DAIRY FARM BUSINESS SUMMARY

May 2014 *E.B. 2014-05*

PRO-DAIRY

NEW YORK LARGE HERD FARMS, 300 COWS OR LARGER, 2013

You can't manage what you can't measure but if you measure it you can improve it!

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2013 DAIRY FARM BUSINESS SUMMARY
LARGE HERD DAIRY FARMS
300 Cows or Larger

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2013 DAIRY FARM BUSINESS SUMMARY AND ANALYSIS
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 599 cows, 600 to 899 cows, and 900 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 and Analysis Project, 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. One hundred and two 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 2012 to 2013 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 112 large herd farms that participated in the 2013 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 112 large herd farms that participated in the 2013 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 300-599 cows, 600-899 cows, and farms with 900 and more cows.

The fifth section contains the income and expense profiles for the 300-599 cow farms, 600-899 cow farms, and 900 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, Delaware, Erie, Genesee, Jefferson, Lewis, Livingston, Madison, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Otsego, Rensselaer, Saratoga, Schuyler, St. Lawrence, Tompkins, Washington, Wayne, and Wyoming counties had farms of this size participating in 2013. This report was written by Jason Karszes, Senior Extension Associate, Pro-Dairy and Wayne A. Knoblauch, Professor, Farm Management. Cathryn Dymond was in charge of data and publication preparation. Data were collected by Cornell Cooperative Extension educators across the state. We also acknowledge the cooperation of Farm Credit East Association; and Dehm Associates, for their assistance in data collection.

PROGRESS OF THE FARM BUSINESS

The 2013 business year for the New York State dairy industry showed increased earnings from 2012, continuing the trend in variation in earnings from one year to the next. Increases in milk prices, high feed costs, and variable growing conditions continued to provide challenges to the dairy industry. Milk production per cow and herd size continued to grow. With the combination of changes during the year, profits increased from 2012, resulting in strong financial performance and leading to continued improvements in the financial position of the average farm over 300 cows in New York

For both 2012 and 2013, 109 farms that averaged more than 300 cows in New York participated in the Dairy Farm Business Summary and Analysis Program (DFBS), administered by Cornell Cooperative Extension and Cornell University. The tables on the following two pages show selected factors and receipts and expenses, per cow and per hundredweight from the same 109 farms that participated in the DFBS project each of the last two years.

Milk Income. Gross milk prices increased 9.5 percent to $21.66 per hundredweight, an increase of $1.87, returning to the same level as 2011. Milk marketing expenses were unchanged at $0.86 per hundredweight, leading an increase of $1.87 in net milk priced received on farms. Milk production per cow increased 0.7 percent to 25,958 pounds per cow. Gross milk revenue per cow increased 10.3 percent from the previous year. Average herd size for the participating farms increased by 4.3 percent to 932 cows. With both milk sold per cow and herd size increasing, total milk pounds shipped per farm increased 5.0 percent. While growing conditions across were New York were quite variable, on average they were better than 2012, with hay yield increasing 19.4 percent and corn silage yield increasing from 16.8 to 18.1 tons per acre. With yields increasing and tillable land worked also increased by 3.3 percent, crop revenue per cow fell 13.1 percent to $153, in part due to lower grain prices at the end of the year. . With all factors combined, total revenue per cow increased 8.0 percent, growing by $473 per cow to $6,407.

Cost Control. Costs continued to increase on the participating farms. Purchased grain again lead the increase, increasing $0.28 per cwt. to $7.08 per cwt. Purchased forages, hired labor, fertilizer, and seed all also increased between $0.03 and $0.06 per cwt. These increases were driven by both increases in cost per unit and the quantity and quality of forages due to the challenging growing conditions over the last two years.

Worker equivalents increased 3.0 percent, a slower pace than which herd size increased, leading to an increase in cows per worker of 1.3 percent. With both cows per worker and milk sold per cow increasing, milk sold per worker equivalent increased 1.9% to 1,187,624. This increase in milk sold per worker offset the increase in the average cost per hired worker of 2.6 percent, leading to an increase of 1.1 percent in the hired labor cost per cwt.

The combination of these changes led to an increase in farm operating costs of $0.67, or 3.5 percent, to $19.55 per hundredweight.

Capital Investment. The average investment in the farm increased 5.0 percent to $10,637 per cow. Additional investments in the farm plus increasing value of land were the key factors leading to the increased investment per cow. The higher investment resulted in total depreciation (machinery and real estate) expenses increasing by $0.08 cents per cwt to $1.50 per cwt.

Increase in Earnings. Profits rose in 2013, continuing the recent trend of large changes in earnings from year to year. The 9.5 percent increase in milk price along with the 3.5 percent increase in total farm operating costs per hundredweight coupled with increases in milk production and herd size lead to higher earnings. Net farm income without appreciation rose to $857,184. Net farm income with appreciation increased to $1,087,330.

- Labor and management income per operator/manager increased 85.1 percent, from $124.553 in 2012 to $230.489 in 2013.
- Rate of return to all capital without appreciation increased to 8.13 percent, from 5.95 percent in 2012. Rate of return on equity capital without appreciation rose to 10.32 percent.
- Farm net worth increased by 10.3 percent.
- Debt to asset ratio decreased from .33 to .32, reflecting the increased asset values offsetting the 2.4 percent increase in debt per cow.

Overall, 2013 was a year of higher earnings than 2012 and while these earning didn't equal the 2011 levels, they do mark the 4th year of average to above average earnings for the average dairy farm over 300 cows in New York. While, on average, farms showed increasing earnings in 2013, the changes on individual farms varied, with some farms actually showing decreases from 2012, with changes to operating costs, milk production, and growing conditions offsetting the increase in milk prices.

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. 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. If you would like help in developing and looking at the trends in your business, contact your local extension office and become involved in a financial management education program.

PROGRESS OF THE FARM BUSINESS
Same 109 Large Herd Dairy Farms, 2012 & 2013

Selected Factors	Average of 109 Farms 2012	Average of 109 Farms 2013	Percent Change
Size of Business			
Average number of cows	894	932	4.3
Average number of heifers	767	806	5.1
Milk sold, lbs.	23,033,177	24,180,018	5.0
Worker equivalent	19.77	20.36	3.0
Total tillable acres	1,743	1,800	3.3
Rates of Production			
Milk sold per cow, lbs.	25,772	25,958	0.7
Butterfat per cow, lbs.[2]	957	984	2.8
Protein per cow, lbs.[2]	798	811	1.6
Hay DM per acre, tons	3.1	3.7	19.4
Corn silage per acre, tons	16.8	18.1	7.7
Labor Efficiency & Costs			
Cows per worker	45.2	45.8	1.3
Milk sold per worker, lbs.	1,165,057	1,187,624	1.9
Hired labor cost per cwt.	$2.83	$2.86	1.1
Hired labor cost per worker	$37,805	$38,774	2.6
Hired labor cost as % of milk sales	14.3%	13.2%	-7.6
Cost Control			
Grain & concentrate purchased as % of milk sales	34%	33%	-2.9
Grain & concentrate per cwt. milk	$6.80	$7.08	4.1
Dairy feed & crop expense per cwt. milk	$8.51	$8.92	4.8
Labor & machinery costs per cow	$1,678	$1,732	3.2
Total farm operating costs per cwt. sold	$19.23	$20.19	5.0
Interest costs per cwt. milk	$0.46	$0.47	2.2
Operating cost of producing cwt. of milk	$15.80	$16.62	5.2
Net milk income over purchased feed costs per cow	$3,124	$3,562	14.0
Capital Efficiency(average for the year)			
Farm capital per cow	$10,129	$10,637	5.0
Machinery & equipment per cow	$1,651	$1,767	7.0
Asset turnover ratio	0.61	0.63	3.3
Income Generation			
Gross milk sales per cow	$5,099	$5,623	10.3
Gross milk sales per cwt.	$19.79	$21.66	9.5
Net milk sales per cwt.	$18.92	$20.80	9.9
Dairy cattle sales per cow	$406	$398	-2.0
Dairy calf sales per cow	$46	$42	-8.7
Profitability			
Net farm income without appreciation	$589,966	$857,184	45.3
Net farm income with appreciation	$813,989	$1,087,330	33.6
Labor & mgt. income per operator/manager	$124,553	$230,489	85.1
Rate of return on equity capital w/o appreciation	7.05%	10.32%	46.4
Rate of return on all capital without appreciation	5.95%	8.13%	36.6
Financial Summary (excluding deferred taxes)			
Farm net worth, end year	$6,355,513	$7,012,506	10.3
Debt to asset ratio	0.33	0.32	-3.0
Farm debt per cow	$3,430	$3,512	2.4

[2]Average of 94 large herd dairy farms that provided this data.

RECEIPTS AND EXPENSES PER COW AND PER HUNDREDWEIGHT

Same 109 Large Herd Dairy Farms, 2012 & 2013

	2012		2013	
Item	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average number of cows	894		932	
Cwt. of milk sold		230,332		241,800
ACCRUAL OPERATING RECEIPTS				
Milk	$5,099	$19.79	$5,623	$21.66
Dairy cattle	406	1.57	398	1.53
Dairy calves	46	0.18	42	0.16
Other livestock	16	0.06	11	0.04
Crops	176	0.68	153	0.59
Miscellaneous receipts	192	0.75	180	0.69
Total Receipts	$5,934	$23.03	$6,407	$24.68
ACCRUAL OPERATING EXPENSES				
Hired labor	$728	$2.83	$742	$2.86
Dairy grain & concentrate	1,752	6.80	1,839	7.08
Dairy roughage	121	0.47	133	0.51
Nondairy feed	0	0.00	0	0.00
Professional nutritional services	1	0.00	1	0.00
Machine hire, rent & lease	99	0.38	105	0.40
Machine repair & vehicle expense	244	0.95	258	1.00
Fuel, oil & grease	215	0.83	217	0.84
Replacement livestock	13	0.05	18	0.07
Breeding	54	0.21	53	0.20
Veterinary & medicine	171	0.66	180	0.69
Milk marketing	223	0.86	223	0.86
Bedding	104	0.40	106	0.41
Milking supplies	92	0.36	96	0.37
Cattle lease	5	0.02	4	0.02
Custom boarding	99	0.38	103	0.40
bST expense	50	0.20	47	0.18
Livestock professional fees	16	0.06	20	0.08
Other livestock expense	18	0.07	20	0.08
Fertilizer & lime	143	0.55	150	0.58
Seeds & plants	110	0.43	128	0.49
Spray & other crop expense	61	0.24	57	0.22
Crop professional fees	6	0.02	9	0.04
Land, building, fence repair	92	0.36	96	0.37
Taxes	56	0.22	61	0.23
Real estate rent/lease	71	0.27	77	0.30
Insurance	43	0.17	43	0.17
Utilities	96	0.37	101	0.39
Interest paid	119	0.46	123	0.47
Other professional fees	33	0.13	32	0.12
Miscellaneous	32	0.13	32	0.12
Total Operating Expenses	$4,866	$18.88	$5,074	$19.55
Expansion livestock	42	0.16	24	0.09
Extraordinary expense	0	0.00	0	0.00
Machinery depreciation	222	0.86	237	0.91
Real estate depreciation	144	0.56	152	0.59
Total Expenses	$5,274	$20.46	$5,487	$21.14
Net Farm Income Without Appreciation	$ 660	$ 2.56	$ 920	$ 3.55

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

In 2013, 38 farms across all herd sizes filled out a supplementary data collection form in order to gain information on additional performance factors for dairy farms. 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 38 farms and only represents these 38 farms. See the Glossary beginning on page 51 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 112 farms over 300 cows that participated in the DFBS project in 2013. 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.

All twenty two farms that were in the top 20 percent in 2013 were also in the summary in 2012. The table on page 7 shows income and expenses for these farms for both 2012 and 2013. 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

38 New York Dairy Farms, 2013

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	3,551	48.7	1,230,313
↓	1,976	28.0	834,852
	1,629	23.5	717,279
	1,408	20.0	584,484
Average of Lowest Quintile	995	14.9	349,274
Overall Average	1,912	27.0	743,240

Dairy Enterprise Only

Quintile	Worker Equivalents	Cows per Worker Equivalent	Pounds Sold per Worker Equivalent
Average of Highest Quintile	11.6	185	4,852,466
↓	8.4	128	3,303,733
	6.9	106	2,812,867
	5.2	91	2,341,950
Average of Lowest Quintile	2.6	67	1,606,546
Overall Average	6.9	115	2,983,512

TOP 20 PERCENT VERSUS AVERAGE
112 Large Herd Dairy Farms, 2013

Selected Factors	Average 112 Farms	Average Top 20% Farms	Percent Difference
Size of Business			
Average number of cows	937	1,153	23.1
Average number of heifers	809	1,013	25.2
Milk sold, lbs.	24,230,047	31,091,806	28.3
Worker equivalent	20.42	22.91	12.2
Total tillable acres	1,818	2,078	14.3
Rates of Production			
Milk sold per cow, lbs.	25,866	26,967	4.3
Butterfat per cow, lbs.[3]	984	1,018	3.5
Protein per cow, lbs. [3]	811	838	3.3
Hay DM per acre, tons	3.7	3.8	2.7
Corn silage per acre, tons	18.2	19.0	4.4
Labor Efficiency & Costs			
Cows per worker	46	50	8.7
Milk sold/worker, lbs.	1,186,390	1,357,128	14.4
Hired labor cost/cwt.	$2.87	$2.51	-12.5
Hired labor cost/hired worker	$38,819	$38,387	-1.1
Hired labor cost as % of milk sales	13.3%	11.5%	-13.5
Cost Control			
Grain & concentrate purchased as % of milk sales	32%	31%	-3.1
Grain & concentrate per cwt. milk	$7.07	$6.90	-2.4
Dairy feed & crop expense per cwt. milk	$8.89	$8.56	-3.7
Labor & machinery costs/cow	$1,730	$1,533	-11.4
Total farm operating costs per cwt. sold	$19.53	$17.89	-8.4
Interest costs per cwt. milk	$0.48	$0.35	-27.1
Milk marketing costs per cwt. milk sold	$0.86	$0.78	-9.3
Operating cost of producing cwt. of milk	$16.63	$14.96	-10.0
Net milk income over purchased feed costs per cow	$3,553	$3,810	7.2
Capital Efficiency (average for the year)			
Farm capital per cow	$10,631	$10,245	-3.6
Machinery & equipment per cow	$1,760	$1,441	-18.1
Asset turnover ratio	0.62	0.68	9.7
Income Generation			
Gross milk sales per cow	$5,603	$5,879	4.9
Gross milk sales per cwt.	$21.66	$21.80	0.7
Net milk sales per cwt.	$20.81	$21.02	1.0
Dairy cattle sales per cow	$395	$392	-0.8
Dairy calf sales per cow	$42	$44	4.8
Profitability			
Net farm income without appreciation	$857,104	$1,717,285	100.4
Net farm income with appreciation	$1,083,263	$1,991,876	83.9
Labor & management income per operator/manager	$232,005	$542,555	133.9
Rate of return on equity capital without appreciation	10.3%	21.0%	103.9
Rate of return on all capital without appreciation	8.1%	16.2%	100.0
Financial Summary (excluding deferred taxes)			
Farm net worth, end of year	$7,035,122	$9,308,807	32.3
Debt to asset ratio	0.32	0.26	-18.8
Farm debt per cow	$3,538	$2,726	-23.0

[3]Average of large herd dairy farms that provided this data.

RECEIPTS AND EXPENSES PER COW AND PER HUNDREDWEIGHT

Same 22 Top 20% Large Herd Dairy Farms, 2012 & 2013

	2012		2013	
Item	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	1,093		1,153	
Cwt. of Milk Sold		290,074		310,918
Accrual Operating Receipts				
Milk	$5,271	$19.86	$5,879	$21.80
Dairy cattle	374	1.41	392	1.46
Dairy calves	52	0.20	44	0.16
Other livestock	-2	-0.01	0	0.00
Crops	142	0.53	206	0.76
Miscellaneous receipts	145	0.55	159	0.59
Total	$5,982	$22.54	$6,681	$24.77
Accrual Operating Expenses				
Hired labor	$695	$2.62	$677	$2.51
Dairy grain & concentrate	1,736	6.54	1,860	6.90
Dairy roughage	158	0.59	132	0.49
Nondairy feed	0	0.00	0	0.00
Professional nutritional services	0	0.00	1	0.00
Machine hire, rent & lease	105	0.40	105	0.39
Machine repair & vehicle expense	205	0.77	211	0.78
Fuel, oil & grease	197	0.74	198	0.73
Replacement livestock	5	0.02	7	0.02
Breeding	43	0.16	46	0.17
Veterinary & medicine	166	0.63	171	0.63
Milk marketing	208	0.78	209	0.78
Bedding	107	0.40	103	0.38
Milking supplies	85	0.32	94	0.35
Cattle lease	9	0.03	11	0.04
Custom boarding	95	0.36	113	0.42
bST expense	53	0.20	51	0.19
Livestock professional fees	14	0.05	12	0.05
Other livestock expense	12	0.04	16	0.06
Fertilizer & lime	123	0.46	136	0.51
Seeds & plants	108	0.41	127	0.47
Spray & other crop expense	48	0.18	48	0.18
Crop professional fees	3	0.01	5	0.02
Land, building & fence repair	89	0.33	97	0.36
Taxes	49	0.19	51	0.19
Real estate rent/lease	55	0.21	62	0.23
Insurance	34	0.13	34	0.13
Utilities	95	0.36	104	0.38
Interest paid	96	0.36	94	0.35
Other professional fees	29	0.11	24	0.09
Miscellaneous	23	0.09	27	0.10
Total Operating Expenses	$4,643	$17.50	$4,825	$17.89
Expansion livestock	10	0.04	10	0.04
Extraordinary Expense	1	0.00	0	0.00
Machinery depreciation	185	0.70	200	0.74
Real Estate depreciation	141	0.53	156	0.58
Total Expenses	$4,980	$18.77	$5,191	$19.25
Net Farm Income without appreciation	$1,003	$ 3.78	$1,489	$ 5.52

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
38 New York Dairy Farms, 2013

Animals Entering Herd	Average
Number calving in 2013 for first time	305
Animals purchased, %[4]	0.5
Animals raised by farm, %[5]	99.5
Current Heifer Inventory	
Raised on dairy, %	86.0
Raised by a custom grower, %	14.0

[4]Animals purchased are animals purchased from a different farm and were not the farm's genetics.
[5]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, 305 animals calved for the first time in 2013. The breakdown on the source of these animals was 0.5 percent purchased and 99.5 percent raised on the farm. Of the current heifer inventory, 86.0 percent were raised on the dairy and 14.0 percent were 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 component 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, 101 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 line item in this section is the expense associated with utilizing forward contracting or hedging programs to market milk, such as commissions or broker fees. The fifth area is income 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[6] MILK INCOME AND MARKETING REPORT
101 Large Herd Dairy Farms, 2013

	Pounds	Percent	Price/Pound	Total	$/Cwt of Milk
BASE FARM PRICE					
Butterfat	928,461	3.77%	$1.67	$1,546,607	$ 6.28
Protein	763,641	3.10%	$3.31	$2,524,478	$10.25
Solids	1,420,406	5.77%	$0.40	$571,607	$ 2.32
Total Component Contribution					$ 18.86
PPD	24,622,815			$351,775	$ 1.43
Base Farm Price					$ 20.28
Premiums					
Quality				$75,811	$ 0.31
Volume				$69,462	$ 0.28
Market Premiums				$151,489	$ 0.62
Total Premiums					$ 1.21
BASE FARM PRICE + PREMIUM					$ 21.49
Deductions					
Promo				$36,843	$ 0.15
Hauling + Stop Charges.				$160,726	$ 0.65
Market Fees & Coop Dues				$15,764	$ 0.06
Total Deductions					$ 0.87
BASE FARM PRICE + PREMIUMS – DEDUCTIONS					$ 20.62
Marketing Programs					
Futures Contracts, Forward Contracting, Etc.				$-7,124	$ -0.03
Total Marketing Income					$ -0.03
Patronage Dividends				$53,488	$ 0.22
NET PRICE RECEIVED ON FARM, ALL SOURCES					**$ 20.81**
PPD - Hauling, per cwt., $ per cwt.					$ 0.78
PPD - Hauling + Market Premiums, per cwt., $ per cwt.					$ 1.39
Net Marketing Value (PPD + Total Premiums – Total Deductions), $ per cwt.					$ 1.77

[6]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[7]
(Each Category Sorted Independently)
101 Large Herd Dairy Farms, 2013

	Lowest Quintile	←		→	Highest Quintile
Butterfat, %	3.61	3.73	3.78	3.85	4.03
Protein, %	2.99	3.07	3.11	3.15	3.22
Other Solids, %	5.71	5.74	5.76	5.78	5.84
Butterfat, $ per Cwt.	6.02	6.21	6.30	6.41	6.69
Protein, $ per Cwt.	9.88	10.14	10.27	10.39	10.67
Other solids, $ per Cwt.	2.28	2.31	2.32	2.33	2.35
Total Component Value per Cwt.	**$ 18.36**	**$ 18.66**	**$ 18.85**	**$ 19.05**	**$ 19.64**
PPD, $ per Cwt.	1.14	1.27	1.37	1.50	188
Base Farm Price per Cwt.	**$ 19.62**	**$ 20.03**	**$ 20.31**	**$ 20.57**	**$ 21.20**
Quality, $ per Cwt.	0.11	0.21	0.29	0.40	0.58
Volume, $ per Cwt.	0.00	0.04	0.26	0.43	0.62
Market premium, $ per Cwt.	0.02	0.30	0.57	0.89	1.17
Total Premium, $ per Cwt.	**0.66**	**0.99**	**1.17**	**1.40**	**1.65**
Base Farm Price + Premiums per Cwt.	**$ 20.48**	**$21.07**	**$ 21.51**	**$ 21.93**	**$ 22.59**
Promotion, $ per Cwt.	0.15	0.15	0.15	0.15	0.15
Hauling, $ per Cwt.	0.30	0.46	0.60	0.78	1.19
Market fees & coop dues per Cwt.	0.00	0.03	0.06	0.10	0.13
Total Marketing Expenses per Cwt.	**$ 0.48**	**$ 0.67**	**$ 0.82**	**$1.01**	**$ 1.40**
Base + Premiums – Deductions per Cwt.	**$ 19.78**	**$ 20.31**	**$ 20.68**	**$ 20.93**	**$ 21.50**
Futures contract, forward contracting, $ per Cwt.	-0.14	0.00	0.00	0.00	0.01
Total Marketing Income, $ per Cwt.	**$-0.14**	**$0.00**	**$ 0.00**	**$ 0.00**	**$ 0.01**
Patronage Dividends, $ per Cwt.	**$ 0.00**	**$ 0.00**	**$ 0.00**	**$ 0.17**	**$ 1.06**
Net Price Received From All Sources, $ per Cwt.	**$ 20.00**	**$ 20.54**	**$ 20.86**	**$ 21.15**	**$ 21.74**
PPD – Hauling, $ per cwt.	**$ 0.41**	**$ 0.65**	**$ 0.78**	**$ 0.89**	**$ 1.13**
PPD – Hauling + Market Premiums, $ per cwt.	**$ 0.71**	**$ 1.06**	**$ 1.39**	**$ 1.66**	**$ 1.98**
Net Marketing Value (PPD + Total Premiums – Total Deductions), $ per cwt.	**$ 1.17**	**$ 1.56**	**$ 1.76**	**$ 1.90**	**$ 2.27**

[7]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
112 Large Herd Dairy Farms, 2013

Type of Farm	Number
Dairy	106
Dairy – cash crop	6

Type of Ownership	Number
Owner	110
Renter	2

Type of Business	Number
Single proprietorship	10
Partnership	17
Limited Liability Corporation	72
Subchapter S Corporation	12
Subchapter C Corporation	1

Business Record System	Number
Account Book	2
Accounting Service	7
On-Farm Computer	101
Other	0

BST Usage (reporting this is optional)	Number
Used consistently	7
Used inconsistently	0
Started Use in 2013	0
Stopped Use in 2013	0
Not Used	5
Average % bst usage of those reporting	14%

Type of Barn	Number
Stanchion/Tie-Stall	0
Freestall	106
Combination	6

Milking System	Number
Pipeline	0
Herringbone Conventional	30
Herringbone Rapid Exit	13
Parallel	54
Parabone	3
Rotary	5
Other	7

Milking Frequency	Number
2x/day	18
3x/day	85
Other	9

Production Records	Number
Testing Service	84
On-Farm System	22
Other	1
None	5

Breed	Percent
Holstein	93
Jersey	2
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 2013.

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
112 Large Herd Dairy Farms, 2013

Expense Item	Cash Paid	-	Change in Inventory or Prepaid Expense	+	Change in Accounts Payable	=	Accrual Expenses
Hired Labor	$ 695,590		$ 1,039		$ 986		$ 695,537
Feed							
Dairy grain & concentrate	1,752,258		34,932		-3,708		1,713,617
Dairy roughage	113,342		-10,567		-3,106		120,804
Nondairy	5		0		0		5
Professional nutritional services	1,034		0		3		1,037
Machinery							
Machinery hire, rent/lease	99,592		206		-1,103		98,283
Mach. repair & farm vehicle exp.	241,070		1,835		1,358		240,594
Fuel, oil & grease	203,867		137		-24		203,706
Livestock							
Replacement livestock	16,174		-29		466		16,669
Breeding	49,943		415		199		49,727
Vet & medicine	168,447		909		-30		167,507
Milk marketing	208,396		0		-810		207,586
Bedding	100,019		898		353		99,473
Milk supplies	91,151		557		-170		90,424
Cattle lease/rent	4,063		0		0		4,063
Custom boarding	93,563		520		111		93,153
bST expense	43,875		446		211		43,640
Livestock professional fees	18,724		306		10		18,429
Other livestock expense	17,863		-276		638		18,778
Crops							
Fertilizer & lime	144,350		1,982		-3,497		138,871
Seeds & plants	128,860		8,890		-448		119,522
Spray, other crop exp.	56,124		1,969		-865		53,290
Crop professional fees	8,176		104		242		8,314
Real Estate							
Land/bldg./fence repair	89,794		1,077		237		88,954
Taxes	56,194		-14		490		56,698
Rent & lease	73,029		88		-674		72,267
Other							
Insurance	39,893		-81		123		40,097
Utilities (farm share)	96,157		89		-114		95,954
Interest paid	115,800		0		14		115,814
Other professional fees	29,979		506		-243		29,230
Miscellaneous	29,950		-45		-424		29,570
Total Operating Expenses	$4,787,281		$45,894		$-9,776		$4,731,611
Expansion livestock	23,398		0		-1,595		21,803
Extraordinary expense	0		0		0		0
Machinery depreciation							221,507
Building depreciation							141,688
Total Accrual Expenses							$5,116,609

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 2013 funds used to prepay 2013 leases exceed the amount of 2013 leases prepaid in 2012, the amount of this excess is subtracted to exclude it from 2013 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 2013 but not paid for. A decrease is subtracted because the resource was used before 2013.

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
112 Large Herd Dairy Farms, 2013

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts
Milk sales	$5,174,339				$74,732		$5,249,070
Dairy cattle	285,263		84,151		780		370,193
Dairy calves	33,115		6,304		-4		39,414
Other livestock	14,863		-5,449		885		10,299
Crops	78,057		60,011		1,375		139,444
Government receipts	50,654		0[8]		-149		50,505
Custom machine work	21,540				575		22,115
Gas tax refund	896				0		896
Other	93,238				-1,461		91,777
Less nonfarm noncash cap.			0[9]				0
Total Receipts	$5,751,964		$145,016		$76,733		$5,973,713

[8] Change in advanced government receipts.
[9] 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 2013 for the 2013 crop year in excess of funds earned for 2013. Likewise, a decrease is added to cash government receipts because it represents funds earned for 2013 but received in 2012.

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[10] 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.

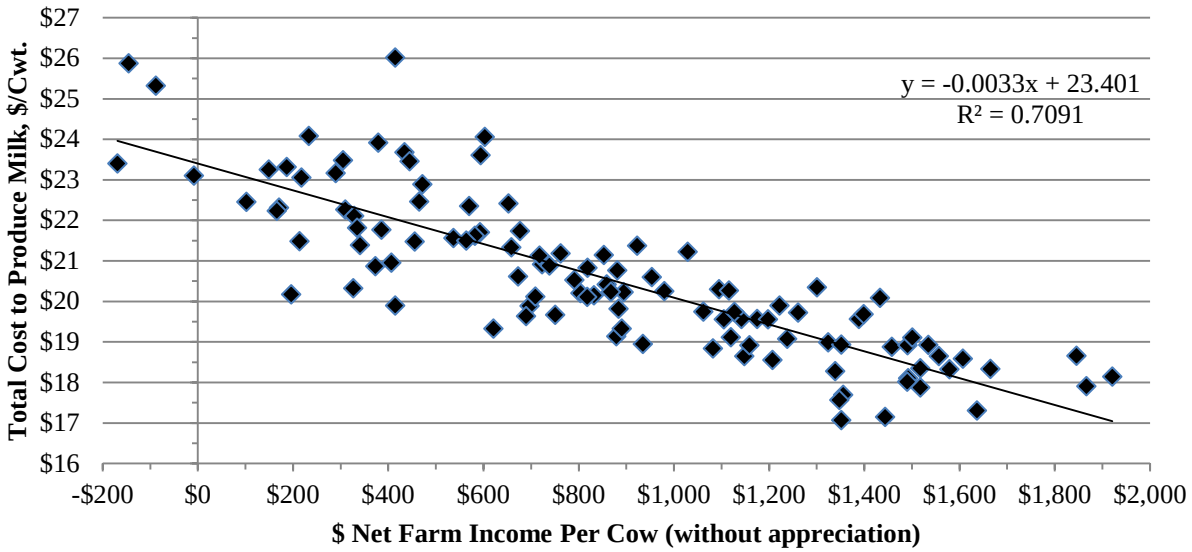
Net farm income is the return to the farm operators and other unpaid family members for their labor, management, and equity capital. It is the farm family's net annual return from working, managing, financing, and owning the farm business. This is not a measure of cash available from the year's business 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
112 Large Herd Dairy Farms, 2013

Item	Average 112 farms Total	Average 112 farms Per Cow	Average Top 20%[11] Farms Total	Average Top 20%[11] Farms Per Cow
Total accrual receipts	$ 5,973,713		$ 7,702,702	
Appreciation: Livestock	11,561		37,043	
Machinery	65,343		89,321	
Real Estate	139,145		146,571	
Other Stock/Certificates	10,110		1,656	
Total Including Appreciation	$ 6,199,872		$ 7,977,294	
Total accrual expenses	5,116,609		5,985,417	
Net Farm Income (with appreciation)	$ 1,083,263	$1,156	$ 1,991,876	$1,728
Net Farm Income (without appreciation)	$ 857,104	$915	$ 1,717,285	$1,489

TOTAL COST TO PRODUCE MILK VS. NET FARM INCOME PER COW
112 Large Herd Dairy Farms, 2013



[10]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.

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

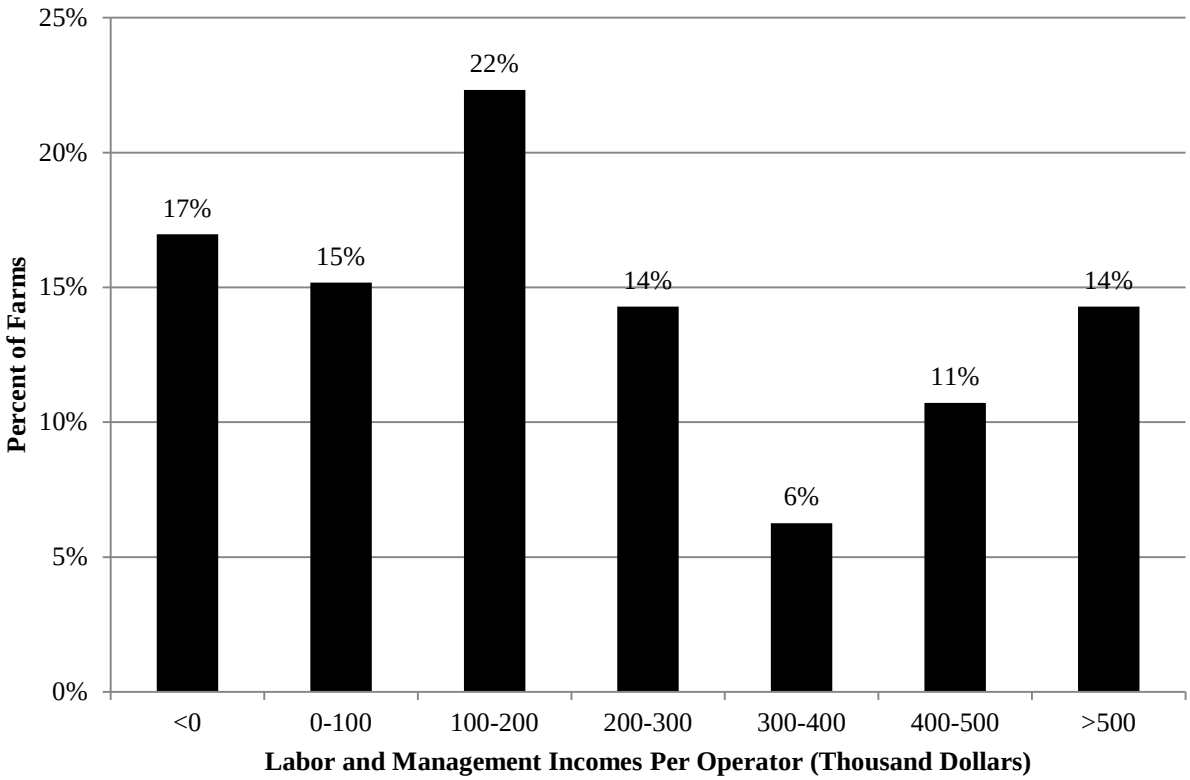
Labor and management income is the return which farm operators receive for their labor and management used in operating the farm business. Appreciation is not included as part of the return to labor and management because it results from ownership of assets rather than management of the farm business. 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
112 Large Herd Dairy Farms, 2013

Item	Average 112 farms	Average Top 20% Farms
Net farm income without appreciation	$ 857,104	$ 1,717,285
Family labor unpaid @ $2,600 per month	- 1,409	- 851
Interest on $6,720,054 ($8,611,581 for top 20%) average equity capital @ 5% real rate	- 336,003	- 430,579
Labor & Management Income per Farm (2.24 operators/farm; 2.37 operators for top 20%)	$ 519,692	$ 1,285,855
Labor & Management Income per Operator/Manager	$ 232,005	$ 542,555

Labor and management income per operator averaged $232,005 on these 112 farms in 2013. Returns to labor and management were less than $200,000 on 54 percent of the farms, with 17% of the farms showing a negative return to labor & management. Labor and management income per operator ranged from $200,000 to $500,000 on 35 percent of the farms while 14 percent showed labor and management incomes per operator greater than $500,000.

DISTRIBUTION OF LABOR & MANAGEMENT INCOMES PER OPERATOR
112 Large Herd Dairy Farms, 2013



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
112 Large Herd Dairy Farms, 2013

Item	Average 112 farms	Average Top 20% Farms
Net farm income with appreciation	$ 1,083,263	$ 1,991,876
Family labor unpaid @ $2,600 per month	- 1,409	- 851
Value of operators' labor & management	- 164,378	- 181,148
Return on equity capital with appreciation	$ 917,475	$ 1,809,878
Interest paid	+ 115,814	+ 108,328
Return on total capital with appreciation	$ 1,033,289	$ 1,918,206
Return on equity capital without appreciation	$ 691,316	$ 1,535,287
Return on total capital without appreciation	$ 807,130	$ 1,643,614
Rate of return on average equity capital:		
with appreciation	13.7%	21.0%
without appreciation	10.3%	17.8%
Rate of return on average total capital:		
with appreciation	10.4%	16.2%
without appreciation	8.1%	13.9%
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 2013, leases were discounted by 7 percent.

Advanced government receipts are included as current liabilities. Government payments received in 2013 that are for participation in the 2013 program are the end year balance and payments received in 2012 for participation in the 2013 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.

2013 FARM BUSINESS & NONFARM MARKET VALUE BALANCE SHEET

112 Large Herd Dairy Farms, 2013

Farm Assets	Jan. 1	Dec. 31	Farm Liabilities & Net Worth	Jan. 1	Dec. 31
Current			Current		
Farm cash, checking & savings	$ 66,733	$ 101,386	Accounts payable	$ 119,079	$ 107,707
Accounts receivable	506,549	583,282	Operating debt	249,956	300,357
Prepaid expenses	9,093	11,826	Short Term	4,989	5,786
Feed & supplies	1,135,381	1,238,552	Advanced govt. receipts	0	0
			Current Portion:		
			Intermediate	265,010	284,082
			Long Term	89,622	94,703
Total Current	$ 1,717,755	$ 1,935,046	Total Current	$ 728,655	$ 792,635
Intermediate			Intermediate		
Dairy cows:			Structured debt		
owned	$ 1,285,193	$ 1,345,802	1-10 years	$ 1,353,478	$ 1,297,718
leased	3,067	2,077	Financial lease		
Heifers	748,344	789,586	(cattle/machinery)	5,357	8,090
Bulls/other livestock	20,502	15,217	Farm Credit stock	1,281	1,545
Mach./equipment owned	1,563,820	1,724,377	Total Intermediate	$1,360,116	$ 1,307,353
Mach./equipment leased	2,290	6,013			
Farm Credit stock	1,281	1,545			
Other stock/certificate	269,577	322,318			
Total Intermediate	$ 3,894,073	$ 4,206,935			
			Long Term		
Long Term			Structured debt		
Land/buildings:			>10 years	$ 1,223,446	$ 1,235,286
owned	$ 3,929,832	$ 4,228,326	Financial lease		
leased	3,122	2,536	(structures)	3,122	2,536
Total Long Term	$ 3,932,954	$ 4,230,862	Total Long Term	$ 1,226,568	$ 1,237,822
			Total Farm Liab.	$ 3,315,339	$3,337,810
Total Farm Assets	$ 9,544,782	$10,372,843	FARM NET WORTH	$6,229,444	$7,035,033

Nonfarm Assets, Liabilities & Net Worth (Average of 36 farms reporting)

Assets	Jan. 1	Dec. 31	Liabilities & Net Worth	Jan. 1	Dec. 31
Personal cash, checking & savings	$ 5,993	$ 6,005	Nonfarm Liabilities	$ 3,651	$ 3,418
Cash value life insurance	88,412	85,557			
Nonfarm real estate	154,167	154,167			
Auto (personal share)	5,678	4,869			
Stocks & bonds	140,694	378,629			
Household furnishings	2,500	2,500			
All other nonfarm assets	100,428	210,569			
Total Nonfarm Assets	$497,871	$842,296	NONFARM NET WORTH	$ 494,220	$ 838,878

Farm & Nonfarm Assets, Liabilities, and Net Worth[12]	Jan. 1	Dec. 31
Total Assets	$10,042,653	$11,215,139
Total Liabilities	3,318,990	3,341,228
TOTAL FARM & NONFARM NET WORTH	$6,723,663	$7,873,911

[12]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
112 Large Herd Dairy Farms, 2013

Item		Average 112 farms		Average Top 20% Farms
Financial Ratios - Farm:				
Percent equity		68%		74%
Debt/asset ratio: total		0.32		0.26
long-term		0.29		0.22
intermediate/current		0.34		0.28
Leverage Ratio		0.47		0.34
Current Ratio		2.44		3.51
Working Capital: $1,142,500	as % of Total Expenses:	22%	$2,016,789	34%
Farm Debt Analysis:				
Accounts payable as % of total debt		3%		2%
Long-term liabilities as a % of total debt		37%		33%
Current & intermediate liabilities as a % of total debt		63%		67%
Cost of term debt (weighted average)		3.68%		3.36%

	Average 112 farms		Average Top 20% Farms	
Farm Debt Levels:	Per Cow	Per Tillable Acre Owned	Per Cow	Per Tillable Acre Owned
Total farm debt	$ 3,538	$3,467	$ 2,726	$ 2,596
Long-term debt	1,312	1,286	903	860
Long-term & intermediate	2,698	2,644	2,040	1,943
Intermediate & current debt	2,226	2,181	1,823	1,736

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
112 Large Herd Dairy Farms, 2013

Item	Average of 112 farms			
		Real Estate		Machinery & Equipment
Value beginning of year		$ 3,929,832		$ 1,563,820
Purchases	$ 459,341 [13]		$ 338,439	
Gift/inheritance	+ 0		+ 0	
Lost capital	- 153,136			
Sales	- 5,168		- 21,717	
Depreciation	- 141,688		- 221,507	
Net investment		= 159,349		= 95,215
Appreciation		+ 139,145		+ 65,343
Value end of year		$ 4,228,326		$ 1,724,377

[13] $131,786 land and $327,554 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)
112 Large Herd Dairy Farms, 2013

Item	Average 112 farms		Average Top 20% Farms	
Beginning of year farm net worth		$ 6,404,986		$7,914,354
Net farm income without appreciation	$857,104		$ 1,717,285	
+ Nonfarm cash income	+ 3,700		+ 1,324	
- Personal withdrawals & family expenditures excluding nonfarm borrowings	- 383,540		- $ 462,149	
Retained Earnings		+$ 477,263		+ $1,256,460
Nonfarm noncash transfers to farm	$ 0		$ 0	
+ Cash used in business from nonfarm capital	+ 82,068		+ 76,768	
- Note/mortgage from farm real estate sold (nonfarm)	- 0		- 0	
Contributed/Withdrawn Capital	=	+$ 82,068		+ $ 76,768
Appreciation	$ 226,159		$ 274,591	
- Lost capital	- 153,136		- 217,412	
Change in Valuation Equity		+$ 73,023		+ $ 57,180
Imbalance/Error		- 2,218		- -4,044
End of year farm net worth[14]		=$ 7,035,122		= $9,308,807
Change in net worth with appreciation		$ 630,136		$1,394,453
Change in Net Worth				
Without appreciation		$ 403,977		$1,119,861
With appreciation		$ 630,136		$1,394,453

[14]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
112 Large Herd Dairy Farms, 2013

Item		Average 112 farms	
Cash Flow from Operating Activities			
Cash farm receipts	$ 5,751,964		
- Cash farm expenses	4,787,281		
- Extraordinary expense	0		
= Net cash farm income		$ 964,682	
Personal withdrawals/family expenses including nonfarm debt payments	$ 383,981		
- Nonfarm income	3,700		
- Net cash withdrawals from the farm		$ 380,282	
= Net Provided by Operating Activities			$ 584,401
Cash Flow From Investing Activities			
Sale of Assets: Machinery	$ 21,717		
+ real estate	5,168		
+ other stock & certificates	9,832		
= Total asset sales		$ 36,717	
Capital purchases: expansion livestock	$ 23,389		
+ machinery	338,439		
+ real estate	459,341		
+ other stock & certificates	52,462		
- Total invested in farm assets		$ 873,640	
= Net Provided by Investment Activities			$ -836,923
Cash Flow From Financing Activities			
Money borrowed (intermediate & long term)	$ 520,582		
+ Money borrowed (short-term)	3,780		
+ Increase in operating debt	50,401		
+ Cash from nonfarm capital used in business	82,068		
+ Money borrowed - nonfarm	441		
= Cash inflow from financing		$ 657,272	
Principal payments (intermediate & long-term)	$ 364,897		
+ Principal payments (short-term)	2,983		
+ Decrease in operating debt	0		
- Cash outflow for financing		$ 367,879	
= Net Provided by Financing Activities			$ 289,393
Cash Flow From Business			
Beginning farm cash, checking & savings		$ 66,733	
- Ending farm cash, checking & savings		101,386	
= Net Provided from Reserves			$ -34,653
Imbalance (error)			$ 2,217

ANNUAL CASH FLOW STATEMENT

22 Top 20% Large Herd Dairy Farms, 2013

Item		Average Top 20% Farms	
Cash Flow from Operating Activities			
Cash farm receipts	$7,073,756		
- Cash farm expenses	5,625,213		
- Extraordinary expense	0		
= Net cash farm income		$ 1,448,543	
Personal withdrawals/family expenses including nonfarm debt payments	$ 462,149		
- Nonfarm income	1,324		
- Net cash withdrawals from the farm		$ 460,825	
= Net Provided by Operating Activities			$ 987,718
Cash Flow From Investing Activities			
Sale of Assets: Machinery	$ 25,301		
+ real estate	4,591		
+ other stock & certificate	20,674		
= Total asset sales		$ 50,566	
Capital purchases: expansion livestock	$ 11,462		
+ machinery	392,614		
+ real estate	581,228		
+ other stock & certificate	86,432		
- Total invested in farm assets		$ 1,071,736	
= Net Provided by Investment Activities			$ -1,021,170
Cash Flow From Financing Activities			
Money borrowed (intermediate & long term)	$ 309,069		
+ Money borrowed (short-term)	4,350		
+ Increase in operating debt	74,170		
+ Cash from nonfarm capital used in business	76,768		
+ Money borrowed - nonfarm	0		
= Cash inflow from financing		$ 464,358	
Principal payments (intermediate & long-term)	$ 389,787		
+ Principal payments (short-term)	5,190		
+ Decrease in operating debt	0		
- Cash outflow for financing		$ 394,978	
= Net Provided by Financing Activities			$ 69,380
Cash Flow From Business			
Beginning farm cash, checking & savings		$ 100,136	
- Ending farm cash, checking & savings		140,109	
= Net Provided from Reserves			$ -39,973
Imbalance (error)			$ -4,044

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 2013. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 2013 debt payments shown below.

FARM DEBT PAYMENTS PLANNED
Large Herd Dairy Farms, 2012 & 2013

	Same 109 Dairy Farms			Same 22 Top 20% Farms		
	2013 Payments		Planned	2013 Payments		Planned
Debt Payments	Planned	Made	2014	Planned	Made	2014
Long-term	$ 144,512	$ 165,261	$ 143,218	$ 133,721	$ 155,079	$ 147,097
Intermediate-term	299,363	310,339	336,100	322,110	341,101	344,081
Short-term	1,825	3,242	2,290	736	5,522	4,091
Operating (net reduction)	19,998	53,288	28,234	52,909	84,379	97,374
Accounts payable (net reduction)	506	32,748	725	455	23,732	2,273
Total	$ 466,205	$ 564,879	$ 510,567	$ 509,931	$ 609,814	$ 594,916
Per cow	$ 500	$ 606		$ 442	$ 529	
Per cwt. 2013 milk	$ 1.93	$ 2.34		$ 1.64	$ 1.96	
Percent of total 2013 receipts	8%	9%		7%	8%	
Percent of 2013 milk receipts	9%	11%		8%	9%	

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 2013 (as of December 31, 2012) that could have been made with the amount available for debt service in 2013. Farmers who did not participate in DFBS in 2012 have their 2013 cash flow coverage ratio based on planned debt payments for 2014.

COVERAGE RATIOS
Same 109 Large Herd Dairy Farms, 2012 & 2013

Item	Average	Item	Average
Cash Flow Coverage Ratio		Debt Coverage Ratio	
Cash farm receipts	$ 5,746,762	Net farm income (without appreciation)	$ 857,184
- Cash farm expenses	4,778,686	+ Depreciation	362,543
+ Interest paid (cash)	114,644	+ Interest paid (accrual)	114,652
- Net personal withdrawals from farm[15]	384,002	- Net personal withdrawals from farm[15]	384,002
(A) = Amount Available for Debt Service	$ 698,719	(A') = Repayment Capacity	$ 950,377
(B) = Debt Payments Planned for 2013 (as of December 31, 2012)	$ 466,205	(B) = Debt Payments Planned for 2013 (as of December 31, 2012)	$ 466,205
(A/B) = Cash Flow Coverage Ratio for 2013	1.50	(A'/B) = Debt Coverage Ratio for 2013	2.04

Same 22 Top 20% Dairy Farms, 2012 & 2013

(A) = Amount Available for Debt Service	$ 1,096,141	(A') = Repayment Capacity	$1,775,840
(B) = Debt Payments Planned for 2013	$ 509,931	(B) = Debt Payments Planned for 2013	$ 509,931
(A/B) = Cash Flow Coverage Ratio for 2013	2.15	(A'/B) = Debt Coverage Ratio for 2013	3.44

[15]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

112 Large Herd Dairy Farms, 2013

Item	Average 112 farms Per Cow	Per Cwt.	Total
Number cows and cwt. Milk	937	242,300	
Accrual Operating Receipts			
Milk	$5,603	$21.66	$5,249,070
Dairy cattle	395	1.53	370,193
Dairy calves	42	0.16	39,414
Other livestock	11	0.04	10,299
Crops	149	0.58	139,444
Misc. receipts	176	0.68	165,292
Total Operating Receipts	$6,377	$24.65	$5,973,713
Accrual Operating Expenses			
Hired labor	$ 742	$ 2.87	$ 695,537
Dairy grain & concentrate	1,829	7.07	1,713,617
Dairy roughage	129	0.50	120,804
Nondairy feed	0	0.00	5
Professional nutritional services	1	0.00	1,037
Machinery hire/rent/lease	105	0.41	98,283
Machinery repair & farm vehicle expense	257	0.99	240,594
Fuel, oil & grease	217	0.84	203,706
Replacement livestock	18	0.07	16,669
Breeding	53	0.21	49,727
Veterinary & medicine	179	0.69	167,507
Milk marketing	222	0.86	207,586
Bedding	106	0.41	99,473
Milking supplies	97	0.37	90,424
Cattle lease	4	0.02	4,063
Custom boarding	99	0.38	93,153
bST expense	47	0.18	43,640
Livestock professional fees	20	0.08	18,429
Other livestock expense	20	0.08	18,778
Fertilizer & lime	148	0.57	138,871
Seeds & plants	128	0.49	119,522
Spray/other crop expenses	57	0.22	53,290
Crop professional fees	9	0.03	8,314
Land, building, fence repair	95	0.37	88,954
Taxes	61	0.23	56,698
Real estate rent/lease	77	0.30	72,267
Insurance	43	0.17	40,097
Utilities	102	0.40	95,954
Other professional fees	31	0.12	29,230
Miscellaneous	32	0.12	29,570
Total Less Interest Paid	$4,927	$19.05	$4,615,797
Net Accrual Operating Income (without interest paid)	$1,450	$ 5.60	$1,357,916
- Change in livestock/crop inventory[16]	155	0.60	145,016
- Change in accounts receivable	82	0.32	76,733
- Change in feed/supply inventory[17]	49	0.19	45,894
+ Change in accounts payable[18]	-10	-0.04	-9,790
NET CASH FLOW	$1,153	$ 4.46	$1,080,483
- Net personal withdrawals from farm (see footnote on page 22)	405	1.57	379,841
Available for Farm Debt Payments & Investments	$ 748	$ 2.89	$ 700,642
- Farm debt payments	602	2.33	563,608
Available for Farm Investment	$ 146	$ 0.57	$ 137,035
- Capital purchases: cattle, machinery & improvements	933	3.61	873,640
Additional Capital Needed	$ 786	$ 3.04	$ -736,606

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

ANNUAL CASH FLOW WORKSHEET

22 Top 20% Large Herd Dairy Farms, 2013

Item	Average Top 20% Farms		
	Per Cow	Per Cwt.	Total
No. cows or cwt. milk	1,153	310,918	
Accrual Operating Receipts			
Milk	$5,879	$21.80	$6,778,475
Dairy cattle	392	1.46	452,442
Dairy calves	44	0.16	50,291
Other livestock	0	0.00	369
Crops	206	0.76	237,677
Misc. receipts	159	0.59	183,448
Total Operating Receipts	$6,681	$24.77	$7,702,702
Accrual Operating Expenses			
Hired labor	$ 677	$ 2.51	$ 780,410
Dairy grain & concentrate	1,860	6.90	2,143,951
Dairy roughage	132	0.49	152,156
Nondairy feed	0	0.00	0
Professional nutritional services	1	0.00	1,488
Mach. hire/rent/lease	105	0.39	120,807
Mach. repair & farm vehicle expense	211	0.78	243,241
Fuel, oil & grease	198	0.73	227,991
Replacement livestock	7	0.02	7,708
Breeding	46	0.17	52,595
Veterinary & medicine	171	0.63	196,600
Milk marketing	209	0.78	241,502
Bedding	103	0.38	119,144
Milking supplies	94	0.35	108,419
Cattle lease	11	0.04	12,452
Custom boarding	113	0.42	130,507
bST expense	51	0.19	58,805
Livestock professional fees	12	0.05	14,125
Other livestock expense	16	0.06	18,908
Fertilizer & lime	136	0.51	157,132
Seeds & plants	127	0.47	146,253
Spray/other crop expenses	48	0.18	55,654
Crop professional fees	5	0.02	5,418
Land, building, fence repair	97	0.36	111,749
Taxes	51	0.19	59,355
Real estate rent/lease	62	0.23	71,284
Insurance	34	0.13	39,573
Utilities	104	0.38	119,485
Other professional fees	24	0.09	27,136
Miscellaneous	27	0.10	30,728
Total Less Interest Paid	$4,731	$17.54	$5,454,576
Net Accrual Operating Income (without interest paid)	$1,950	$ 7.23	$2,248,127
- Change in livestock/crop inventory[19]	308	1.14	354,540
- Change in accounts receivable	238	0.88	274,406
- Change in feed/supply inventory[20]	53	0.20	61,014
+ Change in accounts payable[21]	-1	0.00	-1,200
NET CASH FLOW	$1,350	$ 5.01	$1,556,966
- Net personal withdrawals from farm(see footnote page 22)	400	1.48	460,825
Available for Farm Debt Payments & Investments	$ 951	$ 3.53	$1,096,141
- Farm debt payments	529	1.96	609,814
Available for Farm Investment	$ 422	$ 1.56	$ 486,327
- Capital purchases: cattle, machinery & improvements	930	3.45	1,071,736
Additional Capital Needed	$ -508	$-1.88	$ -585,409

[19]Includes change in advance government receipts.
[20]Includes change in prepaid expenses.
[21]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
112 Large Herd Dairy Farms, 2013

Item	Average 112 farms			Average Top 20% Farms		
Land	Owned	Rented	Total	Owned	Rented	Total
Tillable	963	856	1,818	1,232	846	2,078
Nontillable	26	8	34	8	2	10
Other nontillable	192	7	199	139	0	139
Total	1,180	870	2,051	1,379	848	2,227
Crop Yields	Farms	Acres[22]	Prod/Acre	Farms	Acres	Prod/Acre
Hay crop	109	783	3.71 tn DM	21	899	3.77 tn DM
Corn silage	107	761	18.16 tn	21	951	18.99 tn
Other forage	36	199	4.44 tn DM	10	211	6.56 tn DM
Total forage	109	1,596	4.91 tn DM	21	1,951	4.96 tn DM
Corn grain	56	309	139bu	11	327	153 bu
Oats	2	282	45 bu	0	0	0 bu
Wheat	28	151	58 bu	7	130	66 bu
Other crops	30	168		6	132	
Tillable pasture	8	242		1	15	
Idle tillable	37	104		9	60	
Total Tillable Acres	112	1,728		22	2,078	

[22]This column represents the average acreage for the farms producing that crop. Average acreages including those farms not producing were corn grain 155, oats 5, wheat 38, tillable pasture 17, and idle 34.

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
109 Large Herd Dairy Farms, 2013 [23]

Item	Average 109 Farms	Average Top 20% Farms
Total tillable acres per cow	1.98	1.87
Total forage acres per cow	1.69	1.68
Harvested forage dry matter, tons per cow	8.31	8.69

[23] 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 three farms.

CROP RELATED ACCRUAL EXPENSES
Large Herd Dairy Farms Reporting, 2013

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	109[24]	5			5	
Ave. number of acres	1,809	893			687	
Fertilizer/lime	$ 76.78	$ 50.65	$ 8.91	$ 0.22	$ 48.17	$ 13.71
Seed/plants	65.43	117.57	20.34	0.45	30.00	9.30
Spray/other crop exp.	29.17	46.97	7.86	0.18	12.20	3.60
TOTAL	$ 171.38	$ 215.19	$ 37.12	$ 0.85	$ 90.37	$ 26.61
Average Top 20% Farms:						
No. of farms reporting	21[24]					
Ave. number of acres	2,077					
Fertilizer/lime	$ 75.67					
Seeds/plants	66.68					
Spray/other crop exp.	29.19					
TOTAL	$ 168.54					

[24] Excludes farms that do not harvest forages.

Most machinery costs are associated 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 [25]
109 Large Herd Dairy Farms, 2013

Machinery Expense Item	Average 109 Farms Total Expenses	Average 109 Farms Per Tillable Acre	Average Top 20% Farms Total Expenses	Average Top 20% Farms Per Tillable Acre
Fuel, oil & grease	$206,794	$110.99	$233,724	$107.37
Machinery repairs & farm vehicle exp.	244,165	131.05	248,582	114.20
Machine hire, rent & lease	99,682	53.50	125,941	57.86
Interest (5%)	83,763	44.96	85,184	39.13
Depreciation	225,309	120.93	237,556	109.13
Total	$859,712	$461.43	$930,987	$427.69

[25] 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
112 Large Herd Dairy Farms, 2013

	Dairy Cows		Heifers					
			Bred		Open		Calves	
Item	No.	Value	No.	Value	No.	Value	No.	Value
Average 112 farms:								
Beginning year (owned)	905	$1,285,193	290	$403,803	265	$231,759	231	$112,782
+ Change w/o appreciation		50,500		22,002		11,649		6,304
+ Appreciation		10,110		-503		1,095		695
End year (owned)	941	$1,345,802	306	$425,302	277	$244,503	241	$119,781
End including leased	943							
Average number	937		809 (all age groups)					
Average Top 20% Farms:								
Beginning year (owned)	1,102	$1,584,688	356	$503,464	305	$272,164	316	$154,312
+ Change w/o appreciation		75,355		30,991		21,558		16,552
+ Appreciation		22,555		13,480		1,009		0
End of year (owned)	1,155	$1,682,597	376	$547,935	329	$294,730	338	$170,864
End including leased	1,173							
Average number	1,153		1,013 (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
112 Large Herd Dairy Farms, 2013

Item	Average 112 farms	Average Top 20% Farms
Total milk sold, lbs.	24,230,047	31,091,806
Milk sold per cow, lbs.	25,866	26,967
Butterfat per cow, lbs.	984 [26]	1,018
Protein per cow, lbs.	811 [26]	838
Total butterfat and protein per cow, lbs	1,795 [26]	1,856
Other solids per cow, lbs.	1,509 [26]	1,557
Total components per cow, lbs.	3,304 [26]	3,413

[26] This data is an average for the 101 farms that provided the data.

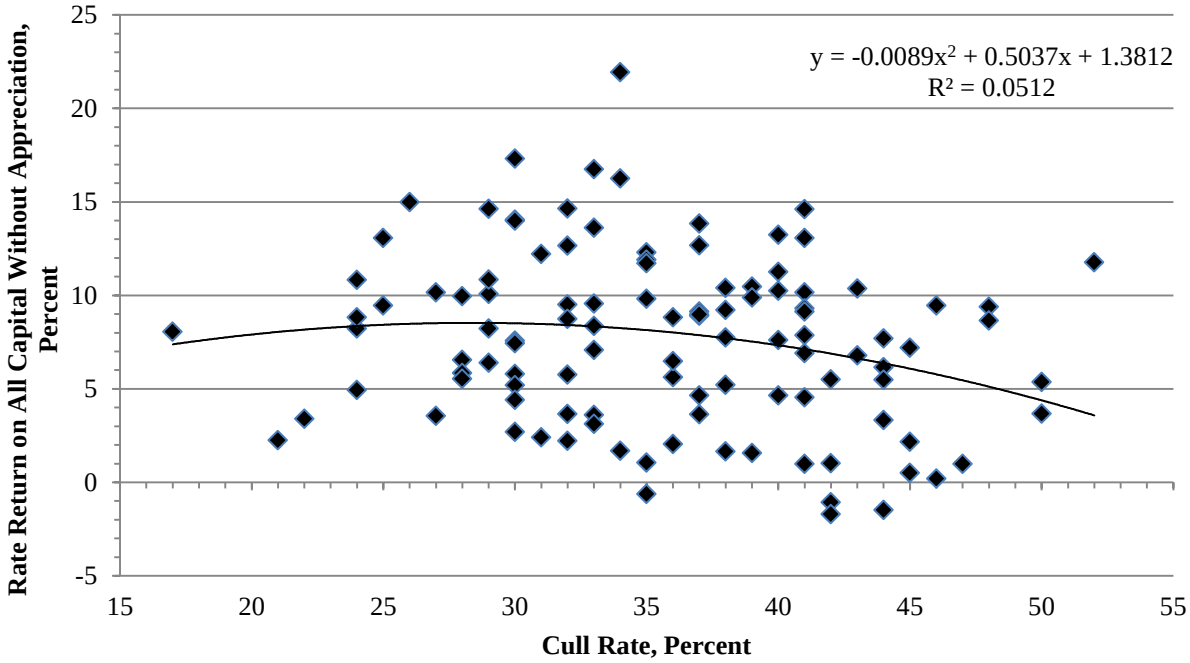
ANIMALS LEAVING THE HERD
112 Large Herd Dairy Farms, 2013

	Average 112 farms		Average Top 20% Farms	
	Number	Percent[27]	Number	Percent[27]
Cows sold for beef	280	29.9	329	28.5
Cows sold for dairy	10	1.1	2	0.2
Cows died	54	5.8	71	6.1
Culling rate[28]	---	36.0	---	35.0

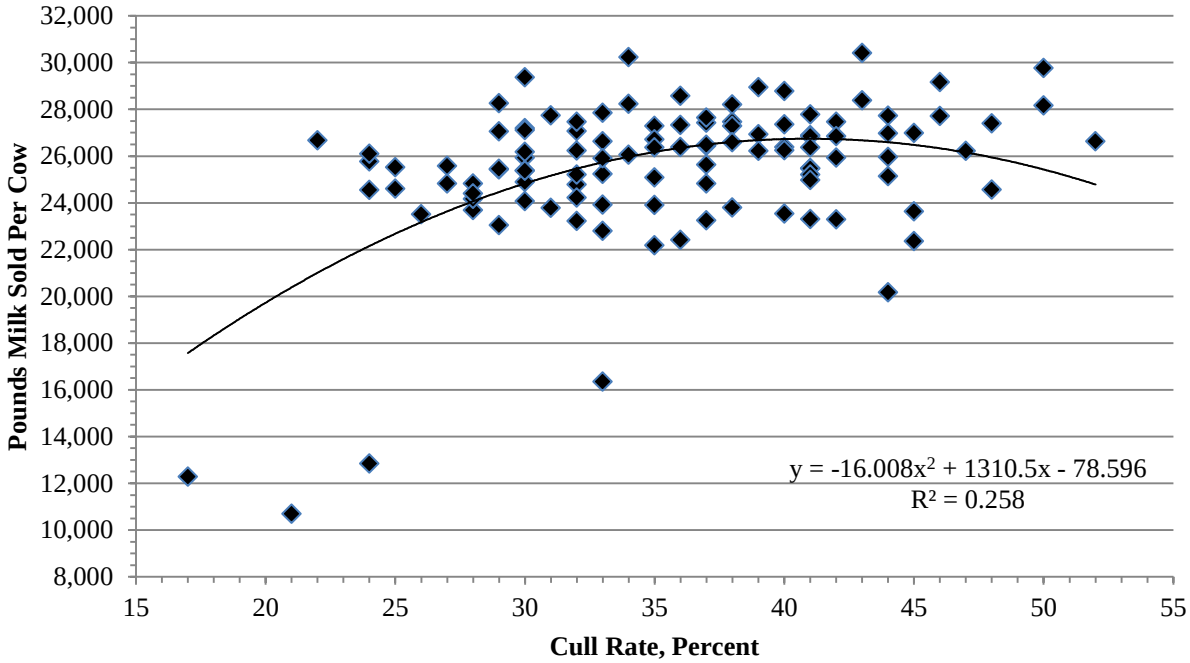
[27] Percent of average number of cows in the herd.
[28] Cows sold for beef plus cows died.

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. There is a curvilinear relationship between cull rate and these two measures for 2013.

RETURN TO ALL CAPITAL WITHOUT APPRECIATION VERSUS CULL RATE
110 Large Herd Dairy Farms, 2013



MILK SOLD PER COW VERSUS CULL RATE
110 Large Herd Dairy Farms, 2013



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

112 Large Herd Dairy Farms, 2013

	Average 112 farms			Average Top 20% Farms		
Item	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Accrual Costs of Producing Milk						
Operating costs	$ 4,028,771	$ 4,301	$ 16.63	$ 4,650,138	$ 4,033	$ 14.96
Purchased inputs costs	$ 4,391,966	$ 4,689	$ 18.13	$ 5,061,190	$ 4,390	$ 16.28
Total Costs	$ 4,893,757	$ 5,224	$ 20.20	$ 5,673,767	$ 4,921	$ 18.25
Accrual Receipts From Milk	$ 5,249,070	$ 5,603	$ 21.66	$ 6,778,475	$ 5,879	$ 21.80
Net Milk Receipts	$ 5,041,484	$ 5,382	$ 20.81	$ 6,536,973	$ 5,670	$ 21.02
Net Farm Income without appreciation	$ 857,104	$ 915	$ 3.54	$ 1,717,285	$ 1,489	$ 5.52
Net Farm Income with appreciation	$ 1,083,263	$ 1,156	$ 4.47	1,991,876	1,728	$ 6.41

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

112 Large Herd Dairy Farms, 2013

	Average 112 farms		Average Top 20% Farms	
Item	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purchased dairy grain & concentrate	$ 1,829	$ 7.07	$ 1,860	$ 6.90
Purchased dairy roughage	129	0.50	132	0.49
Total Purchased Dairy Feed	$ 1,958	$ 7.57	$ 1,992	$ 7.38
Purchased grain & concentrate as % of milk receipts	32%		31%	
Purchased feed & crop expense	$ 2,300	$ 8.89	$ 2,308	$ 8.56
Purchased feed & crop expense as % of milk receipts	41%		40%	
Breeding	$ 53	$ 0.21	$ 46	$ 0.17
Veterinary & medicine	179	0.69	171	0.63
Milk marketing	222	0.86	209	0.78
Bedding	106	0.41	103	0.38
Milking supplies	97	0.37	94	0.35
Cattle lease	4	0.02	11	0.04
Custom boarding	99	0.38	113	0.42
bST expense	47	0.18	51	0.19
Livestock professional fees	20	0.08	12	0.05
Other livestock expenses	20	0.08	16	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.

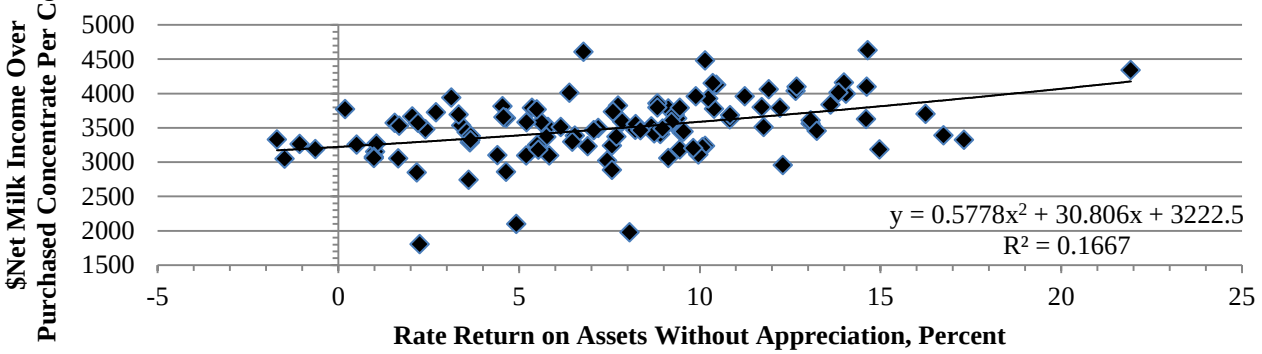
COST OF PRODUCING MILK WHOLE FARM METHOD CALCULATIONS

112 Large Herd Dairy Farms, 2013

Item	Average 112 farms		Average Top 20% Farms	
Total Accrual Operating Expenses	$ 4,731,611		$ 5,562,904	
Expansion Livestock, Accrual	+ 21,803		+ 11,462	
1. Total Accrual Operating Expenses, Including Expansion Livestock		$ 4,753,414		$ 5,574,366
Total Accrual Receipts	$ 5,973,713		$ 7,702,702	
Milk Sales, Accrual	- 5,249,070		- 6,778,475	
2. Total Accrual Nonmilk Receipts		- 724,643		- 924,227
3. Operating Costs of Producing Milk		$ 4,028,771		$ 4,650,138
Cwt. of Milk Sold	÷ 242,300		÷ 310,918	
Operating Costs/Cwt.	= $16.63		= $14.96	
Machinery Depreciation		+ 221,507		+ 231,072
Building Depreciation		+ 141,688		+ 179,980
Extraordinary Expenses		+ 0		+ 0
4. Purchased Inputs Cost of Producing Milk		$ 4,391,966		$ 5,061,190
Cwt. of Milk Sold	÷ 242,300		÷ 310,918	
Purchased Inputs Cost/Cwt.	= $18.13		= $16.28	
Family Labor Unpaid ($2,600/month)		+ 1,409		+ 851
Real Interest on Equity Capital		+ 336,003		+ 430,579
Value of Operators' Labor & Management		+ 164,378		+ 181,148
5. Total Costs of Producing Milk		$ 4,893,757		$ 5,673,767
Cwt. Milk Sold	÷ 242,300		÷ 310,918	
Total Costs/Cwt.	= $20.20		= $18.25	

Net milk income over purchased feed cost per cow is a measure that incorporates the cost of purchased grain and concentrates along with the milk produced per cow and the price received for the component production. It is one of the key measures used to evaluate the effectiveness of the feeding program. Below is the relationship between net milk income over purchased feed cost per cow and return on assets without appreciation.

NET MILK INCOME OVER PURCHASED CONCENTRATE PER COW VERSUS RATE RETURN ON ASSETS
112 Large Herd Dairy Farms, 2013

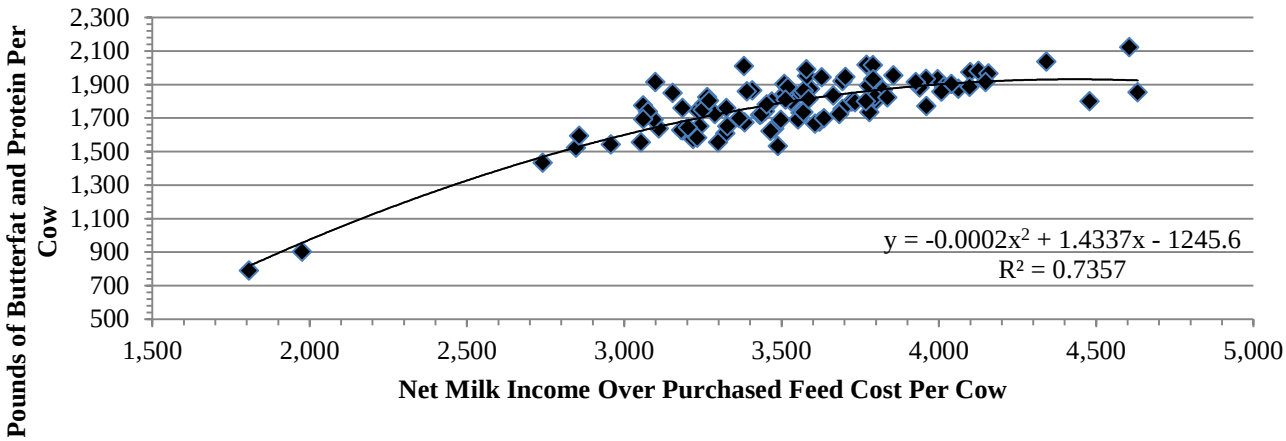


With the change to component milk pricing in 2000, component production has become a focus point for dairy managers. The table and chart below examine the relationship between net milk income over purchased grain and concentrates and cost, price, and milk composition characteristics. The table and charts on page 32 and 33 present costs of producing milk and profitability on the basis of butterfat and protein produced.

COMPONENT PRODUCTION AND COSTS PER HUNDREDWEIGHT BY NET MILK INCOME OVER PURCHASED FEED COST PER COW
101 Large Herd Dairy Farms, 2013

Net Milk Income Over Purchased Feed Cost Per Cow	Milk Production Per Cow	Butterfat pounds Per Cow	Protein Pounds Per Cow	Purchased Feed Costs Per Cwt.	Operating Cost of Producing Milk	Net Milk Price Per Cwt.
$ 4,254	28,114	1,062	$ 874	$ 6.62	$ 15.23	$ 20.97
3,932	27,656	1,040	841	6.96	15.73	20.88
3,788	27,140	1,026	848	7.40	16.21	20.90
3,678	26,068	999	810	7.17	16.38	21.09
3,574	26,329	990	824	7.99	17.36	20.94
3,498	25,435	966	786	7.48	16.63	20.95
3,403	25,633	976	796	7.82	16.97	20.82
3,275	25,121	940	780	8.08	18.03	20.63
3,167	24,610	924	766	7.87	16.23	20.69
2,744	20,760	808	645	7.88	17.92	20.69

POUNDS BUTTERFAT AND PROTEIN PER COW VERSUS NET MILK INCOME OVER PURCHASED FEED COST PER COW
101 Large Herd Dairy Farms, 2013



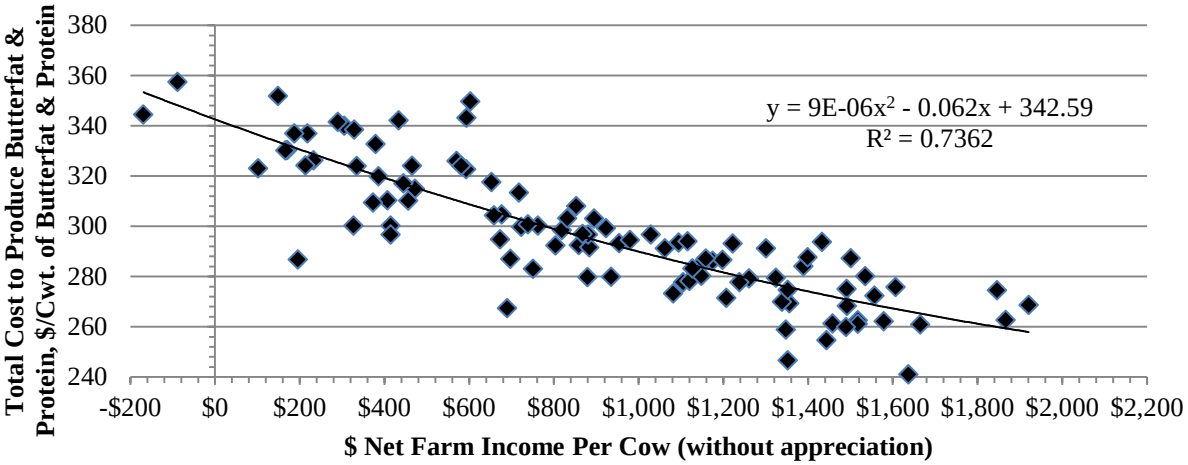
RECEIPTS AND EXPENSES PER HUNDREDWEIGHT OF BUTTERFAT AND PROTEIN[29]

Same 100 Large Herd Dairy Farms, 2012 & 2013

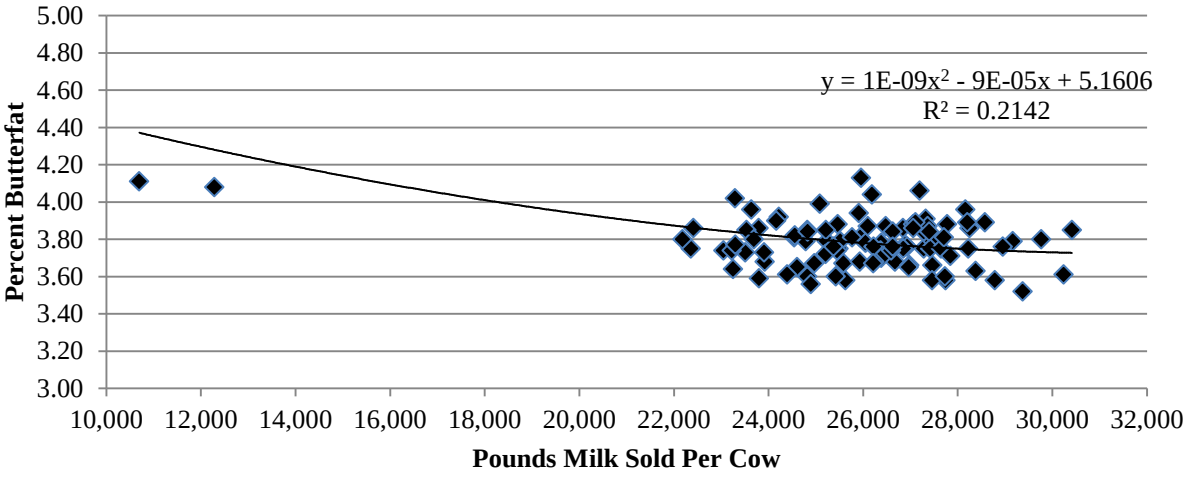
Item	Average Same 100 Large Herd Dairy Farms 2012	Average Same 100 Large Herd Dairy Farms 2013	Average Top 20% Farms 2012	Average Top 20% Farms 2013
Cwt. of butterfat and protein sold	15,897	17,487	18,762	21,779
Accrual Operating Receipts				
Milk	$291.83	$304.67	$307.05	$311.21
Dairy cattle	22.98	21.22	21.80	20.84
Dairy calves	2.65	2.25	3.09	2.28
Other livestock	0.88	0.70	-0.15	0.00
Crops	10.61	8.57	8.19	10.85
Miscellaneous receipts	10.75	9.56	8.50	8.42
Total Operating Receipts	$339.71	$346.97	$348.48	$353.61
Accrual Operating Expenses				
Hired labor	$41.10	$39.77	$40.51	$35.83
Dairy grain & concentrate	100.03	99.22	101.11	98.50
Dairy roughage	6.63	6.89	9.12	7.00
Nondairy feed	0.00	0.00	0.00	0.00
Professional nutritional services	0.00	0.00	0.00	0.00
Machine hire, rent & lease	5.60	5.62	6.18	5.57
Machine repair & vehicle expense	13.99	14.05	11.90	11.14
Fuel, oil & grease	12.23	11.80	11.44	10.42
Replacement livestock	0.74	1.12	0.31	0.29
Breeding	3.09	2.95	2.47	2.43
Veterinary & medicine	9.58	9.56	9.74	8.99
Milk marketing	12.82	12.09	12.06	11.14
Bedding	5.89	5.62	6.18	5.42
Milking supplies	5.16	5.20	4.95	5.00
Cattle lease	0.29	0.28	0.46	0.57
Custom boarding	5.60	5.48	5.57	6.00
bST expense	2.95	2.67	3.09	2.71
Livestock professional fees	0.88	1.12	0.77	0.71
Other livestock expense	1.03	1.12	0.62	0.86
Fertilizer & lime	8.25	8.29	7.11	7.28
Seeds & plants	6.33	6.75	6.34	6.71
Spray & other crop expense	3.54	3.09	2.78	2.57
Crop professional fees	0.44	0.56	0.15	0.29
Land, building & fence repair	5.30	5.20	5.10	5.14
Taxes	3.09	3.23	2.94	2.71
Real estate rent/lease	3.98	4.08	3.25	3.28
Insurance	2.50	2.25	2.01	1.86
Utilities	5.30	5.34	5.57	5.42
Interest paid	6.33	6.32	5.57	5.00
Other professional fees	1.92	1.69	1.70	1.28
Miscellaneous	1.77	1.69	1.39	1.43
Total Operating Expenses	$276.66	$273.19	$270.56	$255.39
Expansion livestock	2.50	1.26	0.62	0.57
Extraordinary expense	0.00	0.00	0.00	0.00
Machinery depreciation	12.67	12.79	10.82	10.56
Real Estate depreciation	8.25	8.43	8.19	8.28
Total Expenses	$300.08	$295.68	$290.20	$274.81
Net Farm Income without appreciation	$39.63	$51.29	$58.44	$78.80

[29]Average data for farms that provided complete milk component data for 2012 – 2013.

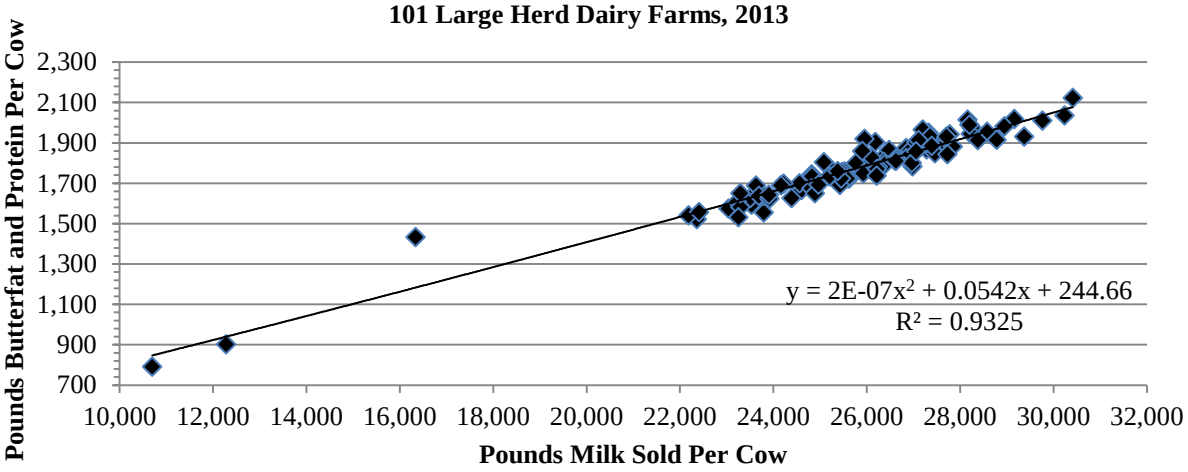
TOTAL COST TO PRODUCE BUTTERFAT & PROTEIN VERSUS NET FARM INCOME PER COW
101 Large Herd Dairy Farms, 2013



POUNDS MILK SOLD PER COW VERSUS PERCENT BUTTERFAT
101 Large Herd Dairy Farms, 2013



POUNDS OF BUTTERFAT AND PROTEIN PER COW VERSUS POUNDS MILK SOLD PER COW
101 Large Herd Dairy Farms, 2013



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
112 Large Herd Dairy Farms, 2013

Item	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
Average 112 farms:				
Farm capital	$ 487,703	$ 10,631	$ 5,477	$ 10,344
Real estate		4,358		4,240
Machinery & equipment	80,717	1,760	906	
Ratios				
Asset turnover ratio	Operating Expense	Interest Expense	Depreciation Expense	
0.62	0.78	0.02	0.06	
Average Top 20% Farms:				
Farm capital	$ 515,580	$ 10,245	$ 5,685	$ 9,591
Real estate		4,073		3,813
Machinery & equipment	72,498	1,441	799	
Ratios				
Asset turnover ratio	Operating Expense	Interest Expense	Depreciation Expense	
0.68	0.71	0.01	0.05	

LABOR FORCE INVENTORY AND ANALYSIS
112 Large Herd Dairy Farms, 2013

Labor Force	Months	Age	Years of Education	Value of Labor & Mgmt.
Operator number 1	12.51	55	15	$ 71,968
Operator number 2	9.23	48	15	52,488
Operator number 3	4.87	42	15	26,158
Operator number 4	2.92	41	21	13,763
Family paid	1.86			
Family unpaid	0.54			
Hired	213.15			
Total	245.08 /	12 = 20.42 Worker Equivalent		
		2.24Operator/Manager Equivalent		
Average Top 20% Farms:				
Total	274.92 /	12 = 22.91 Worker Equivalent		
Operator's		2.37 Operator/Manager Equivalent		

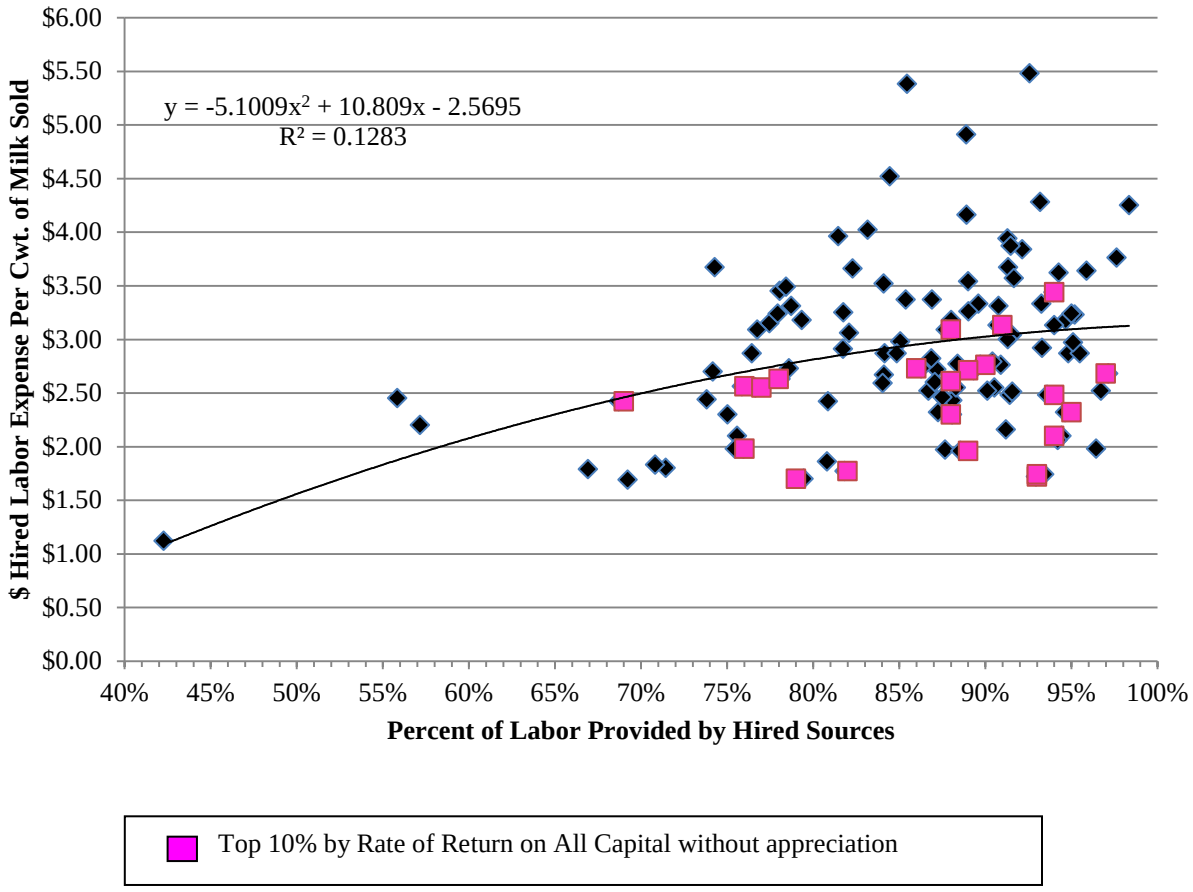
Labor	Average 112 farms		Average Top 20% Farms	
Efficiency	Total	Per Worker	Total	Per Worker
Cows, average number	937	46	1,153	50
Milk sold, pounds	24,230,047	1,186,390	31,091,806	1,357,128
Tillable acres	1,818	89	2,078	91

	Average 112 farms			Average Top 20% Farms		
Labor Costs	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Value of operator(s) labor ($2,600/month)	$ 76,778	$ 82	$ 0.32	$ 79,638	$ 69	$ 0.26
Family unpaid ($2,600/month)	1,404	1	0.01	858	1	0.00
Hired	695,537	742	2.87	780,410	677	2.51
Total Labor	$ 773,719	$ 826	$ 3.19	$ 860,906	$ 747	$ 2.77
Machinery Cost	846,502	904	3.49	906,158	786	2.91
Total Labor & Machinery	$1,620,220	$ 1,730	$ 6.69	$,767,064	$ 1,533	$ 5.68
Hired labor expense per hired worker equiv.		$ 38,819			$ 38,387	
Hired labor expense as % of milk sales		13.3%			11.5%	

Labor Cost Evaluation

Labor costs have been the second largest expense on large dairy farms in New York over multiple 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.

HIRED LABOR EXPENSE PER CWT OF MILK SOLD VERSUS PERCENT OF LABOR PROVIDED BY HIRED SOURCES
112 Large Herd Dairy Farms, 2013



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.

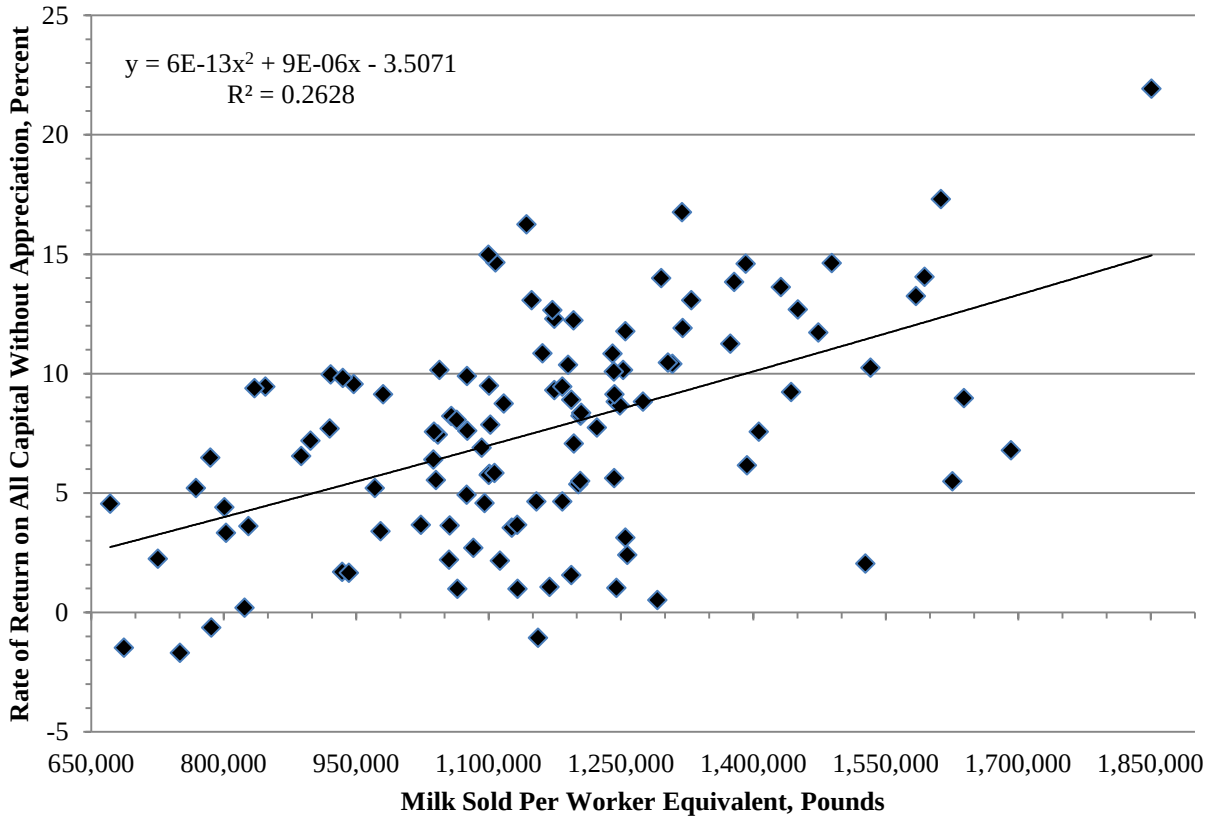
Months of hired labor		_____		
Months of family paid labor	+	_____		
Total hired labor	=		_____	
Total Labor Months	÷		_____	
Percent of labor from hired sources	x 100 =			_____%

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 hundredweight 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 hundredweight of milk sold.

HIRED LABOR EXPENSE BUSINESS CHARTS
112 Large Herd Dairy Farms, 2013

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	$1.75	8%	$28,992	$10.50
↓	2.15	10	31,592	11.45
	2.46	11	33,021	11.96
	2.58	12	34,825	12.62
	2.74	13	36,230	13.13
	2.92	14	37,986	13.76
	3.15	14	40,361	14.62
	3.33	15	42,760	15.49
	3.63	16	45,287	16.41
Average of Highest Decile	4.43	20	50,395	18.26

RATE OF RETURN ON ALL CAPITAL WITHOUT APPRECIATION VERSUS MILK SOLD PER WORKER EQUIVALENT
112 Large Herd Dairy Farms, 2013



CONDENSED SUMMARY & SELECTED BUSINESS FACTORS

CONDENSED FARM BUSINESS SUMMARY FOR THREE LARGE HERD GROUPS

112 Large Herd Dairy Farms, 2013

Item	33 Farms with 300-599 Cows		29 Farms with 600-899 Cows		50 Farms with ≥900 Cows	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	Per Cow	Per Cwt.
ACCRUAL EXPENSES						
Hired labor	$ 706	$ 2.83	$ 693	$ 2.75	$ 765	$ 2.91
Dairy grain & concentrate	1,745	6.99	1,815	7.21	1,851	7.05
Dairy roughage	159	0.64	116	0.46	127	0.48
Nondairy feed	0	0.00	0	0.00	0	0.00
Professional nutritional services	1	0.00	1	0.00	1	0.00
Machine hire, rent & lease	202	0.81	129	0.51	78	0.30
Machine repairs & farm vehicle expense	234	0.94	252	1.00	263	1.00
Fuel, oil & grease	217	0.87	216	0.86	218	0.83
Replacement livestock	55	0.22	7	0.03	14	0.05
Breeding	56	0.22	53	0.21	53	0.20
Veterinary & medicine	166	0.67	173	0.69	183	0.70
Milk marketing	209	0.84	221	0.88	224	0.85
Bedding	102	0.41	114	0.45	105	0.40
Milking supplies	89	0.35	96	0.38	98	0.37
Cattle lease & rent	0	0.00	3	0.01	6	0.02
Custom boarding	116	0.46	98	0.39	97	0.37
bST expense	29	0.11	40	0.16	52	0.20
Livestock professional fees	22	0.09	15	0.06	21	0.08
Other livestock expense	19	0.08	20	0.08	20	0.08
Fertilizer & lime	150	0.60	169	0.67	141	0.54
Seeds & plants	134	0.54	118	0.47	129	0.49
Spray & other crop expense	65	0.26	53	0.21	56	0.21
Crop professional fees	10	0.04	12	0.05	8	0.03
Land, building & fence repair	71	0.29	92	0.37	101	0.38
Taxes & rent	145	0.58	138	0.56	136	0.52
Utilities	107	0.43	97	0.39	103	0.39
Interest paid	122	0.49	126	0.50	123	0.47
Other professional fees	29	0.12	27	0.11	33	0.13
Misc. (including insurance)	74	0.30	80	0.31	73	0.28
Total Operating Expenses	$5,033	$20.17	$4,974	$19.75	$5,078	$19.34
Expansion livestock	19	0.08	9	0.04	29	0.11
Extraordinary expense	0	0.00	0	0.00	0	0.00
Machinery depreciation	249	1.00	231	0.92	236	0.90
Building depreciation	163	0.65	146	0.58	150	0.57
Total Accrual Expenses	$5,464	$21.90	$5,360	$21.28	$5,493	$20.92
ACCRUAL RECEIPTS						
Milk sales	$5,394	$21.62	$5,459	$21.67	$5,691	$21.67
Dairy cattle	369	1.48	381	1.51	405	1.54
Dairy calves	35	0.14	49	0.20	41	0.16
Other livestock	16	0.06	25	0.10	6	0.02
Crops	197	0.79	103	0.41	153	0.58
Miscellaneous receipts	186	0.75	216	0.86	162	0.62
Total Accrual Receipts	$6,198	$24.84	$6,234	$24.75	$6,458	$24.59
PROFITABILITY ANALYSIS (Total)						
Net farm income (without appreciation)	$317,421		$641,711		$1,338,222	
Net farm income (with appreciation)	$422,749		$843,588		$1,658,213	
Labor & management income	$157,599		$362,338		$849,802	
Number of operators	1.86		2.29		2.47	
Labor & management income/operator	$84,841		$158,226		$344,049	
Rates of return on: Equity capital w/o apprec.	6.7%		8.9%		11.5%	
Equity capital w/ apprec.	10.0%		12.6%		14.8%	
All capital w/o apprec.	5.8%		7.3%		8.9%	
All capital w/ apprec.	8.1%		9.8%		11.1%	

SELECTED BUSINESS FACTORS FOR THREE LARGE HERD GROUPS

112 Large Herd Dairy Farms, 2013

Item	33 Farms with 300-599 Cows	29 Farms with 600-899 Cows	50 Farms with ≥ 900 Cows
Cropping Program Analysis			
Total Tillable acres	974	1,443	2,593
Tillable acres rented[30]	485	667	1,210
Hay crop acres[30]	446	616	1,055
Corn silage acres[30]	332	565	1,082
Hay crop, tons DM/acre	3.3	3.6	3.9
Corn silage, tons/acre	17.6	18.2	18.3
Forage DM per cow, tons	8.6	8.4	8.2
Tillable acres/cow	2.3	2.1	1.9
Fertilizer & lime expense/tillable acre	$68.52	$92.86	$72.99
Machinery cost/tillable acre	$442	$458	$467
Dairy Analysis			
Number of cows	433	734	1,387
Number of heifers	358	651	1,198
Milk sold, lbs.	10,797,984	18,488,165	36,425,501
Butterfat & protein, lbs./cow	1,747	1,795	1,805
Milk sold/cow, lbs.	24,948	25,191	26,262
Operating cost of prod. milk/cwt.	$17.03	$16.71	$16.53
Total cost of prod. milk/cwt.	$21.14	$20.49	$19.93
Price/cwt. milk sold	$21.62	$21.67	$21.67
Purchased dairy feed/cow	$1,904	$1,931	$1,978
Purchased dairy feed/cwt. milk	$7.63	$7.67	$7.53
Purchased grain & concentrate as % of milk receipts	32%	33%	32%
Purchased feed & crop expense/cwt. milk	$9.07	$9.07	$8.80
Net milk income over purchased feed costs per cow	$3,423	$3,441	$3,615
Capital Efficiency			
Farm capital/worker	$434,584	$490,617	$499,254
Farm capital/cow	$10,563	$11,023	$10,525
Real estate/cow	$4,396	$4,551	$4,290
Machinery investment/cow	$1,949	$1,800	$1,708
Asset turnover ratio	0.61	0.59	0.64
Labor Efficiency			
Worker equivalent	10.52	16.49	29.24
Operator/manager equivalent	1.86	2.29	2.47
Milk sold/worker, lbs.	1,026,018	1,121,514	1,245,600
Cows/worker	41	45	47
Labor cost/cow	$861	$796	$828
Financial Measures			
Percent equity	70%	69%	67%
Debt/asset ratio - long term	0.32	0.31	0.28
Debt/asset ratio - intermediate & current	0.29	0.30	0.36
Change in net worth with appreciation	$251,818	$552,700	$924,739
Total farm debt per cow	$3,351	$3,484	$3,592
Debt payments made per cow	$737	$660	$562
Debt payments as % of milk sales	14%	12%	10%
Amount available for debt service	$323,827	$492,336	$1,073,337
Debt coverage ratio for 2013	1.68	1.99	2.14

[30]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 599 cows. The second two tables are of farms with 600 - 899 cows. The third set of tables is of farms with 900 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 row 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 row 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

33 Large Herd Dairy Farms with 300 – 599 Cows, 2013

	QUINTILE				
Item	1	2	3	4	5
Accrual Operating Receipts					
Milk	$6,207	$5,956	$5,561	$5,224	$4,049
Dairy cattle	525	429	372	334	171
Dairy calves	106	53	41	24	-26
Other livestock	90	2	0	0	-1
Crops	644	306	169	66	-120
Miscellaneous receipts	381	225	171	119	79
Total Operating Receipts	$7,350	$6,736	$6,425	$5,855	$4,671
Accrual Operating Expenses					
Hired labor	$ 439	$ 606	$ 702	$ 841	$ 1,029
Dairy grain & concentrate	1,200	1,615	1,751	1,950	2,249
Dairy roughage	0	9	76	188	598
Nondairy feed	0	0	0	0	0
Professional nutritional services	0	0	0	0	4
Machinery hire/rent/lease	11	51	195	295	453
Mach. repair & farm vehicle exp.	116	177	229	267	406
Fuel, oil & grease	133	184	222	260	314
Replacement livestock	0	0	0	4	290
Breeding	13	39	58	73	101
Veterinary & medicine	78	142	167	205	250
Milk marketing	106	147	182	248	396
Bedding	21	70	104	147	200
Milking supplies	38	72	86	109	159
Cattle lease	0	0	0	0	0
Custom boarding	0	0	0	86	531
bST expense	0	0	0	42	104
Livestock professional fees	1	9	17	26	57
Other livestock expense	0	5	15	23	62
Fertilizer & lime	41	97	138	189	289
Seeds & plants	47	105	125	159	250
Spray/other crop expenses	7	45	65	88	121
Crop professional fees	0	1	8	15	33
Land, building, fence repair	18	37	58	84	153
Taxes	28	48	62	82	117
Real estate rent/lease	14	42	71	102	178
Insurance	24	33	45	57	72
Utilities	66	90	103	128	157
Interest	22	70	109	182	262
Other professional fees	5	14	26	38	70
Miscellaneous	6	16	21	37	75
Total Operating Expenses	$3,756	$4,634	$5,055	$5,620	$6,189
Expansion livestock	0	0	0	0	103
Extraordinary expense	0	0	0	0	0
Machinery depreciation	122	199	239	310	453
Building depreciation	51	102	172	209	297
Net Farm Income w/o Appreciation	$ 1,414	$ 1,119	$ 707	$ 421	$ 99

RECEIPTS AND EXPENSES PER CWT. OF MILK SOLD

33 Large Herd Dairy Farms with 300 – 599 Cows, 2013

Item	QUINTILE 1	2	3	4	5
Accrual Operating Receipts					
Milk	$22.63	$22.14	$21.73	$21.37	$20.68
Dairy cattle	2.41	1.68	1.50	1.32	0.78
Dairy calves	0.52	0.21	0.16	0.10	-0.10
Other livestock	0.43	0.01	0.00	0.00	0.00
Crops	2.55	1.23	0.72	0.28	-0.50
Miscellaneous receipts	1.51	0.93	0.69	0.50	0.32
Total Operating Receipts	$27.87	$25.71	$24.90	$24.00	$22.97
Accrual Operating Expenses					
Hired labor	$ 1.83	$ 2.52	$ 2.86	$ 3.31	$ 4.42
Dairy grain & concentrate	5.64	6.54	7.01	7.53	8.11
Dairy roughage	0.00	0.03	0.28	0.74	2.69
Nondairy feed	0.00	0.00	0.00	0.00	0.00
Professional nutritional services	0.00	0.00	0.00	0.00	0.01
Machinery hire/rent/lease	0.05	0.21	0.73	1.25	1.60
Mach. repair & farm vehicle exp.	0.49	0.77	0.88	1.12	1.60
Fuel, oil & grease	0.56	0.72	0.92	1.06	1.28
Replacement livestock	0.00	0.00	0.00	0.02	1.13
Breeding	0.06	0.16	0.22	0.29	0.38
Veterinary & medicine	0.37	0.53	0.63	0.78	1.07
Milk marketing	0.46	0.61	0.80	0.97	1.48
Bedding	0.10	0.27	0.42	0.57	0.79
Milking supplies	0.16	0.29	0.34	0.43	0.61
Cattle lease	0.00	0.00	0.00	0.00	0.00
Custom boarding	0.00	0.00	0.00	0.32	2.06
bST expense	0.00	0.00	0.00	0.16	0.41
Livestock professional fees	0.00	0.04	0.07	0.11	0.23
Other livestock expense	0.00	0.02	0.06	0.11	0.25
Fertilizer & lime	0.19	0.39	0.57	0.73	1.25
Seeds & plants	0.20	0.41	0.50	0.64	1.05
Spray/other crop expenses	0.03	0.18	0.26	0.34	0.49
Crop professional fees	0.00	0.00	0.03	0.06	0.12
Land, building, fence repair	0.09	0.16	0.22	0.33	0.59
Taxes	0.12	0.19	0.24	0.33	0.56
Real estate rent/lease	0.06	0.17	0.30	0.45	0.68
Insurance	0.10	0.13	0.18	0.22	0.33
Utilities	0.30	0.36	0.42	0.50	0.61
Interest	0.09	0.27	0.49	0.80	1.05
Other professional fees	0.02	0.06	0.10	0.17	0.27
Miscellaneous	0.02	0.06	0.08	0.17	0.29
Total Operating Expenses	$17.27	$19.10	$20.61	$21.73	$23.31
Expansion livestock	0.00	0.00	0.00	0.00	0.55
Extraordinary expense	0.00	0.00	0.00	0.00	0.00
Machinery depreciation	0.49	0.77	1.00	1.26	2.04
Building depreciation	0.20	0.43	0.72	0.88	1.24
Net Farm Income w/o Appreciation	$ 5.32	$ 4.50	$2.75	$1.88	$0.44

RECEIPTS AND EXPENSES PER COW

29 Large Herd Dairy Farms with 600 – 899 Cows, 2013

Item	QUINTILE 1	2	3	4	5
Accrual Operating Receipts					
Milk	$6,248	$5,788	$5,612	$5,262	$4,442
Dairy cattle	615	440	363	308	220
Dairy calves	210	49	23	14	-8
Other livestock	167	3	0	0	-7
Crops	428	220	105	-14	-182
Miscellaneous receipts	591	227	140	113	73
Total Operating Receipts	$7,246	$6,615	$6,304	$6,040	$5,076
Accrual Operating Expenses					
Hired labor	$ 496	$ 609	$ 667	$ 778	$ 938
Dairy grain & concentrate	1,319	1,719	1,829	1,977	2,322
Dairy roughage	0	4	30	84	475
Nondairy feed	0	0	0	0	0
Professional nutritional services	0	0	0	0	6
Machinery hire/rent/lease	18	44	94	198	333
Mach. repair & farm vehicle exp.	141	216	255	298	372
Fuel, oil & grease	126	190	221	252	312
Replacement livestock	0	0	0	0	39
Breeding	22	40	50	69	94
Veterinary & medicine	94	137	177	203	260
Milk marketing	129	189	225	269	303
Bedding	37	80	114	146	205
Milking supplies	42	69	90	110	187
Cattle lease	0	0	0	0	16
Custom boarding	0	0	0	82	469
bST expense	0	0	0	73	126
Livestock professional fees	1	10	14	18	35
Other livestock expense	0	1	10	27	69
Fertilizer & lime	57	118	161	232	321
Seeds & plants	46	88	124	150	204
Spray/other crop expenses	10	35	57	69	101
Crop professional fees	0	0	7	13	46
Land, building, fence repair	21	54	79	106	221
Taxes	28	49	65	76	114
Real estate rent/lease	13	38	58	96	190
Insurance	27	37	44	57	68
Utilities	61	89	96	110	142
Interest	30	100	136	166	215
Other professional fees	9	20	27	35	47
Miscellaneous	9	18	34	44	67
Total Operating Expenses	$3,935	$4,805	$4,996	$5,303	$5,947
Expansion livestock	0	0	0	3	52
Extraordinary expense	0	0	0	0	0
Machinery depreciation	76	194	257	301	344
Building depreciation	44	87	141	200	269
Net Farm Income w/o Appreciation	$ 1,642	$ 1,181	$ 806	$ 573	$ 293

RECEIPTS AND EXPENSES PER CWT. OF MILK SOLD

29 Large Herd Dairy Farms with 600 – 899 Cows, 2013

Item	QUINTILE 1	2	3	4	5
Accrual Operating Receipts					
Milk	$23.03	$22.11	$21.82	$21.33	$20.67
Dairy cattle	2.43	1.71	1.44	1.21	0.97
Dairy calves	0.94	0.19	0.09	0.06	-0.03
Other livestock	0.78	0.01	0.00	0.00	-0.03
Crops	1.75	0.91	0.45	-0.06	-0.68
Miscellaneous receipts	2.36	0.87	0.58	0.45	0.32
Total Operating Receipts	$27.65	$26.13	$24.88	$23.76	$22.63
Accrual Operating Expenses					
Hired labor	$ 1.94	$ 2.38	$ 2.74	$ 3.31	$ 3.72
Dairy grain & concentrate	5.85	6.70	7.46	7.70	8.58
Dairy roughage	0.00	0.02	0.12	0.34	1.80
Nondairy feed	0.00	0.00	0.00	0.00	0.00
Professional nutritional services	0.00	0.00	0.00	0.00	0.02
Machinery hire/rent/lease	0.07	0.17	0.39	0.83	1.36
Mach. repair & farm vehicle exp.	0.60	0.82	1.03	1.19	1.53
Fuel, oil & grease	0.51	0.75	0.89	0.99	1.21
Replacement livestock	0.00	0.00	0.00	0.00	0.21
Breeding	0.09	0.15	0.21	0.28	0.36
Veterinary & medicine	0.42	0.55	0.68	0.76	1.01
Milk marketing	0.58	0.79	0.90	1.02	1.15
Bedding	0.16	0.30	0.44	0.59	0.84
Milking supplies	0.18	0.27	0.34	0.46	0.71
Cattle lease	0.00	0.00	0.00	0.00	0.08
Custom boarding	0.00	0.00	0.00	0.32	1.75
bST expense	0.00	0.00	0.00	0.28	0.48
Livestock professional fees	0.01	0.04	0.05	0.07	0.14
Other livestock expense	0.00	0.00	0.04	0.10	0.33
Fertilizer & lime	0.24	0.46	0.63	0.90	1.53
Seeds & plants	0.19	0.35	0.47	0.60	0.82
Spray/other crop expenses	0.04	0.14	0.22	0.26	0.45
Crop professional fees	0.00	0.00	0.03	0.06	0.18
Land, building, fence repair	0.09	0.21	0.30	0.41	0.90
Taxes	0.11	0.19	0.25	0.33	0.52
Real estate rent/lease	0.05	0.14	0.23	0.41	0.88
Insurance	0.11	0.15	0.19	0.23	0.27
Utilities	0.28	0.34	0.38	0.43	0.56
Interest	0.12	0.41	0.54	0.68	0.88
Other professional fees	0.04	0.07	0.11	0.15	0.21
Miscellaneous	0.04	0.07	0.13	0.18	0.29
Total Operating Expenses	$17.17	$18.86	$20.22	$21.06	$22.43
Expansion livestock	0.00	0.00	0.00	0.01	0.20
Extraordinary expense	0.00	0.00	0.00	0.00	0.00
Machinery depreciation	0.35	0.71	1.04	1.18	1.41
Building depreciation	0.17	0.35	0.58	0.78	1.14
Net Farm Income w/o Appreciation	$ 6.15	$4.97	$3.40	$2.36	$1.11

RECEIPTS AND EXPENSES PER COW

50 Large Herd Dairy Farms with 900 or More Cows, 2013

Item	QUINTILE 1	2	3	4	5
Accrual Operating Receipts					
Milk	$6,159	$5,945	$5,711	$5,471	$5,100
Dairy cattle	633	463	396	337	207
Dairy calves	79	59	41	23	5
Other livestock	59	2	0	0	-20
Crops	493	243	118	27	-131
Miscellaneous receipts	388	194	136	105	51
Total Operating Receipts	$7,151	$6,796	$6,525	$6,133	$5,688
Accrual Operating Expenses					
Hired labor	$ 538	$ 666	$ 755	$ 845	$ 1,021
Dairy grain & concentrate	1,442	1,725	1,872	1,982	2,176
Dairy roughage	6	34	60	121	395
Nondairy feed	0	0	0	0	0
Professional nutritional services	0	0	0	0	5
Machinery hire/rent/lease	9	24	38	96	232
Mach. repair & farm vehicle exp.	158	209	252	292	427
Fuel, oil & grease	157	189	207	243	308
Replacement livestock	0	0	0	0	72
Breeding	24	39	53	65	93
Veterinary & medicine	112	158	185	218	261
Milk marketing	109	172	203	258	378
Bedding	26	76	100	128	185
Milking supplies	47	71	86	122	168
Cattle lease	0	0	0	0	23
Custom boarding	0	0	4	83	378
bST expense	0	0	10	92	133
Livestock professional fees	1	11	16	20	53
Other livestock expense	0	0	5	25	69
Fertilizer & lime	36	81	134	179	292
Seeds & plants	61	97	128	161	219
Spray/other crop expenses	17	41	62	74	101
Crop professional fees	0	0	2	12	24
Land, building, fence repair	31	66	87	113	178
Taxes	26	44	58	69	98
Real estate rent/lease	21	47	73	95	184
Insurance	20	36	44	53	68
Utilities	65	89	108	120	154
Interest	32	84	139	172	227
Other professional fees	6	15	29	44	78
Miscellaneous	6	15	28	40	73
Total Operating Expenses	$4,308	$4,831	$5,078	$5,332	$5,918
Expansion livestock	0	0	0	6	141
Extraordinary expense	0	0	0	0	0
Machinery depreciation	138	198	245	282	350
Building depreciation	70	99	130	190	260
Net Farm Income w/o Appreciation	$ 1,589	$ 1,254	$ 941	$ 694	$ 241

RECEIPTS AND EXPENSES PER CWT. OF MILK SOLD

50 Large Herd Dairy Farms with 900 or More Cows, 2013

Item	QUINTILE 1	2	3	4	5
Accrual Operating Receipts					
Milk	$22.52	$22.00	$21.68	$21.35	$20.89
Dairy cattle	2.41	1.78	1.51	1.30	0.80
Dairy calves	0.30	0.22	0.16	0.09	0.02
Other livestock	0.23	0.01	0.00	0.00	-0.08
Crops	1.94	0.92	0.45	0.10	-0.51
Miscellaneous receipts	1.50	0.74	0.51	0.41	0.20
Total Operating Receipts	$27.18	$25.24	$24.42	$23.86	$22.74
Accrual Operating Expenses					
Hired labor	$ 2.03	$ 2.57	$ 2.89	$ 3.20	$ 4.01
Dairy grain & concentrate	5.69	6.54	7.13	7.58	8.20
Dairy roughage	0.02	0.13	0.23	0.47	1.44
Nondairy feed	0.00	0.00	0.00	0.00	0.00
Professional nutritional services	0.00	0.00	0.00	0.00	0.02
Machinery hire/rent/lease	0.03	0.09	0.14	0.37	0.91
Mach. repair & farm vehicle exp.	0.58	0.81	0.95	1.13	1.67
Fuel, oil & grease	0.58	0.71	0.80	0.95	1.19
Replacement livestock	0.00	0.00	0.00	0.00	0.27
Breeding	0.09	0.15	0.20	0.25	0.36
Veterinary & medicine	0.43	0.60	0.71	0.82	1.03
Milk marketing	0.43	0.64	0.80	0.99	1.41
Bedding	0.10	0.29	0.39	0.49	0.70
Milking supplies	0.18	0.27	0.33	0.46	0.66
Cattle lease	0.00	0.00	0.00	0.00	0.09
Custom boarding	0.00	0.00	0.02	0.31	1.45
bST expense	0.00	0.00	0.04	0.34	0.49
Livestock professional fees	0.00	0.04	0.06	0.08	0.20
Other livestock expense	0.00	0.00	0.02	0.09	0.26
Fertilizer & lime	0.14	0.32	0.52	0.68	1.13
Seeds & plants	0.24	0.37	0.49	0.62	0.85
Spray/other crop expenses	0.07	0.15	0.24	0.28	0.40
Crop professional fees	0.00	0.00	0.01	0.05	0.09
Land, building, fence repair	0.12	0.25	0.34	0.42	0.67
Taxes	0.10	0.17	0.22	0.27	0.37
Real estate rent/lease	0.08	0.18	0.28	0.37	0.72
Insurance	0.07	0.14	0.17	0.20	0.26
Utilities	0.24	0.34	0.41	0.48	0.60
Interest	0.12	0.31	0.53	0.68	0.90
Other professional fees	0.02	0.06	0.11	0.17	0.29
Miscellaneous	0.02	0.06	0.11	0.15	0.29
Total Operating Expenses	$16.78	$18.24	$19.31	$20.44	$22.67
Expansion livestock	0.00	0.00	0.00	0.03	0.53
Extraordinary expense	0.00	0.00	0.00	0.00	0.00
Machinery depreciation	0.52	0.77	0.93	1.09	1.36
Building depreciation	0.27	0.38	0.51	0.72	0.96
Net Farm Income w/o Appreciation	$ 5.89	$ 4.76	$ 3.61	$ 2.75	$ 0.94

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

112 Large Herd Dairy Farms, 2013

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)[31]	(12)	(12)	(12)	(11)	(11)	(14)	(14)
44.6	2,230	59,294,709	29,102	5.5	24	66	1,601,843
30.3	1,414	37,754,288	27,746	4.8	22	54	1,385,126
26.1	1,149	29,797,620	27,225	4.5	21	50	1,271,598
22.4	1,012	26,107,038	26,746	4.1	20	48	1,222,531
19.3	897	23,355,327	26,286	3.8	19	46	1,181,315
17.6	756	19,809,568	25,787	3.6	18	44	1,130,855
15.0	672	16,899,301	25,268	3.3	17	43	1,091,067
13.4	563	13,584,824	24,603	3.0	16	41	1,047,755
10.7	434	10,966,600	23,641	2.5	14	38	930,298
7.2	340	7,461,389	19,092	1.5	7	31	772,084

Cost Control

Grain Bought Per Cow	% Grain is of Milk Receipts	Net Milk Income Over Purchased Feed Cost Per Cow	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
(12)	(12)	(CALC)	(14)	(14)	(12)	(12)
$ 1,133	24%	$4,234	$553	$1,169	$1,560	$7.07
1,555	28	3,893	729	1,486	1,959	7.96
1,647	30	3,757	791	1,613	2,105	8.28
1,712	31	3,637	860	1,680	2,176	8.59
1,803	32	3,548	931	1,725	2,256	8.87
1,869	33	3,467	960	1,798	2,349	9.19
1,929	34	3,362	997	1,879	2,428	9.40
2,004	36	3,240	1,064	1,970	2,529	9.66
2,104	37	3,119	1,142	2,085	2,649	9.91
2,345	39	2,663	1,368	2,351	2,898	10.77

[31]( ) = 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)
$1.75	$28,992	8%	$0.38	$0.35	$0.00
2.15	31,592	10	0.57	0.47	0.00
2.46	33,021	11	0.62	0.53	0.00
2.58	34,825	12	0.71	0.59	0.00
2.74	36,230	13	0.80	0.66	0.03
2.92	37,986	14	0.87	0.70	0.06
3.15	40,361	14	0.94	0.76	0.08
3.33	42,760	15	1.04	0.82	0.11
3.63	45,287	16	1.13	0.94	0.16
4.43	50,395	20	1.58	1.12	0.38

Machinery & Crop Expense		Cost of Producing Milk			
		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)
$428	$104	$2,992	$13.83	$3,890	$17.78
532	121	3,687	14.56	4,711	18.68
564	131	3,907	15.23	4,932	19.18
595	140	4,092	15.75	5,026	19.68
630	151	4,199	16.56	5,156	20.12
673	162	4,344	17.08	5,262	20.53
703	173	4,532	17.61	5,450	21.18
739	192	4,701	18.26	5,664	21.79
819	209	4,959	19.06	5,994	22.79
1,056	336	5,432	20.23	6,280	24.26

bST Expense Per Cow	bST Expense Per Cwt.	Culling Rate	Expense Ratios		
			Operating	Depreciation	Interest
(12)	(12)	(12)	(14)	(14)	(14)
$0	$0.00	19%	0.67	0.03	0.00
0	0.00	28	0.70	0.04	0.01
0	0.00	30	0.72	0.05	0.01
0	0.00	32	0.75	0.06	0.02
0	0.00	34	0.77	0.06	0.02
3	0.01	37	0.79	0.06	0.02
48	0.19	39	0.81	0.07	0.03
91	0.34	41	0.83	0.08	0.03
110	0.41	43	0.87	0.09	0.03
137	0.51	47	0.91	0.10	0.04

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)
$22.96	$22.04	$6,283	$676	$159
22.37	21.42	6,091	515	71
22.12	21.25	5,986	466	59
21.97	21.08	5,823	421	48
21.83	20.94	5,673	390	41
21.62	20.82	5,590	373	34
21.47	20.62	5,461	344	23
21.24	20.44	5,282	312	17
21.03	20.18	5,048	259	9
20.54	19.79	4,157	143	-24

Debt Management

Farm Debt Per Cow		Cost of	Planned Debt Payments	
Total	Intermediate & Long Term	Borrowed Capital	Per Cow	Per Cwt.
(7)	(7)	(7)	(10)	(10)
$ 629	$ 296	1.7%	$ 50	$0.33
1,807	1,128	3.0	195	1.00
2,393	1,721	3.1	302	1.00
2,896	2,134	4.0	392	1.45
3,434	2,648	4.0	486	2.00
3,917	3,088	4.0	540	2.00
4,289	3,373	4.0	615	2.45
4,649	3,821	4.0	706	3.00
5,305	4,153	4.2	801	3.00
6,141	4,949	5.1	1,016	4.09

Cash Flow Analysis

Amount Available for Family Living, Debt Service & Investment		Personal Withdrawals & Family Expenditures		Cash Flow Coverage
Per Cow	Per Cwt.	Per Cow	Per Cwt.	Ratio
(16)	(16)	(CALC)	(CALC)	(10)
$2,054	$7.89	$1,347	$4.92	7.90
1,623	6.34	614	2.46	3.14
1,422	5.59	381	1.59	2.33
1,297	5.15	289	1.21	1.82
1,172	4.80	248	0.98	1.52
1,080	4.22	206	0.81	1.24
994	3.95	171	0.67	0.97
844	3.28	139	0.54	0.70
628	2.46	102	0.41	0.46
414	1.74	51	0.19	-0.87

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)
$ 6,659	$1,846	$ 661	$29,303	1.02
8,415	2,936	1,128	31,485	0.78
9,062	3,418	1,371	32,708	0.73
9,702	3,723	1,593	34,405	0.68
10,290	4,046	1,799	35,620	0.64
11,088	4,375	1,981	37,065	0.61
11,708	4,918	2,146	38,790	0.57
12,346	5,429	2,326	40,596	0.55
13,294	6,109	2,511	43,190	0.49
14,977	7,320	3,129	48,554	0.41

Solvency					Liquidity	
		Debt to Asset Ratios			Working Capital	
Percent Equity	Leverage Ratio	Total	Current/ Intermediate	Long Term	as % of Total Expenses	Current Ratio
(7)	(7)	(7)	(7)	(7)	(7)	(7)
95%	0.06	0.06	0.06	0.00	56%	35.40
84	0.20	0.17	0.16	0.03	36	6.02
78	0.30	0.23	0.23	0.11	31	4.59
73	0.39	0.28	0.26	0.22	28	3.36
69	0.48	0.32	0.30	0.29	24	2.75
63	0.60	0.37	0.35	0.36	20	2.48
60	0.70	0.41	0.40	0.42	17	2.10
56	0.79	0.44	0.44	0.49	11	1.58
54	0.89	0.47	0.52	0.54	5	1.21
42	1.56	0.59	0.69	0.67	-5	0.76

Profitability				
Labor and	Rate Return to Equity Capital		Rate Return to All Capital	
Mgmt. Income Per Operator	Without Appreciation	With Appreciation	Without Appreciation	With Appreciation
(4)	(4)	(4)	(4)	(4)
$926,674	24.57%	32.86%	15.72%	20.59%
488,179	17.69	23.27	12.57	15.69
400,836	14.24	19.33	10.43	13.46
282,481	12.36	16.66	9.44	12.24
210,868	10.62	15.17	8.52	10.98
167,410	8.95	12.12	7.28	9.59
117,362	7.21	9.95	5.81	7.80
50,195	4.84	7.70	4.46	6.33
-1,294	2.27	4.47	2.71	4.05
-111,617	-1.45	-0.63	0.26	1.05

Profitability, Continued			
Net Farm Income Without Appreciation		Net Farm Income From Operations	Net Income Efficiency
Per Cow	Per Cwt.	Ratio	Ratio
(12)	(12)	(4)	(CALC)
$ 1,659	$ 6.17	24%	20%
1,437	5.41	22	13
1,270	4.98	20	10
1,108	4.37	18	9
904	3.60	15	8
783	3.13	12	7
652	2.55	10	6
487	2.08	8	5
335	1.42	6	3
83	0.29	1	2

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 45-48 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.

Dairy Enterprise Only – Dairy enterprise only represents the estimate of labor hours, hired and family, that was utilized to operate the dairy. This estimate includes all labor to milk, feed, scrape, and take care of the milking and dry cows. Labor to take care of dairy replacements, produce crops, and spread manure was excluded. Labor efficiency numbers calculated for the dairy enterprise only help evaluate the labor efficiency of the dairy and the overall business.

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).

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

Milking System Only – The milking center of dairy farms is a major investment and utilizes a significant portion of the farm labor. Producers provided estimates concerning the number of labor hours per day spent employed in the milking center and the number of milking units utilized. The labor represents time spent to set up, milk cows, and clean the milking center during a 24-hour period. Time spent to move cows to and from the milking center is not included.

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, 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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OTHER A.E.M. EXTENSION BULLETINS

EB No	Title	Fee (if applicable)	Author(s)
2014-04	Agriculture-Based Economic Development in New York State: The Contribution of Agriculture to the New York Economy		Schmit, T.
2014-03	Agriculture-Based Economic Development in New York State: Assessing the Inner-Industry Linkages in the Agricultural and Food System		Schmit, T. and R. Boisvert
2014-02	Dairy Replacement Programs: Cost & Analysis 3rd Quarter 2012		Karszes, J.
2014-01	Cost of establishment and production of V. vinifera grapes in the Finger Lakes region of New York - 2013		Gomez, M.
2013-17	New York Economic Handbook, 2014		Extension Faculty and Staff
2013-16	Dairy Farm Business Summary, Northern New York Region, 2012	($12.00)	Knoblauch, W., Conneman, G., Dymond, C., Karszes, J., Howland, B., Buxton, S., Kiraly, M., and K. Shoen
2013-15	Dairy Farm Business Summary, Hudson and Central New York Region, 2012	($12.00)	Knoblauch, W., Conneman, G., Dymond, C., Karszes, J., Howland, B., Buxton, S., Kiraly, M., and K. Shoen
2013-14	Eastern Broccoli Crop Budgets		Atallah, S. and M. Gómez
2013-13	Dairy Farm Business Summary, New York Small Herd Farms, 120 Cows or Fewer, 2012	($16.00)	Knoblauch, W., Dymond, C., Karszes, J. and M. Kiraly
2013-12	Dairy Farm Business Summary, Western New York Region, 2012	($12.00)	Knoblauch, W., Dymond, C., Karszes, J., Hanchar, J., Grace, J., Carlberg, V. and J. Petzen

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