DAIRY FARM BUSINESS SUMMARY

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PRO-DAIRY

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NEW YORK LARGE HERD FARMS, 300 COWS OR LARGER 2000

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2000 DAIRY FARM BUSINESS SUMMARY
LARGE HERD DAIRY FARMS
300 Cows or Larger

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2000 DAIRY FARM BUSINESS SUMMARY
LARGE HERD DAIRY FARMS[1]

INTRODUCTION

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

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

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

Program Objective

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

Format

This report is comprised of six sections. The first section charts the progress of the large herd farm business over two years. Sixty-six of the large herd farms participated in the summary the last two years. The averages of selected business factors are presented for these farms and the changes that occurred from 1999 to 2000 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 70 large herd farms that participated in the 2000 DFBS program. Also presented is information concerning dairy enterprise efficiency, and milk parlor efficiency.

The summary and analysis section lists the average data for the 70 large herd farms that participated in the 2000 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% large farms.

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

The fifth section contains the income and expense profiles for the 300-400 cow farms, 400-600 cow farms, and 600 and more cow farms on a per cow and per cwt. 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. Cayuga, Chautauqua, Chenango, Clinton, Cortland, Erie, Genesee, Jefferson, Livingston, Montgomery, Niagara, Oneida, Ontario, St. Lawrence, Saratoga, Schuyler, Tioga, Washington, Wayne and Wyoming counties had farms of this size in 2000. This report was written by Jason Karszes, Senior Extension Associate, Pro-Dairy and Wayne A. Knoblauch, Professor, Farm Management. Linda Putnam was in charge of data preparation. Faye Butts prepared the publication. Data were collected by Cornell Cooperative Extension educators across the state.

PROGRESS OF THE FARM BUSINESS

The 2000 business year for the New York State dairy industry was markedly different than the last four years, primarily due to three areas. Milk price and growing conditions decreased from 1999 and costs increased from 1999. The combination of these factors led to profit levels that were significantly lower than 1999 and lower than any year in the 90's. The average farm in this report didn't make significant financial progress in 2000.

For both 1999 and 2000, 66 farms that averaged more than 300 cows in New York participated in the Dairy Farm Business Summary Program (DFBS), administered by Cornell Cooperative Extension and Cornell University. The table on the following page shows selected factors from the 66 farms that participated in the DFBS project each of the last two years.

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

Milk price. Gross milk prices decreased 10.8 percent, or $1.61 per cwt. With the change to multiple component pricing starting on January 1, 2000, which moved away from zone differentials that no longer are included in hauling costs, and the increase in fuel costs, milk marketing expenses per cwt. increased by 50 percent to 62 cents per cwt. This increase in marketing costs, coupled with the decrease in gross price, led to a decrease of 12.4 percent in net price received on the farm, with an average net price per cwt. of $12.70 for 2000.

Milk income. Primarily due to the poor growing conditions in 2000 and the resulting lower forage quality, milk production per cow decreased slightly from 1999. This decrease in production coupled with the lower milk price led to an 11.1 percent decrease in milk income per cow in 2000. While the production per cow did not increase, these farms continued to add cows and increased herd size by 38 cows, or 6.4 percent, which led to a 6.1 percent increase in total milk marketed off the farm. Even with this increase in milk marketed off the farm, it did not offset the decrease in milk price. Gross milk revenue for the farm decreased by $107,640, or 5.3 percent. While hay yields did increase to 3.94 tons of dry matter per acre, the quality was low due to high moisture conditions and low temperatures. Corn yields fell 6.5 percent to 16.1 tons per acre, as fed, also with lower quality.

Cost control. With the increase in herd size, worker equivalents increased by 4 percent. With this increase being lower than the increase in herd size, labor efficiency increased by 2%, with milk sold per worker equivalent averaging 1,052,794 pounds. While labor efficiency continued to increase, hired labor costs increased at a faster rate. Hired labor costs per worker equivalent increased 5 percent, hired labor costs per cwt. of milk increased 3.1 percent, and hired labor costs as percent of milk sales increased from 17 to 19.7 percent.

Along with the increase in labor costs and milk marketing costs, interest and fuel costs increased significantly from 1999. With the increase in interest rates and the farms actually increasing borrowed capital during the year (debt per cow rising from $2,778 to $2,873), interest expense per cwt. increased 16 cents per cwt., a 20.8 percent increase. The increase in fuel costs during the year led to a 9 cent increase per cwt. With these significant cost changes, total farm operating expenses increased 3.5 percent, or 46 cents per cwt. to 13.42 per cwt.

Weaker earnings picture. The combinations of lower milk prices, increased costs, and lower production led to a significant decrease in farm earnings for 2000. Net farm income without appreciation decreased 73.1 percent to $93,452. Net farm income with appreciation decreased 56.7 percent to $177,697. The appreciation in 2000 is due primarily to the increase in cattle prices being reflected on the balance sheet at the end of 2000.

- Labor and management income per operator/manager decreased 103.3 percent to $-3,960.
- Rate of return to all capital without appreciation decreased 64.5 percent to 3.79 percent. Rate of return on equity capital without appreciation decreased 96.7 percent to 0.48 percent.
- Farm net worth increased by 0.3 percent from the previous year.
- Debt to asset ratio increased from 0.46 to 0.47.

Overall, 2000 was a challenging year for the 300 cow and larger farms. While, on average, profits decreased significantly from 1999, the changes on individual farms varied, with some farms actually doing better in 2000 than in 1999.

The importance of trend analysis is to identify what areas changed, ask why they changed, and look at what you can do differently in the future to influence that change. If you would like help in developing and looking at the trends in your business, contact your local extension service and become involved in a financial management education program.

PROGRESS OF THE FARM BUSINESS

Same 66 Large Herd Dairy Farms, 1999 & 2000

Selected Factors	Average of 66 Farms 1999	Average of 66 Farms 2000	Percent Change
Size of Business			
Average number of cows	591	629	6.4
Average number of heifers	447	479	7.2
Milk sold, lbs.	13,537,760	14,360,107	6.1
Worker equivalent	13.11	13.64	4.0
Total tillable acres	1,132	1,193	5.4
Rates of Production			
Milk sold per cow, lbs.	22,905	22,830	-0.3
Hay DM per acre, tons	3.52	3.94	11.9
Corn silage per acre, tons	17.22	16.10	-6.5
Labor Efficiency & Costs			
Cows per worker	45	46	2.2
Milk sold/worker, lbs.	1,032,629	1,052,794	2.0
Hired labor cost/cwt.	$2.54	$2.62	3.1
Hired labor cost/worker	$31,733	$33,304	5.0
Hired labor cost as % of milk sales	17%	19.7%	15.9
Cost Control			
Grain & conc. purchased as % of milk sales	25%	28%	12.0
Grain & conc. per cwt. milk	$3.73	$3.69	-1.1
Dairy feed & crop expense per cwt. milk	$4.68	$4.59	-1.9
Labor & mach. costs/cow	$1,143	$1,174	2.7
Total farm operating costs per cwt. sold	$12.96	$13.42	3.5
Interest costs per cwt. milk	$0.77	$0.93	20.8
Milk marketing costs per cwt. milk sold	$0.42	$0.62	47.6
Operating cost of producing cwt. of milk	$11.27	$11.59	2.8
Capital Efficiency(average for the year)			
Farm capital per cow	$5,884	$5,986	1.7
Mach. & equip. per cow	$996	$1,026	3.0
Asset turnover ratio	0.68	0.62	-8.8
Income Generation			
Gross milk sales per cow	$3,420	$3,042	-11.1
Gross milk sales per cwt.	$14.93	$13.32	-10.8
Net milk sales per cwt.	$14.50	$12.70	-12.4
Dairy cattle sales per cow	$218	$258	-18.3
Dairy calf sales per cow	$27	$40	48.1
Profitability			
Net farm income w/o appreciation	$347,407	$93,452	-73.1
Net farm income w/appreciation	$410,525	$177,697	-56.7
Labor & mgt. income per operator/manager	$119,862	$ -3,960	-103.3
Rate of return on equity capital w/o appreciation	14.38%	0.48%	-96.7
Rate of return on all capital w/o appreciation	10.68%	3.79%	-64.5
Financial Summary			
Farm net worth, end year	$1,968,181	$1,974,856	0.3
Debt to asset ratio	0.46	0.49	6.5
Farm debt per cow	$2,778	$2,873	3.4

RECEIPTS AND EXPENSES PER COW AND PER HUNDREDWEIGHT

Same 66 Large Herd Dairy Farms, 1999 & 2000

	1999		2000	
Item	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	591		629	
Cwt. of Milk Sold		135,378		143,601
Accrual Operating Receipts				
Milk	$3,420	$14.93	$3,042	$13.32
Dairy cattle	218	0.95	258	1.13
Dairy calves	27	0.12	40	0.17
Other livestock	13	0.06	13	0.06
Crops	90	0.39	54	0.24
Miscellaneous receipts	110	0.48	148	0.65
Total	$3,877	$16.93	$3,556	$15.58
Accrual Operating Expenses				
Hired labor	$581	$2.54	$599	$2.62
Dairy grain & concentrate	855	3.73	842	3.69
Dairy roughage	54	0.24	63	0.28
Nondairy feed	0	0.00	0	0.00
Machine hire, rent & lease	93	0.41	98	0.43
Machine repairs & vehicle expense	153	0.67	138	0.60
Fuel, oil & grease	48	0.21	68	0.30
Replacement livestock	51	0.22	43	0.19
Breeding	36	0.16	38	0.17
Veterinary & medicine	116	0.51	124	0.54
Milk marketing	97	0.42	142	0.62
Bedding	53	0.23	54	0.24
Milking supplies	71	0.31	73	0.32
Cattle lease	16	0.07	13	0.06
Custom boarding	39	0.17	53	0.23
bST expense	65	0.28	66	0.29
Other livestock expense	27	0.12	24	0.10
Fertilizer & lime	68	0.30	55	0.24
Seeds & plants	42	0.18	41	0.18
Spray & other crop expense	53	0.23	47	0.21
Land, building & fence repair	58	0.25	46	0.20
Taxes	31	0.13	28	0.12
Real estate rent/lease	66	0.29	70	0.31
Insurance	26	0.12	26	0.11
Utilities	59	0.26	61	0.27
Interest paid	175	0.77	212	0.93
Miscellaneous	36	0.16	40	0.17
Total Operating Expenses	$2,970	$12.96	$3,064	$13.42
Expansion livestock	70	0.30	95	0.42
Machinery depreciation	135	0.59	136	0.60
Real Estate depreciation	115	0.50	111	0.49
Total Expenses	$3,290	$14.36	$3,407	$14.92
Net Farm Income without appreciation	588	2.57	149	0.65

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

In 2000, 27 of the 70 farms with over 300 cows filled out a supplementary data collection form in order to gain information on some additional management concerns of dairy farmers. Reported below are the averages and business charts for these factors. Each category is sorted independently, therefore farms that are the highest or lowest in one column may not necessarily be the highest or lowest in the next column. Please note that this is only descriptive data from 27 farms and only represents these 27 farms. See the Glossary beginning on page 49 for definitions of the factors in the table below.

On the following page selected factors for the top 20% 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 70 farms over 300 cows that participated in the DFBS project in 2000. 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

Fourteen farms that were in the top 20 percent in 2000 were also in the summary in 1999. The table on page 7 shows income and expenses for these farms for both 1999 and 2000. Identifying the changes that occurred on these farms provides insight into what happened on the most profitable farms. How your farm changed in comparison should provide valuable management information.

SUPPLEMENTAL FARM BUSINESS CHART

27 Large Herd Farms, 2000

Milking System Only

	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
	2,746	51	815,235
	1,866	31	637,440
	1,646	27	513,317
	1,401	23	420,268
	1,208	19	321,873
Average	1,789	31	543,621

Dairy Enterprise Only

	Worker Equivalents	Cows per Worker Equivalent	Pounds Sold per Worker Equivalent
	10.81	260	4,937,194
	6.57	133	3,001,055
	5.00	101	2,288,670
	4.11	94	2,008,515
	2.76	75	1,713,242
Average	5.92	135	2,829,400

TOP 20 PERCENT VS. AVERAGE
70 Large Herd Dairy Farms, 2000

Selected Factors	Average 2000	Top 20% 2000	Percent Difference
Size of Business			
Average number of cows	638	540	-15.4
Average number of heifers	485	400	-17.5
Milk sold, lbs.	14,427,925	12,721,762	-11.8
Worker equivalent	13.68	11.67	-14.7
Total tillable acres	1,214	1,134	-6.6
Rates of Production			
Milk sold per cow, lbs.	22,622	23,540	4.1
Hay DM per acre, tons	3.82	4.00	4.7
Corn silage per acre, tons	15.95	16.01	0.4
Labor Efficiency & Costs			
Cows per worker	47	46	2.1
Milk sold/worker, lbs.	1,054,673	1,090,125	3.4
Hired labor cost/cwt.	$2.60	$2.44	-6.2
Hired labor cost/hired worker	$33,156	$32,044	-3.4
Hired labor cost as % of milk sales	19.5%	18.3%	-6.2
Cost Control			
Grain & conc. purchased as % of milk sales	27%	27%	0.0
Grain & conc. per cwt. milk	$3.66	$3.54	-3.3
Dairy feed & crop expense per cwt. milk	$4.58	$4.35	-5.0
Labor & mach. costs/cow	$1,164	$1,136	-2.4
Total farm operating costs per cwt. sold	$13.47	$12.21	-9.4
Interest costs per cwt. milk	$0.95	$0.73	-23.2
Milk marketing costs per cwt. milk sold	$0.64	$0.53	-17.2
Operating cost of producing cwt. of milk	$11.63	$10.02	-13.8
Capital Efficiency (average for the year)			
Farm capital per cow	$6,044	$5,819	-3.7
Mach. & equip. per cow	$1,030	$1,082	5.0
Asset turnover ratio	0.61	0.67	9.8
Income Generation			
Gross milk sales per cow	$3,023	$3,144	4.0
Gross milk sales per cwt.	$13.37	$13.35	-0.1
Net milk sales per cwt.	$12.73	$12.81	0.6
Dairy cattle sales per cow	$261	$316	21.1
Dairy calf sales per cow	$39	$39	0.0
Profitability			
Net farm income without appreciation	$84,539	$290,563	243.7
Net farm income with appreciation	$168,456	$361,385	114.5
Labor & mgt. income per oper./manager	$-8,963	$114,554	137.8
Rate of return on equity capital w/o appreciation	-0.18%	11.42%	644.4
Rate of return on all capital w/o appreciation	3.47%	10.02%	188.8
Financial Summary			
Farm net worth, end of year	$2,017,999	$2,030,076	0.6
Debt to asset ratio	0.49	0.38	-22.4
Farm debt per cow	$2,907	$2,273	-21.8

RECEIPTS AND EXPENSES PER COW AND PER HUNDREDWEIGHT

Same 14 Top 20% Large Herd Dairy Farms, 1999 & 2000

	1999		2000	
Item	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	495		540	
Cwt. Of Milk Sold		112,959		127,218
Accrual Operating Receipts				
Milk	$3,395	$14.88	$3,144	$13.35
Dairy cattle	293	1.28	316	1.34
Dairy calves	25	0.11	39	0.17
Other livestock	50	0.22	33	0.14
Crops	83	0.36	107	0.46
Miscellaneous receipts	86	0.38	139	0.59
Total	$3,931	$17.23	$3,778	$16.04
Accrual Operating Expenses				
Hired labor	$544	$2.38	$576	$2.44
Dairy grain & concentrate	873	3.83	835	3.54
Dairy roughage	17	0.07	46	0.20
Nondairy feed	0	0.00	0	0.00
Machine hire, rent & lease	64	0.28	63	0.27
Machine repairs & vehicle expense	152	0.67	137	0.58
Fuel, oil & grease	46	0.20	64	0.27
Replacement livestock	53	0.23	42	0.18
Breeding	40	0.18	41	0.17
Veterinary & medicine	113	0.50	115	0.49
Milk marketing	99	0.43	126	0.53
Bedding	33	0.14	37	0.16
Milking supplies	77	0.34	58	0.25
Cattle lease	9	0.04	2	0.01
Custom boarding	17	0.07	37	0.16
bST expense	60	0.26	73	0.31
Other livestock expense	40	0.17	40	0.17
Fertilizer & lime	63	0.28	61	0.26
Seeds & plants	41	0.18	42	0.18
Spray & other crop expense	55	0.24	39	0.17
Land, building & fence repair	59	0.26	48	0.20
Taxes	26	0.12	20	0.09
Real estate rent/lease	74	0.32	86	0.36
Insurance	23	0.10	26	0.11
Utilities	51	0.22	48	0.20
Interest paid	144	0.63	171	0.73
Miscellaneous	39	0.17	42	0.18
Total Operating Expenses	$2,812	$12.32	$2,876	$12.21
Expansion livestock	124	0.54	119	0.51
Machinery depreciation	138	0.61	159	0.68
Real Estate depreciation	99	0.43	85	0.36
Total Expenses	$3,172	$13.90	$3,240	$13.75
Net Farm Income without appreciation	759	3.32	538	2.28

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
28 Large Herd Dairy Farms, 2000

Animals Entering Herd	Average
Number calving in 2000 for first time	252
Animals purchased, %[1]	18.8
Animals raised by farm, %[2]	81.2
Current Heifer Inventory	
Raised on dairy, %	81
Raised by a custom grower, %	19

[1] Animals purchased are animals purchased from a different farm and were not the farm's genetics.
[2] 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, 252 animals calved for the first time in 2000. The breakdown on these animals for source was 18.8% purchased and 81.2% raised by the farm. Of the current heifer inventory, 81% were raised on the dairy and 19% were being raised by a custom grower. There is increased interest in evaluating the dairy replacement enterprise.

Milk Income and Marketing Expense Breakdown

Starting January 1st, 2001, the northeast switched to multiple components pricing, which changed the format of the milk check and how farmers received payment for their milk. To examine the breakdown of the gross milk income and the marketing expenses, 30 farms filled out a detailed form for all the different sources of income for milk sales and the milk marketing expenses on an accrual basis. This information is reported in the following two tables. The tables are divided into six different areas, each representing a different area of income or expenses.

The first section looks at the value of the milk components on a per cwt. basis. The second area looks at the Producer Price Differential. The third area looks at the premiums a farm receives. Any premiums not specifically noted as quality or volume related are included in market premiums. The fourth area looks at the expenses associated with marketing milk. A new line item in this section is the expenses associated with utilizing forward contracting or hedging programs to market milk, such as commission or broker fees. The fifth area is income from the compact program or from forward contracting or hedging programs. The sixth area is the patronage dividends or refunds from the milk cooperatives. Equity purchased in the milk cooperative utilizing a monthly deduction from the milk check or a percent of the patronage dividend is treated as a capital purchase and is not a milk marketing expense. The cumulative total for these six areas is the net price received on farms. Your net farm price can be found on page 10 of your farm's 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 MILK INCOME AND MARKETING REPORT
30 Large Herd Dairy Farms, 2000

	Pounds	Percent	Price/Pound	Total	$/Cwt of Milk
BASE FARM PRICE					
Butterfat	551,999.52	3.72%	$ 1.2564	$ 690,556.36	$ 4.67
Protein	452,947.65	3.05%	$ 1.6647	$ 745,427.84	$ 5.02
Solids	848,642.42	5.63%	$ 0.0524	$ 44,506.57	$ 0.30
Total Component Contribution					$ 9.99
PPD	14,915,905.57		$ 2.3942	$ 361,042.21	$ 2.39
Base Farm Price					$ 12.38
Premiums					
Quality				$ 20,327.38	$ 0.14
Volume				$ 39,216.68	$ 0.25
Market Premiums				$ 55,718.27	$ 0.30
Total Premiums					$ 0.69
BASE FARM PRICE + PREMIUM					$ 13.07
Deductions					
Promo				$ 22,685.37	$ 0.15
Hauling + Stop Charges.				$ 63,795.29	$ 0.41
Market Fees & Coop Dues				$ 7,186.18	$ 0.05
Futures/Contract Fees				$ 0.00	$ 0.00
Total Deductions					$ 0.61
BASE FARM PRICE + PREMIUMS - DEDUCTIONS					$ 12.45
Marketing Programs					
Compact				$ 8,551.12	$ 0.03
Futures Contracts, Forward Contracting, Etc.				$ 11,675.33	$ 0.07
Total Marketing Income					$ 0.10
Patronage Dividends				$ 22,437.79	$ 0.21
NET PRICE RECEIVED ON FARM, ALL SOURCES					**$ 12.76**
PPD - Hauling, per cwt.					$ 1.98
PPD - Hauling + Market Premiums, per cwt.					$ 2.28

MILK PRICE INFORMATION BY QUINTILE
(Each Category Sorted Independently)
30 Large Herd Dairy Farms, 2000

	Lowest Quintile	◄	►		Highest Quintile
Butterfat, %	3.48	3.63	3.67	3.75	4.06
Protein, %	2.81	2.92	2.96	3.00	3.19
Other Solids, %	5.16	5.65	5.73	5.76	5.84
Butterfat, $ per Cwt.	4.36	4.49	4.59	4.74	5.16
Protein, $ per Cwt.	4.79	4.90	5.00	5.08	5.33
Other solids, $ per Cwt.	.27	.28	.29	.29	.35
Total Component Value per Cwt.	**$ 9.55**	**$ 9.72**	**$ 9.86**	**$ 10.03**	**$ 10.78**
PPD, $ per Cwt.	2.25	2.29	2.34	2.42	2.67
Base Farm Price per Cwt.	**$ 11.86**	**$ 12.05**	**$ 12.24**	**$ 12.47**	**$ 13.30**
Quality, $ per Cwt.	.03	.09	.13	.19	.24
Volume, $ per Cwt.	.00	.11	.26	.33	.55
Market premium, $ per Cwt.	.00	.05	.21	.31	.93
Total Premium, $ per Cwt.	**.33**	**.46**	**.61**	**.88**	**1.15**
Base Farm Price + Premiums per Cwt.	**$ 12.39**	**$ 12.68**	**$ 12.88**	**$ 13.09**	**$ 14.29**
Promotion, $ per Cwt.	.15	.15	.15	.15	.15
Hauling, $ per Cwt.	.25	.34	.38	.44	.66
Market fees & coop dues per Cwt.	.00	.04	.06	.07	.09
Futures/contract fees, $ per Cwt.	.00	.00	.00	.00	.00
Total Marketing Expenses per Cwt.	**$ .44**	**$ .54**	**$ .59**	**$ .63**	**$ .88**
Base + Premiums – Deductions per Cwt.	**$ 11.78**	**$ 12.11**	**$ 12.31**	**$ 12.46**	**$ 13.60**
Compact, $ per Cwt.	.00	.00	.00	.00	.14
Futures contract, forward contracting, $ per Cwt.	.00	.00	.00	.00	.37
Total Marketing Income, $ per Cwt.	**$ .00**	**$ .00**	**$ .00**	**$ .00**	**$ .51**
Patronage Dividends, $ per Cwt.	**$ .00**	**$ .00**	**$ .00**	**$ .08**	**$ .95**
Net Price Received From All Sources, $ per Cwt.	**$ 11.86**	**$ 12.33**	**$ 12.49**	**$ 13.07**	**$ 14.03**
PPD - hauling, $ per Cwt.	**1.81**	**1.91**	**1.95**	**2.00**	**2.24**
PPD - hauling + mkt premiums, $ per Cwt.	**1.92**	**2.02**	**2.15**	**2.31**	**3.01**

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
70 Large Herd Dairy Farms, 2000

Type of Farm	Number
Dairy	70

Type of Ownership	Number
Owner	66
Renter	4

Type of Business	Number
Single proprietorship	19
Partnership	19
Limited Liability Corporation	14
Subchapter S Corporation	14
Subchapter C Corporation	4

Business Record System	Number
Account Book	3
Accounting Service	5
On-Farm Computer	60
Other	2

BST Usage	Number
<25%	4
25-75%	48
>75%	7
Stopped Use in 2000	3
Not Used	8

Type of Barn	Number
Stanchion/Tie-Stall	0
Freestall	69
Combination	1

Milking System	Number
Pipeline	0
Herringbone Conventional	27
Herringbone Rapid Exit	13
Parallel	24
Parabone	2
Rotary	1
Other	3

Milking Frequency	Number
2x/day	13
3x/day	51
Other	6

Production Records	Number
Testing Service	59
On-Farm System	9
Other	2
None	0

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 2000.

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
70 Large Herd Dairy Farms, 2000

Expense Item	Cash Paid	-	Change in Inventory or Prepaid Expense		+	Change in Accounts Payable	=	Accrual Expenses
Hired Labor	$ 375,301		$ -638	<<		$ -167		$ 375,772
Feed								
Dairy grain & concentrate	472,752		-42,751			12,142		527,646
Dairy roughage	38,390		-46			903		39,339
Nondairy	5		0			0		5
Machinery								
Mach. hire, rent/lease	54,706		-1,681	<<		2,632		59,019
Mach. rep. & farm veh. exp	87,340		495			352		87,196
Fuel, oil & grease	42,542		606			1,091		43,028
Livestock								
Replacement livestock	31,373		0	<<		896		32,270
Breeding	22,072		-969			526		23,567
Vet & medicine	75,786		-1,463			898		78,147
Milk marketing	91,800		0	<<		87		91,886
Bedding	32,941		196			397		33,142
Milk supplies	44,090		-1,539			647		46,277
Cattle lease/rent	8,153		223	<		22		7,952
Custom boarding	33,977		-134	<<		787		34,898
bST expense	39,172		-1,531			192		40,895
Other livestock expense	14,637		4			127		14,760
Crops								
Fertilizer & lime	33,122		-2,480			86		35,687
Seeds & plants	17,183		-8,753			359		26,296
Spray, other crop exp.	30,684		-1,352			-69		31,966
Real Estate								
Land/bldg./fence repair	30,074		-80			142		30,296
Taxes	19,174		72	<<		-3		19,099
Rent & lease	44,907		980	<<		335		44,261
Other								
Insurance	17,606		36	<<		-150		17,420
Utilities (farm share)	38,999		14	<<		342		39,328
Interest paid	136,846		158	<<		520		137,208
Miscellaneous	25,710		-161			364		26,235
Total Operating Expenses	$ 1,859,344		$ -60,792			$ 23,459		$ 1,943,595
Expansion livestock	$ 65,396		$ 0	<<		$ 41		$ 65,438
Machinery depreciation								$ 91,091
Building depreciation								$ 74,303
Total Accrual Expenses								$ 2,174,427

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 2000 funds used to prepay 2001 leases exceed the amount of 2000 leases prepaid in 1999, the amount of this excess is subtracted to exclude it from 2000 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 2000 but not paid for. A decrease is subtracted because the resource was used before 2000.

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
70 Large Herd Dairy Farms, 2000

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts
Milk sales	$1,913,585				$ 15,011		$ 1,928,596
Dairy cattle	91,511		$ 74,983		-48		166,446
Dairy calves	25,086				-102		24,984
Other livestock	6,898		710		14		7,622
Crops	9,766		26,418		-782		35,401
Government receipts	62,290		0 [2]		1,277		63,567
Custom machine work	3,556				545		4,101
Gas tax refund	522				3		525
Other	27,991				-266		27,725
Less nonfarm noncash cap.			0 [3]				0
Total Receipts	$2,141,205		$ 102,111		$ 15,651		$ 2,258,966

[2] Change in advanced government receipts.
[3] 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 2000 for the 2001 crop year in excess of funds earned for 2000. Likewise, a decrease is added to cash government receipts because it represents funds earned for 2000 but received in 1999.

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[4] 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.

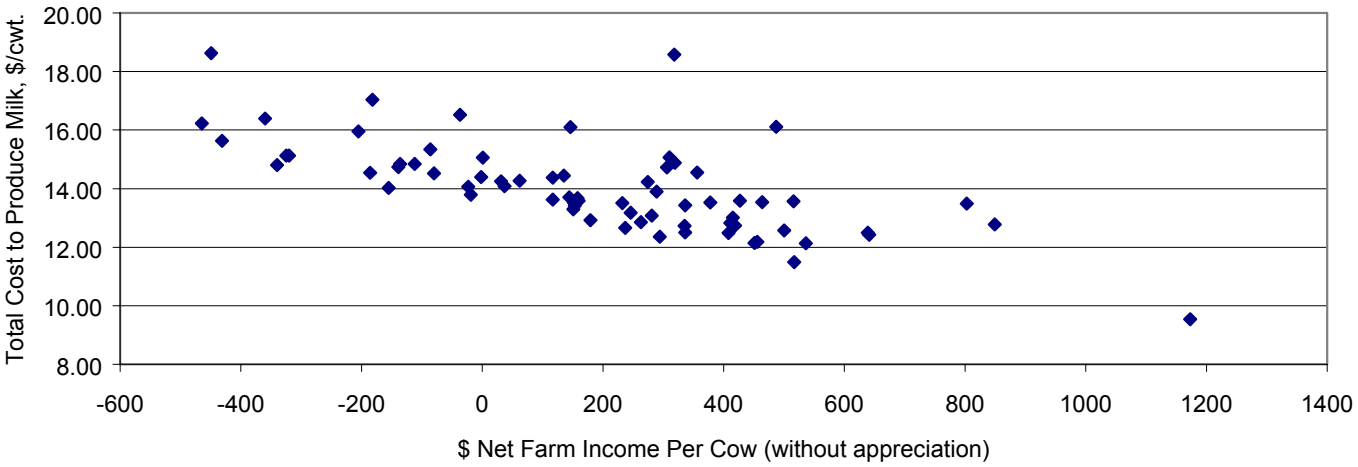
Net farm income is the return to the farm operators and other unpaid family members for their labor, management, and equity capital. It is the farm family's net annual return from working, managing, financing, and owning the farm business. This is not a measure of cash available from the year's business 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
70 Large Herd Dairy Farms, 2000

Item	Average 70 Farms Total	Average 70 Farms Per Cow	Average Top 20%[5] Farms Total	Average Top 20%[5] Farms Per Cow
Total accrual receipts	$ 2,258,966		$ 2,040,001	
Appreciation: Livestock	37,546		30,998	
Machinery	14,645		13,431	
Real Estate	39,419		28,333	
Other Stock/Certificates	-7,693		-1,940	
Total Including Appreciation	$ 2,342,883		$ 2,110,823	
Total accrual expenses	2,174,427		1,749,438	
Net Farm Income (with appreciation)	$ 168,456	$264	$ 361,385	$ 669
Net Farm Income (w/o appreciation)	$ 84,539	$133	$ 290,563	$ 538

TOTAL COST TO PRODUCE MILK VS. NET FARM INCOME PER COW
70 Large Herd Dairy Farms, 2000



[4]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.

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

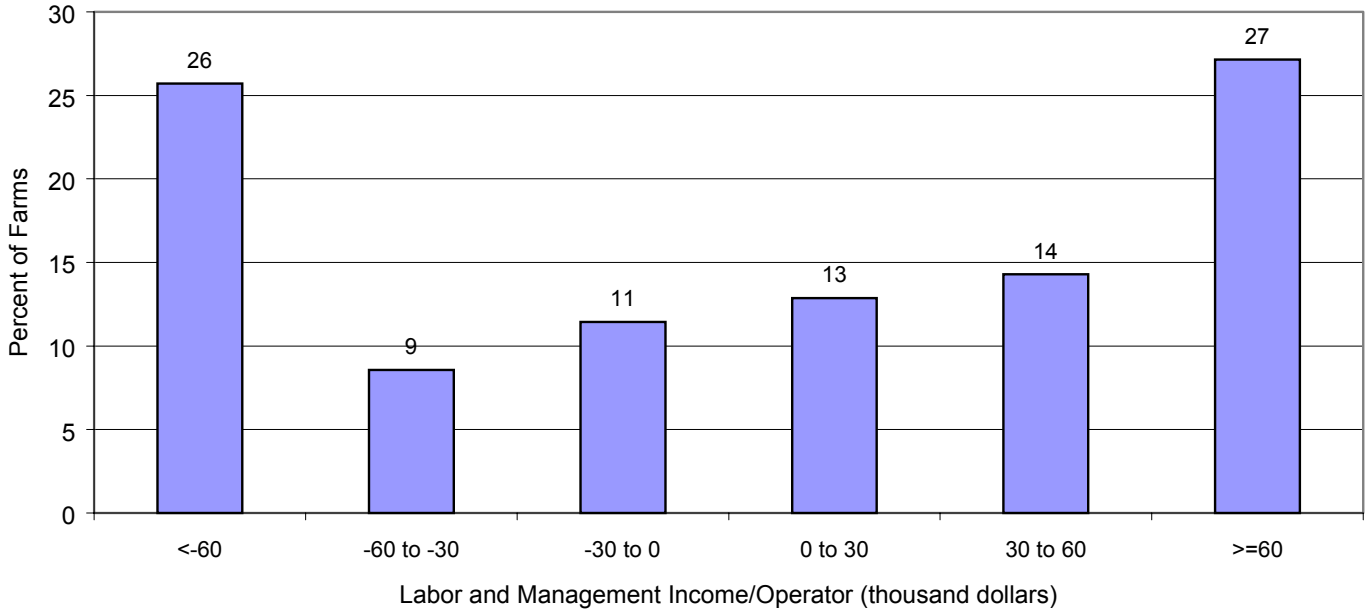
Labor and management income is the return which farm operators receive for their labor and management used in operating the farm business. Appreciation is not included as part of the return to labor and management because it results from ownership of assets rather than management of the farm business. 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
70 Large Herd Dairy Farms, 2000

Item	Average 70 Farms	Average Top 20% Farms
Net farm income without appreciation	$ 84,539	$ 290,563
Family labor unpaid @ $1,900 per month	- 3,230	- 3,040
Interest on $2,013,366 ($1,947,280 for top 20%) average equity capital @ 5% real rate	- 100,668	- 97,364
Labor & Management Income per Farm (2.16 operators/farm; 1.66 operators for top 20%)	$ -19,359	$ 190,159
Labor & Management Income per Operator/Manager	$ -8,963	$ 114,554

Labor and management income per operator averaged $-8,963 on these 70 farms in 2000. Returns to labor and management were less than $-30,000 on 35 percent of the farms. Labor and management income per operator ranged from $-30,000 to $30,000 on 24 percent of the farms while 41 percent showed labor and management incomes of $30,000 or more per operator.

DISTRIBUTION OF LABOR & MANAGEMENT INCOME PER OPERATOR
70 Large Herd Dairy Farms, 2000



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
70 Large Herd Dairy Farms, 2000

Item	Average 70 Farms	Average Top 20% Farms
Net farm income with appreciation	$ 168,456	$ 361,385
Family labor unpaid @ $1,900 per month	- 3,230	- 3,040
Value of operators' labor & management	- 84,897	- 65,164
Return on equity capital with appreciation	$ 80,329	$ 293,181
Interest paid	+ 137,208	+ 92,372
Return on total capital with appreciation	$ 217,537	$ 385,553
Return on equity capital without appreciation	$ -3,588	$ 222,359
Return on total capital without appreciation	$ 133,620	$ 314,731
Rate of return on average equity capital:		
with appreciation	4.0%	15.1 %
without appreciation	-0.2%	11.4 %
Rate of return on average total capital:		
with appreciation	5.6%	12.3 %
without appreciation	3.5%	10.0 %
Net farm income from operations ratio	0.04	0.14

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 2000, leases were discounted by 9.75 percent.

Advanced government receipts are included as current liabilities. Government payments received in 2000 that are for participation in the 1999 program are the end year balance and payments received in 1999 for participation in the 2000 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.

2000 FARM BUSINESS & NONFARM BALANCE SHEET

70 Large Herd Dairy Farms, 2000

Farm Assets	Jan. 1	Dec. 31	Farm Liabilities & Net Worth	Jan. 1	Dec. 31
Current			Current		
Farm cash, checking & savings	$ 21,454	$ 19,115	Accounts payable	$ 30,889	$ 54,389
Accounts receivable	122,429	138,079	Operating debt	181,380	179,948
Prepaid expenses	8,860	7,891	Short Term	6,473	5,734
Feed & supplies	491,067	457,661	Advanced govt. receipts	0	0
			Current Portion:		
			Intermediate	117,905	124,676
			Long Term	58,968	52,413
Total Current	$ 643,810	$ 622,746	Total Current	$ 395,615	$ 417,160
Intermediate			Intermediate		
Dairy cows:			Structured debt		
owned	$ 624,132	$ 695,624	1-10 years	$ 615,523	$ 721,190
leased	16,846	12,539	Financial lease		
Heifers	295,563	336,497	(cattle/machinery)	62,052	46,757
Bulls/other livestock	6,048	6,861	Farm Credit stock	18,371	13,347
Mach./equipment owned	596,300	638,337	Total Intermediate	$ 695,946	$ 781,294
Mach./equipment leased	45,206	34,218			
Farm Credit stock	18,371	13,347			
Other stock/certificate	87,204	89,047			
Total Intermediate	$1,689,670	$1,826,470			
			Long Term		
Long Term			Structured debt		
Land/buildings:			>10 years	$ 668,685	$ 724,738
owned	$1,435,499	$1,491,975	Financial lease		
leased	885	1,160	(structures)	885	1,160
Total Long Term	$1,436,384	$1,493,135	Total Long Term	$ 669,570	$ 725,898
			Total Farm Liab.	$1,761,131	$1,924,352
Total Farm Assets	$3,769,864	$3,942,351	FARM NET WORTH	$2,008,733	$2,017,999

Nonfarm Assets, Liabilities & Net Worth (Average of 29 farms reporting)

Assets	Jan. 1	Dec. 31	Liabilities & Net Worth	Jan. 1	Dec. 31
Personal cash, checking & savings	$ 2,531	$ 4,362	Nonfarm Liabilities	$ 5,171	$ 5,521
Cash value life insurance	19,243	30,475			
Nonfarm real estate	20,000	22,150			
Auto (personal share)	4,793	10,448			
Stocks & bonds	21,536	22,377			
Household furnishings	8,569	18,603			
All other nonfarm assets	5,432	7,052			
Total Nonfarm Assets	$ 82,104	$ 115,467	NONFARM NET WORTH	$ 76,933	$ 109,946

Farm & Nonfarm Assets, Liabilities, and Net Worth[6]	Jan. 1	Dec. 31
Total Assets	$ 3,851,968	$ 4,057,818
Total Liabilities	1,766,302	1,929,873
TOTAL FARM & NONFARM NET WORTH	$ 2,085,666	$ 2,127,945

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

The following condensed balance sheet, including deferred taxes, contains average data from only those farmers who elected to provide the additional information required to compute deferred taxes. Deferred taxes represent an estimate of the taxes that would be paid if the farm were sold at year end fair market values on the date of the balance sheet. Accuracy is dependent on the accuracy of the market values and the tax basis data provided. Any tax liability for assets other than livestock, machinery, land, buildings and nonfarm assets is excluded. It is assumed that all gain on purchased livestock and machinery is ordinary gain and that listed market values are net of selling costs. The effects of investment tax credit carryover and recapture, carryover of operating losses, alternative minimum taxes and other than average exemptions and deductions are excluded because they have only minor influence on the taxes of most farms. The dramatic impact of including deferred taxes is clear. Total liabilities were increased 58 percent on these 5 farms by including deferred taxes.

Deferred taxes on these farms totaled an average of $214,846, roughly one-third of the pretax net worth. Percent equity decreased from 63 percent to 41 percent when deferred taxes are included on these farms. When examining net worth, especially as a source of cash for retirement or other purposes, deferred taxes become an important consideration. Deferred taxes in this calculation specify that all assets were sold during one tax year. Therefore, tax management strategies such as making sales in more than one year or installment sales warrant careful consideration to reduce income tax liabilities.

CONDENSED BALANCE SHEET INCLUDING DEFERRED TAXES
December 31, 2000
5 New York Dairy Farms, 2000

Assets		Liabilities & Net Worth	
		Current debts & payables	$ 76,572
		Current deferred taxes	43,331
Total Current Assets	$ 143,265	Total Current Liabilities	$ 119,903
		Intermediate debts & leases	$ 215,235
		Intermediate deferred taxes	120,386
Total Inter. Assets	$ 516,692	Total Intermediate Liabilities	$ 335,621
		Long term debts & leases	$ 78,304
		Long term deferred taxes	46,312
Total Long Term Assets	$ 329,731	Total Long Term Liabilities	$ 124,616
TOTAL FARM ASSETS	$ 989,687	TOTAL FARM LIABILITIES	$ 580,140
		Farm Net Worth	$ 409,547
		Percent Equity (Farm)	41%
		Nonfarm debts	$ 0
		Nonfarm deferred taxes	4,817
Total Nonfarm Assets	$ 95,363	Total Nonfarm Liabilities	$ 4,817
TOTAL ASSETS	$ 1,085,050	TOTAL LIABILITIES	$ 584,957
		Total Net Worth	$ 500,093
		Percent Equity (Total)	46%

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
70 Large Herd Dairy Farms, 2000

Item		Average 70 Farms		Average Top 20% Farms
Financial Ratios - Farm:				
Percent equity		51%		62%
Debt/asset ratio: total		0.49		0.38
long-term		0.49		0.38
intermediate/current		0.49		0.39
Leverage Ratio		0.95		0.62
Current Ratio		1.49		2.05
Working Capital: $205,586	as % of Total Expenses:	9%	$294,280	17%
Farm Debt Analysis:				
Accounts payable as % of total debt		3%		1%
Long-term liabilities as a % of total debt		38%		33%
Current & intermediate liabilities as a % of total debt		62%		67%
Cost of term debt (weighted average)		8.1%		7.3%

	Average 70 Farms		Average Top 20% Farms	
Farm Debt Levels:	Per Cow	Per Tillable Acre Owned	Per Cow	Per Tillable Acre Owned
Total farm debt	$ 2,907	$3,069	$ 2,273	$ 2,366
Long-term debt	1,097	1,158	739	769
Long-term & intermediate	2,277	2,404	1,769	1,841
Intermediate & current debt	1,810	1,911	1,534	1,597

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
70 Large Herd Dairy Farms, 2000

Item	Average of 70 Farms			
		Real Estate		Machinery & Equipment
Value beginning of year		$ 1,435,499		$ 596,300
Purchases	$ 140,667 [7]		$ 125,557	
Gift/inheritance	+ 0		+ 1,490	
Lost capital	- 34,722			
Sales	- 14,587		- 8,564	
Depreciation	- 74,303		- 91,091	
Net investment		= 17,057		= 27,392
Appreciation		+ 39,419		+ 14,645
Value end of year		$ 1,491,975		$ 638,337

[7] $32,761 land and $107,906 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)
70 Large Herd Dairy Farms, 2000

Item	Average 70 Farms		Average Top 20% Farms	
Beginning of year farm net worth		$ 2,008,733		$ 1,864,484
Net farm income w/o appreciation	$ 84,539		$ 290,563	
+ Nonfarm cash income	+ 5,330		+ 1,297	
- Personal withdrawals & family expenditures excluding nonfarm borrowings	- 145,561		- 162,858	
Retained Earnings		+ -55,692		+ 129,002
Nonfarm noncash transfers to farm	$ 1,490		$ 5,357	
+ Cash used in business from nonfarm capital	+ 16,782		+ 8,172	
- Note/mortgage from farm real estate sold (nonfarm)	- 428		- 0	
Contributed/Withdrawn Capital	=	+$ 17,844		+ 13,529
Appreciation	$ 83,917		$ 70,822	
- Lost capital	- 34,722		- 47,367	
Change in Valuation Equity		+$ 49,195		+ 23,455
Imbalance/Error		- 2,081		- 394
End of year farm net worth[8]		=$ 2,017,999		=$ 2,030,076
Change in net worth w/apprec.		$ 9,266		$ 165,592
Change in Net Worth				
Without appreciation		$ -74,651		$ 94,770
With appreciation		$ 9,266		$ 165,592

[8]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
70 Large Herd Dairy Farms, 2000

Item		Average 70 Farms	
Cash Flow from Operating Activities			
Cash farm receipts	$ 2,141,205		
- Cash farm expenses	1,859,344		
= Net cash farm income		$ 281,861	
Personal withdrawals/family expenses including nonfarm debt payments	$ 145,954		
- Nonfarm income	5,330		
- Net cash withdrawals from the farm		$ 140,624	
= Net Provided by Operating Activities			$ 141,237
Cash Flow From Investing Activities			
Sale of Assets: Machinery	$ 8,564		
+ real estate	14,158		
+ other stock/cert.	5,282		
= Total asset sales		$ 28,004	
Capital purchases: expansion livestock	$ 65,396		
+ machinery	125,557		
+ real estate	140,667		
+ other stock/cert.	14,818		
- Total invested in farm assets		$ 346,438	
= Net Provided by Investment Activities			$ -318,434
Cash Flow From Financing Activities			
Money borrowed (inter. & long term)	$ 356,387		
+ Money borrowed (short-term)	3,829		
+ Increase in operating debt	0		
+ Cash from nonfarm cap. used in business	16,782		
+ Money borrowed - nonfarm	393		
= Cash inflow from financing		$ 377,391	
Principal payments (inter. & long-term)	$ 194,452		
+ Principal payments (short-term)	4,568		
+ Decrease in operating debt	1,432		
- Cash outflow for financing		$ 200,452	
= Net Provided by Financing Activities			$ 176,939
Cash Flow From Business			
Beginning farm cash, checking & savings		$ 21,454	
- Ending farm cash, checking & savings		19,115	
= Net Provided from Reserves			$ 2,339
Imbalance (error)			$ 2,081

ANNUAL CASH FLOW STATEMENT

14 Top 20% Large Herd Dairy Farms, 2000

Item		Average Top 20% Farms	
Cash Flow from Operating Activities			
Cash farm receipts	$1,867,448		
- Cash farm expenses	1,507,830		
= Net cash farm income		$ 359,618	
Personal withdrawals/family expenses including nonfarm debt payments	$ 162,858		
- Nonfarm income	1,297		
- Net cash withdrawals from the farm		$ 161,561	
= Net Provided by Operating Activities			$ 198,057
Cash Flow From Investing Activities			
Sale of Assets: Machinery	$ 1,661		
+ real estate	4,994		
+ other stock/cert.	1,690		
= Total asset sales		$ 8,345	
Capital purchases: expansion livestock	$ 64,413		
+ machinery	132,088		
+ real estate	166,628		
+ other stock/cert.	8,987		
- Total invested in farm assets		$ 372,116	
= Net Provided by Investment Activities			$ -363,771
Cash Flow From Financing Activities			
Money borrowed (inter. & long term)	$ 329,285		
+ Money borrowed (short-term)	13,297		
+ Increase in operating debt	0		
+ Cash from nonfarm cap. used in business	8,172		
+ Money borrowed - nonfarm	0		
= Cash inflow from financing		$ 350,754	
Principal payments (inter. & long-term)	$ 155,675		
+ Principal payments (short-term)	2,208		
+ Decrease in operating debt	37,371		
- Cash outflow for financing		$ 195,254	
= Net Provided by Financing Activities			$ 155,500
Cash Flow From Business			
Beginning farm cash, checking & savings		$ 28,091	
- Ending farm cash, checking & savings		17,485	
= Net Provided from Reserves			$ 10,606
Imbalance (error)			$ 392

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 2001. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 2001 debt payments shown below.

FARM DEBT PAYMENTS PLANNED

Large Herd Dairy Farms, 1999 & 2000

	Same 66 Dairy Farms			Same 14 Top 20% Farms		
	2000 Payments		Planned	2000 Payments		Planned
Debt Payments	Planned	Made	2001	Planned	Made	2001
Long-term	$ 108,950	$ 136,733	$ 108,530	$ 45,680	$ 78,179	$ 58,156
Intermediate-term	178,794	165,828	187,575	167,099	164,538	172,312
Short-term	4,568	4,874	4,162	2,100	2,320	14,511
Operating (net reduction)	19,960	1,692	8,471	22,500	37,371	10,812
Accounts payable (net reduction)	1,921	0	4,034	1,429	0	0
Total	$ 314,193	$ 309,127	$ 312,772	$ 238,808	$ 282,408	$ 255,791
Per cow	$ 500	$ 491		$ 442	$ 523	
Per cwt. 2000 milk	$ 2.19	$ 2.15		$ 1.88	$ 2.22	
Percent of total 2000 receipts	14%	14%		12%	14%	
Percent of 2000 milk receipts	16%	16%		14%	17%	

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 2000 (as of December 31, 1999) that could have been made with the amount available for debt service in 2000. Farmers who did not participate in DFBS in 1999 have their 2000 cash flow coverage ratio based on planned debt payments for 2001.

COVERAGE RATIOS

Same 66 Large Herd Dairy Farms, 1999 & 2000

Item	Average	Item	Average
Cash Flow Coverage Ratio		Debt Coverage Ratio	
Cash farm receipts	$2,126,956	Net farm income (w/o apprec.)	$ 93,452
- Cash farm expenses	1,839,048	+ Depreciation	155,826
+ Interest paid (cash)	132,825	+ Interest paid (accrual)	133,209
- Net personal withdrawals from farm[9]	142,920	- Net personal withdrawals from farm[9]	142,920
(A) = Amount Available for Debt Service	$ 277,813	(A') = Repayment Capacity	$239,567
(B) = Debt Payments Planned for 2000 (as of December 31, 1999)	$ 314,193	(B) = Debt Payments Planned for 2000 (as of December 31, 1999)	$314,193
(A/ B)= Cash Flow Coverage Ratio for 2000	0.88	(A'/B)= Debt Coverage Ratio for 2000	0.76

Same 14 Top 20% Dairy Farms, 1999 & 2000

(A) = Amount Available for Debt Service	$ 290,429	(A') = Repayment Capacity	$353,292
(B) = Debt Payments Planned for 2000	238,808	(B) = Debt Payments Planned for 2000	238,808
(A/ B)= Cash Flow Coverage Ratio for 2000	1.22	(A'/B)= Debt Coverage Ratio for 2000	1.48

[9]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

70 Large Herd Dairy Farms, 2000

Item	Average 70 Farms Per Cow	Average 70 Farms Per Cwt.	Total
Number cows and cwt. milk	638	144,279	
Accrual Operating Receipts			
Milk	$ 3,023	$ 13.37	$ 1,928,596
Dairy cattle	261	1.15	166,446
Dairy calves	39	0.17	24,984
Other livestock	12	0.05	7,622
Crops	55	0.25	35,401
Misc. receipts	150	0.66	95,918
Total	$ 3,541	$ 15.66	$ 2,258,966
Accrual Operating Expenses			
Hired labor	$ 589	$ 2.60	$ 375,772
Dairy grain & concentrate	827	3.66	527,646
Dairy roughage	62	0.27	39,339
Nondairy feed	0	0.00	5
Mach. hire/rent/lease	93	0.41	59,019
Mach. repair & farm vehicle expense	137	0.60	87,196
Fuel, oil & grease	67	0.30	43,028
Replacement livestock	51	0.22	32,270
Breeding	37	0.16	23,567
Vet & medicine	122	0.54	78,147
Milk marketing	144	0.64	91,886
Bedding	52	0.23	33,142
Milking supplies	73	0.32	46,277
Cattle lease	12	0.06	7,952
Custom boarding	55	0.24	34,898
bST expense	64	0.28	40,895
Other livestock expense	23	0.10	14,760
Fertilizer & lime	56	0.25	35,687
Seeds & plants	41	0.18	26,296
Spray/other crop expenses	50	0.22	31,966
Land, building, fence repair	47	0.21	30,296
Taxes	30	0.13	19,099
Real estate rent/lease	69	0.31	44,261
Insurance	27	0.12	17,420
Utilities	62	0.27	39,328
Miscellaneous	41	0.18	26,235
Total Less Interest Paid	$ 2,831	$ 12.52	$ 1,806,387
Net Accrual Operating Income (without interest paid)	$ 709	$ 3.14	$ 452,579
- Change in livestock/crop inventory[10]	160	0.71	102,111
- Change in accounts receivable	25	0.11	15,651
- Change in feed/supply inventory[11]	-95	-0.42	-60,792
+ Change in accounts payable[12]	36	0.16	22,939
NET CASH FLOW	$ 656	$ 2.90	$ 418,707
- Net personal withdrawals from farm (see footnote on p. 23)	$ 220	$ 0.97	$ 140,231
Available for Farm Debt Payments & Investments	$ 436	$ 1.93	$ 278,476
- Farm debt payments	519	2.30	331,177
Available for Farm Investment	$ -83	$ -0.37	$ -52,701
- Capital purchases: cattle, machinery & improvements	$ 543	$ 2.40	$ 346,438

[10]Includes change in advance government receipts.

[11]Includes change in prepaid expenses.

[12]Excludes change in interest account payable.

ANNUAL CASH FLOW WORKSHEET
14 Top 20% Large Herd Dairy Farms, 2000

Item	Average Top 20% Farms Per Cow	Per Cwt.	Total
No. cows or cwt. milk	540	127,218	
Accrual Operating Receipts			
Milk	$ 3,144	$ 13.35	$ 1,697,737
Dairy cattle	316	1.34	170,693
Dairy calves	39	0.17	21,150
Other livestock	33	0.14	17,588
Crops	107	0.46	57,935
Misc. receipts	139	0.59	74,899
Total	$ 3,778	$ 16.04	$ 2,040,001
Accrual Operating Expenses			
Hired labor	$ 576	$ 2.44	$ 310,831
Dairy grain & concentrate	835	3.54	450,739
Dairy roughage	46	0.20	24,850
Nondairy feed	0	0.00	0
Mach. hire/rent/lease	63	0.27	33,987
Mach. repair & farm vehicle expense	137	0.58	73,995
Fuel, oil & grease	64	0.27	34,469
Replacement livestock	42	0.18	22,933
Breeding	41	0.17	22,152
Vet & medicine	115	0.49	62,106
Milk marketing	126	0.53	67,945
Bedding	37	0.16	19,899
Milking supplies	58	0.25	31,233
Cattle lease	2	0.01	1,300
Custom boarding	37	0.16	20,063
bST expense	73	0.31	39,303
Other livestock expense	40	0.17	21,611
Fertilizer & lime	61	0.26	33,158
Seeds & plants	42	0.18	22,910
Spray/other crop expenses	39	0.17	21,172
Land, building, fence repair	48	0.20	25,703
Taxes	20	0.09	10,863
Real estate rent/lease	86	0.36	46,412
Insurance	26	0.11	14,230
Utilities	48	0.20	25,986
Miscellaneous	42	0.18	22,885
Total Less Interest Paid	$ 2,705	$ 11.48	$ 1,460,735
Net Accrual Operating Income (without interest paid)	$ 1,073	$ 4.55	$ 579,266
- Change in livestock/crop inventory[13]	255	1.08	137,873
- Change in accounts receivable	64	0.27	34,680
- Change in feed/supply inventory[14]	-76	-0.32	-41,010
+ Change in accounts payable[15]	8	0.03	4,266
NET CASH FLOW	$ 837	$ 3.55	$ 451,990
- Net personal withdrawals from farm(see footnote p.23)	$ 299	$ 1.27	$ 161,561
Available for Farm Debt Payments & Investments	$ 538	$ 2.28	$ 290,429
- Farm debt payments	523	2.22	282,408
Available for Farm Investment	$ 15	$ 0.06	$ 8,021
- Capital purchases: cattle, machinery & improvements	$ 689	$ 2.93	$ 372,116

[13]Includes change in advance government receipts.
[14]Includes change in prepaid expenses.
[15]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
70 Large Herd Dairy Farms, 2000

Item	Average 70 Farms			Average Top 20% Farms		
Land	Owned	Rented	Total	Owned	Rented	Total
Tillable	627	587	1,214	535	599	1,134
Nontillable	38	14	52	23	52	75
Other nontillable	171	8	178	200	8	208
Total	835	609	1,444	758	659	1,417
Crop Yields	Farms	Acres[16]	Prod/Acre	Farms	Acres	Prod/Acre
Hay crop	67	566	3.83 tn DM	14	547	4.00 tn DM
Corn silage	65	549	15.96 tn	14	457	16.01 tn
Other forage	4	149	3.11 tn DM	0	0	0.00 tn DM
Total forage	67	1,108	4.51 tn DM	14	1,005	4.45 tn DM
Corn grain	17	152	107 bu	4	84	108 bu
Oats	4	60	42 bu	1	15	40bu
Wheat	10	101	51 bu	2	128	33bu
Other crops	19	130		6	105	
Tillable pasture	7	150		1	40	
Idle	29	116		7	77	
Total Tillable Acres	70	1,214		14	1,134	

[16]This column represents the average acreage for the farms producing that crop. Average acreages including those farms not producing were corn grain 37, oats 3, wheat 14, tillable pasture 15 and idle 48.

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
70 Large Herd Dairy Farms, 2000

Item	Average 70 Farms	Average Top 20% Farms
Total tillable acres per cow	1.90	2.10
Total forage acres per cow	1.66	1.86
Harvested forage dry matter, tons per cow	7.49	8.29

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 one farm.

CROP RELATED ACCRUAL EXPENSES
Large Herd Dairy Farms Reporting, 2000

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	70	7			7	
Ave. number of acres	1,214	456			479	
Fertilizer/lime	$ 29.40	$ 32.74	$ 5.97	$ 0.31	$ 21.12	$ 4.88
Seed/plants	21.66	38.33	6.99	0.36	8.74	2.02
Spray/other crop exp.	26.33	42.49	7.75	0.40	12.30	2.84
TOTAL	$ 77.39	$ 113.56	$ 20.71	$ 1.07	$ 42.16	$ 9.74
Average Top 20% Farms:						
No. of farms reporting	14					
Ave. number of acres	1,134					
Fertilizer/lime	$ 29.24					
Seeds/plants	20.20					
Spray/other crop exp.	18.67					
TOTAL	$ 68.11					

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

ACCRUAL MACHINERY EXPENSES
70 Large Herd Dairy Farms, 2000

Machinery Expense Item	Average 70 Farms Total Expenses	Average 70 Farms Per Till. Acre	Average Top 20% Farms Total Expenses	Average Top 20% Farms Per Till. Acre
Fuel, oil & grease	$ 43,028	$ 35.44	$ 34,469	$ 30.40
Mach. repairs & farm veh. exp.	87,196	71.83	73,995	65.25
Machine hire, rent & lease	59,019	48.62	33,987	29.97
Interest (5%)	32,852	27.06	29,224	25.77
Depreciation	91,091	75.03	85,963	75.81
Total	$ 313,186	$ 257.98	$ 257,638	$ 227.19

Dairy Analysis

Analysis of the dairy enterprise can reveal a great deal about the strengths and weaknesses of the dairy farm business. Information on this page 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 9 and 10.

DAIRY HERD INVENTORY
70 Large Herd Dairy Farms, 2000

	Dairy Cows		Heifers					
			Bred		Open		Calves	
Item	No.	Value	No.	Value	No.	Value	No.	Value
Average 70 Farms:								
Beginning year (owned)	593	$ 624,132	179	$ 168,605	151	$ 88,722	124	$ 38,236
+ Change w/o apprec.		53,480		12,336		2,488		6,680
+ Appreciation		18,012		9,371		6,088		3,971
End year (owned)	643	$ 695,624	190	$ 190,312	156	$ 97,298	142	$ 48,887
End including leased	662							
Average number	638		485 (all age groups)					
Average Top 20% Farms:								
Beginning year (owned)	498	$ 540,279	150	$ 151,917	109	$ 67,933	114	$ 38,144
+ Change w/o apprec.		61,710		16,346		10,077		4,838
+ Appreciation		15,818		8,207		4,585		2,316
End of year (owned)	551	$ 617,807	165	$ 176,470	126	$ 82,595	127	$ 45,298
End including leased	557							
Average number	540		400 (all age groups)					

Total milk sold and milk sold per cow 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
70 Large Herd Dairy Farms, 2000

Item	Average 70 Farms	Average Top 20% Farms
Total milk sold, lbs.	14,427,925	12,721,762
Milk sold per cow, lbs.	22,622	23,540
Average milk plant test, percent butterfat	3.65 %	3.65 %

ANIMALS LEAVING THE HERD
70 Large Herd Dairy Farms, 2000

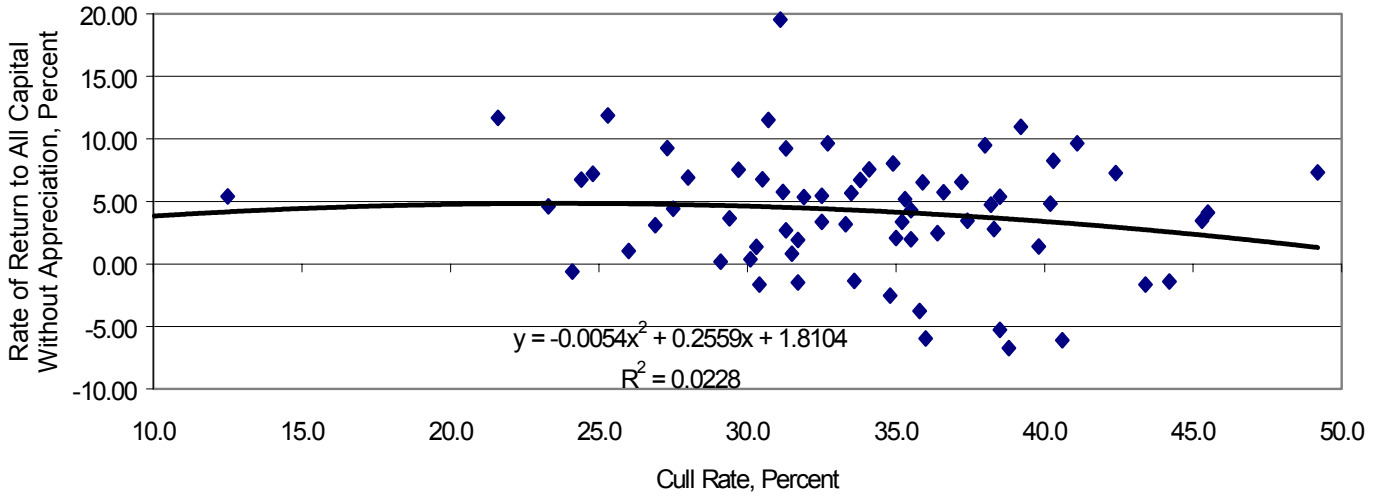
	Average 70 Farms		Average Top 20% Farms	
	Number	Percent[17]	Number	Percent[17]
Cows sold for beef	184	28.83	157	29.1
Cows sold for dairy	5	0.8	0	0.0
Cows died	33	5.2	25	4.6
Culling rate[18]	---	34.0	---	33.7

[17]Percent of average number of cows in the herd.
[18]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 and milk production and profit levels. While there is no significant relationship between cull rate and these two measures, it is interesting to note that out of the top 10 farms that averaged over 9% return to all capital without appreciation, 7 of them averaged less than a 35% cull rate.

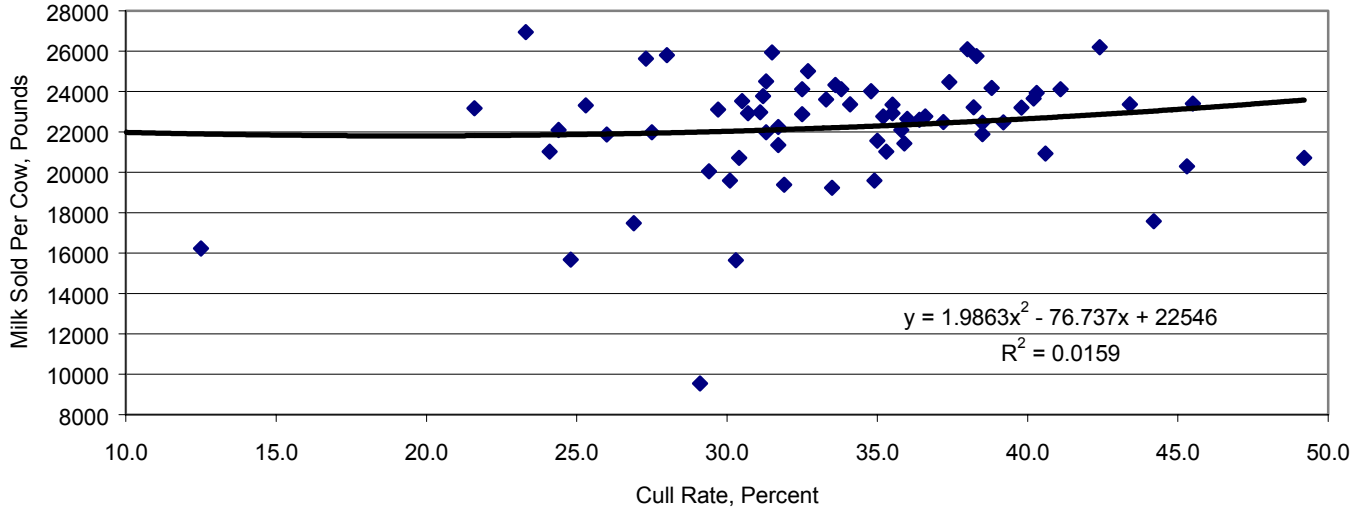
RETURN TO ALL CAPITAL WITHOUT APPRECIATION VERSUS CULL RATE

70 Large Herd Dairy Farms, 2000



MILK SOLD PER COW VERSUS CULL RATE

70 Large Herd Dairy Farms, 2000



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

70 Large Herd Dairy Farms, 2000

	Average 70 Farms			Average Top 20% Farms		
Item	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Accrual Costs of Producing Milk						
Operating costs	$ 1,678,663	$ 2,631	$11.63	$ 1,275,256	$ 2,362	$ 10.02
Purchased inputs costs	$ 1,844,057	$ 2,890	$12.78	$ 1,407,174	$ 2,606	$ 11.06
Total Costs	$ 2,032,852	$ 3,186	$14.09	$ 1,572,742	$ 2,912	$ 12.36
Accrual Receipts From Milk	$ 1,928,596	$ 3,023	$13.37	$ 1,697,737	$ 3,144	$ 13.35
Net Milk Receipts	$ 1,836,710	$ 2,879	$12.73	$ 1,629,792	$ 3,018	$ 12.81
Net Farm Income w/o appreciation	$ 84,539	$ 133	$0.59	$ 290,563	$ 538	$ 2.28
Net Farm Income with appreciation	$ 168,456	$ 264	$1.17	$ 361,385	$ 669	$ 2.84

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

70 Large Herd Dairy Farms, 2000

	Average 70 Farms		Average Top 20% Farms	
Item	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purchased dairy grain & concentrate	$ 827	$3.66	$ 835	$ 3.54
Purchased dairy roughage	62	0.27	46	0.20
Total Purchased Dairy Feed	$ 889	$3.93	$ 881	$ 3.74
Purchased grain & concentrate as % of milk receipts	27%		27 %	
Purchased feed & crop expense	$ 1,036	$4.58	$ 1,024	$ 4.35
Purchased feed & crop expense as % of milk receipts	34%		33 %	
Breeding	$ 37	$0.16	$ 41	$ 0.17
Veterinary & medicine	122	0.54	115	0.49
Milk marketing	144	0.64	126	0.53
Bedding	52	0.23	37	0.16
Milking supplies	73	0.32	58	0.25
Cattle lease	12	0.06	2	0.01
Custom boarding	55	0.24	37	0.16
bST expense	64	0.28	73	0.31
Other livestock expenses	23	0.10	40	0.17

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

70 Large Herd Dairy Farms, 2000

Item	Average 70 Farms		Average Top 20% Farms	
Total Accrual Operating Expenses	$ 1,943,595		$ 1,553,107	
Expansion Livestock, Accrual	+ 65,438		+ 64,413	
1. Total Accrual Operating Expenses, Including Expansion Livestock		$ 2,009,033		$ 1,617,520
Total Accrual Receipts	$ 2,258,966		$ 2,040,001	
Milk Sales, Accrual	- 1,928,596		- 1,697,737	
2. Total Accrual Nonmilk Receipts		- 330,370		- 342,264
3. Operating Costs of Producing Milk		$ 1,678,663		$ 1,275,256
Cwt. of Milk Sold	÷ 144,279.3		÷ 127,217.6	
Operating Costs/Cwt.	= $11.63		= $10.02	
Machinery Depreciation		+ 91,091		+ 85,963
Building Depreciation		+ 74,303		+ 45,955
4. Purchased Inputs Cost of Producing Milk		$ 1,844,057		$ 1,407,174
Cwt. of Milk Sold	÷ 144,279.3		÷ 127,217.6	
Purchased Inputs Cost/Cwt.	= $12.78		= $11.06	
Family Labor Unpaid ($1,800/month)		+ 3,230		+ 3,040
Real Interest on Equity Cap.		+ 100,668		+ 97,364
Value of Operators' Labor & Management		+ 84,897		+ 65,164
5. Total Costs of Producing Milk		$ 2,032,852		$ 1,572,742
Cwt. Milk Sold	÷ 144,279.3		÷ 127,217.6	
Total Costs/Cwt.	= $14.09		= $12.36	

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
70 Large Herd Dairy Farms, 2000

Item	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
Average 70 Farms:				
Farm capital	$ 281,879	$ 6,044	$ 3,176	$ 6,150
Real estate		2,296		2,336
Machinery & equipment	48,029	1,030	541	
Ratios				
Asset turnover ratio	Operating Expense	Interest Expense	Depreciation Expense	
0.61	0.83	0.06	0.07	
Average Top 20% Farms:				
Farm capital	$ 269,242	$ 5,819	$ 2,771	$ 5,873
Real estate		1,913		1,931
Machinery & equipment	50,084	1,082	515	
Ratios				
Asset turnover ratio	Operating Expense	Interest Expense	Depreciation Expense	
0.67	0.75	0.05	0.06	

LABOR FORCE INVENTORY AND ANALYSIS
70 Large Herd Dairy Farms, 2000

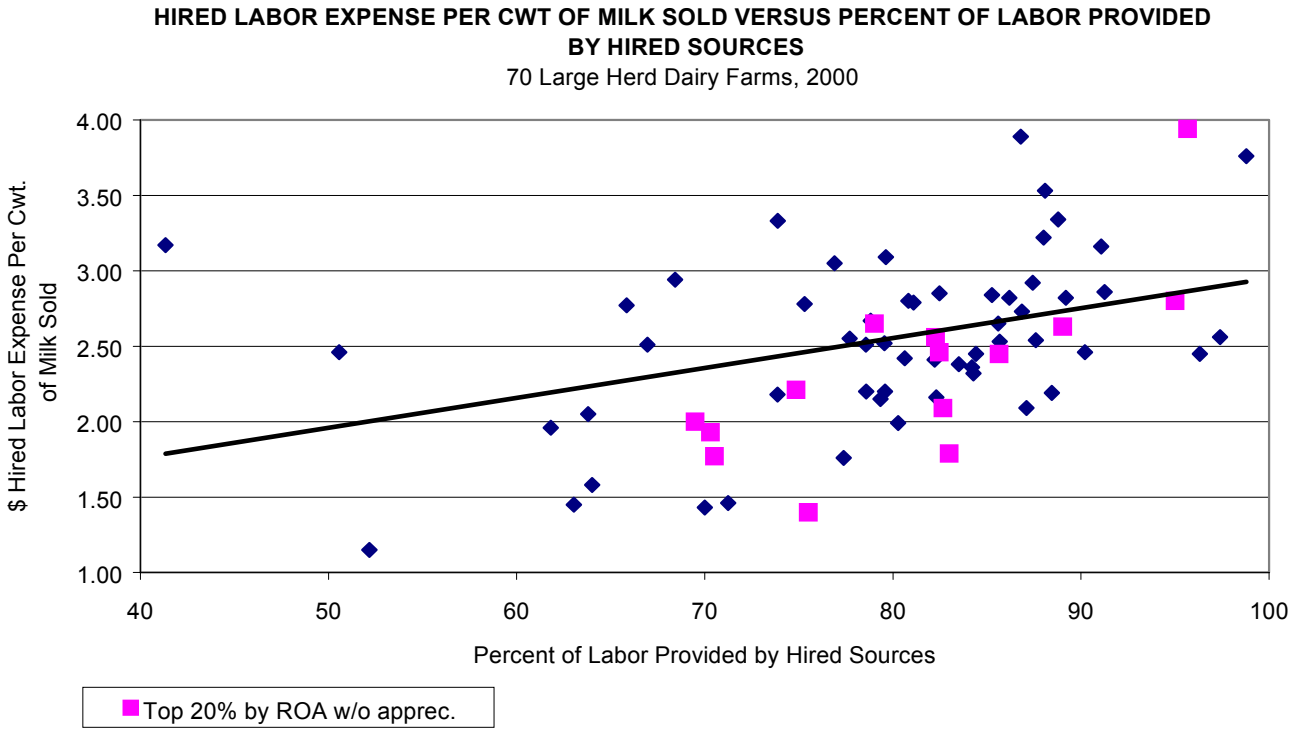
Labor Force	Months	Age	Years of Education	Value of Labor & Mgmt.
Operator number 1	13.7	45	14	$ 45,442
Operator number 2	8.4	41	14	25,224
Operator number 3	3.5	36	13	10,830
Operator number 4	0.9	36	14	3,350
Family paid	4.8			
Family unpaid	1.7			
Hired	131.2			
Total	164.1	/ 12 = 13.68 Worker Equivalent		
		2.16 Operator/Manager Equivalent		
Average Top 20% Farms:				
Total	140.0	/ 12 = 11.67 Worker Equivalent		
Operator's		1.66 Operator/Manager Equivalent		

Labor	Average 70 Farms		Average Top 20% Farms	
Efficiency	Total	Per Worker	Total	Per Worker
Cows, average number	638	47	540	46
Milk sold, pounds	14,427,925	1,054,673	12,721,762	1,090,125
Tillable acres	1,214	89	1,134	97
Work units	6,240	456	5,339	457

	Average 70 Farms			Average Top 20% Farms		
Labor Costs	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Value of operator(s) labor ($1,900/mo.)	$ 50,350	$ 79	$0.35	$ 41,990	$ 78	$ 0.33
Family unpaid ($1,900/mo.)	3,230	5	0.02	3,040	6	0.02
Hired	375,772	589	2.60	310,831	576	2.44
Total Labor	$ 429,352	$ 673	$2.98	$ 355,861	$ 659	$ 2.80
Machinery Cost	313,186	491	2.17	257,638	477	2.03
Total Labor & Mach.	$ 742,538	$ 1,164	$5.15	$ 613,499	$ 1,136	$ 4.82
Hired labor expense per hired worker equiv.		$ 33,156			$ 32,044	
Hired labor expense as % of milk sales		19.5%			18.3%	

Labor Cost Evaluation

Labor costs have been the first or second largest expense on large dairy farms in New York the last three 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 services and can be used to see how your farms' expense compares to other farms. To calculate percent of labor provided by hired sources use the worksheet below.



Worksheet for Determining Percent of Labor From Hired Sources

Divide total hired and family paid months of labor by the total months of labor provided from all sources. These values can be found on page 11 of your farm's Dairy Farm Business Summary report.

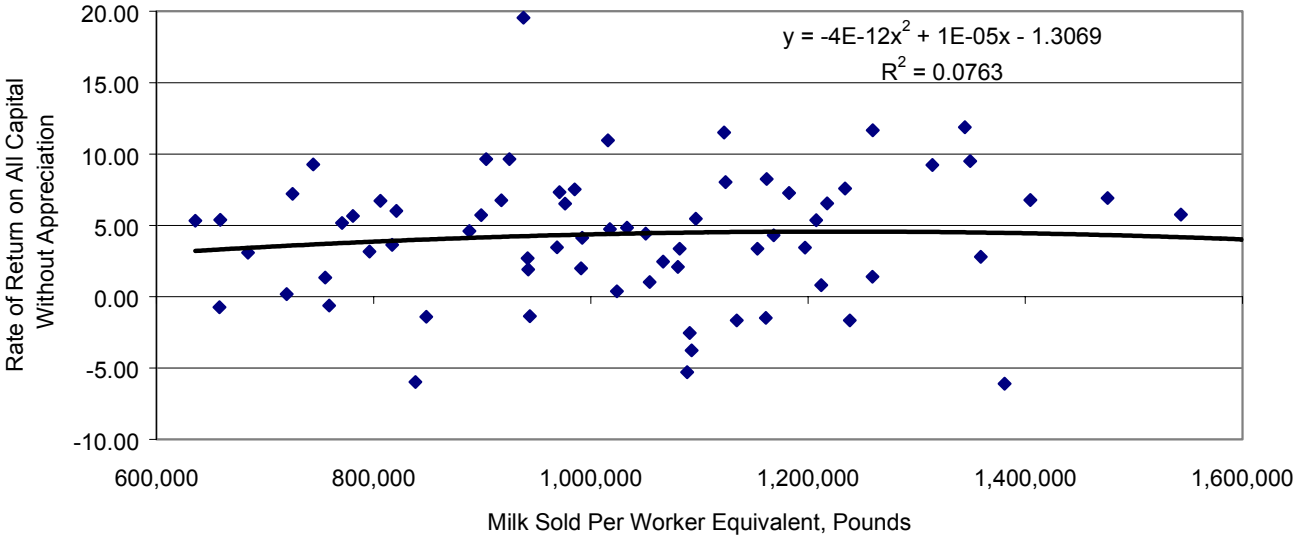
Months of hired labor		_____		
Months of family paid labor	+	_____		
Total hired labor	=		_____	
Total Labor Months	÷		_____	
Percent of labor from hired sources	x 100 =			_____%

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. The chart below shows the relationship between labor efficiency and return on all capital without appreciation. Labor efficiency improvements are one method that is used to allow the business to reward their employees while maintaining their labor costs per cwt. of milk produced. A second area is improved cost control of day to day activities, which is one reason why some farms can generate higher than average profits while having some of the higher labor costs per cwt. of milk sold.

Hired Labor Expense Business Charts
70 Large Herd Dairy Farms, 2000

Hired Labor Expense per Cwt	Hired Labor Expense as % of Milk Sales	Hired Labor Expense per Hired Worker Equivalent	Hired Labor Expense per Hour
$ 1.46	11%	$ 22,056	$ 7.99
1.93	14	25,598	9.27
2.15	16	27,843	10.09
2.33	17	28,597	10.36
2.46	18	29,487	10.68
2.54	19	30,904	11.20
2.70	20	33,130	12.00
2.82	21	35,079	12.71
3.03	22	37,940	13.75
3.57	27	68,075	24.66

RATE OF RETURN ON ALL CAPITAL WITHOUT APPRECIATION VERSUS MILK SOLD PER WORKER EQUIVALENT
70 Large Herd Dairy Farms, 2000



CONDENSED SUMMARY & SELECTED BUSINESS FACTORS

CONDENSED FARM BUSINESS SUMMARY FOR THREE LARGE HERD GROUPS

70 Large Herd Dairy Farms, 2000

Item	19 Farms with 300-400 Cows		23 Farms with 400-600 Cows		28 Farms with ≥600 Cows	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	Per Cow	Per Cwt.
ACCRUAL EXPENSES						
Hired labor	$485	$2.30	$532	$2.41	$638	$2.75
Dairy grain & concentrate	724	3.44	806	3.65	861	3.71
Dairy roughage	89	0.42	94	0.42	42	0.18
Nondairy feed	0	0.00	0	0.00	0	0.00
Machine hire, rent & lease	97	0.46	74	0.33	99	0.43
Machine repairs & farm vehicle expense	144	0.68	134	0.61	136	0.59
Fuel, oil & grease	77	0.37	70	0.32	64	0.28
Replacement livestock	99	0.47	31	0.14	47	0.20
Breeding	32	0.15	38	0.17	38	0.16
Veterinary & medicine	103	0.49	120	0.54	128	0.55
Milk marketing	165	0.78	140	0.64	141	0.61
Bedding	33	0.16	48	0.22	58	0.25
Milking supplies	57	0.27	72	0.33	76	0.33
Cattle lease & rent	7	0.03	2	0.01	18	0.08
Custom boarding	64	0.30	31	0.14	62	0.27
bST expense	51	0.24	51	0.23	72	0.31
Other livestock expense	32	0.15	31	0.14	18	0.08
Fertilizer & lime	54	0.26	50	0.22	59	0.25
Seeds & plants	30	0.14	45	0.20	42	0.18
Spray & other crop expense	41	0.19	44	0.20	55	0.24
Land, building & fence repair	49	0.23	48	0.22	47	0.20
Taxes & rent	113	0.54	98	0.45	97	0.42
Utilities	64	0.30	60	0.27	62	0.27
Interest paid	216	1.02	201	0.91	221	0.95
Misc. (including insurance)	61	0.29	65	0.29	72	0.31
Total Operating Expenses	$2,886	$13.71	$2,886	$13.06	$3,152	$13.58
Expansion livestock	82	0.39	89	0.40	113	0.49
Machinery depreciation	153	0.73	165	0.75	131	0.57
Building depreciation	76	0.36	124	0.56	123	0.43
Total Accrual Expenses	$3,197	$15.19	$3,264	$14.77	$3,520	$15.16
ACCRUAL RECEIPTS						
Milk sales	$2,817	$13.38	$2,975	$13.47	$3,094	$13.33
Dairy cattle	260	1.24	249	1.13	266	1.15
Dairy calves	51	0.24	42	0.19	35	0.15
Other livestock	46	0.22	14	0.06	3	0.01
Crops	30	0.14	94	0.42	46	0.20
Miscellaneous receipts	189	0.90	166	0.75	135	0.58
Total Accrual Receipts	$3,392	$16.11	$3,540	$16.02	$3,579	$15.41
PROFITABILITY ANALYSIS (Total)						
Net farm income (without appreciation)	$67,166		$132,098		$57,259	
Net farm income (with appreciation)	$109,027		197,545		$184,884	
Labor & management income	$11,985		43,401		$-92,068	
Number of operators	1.62		2.03		2.44	
Labor & management income/operator	$7,398		$21,380		$-37,733	
Rates of return on: Equity capital w/o apprec.	0.7%		3.0%		-1.9%	
Equity capital w/ apprec.	4.8%		6.9%		2.4%	
All capital w/o apprec.	4.2%		5.0%		2.7%	
All capital w/ apprec.	6.3%		7.2%		4.9%	

SELECTED BUSINESS FACTORS FOR THREE LARGE HERD GROUPS

70 Large Herd Dairy Farms, 2000

Item	19 Farms with 300-400 Cows	23 Farms with 400-600 Cows	28 Farms with ≥ 600 Cows
Cropping Program Analysis			
Total Tillable acres	698	974	1,761
Tillable acres rented[19]	372	457	839
Hay crop acres[19]	334	432	773
Corn silage acres[19]	226	368	820
Hay crop, tons DM/acre	3.4	3.7	4.0
Corn silage, tons/acre	15.9	16.7	15.7
Forage DM per cow, tons	6.5	7.6	7.7
Tillable acres/cow	2.0	2.0	1.8
Fertilizer & lime expense/tillable acre	$26.72	$24.37	$32.40
Machinery cost/tillable acre	$261	$244	$264
Dairy Analysis			
Number of cows	346	478	967
Number of heifers	220	357	770
Milk sold, lbs.	7,285,203	10,559,391	22,452,497
Milk sold/cow, lbs.	21,059	22,111	23,208
Operating cost of prod. milk/cwt.	$11.37	$10.91	$11.97
Total cost of prod. milk/cwt.	$13.99	$13.78	$14.23
Price/cwt. milk sold	$13.38	$13.47	$13.33
Purchased dairy feed/cow	$813	900	$903
Purchased dairy feed/cwt. milk	$3.86	4.07	$3.89
Purchased grain & concentrate as % of milk receipts	26%	27%	28%
Purchased feed & crop expense/cwt. milk	$4.46	$4.70	$4.56
Capital Efficiency			
Farm capital/worker	$250,108	$266,479	$297,667
Farm capital/cow	$5,725	6,171	$6,073
Real estate/cow	$2,084	2,362	$2,322
Machinery investment/cow	$1,111	1,082	$989
Asset turnover ratio	0.61	0.60	0.61
Labor Efficiency			
Worker equivalent	7.92	11.07	19.73
Operator/manager equivalent	1.62	2.03	2.44
Milk sold/worker, lbs.	919,849	953,875	1,137,988
Cows/worker	44	43	49
Labor cost/cow	$610	$649	$698
Financial Measures			
Percent equity	51%	56%	49%
Debt/asset ratio - long term	0.38	0.40	0.55
Debt/asset ratio - intermediate & current	0.55	0.46	0.49
Change in net worth with appreciation	$5,005	$87,827	$-52,375
Total farm debt per cow	$2,773	$2,667	$3,042
Debt payments made per cow	$512	$507	$498
Debt payments as % of milk sales	18%	17%	16%
Amount available for debt service	$124,150	$248,157	$404,521
Debt coverage ratio for 2000	0.67	1.22	0.60

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

INCOME AND EXPENSE PROFILES BY HERD SIZE

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

RECEIPTS AND EXPENSES PER COW

19 Large Herd Dairy Farms with 300 – 400 Cows, 2000

	QUINTILE				
Item	1	2	3	4	5
Accrual Operating Receipts					
Milk	$3,516	$3,166	$2,924	$2,678	$1,953
Dairy cattle	640	297	198	161	82
Dairy calves	113	58	44	30	24
Other livestock	273	15	3	0	-3
Crops	136	100	43	-17	-86
Misc. receipts	348	223	160	143	121
Total Operating Receipts	$4,512	$3,689	$3,401	$3,139	$2,473
Accrual Operating Expenses					
Hired labor	$310	$406	$486	$574	$689
Dairy grain & concentrate	398	692	771	834	996
Dairy roughage	0	1	10	75	422
Nondairy feed	0	0	0	0	0
Mach. hire/rent/lease	3	32	65	152	282
Mach. repair & farm veh. exp.	64	95	146	198	246
Fuel, oil & grease	44	64	76	90	127
Replacement livestock	0	0	23	175	372
Breeding	6	19	30	41	73
Vet & medicine	45	67	93	120	220
Milk marketing	77	130	157	217	267
Bedding	7	21	32	47	64
Milking supplies	26	40	49	74	110
Cattle lease	0	0	0	1	40
Custom boarding	0	0	16	86	247
bST expense	1	24	70	78	88
Other livestock expense	9	16	21	40	85
Fertilizer & lime	4	41	53	74	119
Seeds & plants	9	22	33	39	58
Spray/other crop expenses	5	18	46	64	87
Land, building, fence repair	9	26	40	53	136
Taxes	5	24	36	52	70
Real estate rent/lease	6	23	40	87	286
Insurance	14	20	24	31	50
Utilities	41	56	64	75	87
Interest	102	154	204	284	377
Miscellaneous	8	28	40	47	59
Total Operating Expenses	$2,075	$2,716	$2,896	$3,206	$3,708
Expansion Livestock	0	0	0	72	407
Machinery Depreciation	63	104	132	200	320
Building Depreciation	12	52	81	105	148
Net Farm Income w/o Apprec.	$668	$363	$253	$32	$-215

RECEIPTS AND EXPENSES PER CWT. OF MILK SOLD
19 Large Herd Dairy Farms With 300 – 400 Cows, 2000

Item	QUINTILE 1	2	3	4	5
Accrual Operating Receipts					
Milk	$14.33	$13.92	$13.58	$13.01	$12.33
Dairy cattle	3.90	1.41	1.01	0.71	0.35
Dairy calves	.50	.29	.20	.17	.12
Other livestock	1.36	.07	.02	.00	-.02
Crops	.61	.46	.19	-.09	-.47
Misc. receipts	2.07	1.13	.81	.63	.53
Total Operating Receipts	$19.94	$16.98	$16.28	$15.21	$13.98
Accrual Operating Expenses					
Hired labor	$1.53	$2.14	$2.43	$2.70	$3.04
Dairy grain & concentrate	2.21	3.33	3.52	3.71	4.29
Dairy roughage	.00	.01	.05	.42	1.88
Nondairy feed	.00	.00	.00	.00	.00
Mach. hire/rent/lease	.01	.15	.31	.83	1.20
Mach. repair & farm veh. exp.	.31	.48	.71	.86	1.35
Fuel, oil & grease	.22	.29	.34	.50	.61
Replacement livestock	.00	.00	.11	.92	1.69
Breeding	.03	.10	.15	.20	.30
Vet & medicine	.22	.36	.49	.57	.90
Milk marketing	.48	.60	.69	1.00	1.24
Bedding	.04	.10	.16	.22	.29
Milking supplies	.14	.19	.23	.35	.54
Cattle lease	.00	.00	.00	.01	.24
Custom boarding	.00	.00	.07	.37	1.08
bST expense	.01	.11	.31	.34	.41
Other livestock expense	.05	.08	.11	.20	.35
Fertilizer & lime	.02	.18	.23	.35	.93
Seeds & plants	.04	.11	.16	.19	.31
Spray/other crop expenses	.03	.09	.19	.32	.47
Land, building, fence repair	.06	.12	.19	.25	.59
Taxes	.02	.10	.19	.28	.40
Real estate rent/lease	.03	.11	.20	.49	1.29
Insurance	.06	.09	.11	.17	.27
Utilities	.21	.25	.32	.36	.43
Interest	.42	.73	1.10	1.44	1.99
Miscellaneous	.04	.14	.18	.22	.34
Total Operating Expenses	$11.97	$13.26	$13.87	$14.64	$15.69
Expansion Livestock	.00	.00	.00	.36	2.32
Machinery Depreciation	.28	.47	.65	.90	2.20
Building Depreciation	.06	.24	.35	.54	.95
Net Farm Income w/o Apprec.	$2.75	$1.74	$1.09	$0.13	$-1.08

RECEIPTS AND EXPENSES PER COW
23 Large Herd Dairy Farms With 400 – 600 Cows, 2000

Item	QUINTILE 1	2	3	4	5
Accrual Operating Receipts					
Milk	$3,373	$3,104	$3,003	$2,861	$2,638
Dairy cattle	480	299	235	177	110
Dairy calves	101	41	37	28	13
Other livestock	88	5	1	0	-2
Crops	239	167	95	30	-35
Misc. receipts	293	217	163	124	71
Total Operating Receipts	$4,133	$3,789	$3,572	$3,332	$3,034
Accrual Operating Expenses					
Hired labor	$361	$453	$552	$636	$745
Dairy grain & concentrate	593	728	823	899	1,010
Dairy roughage	3	18	44	93	397
Nondairy feed	0	0	0	0	0
Mach. hire/rent/lease	5	35	63	109	190
Mach. repair & farm veh. exp.	78	105	143	173	197
Fuel, oil & grease	41	55	71	88	107
Replacement livestock	0	0	1	44	149
Breeding	13	30	39	46	68
Vet & medicine	85	100	121	138	171
Milk marketing	76	119	137	177	217
Bedding	16	36	44	66	93
Milking supplies	38	48	69	90	137
Cattle lease	0	0	0	0	13
Custom boarding	0	0	2	42	125
bST expense	0	28	63	78	102
Other livestock expense	11	20	29	38	65
Fertilizer & lime	18	41	54	67	78
Seeds & plants	16	40	46	57	73
Spray/other crop expenses	5	38	48	58	84
Land, building, fence repair	13	33	54	63	96
Taxes	8	19	29	38	52
Real estate rent/lease	15	53	68	92	134
Insurance	15	23	29	36	63
Utilities	33	50	56	77	103
Interest	86	184	219	259	295
Miscellaneous	12	20	29	43	78
Total Operating Expenses	$2,347	$2,776	$2,986	$3,132	$3,387
Expansion Livestock	0	0	32	156	319
Machinery Depreciation	72	129	182	215	252
Building Depreciation	58	92	109	152	222
Net Farm Income w/o Apprec.	$745	$427	$294	$145	$-152

RECEIPTS AND EXPENSES PER CWT. OF MILK SOLD
23 Large Herd Dairy Farms With 400 – 600 Cows, 2000

Item	QUINTILE 1	2	3	4	5
Accrual Operating Receipts					
Milk	$15.86	$13.83	$13.08	$12.89	$12.51
Dairy cattle	2.15	1.41	1.11	.80	.49
Dairy calves	.42	.19	.17	.12	.06
Other livestock	.41	.02	.01	.00	-.01
Crops	1.03	.82	.44	.14	-.18
Misc. receipts	1.32	.98	.70	.56	.34
Total Operating Receipts	$19.14	$16.78	$15.82	$15.14	$14.27
Accrual Operating Expenses					
Hired labor	$1.64	$2.13	$2.51	$2.80	$3.34
Dairy grain & concentrate	2.79	3.27	3.55	4.01	4.86
Dairy roughage	.01	.09	.19	.41	1.69
Nondairy feed	.00	.00	.00	.00	.00
Mach. hire/rent/lease	.02	.16	.30	.51	.87
Mach. repair & farm veh. exp.	.33	.49	.66	.79	.90
Fuel, oil & grease	.19	.26	.33	.39	.47
Replacement livestock	.00	.00	.00	.21	.63
Breeding	.06	.13	.18	.24	.32
Vet & medicine	.38	.45	.53	.65	.80
Milk marketing	.34	.56	.65	.75	1.02
Bedding	.07	.16	.21	.29	.42
Milking supplies	.18	.22	.30	.41	.61
Cattle lease	.00	.00	.00	.00	.06
Custom boarding	.00	.00	.01	.21	.58
bST expense	.00	.14	.27	.35	.46
Other livestock expense	.05	.09	.14	.18	.28
Fertilizer & lime	.08	.19	.26	.30	.35
Seeds & plants	.08	.18	.21	.25	.33
Spray/other crop expenses	.02	.17	.23	.26	.38
Land, building, fence repair	.06	.15	.25	.28	.44
Taxes	.04	.08	.12	.19	.25
Real estate rent/lease	.08	.25	.31	.41	.58
Insurance	.07	.11	.13	.16	.27
Utilities	.16	.22	.28	.34	.43
Interest	.38	.78	1.00	1.19	1.51
Miscellaneous	.05	.09	.13	.21	.34
Total Operating Expenses	$11.02	$12.66	$13.18	$14.01	$15.58
Expansion Livestock	.00	.00	.16	.71	1.42
Machinery Depreciation	.32	.60	.82	.95	1.16
Building Depreciation	.25	.41	.53	.70	.97
Net Farm Income w/o Apprec.	$3.52	$1.87	$1.34	$0.65	$-0.70

RECEIPTS AND EXPENSES PER COW
28 Large Herd Dairy Farms With 600 or More Cows, 2000

Item	QUINTILE 1	2	3	4	5
Accrual Operating Receipts					
Milk	$3,462	$3,169	$3,065	$3,006	$2,866
Dairy cattle	500	347	254	181	130
Dairy calves	46	39	37	35	27
Other livestock	12	4	1	0	-2
Crops	198	91	53	3	-50
Misc. receipts	248	166	128	103	84
Total Operating Receipts	$4,019	$3,740	$3,626	$3,442	$3,288
Accrual Operating Expenses					
Hired labor	$462	$560	$606	$669	$856
Dairy grain & concentrate	734	805	864	923	1,053
Dairy roughage	0	14	33	60	122
Nondairy feed	0	0	0	0	0
Mach. hire/rent/lease	12	33	82	157	244
Mach. repair & farm veh. exp.	69	106	142	172	222
Fuel, oil & grease	46	58	65	72	88
Replacement livestock	0	0	16	60	175
Breeding	17	30	41	49	68
Vet & medicine	89	109	125	143	176
Milk marketing	96	122	132	152	210
Bedding	26	42	55	71	99
Milking supplies	41	58	70	87	120
Cattle lease	0	0	0	5	76
Custom boarding	0	1	17	54	179
bST expense	40	66	80	87	93
Other livestock expense	1	11	19	32	45
Fertilizer & lime	23	42	66	77	104
Seeds & plants	21	35	43	54	69
Spray/other crop expenses	17	37	56	71	110
Land, building, fence repair	11	25	42	59	101
Taxes	11	22	27	35	48
Real estate rent/lease	20	37	60	88	139
Insurance	12	19	24	30	57
Utilities	36	55	63	73	97
Interest	109	196	231	278	366
Miscellaneous	17	29	40	51	82
Total Operating Expenses	$2,789	$2,997	$3,091	$3,224	$3,631
Expansion Livestock	0	0	66	169	393
Machinery Depreciation	51	94	146	181	223
Building Depreciation	39	78	104	165	245
Net Farm Income w/o Apprec.	$512	$339	$169	$-15	$-354

RECEIPTS AND EXPENSES PER CWT. OF MILK SOLD
28 Large Herd Dairy Farms With 600 or More Cows, 2000

Item	QUINTILE 1	2	3	4	5
Accrual Operating Receipts					
Milk	$14.32	$13.43	$13.18	$13.03	$12.78
Dairy cattle	2.10	1.51	1.09	.81	.54
Dairy calves	.19	.17	.16	.15	.12
Other livestock	.05	.02	.00	.00	-.01
Crops	.89	.41	.21	.01	-.21
Misc. receipts	1.10	.69	.56	.44	.37
Total Operating Receipts	$16.85	$16.25	$15.60	$14.80	$14.29
Accrual Operating Expenses					
Hired labor	$2.00	$2.46	$2.63	$2.90	$3.52
Dairy grain & concentrate	3.26	3.52	3.70	3.92	4.33
Dairy roughage	.00	.06	.15	.27	.52
Nondairy feed	.00	.00	.00	.00	.00
Mach. hire/rent/lease	.05	.15	.35	.68	1.11
Mach. repair & farm veh. exp.	.30	.44	.62	.73	.94
Fuel, oil & grease	.20	.25	.28	.32	.37
Replacement livestock	.00	.00	.07	.25	.80
Breeding	.07	.13	.18	.22	.28
Vet & medicine	.37	.48	.56	.60	.75
Milk marketing	.41	.53	.58	.65	.89
Bedding	.11	.18	.24	.30	.41
Milking supplies	.17	.26	.31	.37	.50
Cattle lease	.00	.00	.00	.02	.33
Custom boarding	.00	.00	.08	.23	.79
bST expense	.18	.29	.33	.37	.39
Other livestock expense	.01	.05	.09	.14	.18
Fertilizer & lime	.10	.18	.29	.33	.44
Seeds & plants	.09	.15	.18	.23	.29
Spray/other crop expenses	.07	.16	.25	.30	.48
Land, building, fence repair	.05	.11	.18	.26	.44
Taxes	.05	.09	.12	.15	.22
Real estate rent/lease	.09	.16	.25	.39	.62
Insurance	.05	.09	.10	.12	.25
Utilities	.15	.23	.27	.32	.42
Interest	.47	.83	1.00	1.20	1.60
Miscellaneous	.08	.12	.18	.22	.35
Total Operating Expenses	$11.78	$12.85	$13.46	$14.60	$14.97
Expansion Livestock	.00	.00	.28	.71	1.74
Machinery Depreciation	.23	.41	.61	.77	.94
Building Depreciation	.17	.34	.45	.72	1.04
Net Farm Income w/o Apprec.	$2.20	$1.46	$0.69	$-0.06	$-1.56

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

70 Large Herd Dairy Farms, 2000

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
(11)[20]	(11)	(11)	(10)	(9)	(9)	(11)	(11)
30.9	1,544	35,553,590	26,050	6.6	21	72	1,629,325
20.3	954	22,116,437	24,421	5.3	19	55	1,266,772
15.9	737	17,499,215	23,958	4.6	18	53	1,184,338
14.2	635	14,768,071	23,419	4.1	17	50	1,116,434
12.2	557	12,385,571	23,076	3.8	17	48	1,064,977
11.4	479	10,685,277	22,661	3.5	16	46	1,000,251
9.9	419	9,478,225	22,106	3.4	15	43	947,273
8.6	386	8,767,274	21,315	3.1	14	41	873,702
7.3	350	7,473,344	20,051	2.8	14	37	783,648
6.0	317	5,552,248	15,916	1.7	12	32	689,454

Cost Control

Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
(10)	(10)	(11)	(11)	(10)	(10)
$461	18%	$291	$814	$648	$3.52
655	23	379	956	845	4.04
740	25	421	1,035	922	4.17
777	26	455	1,093	968	4.31
800	27	491	1,137	1,016	4.52
827	27	510	1,196	1,062	4.62
869	28	538	1,241	1,084	4.68
899	30	575	1,264	1,141	4.84
954	31	626	1,354	1,195	5.26
1,078	34	745	1,503	1,345	5.84

[20] ( ) = 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
(11)	(11)	(11)	(10)	(10)	(10)
$1.46	$22,056	11%	$0.31	$0.27	$0.00
1.93	25,598	14	0.48	0.36	0.04
2.15	27,843	16	0.53	0.41	0.06
2.33	28,597	17	0.56	0.45	0.08
2.46	29,487	18	0.59	0.51	0.09
2.54	30,904	19	0.62	0.54	0.11
2.70	33,130	20	0.68	0.57	0.14
2.82	35,079	21	0.73	0.62	0.17
3.03	37,940	22	0.89	0.68	0.20
3.57	68,075	27	1.22	0.89	0.32

Machinery & Crop Expense		Operating Cost		Total Cost	
Per Tillable Acre	Per Ton Dry Matter	Per Cow	Per Cwt.	Per Cow	Per Cwt.
(CALC)	(CALC)	(10)	(10)	(10)	(10)
$147	$27	$1,639	$8.98	$2,299	$11.75
240	62	2,156	9.95	2,716	12.60
274	73	2,360	10.23	2,939	12.95
303	77	2,421	10.56	3,008	13.46
347	80	2,482	11.04	3,088	13.61
361	86	2,620	11.58	3,172	14.05
377	94	2,703	11.88	3,245	14.44
391	103	2,803	12.44	3,343	14.84
433	110	2,941	13.08	3,493	15.48
3,116	224	3,245	14.20	3,775	17.07

bST Expense Per Cow	bST Expense Per Cwt.	Percent Herd On bST	Culling Rate	Expense Ratios		
				Operating	Depreciation	Interest
(10)	(10)	(CALC)	(10)	(11)	(11)	(11)
$ 5	$0.02	3%	19	68%	3%	1%
38	0.18	28	27	73	4	4
59	0.26	43	30	75	5	5
67	0.29	49	31	77	6	5
71	0.31	52	33	80	7	6
77	0.33	56	35	82	8	7
81	0.35	59	36	84	8	7
84	0.37	62	38	87	10	8
90	0.39	66	40	91	11	9
101	0.45	74	45	96	14	11

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
(10)	(10)	(10)	(10)	(10)
$15.41	$14.60	$3,572	$600	$109
14.13	13.31	3,261	412	51
13.74	12.99	3,165	327	43
13.45	12.75	3,081	279	39
13.22	12.60	3,030	235	38
13.09	12.54	2,993	201	36
13.00	12.46	2,934	180	34
12.91	12.29	2,856	157	30
12.70	12.15	2,722	145	24
12.35	11.70	2,189	69	14

Debt Management

Farm Debt Per Cow		Cost of	Planned Debt Payments	
Total	Intermediate & Long Term	Borrowed Capital	Per Cow	Per Cwt.
(5)	(5)	(5)	(8)	(8)
$1,144	$862	5.5%	$189	$0.80
1,936	1,487	7.3	307	1.33
2,391	1,665	7.6	373	1.63
2,684	1,924	7.8	440	2.12
2,811	2,201	8.1	501	2.36
2,967	2,287	8.3	541	2.51
3,123	2,477	8.7	580	2.65
3,369	2,653	8.8	635	2.77
3,804	3,206	9.2	696	3.11
4,318	3,573	9.9	963	4.20

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
(Optional Page 12)		(CALC)	(CALC)	(8)
$1,116	$5.11	$725	$3.17	2.45
931	4.19	360	1.63	1.53
825	3.75	276	1.29	1.28
770	3.48	227	1.05	1.14
725	3.29	179	0.86	1.02
665	3.01	161	0.70	0.90
591	2.66	139	0.61	0.79
521	2.35	117	0.53	0.69
461	2.07	104	0.48	0.58
202	0.89	52	0.23	-1.72

Capital Efficiency

Farm Capital Per Cow	Real Estate Investment Per Cow	Machinery Investment Per Cow	Total Labor Cost Per Worker Equivalent	Asset Turnover Ratio
(11)	(11)	(11)	(CALC)	(11)
$3,578	$705	$431	$22,258	1.03
4,644	1,377	694	24,915	0.76
5,098	1,695	841	26,737	0.71
5,616	1,922	911	27,416	0.67
6,030	2,099	981	28,260	0.62
6,293	2,295	1,069	29,122	0.58
6,578	2,586	1,148	31,475	0.55
6,905	2,875	1,274	32,899	0.53
7,355	3,171	1,562	34,999	0.49
8,313	3,819	1,806	48,218	0.42

Solvency

Percent Equity	Leverage Ratio	Debt to Asset Ratios		
		Total	Current/Intermed.	Long Term
(5)	(5)	(5)	(5)	(5)
80%	-0.84	0.20	0.15	0.00
67	0.46	0.33	0.30	0.05
62	0.59	0.38	0.40	0.22
56	0.77	0.44	0.45	0.33
52	0.90	0.48	0.49	0.38
49	1.04	0.51	0.54	0.45
44	1.24	0.56	0.58	0.50
40	1.46	0.60	0.64	0.58
36	1.70	0.64	0.72	0.73
18	3.84	0.82	0.88	1.14

Profitability

Labor and Mgmt. Income Per Operator	Rate Return to Equity Capital		Rate Return to All Capital	
	Without Appreciation	With Appreciation	Without Appreciation	With Appreciation
(3)	(3)	(3)	(3)	(3)
$175,082	14.8%	24.5%	12.1%	15.2%
89,008	9.7	17.2	8.5	12.1
63,653	6.8	12.5	7.0	9.9
39,725	5.1	9.6	6.0	8.6
22,753	3.1	6.9	5.1	7.3
-255	0.5	4.3	3.8	6.1
-31,395	-2.0	2.6	2.8	4.4
-62,803	-5.5	-0.1	1.3	3.2
-107,415	-11.6	-6.3	-1.0	1.6
-393,318	-34.9	-19.7	-4.6	-4.3

Profitability, Continued

Net Farm Income Without Appreciation		Net Farm Income From Operations Ratio	Net Income Efficiency Ratio
Per Cow	Per Cwt.		
(10)	(10)	(3)	(CALC)
$737	$3.26	19%	18%
472	2.11	13	11
389	1.74	11	9
317	1.45	9	8
260	1.08	7	7
157	0.72	5	6
92	0.40	3	4
-35	-0.18	-1	3
-159	-0.81	-5	1
-384	-1.68	-11	-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 43-46 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 21).

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 23).

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 8 & 9 of the data entry form.

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

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

Current Portion - (defined on page 16).

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

Debt Coverage Ratio – (defined on page 23).

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

Debt to Asset Ratios - (defined on page 19).

Deferred Taxes - (defined on page 18).

Depreciation Expense Ratio - The percentage of Total Accrual Receipts that is charged to depreciation expense. Machinery Depreciation (DFBS p. 2) plus Building Depreciation (p. 2) 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 18.

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 (p. 2) by number of hired plus family paid worker equivalents (p. 11).

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 (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 (p. 2) 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 (p. 2) and total machinery expenses (p. 9), then divide by number of tillable acres, owned & rented (p. 9).

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 (p. 2) and total machinery expenses (p. 9), then divide by total forage, production, tons DM (p. 9).

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

Net Farm Income - (defined on page 14).

Net Farm Income from Operations Ratio - The percentage of each gross dollar that is generated that is net farm income. Net Farm Income without Appreciation (p. 3) 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 (p. 3) by number of cwt. of milk sold, which is total milk sold (p. 10) 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 (p. 3) by average number of cows for the year (p. 10).

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 (p. 3), plus Accrual Interest Paid (p. 2), divided by number of operators (p. 3), divided by Total Accrual Receipts (p. 3) times 100.

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. (p. 10) minus accrual milk marketing expense per cwt. (p. 10).

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 30).

Operating Expense Ratio - The percentage of Total Accrual Receipts that is used for operating expenses, excluding interest & depreciation. Total Accrual Expenses (p. 2) minus Machinery Depreciation (p. 2), minus Building Depreciation (p. 2), minus Accrual Interest Expense (p. 2), divided by Total Accrual Receipts (p. 3) times 100.

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

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

Percent Herd on bST – Calculated by taking the accrual bST expense for the year and dividing by an average price of $5.25 per dose, then dividing by 26, then dividing by the average number of milking and dry cows in the herd.

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 (p. 7) divided by pounds milk sold (p. 10) 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 (p. 7) divided by average number of cows (p. 10).

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 1 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 30).

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 30).

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. 11) divided by number of worker equivalents (p. 11).

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.

INDEX

OTHER A.E.M. EXTENSION BULLETINS

EB No	Title	Fee (if applicable)	Author(s)
2001-05	Dairy Farm Business Summary, Western and Central Plain Region, 2000	($8 ea.)	Knoblauch, W.A., L.D. Putnam, J. Karszes, S. Richards, J. Hanchar, C. Oostveen, B. Dehm, K. English, S. True, J. Gremer, and G. Allhusen
2001-04	Farmland Protection Planning in New York		Maloney, M. and J. Smith
2001-03	Mocash: A Computer Spreadsheet for Projecting Monthly Cash Flows		LaDue, E.L., J. Schuelke, and V. Mensah-Dartey
2001-02	1999 Department Publications		Peters, C.
2001-01	Considering Cooperation: A Guide For New Cooperative Development		Henehan, B.
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