.01	4	0.02
Machinery depreciation	147	0.64	173	0.76
Real Estate depreciation	134	0.58	132	0.58
Total Expenses	$3,453	$14.90	$3,703	$16.28
Net Farm Income without appreciation	$101	$0.42	$606	$2.65

TOP 20 PERCENT COMPARISON TO AVERAGE AND FACTORS CONCERNING DAIRY ENTERPRISE AND PARLOR EFFICIENCY

In 2004, 27 of the 65 farms with over 300 cows filled out a supplementary data collection form in order to gain information on some additional management concerns of dairy farmers. Reported below are the averages and business charts for these factors. Each category is sorted independently, therefore farms that are the highest or lowest in one column may not necessarily be the highest or lowest in the next column. Please note that this is only descriptive data from 27 farms and only represents these 27 farms. See the Glossary beginning on page 48 for definitions of the factors in the table below.

On the following page selected factors for the top 20 percent of large herd farms as sorted by rate of return on all assets without appreciation are compared to the same factors for the average of all 65 farms over 300 cows that participated in the DFBS project in 2004. It is useful to see what factors are different between the average and the top 20% and to ask questions about where your own business fits into these factors.

Thirteen farms that were in the top 20 percent in 2004 were also in the summary in 2003. The table on page 7 shows income and expenses for these farms for both 2003 and 2004. Identifying the changes that occurred on these farms provides insight into what happened on the most profitable farms. How your farm changed in comparison should provide valuable management information.

SUPPLEMENTAL FARM BUSINESS CHART

27 Large Herd Farms, 2004

Milking System Only

Quintile	Pounds of Milk Harvested Per Hour of Milking Labor	Total Cows Milked Per Hour of Milking Labor Per Day	Pounds of Milk Harvested per Machine Per Year
Average of Highest Quintile	2,192	35	770,036
↓	1,666	27	588,415
	1,414	23	475,788
	1,187	20	350,407
Average of Lowest Quintile	925	17	200,303
Overall Average	1,474	24	476,943

Dairy Enterprise Only

Quintile	Worker Equivalents	Cows per Worker Equivalent	Pounds Sold per Worker Equivalent
Average of Highest Quintile	17.28	145	3,311,434
↓	10.00	109	2,486,219
	6.50	99	2,237,165
	4.36	84	1,639,490
Average of Lowest Quintile	2.94	49	1,048,687
Overall Average	8.15	97	2,148,159

TOP 20 PERCENT VS. AVERAGE
65 Large Herd Dairy Farms, 2004

Selected Factors	Average 65 Farms	Average Top 20% Farms	Percent Difference
Size of Business			
Average number of cows	709	711	0.3
Average number of heifers	558	496	-11.1
Milk sold, lbs.	16,135,280	16,133,850	0.0
Worker equivalent	15.82	14.51	-8.3
Total tillable acres	1,390	1,376	-1.0
Rates of Production			
Milk sold per cow, lbs.	22,759	22,684	-0.3
Hay DM per acre, tons	3.80	3.48	-8.4
Corn silage per acre, tons	18.00	18.05	0.3
Labor Efficiency & Costs			
Cows per worker	45	49	8.9
Milk sold/worker, lbs.	1,019,929	1,111,912	9.0
Hired labor cost/cwt.	$2.89	$2.39	-17.3
Hired labor cost/hired worker	$34,492	$31,593	-8.4
Hired labor cost as % of milk sales	17.4%	14.2%	-18.4
Cost Control			
Grain & conc. Purchased as % of milk sales	27%	25%	-7.4
Grain & conc. Per cwt. Milk	$4.52	$4.20	-7.1
Dairy feed & crop expense per cwt. Milk	$5.54	$5.15	-7.0
Labor & mach. Costs/cow	$1,285	$1,149	-10.6
Total farm operating costs per cwt. Sold	$14.65	$13.68	-6.6
Interest costs per cwt. Milk	$0.57	$0.47	-17.5
Milk marketing costs per cwt. Milk sold	$0.70	$0.66	-5.7
Operating cost of producing cwt. Of milk	$12.62	$11.30	-10.5
Net milk income over purchased feed costs per cow	$2,594	$2,721	4.9
Capital Efficiency (average for the year)			
Farm capital per cow	$6,699	$5,936	-11.4
Mach. & equip. per cow	$1,093	$976	-10.7
Asset turnover ratio	0.68	0.81	19.1
Income Generation			
Gross milk sales per cow	$3,780	$3,824	1.2
Gross milk sales per cwt.	$16.61	$16.85	1.4
Net milk sales per cwt.	$15.91	$16.19	1.8
Dairy cattle sales per cow	$282	$389	37.9
Dairy calf sales per cow	$48	$70	45.8
Profitability			
Net farm income without appreciation	$424,608	$693,923	63.4
Net farm income with appreciation	$594,263	$908,461	52.9
Labor & mgt. income per oper./manager	$131,329	$261,411	99.1
Rate of return on equity capital w/o appreciation	12.9%	26.0%	101.6
Rate of return on all capital w/o appreciation	8.8%	16.1%	83.0
Financial Summary			
Farm net worth, end of year	$2,769,120	$2,689,375	-2.9
Debt to asset ratio	0.44	0.41	-6.8
Farm debt per cow	$3,046	$2,564	-15.8

RECEIPTS AND EXPENSES PER COW AND PER HUNDREDWEIGHT
Same 13 Top 20% Large Herd Dairy Farms, 2003 & 2004

	2003		2004	
Item	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	619		711	
Cwt. of Milk Sold		139,115		161,339
Accrual Operating Receipts				
Milk	$2,983	$13.27	$3,824	$16.85
Dairy cattle	251	1.12	389	1.71
Dairy calves	64	0.29	70	0.31
Other livestock	2	0.01	0	0.00
Crops	103	0.46	111	0.49
Miscellaneous receipts	103	0.46	127	0.56
Total	$3,506	$15.61	$4,521	$19.92
Accrual Operating Expenses				
Hired labor	$526	$2.34	$542	$2.39
Dairy grain & concentrate	916	4.04	953	4.20
Dairy roughage	24	0.10	53	0.24
Nondairy feed	4	0.02	0	0.00
Professional nutritional services	1	0.01	2	0.01
Machine hire, rent & lease	89	0.40	80	0.35
Machine repairs & vehicle expense	122	0.54	164	0.72
Fuel, oil & grease	58	0.26	73	0.32
Replacement livestock	57	0.25	58	0.25
Breeding	33	0.15	37	0.16
Veterinary & medicine	117	0.52	134	0.59
Milk marketing	138	0.62	150	0.66
Bedding	48	0.21	48	0.21
Milking supplies	67	0.30	82	0.36
Cattle lease	3	0.01	4	0.02
Custom boarding	73	0.32	96	0.42
bST expense	65	0.29	41	0.18
Livestock professional fees	2	0.01	8	0.03
Other livestock expense	20	0.09	13	0.06
Fertilizer & lime	74	0.33	70	0.31
Seeds & plants	43	0.19	49	0.22
Spray & other crop expense	30	0.13	36	0.16
Crop professional fees	9	0.04	7	0.03
Land, building & fence repair	26	0.12	50	0.22
Taxes	36	0.16	35	0.16
Real estate rent/lease	50	0.22	62	0.27
Insurance	41	0.18	43	0.19
Utilities	64	0.29	66	0.29
Interest paid	122	0.54	106	0.47
Other professional fees	13	0.06	19	0.08
Miscellaneous	17	0.07	23	0.10
Total Operating Expenses	$2,887	$12.85	$3,104	$13.68
Expansion livestock	76	0.34	157	0.69
Extraordinary Expense	3	0.01	0	0.00
Machinery depreciation	120	0.53	156	0.69
Real Estate depreciation	124	0.55	127	0.56
Total Expenses	$3,210	$14.28	$3,545	$15.62
Net Farm Income without appreciation	296	1.33	976	4.30

Supplementary Information

Each year DFBS cooperators volunteer to complete supplementary data collection forms looking at selected management aspects of the business or specific research areas being studied. This is in addition to the normal DFBS data collection form. Two areas that were examined this year were the source of dairy replacements and the breakdown of the milk income and marketing expenses. Following is a summary of this information.

SOURCE OF DAIRY REPLACEMENTS
27 Large Herd Dairy Farms, 2004

Animals Entering Herd	Average
Number calving in 2004 for first time	243
Animals purchased, %[2]	10
Animals raised by farm, %[3]	90
Current Heifer Inventory	
Raised on dairy, %	69
Raised by a custom grower, %	31

[2]Animals purchased are animals purchased from a different farm and were not the farm's genetics.
[3]Animals raised by farm are animals that were born on the farm and entered the herd, which includes animals raised by the farm or custom grower.

On the average farm, 243 animals calved for the first time in 2004. The breakdown on the source of these animals was 10 percent purchased and 90 percent raised by the farm. Of the current heifer inventory, 69 percent were raised on the dairy and 31 percent were being raised by a custom grower. There is increased interest in evaluating the dairy replacement enterprise.

Milk Income and Marketing Expense Breakdown

Starting January 1st, 2000, the northeast switched to multiple components pricing, which changed the format of the milk check and how farmers received payment for their milk. To examine the breakdown of the gross milk income and the marketing expenses, 52 farms filled out a detailed form for all the different sources of income for milk sales and the milk marketing expenses on an accrual basis. This information is reported in the following two tables. The tables are divided into six different areas, each representing a different area of income or expenses.

The first section looks at the value of the milk components on a per cwt. basis. The second area looks at the Producer Price Differential. The third area looks at the premiums a farm receives. Any premiums not specifically noted as quality or volume related are included in market premiums. The fourth area looks at the expenses associated with marketing milk. A new line item in this section is the expenses associated with utilizing forward contracting or hedging programs to market milk, such as commission or broker fees. The fifth area is income from the compact program or from forward contracting or hedging programs. The sixth area is the patronage dividends or refunds from the milk cooperatives. Equity purchased in the milk cooperative utilizing a monthly deduction from the milk check or a percent of the patronage dividend is treated as a capital purchase and is not a milk marketing expense. The cumulative total for these six areas is the net price received on farms. For participating farms, the net farm price can be found on page 13 of the DFBS report.

The table on page 9 reports the averages for these different areas. The table on page 10 contains the range for each of the individual lines of the report. This table is in farm business chart format with each item sorted independently and ranked by fifths. Numbers for the different areas will not add to the totals for that quintile or to the net price received because the highest farms for each item were averaged, not the same farms throughout the six areas. This table shows the range of income and expenses received by farms for all the different areas.

For your individual farm, compare your accrual numbers following this same format to look at how you compare to other farms in your region and to identify possible areas to generate additional revenue.

AVERAGE[4] MILK INCOME AND MARKETING REPORT
52 Large Herd Dairy Farms, 2004

	Pounds	Percent	Price/Pound	Total	$/Cwt of Milk
BASE FARM PRICE					
Butterfat	618,654.88	3.55%	$ 2.046	$ 1,265,875.10	$ 7.27
Protein	517,910.48	2.98%	$ 2.586	$ 1,339,494.37	$ 7.70
Solids	986,037.40	5.67%	$ 0.075	$ 74,343.73	$ 0.43
Total Component Contribution					$ 15.40
PPD	17,404,685.60			$ 56,134.02	$ 0.32
Base Farm Price					$ 15.72
Premiums					
Quality				$ 35,404.40	$ 0.21
Volume				$ 48,797.83	$ 0.28
Market Premiums				$ 91,861.46	$ 0.53
Total Premiums					$ 1.02
BASE FARM PRICE + PREMIUM					$ 16.74
Deductions					
Promo				$ 27,257.44	$ 0.16
Hauling + Stop Charges.				$ 77,105.56	$ 0.44
Market Fees & Coop Dues				$ 14,545.81	$ 0.08
Total Deductions					$ 0.68
BASE FARM PRICE + PREMIUMS - DEDUCTIONS					$ 16.06
Marketing Programs					
Futures Contracts, Forward Contracting, Etc.				$ -45,934.75	$ -0.26
Total Marketing Income					$ -0.26
Patronage Dividends				$ 13,522.89	$ 0.08
NET PRICE RECEIVED ON FARM, ALL SOURCES					**$ 15.88**
PPD - Hauling, per cwt., $ per cwt.					$ -0.12
PPD - Hauling + Market Premiums, per cwt., $ per cwt.					$ 0.41
Net Marketing Value (PPD + Total Premiums – Total Deductions), $ per cwt.					$ 0.66

[4]Each calculation of an average is independent of all others. Therefore, math operations on the detail will not result in the totals. However, detail in the "$/Cwt of Milk" column will result in the totals.

MILK PRICE INFORMATION BY QUINTILE[5]
(Each Category Sorted Independently)
52 Large Herd Dairy Farms, 2004

	Lowest Quintile	←		→	Highest Quintile
Butterfat, %	3.35	3.50	3.59	3.66	3.84
Protein, %	2.82	2.95	2.99	3.02	3.14
Other Solids, %	5.30	5.67	5.71	5.74	5.83
Butterfat, $ per Cwt.	6.87	7.18	7.33	7.47	7.91
Protein, $ per Cwt.	7.33	7.62	7.73	7.85	8.17
Other solids, $ per Cwt.	0.41	0.43	0.43	0.43	0.45
Total Component Value per Cwt.	**$ 14.73**	**$ 15.24**	**$ 15.51**	**$ 15.71**	**$ 16.41**
PPD, $ per Cwt.	0.06	0.15	0.26	0.41	0.88
Base Farm Price per Cwt.	**$ 14.96**	**$ 15.59**	**$ 15.86**	**$ 16.11**	**$ 16.79**
Quality, $ per Cwt.	0.04	0.12	0.20	0.25	0.38
Volume, $ per Cwt.	0.02	0.19	0.27	0.39	0.67
Market premium, $ per Cwt.	0.07	0.20	0.36	0.62	0.94
Total Premium, $ per Cwt.	**0.53**	**0.75**	**0.95**	**1.12**	**1.30**
Base Farm Price + Premiums per Cwt.	**$ 15.78**	**$ 16.48**	**$ 16.74**	**$ 17.03**	**$ 17.89**
Promotion, $ per Cwt.	0.15	0.15	0.15	0.15	0.18
Hauling, $ per Cwt.	0.29	0.36	0.42	0.50	0.86
Market fees & coop dues per Cwt.	0.05	0.05	0.09	0.11	0.13
Total Marketing Expenses per Cwt.	**$ 0.51**	**$ 0.61**	**$ 0.68**	**$ 0.75**	**$ 1.08**
Base + Premiums – Deductions per Cwt.	**$ 15.16**	**$ 15.83**	**$ 15.99**	**$ 16.27**	**$ 17.05**
Futures contract, forward contracting, $ per Cwt.	-0.86	-0.08	0.00	0.00	0.31
Total Marketing Income, $ per Cwt.	**$ -0.86**	**$ -0.08**	**$ 0.00**	**$ 0.00**	**$ 0.31**
Patronage Dividends, $ per Cwt.	**$ 0.00**	**$ 0.00**	**$ 0.02**	**$ 0.10**	**$ 0.34**
Net Price Received From All Sources, $ per Cwt.	**$ 15.05**	**$ 15.66**	**$ 15.98**	**$ 16.28**	**$ 17.11**
PPD – Hauling, $ per cwt.	**$ -0.39**	**$ -0.24**	**$ -0.14**	**$ -0.02**	**$ 0.12**
PPD – Hauling + Market Premiums, $ per cwt.	**$ -0.23**	**$ 0.01**	**$ 0.24**	**$ 0.56**	**$ 0.94**
Net Marketing Value (PPD + Total Premiums – Total Deductions), $ per cwt.	**$ -0.02**	**$ 0.31**	**$ 0.62**	**$ 0.82**	**$ 1.06**

[5]Each calculation of an average is independent of all others. Therefore, math operations on the detail will not result in the totals.

SUMMARY AND ANALYSIS OF THE FARM BUSINESS

Business Characteristics

Planning the optimal management strategies is a crucial component of operating a successful farm. Various combinations of farm resources, enterprises, business arrangements, and management techniques are used by the dairy farmers in this region. The following table shows important farm business characteristics and the number of farms with each characteristic.

BUSINESS CHARACTERISTICS
65 Large Herd Dairy Farms, 2004

Type of Farm	Number
Dairy	64
Dairy – cash crop	1

Type of Ownership	Number
Owner	64
Renter	1

Type of Business	Number
Single proprietorship	17
Partnership	16
Limited Liability Corporation	23
Subchapter S Corporation	9
Subchapter C Corporation	0

Business Record System	Number
Account Book	3
Accounting Service	3
On-Farm Computer	59
Other	0

BST Usage	Number
Used consistently	33
Used inconsistently	18
Started Use in 2004	1
Stopped Use in 2004	1
Not Used	12
Average % bst usage of those reporting	45%

Type of Barn	Number
Stanchion/Tie-Stall	0
Freestall	63
Combination	2

Milking System	Number
Pipeline	0
Herringbone Conventional	19
Herringbone Rapid Exit	10
Parallel	29
Parabone	2
Rotary	2
Other	3

Milking Frequency	Number
2x/day	13
3x/day	47
Other	5

Production Records	Number
Testing Service	51
On-Farm System	9
Other	1
None	4

Breed	Percent
Holstein	94
Jersey	3
Other	3

Income Statement

In order for an income statement to accurately measure farm income, it must include cash transactions and accrual adjustments (changes in accounts payable, accounts receivable, inventories, and prepaid expenses).

Cash paid is the actual cash outlay during the year and does not necessarily represent the cost of goods and services actually used in 2004.

Change in inventory: Increases in inventories of supplies and other purchased inputs are subtracted in computing accrual expenses because they represent purchased inputs not actually used during the year. Decreases in purchased inventories are added to expenses because they represent inputs purchased in a prior year and used this year.

CASH AND ACCRUAL FARM EXPENSES
65 Large Herd Dairy Farms, 2004

Expense Item	Cash Paid	-	Change in Inventory or Prepaid Expense		+	Change in Accounts Payable	=	Accrual Expenses
Hired Labor	$ 468,165		$ 431	<<		$ -2,096		$ 465,638
Feed								
Dairy grain & concentrate	771,502		33,846			-8,960		728,696
Dairy roughage	46,180		2,914			-836		42,430
Nondairy	260		-6			0		266
Professional nutritional services	1,506		0			-2		1,504
Machinery								
Mach. hire, rent/lease	39,902		0	<<		-394		39,508
Mach. rep. & farm veh. exp	121,635		1,364			160		120,431
Fuel, oil & grease	64,057		1,793			-266		61,998
Livestock								
Replacement livestock	23,729		0	<<		-43		23,686
Breeding	32,164		922			-31		31,211
Vet & medicine	100,354		1,182			-1,588		97,584
Milk marketing	111,526		0	<<		876		112,402
Bedding	46,276		265			-507		45,504
Milk supplies	51,824		-531			-521		51,834
Cattle lease/rent	1,426		0	<		0		1,426
Custom boarding	68,468		200	<<		-1,160		67,108
bST expense	29,736		-600			-1,096		29,240
Livestock professional fees	5,950		-38			-20		5,968
Other livestock expense	14,703		272			-674		13,757
Crops								
Fertilizer & lime	54,178		2,562			269		51,885
Seeds & plants	49,679		8,463			-915		40,301
Spray, other crop exp.	26,771		953			-278		25,540
Crop professional fees	4,875		145			-46		4,684
Real Estate								
Land/bldg./fence repair	33,827		-24			-116		33,735
Taxes	29,787		86	<<		597		30,298
Rent & lease	37,689		84	<<		-764		36,841
Other								
Insurance	22,888		570	<<		55		22,373
Utilities (farm share)	54,984		73	<<		296		55,207
Interest paid	92,379		0	<<		-140		92,239
Other professional fees	15,520		85			-126		15,309
Miscellaneous	13,975		62			1,415		15,328
Total Operating Expenses	$ 2,435,916		$ 55,073			$ -16,911		$ 2,363,932
Expansion livestock	$ 47,078		$ 0	<<		$ 0		$ 47,078
Extraordinary expense	$ 2,071		$ 0			$ 365		$ 2,436
Machinery depreciation								$ 123,892
Building depreciation								$ 93,029
Total Accrual Expenses								$ 2,630,366

Change in prepaid expenses (noted above by <<) is a net change in non-inventory expenses that have been paid in advance of their use. If 2004 funds used to prepay 2005 leases exceed the amount of 2004 leases prepaid in 2003, the amount of this excess is subtracted to exclude it from 2004 accrual lease expenses. The excess prepaid lease is charged against the future year's business operation. A decrease in prepaid lease is added to accrual expenses because it represents use of resources during this year that were paid for in past years.

Change in accounts payable: An increase in accounts payable from beginning to end of year is added when calculating accrual expenses because these expenses were incurred (resources used) in 2004 but not paid for. A decrease is subtracted because the resource was used before 2004.

Accrual expenses are the costs of inputs actually used in this year's production. They are the total of cash paid, as well as changes in inventory, prepaid expenses, and accounts payable.

CASH AND ACCRUAL FARM RECEIPTS
65 Large Herd Dairy Farms, 2004

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts
Milk sales	$2,636,487				$ 43,557		$ 2,680,044
Dairy cattle	119,100		$ 80,183		319		199,602
Dairy calves	28,809		5,404		-26		34,187
Other livestock	5,954		-1,125		62		4,891
Crops	18,705		24,749		1,067		44,521
Government receipts	52,333		0 [6]		-249		52,084
Custom machine work	6,942				-138		6,804
Gas tax refund	352				-1		351
Other	31,757				734		32,491
Less nonfarm noncash cap.			0 [7]				0
Total Receipts	$2,900,438		$ 109,211		$ 45,325		$ 3,054,974

[6] Change in advanced government receipts.
[7] Gifts or inheritances of cattle or crops included in inventory

Cash receipts include the gross value of milk checks received during the year plus all other payments received from the sale of farm products, services, and government programs. Nonfarm income is not included in calculating farm profitability.

Changes in inventory of assets produced by the business are calculated by subtracting beginning of year values from end of year excluding appreciation. Increases in livestock inventory caused by herd growth and/or quality are added, and decreases caused by herd reduction and/or quality are subtracted. Changes in inventories of crops grown are also included. An annual increase in advanced government receipts is subtracted from cash income because it represents income received in 2004 for the 2005 crop year in excess of funds earned for 2004. Likewise, a decrease is added to cash government receipts because it represents funds earned for 2004 but received in 2003.

Changes in accounts receivable are calculated by subtracting beginning year balances from end year balances. The January milk check for this December's marketings compared with the previous January's check is included as a change in accounts receivable.

Accrual receipts represent the value of all farm commodities produced and services actually generated by the farm business during the year.

Profitability Analysis

Farm operators[8] contribute labor, management, and equity capital to their businesses and the combination of these resources, and the other resources used in the business, determines profitability. Farm profitability can be measured as the return to all family resources or as the return to one or more individual resources such as labor and management.

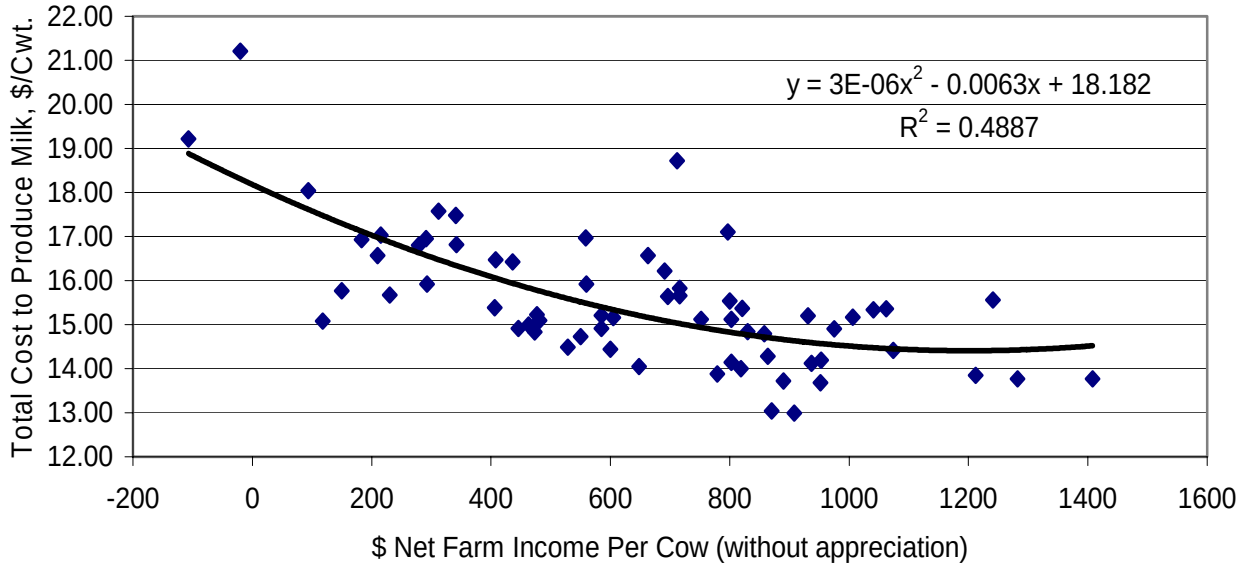
Net farm income is the return to the farm operators and other unpaid family members for their labor, management, and equity capital. It is the farm family's net annual return from working, managing, financing, and owning the farm business. This is not a measure of cash available from the year's business operation. Cash flow is evaluated later in this report.

Net farm income is computed both with and without appreciation. Appreciation represents the change in values caused by annual changes in prices of livestock, machinery, real estate inventory, and stocks and certificates (other than Farm Credit). Appreciation is a major factor contributing to changes in farm net worth and must be included for a complete profitability analysis.

NET FARM INCOME
65 Large Herd Dairy Farms, 2004

Item	Average 65 Farms Total	Average 65 Farms Per Cow	Average Top 20%[9] Farms Total	Average Top 20%[9] Farms Per Cow
Total accrual receipts	$ 3,054,974		$ 3,214,497	
Appreciation: Livestock	37,976		39,616	
Machinery	45,590		74,396	
Real Estate	84,370		91,601	
Other Stock/Certificates	1,719		8,925	
Total Including Appreciation	$ 3,224,629		$ 3,429,035	
Total accrual expenses	2,630,366		2,520,574	
Net Farm Income (with appreciation)	$ 594,263	$838	$ 908,461	$1,278
Net Farm Income (w/o appreciation)	$ 424,608	599	$ 693,923	$976

TOTAL COST TO PRODUCE MILK VS. NET FARM INCOME PER COW
65 Large Herd Dairy Farms, 2004



[8]Operators are the individuals who are integrally involved in the operation and management of the farm business. They are not limited to those who own the farm or are formal members of the partnership or corporation.

[9]Top 20% of large herd farms by rate of return on all assets without appreciation.

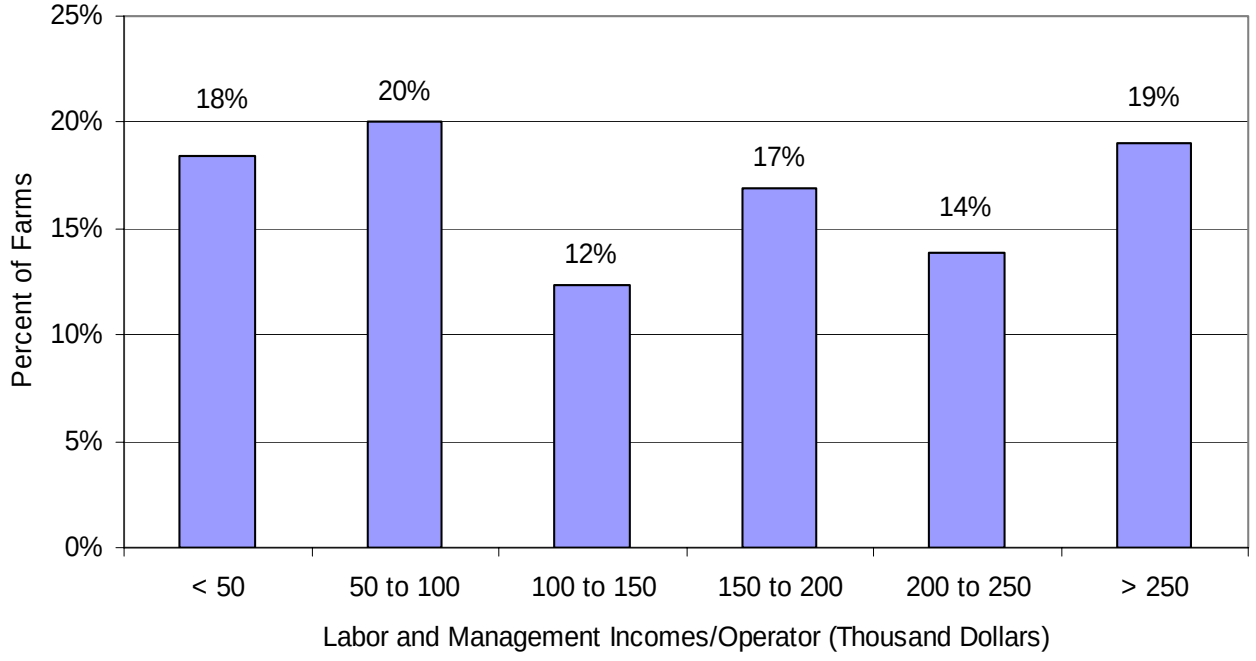
Labor and management income is the return which farm operators receive for their labor and management used in operating the farm business. Appreciation is not included as part of the return to labor and management because it results from ownership of assets rather than management of the farm business. Labor and management income is calculated by deducting a charge for unpaid family labor and the opportunity cost of using equity capital, at a real interest rate of five percent, from net farm income excluding appreciation. The interest charge of five percent reflects the long-term average rate of return above inflation that a farmer might expect to earn in comparable risk investments.

LABOR AND MANAGEMENT INCOME
65 Large Herd Dairy Farms, 2004

Item	Average 65 Farms	Average Top 20% Farms
Net farm income without appreciation	$ 424,608	$ 693,923
Family labor unpaid @ $2,200 per month	- 2,288	- 2,978
Interest on $2,536,597 ($2,316,815 for top 20%) average equity capital @ 5% real rate	- 126,830	- 115,841
Labor & Management Income per Farm (2.25 operators/farm; 2.20 operators for top 20%)	$ 295,490	$ 575,104
Labor & Management Income per Operator/Manager	$ 131,329	$ 261,411

Labor and management income per operator averaged $131,329 on these 65 farms in 2004. Returns to labor and management were less than $100,000 on 38 percent of the farms. Labor and management income per operator ranged from $100,000 to $200,000 on 29 percent of the farms while 33 percent showed labor and management incomes of $200,000 or more per operator.

DISTRIBUTION OF LABOR & MANAGEMENT INCOMES PER OPERATOR
65 Large Herd Dairy Farms, 2004



Return on equity capital measures the net return remaining for the farmer's equity or owned capital after a charge has been made for the owner-operator's labor and management. The earnings or amount of net farm income allocated to labor and management is the opportunity cost of operators' labor and management estimated by the cooperators. Return on equity capital is calculated with and without appreciation. The rate of return on equity capital is determined by dividing the amount returned by the average farm net worth or equity capital. Return on total capital is calculated by adding interest paid to the return on equity capital and then dividing by average farm assets to calculate the rate of return on total capital.

RETURN ON EQUITY CAPITAL AND RETURN ON TOTAL CAPITAL
65 Large Herd Dairy Farms, 2004

Item	Average 65 Farms	Average Top 20% Farms
Net farm income with appreciation	$ 594,263	$ 908,461
Family labor unpaid @ $2,200 per month	- 2,288	- 2,978
Value of operators' labor & management	- 94,697	- 87,692
Return on equity capital with appreciation	$ 497,278	$ 817,791
Interest paid	+ 92,239	+ 75,178
Return on total capital with appreciation	$ 589,517	$ 892,969
Return on equity capital without appreciation	$ 327,623	$ 603,253
Return on total capital without appreciation	$ 419,862	$ 678,435
Rate of return on average equity capital:		
with appreciation	19.6%	35.3 %
without appreciation	12.9%	26.0 %
Rate of return on average total capital:		
with appreciation	12.4%	21.2 %
without appreciation	8.8%	16.1 %
Net farm income from operations ratio	0.14	0.22

Farm and Family Financial Status

The first step in evaluating the financial position of the farm is to construct a balance sheet which identifies all the assets and liabilities of the business. The second step is to evaluate the relationship between assets, liabilities, and net worth and changes that occurred during the year.

Financial lease obligations are included in the balance sheet. The present value of all future payments is listed as a liability since the farmer is committed to make the payments by signing the lease. The present value is also listed as an asset, representing the future value the item has to the business. For 2004, leases were discounted by 5.75 percent.

Advanced government receipts are included as current liabilities. Government payments received in 2004 that are for participation in the 2005 program are the end year balance and payments received in 2003 for participation in the 2004 program are the beginning year balance.

Current Portion or principal due in the next year for intermediate and long term debt is included as a current liability.

2004 FARM BUSINESS & NONFARM BALANCE SHEET

65 Large Herd Dairy Farms, 2004

Farm Assets	Jan. 1	Dec. 31	Farm Liabilities & Net Worth	Jan. 1	Dec. 31
Current			Current		
Farm cash, checking & savings	$ 29,817	$ 27,365	Accounts payable	$ 102,464	$ 85,918
Accounts receivable	136,304	181,628	Operating debt	133,456	122,237
Prepaid expenses	4,266	5,902	Short Term	12,372	11,421
Feed & supplies	426,659	504,845	Advanced govt. receipts	0	0
			Current Portion:		
			Intermediate	167,911	182,549
			Long Term	61,604	69,553
Total Current	$ 597,046	$ 719,740	Total Current	$ 477,807	$ 471,678
Intermediate			Intermediate		
Dairy cows:			Structured debt		
owned	$ 816,191	$ 903,282	1-10 years	$ 830,602	$ 831,777
leased	1,703	1,197	Financial lease		
Heifers	437,512	473,564	(cattle/machinery)	8,951	5,652
Bulls/other livestock	6,877	6,173	Farm Credit stock	11,545	11,369
Mach./equipment owned	722,519	816,204	Total Intermediate	$ 851,098	$ 848,798
Mach./equipment leased	7,248	4,455			
Farm Credit stock	11,545	11,369			
Other stock/certificate	109,075	120,721			
Total Intermediate	$2,112,670	$2,336,965			
			Long Term		
Long Term			Structured debt		
Land/buildings:			>10 years	$ 882,475	$ 878,548
owned	$1,805,737	$1,911,439	Financial lease		
leased	0	15,504	(structures)	0	15,504
Total Long Term	$1,805,737	$1,926,943	Total Long Term	$ 882,475	$ 894,052
			Total Farm Liab.	$2,211,380	$ 2,214,528
Total Farm Assets	$4,515,453	$4,983,648	FARM NET WORTH	$2,304,073	$ 2,769,120

Nonfarm Assets, Liabilities & Net Worth (Average of 28 farms reporting)

Assets	Jan. 1	Dec. 31	Liabilities & Net Worth	Jan. 1	Dec. 31
Personal cash, checking & savings	$ 4,342	$ 4,762	Nonfarm Liabilities	$ 6,153	$ 5,651
Cash value life insurance	27,089	30,380			
Nonfarm real estate	130,877	147,654			
Auto (personal share)	4,982	7,357			
Stocks & bonds	46,252	68,113			
Household furnishings	9,607	9,893			
All other nonfarm assets	4,556	5,970			
Total Nonfarm Assets	$ 227,706	$ 274,129	NONFARM NET WORTH	$ 221,553	$ 268,478

Farm & Nonfarm Assets, Liabilities, and Net Worth[10]	Jan. 1	Dec. 31
Total Assets	$ 4,743,159	$ 5,257,777
Total Liabilities	2,217,533	2,220,179
TOTAL FARM & NONFARM NET WORTH	$ 2,525,626	$ 3,037,598

[10]Assumes that average nonfarm assets and liabilities for the nonreporting farms were the same as for those reporting.

Balance sheet analysis involves examination of relative asset and debt levels for the business. Percent equity is calculated by dividing end of year net worth by end of year assets and multiplying by 100. The debt to asset ratio is compiled by dividing liabilities by assets. Low debt to asset ratios reflect business solvency and the potential capacity to borrow. Debt levels per productive unit represent old standards that are still useful if used with measures of cash flow and repayment ability.

BALANCE SHEET ANALYSIS
65 Large Herd Dairy Farms, 2004

Item		Average 65 Farms		Average Top 20% Farms
Financial Ratios - Farm:				
Percent equity		56%		59%
Debt/asset ratio: total		0.44		0.41
long-term		0.46		0.36
intermediate/current		0.43		0.44
Leverage Ratio		0.80		0.71
Current Ratio		1.53		1.62
Working Capital: $248,062	as % of Total Expenses:	9%	$262,163	10%
Farm Debt Analysis:				
Accounts payable as % of total debt		4%		2%
Long-term liabilities as a % of total debt		40%		30%
Current & intermediate liabilities as a % of total debt		60%		70%
Cost of term debt (weighted average)		4.7%		4.4%

	Average 65 Farms		Average Top 20% Farms	
Farm Debt Levels:	Per Cow	Per Tillable Acre Owned	Per Cow	Per Tillable Acre Owned
Total farm debt	$ 3,046	$ 3,261	$ 2,564	$ 3,305
Long-term debt	1,230	1,317	757	976
Long-term & intermediate	2,397	2,567	1,995	2,571
Intermediate & current debt	1,816	1,945	1,808	2,329

Farm inventory balance is an accounting of the value of assets used on the balance sheet and the changes that occur from the beginning to end of year. Changes in the livestock inventory are included in the dairy analysis. Net investment indicates whether the capital stock is being expanded (positive) or depleted (negative).

FARM INVENTORY BALANCE
65 Large Herd Dairy Farms, 2004

Item	Average of 65 Farms			
	Real Estate		Machinery & Equipment	
Value beginning of year		$ 1,805,737		$ 722,519
Purchases	$ 159,587 [11]		$ 183,069	
Gift/inheritance	+ 0		+ 0	
Lost capital	- 41,850			
Sales	- 3,375		- 11,082	
Depreciation	- 93,029		- 123,892	
Net investment		= 21,333		= 48,095
Appreciation		+ 84,370		+ 45,590
Value end of year		$ 1,911,439		$ 816,204

[11] $38,906 land and $120,681 buildings and/or depreciable improvements.

Statement of Owner Equity

The Statement of Owner Equity has two purposes. It allows (1) verification that the accrual income statement and market value balance sheet are interrelated and consistent (in accountants terms, they reconcile) and (2) identification of the causes of change in equity that occurred on the farm during the year. The Statement of Owner Equity allows you to determine to what degree the change in equity was caused by (1) earnings from the business, and nonfarm income, in excess of withdrawals being retained in the business (called retained earnings), (2) outside capital being invested in the business or farm capital being removed from the business (called contributed/withdrawn capital) and (3) increases or decreases in the value (price) of assets owned by the business (called change in valuation equity).

Retained earnings is an excellent indicator of farm generated financial progress.

STATEMENT OF OWNER EQUITY (RECONCILIATION)
65 Large Herd Dairy Farms, 2004

Item	Average 65 Farms		Average Top 20% Farms	
Beginning of year farm net worth		$ 2,304,073		$1,944,255
Net farm income w/o appreciation	$ 424,608		$ 693,923	
+ Nonfarm cash income	+ 5,509		+ 17	
- Personal withdrawals & family expenditures excluding nonfarm borrowings	- 110,732		- $ 123,530	
Retained Earnings		+$ 319,385		+ $ 570,410
Nonfarm noncash transfers to farm	$ 0		$ 0	
+ Cash used in business from nonfarm capital	+ 19,129		+ 38,766	
- Note/mortgage from farm real estate sold (nonfarm)	- 308		- 0	
Contributed/Withdrawn Capital	=	+$ 18,821		+ $ 38,766
Appreciation	$ 169,655		$ 214,538	
- Lost capital	- 41,850		- 72,519	
Change in Valuation Equity		+$ 127,805		+ $ 142,019
Imbalance/Error		- 964		- 6,075
End of year farm net worth[12]		=$ 2,769,120		= $2,689,375
Change in net worth w/apprec.		$ 465,047		$ 745,120
Change in Net Worth				
Without appreciation		$ 295,392		$ 530,582
With appreciation		$ 465,047		$ 745,120

[12]May not add due to rounding.

Cash Flow Statement

Completing an annual cash flow statement is an important step in understanding the sources and uses of funds for the business. Understanding last year's cash flow is the first step toward planning and managing cash flow for the current and future years.

The annual cash flow statement is structured to show net cash provided by operating activities, investing activities, financing activities and from reserves. All cash inflows and outflows, including beginning and end balances, are included. Therefore, the sum of net cash provided from all four activities should be zero. Any imbalance is the error from incorrect accounting of cash inflows/outflows.

ANNUAL CASH FLOW STATEMENT
65 Large Herd Dairy Farms, 2004

Item		Average 65 Farms	
Cash Flow from Operating Activities			
Cash farm receipts	$ 2,900,438		
- Cash farm expenses	2,435,916		
- Extraordinary expense	2,071		
= Net cash farm income		$ 462,451	
Personal withdrawals/family expenses including nonfarm debt payments	$ 111,555		
- Nonfarm income	5,509		
- Net cash withdrawals from the farm		$ 106,046	
= Net Provided by Operating Activities			$ 356,405
Cash Flow From Investing Activities			
Sale of Assets: Machinery	$ 11,082		
+ real estate	3,375		
+ other stock/cert.	6,176		
= Total asset sales		$ 20,633	
Capital purchases: expansion livestock	$ 47,078		
+ machinery	183,069		
+ real estate	159,587		
+ other stock/cert.	16,102		
- Total invested in farm assets		$ 405,836	
= Net Provided by Investment Activities			$ -385,203
Cash Flow From Financing Activities			
Money borrowed (inter. & long term)	$ 262,436		
+ Money borrowed (short-term)	4,491		
+ Increase in operating debt	0		
+ Cash from nonfarm cap. used in business	19,129		
+ Money borrowed - nonfarm	823		
= Cash inflow from financing		$ 286,879	
Principal payments (inter. & long-term)	$ 242,909		
+ Principal payments (short-term)	5,441		
+ Decrease in operating debt	11,219		
- Cash outflow for financing		$ 259,569	
= Net Provided by Financing Activities			$ 27,310
Cash Flow From Business			
Beginning farm cash, checking & savings		$ 29,817	
- Ending farm cash, checking & savings		27,365	
= Net Provided from Reserves			$ 2,452
Imbalance (error)			$ 964

ANNUAL CASH FLOW STATEMENT

13 Top 20% Large Herd Dairy Farms, 2004

Item		Average Top 20% Farms	
Cash Flow from Operating Activities			
Cash farm receipts	$2,892,668		
- Cash farm expenses	2,229,978		
- Extraordinary expense	0		
= Net cash farm income		$ 592,690	
Personal withdrawals/family expenses including nonfarm debt payments	$ 123,530		
- Nonfarm income	17		
- Net cash withdrawals from the farm		$ 123,513	
= Net Provided by Operating Activities			$ 469,177
Cash Flow From Investing Activities			
Sale of Assets: Machinery	$ 6,730		
+ real estate	0		
+ other stock/cert.	19,368		
= Total asset sales		$ 26,098	
Capital purchases: expansion livestock	$ 111,850		
+ machinery	205,855		
+ real estate	226,240		
+ other stock/cert.	8,430		
- Total invested in farm assets		$ 552,375	
= Net Provided by Investment Activities			$ -526,277
Cash Flow From Financing Activities			
Money borrowed (inter. & long term)	$ 325,742		
+ Money borrowed (short-term)	7,766		
+ Increase in operating debt	0		
+ Cash from nonfarm cap. used in business	38,766		
+ Money borrowed - nonfarm	0		
= Cash inflow from financing		$ 372,274	
Principal payments (inter. & long-term)	$ 261,923		
+ Principal payments (short-term)	10,494		
+ Decrease in operating debt	20,861		
- Cash outflow for financing		$ 293,278	
= Net Provided by Financing Activities			$ 78,996
Cash Flow From Business			
Beginning farm cash, checking & savings		$ 25,136	
- Ending farm cash, checking & savings		40,957	
= Net Provided from Reserves			$ -15,821
Imbalance (error)			$ 6,075

Repayment Analysis

A valuable use of cash flow analysis is to compare the debt payments planned for the last year with the amount actually paid. The measures listed below provide a number of different perspectives on the repayment performance of the business. However, the critical question to many farmers and lenders is whether planned payments can be made in 2005. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 2005 debt payments shown below.

FARM DEBT PAYMENTS PLANNED

Large Herd Dairy Farms, 2003 & 2004

	Same 59 Dairy Farms			Same 13 Top 20% Farms		
	2004 Payments		Planned	2004 Payments		Planned
Debt Payments	Planned	Made	2005	Planned	Made	2005
Long-term	$ 110,920	$ 118,650	$ 119,505	$ 61,632	$ 60,910	$ 65,341
Intermediate-term	204,873	221,605	235,326	223,987	273,713	248,189
Short-term	7,846	6,176	4,268	10,231	10,542	5,778
Operating (net reduction)	10,207	30,691	12,585	8,562	34,326	8,077
Accounts payable (net reduction)	2,203	24,567	4,250	0	38,459	0
Total	$ 336,049	$ 401,689	$ 375,934	$ 304,412	$ 417,950	$ 327,385
Per cow	$ 465	$ 556		$ 428	$ 588	
Per cwt. 2004 milk	$ 2.04	$ 2.44		$ 1.89	$ 2.59	
Percent of total 2004 receipts	11%	13%		9%	13%	
Percent of 2004 milk receipts	12%	15%		11%	15%	

The cash flow coverage ratio and debt coverage ratio measure the ability of the farm business to meet its planned debt payments schedule. The ratios show the percentage of payments planned for 2004 (as of December 31, 2003) that could have been made with the amount available for debt service in 2004. Farmers who did not participate in DFBS in 2003 have their 2004 cash flow coverage ratio based on planned debt payments for 2005.

COVERAGE RATIOS

Same 59 Large Herd Dairy Farms, 2003 & 2004

Item	Average	Item	Average
Cash Flow Coverage Ratio		Debt Coverage Ratio	
Cash farm receipts	$ 2,952,632	Net farm income (w/o apprec.)	$ 438,484
- Cash farm expenses	2,478,851	+ Depreciation	220,250
+ Interest paid (cash)	93,714	+ Interest paid (accrual)	93,559
- Net personal withdrawals from farm[13]	106,250	- Net personal withdrawals from farm[13]	106,250
(A) = Amount Available for Debt Service	$ 461,245	(A') = Repayment Capacity	$ 646,043
(B) = Debt Payments Planned for 2004 (as of December 31, 2003)	$ 336,049	(B) = Debt Payments Planned for 2004 (as of December 31, 2003)	$ 336,049
(A/B) = Cash Flow Coverage Ratio for 2004	1.37	(A'/B) = Debt Coverage Ratio for 2004	1.92

Same 13 Top 20% Dairy Farms, 2003 & 2004

(A) = Amount Available for Debt Service	$ 543,991	(A') = Repayment Capacity	$ 847,096
(B) = Debt Payments Planned for 2004	304,412	(B) = Debt Payments Planned for 2004	304,412
(A/B) = Cash Flow Coverage Ratio for 2004	1.79	(A'/B) = Debt Coverage Ratio for 2004	2.78

[13]Personal withdrawals and family expenditures less nonfarm income and nonfarm money borrowed. If family withdrawals are excluded, or inaccurately included, the cash flow coverage ratio will be incorrect.

ANNUAL CASH FLOW WORKSHEET

65 Large Herd Dairy Farms, 2004

Item	Average 65 Farms Per Cow	Average 65 Farms Per Cwt.	Total
Number cows and cwt. Milk	709	161,353	
Accrual Operating Receipts			
Milk	$ 3,780	$ 16.61	$ 2,680,044
Dairy cattle	282	1.24	199,602
Dairy calves	48	0.21	34,187
Other livestock	7	0.03	4,891
Crops	63	0.28	44,521
Misc. receipts	129	0.57	91,730
Total	$ 4,309	$ 18.93	$ 3,054,974
Accrual Operating Expenses			
Hired labor	$ 657	$ 2.89	$ 465,638
Dairy grain & concentrate	1,028	4.52	728,696
Dairy roughage	60	0.26	42,430
Nondairy feed	0	0.00	266
Professional nutritional services	2	0.01	1,504
Mach. Hire/rent/lease	56	0.24	39,508
Mach. Repair & farm vehicle expense	170	0.75	120,431
Fuel, oil & grease	87	0.38	61,998
Replacement livestock	33	0.15	23,686
Breeding	44	0.19	31,211
Vet & medicine	138	0.60	97,584
Milk marketing	159	0.70	112,402
Bedding	64	0.28	45,504
Milking supplies	73	0.32	51,834
Cattle lease	2	0.01	1,426
Custom boarding	95	0.42	67,108
bST expense	41	0.18	29,240
Livestock professional fees	8	0.04	5,968
Other livestock expense	19	0.09	13,757
Fertilizer & lime	73	0.32	51,885
Seeds & plants	57	0.25	40,301
Spray/other crop expenses	36	0.16	25,540
Crop professional fees	7	0.03	4,684
Land, building, fence repair	48	0.21	33,735
Taxes	43	0.19	30,298
Real estate rent/lease	52	0.23	36,841
Insurance	32	0.14	22,373
Utilities	78	0.34	55,207
Other professional fees	22	0.09	15,309
Miscellaneous	22	0.09	15,328
Total Less Interest Paid	$ 3,204	$ 14.08	$ 2,271,693
Net Accrual Operating Income (without interest paid)	$ 1,105	$ 4.85	$ 783,281
- Change in livestock/crop inventory[14]	154	0.68	109,211
- Change in accounts receivable	64	0.28	45,325
- Change in feed/supply inventory[15]	78	0.34	55,073
+ Change in accounts payable[16]	-24	-0.10	-16,771
NET CASH FLOW	$ 785	$ 3.45	$ 556,901
- Net personal withdrawals from farm (see footnote on p. 22)	$ 148	$ 0.65	$ 105,224
Available for Farm Debt Payments & Investments	$ 637	$ 2.80	$ 451,677
- Farm debt payments	554	2.43	392,781
Available for Farm Investment	$ 83	$ 0.37	$ 58,896
- Capital purchases: cattle, machinery & improvements	$ 572	$ 2.52	$ 405,836

[14]Includes change in advance government receipts.
[15]Includes change in prepaid expenses.
[16]Excludes change in interest account payable.

ANNUAL CASH FLOW WORKSHEET
13 Top 20% Large Herd Dairy Farms, 2004

Item	Average Top 20% Farms Per Cow	Per Cwt.	Total
No. cows or cwt. milk	711	161,339	
Accrual Operating Receipts			
Milk	$ 3,824	$ 16.85	$ 2,718,906
Dairy cattle	389	1.71	276,674
Dairy calves	70	0.31	49,517
Other livestock	0	0.00	50
Crops	111	0.49	79,051
Misc. receipts	127	0.56	90,299
Total	$ 4,521	$ 19.92	$ 3,214,497
Accrual Operating Expenses			
Hired labor	$ 542	$ 2.39	$ 385,696
Dairy grain & concentrate	953	4.20	677,867
Dairy roughage	53	0.24	37,916
Nondairy feed	0	0.00	94
Professional nutritional services	2	0.01	1,522
Mach. hire/rent/lease	80	0.35	56,895
Mach. repair & farm vehicle expense	164	0.72	116,405
Fuel, oil & grease	73	0.32	51,897
Replacement livestock	58	0.25	40,942
Breeding	37	0.16	26,123
Vet & medicine	134	0.59	95,224
Milk marketing	150	0.66	106,558
Bedding	48	0.21	33,847
Milking supplies	82	0.36	58,119
Cattle lease	4	0.02	3,074
Custom boarding	96	0.42	68,200
bST expense	41	0.18	29,453
Livestock professional fees	8	0.03	5,528
Other livestock expense	13	0.06	9,561
Fertilizer & lime	70	0.31	50,045
Seeds & plants	49	0.22	35,076
Spray/other crop expenses	36	0.16	25,300
Crop professional fees	7	0.03	4,911
Land, building, fence repair	50	0.22	35,333
Taxes	35	0.16	25,045
Real estate rent/lease	62	0.27	43,801
Insurance	43	0.19	30,598
Utilities	66	0.29	47,135
Other professional fees	19	0.08	13,579
Miscellaneous	23	0.10	16,295
Total Less Interest Paid	$ 2,999	$ 13.21	$ 2,132,039
Net Accrual Operating Income (without interest paid)	$ 1,522	$ 6.71	$ 1,082,458
- Change in livestock/crop inventory[17]	340	1.50	241,815
- Change in accounts receivable	113	0.50	80,013
- Change in feed/supply inventory[18]	80	0.35	56,960
+ Change in accounts payable[19]	-51	-0.22	-36,166
NET CASH FLOW	$ 939	$ 4.14	$ 667,504
- Net personal withdrawals from farm(see footnote p.22)	$ 174	$ 0.77	$ 123,512
Available for Farm Debt Payments & Investments	$ 765	$ 3.37	$ 543,992
- Farm debt payments	588	2.59	417,950
Available for Farm Investment	$ 177	$ 0.78	$ 126,042
- Capital purchases: cattle, machinery & improvements	$ 777	$ 3.42	$ 552,375

[17]Includes change in advance government receipts.
[18]Includes change in prepaid expenses.
[19]Excludes change in interest account payable.

Cropping Analysis

The cropping program is an important part of the dairy farm business and often represents opportunities for improved productivity and profitability. A complete evaluation of what the available land resources are, how they are being used, how well crops are producing, and what it costs to produce them is important to evaluating alternative cropping and feed purchasing alternatives.

LAND RESOURCES AND CROP PRODUCTION
65 Large Herd Dairy Farms, 2004

Item	Average 65 Farms			Average Top 20% Farms		
Land	Owned	Rented	Total	Owned	Rented	Total
Tillable	679	711	1,390	575	801	1,376
Nontillable	43	14	57	32	15	47
Other nontillable	241	8	249	250	27	277
Total	963	733	1,696	857	843	1,700
Crop Yields	Farms	Acres[20]	Prod/Acre	Farms	Acres	Prod/Acre
Hay crop	63	655	3.80 tn DM	12	738	3.48 tn DM
Corn silage	60	588	18.00 tn	11	581	18.05 tn
Other forage	0	0	0 00 tn DM	0	0	0.00 tn DM
Total forage	63	1,217	4.75 tn DM	12	1,271	4.53 tn DM
Corn grain	25	300	137 bu	4	355	141 bu
Oats	3	60	55 bu	0	0	0 bu
Wheat	8	93	60 bu	0	0	0 bu
Other crops	15	147		2	70	
Tillable pasture	13	92		4	159	
Idle tillable	32	61		6	52	
Total Tillable Acres	65	1,390		13	1,376	

[20]This column represents the average acreage for the farms producing that crop. Average acreages including those farms not producing were corn grain 115, oats 3, wheat 11, tillable pasture 18 and idle 31.

Average crop acres and yields compiled for the region are for the farms reporting each crop. Yields of forage crops have been converted to tons of dry matter using dry matter coefficients reported by the farmers. Grain production has been converted to bushels of dry grain equivalent based on dry matter information provided.

The following crop/dairy ratios indicate the relationship between forage production, forage production resources, and the dairy herd.

CROP/DAIRY RATIOS
63 Large Herd Dairy Farms, 2004 [21]

Item	Average 63 Farms	Average Top 20% Farms
Total tillable acres per cow	2.00	2.05
Total forage acres per cow	1.69	1.75
Harvested forage dry matter, tons per cow	8.04	7.92

[21] Excludes farms that do not harvest forages.

Cropping Analysis (continued)

A number of cooperators have allocated crop expenses among the hay crop, corn, and other crops produced. Fertilizer and lime, seeds and plants, and spray and other crop expenses have been computed per acre and per production unit for hay and corn. Additional expense items such as fuels, labor, and machinery repairs are not included. Rotational grazing was used on two farms.

CROP RELATED ACCRUAL EXPENSES
Large Herd Dairy Farms Reporting, 2004

Item	Total Per Till. Acre	All Corn Per Acre	Corn Silage Per Ton DM	Corn Grain Per Dry Sh. Bu.	Hay Crop Per Acre	Hay Crop Per Ton DM
No. of farms reporting	63[22]	16			16	
Ave. number of acres	1,433	527			515	
Fertilizer/lime	$ 36.34	$ 42.86	$ 7.14	$ 0.29	$ 28.20	$ 8.13
Seed/plants	24.79	41.08	6.89	0.27	16.19	4.62
Spray/other crop exp.	19.08	42.57	7.04	0.30	8.82	2.51
TOTAL	$ 80.21	$ 126.51	$ 21.07	$ 0.86	$ 53.21	$ 15.26
Average Top 20% Farms:						
No. of farms reporting	12[22]					
Ave. number of acres	1,489					
Fertilizer/lime	$ 35.93					
Seeds/plants	23.45					
Spray/other crop exp.	18.41					
TOTAL	$ 77.79					

[22] Excludes farms that do not harvest forages.

Most machinery costs are associated with crop production with crop production and should be analyzed with the crop enterprise. Total machinery expenses include the major fixed costs (interest and depreciation), as well as the accrual operating costs. Although machinery costs have not been allocated to individual crops, they are shown below per total tillable acre.

ACCRUAL MACHINERY EXPENSES [23]
63 Large Herd Dairy Farms, 2004

Machinery Expense Item	Average 63 Farms Total Expenses	Average 63 Farms Per Till. Acre	Average Top 20% Farms Total Expenses	Average Top 20% Farms Per Till. Acre
Fuel, oil & grease	$ 63,177	$ 44.09	$ 53,652	$ 36.03
Mach. repairs & farm veh. exp.	123,139	85.93	121,510	81.61
Machine hire, rent & lease	38,521	26.88	50,016	33.59
Interest (5%)	39,573	27.62	35,769	24.02
Depreciation	126,743	88.45	115,817	77.78
Total	$ 391,153	$ 272.97	$ 376,764	$ 253.03

[23] Excludes farms that do not harvest forages.

Dairy Analysis

Analysis of the dairy enterprise can reveal a great deal about the strengths and weaknesses of the dairy farm business. Information on the following pages should be used in conjunction with DHI and other dairy production information. Changes in dairy herd size and market values that occur during the year are identified in the table below. The change in inventory value without appreciation is attributed to physical changes in herd size and quality. Any change in inventory is included as an accrual farm receipt when calculating all of the profitability measures on pages 14 through 16.

Dairy Analysis (continued)

DAIRY HERD INVENTORY
65 Large Herd Dairy Farms, 2004

	Dairy Cows		Heifers					
			Bred		Open		Calves	
Item	No.	Value	No.	Value	No.	Value	No.	Value
Average 65 Farms:								
Beginning year (owned)	672	$ 816,191	202	$ 235,270	191	$139,507	146	$ 62,735
+ Change w/o apprec.		62,956		12,826		4,401		5,404
+ Appreciation		24,135		5,681		5,163		2,576
End year (owned)	723	$ 903,282	213	$ 253,777	195	$149,071	157	$ 70,715
End including leased	727							
Average number	709		558 (all age groups)					
Average Top 20% Farms:								
Beginning year (owned)	634	$ 798,295	185	$ 220,329	143	$111,902	136	$ 56,604
+ Change w/o apprec.		128,071		21,520		13,747		13,937
+ Appreciation		30,838		2,371		2,568		3,809
End of year (owned)	735	$ 957,204	203	$ 244,220	160	$128,217	160	$ 74,350
End including leased	741							
Average number	711		496 (all age groups)					

Total milk sold and milk sold per cow along with components produced are extremely valuable measures of size and productivity, respectively, on the dairy farm. These measures of milk output are based on pounds of milk marketed during the year. Farm managers on DHI should compare milk sold per cow with their rolling herd average on the test date nearest December 31 to see how close the DHI estimate of milk produced is to actual milk sales.

MILK PRODUCTION
65 Large Herd Dairy Farms, 2004

Item	Average 65 Farms	Average Top 20% Farms
Total milk sold, lbs.	16,135,280	16,133,850
Milk sold per cow, lbs.	22,759	22,684
Butterfat per cow, lbs. [24]	816	827
Protein per cow, lbs. [24]	683	683
Other solids per cow, lbs. [24]	1,301	1,288
Total components per cow, lbs. [24]	2,800	2,798

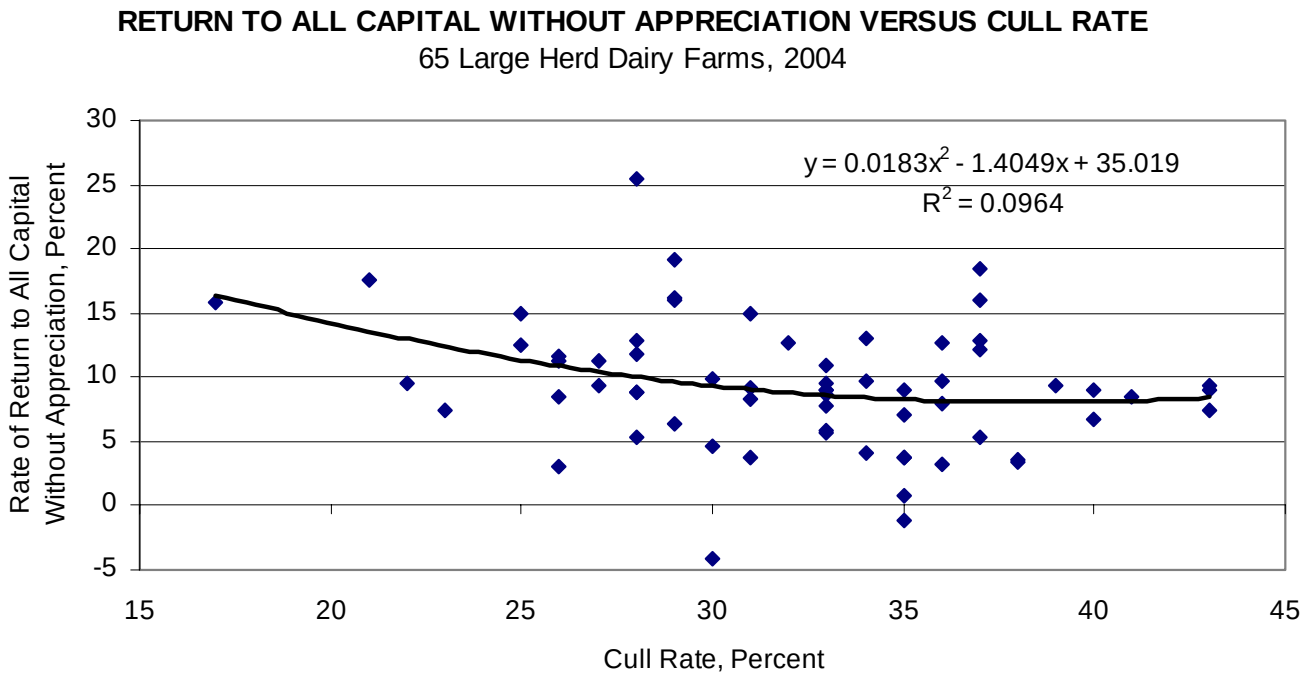
[24] This data is an average for those farms that provided the data.

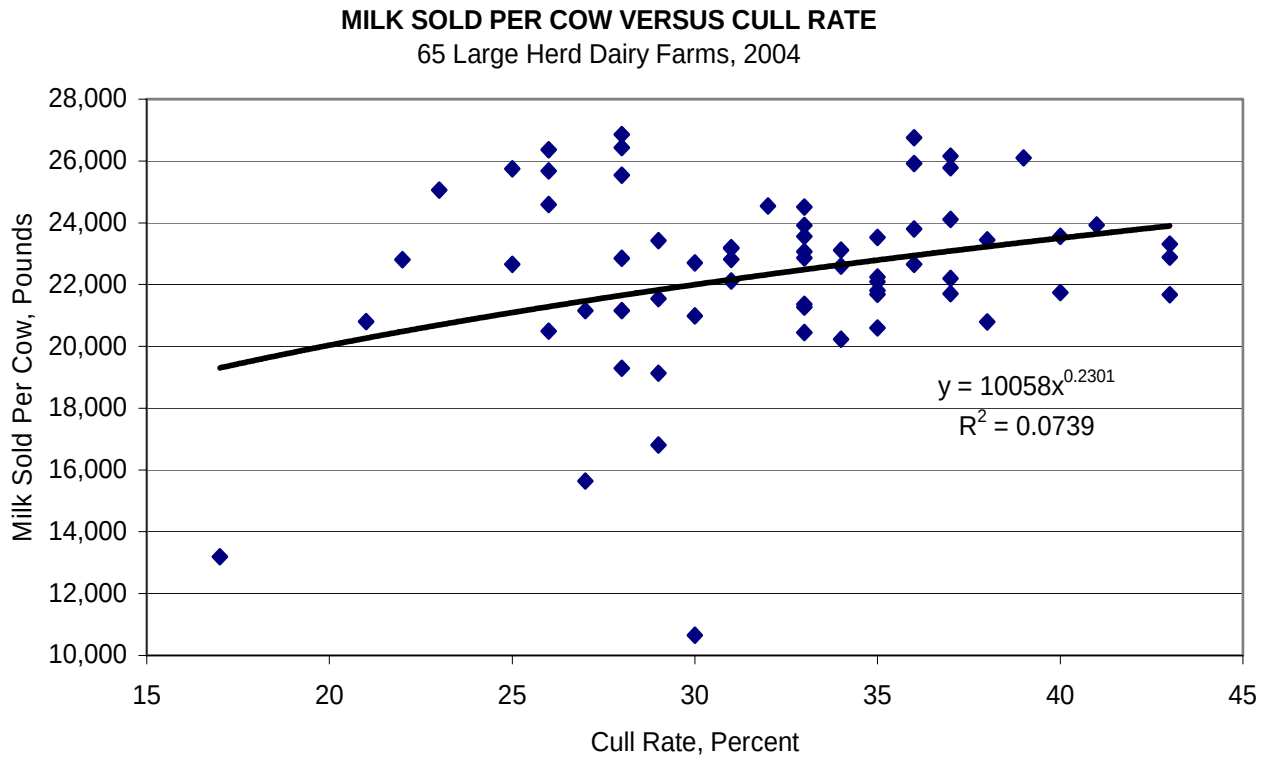
ANIMALS LEAVING THE HERD
65 Large Herd Dairy Farms, 2004

	Average 65 Farms		Average Top 20% Farms	
	Number	Percent[25]	Number	Percent[25]
Cows sold for beef	190	26.8	169	23.8
Cows sold for dairy	5	0.7	8	1.1
Cows died	42	5.9	40	5.6
Culling rate[26]	---	32.7	---	29.4

[25]Percent of average number of cows in the herd.
[26]Cows sold for beef plus cows died.

Cull rate measures the turnover of cows within the dairy herd and is comprised of both animals that die on the farm and animals that are sold as beef. Cull rates are impacted by the herd management skills of the farm owners and where the business is in terms of growth cycles and cow life cycles. The following two charts look at the relationship between percent cull rates, milk production and profit levels. While there is no significant relationship between cull rate and these two measures, it is interesting to note that the relationship is curvilinear.





The cost of producing milk has been compiled using the whole farm method and is featured in the following table. Accrual receipts from milk sales can be compared with the accrual costs of producing milk per cow and per hundredweight of milk. Using the whole farm method, operating costs of producing milk are estimated by deducting nonmilk accrual receipts from total accrual operating expenses including expansion livestock purchased. Purchased inputs cost of producing milk are the operating costs plus depreciation. Total costs of producing milk include the operating costs of producing milk plus depreciation on machinery and buildings, the value of unpaid family labor, the value of operators' labor and management, and the interest charge for using equity capital.

ACCRUAL RECEIPTS FROM DAIRY AND COST OF PRODUCING MILK

65 Large Herd Dairy Farms, 2004

	Average 65 Farms			Average Top 20% Farms		
Item	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Accrual Costs of Producing Milk						
Operating costs	$ 2,036,081	$ 2,872	$12.62	$ 1,823,476	$ 2,565	$ 11.30
Purchased inputs costs	$ 2,253,001	$ 3,178	$13.96	$ 2,024,983	$ 2,848	$ 12.55
Total Costs	$ 2,476,816	$ 3,493	$15.35	$ 2,231,495	$ 3,139	$ 13.83
Accrual Receipts From Milk	$ 2,680,044	$ 3,780	$16.61	$ 2,718,906	$ 3,824	$ 16.85
Net Milk Receipts	$ 2,567,642	$ 3,621	$15.91	$ 2,612,348	$ 3,674	$ 16.19
Net Farm Income w/o appreciation	$ 424,608	$ 599	$2.63	$ 693,923	$ 976	$ 4.30
Net Farm Income with appreciation	$ 594,263	$ 838	$3.68	$ 908,461	$ 1,278	$ 5.63

The accrual operating expenses most commonly associated with the dairy enterprise are listed in the table below. Evaluating these costs per unit of production enables an evaluation of the dairy enterprise.

DAIRY RELATED ACCRUAL EXPENSES

65 Large Herd Dairy Farms, 2004

	Average 65 Farms		Average Top 20% Farms	
Item	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purchased dairy grain & concentrate	$ 1,028	$4.52	$ 953	$ 4.20
Purchased dairy roughage	60	0.26	53	0.24
Total Purchased Dairy Feed	$ 1,088	$4.78	$ 1,006	$ 4.44
Purchased grain & concentrate as % of milk receipts	27%		25 %	
Purchased feed & crop expense	$ 1,260	$5.54	$ 1,169	$ 5.15
Purchased feed & crop expense as % of milk receipts	33%		31 %	
Breeding	$ 44	$0.19	$ 37	$ 0.16
Veterinary & medicine	138	0.60	134	0.59
Milk marketing	159	0.70	150	0.66
Bedding	64	0.28	48	0.21
Milking supplies	73	0.32	82	0.36
Cattle lease	2	0.01	4	0.02
Custom boarding	95	0.42	96	0.42
bST expense	41	0.18	41	0.18
Livestock professional fees	8	0.04	8	0.03
Other livestock expenses	19	0.09	13	0.06

Cost of Producing Milk

The cost of producing milk has been compiled below using the whole farm method. The following steps are used in the calculations.

1. The cost of expansion livestock is added to total accrual operating expenses to offset any related inventory increase included in accrual receipts.

2. Accrual milk sales are deducted form total accrual receipts to get total accrual nonmilk receipts which are used to represent total nonmilk operating costs.

3. Total accrual nonmilk receipts are subtracted from total accrual operating expenses including expansion livestock to calculate the operating costs of producing milk.

4. Machinery depreciation and building depreciation are added to operating costs to determine the purchased inputs cost of producing milk.

5. The opportunity costs of equity capital, operator's labor and operator's management and the value of unpaid family labor are added to all other costs to obtain the total costs of producing milk. This cost includes all the operating, depreciation, and imputed costs of producing milk.

COST OF PRODUCING MILK WHOLE FARM METHOD CALCULATIONS

65 Large Herd Dairy Farms, 2004

Item	Average 65 Farms			Average Top 20% Farms		
Total Accrual Operating Expenses	$	2,363,932		$	2,207,217	
Expansion Livestock, Accrual	+	47,078		+	111,850	
1. Total Accrual Operating Expenses, Including Expansion Livestock			$ 2,411,010			$ 2,319,067
Total Accrual Receipts	$	3,054,974		$	3,214,497	
Milk Sales, Accrual	-	2,680,044		-	2,718,906	
2. Total Accrual Nonmilk Receipts			- 374,930			- 495,591
3. Operating Costs of Producing Milk			$ 2,036,080			$ 1,823,476
Cwt. of Milk Sold	÷	161,353		÷	161,339	
Operating Costs/Cwt.	=	$12.62		=	$11.30	
Machinery Depreciation			+ 123,892			+ 111,241
Building Depreciation			+ 93,029			+ 90,267
4. Purchased Inputs Cost of Producing Milk			$ 2,253,001			$ 2,024,983
Cwt. of Milk Sold	÷	161,353		÷	161,339	
Purchased Inputs Cost/Cwt.	=	$13.96		=	$12.55	
Family Labor Unpaid ($2,200/month)			+ 2,288			+ 2,978
Real Interest on Equity Cap.			+ 126,830			+ 115,841
Value of Operators' Labor & Management			+ 94,697			+ 87,692
5. Total Costs of Producing Milk			$ 2,476,816			$ 2,231,495
Cwt. Milk Sold	÷	161,353		÷	161,339	
Total Costs/Cwt.	=	$15.35		=	$13.83	

Capital and Labor Efficiency Analysis

Capital efficiency factors measure how intensively the capital is being used in the farm business. Measures of labor efficiency are key indicators of management's success in generating products per unit of labor input.

CAPITAL EFFICIENCY
65 Large Herd Dairy Farms, 2004

Item	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
Average 65 Farms:				
Farm capital	$ 300,224	$ 6,699	$ 3,417	$ 6,995
Real estate		2,632		2,749
Machinery & equipment	49,002	1,093	558	
Ratios				
Asset turnover ratio	Operating Expense	Interest Expense	Depreciation Expense	
0.68	0.76	0.03	0.07	
Average Top 20% Farms:				
Farm capital	$ 290,885	$ 5,936	$ 3,067	$ 7,340
Real estate		2,101		2,598
Machinery & equipment	47,843	976	505	
Ratios				
Asset turnover ratio	Operating Expense	Interest Expense	Depreciation Expense	
0.81	0.70	0.02	0.06	

LABOR FORCE INVENTORY AND ANALYSIS
65 Large Herd Dairy Farms, 2004

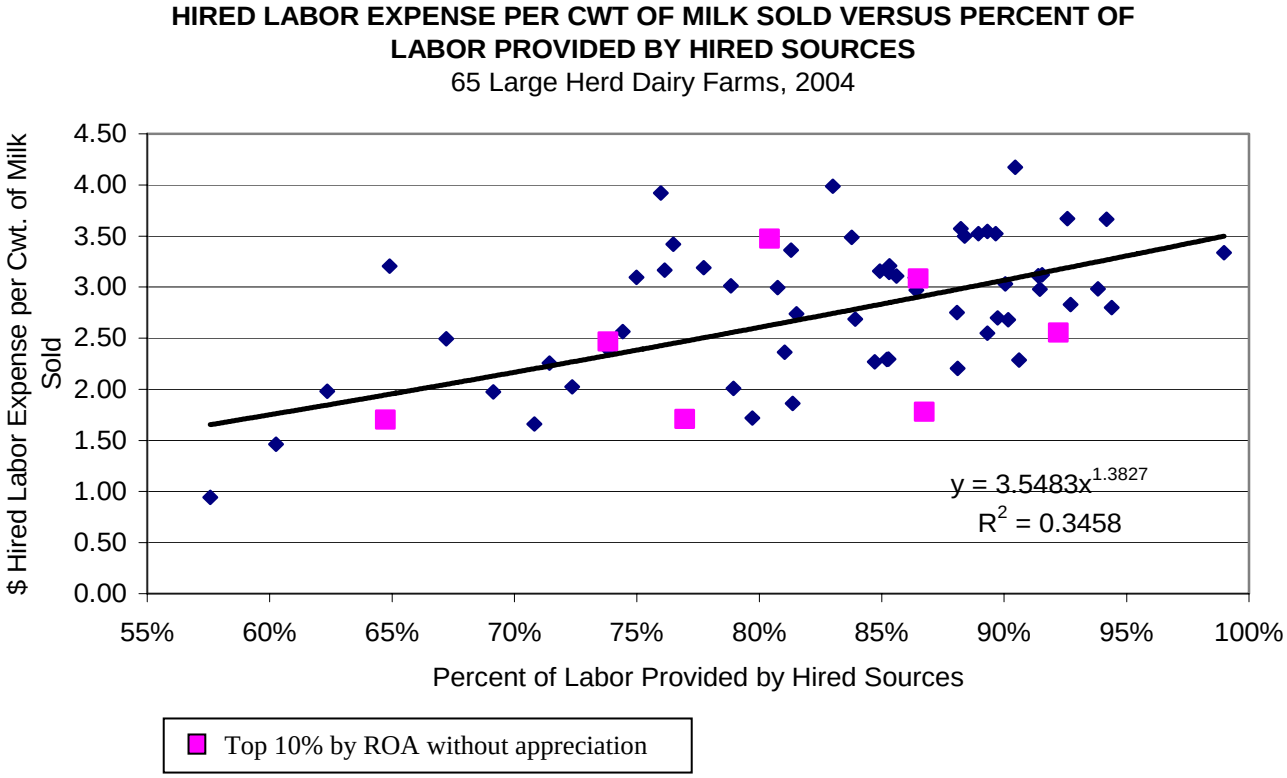
Labor Force	Months	Age	Years of Education	Value of Labor & Mgmt.
Operator number 1	13.6	49	15	$ 51,489
Operator number 2	9.3	44	14	31,696
Operator number 3	3.0	46	14	9,345
Operator number 4	0.9	41	15	2,167
Family paid	6.1			
Family unpaid	1.0			
Hired	155.9			
Total	189.8 /	12 = 15.82 Worker Equivalent		
		2.25 Operator/Manager Equivalent		
Average Top 20% Farms:				
Total	176.2 /	12 = 14.51 Worker Equivalent		
Operator's		2.20 Operator/Manager Equivalent		

Labor	Average 65 Farms		Average Top 20% Farms	
Efficiency	Total	Per Worker	Total	Per Worker
Cows, average number	709	45	711	49
Milk sold, pounds	16,135,280	1,019,929	16,133,850	1,111,912
Tillable acres	1,390	88	1,376	95

	Average 65 Farms			Average Top 20% Farms		
Labor Costs	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Value of operator(s) labor ($2,200/mo.)	$ 58,960	$ 83	$0.37	$ 57,826	$ 81	$ 0.36
Family unpaid ($2,200/mo.)	2,288	3	0.01	2,978	4	0.02
Hired	465,638	657	2.89	385,696	542	2.39
Total Labor	$ 526,886	$ 743	$3.27	$ 446,500	$ 627	$ 2.77
Machinery Cost	384,589	542	2.38	371,147	522	2.30
Total Labor & Machinery	$ 911,475	$ 1,285	$5.65	$ 817,647	$ 1,149	$ 5.07
Hired labor expense per hired worker equiv.		$ 34,492			$ 31,593	
Hired labor expense as % of milk sales		17.4%			14.2%	

Labor Cost Evaluation

Labor costs have been the first or second largest expense on large dairy farms in New York the last four years. A key factor to track on these farms is hired labor expense per cwt. milk sold. The chart below shows the relationship between hired labor expenses per cwt. and percent of labor provided by hired labor sources and can be used to see how your farms' expense compares to other farms. To calculate percent of labor provided by hired sources use the worksheet below.



Worksheet for Determining Percent of Labor From Hired Sources

Divide total hired and family paid months of labor by the total months of labor provided from all sources. These values can be found on page 14 of your farm's Dairy Farm Business Summary report.

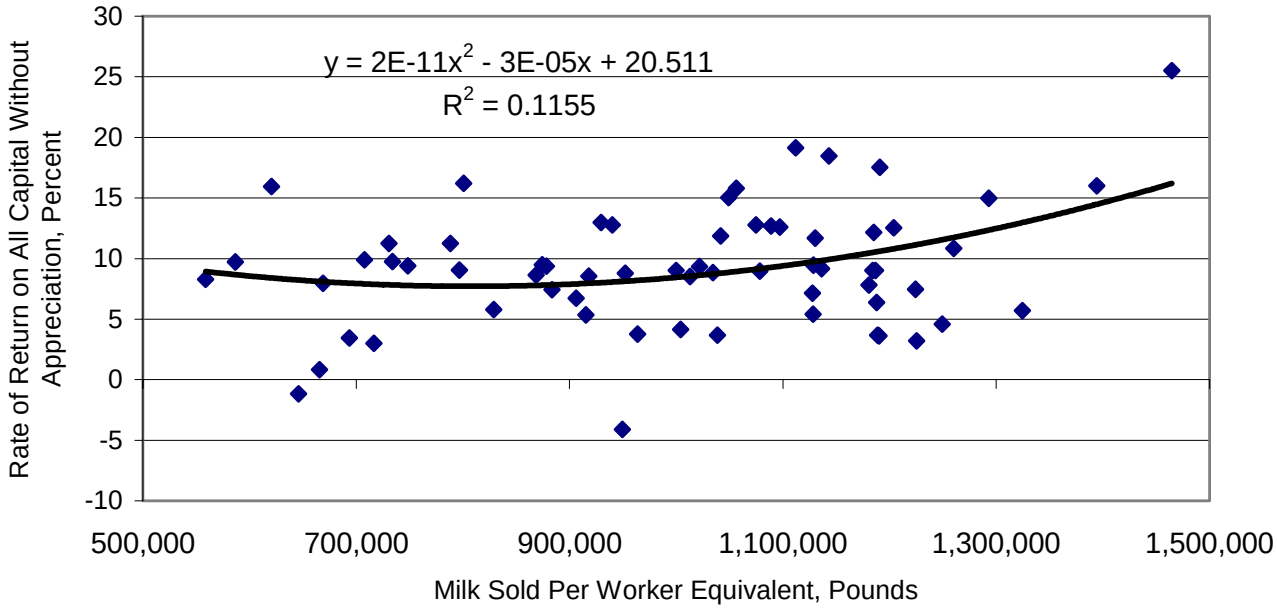
Months of hired labor		_____		
Months of family paid labor	+	_____		
Total hired labor	=		_____	
Total Labor Months	÷		_____	
Percent of labor from hired sources	x 100 =			_____%

The table below is the business chart for labor costs on a per worker and per hour basis and shows the range of costs for these farms. Hired Labor expenses are all expenses that are associated with labor, and are not just payroll. The chart below shows the relationship between labor efficiency and return on all capital without appreciation. Labor efficiency improvements are one method that is used to allow the business to reward their employees while maintaining their labor costs per cwt. of milk produced. A second area is improved cost control of day to day activities, which is one reason why some farms can generate higher than average profits while having some of the higher labor costs per cwt. of milk sold.

Hired Labor Expense Business Charts
65 Large Herd Dairy Farms, 2004

Decile	Hired Labor Expense per Cwt	Hired Labor Expense as % of Milk Sales	Hired Labor Expense per Hired Worker Equivalent	Hired Labor Expense per Hour
Average of Lowest Decile	$ 1.57	9%	$ 22,532	$ 8.16
	2.04	12	25,214	9.14
	2.34	13	27,802	10.07
	2.60	15	29,731	10.77
	2.86	17	32,030	11.61
	3.05	18	33,868	12.27
	3.13	19	35,700	12.93
	3.29	19	38,084	13.80
	3.51	21	40,777	14.77
Average of Highest Decile	3.83	23	46,420	16.82

RATE OF RETURN ON ALL CAPITAL WITHOUT APPRECIATION VERSUS MILK SOLD PER WORKER EQUIVALENT
65 Large Herd Dairy Farms, 2004



CONDENSED SUMMARY & SELECTED BUSINESS FACTORS

CONDENSED FARM BUSINESS SUMMARY FOR THREE LARGE HERD GROUPS

65 Large Herd Dairy Farms, 2004

Item	17 Farms with 300-400 Cows		20 Farms with 401-599 Cows		28 Farms with ≥600 Cows	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	Per Cow	Per Cwt.
ACCRUAL EXPENSES						
Hired labor	$540	$2.49	$594	$2.68	$700	$3.02
Dairy grain & concentrate	1,049	4.83	928	4.19	1,056	4.56
Dairy roughage	84	0.39	41	0.19	61	0.26
Nondairy feed	1	0.00	2	0.01	0	0.00
Professional nutritional services	2	0.01	2	0.01	2	0.01
Machine hire, rent & lease	57	0.26	84	0.38	46	0.20
Machine repairs & farm vehicle expense	180	0.83	179	0.81	165	0.71
Fuel, oil & grease	98	0.45	94	0.42	83	0.36
Replacement livestock	54	0.25	17	0.08	35	0.15
Breeding	46	0.21	40	0.18	45	0.19
Veterinary & medicine	117	0.54	126	0.57	145	0.63
Milk marketing	166	0.76	165	0.74	155	0.67
Bedding	57	0.26	46	0.21	71	0.31
Milking supplies	75	0.35	67	0.30	75	0.32
Cattle lease & rent	4	0.02	6	0.03	0	0.00
Custom boarding	47	0.21	74	0.33	111	0.48
bST expense	38	0.17	33	0.15	45	0.19
Livestock professional fees	10	0.05	6	0.03	9	0.04
Other livestock expense	22	0.10	26	0.12	17	0.07
Fertilizer & lime	65	0.30	78	0.35	73	0.32
Seeds & plants	39	0.18	54	0.24	61	0.26
Spray & other crop expense	37	0.17	43	0.20	33	0.14
Crop professional fees	3	0.01	6	0.03	8	0.03
Land, building & fence repair	37	0.17	49	0.22	49	0.21
Taxes & rent	96	0.44	99	0.45	93	0.40
Utilities	95	0.44	75	0.34	75	0.33
Interest paid	140	0.65	136	0.62	126	0.54
Other professional fees	19	0.09	14	0.06	25	0.11
Misc. (including insurance)	53	0.24	45	0.20	56	0.24
Total Operating Expenses	$3,228	$14.87	$3,130	$14.14	$3,420	$14.77
Expansion livestock	64	0.29	19	0.09	82	0.36
Extraordinary expense	24	0.11	0	0.00	1	0.00
Machinery depreciation	191	0.88	171	0.77	173	0.75
Building depreciation	129	0.60	121	0.55	135	0.58
Total Accrual Expenses	$3,636	$16.74	$3,442	$15.55	$3,811	$16.46
ACCRUAL RECEIPTS						
Milk sales	$3,647	$16.79	$3,748	$16.93	$3,815	$16.48
Dairy cattle	233	1.07	201	0.91	317	1.37
Dairy calves	56	0.26	46	0.21	47	0.20
Other livestock	17	0.08	11	0.05	4	0.02
Crops	99	0.46	58	0.26	57	0.25
Miscellaneous receipts	162	0.75	135	0.61	121	0.52
Total Accrual Receipts	$4,213	$19.40	$4,199	$18.97	$4,362	$18.84
PROFITABILITY ANALYSIS (Total)						
Net farm income (without appreciation)	$199,701		$375,584		$596,174	
Net farm income (with appreciation)	$276,842		492,935		$859,358	
Labor & management income	$129,644		293,240		$397,787	
Number of operators	1.87		2.42		2.35	
Labor & management income/operator	$69,328		$121,174		$169,271	
Rates of return on: Equity capital w/o apprec.	9.4%		17.8%		12.2%	
Equity capital w/ apprec.	15.0%		25.1%		19.0%	
All capital w/o apprec.	7.3%		11.4%		8.4%	
All capital w/ apprec.	10.5%		15.1%		12.0%	

SELECTED BUSINESS FACTORS FOR THREE LARGE HERD GROUPS

65 Large Herd Dairy Farms, 2004

Item	17 Farms with 300-400 Cows	20 Farms with 401-599 Cows	28 Farms with ≥ 600 Cows
Cropping Program Analysis			
Total Tillable acres	703	1,104	2,011
Tillable acres rented[27]	340	635	991
Hay crop acres[27]	351	476	920
Corn silage acres[27]	256	375	837
Hay crop, tons DM/acre	3.7	3.4	3.8
Corn silage, tons/acre	18.7	18.4	17.9
Forage DM per cow, tons	8.7	8.3	7.8
Tillable acres/cow	2.0	2.2	1.9
Fertilizer & lime expense/tillable acre	$32.15	$35.13	$39.29
Machinery cost/tillable acre	$292	$263	$279
Dairy Analysis			
Number of cows	346	496	1,082
Number of heifers	267	392	853
Milk sold, lbs.	7,514,255	10,981,480	25,050,750
Milk sold/cow, lbs.	21,699	22,162	23,161
Operating cost of prod. milk/cwt.	$12.55	$12.19	$12.77
Total cost of prod. milk/cwt.	$15.99	$15.05	$15.35
Price/cwt. milk sold	$16.79	$16.93	$16.48
Purchased dairy feed/cow	$1,133	$969	$1,117
Purchased dairy feed/cwt. milk	$5.22	$4.38	$4.82
Purchased grain & concentrate as % of milk receipts	29%	25%	28%
Purchased feed & crop expense/cwt. milk	$5.88	$5.20	$5.58
Capital Efficiency			
Farm capital/worker	$277,557	$258,452	$321,438
Farm capital/cow	$6,987	$6,310	$6,767
Real estate/cow	$2,665	$2,320	$2,727
Machinery investment/cow	$1,374	$1,117	$1,031
Asset turnover ratio	0.63	0.70	0.68
Labor Efficiency			
Worker equivalent	8.71	12.11	22.78
Operator/manager equivalent	1.87	2.42	2.35
Milk sold/worker, lbs.	862,716	906,811	1,099,682
Cows/worker	40	41	47
Labor cost/cow	$686	$725	$760
Financial Measures			
Percent equity	59%	55%	55%
Debt/asset ratio - long term	0.46	0.44	0.47
Debt/asset ratio - intermediate & current	0.39	0.46	0.43
Change in net worth with appreciation	$221,256	$385,594	$669,808
Total farm debt per cow	$2,887	$2,961	$3,105
Debt payments made per cow	$614	$501	$524
Debt payments as % of milk sales	17%	13%	14%
Amount available for debt service	$212,774	$348,953	$670,099
Debt coverage ratio for 2004	1.61	1.98	1.95

[27]Average of all farms, not only those reporting data.

INCOME AND EXPENSE PROFILES BY HERD SIZE

Use two of the following six tables to make an income and expense profile for your dairy farm business. The first two tables represent farms with 300 to 400 cows. The second two tables are of farms with 401-599 cows. The third set of tables are of farms with 600 or more cows. The figures in the quintile columns represent the average of the top 20 percent to the bottom 20 percent for each receipt and expenditure category. Each line is computed independently. The farms that comprise the top 20 percent in milk sales do not necessarily make up the top 20 percent of any other category. On each line circle the income and cost measures closest to the one for your farm. Then draw a vertical line connecting your circles on each table. The strongest profile will be a relatively straight line on the left side of the table.

RECEIPTS AND EXPENSES PER COW

17 Large Herd Dairy Farms with 300 – 400 Cows, 2004

	QUINTILE				
Item	1	2	3	4	5
Accrual Operating Receipts					
Milk	$4,331	$3,894	$3,727	$3,628	$2,949
Dairy cattle	538	267	218	176	47
Dairy calves	105	73	55	50	15
Other livestock	89	7	1	0	-3
Crops	281	150	107	31	-15
Misc. receipts	267	193	169	137	75
Total Operating Receipts	$4,825	$4,594	$4,466	$4,193	$3,334
Accrual Operating Expenses					
Hired labor	$298	$462	$546	$696	$833
Dairy grain & concentrate	736	957	1,152	1,210	1,340
Dairy roughage	0	3	19	49	391
Nondairy feed	0	0	0	0	0
Professional nutritional services	0	0	0	0	10
Mach. hire/rent/lease	0	11	40	90	177
Mach. repair & farm veh. exp.	73	129	176	241	329
Fuel, oil & grease	53	89	101	118	149
Replacement livestock	0	0	0	7	293
Breeding	11	36	47	56	91
Vet & medicine	60	92	122	141	201
Milk marketing	114	151	163	170	263
Bedding	22	39	58	71	113
Milking supplies	41	51	75	96	138
Cattle lease	0	0	0	0	19
Custom boarding	0	0	0	82	193
bST expense	0	28	45	61	72
Livestock professional fees	0	1	15	20	24
Other livestock expense	1	12	22	30	54
Fertilizer & lime	10	47	66	84	147
Seeds & plants	5	32	47	57	66
Spray/other crop expenses	2	23	41	58	78
Crop professional fees	0	0	2	4	10
Land, building, fence repair	11	24	36	47	81
Taxes	14	39	57	65	77
Real estate rent/lease	7	22	41	68	140
Insurance	17	24	36	41	55
Utilities	64	81	88	105	155
Interest	69	93	126	187	261
Other professional fess	1	7	14	18	64
Miscellaneous	4	14	18	24	45
Total Operating Expenses	$2,516	$3,202	$3,333	$3,550	$3,840
Expansion livestock	0	0	0	21	348
Extraordinary expense	0	0	0	20	115
Machinery depreciation	61	139	181	229	381
Building depreciation	37	96	141	179	217
Net Farm Income w/o Apprec.	$1,076	$803	$657	$399	$173

RECEIPTS AND EXPENSES PER CWT. OF MILK SOLD
17 Large Herd Dairy Farms With 300 – 400 Cows, 2004

	QUINTILE				
Item	1	2	3	4	5
Accrual Operating Receipts					
Milk	$16.16	$16.61	$16.88	$17.11	$17.69
Dairy cattle	2.51	1.21	0.95	0.75	0.20
Dairy calves	0.47	0.33	0.27	0.23	0.07
Other livestock	0.40	0.03	0.01	0.00	-0.01
Crops	1.49	0.78	0.43	0.14	-0.05
Misc. receipts	1.23	0.86	0.74	0.59	0.41
Total Operating Receipts	$21.35	$20.42	$19.86	$18.86	$17.55
Accrual Operating Expenses					
Hired labor	$1.58	$2.24	$2.53	$2.95	$3.49
Dairy grain & concentrate	3.82	4.59	5.18	5.35	5.60
Dairy roughage	0.00	0.02	2.09	0.23	2.08
Nondairy feed	0.00	0.00	0.00	0.00	0.01
Professional nutritional services	0.00	0.00	0.00	0.00	0.05
Mach. hire/rent/lease	0.00	0.05	0.17	0.39	1.15
Mach. repair & farm veh. exp.	0.39	0.59	0.79	1.10	1.39
Fuel, oil & grease	0.29	0.40	0.44	0.52	0.62
Replacement livestock	0.00	0.00	0.00	0.03	1.34
Breeding	0.05	0.16	0.21	0.24	0.39
Vet & medicine	0.31	0.42	0.54	0.62	0.86
Milk marketing	0.53	0.67	0.75	0.80	1.34
Bedding	0.11	0.19	0.24	0.31	0.53
Milking supplies	0.20	0.27	0.33	0.44	0.60
Cattle lease	0.00	0.00	0.00	0.00	0.09
Custom boarding	0.00	0.00	0.00	0.41	0.81
bST expense	0.00	0.13	0.21	0.26	0.31
Livestock professional fees	0.00	0.00	0.06	0.08	0.11
Other livestock expense	0.00	0.05	0.11	0.16	0.25
Fertilizer & lime	0.06	0.20	0.28	0.38	0.66
Seeds & plants	0.02	0.14	0.21	0.24	0.31
Spray/other crop expenses	0.01	0.10	0.17	0.26	0.36
Crop professional fees	0.00	0.00	0.01	0.02	0.04
Land, building, fence repair	0.06	0.10	0.17	0.21	0.38
Taxes	0.06	0.18	0.26	0.30	0.36
Real estate rent/lease	0.03	0.09	0.18	0.32	0.80
Insurance	0.08	0.12	0.16	0.19	0.24
Utilities	0.33	0.36	0.43	0.47	0.66
Interest	0.30	0.44	0.62	0.87	1.27
Other professional fees	0.01	0.03	0.08	0.08	0.29
Miscellaneous	0.02	0.06	0.08	0.11	0.25
Total Operating Expenses	$13.40	$14.80	$15.01	$15.61	$16.50
Expansion livestock	0.00	0.00	0.00	0.08	1.61
Extraordinary expense	0.00	0.00	0.00	0.08	0.92
Machinery depreciation	0.31	0.59	0.84	1.07	1.71
Building depreciation	0.18	0.45	0.63	0.84	1.01
Net Farm Income w/o Apprec.	$4.83	$3.65	$2.64	$1.84	$0.78

RECEIPTS AND EXPENSES PER COW
20 Large Herd Dairy Farms With 401 – 599 Cows, 2004

Item	QUINTILE 1	2	3	4	5
Accrual Operating Receipts					
Milk	$4,532	$3,997	$3,654	$3,522	$3,011
Dairy cattle	364	237	205	158	23
Dairy calves	77	54	43	35	21
Other livestock	58	1	0	0	-1
Crops	153	104	60	18	-53
Misc. receipts	220	159	125	110	61
Total Operating Receipts	$5,079	$4,505	$4,123	$3,849	$3,391
Accrual Operating Expenses					
Hired labor	$344	$499	$610	$708	$807
Dairy grain & concentrate	625	816	942	1,069	1,198
Dairy roughage	0	1	10	23	164
Nondairy feed	0	0	0	0	8
Professional nutritional services	0	0	0	0	8
Mach. hire/rent/lease	11	41	69	89	200
Mach. repair & farm veh. exp.	92	132	173	191	324
Fuel, oil & grease	47	71	99	116	140
Replacement livestock	0	0	0	1	84
Breeding	11	27	39	51	72
Vet & medicine	60	99	127	154	189
Milk marketing	92	128	152	175	273
Bedding	7	27	42	61	93
Milking supplies	30	45	57	77	124
Cattle lease	0	0	0	2	27
Custom boarding	0	0	0	47	316
bST expense	0	3	22	57	81
Livestock professional fees	0	0	3	10	16
Other livestock expense	3	13	20	27	70
Fertilizer & lime	32	55	67	98	144
Seeds & plants	25	36	47	64	99
Spray/other crop expenses	4	27	42	52	87
Crop professional fees	0	0	2	8	18
Land, building, fence repair	13	23	38	68	106
Taxes	10	27	35	48	73
Real estate rent/lease	6	24	49	99	120
Insurance	15	22	26	31	42
Utilities	36	57	72	89	121
Interest	82	105	120	140	233
Other professional fees	2	6	12	18	33
Miscellaneous	7	10	16	21	38
Total Operating Expenses	$2,301	$2,905	$3,168	$3,394	$3,853
Expansion livestock	0	0	0	0	95
Extraordinary expense	0	0	0	0	0
Machinery depreciation	90	120	158	194	286
Building depreciation	24	80	128	152	223
Net Farm Income w/o Apprec.	$1,137	$881	$794	$640	$327

RECEIPTS AND EXPENSES PER CWT. OF MILK SOLD
20 Large Herd Dairy Farms With 401 – 599 Cows, 2004

	QUINTILE				
Item	1	2	3	4	5
Accrual Operating Receipts					
Milk	$18.91	$17.40	$16.65	$16.20	$15.82
Dairy cattle	1.81	1.05	0.88	0.69	0.09
Dairy calves	0.43	0.25	0.18	0.15	0.10
Other livestock	0.29	0.01	0.00	0.00	-0.01
Crops	0.67	0.48	0.29	0.07	-0.24
Misc. receipts	0.93	0.74	0.57	0.48	0.32
Total Operating Receipts	$21.28	$19.77	$18.72	$18.07	$17.36
Accrual Operating Expenses					
Hired labor	$1.68	$2.15	$2.89	$3.16	$3.58
Dairy grain & concentrate	3.19	3.81	4.22	4.66	5.18
Dairy roughage	0.00	0.01	0.04	0.12	0.72
Nondairy feed	0.00	0.00	0.00	0.00	0.04
Professional nutritional services	0.00	0.00	0.00	0.00	0.04
Mach. Hire/rent/lease	0.05	0.20	0.30	0.42	0.94
Mach. Repair & farm veh. Exp.	0.45	0.60	0.75	0.90	1.43
Fuel, oil & grease	0.23	0.35	0.42	0.50	0.63
Replacement livestock	0.00	0.00	0.00	0.00	0.32
Breeding	0.05	0.11	0.19	0.23	0.33
Vet & medicine	0.30	0.43	0.60	0.69	0.82
Milk marketing	0.45	0.62	0.68	0.75	1.17
Bedding	0.04	0.11	0.19	0.28	0.46
Milking supplies	0.15	0.22	0.25	0.33	0.53
Cattle lease	0.00	0.00	0.00	0.01	0.11
Custom boarding	0.00	0.00	0.00	0.21	1.32
bST expense	0.00	0.01	0.12	0.25	0.33
Livestock professional fees	0.00	0.00	0.02	0.05	0.07
Other livestock expense	0.01	0.06	0.10	0.14	0.31
Fertilizer & lime	0.15	0.25	0.31	0.41	0.77
Seeds & plants	0.13	0.17	0.22	0.27	0.42
Spray/other crop expenses	0.02	0.13	0.19	0.22	0.41
Crop professional fees	0.00	0.00	0.01	0.04	0.08
Land, building, fence repair	0.06	0.10	0.21	0.29	0.45
Taxes	0.04	0.11	0.16	0.25	0.35
Real estate rent/lease	0.03	0.12	0.23	0.43	0.54
Insurance	0.06	0.11	0.12	0.15	0.18
Utilities	0.18	0.28	0.33	0.38	0.51
Interest	0.36	0.47	0.56	0.74	1.01
Other professional fees	0.01	0.04	0.05	0.08	0.14
Miscellaneous	0.03	0.05	0.07	0.10	0.20
Total Operating Expenses	$12.05	$13.65	$14.22	$14.60	$16.14
Expansion livestock	0.00	0.00	0.00	0.00	0.37
Extraordinary expense	0.00	0.00	0.00	0.00	0.00
Machinery depreciation	0.45	0.56	0.67	0.84	1.30
Building depreciation	0.11	0.35	0.53	0.81	1.03
Net Farm Income w/o Apprec.	$5.49	$4.28	$3.63	$2.70	$1.43

RECEIPTS AND EXPENSES PER COW
28 Large Herd Dairy Farms With 600 or More Cows, 2004

Item	QUINTILE 1	2	3	4	5
Accrual Operating Receipts					
Milk	$4,408	$3,967	$3,801	$3,658	$3,321
Dairy cattle	592	357	278	231	178
Dairy calves	100	55	41	32	21
Other livestock	24	2	0	0	-11
Crops	198	95	38	13	-38
Misc. receipts	238	153	108	86	56
Total Operating Receipts	$5,072	$4,604	$4,409	$4,229	$3,761
Accrual Operating Expenses					
Hired labor	$507	$619	$675	$777	$892
Dairy grain & concentrate	795	970	1,041	1,139	1,277
Dairy roughage	0	5	31	69	176
Nondairy feed	0	0	0	0	0
Professional nutritional services	0	0	0	2	10
Mach. hire/rent/lease	5	14	32	57	115
Mach. repair & farm veh. exp.	83	114	148	215	290
Fuel, oil & grease	54	69	75	93	140
Replacement livestock	0	0	0	16	177
Breeding	23	32	43	54	83
Vet & medicine	105	122	136	160	193
Milk marketing	94	133	141	160	275
Bedding	22	48	62	76	127
Milking supplies	27	49	62	92	132
Cattle lease	0	0	0	0	2
Custom boarding	0	4	42	97	230
bST expense	3	26	48	57	65
Livestock professional fees	0	0	2	13	24
Other livestock expense	0	4	9	26	56
Fertilizer & lime	19	43	63	88	211
Seeds & plants	13	40	46	63	104
Spray/other crop expenses	1	19	38	47	72
Crop professional fees	0	0	1	9	29
Land, building, fence repair	14	29	44	60	91
Taxes	13	27	41	51	77
Real estate rent/lease	14	26	43	69	108
Insurance	19	22	29	36	56
Utilities	42	62	73	95	116
Interest	56	102	126	140	218
Other professional fees	4	8	11	19	48
Miscellaneous	3	9	13	22	54
Total Operating Expenses	$2,891	$3,196	$3,366	$3,589	$4,058
Expansion livestock	0	0	0	27	397
Extraordinary expense	0	0	0	0	5
Machinery depreciation	92	127	176	213	275
Building depreciation	49	72	107	160	250
Net Farm Income w/o Apprec.	$1,046	$761	$541	$369	$134

RECEIPTS AND EXPENSES PER CWT. OF MILK SOLD
28 Large Herd Dairy Farms With 600 or More Cows, 2004

	QUINTILE				
Item	1	2	3	4	5
Accrual Operating Receipts					
Milk	$17.68	$17.03	$16.52	$16.05	$15.43
Dairy cattle	2.64	1.50	1.18	1.00	0.80
Dairy calves	0.45	0.24	0.17	0.14	0.09
Other livestock	0.10	0.01	0.00	0.00	-0.05
Crops	0.86	0.40	0.17	0.06	-0.16
Misc. receipts	1.04	0.64	0.47	0.37	0.25
Total Operating Receipts	$21.01	$19.85	$19.15	$18.18	$17.08
Accrual Operating Expenses					
Hired labor	$2.21	$2.71	$3.03	$3.24	$3.76
Dairy grain & concentrate	3.58	4.32	4.51	4.73	5.37
Dairy roughage	0.00	0.03	0.14	0.29	0.80
Nondairy feed	0.00	0.00	0.00	0.00	0.00
Professional nutritional services	0.00	0.00	0.00	0.01	0.05
Mach. hire/rent/lease	0.02	0.06	0.14	0.24	0.47
Mach. repair & farm veh. exp.	0.37	0.51	0.64	0.92	1.21
Fuel, oil & grease	0.25	0.29	0.33	0.40	0.58
Replacement livestock	0.00	0.00	0.00	0.07	0.80
Breeding	0.10	0.14	0.18	0.23	0.34
Vet & medicine	0.46	0.53	0.59	0.69	0.82
Milk marketing	0.43	0.57	0.62	0.70	1.12
Bedding	0.10	0.22	0.26	0.33	0.53
Milking supplies	0.12	0.21	0.28	0.38	0.58
Cattle lease	0.00	0.00	0.00	0.00	0.01
Custom boarding	0.00	0.02	0.18	0.42	1.05
bST expense	0.02	0.12	0.20	0.24	0.28
Livestock professional fees	0.00	0.00	0.01	0.05	0.10
Other livestock expense	0.00	0.02	0.04	0.11	0.23
Fertilizer & lime	0.08	0.19	0.27	0.38	0.95
Seeds & plants	0.06	0.17	0.20	0.27	0.46
Spray/other crop expenses	0.01	0.08	0.16	0.20	0.30
Crop professional fees	0.00	0.00	0.01	0.04	0.13
Land, building, fence repair	0.06	0.13	0.19	0.25	0.40
Taxes	0.06	0.11	0.17	0.22	0.33
Real estate rent/lease	0.06	0.12	0.18	0.30	0.48
Insurance	0.08	0.10	0.12	0.16	0.25
Utilities	0.19	0.27	0.31	0.41	0.49
Interest	0.24	0.42	0.54	0.63	0.97
Other professional fees	0.02	0.04	0.05	0.08	0.21
Miscellaneous	0.01	0.04	0.06	0.09	0.22
Total Operating Expenses	$12.91	$14.00	$14.75	$15.25	$16.89
Expansion livestock	0.00	0.00	0.00	0.12	1.82
Extraordinary expense	0.00	0.00	0.00	0.00	0.02
Machinery depreciation	0.39	0.57	0.73	0.92	1.22
Building depreciation	0.21	0.32	0.47	0.67	1.08
Net Farm Income w/o Apprec.	$4.41	$3.16	$2.36	$1.64	$0.59

FARM BUSINESS CHART

The Farm Business Chart is a tool which can be used in analyzing your business. Compare your business by drawing a line through or near the figure in each column which represents your current level of performance. The ten figures in each column represent the average of each 10 percent or decile of farms included in this summary. Each column of the chart is independent of the others. The farms which are in the top 10 percent for one factor would not necessarily be the same farms which make up the 10 percent for any other factor. Use this information to identify business areas where more challenging goals are needed.

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS

65 Large Herd Dairy Farms, 2004

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	Number of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(14)[28]	(12)	(12)	(12)	(11)	(11)	(14)	(14)
36.9	1,921	44,141,294	26,442	5.9	23	69	1,330,864
24.1	1,130	26,538,728	25,621	4.5	21	54	1,213,883
21.0	921	21,941,120	24,267	4.2	20	52	1,185,568
17.7	753	17,007,010	23,553	3.9	19	50	1,132,371
15.1	623	14,396,365	23,116	3.5	18	49	1,079,538
13.2	525	12,564,339	22,763	3.3	18	44	1,021,920
11.9	478	10,364,925	22,116	3.2	18	42	938,314
10.0	415	8,686,370	21,483	3.1	17	38	862,930
8.3	356	7,724,726	20,751	2.8	16	34	746,057
6.3	319	6,369,353	16,421	2.4	13	28	634,355

Cost Control

Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
(12)	(12)	(14)	(14)	(12)	(12)
$621	19%	$307	$796	$844	$4.36
807	23	417	1,096	1,054	4.79
881	24	472	1,180	1,132	5.11
981	26	519	1,245	1,203	5.30
1,032	27	566	1,292	1,242	5.46
1,074	28	593	1,365	1,281	5.66
1,138	29	627	1,453	1,331	5.85
1,177	30	682	1,518	1,412	6.09
1,230	32	740	1,586	1,509	6.34
1,341	35	864	1,720	1,604	7.14

[28] ( ) = page number of the participant's DFBS where factor is located.
CALC=Need to calculate for each farm; refer to the Glossary for definition.

Cost Control (con't)					
Hired Labor Expense			Expenses Per Cwt.		
Per Cwt.	Per Hired Worker Equiv.	As % of Milk Sales	Milk Marketing	Veterinary & Medicine	Other Livestock
(14)	(14)	(14)	(15)	(15)	(15)
$1.57	$22,532	9%	$0.39	$0.30	$0.00
2.04	25,214	12	0.54	0.38	0.01
2.34	27,802	13	0.58	0.48	0.03
2.60	29,731	15	0.63	0.53	0.04
2.86	32,030	17	0.66	0.57	0.07
3.06	33,977	18	0.70	0.61	0.10
3.15	36,023	19	0.74	0.66	0.13
3.34	38,675	19	0.78	0.72	0.16
3.53	41,257	21	1.05	0.80	0.20
3.85	48,196	23	1.40	0.88	0.34

		Cost of Producing Milk			
Machinery & Crop Expense		Operating Cost		Total Cost	
Per Tillable Acre	Per Ton Dry Matter	Per Cow	Per Cwt.	Per Cow	Per Cwt.
(CALC)	(CALC)	(12)	(12)	(12)	(12)
$228	$62	$1,961	$10.04	$2,586	$13.53
281	72	2,404	11.06	3,101	14.03
315	79	2,552	11.63	3,247	14.57
339	88	2,622	12.01	3,369	14.96
361	93	2,769	12.32	3,468	15.17
380	98	2,932	12.79	3,570	15.46
405	102	3,068	13.19	3,696	15.79
427	109	3,179	13.60	3,765	16.51
470	123	3,334	14.08	3,946	16.97
758	292	3,580	15.19	4,206	18.71

bST Expense Per Cow	bST Expense Per Cwt.	Percent Herd On bST	Culling Rate	Expense Ratios		
				Operating	Depreciation	Interest
(12)	(12)	(12)	(12)	(14)	(14)	(14)
$ 0	$0.00	0%	23%	62%	3%	1%
1	0.00	0	27	67	4	2
10	0.05	5	28	70	5	2
29	0.14	20	30	73	6	3
41	0.19	38	33	75	7	3
50	0.22	47	34	77	7	3
56	0.24	54	35	79	8	4
61	0.26	58	36	81	9	4
68	0.28	62	38	83	10	5
78	0.33	77	42	89	14	7

Income Generation

Milk Receipts Per Cwt.	Net Milk Receipts Per Cwt.	Milk Receipts Per Cow	Dairy Cattle Sales Per Cow	Dairy Calf Sales Per Cow
(12)	(12)	(12)	(12)	(12)
$18.74	$17.69	$4,575	$668	$114
17.64	16.74	4,351	423	78
17.26	16.42	4,076	344	68
17.07	16.29	3,904	300	56
16.82	16.06	3,810	245	51
16.64	15.96	3,716	230	47
16.41	15.78	3,663	215	40
16.17	15.58	3,582	188	34
15.96	15.40	3,387	146	28
15.50	14.86	2,874	19	9

Debt Management

Farm Debt Per Cow		Cost of Borrowed Capital	Planned Debt Payments	
Total	Intermediate & Long Term		Per Cow	Per Cwt.
(7)	(7)	(7)	(10)	(10)
$1,485	$1,028	3.0%	$ 9	$0.00
2,077	1,548	4.0	240	0.71
2,345	1,748	4.0	338	1.00
2,530	1,992	4.0	420	1.00
2,858	2,253	4.4	468	2.00
3,067	2,530	5.0	517	2.00
3,351	2,693	5.0	546	2.00
3,774	3,000	5.0	579	2.00
4,115	3,330	5.7	631	2.17
4,919	4,089	6.8	811	3.33

Cash Flow Analysis

Amount Available for Family Living, Debt Service & Investment		Personal Withdrawals & Family Expenditures		Cash Flow Coverage Ratio
Per Cow	Per Cwt.	Per Cow	Per Cwt.	
(16)	(16)	(CALC)	(CALC)	(10)
$1,303	$5.83	$401	$1.83	3.88
1,027	4.90	282	1.28	1.95
961	4.38	226	0.97	1.72
923	4.04	179	0.80	1.49
849	3.70	155	0.72	1.34
800	3.52	141	0.59	1.25
737	3.31	115	0.52	1.11
666	2.98	94	0.43	0.97
563	2.45	74	0.35	0.76
402	1.88	40	0.17	0.49

Capital Efficiency

Farm Capital Per Cow	Real Estate Investment Per Cow	Machinery Investment Per Cow	Total Labor Cost Per Worker Equivalent	Asset Turnover Ratio
(14)	(14)	(14)	(CALC)	(14)
$4,080	$873	$431	$23,554	1.17
5,458	1,850	712	25,445	0.83
6,074	2,064	874	27,476	0.76
6,283	2,230	1,018	29,083	0.73
6,508	2,421	1,161	30,981	0.70
6,821	2,640	1,248	32,386	0.67
7,179	2,894	1,344	34,342	0.63
7,934	3,275	1,531	36,416	0.60
8,584	3,840	1,796	39,232	0.55
9,801	4,727	2,035	43,533	0.48

Solvency					Liquidity	
		Debt to Asset Ratios				
Percent Equity	Leverage Ratio	Total	Current/ Intermediate	Long Term	Working Capital as % of Total Expenses	Current Ratio
(7)	(7)	(7)	(7)	(7)	(7)	(7)
79%	0.28	0.22	0.17	0.03	30.5%	6.76%
73	0.39	0.28	0.25	0.18	23.5	3.05
70	0.47	0.32	0.31	0.30	19.0	2.45
64	0.65	0.39	0.36	0.37	16.5	2.14
59	0.82	0.45	0.40	0.46	14.0	1.90
53	0.96	0.49	0.46	0.54	11.3	1.62
50	1.05	0.51	0.51	0.60	7.4	1.44
46	1.28	0.56	0.58	0.68	4.3	1.23
41	1.54	0.61	0.63	0.82	-1.6	0.94
28	3.42	0.73	0.82	1.00	-7.1	0.73

Labor and Mgmt. Income Per Operator	Rate Return to Equity Capital		Rate Return to All Capital	
	Without Appreciation	With Appreciation	Without Appreciation	With Appreciation
(4)	(4)	(4)	(4)	(4)
$480,375	33.1%	47.4%	19.3%	25.9%
306,567	22.9	34.2	15.1	21.9
238,658	19.6	29.8	12.6	17.1
209,393	17.4	25.9	11.1	14.3
171,288	15.4	22.6	9.5	12.9
140,625	13.3	19.3	9.0	11.7
98,367	11.0	16.1	8.4	10.6
76,104	8.7	13.8	6.7	10.0
38,304	4.1	10.6	4.4	7.8
-23,535	-2.8	0.1	1.3	2.5

Profitability, Continued				
Net Farm Income Without Appreciation		Net Farm Income From Operations Ratio	Net Income Efficiency Ratio	Net Milk Income Over Purchased Feed Costs Per Cow
Per Cow	Per Cwt.			
(12)	(12)	(4)	(CALC)	(CALC)
$1,213	$5.48	27%	23%	$3,214
977	4.53	24	16	2,877
887	4.00	20	11	2,780
813	3.64	19	9	2,697
747	3.19	16	8	2,585
641	2.69	14	7	2,509
534	2.28	13	6	2,455
425	1.91	10	5	2,363
280	1.27	7	4	2,300
90	0.40	2	3	1,897

IDENTIFY AND SET GOALS

If businesses are to be successful, they must have direction. Written goals help provide businesses with an identifiable direction over both the long and short term. Goal setting is as important on a dairy farm as it is in other businesses. Written goals are a tool which farm operators can use to ensure that the business continues to move in the proper direction. Goals should be SMART:

1. Goals should be **S**pecific.

2. Goals should be **M**easurable.

3. Goals should be **A**chievable but challenging.

4. Goals should be **R**ewarding.

5. Goals should designate a **T**ime when each goal will be achieved.

Goal setting on a dairy farm does not have to be a complex process. In many cases it provides a process for writing down and agreeing on goals that you have already given some thought to. It is also important to remember that once you write out your goals they are not cast in concrete. If a change takes place which has a major impact on the farm business, the goals should be reworked to accommodate that change. Refer to your goals as often as necessary to keep the farm business progressing.

It is important to identify both objectives (long-range) and goals (short-range) when looking at the future of your farm business.

A suggested format for writing out your goals is as follows:

a. Begin with a mission statement which describes why the business exists based on the preferences and values of the owners.

b. Identify 4-6 objectives.

c. Identify SMART goals.

Worksheet for Setting Goals

I. Mission and Objectives

_____

_____

_____

_____

_____

_____

_____

_____

Worksheet for Setting Goals (Continued)

II. Goals

What	How	When	Who is Responsible

Summarize Your Business Performance

The Farm Business Charts on pages 42-45 can be used to help identify strengths and weaknesses of your farm business. Identify three major strengths and three areas of your farm business that need improvement.

Strengths:	Needs improvement:

GLOSSARY AND LOCATION OF COMMON TERMS

Some of the following definitions include formulas for calculating the factor being described. Page references to the individual Dairy Farm Business Summary are provided in parentheses for ease of calculation for your farm.

Accounts Payable - Open accounts or bills owed to feed and supply firms, cattle dealers, veterinarians and other providers of farm services and supplies.

Accounts Receivable - Outstanding receipts from items sold or sales proceeds not yet received, such as the payment for December milk sales received in January.

Accrual Expenses - (defined on page 13).

Accrual Receipts - (defined on page 13).

Annual Cash Flow Statement - (defined on page 20).

Appreciation - (defined on page 14).

Asset Turnover Ratio - The ratio of total farm income to total farm assets, calculated by dividing total accrual operating receipts plus appreciation by average total farm assets.

Balance Sheet - A "snapshot" of the business financial position at a given point in time, usually December 31. The balance sheet equates the value of assets to liabilities plus net worth.

Capital Efficiency - The amount of capital invested per production unit. Relatively high investments per worker with low to moderate investments per cow imply efficient use of capital.

Cash From Nonfarm Capital Used in the Business - Transfers of money from nonfarm savings or investments to the farm business where it is used to pay operating expenses, make debt payments and/or capital purchases.

Cash Flow Coverage Ratio - (defined on page 22).

Cash Paid - (defined on page 11).

Cash Receipts - (defined on page 13).

Change in Accounts Payable - (defined on page 11).

Change in Accounts Receivable - (defined on page 11).

Change in Inventory - (defined on page 11).

Cost of Borrowed Capital - A weighted average of the cost of borrowed capital to the farm. Calculate by multiplying end of year principal of each loan that is borrowed by the interest rate for each loan at that time. Add up each amount that is calculated for each loan and then divide by total amount of borrowed funds. Do not include accounts payable. This information is found on pages 10 & 11 of the data entry form.

Cows per Worker Equivalent for the Dairy Enterprise - Determined by dividing the average number of milking and dry cows by the number of worker equivalents in the dairy enterprise.

Culling Rate – Culling rate is calculated by dividing the number of animals that left the herd for culling purposes and that died by the average number of milking and dry cows for the year.

Current Portion - (defined on page 16).

Dairy (farm) - A farm business where dairy farming is the primary enterprise, operating and managing this farm is a full-time occupation for one or more people and cropland is owned.

Debt Coverage Ratio – (defined on page 22).

Debt Per Cow - Total end-of-year debt divided by end-of-year number of cows.

Debt to Asset Ratios - (defined on page 18).

Deferred Taxes - (defined on page 17).

Depreciation Expense Ratio - The percentage of Total Accrual Receipts that is charged to depreciation expense. Machinery Depreciation (DFBS p. 3) plus Building Depreciation (p. 3) divided by Total Accrual Receipts (p. 3) times 100.

Dry Matter - The amount or proportion of dry material that remains after all water is removed. Commonly used to measure dry matter percent and tons of dry matter in feed.

Equity Capital - The farm operator/manager's owned capital or farm net worth.

Expansion Livestock - Purchased dairy cattle and other livestock that cause an increase in herd size from the beginning to the end of the year.

Farm Debt Payments as Percent of Milk Sales - Amount of milk income committed to debt repayment, calculated by dividing planned debt payments by total milk receipts. A reliable measure of repayment ability, see page 22.

Farm Debt Payments Per Cow - Planned or scheduled debt payments per cow represent the repayment plan scheduled at the beginning of the year divided by the average number of cows for the year. This measure of repayment ability is used in the Financial Analysis Chart.

Financial Lease - A long-term non-cancellable contract giving the leassee use of an asset in exchange for a series of lease payments. The term of a financial lease usually covers a major portion of the economic life of the asset. The lease is a substitute for purchase. The lessor retains ownership of the asset.

Hired Labor Expense per Hired Worker Equivalent - The total cost to the farm per hired worker equivalent. Divide accrual hired labor expense (DFBS p. 2) by number of hired plus family paid worker equivalents (p. 14).

Hired Labor Expense as % of Milk Sales - The percentage of the gross milk receipts that is used for labor expense. Divide accrual hired labor expense (DFBS p. 2) by accrual milk sales (p. 3).

Income Statement - A complete and accurate account of farm business receipts and expenses used to measure profitability over a period of time such as one year or one month.

Interest Expense Ratio - The percentage of Total Accrual Receipts that is used for interest expense. Total Accrual Interest (DFBS p. 3) divided by Total Accrual Receipts (p. 3) times 100.

Labor and Management Income - (defined on page 15).

Labor and Management Income Per Operator - The return to the owner/manager's labor and management per full-time operator.

Labor Efficiency - Production capacity and output per worker.

Leverage Ratio - Dollars of debt per dollar of equity, computed by dividing total liabilities by total equity.

Liquidity - Ability of business to generate cash to make debt payments or to convert assets to cash.

Machinery & Crop Expenses per Tillable Acre - A measure of the cost to produce crops on a tillable acre basis. Add total crop expenses (DFBS p. 2) and total machinery expenses (p. 11), then divide by number of tillable acres, owned & rented (p. 11).

Machinery & Crop Expense per Ton Dry Matter - A measure of the cost per ton of DM to produce a crop. It is not a measure of total costs to produce feed. Add total crop expenses (DFBS p. 2) and total machinery expenses (p. 11), then divide by total forage, production, tons DM (p. 11).

Milk Sold per Worker Equivalent for the Dairy Enterprise – Determined by dividing the total amount of milk produced in the year by the number of worker equivalents in the dairy enterprise

Net Farm Income - (defined on page 14).

Net Farm Income from Operations Ratio - The percentage of each gross dollar that is generated that is net farm income. Net Farm Income without Appreciation (DFBS p. 4) divided by Total Accrual Receipts (p. 3) times 100.

Net Farm Income without Appreciation per Cwt. - The amount of net farm income, without appreciation, per cwt., that the farm generated. Divide net farm income without appreciation (DFBS p. 4) by number of cwt. of milk sold, which is total milk sold (p. 12) divided by 100.

Net Farm Income without Appreciation per Cow - The amount of net farm income, without appreciation, per cow that the farm generated. Divide net farm income without appreciation (DFBS p. 4) by average number of cows for the year (p. 12).

Net Income Efficiency Ratio - A measure of how efficiently the business is in generating net income, taking into account the differences in number of operators, debt levels, and amount of unpaid family labor being used on a farm. Net farm income without appreciation minus unpaid family labor charge (DFBS p. 4), plus Accrual Interest Paid (p. 3), divided by number of operators (p. 4), divided by Total Accrual Receipts (p. 3) times 100.

Net Milk Income over Purchased Feed Costs per Cow – A measure of the overall performance of the feeding program for the dairy. Gross milk sales per cow minus milk marketing expenses per cow minus purchased grain and concentrates per cow.

Net Milk Receipts per Cwt. - The mail box price received by farmers before any farmer authorized assignments or deductions. Accrual Receipts from milk, per cwt. (DFBS p. 12) minus accrual milk marketing expense per cwt. (p. 12).

Net Worth - The value of assets less liabilities equal net worth. It is the equity the owner has in owned assets.

Operating Costs of Producing Milk - (defined on page 29).

Operating Expense Ratio - The percentage of Total Accrual Receipts that is used for operating expenses, excluding interest & depreciation. Total Accrual Expenses (DFBS p. 3) minus Machinery Depreciation (p. 3), minus Building Depreciation (p. 3), minus Accrual Interest Expense (p. 3), divided by Total Accrual Receipts (p. 3) times 100.

Opportunity Costs - The cost or charge made for using a resource based on its value in its most likely alternative use. The opportunity cost of a farmer's labor and management is the value he/she would receive if employed in his/her most qualified alternative position.

Other Livestock Expenses - All other dairy herd and livestock expenses not included in more specific categories. Other livestock expenses include; bedding, DHIC, milk house and parlor supplies, livestock board, registration fees and transfers.

Percent Herd on bST – Percent of maximum number of cow days per year that could be supplemented following label restrictions that were treated with bST.

Personal Withdrawals and Family Expenditures Including Nonfarm Debt Payments - All the money removed from the farm business for personal or nonfarm use including family living expenses, health and life insurance, income taxes, nonfarm debt payments, and investments.

Personal Withdrawals & Family Expenditures per Cwt. - The amount of money on a per cwt. basis that the family uses for family living and personal expenses. This is the total amount, per cwt., used by the family, including farm and nonfarm income. Personal withdrawals/family expense, including nonfarm debt payments (DFBS p. 9) divided by pounds milk sold (p. 12) divided by 100.

Personal Withdrawals & Family Expenditures per Cow - The amount of money on a per cow basis that the family used for family living and personal expenses. This is the total amount, per cow, used by the family, including farm and nonfarm income. Personal withdrawals/family expense, including nonfarm debt payments (DFBS p. 9) divided by average number of cows (p. 12).

Pounds of Milk Harvested per Hour of Milking Labor – Calculated by dividing the total pounds milk produced by the total number of labor hours used to operate the milking center for one year. The total number of labor hours is estimated by multiplying the number of hours to operate the milking center for one day, which was provided by the participating dairies, by 365. Operating the milking center includes setting up, milking, and washing down the milking center, but doesn't include time spent to bring cows to and from the milking center.

Pounds of Milk Harvested per Machine Per Year – Calculated by dividing the total pounds of milk produced for the year by the number of milking machines in the milking center.

Profitability - The return or net income the owner/manager receives for using one or more of his or her resources in the farm business. True "economic profit" is what remains after deducting all the costs including the opportunity costs of the owner/manager's labor, management, and equity capital.

Purchased Inputs Cost of Producing Milk - (defined on page 29).

Repayment Analysis - an evaluation of the business' ability to make planned debt payments.

Replacement Livestock - Dairy cattle and other livestock purchased to replace those that were culled or sold from the herd during the year.

Return on Equity Capital - (defined on page 16).

Return on Total Capital - (defined on page 16).

Solvency - The extent or ability of assets to cover or pay liabilities. Debt/asset and leverage ratios are common measure of solvency.

Total Costs of Producing Milk - (defined on page 29).

Total Cows Milked Per Hour of Milking Labor Per Day – Determined by dividing the average number of milking and dry cows by the labor hours required to operate the milking center for a one day period.

Total Labor Costs per Worker Equivalent, All Labor - The average cost per worker equivalent when considering all labor (hired, paid family, family non-paid, and operators) used on the farm and total costs for this labor. Total Labor Cost (p. 14) divided by number of worker equivalents (p. 14).

Whole Farm Method - A procedure used to calculate costs of producing milk on dairy farms without using enterprise cost accounts. All non-milk receipts are assigned a cost equal to their sale value and deducted from total farm expenses to determine the costs of producing milk.

Worker Equivalents for the Dairy Enterprise – Determined by the farmer estimating how many of hours of labor are spent in the milking center and dairy complex performing all routine tasks. Labor spent in the field or in the dairy replacement enterprise is excluded. The daily labor estimate is multiplied by 365 days and then divided by 2,760 hours to get the number of worker equivalents.

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