

JULY 2000

PRO-DAIRY

E.B. 2000-04

# DAIRY FARM BUSINESS SUMMARY

## *NEW YORK LARGE HERD FARMS, 300 COWS OR LARGER 1999*



Jason Karszes  
Wayne A. Knoblauch  
Linda D. Putnam

Department of Agricultural, Resource, and Managerial Economics  
College of Agriculture and Life Sciences  
Cornell University, Ithaca, New York 14853-7801

It is the Policy of Cornell University actively to support equality of educational and employment opportunity. No person shall be denied admission to any educational program or activity or be denied employment on the basis of any legally prohibited discrimination involving, but not limited to, such factors as race, color, creed, religion, national or ethnic origin, sex, age or handicap. The University is committed to the maintenance of affirmative action programs which will assure the continuation of such equality of opportunity.

Publication Price Per Copy: \$12.00

For additional copies, contact:

Faye Butts  
Department of Agricultural, Resource, and  
Managerial Economics  
Agricultural Finance and Management Group  
358 Warren Hall  
Cornell University  
Ithaca, New York 14853-7801

E-mail: [fsb1@cornell.edu](mailto:fsb1@cornell.edu)  
Fax: 607-255-1589  
Phone: 607-254-7412

**1999 DAIRY FARM BUSINESS SUMMARY**  
**LARGE HERD DAIRY FARMS**  
**300 Cows or Larger**

**Table of Contents**

	<u>Page</u>
INTRODUCTION .....	1
Program Objectives .....	1
Format .....	1
PROGRESS OF THE FARM BUSINESS .....	2
TOP 20 PERCENT COMPARISON TO AVERAGE AND FACTORS CONCERNING DAIRY ENTERPRISE, AND PARLOR EFFICIENCY .....	5
SUMMARY AND ANALYSIS OF THE FARM BUSINESS .....	8
Business Characteristics .....	8
Income Statement .....	8
Profitability Analysis.....	11
Farm and Family Financial Status .....	13
Statement of Owner Equity .....	17
Cash Flow Statement.....	18
Repayment Analysis.....	20
Cropping Analysis.....	23
Dairy Analysis.....	25
Cost of Producing Milk.....	28
Capital and Labor Efficiency Analysis.....	29
Labor Cost Evaluation.....	30
CONDENSED SUMMARY AND SELECTED BUSINESS FACTORS .....	32
INCOME AND EXPENSE PROFILES BY HERD SIZE .....	34
FARM BUSINESS CHART.....	40
IDENTIFY AND SET GOALS.....	44
GLOSSARY AND LOCATION OF COMMON TERMS .....	46
INDEX .....	50

# 1999 DAIRY FARM BUSINESS SUMMARY LARGE HERD DAIRY FARMS

## 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 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 1998 to 1999 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 1999 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 1999 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.

---

<sup>1</sup>The large herd summary is comprised of farms with 300 or more cows. Cayuga, Chautauqua, Chenango, Clinton, Cortland, Erie, Genesee, Jefferson, Livingston, Niagara, Ontario, St. Lawrence, Saratoga, Schuyler, Tioga, Washington, Wayne and Wyoming counties had farms of this size in 1999. 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

A combination of changes in three major areas impacting dairy farms made 1999 a very similar year to 1998. While milk price and growing conditions decreased from 1998, feed costs also decreased from 1998. The combination of these factors generated profitability levels that were slightly lower than 1998. Profit generation and net worth growth were the second largest to occur in the 90s, behind the 1998 business year, and many farms continued to make significant financial progress towards their individual goals.

For both 1998 and 1999, 60 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 60 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 and labor costs.** Milk prices decreased 3.7 percent, or \$.57 per cwt., from 1998 to 1999. While milk price decreased, the increase in milk sold per cow of 2.9 percent led to a decrease of less than 1 percent in milk income per cow. This increase in production per cow coupled with a 4.8 percent increase in cow numbers led to a strong 7.9 percent increase in milk marketed off the farm. To support the increase in cow numbers, tillable land increased by 5.2% to 1,146 acres. Worker equivalents necessary to work the farm also increased to 13.43, an increase of 4.9 percent over the previous year. With both herd size and worker equivalents increasing at the same rate, cows per worker remained stable at 45. Milk sold per worker, however, did increase 2.9 percent due to the increase in milk sold per cow.

Even though labor efficiency did increase, labor costs increased at a faster rate. Labor cost per hundredweight of milk sold increased 3.7 percent, and hired labor cost per worker equivalent increased 4.9 percent to a level of \$31,684 per worker equivalent. Continued low unemployment and the ability of dairy producers to pay more are two reasons behind the increases.

**Lower feed costs.** The average 300 cow and larger farm spent \$3.76 per cwt. for purchased grain and concentrates in 1999, a decrease of 35 cents from the previous year. This decrease of 8.5 percent in purchased concentrates offset the decrease in milk price and maintained the grain and concentrated purchased as a percent of milk sales at 25 percent. Total feed and crop input costs decreased 32 cents, or 6.4 percent. These decreases in feed costs were partially offset by increases in the costs of labor, crop inputs, and machinery and the combination of changes led to a 1.4 percent decrease in total farm operating costs, and a 3.1 percent decrease in the operating cost of producing milk.

Forage yields decreased 4.8 percent for hay dry matter yields and 11.8 percent for as-fed corn silage yields, primarily due to the dryer growing conditions experienced in 1999. Of course, not every region of New York was impacted the same by the dryer conditions and the impact in yields ranged from none to over 40% decrease.

**Continued strong earnings picture.** The combination of decreased feed costs, increased production per cow, and increase in cow numbers coupled with the decrease in milk price led to only a slight decrease in profits from 1998. Net farm income without appreciation decreased 1.6 percent to \$339,862. Net farm income with appreciation decreased 2.7 percent to \$409,124.

- Labor and management income per operator/manager decreased 5 percent to \$116,438.
- Rate of return to all capital without appreciation decreased 12.7 percent to 10.3 percent. Rate of return on equity capital without appreciation decreased 15.3 percent to 13.8 percent.
- Farm net worth increased 11.6 percent from the previous year.
- Debt per cow increased slightly. And the debt to asset ratio stayed at the same level of 0.47.

Overall, 1999 was a very good year for the 300 cow and larger farms. While there was continuation of strong profitability, the changes on individual farms varied, with some farms actually doing worse in 1999 than 1998.

The challenge in 1999 was to maximize milk production while maintaining cost control, wisely managing the excess cash flow, and working around the dryer growing conditions. Farms that took advantage of 1999 most profitably were those that have improved their ability to produce milk at a lower cost and to manage through low- cash price cycles.

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 educational program.

**PROGRESS OF THE FARM BUSINESS**  
Same 60 Large Herd Dairy Farms, 1998 & 1999

Selected Factors	Average of 60 Farms		Percent Change
	1998	1999	
<u>Size of Business</u>			
Average number of cows	580	608	4.8
Average number of heifers	428	444	3.7
Milk sold, lbs.	12,826,444	13,844,419	7.9
Worker equivalent	12.80	13.43	4.9
Total tillable acres	1,089	1,146	5.2
<u>Rates of Production</u>			
Milk sold per cow, lbs.	22,133	22,767	2.9
Hay DM per acre, tons	3.72	3.54	-4.8
Corn silage per acre, tons	19.70	17.38	-11.8
<u>Labor Efficiency &amp; Costs</u>			
Cows per worker	45	45	0.0
Milk sold/worker, lbs.	1,002,066	1,030,858	2.9
Hired labor cost/cwt.	\$2.46	\$2.55	3.7
Hired labor cost/worker	\$30,207	\$31,684	4.9
Hired labor cost as % of milk sales	15.9%	17.1%	7.5
<u>Cost Control</u>			
Grain & conc. purchased as % of milk sales	25%	25%	0.0
Grain & conc. per cwt. milk	\$4.11	\$3.76	-8.5
Dairy feed & crop expense per cwt. milk	\$5.03	\$4.71	-6.4
Labor & mach. costs/cow	\$1,052	\$1,136	8.0
Total farm operating costs per cwt. sold	\$13.29	\$13.10	-1.4
Interest costs per cwt. milk	\$0.90	\$0.78	-13.3
Milk marketing costs per cwt. milk sold	\$0.46	\$0.44	-4.3
Operating cost of producing cwt. of milk	\$11.79	\$11.43	-3.1
<u>Capital Efficiency</u> (average for the year)			
Farm capital per cow	\$5,598	\$5,879	5.0
Mach. & equip. per cow	\$928	\$980	5.6
Asset turnover ratio	0.70	0.67	-4.3
<u>Income Generation</u>			
Gross milk sales per cow	\$3,427	\$3,399	-0.8
Gross milk sales per cwt.	\$15.50	\$14.93	-3.7
Net milk sales per cwt.	\$15.03	\$14.49	-3.6
Dairy cattle sales per cow	\$205	\$202	-1.5
Dairy calf sales per cow	\$23	\$27	17.4
<u>Profitability</u>			
Net farm income w/o apprec.	\$345,477	\$339,862	-1.6
Net farm income w/apprec.	\$420,279	\$409,124	-2.7
Labor & mgt. income per oper./manager	\$122,583	\$116,438	-5.0
Rate of return on equity capital w/o apprec.	16.3%	13.8%	-15.3
Rate of return on all capital w/o apprec.	11.8%	10.3%	-12.7
<u>Financial Summary</u>			
Farm net worth, end year	\$1,797,673	\$2,005,613	11.6
Debt to asset ratio	0.47	0.47	0.0
Farm debt per cow	\$2,685	\$2,790	3.9

**RECEIPTS AND EXPENSES PER COW AND PER HUNDREDWEIGHT**  
Same 60 Large Herd Dairy Farms, 1998 & 1999

Item	1998		1999	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	580		608	
Cwt. of Milk Sold		128,264		138,444
<u>Accrual Operating Receipts</u>				
Milk	\$3,427	\$15.50	\$3,399	\$14.93
Dairy cattle	205	0.93	202	0.89
Dairy calves	23	0.10	27	0.12
Other livestock	3	0.02	4	0.02
Crops	61	0.27	95	0.42
Miscellaneous receipts	89	0.40	112	0.49
Total	<u>\$3,808</u>	<u>\$17.22</u>	<u>\$3,839</u>	<u>\$16.86</u>
<u>Accrual Operating Expenses</u>				
Hired labor	\$544	\$2.46	\$581	\$2.55
Dairy grain & concentrate	908	4.11	856	3.76
Dairy roughage	46	0.21	53	0.23
Nondairy feed	0	0.00	0	0.00
Machine hire, rent & lease	79	0.36	93	0.41
Machine repairs & vehicle expense	146	0.66	159	0.70
Fuel, oil & grease	48	0.22	46	0.20
Replacement livestock	49	0.22	52	0.23
Breeding	33	0.15	36	0.16
Veterinary & medicine	104	0.47	119	0.52
Milk marketing	103	0.46	100	0.44
Bedding	47	0.21	54	0.24
Milking supplies	71	0.32	69	0.30
Cattle lease	15	0.07	17	0.07
Custom boarding	42	0.19	41	0.18
bST expense	63	0.28	67	0.29
Other livestock expense	27	0.12	26	0.11
Fertilizer & lime	65	0.30	70	0.31
Seeds & plants	42	0.19	42	0.18
Spray & other crop expense	50	0.23	51	0.22
Land, building & fence repair	54	0.24	55	0.24
Taxes	31	0.14	31	0.13
Real estate rent/lease	58	0.26	66	0.29
Insurance	29	0.13	27	0.12
Utilities	57	0.26	58	0.26
Interest paid	199	0.90	178	0.78
Miscellaneous	30	0.13	34	0.15
Total Operating Expenses	<u>\$2,939</u>	<u>\$13.29</u>	<u>\$2,983</u>	<u>\$13.10</u>
Expansion livestock	49	0.22	60	0.26
Machinery depreciation	112	0.50	127	0.56
Real Estate depreciation	112	0.51	111	0.49
Total Expenses	<u>\$3,212</u>	<u>\$14.53</u>	<u>\$3,280</u>	<u>\$14.41</u>
Net Farm Income without appreciation	596	2.69	559	2.45

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

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 1999. 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.

In 1999, 31 of the 70 farms over 300 cows filled out a supplementary data collection form that dealt with some additional management concerns of dairy farms. Reported below are the averages and business charts for these factors. Each category is sorted independently, therefore farms that are the highest or lowest in one column may not necessarily be the highest or lowest in the next column. Please note that this is only descriptive data from 31 farms and only represents these 31 farms. See the Glossary beginning on page 46 for definitions of the factors in the table below.

Ten farms that were in the top 20 percent in 1999 were also in the summary in 1998. The table on page 7 shows income and expenses for these farms for both 1998 and 1999. 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**

31 Large Herd Farms, 1999

For 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
2,767	42	782,840
1,870	30	639,123
1,477	25	514,090
1,284	22	430,682
980	16	365,220
Average		
1,669	27	545,349
For Dairy Enterprise Only		
Worker Equivalents	Cows per Worker Equivalent	Pounds Sold per Worker Equivalent
9.55	160	3,715,879
6.50	141	3,218,143
4.95	115	2,624,300
3.66	90	2,051,996
2.98	70	1,454,091
Average		
5.51	115	2,613,250



**TOP 20 PERCENT VS. AVERAGE**  
70 Large Herd Dairy Farms, 1999

Selected Factors	Average 1999	Top 20% 1999	Percent Difference
<u>Size of Business</u>			
Average number of cows	594	823	38.6
Average number of heifers	435	611	40.5
Milk sold, lbs.	13,442,582	19,284,373	43.5
Worker equivalent	13.18	17.15	30.1
Total tillable acres	1,127	1,439	27.7
<u>Rates of Production</u>			
Milk sold per cow, lbs.	22,638	23,428	3.5
Hay DM per acre, tons	3.59	4.07	13.4
Corn silage per acre, tons	17.38	17.59	1.2
<u>Labor Efficiency &amp; Costs</u>			
Cows per worker	45	48	6.7
Milk sold/worker, lbs.	1,019,923	1,124,453	10.2
Hired labor cost/cwt.	\$2.50	\$2.55	2.0
Hired labor cost/hired worker	\$31,081	\$32,496	4.6
Hired labor cost as % of milk sales	16.7%	17.1%	2.4
<u>Cost Control</u>			
Grain & conc. purchased as % of milk sales	25%	25%	0.0
Grain & conc. per cwt. milk	\$3.78	\$3.69	-2.4
Dairy feed & crop expense per cwt. milk	\$4.74	\$4.52	-4.6
Labor & mach. costs/cow	\$1,126	\$1,057	-6.1
Total farm operating costs per cwt. sold	\$13.06	\$12.13	-7.1
Interest costs per cwt. milk	\$0.81	\$0.54	-33.3
Milk marketing costs per cwt. milk sold	\$0.43	\$0.32	-25.6
Operating cost of producing cwt. of milk	\$11.35	\$10.63	-6.3
<u>Capital Efficiency (average for the year)</u>			
Farm capital per cow	\$5,872	\$4,971	-15.3
Mach. & equip. per cow	\$993	\$886	-10.8
Asset turnover ratio	0.67	0.80	19.4
<u>Income Generation</u>			
Gross milk sales per cow	\$3,373	\$3,491	3.5
Gross milk sales per cwt.	\$14.90	\$14.90	0.0
Net milk sales per cwt.	\$14.47	\$14.58	0.8
Dairy cattle sales per cow	\$207	\$250	21.8
Dairy calf sales per cow	\$26	\$24	7.7
<u>Profitability</u>			
Net farm income without appreciation	\$333,148	\$664,645	99.5
Net farm income with appreciation	\$403,614	\$705,530	74.8
Labor & mgt. income per oper./manager	\$111,811	\$320,469	186.6
Rate of return on equity capital w/o apprec.	13.8%	25.2%	82.6
Rate of return on all capital w/o apprec.	10.4%	17.0%	63.5
<u>Financial Summary</u>			
Farm net worth, end of year	\$1,931,028	\$2,549,691	32.0
Debt to asset ratio	0.47	0.42	10.6
Farm debt per cow	\$2,834	\$2,135	-24.7

**RECEIPTS AND EXPENSES PER COW AND PER HUNDREDWEIGHT**

Same 10 Top 20% Large Herd Dairy Farms, 1998 &amp; 1999

Item	1998		1999	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	918		958	
Cwt. Of Milk Sold		210,997		225,391
<u>Accrual Operating Receipts</u>				
Milk	\$3,525	\$15.34	\$3,524	\$14.98
Dairy cattle	172	0.75	222	0.94
Dairy calves	17	0.07	24	0.10
Other livestock	3	0.02	3	0.01
Crops	68	0.30	113	0.48
Miscellaneous receipts	61	0.27	67	0.29
Total	\$3,847	\$16.74	\$3,953	\$16.80
<u>Accrual Operating Expenses</u>				
Hired labor	\$630	\$2.74	\$627	\$2.67
Dairy grain & concentrate	924	4.02	872	3.71
Dairy roughage	71	0.31	50	0.21
Nondairy feed	0	0.00	0	0.00
Machine hire, rent & lease	80	0.35	78	0.33
Machine repairs & vehicle expense	135	0.59	144	0.61
Fuel, oil & grease	45	0.19	42	0.18
Replacement livestock	33	0.14	21	0.09
Breeding	29	0.13	36	0.16
Veterinary & medicine	104	0.45	117	0.50
Milk marketing	91	0.40	80	0.34
Bedding	52	0.23	58	0.25
Milking supplies	66	0.29	59	0.25
Cattle lease	29	0.13	30	0.13
Custom boarding	65	0.28	79	0.34
bST expense	75	0.33	72	0.31
Other livestock expense	25	0.11	22	0.10
Fertilizer & lime	56	0.25	72	0.31
Seeds & plants	34	0.15	30	0.13
Spray & other crop expense	41	0.18	27	0.12
Land, building & fence repair	52	0.23	56	0.24
Taxes	30	0.13	30	0.13
Real estate rent/lease	63	0.28	72	0.31
Insurance	22	0.09	19	0.08
Utilities	50	0.22	52	0.22
Interest paid	145	0.63	128	0.55
Miscellaneous	30	0.13	35	0.15
Total Operating Expenses	\$2,979	\$12.96	\$2,910	\$12.37
Expansion livestock	50	0.22	69	0.29
Machinery depreciation	71	0.31	106	0.45
Real Estate Depreciation	106	0.46	80	0.34
Total Expenses	\$3,207	\$13.95	\$3,165	\$13.45
Net Farm Income without apprec.	640	2.79	788	3.35

## 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, 1999

Type of Farm	Number	Type of Barn	Number
Dairy	70	Stanchion/Tie-Stall	0
		Freestall	69
		Combination	1
Type of Ownership	Number	Milking System	Number
Owner	66	Pipeline	0
Renter	4	Herringbone Conventional	29
		Herringbone Rapid Exit	13
		Parallel	23
		Parabone	2
		Rotary	0
		Other	3
Type of Business	Number	Milking Frequency	Number
Single proprietorship	19	2x/day	10
Partnership	21	3x/day	49
Limited Liability Corporation	11	Other	11
Subchapter S Corporation	16		
Subchapter C Corporation	3		
Business Record System	Number	Production Records	Number
Account Book	5	Testing Service	61
Accounting Service	7	On-Farm System	7
On-Farm Computer	55	Other	1
Other	3	None	1
BST Usage	Number		
<25%	7		
25-75%	49		
>75%	7		
Stopped Use in 1999	1		
Not Used	6		

### **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 1999.

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, 1999

Expense Item	Cash Paid	-	Change in Inventory or Prepaid Expense	+	Change in Accounts Payable	=	Accrual Expenses
<u>Hired Labor</u>	\$ 335,729		\$ 1,059 <<		\$ 749		\$ 335,419
<u>Feed</u>							
Dairy grain & concentrate	558,363		46,581		-3,056		508,727
Dairy roughage	33,462		1,670		-615		31,178
Nondairy	5		0		0		5
<u>Machinery</u>							
Mach. hire, rent/lease	54,046		821 <<		275		53,499
Mach. rep. & farm veh. exp	92,878		976		663		92,565
Fuel, oil & grease	28,405		-1		-101		28,305
<u>Livestock</u>							
Replacement livestock	31,730		0 <<		-792		30,938
Breeding	22,574		1,673		23		20,924
Vet & medicine	70,920		3,169		311		68,062
Milk marketing	57,789		0 <<		-29		57,761
Bedding	30,911		276		237		30,872
Milk supplies	44,449		2,563		-282		41,604
Cattle lease/rent	9,212		0 <<		0		9,212
Custom boarding	23,093		513 <<		134		22,714
bST expense	39,685		1,005		159		38,839
Other livestock expense	16,883		354		-104		16,426
<u>Crops</u>							
Fertilizer & lime	43,838		1,793		-492		41,554
Seeds & plants	29,705		4,786		481		25,399
Spray, other crop exp.	33,174		2,531		-59		30,584
<u>Real Estate</u>							
Land/bldg./fence repair	31,644		-172		264		32,080
Taxes	18,648		-175 <<		96		18,919
Rent & lease	37,521		17 <<		103		37,607
<u>Other</u>							
Insurance	17,002		570 <<		-29		16,403
Utilities (farm share)	34,837		-65 <<		-166		34,735
Interest paid	109,446		217 <<		100		109,329
Miscellaneous	21,759		285		231		21,705
Total Operating Expenses	\$ 1,827,708		\$ 70,445		\$ -1,899		\$ 1,755,365
Expansion livestock	\$ 40,742		\$ 0 <<		\$ -1,186		\$ 39,556
Machinery depreciation							\$ 77,794
Building depreciation							\$ 66,721
Total Accrual Expenses							\$ 1,939,436

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 1998 funds used to prepay 1999 leases exceed the amount of 1998 leases prepaid in 1997, the amount of this excess is subtracted to exclude it from 1998 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 1999 but not paid for. A decrease is subtracted because the resource was used before 1999.

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, 1999

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts
Milk sales	\$2,031,975				\$ -28,705		\$ 2,003,269
Dairy cattle	71,082		\$ 51,924		150		123,156
Dairy calves	15,604				-6		15,598
Other livestock	2,878		-138		0		2,740
Crops	11,921		45,131		-203		56,849
Government receipts	39,300		336 <sup>2</sup>		-385		39,251
Custom machine work	5,381				-121		5,259
Gas tax refund	328				-61		267
Other	<u>26,241</u>				-46		26,195
Less nonfarm noncash cap.			<u>0</u> <sup>3</sup>				<u>0</u>
Total Receipts	\$2,204,708		\$ 97,253		\$ 29,377		\$ 2,272,584

<sup>2</sup> Change in advanced government receipts.

<sup>3</sup> 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 1999 for the 2000 crop year in excess of funds earned for 1999. Likewise, a decrease is added to cash government receipts because it represents funds earned for 1999 but received in 1998.

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<sup>4</sup> 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.

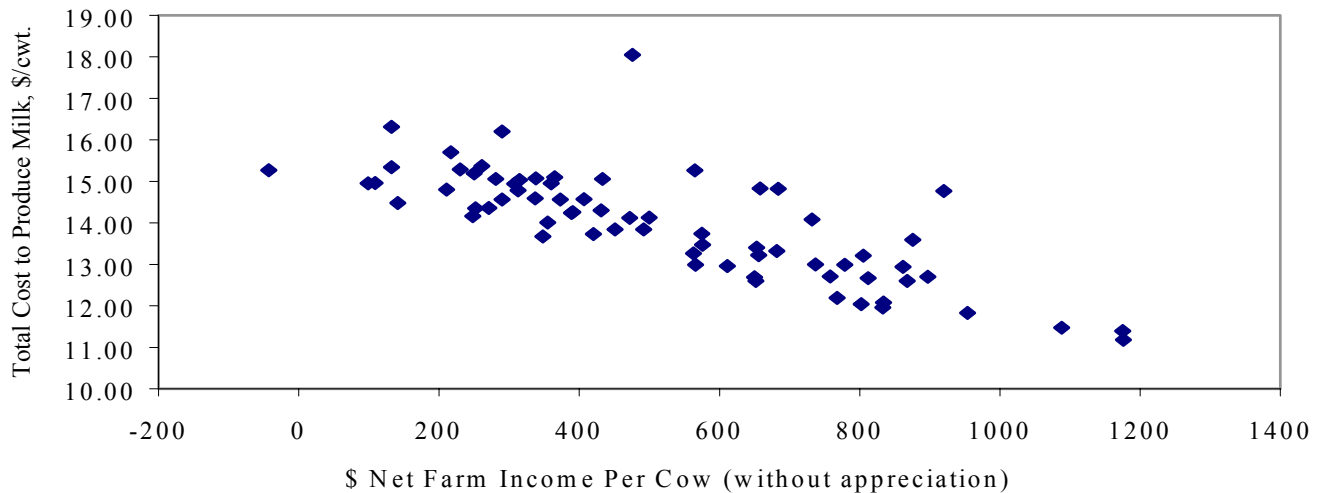
Net farm income is the return to the farm operators and other unpaid family members for their labor, management, and equity capital. It is the farm family's net annual return from working, managing, financing, and owning the farm business. This is not a measure of cash available from the year's business 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, 1999

Item	Average 70 Farms		Average Top 20% <sup>5</sup> Farms	
	Total	Per Cow	Total	Per Cow
Total accrual receipts	\$ 2,272,584		\$ 3,241,877	
Appreciation: Livestock	16,142		1,222	
Machinery	11,488		6,163	
Real Estate	39,523		34,137	
Other Stock/Certificates	3,313		-637	
Total Including Appreciation	\$ 2,343,050		\$ 3,282,762	
Total accrual expenses	1,939,436		2,577,232	
Net Farm Income (with appreciation)	\$ 403,614	\$679	\$ 705,530	\$ 857
Net Farm Income (w/o appreciation)	\$ 333,148	\$561	\$ 664,645	\$ 808

#### TOTAL COST TO PRODUCE MILK vs. NET FARM INCOME PER COW 70 Large Herd Dairy Farms, 1999



<sup>4</sup>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.

<sup>5</sup>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.

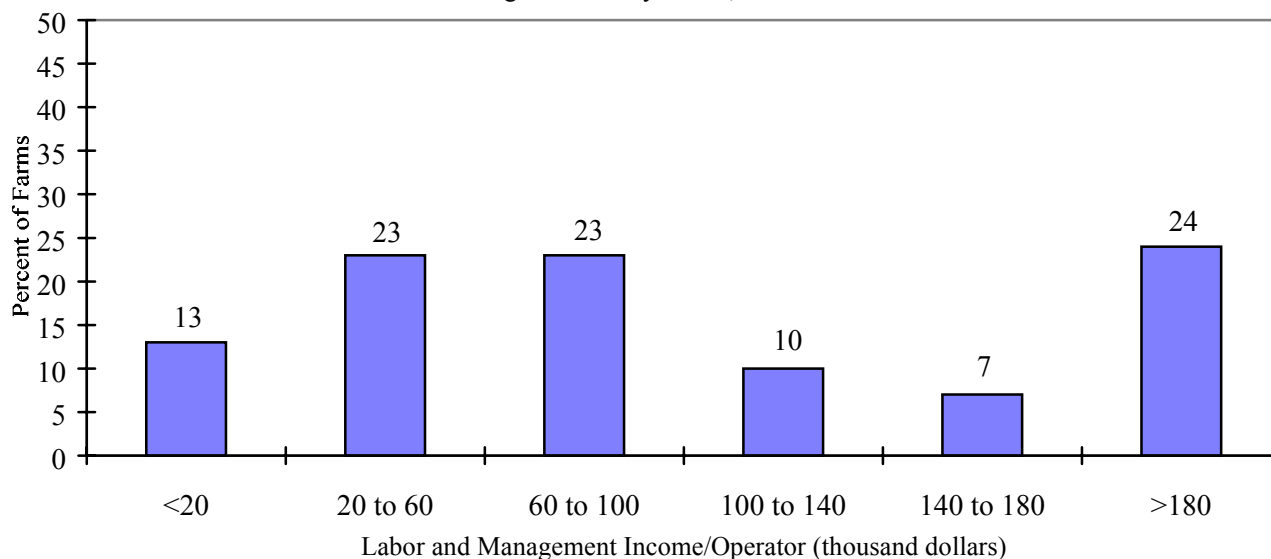
**LABOR AND MANAGEMENT INCOME**  
70 Large Herd Dairy Farms, 1999

Item	Average 70 Farms	Average Top 20% Farms
Net farm income without appreciation	\$ 333,148	\$ 664,645
Family labor unpaid @ \$1,800 per month	- 2,880	- 2,520
Interest on \$1,819,839 (\$2,346,550 for top 20%) average equity capital @ 5% real rate	- 90,992	- 117,328
Labor & Management Income per Farm (2.14 operators/farm; 1.70 operators for top 20%)	\$ 239,276	\$ 544,797
Labor & Management Income per Operator/Manager	\$ 111,811	\$ 320,469

Labor and management income per operator averaged \$111,811 on these 70 farms in 1999. Returns to labor and management were less than \$60,000 on 36 percent of the farms. Labor and management income per operator ranged from \$60,000 to \$140,000 on 33 percent of the farms while 31 percent showed labor and management incomes of \$140,000 or more per operator.

**DISTRIBUTION OF LABOR & MANAGEMENT INCOME  
PER OPERATOR**

70 Large Herd Dairy Farms, 1999



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, 1999

Item	Average 70 Farms	Average Top 20% Farms
Net farm income with appreciation	\$ 403,614	\$ 705,530
Family labor unpaid @ \$1,800 per month	- 2,880	- 2,520
Value of operators' labor & management	- 78,606	- 71,214
Return on equity capital with appreciation	\$ 322,128	\$ 631,796
Interest paid	+ 109,329	+ 103,806
Return on total capital with appreciation	\$ 431,457	\$ 735,602
Return on equity capital without appreciation	\$ 251,662	\$ 590,911
Return on total capital without appreciation	\$ 360,991	\$ 694,717
Rate of return on average equity capital:		
with appreciation	17.7%	26.9 %
without appreciation	13.8%	25.2 %
Rate of return on average total capital:		
with appreciation	12.4%	18.0 %
without appreciation	10.4%	17.0 %
Net farm income from operations ratio	0.15	0.21

**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 1999, leases were discounted by 8.5 percent.

Advanced government receipts are included as current liabilities. Government payments received in 1999 that are for participation in the 1998 program are the end year balance and payments received in 1998 for participation in the 1999 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.



**1999 FARM BUSINESS & NONFARM BALANCE SHEET**

70 Large Herd Dairy Farms, 1999

Farm Assets	Jan. 1	Dec. 31	Farm Liabilities & Net Worth	Jan. 1	Dec. 31
<u>Current</u>			<u>Current</u>		
Farm cash, checking & savings	\$ 8,369	\$ 22,805	Accounts payable	\$ 39,357	\$ 36,273
Accounts receivable	149,907	120,531	Operating debt	121,449	180,930
Prepaid expenses	5,104	8,061	Short Term	15,685	16,768
Feed & supplies	373,282	485,900	Advanced govt. receipts	380	44
			Current Portion:		
			Intermediate	100,179	118,976
			Long Term	<u>41,284</u>	<u>57,926</u>
Total Current	\$ 536,662	\$ 637,297	Total Current	\$ 318,334	\$ 410,917
<u>Intermediate</u>			<u>Intermediate</u>		
Dairy cows:			Structured debt		
owned	\$ 583,448	\$ 626,705	1-10 years	\$ 541,040	\$ 623,476
leased	17,890	11,970	Financial lease		
Heifers	259,432	284,168	(cattle/machinery)	69,732	52,088
Bulls/other livestock	4,275	4,212	Farm Credit stock	<u>15,908</u>	<u>16,687</u>
Mach./equipment owned	504,003	583,663	Total Intermediate	\$ 626,680	\$ 692,251
Mach./equipment leased	51,842	40,118			
Farm Credit stock	15,908	16,687			
Other stock/certificate	<u>75,743</u>	<u>92,670</u>			
Total Intermediate	\$1,512,541	\$1,660,193			
<u>Long Term</u>			<u>Long Term</u>		
Land/buildings:			Structured debt		
owned	\$1,246,723	\$1,368,337	>10 years	\$ 642,263	\$ 631,631
leased	<u>8,925</u>	<u>5,405</u>	Financial lease		
Total Long Term	\$1,255,648	\$1,373,742	(structures)	<u>8,925</u>	<u>5,405</u>
			Total Long Term	\$ 651,188	\$ 637,036
Total Farm Assets	\$3,304,851	\$3,671,232	Total Farm Liab.	\$1,596,202	\$1,740,204
			FARM NET WORTH	\$1,708,649	\$1,931,028

## Nonfarm Assets, Liabilities &amp; Net Worth (Average of 26 farms reporting)

Assets	Jan. 1	Dec. 31	Liabilities & Net Worth	Jan. 1	Dec. 31
Personal cash, checking & savings	\$ 1,248	\$ 1,589	Nonfarm Liabilities	\$ 9,110	\$ 5,129
Cash value life insurance	17,384	22,251			
Nonfarm real estate	18,635	19,038			
Auto (personal share)	2,658	3,769			
Stocks & bonds	8,236	18,635			
Household furnishings	4,154	4,923			
All other nonfarm assets	<u>0</u>	<u>1,192</u>			
Total Nonfarm Assets	\$ 52,315	\$ 71,397	NONFARM NET WORTH	\$ 43,205	\$ 66,268

Farm & Nonfarm Assets, Liabilities, and Net Worth<sup>6</sup>

	Jan. 1	Dec. 31
Total Assets	\$ 3,357,166	\$ 3,742,629
Total Liabilities	<u>1,605,312</u>	<u>1,745,333</u>
TOTAL FARM & NONFARM NET WORTH	\$ 1,751,854	\$ 1,997,296

<sup>6</sup>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 67 percent on these 5 farms by including deferred taxes.

Deferred taxes on these five farms totaled an average of \$349,387, roughly one-third of the pretax net worth. Percent equity decreased from 70 percent to 50 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, 1999

Average of 5 New York Dairy Farms Reporting Data, 1999

ASSETS		LIABILITIES & NET WORTH	
		Current debts & payables	\$ 111,832
		Current deferred taxes	<u>74,919</u>
Total Current Assets	\$ 241,196	Total Current Liabilities	\$ 186,751
		Intermediate debts & leases	\$ 223,610
		Intermediate deferred taxes	<u>180,386</u>
Total Intermediate Assets	\$ 798,467	Total Intermediate Liabilities	\$ 403,996
		Long term debts & leases	\$ 186,845
		Long term deferred taxes	<u>88,976</u>
Total Long Term Assets	\$ 571,360	Total Long Term Liabilities	\$ 275,821
TOTAL FARM ASSETS	\$ 1,611,023	TOTAL FARM LIABILITIES	\$ 866,568
		Farm Net Worth	\$ 744,455
		Percent Equity (Farm)	46%
		Nonfarm debts	\$ 0
		Nonfarm deferred taxes	<u>5,106</u>
Total Nonfarm Assets	\$ 122,027	Total Nonfarm Liabilities	\$ 5,106
TOTAL ASSETS	\$ 1,733,050	TOTAL LIABILITIES	\$ 871,674
		Total Net Worth	\$ 861,376
		Percent Equity (Total)	50%

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, 1999

Item	Average 70 Farms	Average Top 20% Farms		
<u>Financial Ratios - Farm:</u>				
Percent equity	53%	58%		
Debt/asset ratio: total	0.47	0.42		
long-term	0.46	0.37		
intermediate/current	0.48	0.44		
Leverage Ratio	0.90	0.72		
Current Ratio	1.55	1.79		
Working Capital: \$226,380	as % of Total Expenses: 12%	\$383,911 15%		
<u>Farm Debt Analysis:</u>				
Accounts payable as % of total debt	2%	2%		
Long-term liabilities as a % of total debt	37%	30%		
Current & intermediate liabilities as a % of total debt	63%	70%		
Cost of term debt (weighted average)	7.7%	6.8%		
	<u>Average 70 Farms</u>	<u>Average Top 20% Farms</u>		
<u>Farm Debt Levels:</u>	<u>Per Cow</u>	<u>Per Tillable Acre Owned</u>	<u>Per Cow</u>	<u>Per Tillable Acre Owned</u>
Total farm debt	\$ 2,834	\$2,960	\$ 2,135	\$ 2,286
Long-term debt	1,038	1,083	637	682
Long-term & intermediate	2,165	2,261	1,571	1,682
Intermediate & current debt	1,797	1,876	1,498	1,604

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, 1999

Item	Average of 70 Farms	
	<u>Real Estate</u>	<u>Machinery &amp; Equipment</u>
Value beginning of year	\$ 1,246,723	\$ 504,003
Purchases	\$ 227,154 <sup>7</sup>	\$ 150,813
Gift/inheritance	+ 0	+ 56
Lost capital	- 71,761	
Sales	- 6,581	- 4,902
Depreciation	- <u>66,721</u>	- <u>77,794</u>
Net investment	= 82,091	= 68,172
Appreciation	+ <u>39,523</u>	+ <u>11,488</u>
Value end of year	\$ 1,368,337	\$ 583,663

<sup>7</sup> 39,807 land and \$187,347 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, 1999

Item	Average 70 Farms		Average Top 20% Farms	
Beginning of year farm net worth		\$ 1,708,649		\$ 2,143,409
Net farm income w/o appreciation	\$ 333,148		\$ 664,645	
+ Nonfarm cash income	+ 7,158		+ 8,358	
- Personal withdrawals & family expenditures excluding nonfarm borrowings	- 123,717		- 223,928	
Retained Earnings		+ 216,589		+ 449,075
Nonfarm noncash transfers to farm	\$ 56		\$ 0	
+ Cash used in business from nonfarm capital	+ 8,380		+ 8,339	
- Note/mortgage from farm real estate sold (nonfarm)	- 0		- 0	
Contributed/Withdrawn Capital	=	+\$ 8,436	=	+ 8,339
Appreciation	\$ 70,466		\$ 40,885	
- Lost capital	- 71,761		- 93,411	
Change in Valuation Equity		+\$ -1,295		+ -52,526
Imbalance/Error		- 1,351		- 1,394
End of year farm net worth <sup>8</sup>		=\$ 1,931,028		=\$ 2,549,691
Change in net worth w/apprec.		\$ 222,379		\$ 406,282
<hr/>				
<u>Change in Net Worth</u>				
Without appreciation		\$ 151,913		\$ 365,397
With appreciation		\$ 222,379		\$ 406,282

<sup>8</sup>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, 1999

Item	Average 70 Farms	
<b><u>Cash Flow from Operating Activities</u></b>		
Cash farm receipts	\$ 2,204,708	
- Cash farm expenses	<u>1,827,708</u>	
= Net cash farm income		\$ 377,000
Personal withdrawals/family expenses including nonfarm debt payments	\$ 122,222	
- Nonfarm income	<u>7,158</u>	
- Net cash withdrawals from the farm		\$ <u>115,064</u>
= Net Provided by Operating Activities		\$ 261,936
<b><u>Cash Flow From Investing Activities</u></b>		
Sale of Assets: Machinery	\$ 4,902	
+ real estate	6,581	
+ other stock/cert.	<u>5,629</u>	
= Total asset sales		\$ 17,112
Capital purchases: expansion livestock	\$ 40,742	
+ machinery	150,813	
+ real estate	227,154	
+ other stock/cert.	<u>19,243</u>	
- Total invested in farm assets		\$ <u>437,952</u>
= Net Provided by Investment Activities		\$ -420,840
<b><u>Cash Flow From Financing Activities</u></b>		
Money borrowed (inter. & long term)	\$ 328,305	
+ Money borrowed (short-term)	7,848	
+ Increase in operating debt	59,481	
+ Cash from nonfarm cap. used in business	8,380	
+ Money borrowed - nonfarm	<u>-1,495</u>	
= Cash inflow from financing		\$ 402,519
Principal payments (inter. & long-term)	\$ 221,063	
+ Principal payments (short-term)	6,765	
+ Decrease in operating debt	<u>0</u>	
- Cash outflow for financing		\$ <u>227,828</u>
= Net Provided by Financing Activities		\$ 174,691
<b><u>Cash Flow From Business</u></b>		
Beginning farm cash, checking & savings		\$ 8,369
- Ending farm cash, checking & savings		<u>22,805</u>
= Net Provided from Reserves		\$ <u>-14,436</u>
<b><u>Imbalance (error)</u></b>		<b>\$ 1,351</b>

**ANNUAL CASH FLOW STATEMENT**  
14 Top 20% Large Herd Dairy Farms, 1999

Item	Average Top 20% Farms	
<u>Cash Flow from Operating Activities</u>		
Cash farm receipts	\$3,103,636	
- Cash farm expenses	<u>2,474,542</u>	
= Net cash farm income		\$ 629,094
Personal withdrawals/family expenses including nonfarm debt payments	\$ 223,570	
- Nonfarm income	<u>8,358</u>	
- Net cash withdrawals from the farm		<u>\$ 215,212</u>
= Net Provided by Operating Activities		\$ 413,882
<u>Cash Flow From Investing Activities</u>		
Sale of Assets: Machinery	\$ 3,907	
+ real estate	0	
+ other stock/cert.	<u>6,238</u>	
= Total asset sales		\$ 10,145
Capital purchases: expansion livestock	\$ 84,429	
+ machinery	182,185	
+ real estate	319,036	
+ other stock/cert.	<u>11,323</u>	
- Total invested in farm assets		<u>\$ 596,973</u>
= Net Provided by Investment Activities		\$ -586,828
<u>Cash Flow From Financing Activities</u>		
Money borrowed (inter. & long term)	\$ 295,445	
+ Money borrowed (short-term)	886	
+ Increase in operating debt	110,130	
+ Cash from nonfarm cap. used in business	8,339	
+ Money borrowed - nonfarm	<u>-358</u>	
= Cash inflow from financing		\$ 414,442
Principal payments (inter. & long-term)	\$ 166,506	
+ Principal payments (short-term)	421	
+ Decrease in operating debt	<u>0</u>	
- Cash outflow for financing		<u>\$ 166,927</u>
= Net Provided by Financing Activities		\$ 247,515
<u>Cash Flow From Business</u>		
Beginning farm cash, checking & savings		\$ -24,377
- Ending farm cash, checking & savings		<u>51,584</u>
= Net Provided from Reserves		\$ -75,961
<u>Imbalance (error)</u>		\$ -1,392

## 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 2000. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 2000 debt payments shown below.

### FARM DEBT PAYMENTS PLANNED

Large Herd Dairy Farms, 1998 & 1999

Debt Payments	Same 60 Dairy Farms			Same 10 Top 20% Farms		
	1999 Payments		Planned 2000	1999 Payments		Planned 2000
	Planned	Made		Planned	Made	
Long-term	\$ 96,282	\$ 160,273	\$ 114,174	\$ 96,800	\$ 123,774	\$ 102,007
Intermediate-term	149,410	178,700	176,623	153,404	170,778	207,531
Short-term	5,807	6,005	4,625	6,578	589	4,000
Operating (net reduction)	15,696	0	23,824	55,329	0	26,500
Accounts payable (net reduction)	<u>1,065</u>	<u>6,937</u>	<u>1,946</u>	<u>0</u>	<u>7,730</u>	<u>0</u>
Total	\$ 268,260	\$ 351,915	\$ 321,192	\$ 312,111	\$ 302,871	\$ 340,038
Per cow	\$ 441	\$ 579		\$ 316	\$ 316	
Per cwt. 1999 milk	\$ 1.94	\$ 2.54		\$ 1.34	\$ 1.34	
Percent of total 1999 receipts	11%	15%		8%	8%	
Percent of 1999 milk receipts	13%	17%		9%	9%	

The cash flow coverage ratio and debt coverage ratio measure the ability of the farm business to meet its planned debt payments schedule. The ratios show the percentage of payments planned for 1999 (as of December 31, 1998) that could have been made with the amount available for debt service in 1999. Farmers who did not participate in DFBS in 1998 have their 1999 cash flow coverage ratio based on planned debt payments for 2000.

### COVERAGE RATIOS

Same 60 Large Herd Dairy Farms, 1998 & 1999

Item	Average	Item	Average
<u>Cash Flow Coverage Ratio</u>		<u>Debt Coverage Ratio</u>	
Cash farm receipts	\$2,271,291	Net farm income (w/o apprec.)	\$339,862
- Cash farm expenses	1,895,478	+ Depreciation	144,720
+ Interest paid (cash)	108,342	+ Interest paid (accrual)	108,206
- Net personal withdrawals from farm <sup>9</sup>	<u>119,237</u>	- Net personal withdrawals from farm <sup>9</sup>	<u>119,237</u>
(A) = Amount Available for Debt Service	\$ 364,918	(A') = Repayment Capacity	\$473,551
(B) = Debt Payments Planned for 1999 (as of December 31, 1998)	\$ 268,260	(B) = Debt Payments Planned for 1999 (as of December 31, 1998)	\$268,260
(A/B)= Cash Flow Coverage Ratio for 1999	1.36	(A'/B)= Debt Coverage Ratio for 1999	1.77
-----			
Same 10 Top 20% Dairy Farms, 1998 & 1999			
(A) = Amount Available for Debt Service	\$ 558,232	(A') = Repayment Capacity	\$794,799
(B) = Debt Payments Planned for 1999	312,111	(B) = Debt Payments Planned for 1999	312,111
(A/B)= Cash Flow Coverage Ratio for 1999	1.79	(A'/B)= Debt Coverage Ratio for 1999	2.55

<sup>9</sup>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, 1999

Item	Average 70 Farms		Total
	Per Cow	Per Cwt.	
Number cows and cwt. milk	594	134,426	
<u>Accrual Operating Receipts</u>			
Milk	\$ 3,373	\$ 14.90	\$ 2,003,269
Dairy cattle	207	0.92	123,156
Dairy calves	26	0.12	15,598
Other livestock	5	0.02	2,740
Crops	96	0.42	56,849
Misc. receipts	119	0.53	70,972
Total	\$ 3,826	\$ 16.91	\$ 2,272,584
<u>Accrual Operating Expenses</u>			
Hired labor	\$ 565	\$ 2.50	\$ 335,419
Dairy grain & concentrate	856	3.78	508,727
Dairy roughage	52	0.23	31,178
Nondairy feed	0	0.00	5
Mach. hire/rent/lease	90	0.40	53,499
Mach. repair & farm vehicle expense	156	0.69	92,565
Fuel, oil & grease	48	0.21	28,305
Replacement livestock	52	0.23	30,938
Breeding	35	0.16	20,924
Vet & medicine	115	0.51	68,062
Milk marketing	97	0.43	57,761
Bedding	52	0.23	30,872
Milking supplies	70	0.31	41,604
Cattle lease	16	0.07	9,212
Custom boarding	38	0.17	22,714
bST expense	65	0.29	38,839
Other livestock expense	28	0.12	16,426
Fertilizer & lime	70	0.31	41,554
Seeds & plants	43	0.19	25,399
Spray/other crop expenses	51	0.23	30,584
Land, building, fence repair	54	0.24	32,080
Taxes	32	0.14	18,919
Real estate rent/lease	63	0.28	37,607
Insurance	28	0.12	16,403
Utilities	58	0.26	34,735
Miscellaneous	37	0.16	21,705
Total Less Interest Paid	\$ 2,771	\$ 12.24	\$ 1,646,036
<u>Net Accrual Operating Income</u>			
(without interest paid)	\$ 1,055	\$ 4.66	\$ 626,548
- Change in livestock/crop inventory <sup>10</sup>	164	0.72	97,253
- Change in accounts receivable	-49	-0.22	-29,377
- Change in feed/supply inventory <sup>11</sup>	119	0.52	70,445
+ Change in accts. Payable <sup>12</sup>	-3	-0.01	-1,999
NET CASH FLOW	\$ 819	\$ 3.62	\$ 486,446
- Net personal withdrawals from farm (see footnote on p. 16)	\$ 196	\$ 0.87	\$ 116,559
Available for Farm Debt Payments & Investments	\$ 623	\$ 2.75	\$ 369,887
- Farm debt payments	569	2.52	338,140
Available for Farm Investment	\$ 53	\$ 0.24	\$ 31,747
- Capital purchases: cattle, machinery & improvements	\$ 737	\$ 3.26	\$ 437,952

<sup>10</sup>Includes change in advance government receipts.<sup>11</sup>Includes change in prepaid expenses.<sup>12</sup>Excludes change in interest account payable.



**ANNUAL CASH FLOW WORKSHEET**  
14 Top 20% Large Herd Dairy Farms, 1999

Item	Average Top 20% Farms		
	Per Cow	Per Cwt.	Total
No. cows or cwt. milk	823	192,844	
<u>Accrual Operating Receipts</u>			
Milk	\$ 3,491	\$ 14.90	\$ 2,873,097
Dairy cattle	250	1.07	205,608
Dairy calves	24	0.10	19,537
Other livestock	7	0.03	5,402
Crops	106	0.45	87,138
Misc. receipts	62	0.26	51,096
Total	\$ 3,939	\$ 16.81	\$ 3,241,877
<u>Accrual Operating Expenses</u>			
Hired labor	\$ 599	\$ 2.55	\$ 492,584
Dairy grain & concentrate	864	3.69	711,477
Dairy roughage	61	0.26	49,884
Nondairy feed	0	0.00	0
Mach. hire/rent/lease	68	0.29	56,203
Mach. repair & farm vehicle expense	141	0.60	115,641
Fuel, oil & grease	41	0.18	33,942
Replacement livestock	22	0.10	18,517
Breeding	35	0.15	28,543
Vet & medicine	112	0.48	91,795
Milk marketing	75	0.32	61,780
Bedding	55	0.23	44,927
Milking supplies	62	0.27	51,374
Cattle lease	27	0.12	22,627
Custom boarding	70	0.30	57,215
bST expense	69	0.29	56,466
Other livestock expense	20	0.09	16,858
Fertilizer & lime	71	0.30	58,155
Seeds & plants	32	0.14	26,118
Spray/other crop expenses	32	0.14	26,556
Land, building, fence repair	55	0.24	45,348
Taxes	28	0.12	23,138
Real estate rent/lease	66	0.28	53,959
Insurance	21	0.09	17,196
Utilities	52	0.22	43,088
Miscellaneous	39	0.16	31,738
Total Less Interest Paid	\$ 2,716	\$ 11.59	\$ 2,235,127
<u>Net Accrual Operating Income</u>			
(without interest paid)	\$ 1,223	\$ 5.22	\$ 1,006,750
- Change in livestock/crop inventory <sup>13</sup>	208	0.89	170,791
- Change in accounts receivable	-40	-0.17	-32,550
- Change in feed/supply inventory <sup>14</sup>	166	0.71	136,406
+ Change in accounts payable <sup>15</sup>	1	0.00	441
NET CASH FLOW	\$ 890	\$ 3.80	\$ 732,545
- Net personal withdrawals from farm(see footnote p.18)	\$ 262	\$ 1.12	\$ 215,570
Available for Farm Debt Payments & Investments	\$ 628	\$ 2.68	\$ 516,975
- Farm debt payments	327	1.40	269,431
Available for Farm Investment	\$ 301	\$ 1.28	\$ 247,544
- Capital purchases: cattle, machinery & improvements	\$ 725	\$ 3.10	\$ 596,973

<sup>13</sup>Includes change in advance government receipts.

<sup>14</sup>Includes change in prepaid expenses.

<sup>15</sup>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, 1999

Item	Average 70 Farms			Average Top 20% Farms		
	<u>Owned</u>	<u>Rented</u>	<u>Total</u>	<u>Owned</u>	<u>Rented</u>	<u>Total</u>
Land						
Tillable	588	539	1,127	807	632	1,439
Nontillable	34	22	56	49	20	69
Other nontillable	170	12	182	230	3	233
Total	792	573	1,365	1,086	655	1,741
<u>Crop Yields</u>	<u>Farms</u>	<u>Acres<sup>16</sup></u>	<u>Prod/Acre</u>	<u>Farms</u>	<u>Acres</u>	<u>Prod/Acre</u>
Hay crop	67	500	3.60 tn DM	12	695	4.07 tn DM
Corn silage	67	524	17.39 tn	12	765	17.60 tn
Other forage	2	128	1.16 tn DM	0	0	0.00 tn DM
Total forage	67	1,028	4.76 tn DM	12	1,461	5.05 tn DM
Corn grain	24	188	108 bu	4	190	150 bu
Oats	2	33	37 bu	1	40	0 bu
Wheat	9	112	64 bu	0	0	0 bu
Other crops	24	137		3	583	
Tillable pasture	6	69		1	5	
Idle	9	84		2	36	
Total Tillable Acres	70	1,127		14	1,439	

<sup>16</sup>This column represents the average acreage for the farms producing that crop. Average acreages including those farms not producing were corn grain 64, oats 1, wheat 14, tillable pasture 6, and idle 11.

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, 1999

Item	Average 70 Farms	Average Top 20% Farms
Total tillable acres per cow	1.90	1.75
Total forage acres per cow	1.66	1.52
Harvested forage dry matter, tons per cow	7.88	7.69

**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, 1999

Item	Total	All	Corn Silage	Corn Grain	Hay Crop	
	Per Till. Acre	Corn Per Acre	Per Ton DM	Per Dry Sh. Bu.	Per Acre	Per Ton DM
No. of farms reporting	70	9			9	
Ave. number of acres	1,127	442			424	
Fertilizer/lime	\$ 36.87	\$ 43.08	\$ 7.13	\$ 0.39	\$ 21.16	\$ 5.21
Seed/plants	22.54	38.13	6.31	0.35	13.51	3.33
Spray/other crop exp.	27.14	58.35	9.66	0.53	14.85	3.66
TOTAL	\$ 86.55	\$ 139.56	\$ 23.10	\$ 1.27	\$ 49.52	\$ 12.20

Average Top 20% Farms:

No. of farms reporting	14
Ave. number of acres	1,439
Fertilizer/lime	\$ 40.41
Seeds/plants	18.15
Spray/other crop exp.	18.45
TOTAL	\$ 77.01

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, 1999

Machinery Expense Item	Average 70 Farms		Average Top 20% Farms	
	Total Expenses	Per Till. Acre	Total Expenses	Per Till. Acre
Fuel, oil & grease	\$ 28,305	\$ 25.12	\$ 33,942	\$ 23.59
Mach. repairs & farm veh. exp.	92,565	82.13	115,641	80.36
Machine hire, rent & lease	53,499	47.47	56,203	39.06
Interest (5%)	29,491	26.17	36,453	25.33
Depreciation	77,794	69.03	91,933	63.89
Total	\$ 281,654	\$ 249.91	\$ 334,172	\$ 232.23

**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, 1999

Item	Dairy Cows				Heifers		Calves	
	No.	Value	No.	Bred Value	No.	Open Value	No.	Value
<u>Average 70 Farms:</u>								
Beginning year (owned)	560	\$ 583,448	156	\$ 142,644	148	\$ 82,933	108	\$ 33,855
+ Change w/o apprec.		34,289		11,814		1,509		4,312
+ Appreciation		<u>8,968</u>		<u>3,469</u>		<u>2,413</u>		<u>1,218</u>
End year (owned)	592	\$ 626,705	167	\$ 157,927	145	\$ 86,855	123	\$ 39,385
End including leased	614							
Average number	594		435 (all age groups)					
<u>Average Top 20% Farms:</u>								
Beginning year (owned)	741	\$ 719,299	242	\$ 198,636	198	\$ 96,707	124	\$ 34,070
+ Change w/o apprec.		67,406		25,706		-5,629		18,466
+ Appreciation		<u>0</u>		<u>372</u>		<u>743</u>		<u>108</u>
End of year (owned)	806	\$ 786,705	268	\$ 224,714	172	\$ 91,821	186	\$ 52,644
End including leased	864							
Average number	823		611 (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, 1999

Item	Average 70 Farms	Average Top 20% Farms
Total milk sold, lbs.	13,442,582	19,284,373
Milk sold per cow, lbs.	22,638	23,428
Average milk plant test, percent butterfat	3.65 %	3.64 %

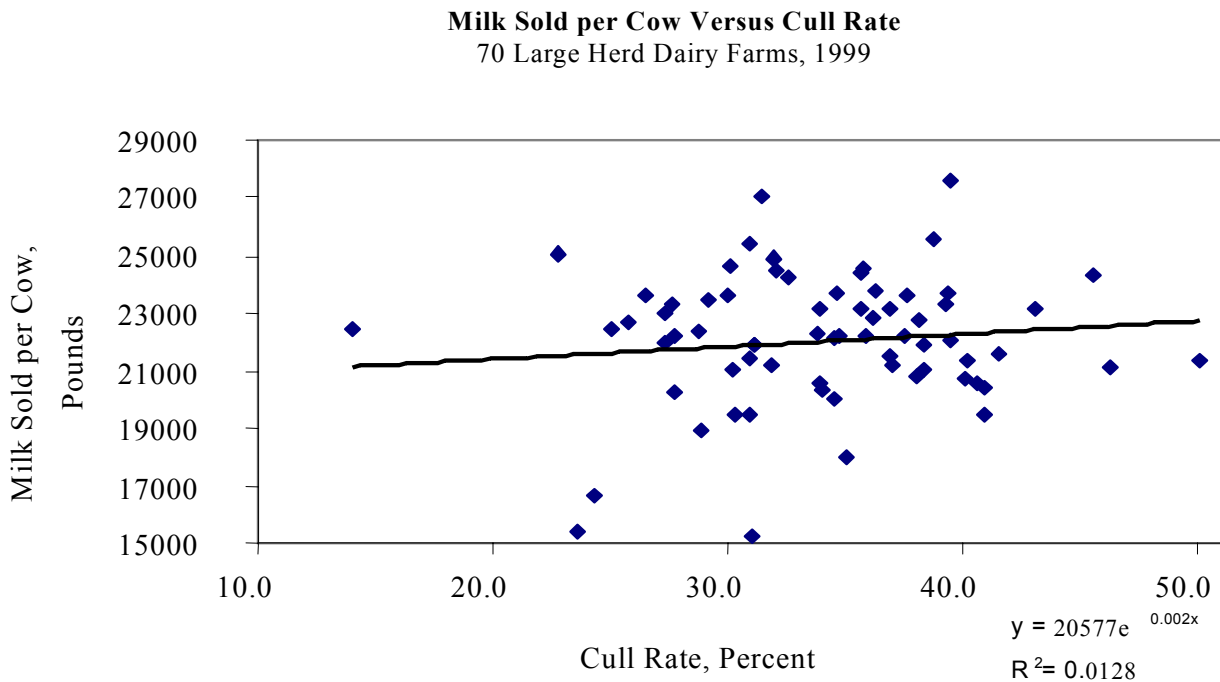
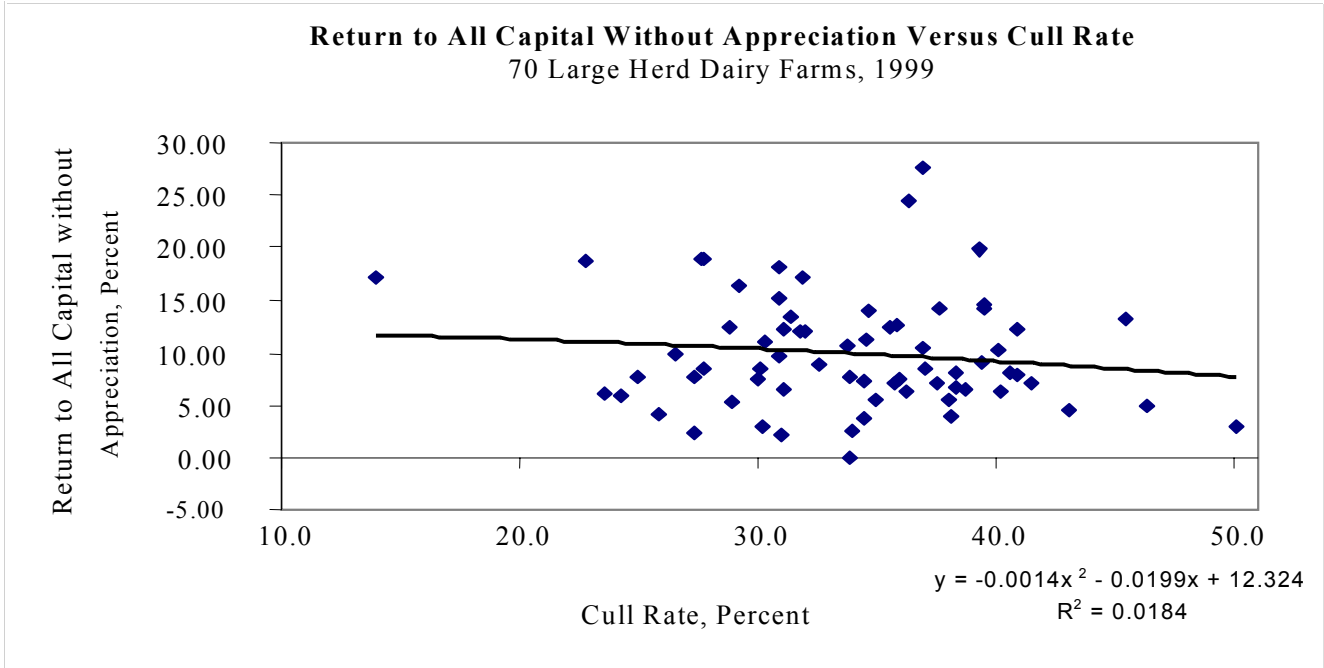
**ANIMALS LEAVING THE HERD**  
70 Large Herd Dairy Farms, 1999

	Average 70 Farms		Average Top 20% Farms	
	Number	Percent <sup>17</sup>	Number	Percent <sup>17</sup>
Cows sold for beef	174	29.3	240	29.2
Cows sold for dairy	1	0.2	1	0.1
Cows died	29	4.9	34	4.1
Culling rate <sup>18</sup>	---	34.2	---	33.3

<sup>17</sup>Percent of average number of cows in the herd.

<sup>18</sup>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 11 farms that averaged over 15% return to all capital without appreciation, 8 of them averaged less than a 35% cull rate.



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, 1999

Item	Average 70 Farms			Average Top 20% Farms		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
<u>Accrual Costs of Producing Milk</u>						
Operating costs	\$ 1,525,606	\$ 2,568	\$11.35	\$ 2,049,511	\$ 2,490	\$ 10.63
Purchased inputs costs	\$ 1,670,121	\$ 2,812	\$12.42	\$ 2,208,452	\$ 2,683	\$ 11.45
Total Costs	\$ 1,842,599	\$ 3,102	\$13.71	\$ 2,399,514	\$ 2,916	\$ 12.44
<u>Accrual Receipts From Milk</u>						
Net Milk Receipts	\$ 2,003,269	\$ 3,373	\$14.90	\$ 2,873,097	\$ 3,491	\$ 14.90
Net Farm Income w/o appreciation	\$ 1,945,508	\$ 3,275	\$14.47	\$ 2,811,317	\$ 3,416	\$ 14.58
Net Farm Income with appreciation	\$ 333,148	\$ 561	\$2.48	\$ 664,645	\$ 808	\$ 3.45
Net Farm Income with appreciation	\$ 403,614	\$ 679	\$3.00	\$ 705,530	\$ 857	\$ 3.66

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, 1999

Item	Average 70 Farms		Average Top 20% Farms	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purchased dairy grain & concentrate	\$ 856	\$3.78	\$ 864	\$ 3.69
Purchased dairy roughage	52	0.23	61	0.26
Total Purchased Dairy Feed	\$ 908	\$4.01	\$ 925	\$ 3.95
Purchased grain & concentrate as % of milk receipts		25%		25 %
Purchased feed & crop expense	\$ 1,073	\$4.74	\$ 1,060	\$ 4.52
Purchased feed & crop expense as % of milk receipts		32%		30 %
Breeding	\$ 35	\$0.16	\$ 35	\$ 0.15
Veterinary & medicine	115	0.51	112	0.48
Milk marketing	97	0.43	75	0.32
Bedding	52	0.23	55	0.23
Milking supplies	70	0.31	62	0.27
Cattle lease	16	0.07	27	0.12
Custom boarding	38	0.17	70	0.30
bST expense	65	0.29	69	0.29
Other livestock expenses	28	0.12	20	0.09

**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 from 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, 1999

Item	Average 70 Farms		Average Top 20% Farms		
Total Accrual Operating Expenses	\$	1,755,365	\$	2,338,933	
Expansion Livestock, Accrual	+	<u>39,556</u>	+	<u>79,358</u>	
1. Total Accrual Operating Expenses, Including Expansion Livestock		\$ 1,794,921		\$ 2,418,291	
Total Accrual Receipts	\$	2,272,584	\$	3,241,877	
Milk Sales, Accrual	-	<u>2,003,269</u>	-	<u>2,873,097</u>	
2. Total Accrual Nonmilk Receipts		- 269,315		- 368,780	
3. Operating Costs of Producing Milk		\$ 1,525,606		\$ 2,049,511	
Cwt. of Milk Sold	÷	134,425.8	÷	192,843.7	
Operating Costs/Cwt.	=	\$11.35	=	\$10.63	
Machinery Depreciation	+	77,794	+	91,933	
Building Depreciation	+	<u>66,721</u>	+	<u>67,008</u>	
4. Purchased Inputs Cost of Producing Milk		\$ 1,670,121		\$ 2,208,452	
Cwt. of Milk Sold	÷	134,425.8	÷	192,843.7	
Purchased Inputs Cost/Cwt.	=	\$12.42	=	\$11.45	
Family Labor Unpaid (\$1,800/month)		+	2,880	+	2,520
Real Interest on Equity Cap.		+	90,992	+	117,328
Value of Operators' Labor & Management		+	<u>78,606</u>	+	<u>71,214</u>
5. Total Costs of Producing Milk		\$ 1,842,599		\$ 2,399,514	
Cwt. Milk Sold	÷	134,425.8	÷	192,843.7	
Total Costs/Cwt.	=	\$13.71	=	\$12.44	

**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, 1999

Item	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
<u>Average 70 Farms:</u>				
Farm capital	\$ 264,647	\$ 5,872	\$ 3,095	\$ 5,932
Real estate		2,213		2,236
Machinery & equipment	44,751	993	523	
<u>Ratios</u>				
Asset turnover ratio	Operating Expense	Interest Expense	Depreciation Expense	
0.67	0.74	0.05	0.06	
<u>Average Top 20% Farms:</u>				
Farm capital	\$ 238,544	\$ 4,971	\$ 2,843	\$ 5,069
Real estate		1,681		1,714
Machinery & equipment	42,511	886	507	
<u>Ratios</u>				
Asset turnover ratio	Operating Expense	Interest Expense	Depreciation Expense	
0.80	0.71	0.03	0.05	

**LABOR FORCE INVENTORY AND ANALYSIS**

70 Large Herd Dairy Farms, 1999

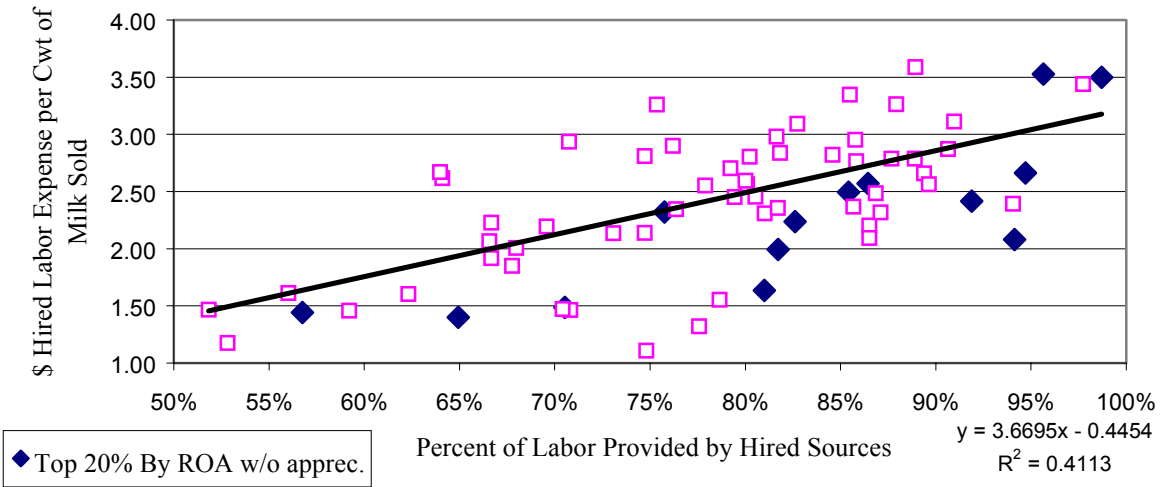
Labor Force	Months	Age	Years of Education	Value of Labor & Mgmt.		
Operator number 1	13.7	44	14	\$ 41,062		
Operator number 2	8.1	39	13	22,778		
Operator number 3	3.6	36	13	10,086		
Operator number 4	1.6	30	11	4,543		
Family paid	6.2					
Family unpaid	1.6					
Hired	<u>123.3</u>					
Total	158.1	/ 12 = 13.18 Worker Equivalent 2.14 Operator/Manager Equivalent				
<u>Average Top 20% Farms:</u>						
Total	205.7	/ 12 = 17.15 Worker Equivalent				
Operator's		1.70 Operator/Manager Equivalent				
Labor Efficiency	Average 70 Farms		Average Top 20% Farms			
	Total	Per Worker	Total	Per Worker		
Cows, average number	594	45	823	48		
Milk sold, pounds	13,442,582	1,019,923	19,284,373	1,124,453		
Tillable acres	1,127	86	1,439	84		
Work units	5,797	440	7,953	464		
Labor Costs	Average 70 Farms			Average Top 20% Farms		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Value of operator(s) labor (\$1,800/mo.)	\$ 48,600	\$ 82	\$0.36	\$ 40,500	\$ 49	\$ 0.21
Family unpaid (\$1,800/mo.)	2,880	5	0.02	2,520	3	0.01
Hired	<u>335,419</u>	<u>565</u>	<u>2.50</u>	<u>492,584</u>	<u>599</u>	<u>2.55</u>
Total Labor	\$ 386,899	\$ 651	\$2.88	\$ 535,604	\$ 651	\$ 2.77
Machinery Cost	<u>281,654</u>	<u>474</u>	<u>2.10</u>	<u>334,172</u>	<u>406</u>	<u>1.73</u>
Total Labor & Mach.	\$ 668,553	\$ 1,126	\$4.98	\$ 869,776	\$ 1,057	\$ 4.50
Hired labor expense per hired worker equiv.		\$ 31,081		\$ 32,496		
Hired labor expense as % of milk sales		16.7%		17.1%		



**Labor Cost Evaluation**

Labor costs have been the first or second largest expense on large dairy farms in New York the last two 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.

**Hired Labor Expense per Cwt of Milk Sold Versus Percent of Labor Provided by Hired Sources**  
70 Large Herd Dairy Farms, 1999



**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 =	_____	%

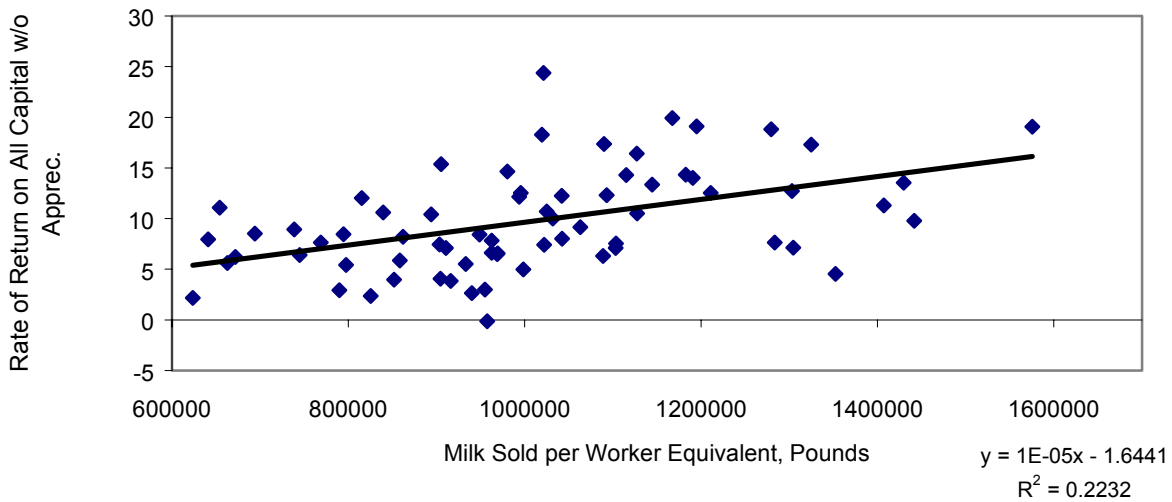
The table below is the business chart for labor costs on a per worker and per hour basis and shows the range of costs for these farms. The chart below shows the relationship between labor efficiency and return on all capital without appreciation. Labor efficiency improvements are one method that is used 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, 1999

Hired Labor Expense per Cwt	Hired Labor Expense as % of Milk Sales	Hired Labor Expense per Hired Worker Equivalent	Hired Labor Expense per Hour
\$ 1.34	9%	\$ 18,503	\$ 6.70
1.55	11	25,185	9.12
2.00	13	26,278	9.52
2.21	15	27,695	10.03
2.36	16	28,304	10.26
2.51	17	29,769	10.79
2.64	18	31,318	11.35
2.80	19	33,610	12.18
2.98	20	35,822	12.98
3.42	22	39,853	14.44

**Rate of Return on All Capital without Appreciation versus Milk Sold per Worker Equivalent**

70 Large Herd Dairy Farms, 1999



## CONDENSED SUMMARY &amp; SELECTED BUSINESS FACTORS

## CONDENSED FARM BUSINESS SUMMARY FOR THREE LARGE HERD GROUPS

70 Large Herd Dairy Farms, 1999

Item	23 Farms with 300-400 Cows		25 Farms with 400-600 Cows		22 Farms with ≥600 Cows	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	Per Cow	Per Cwt.
<b>ACCRUAL EXPENSES</b>						
Hired labor	\$468	\$2.20	\$534	\$2.42	\$619	\$2.64
Dairy grain & concentrate	755	3.55	841	3.82	904	3.85
Dairy roughage	93	0.44	55	0.25	35	0.15
Nondairy feed	0	0.00	0	0.00	0	0.00
Machine hire, rent & lease	75	0.35	80	0.36	102	0.43
Machine repairs & farm vehicle expense	160	0.75	159	0.72	153	0.65
Fuel, oil & grease	48	0.23	49	0.22	46	0.20
Replacement livestock	78	0.37	53	0.24	42	0.18
Breeding	28	0.13	38	0.17	36	0.15
Veterinary & medicine	95	0.45	115	0.52	122	0.52
Milk marketing	109	0.51	106	0.48	88	0.37
Bedding	38	0.18	48	0.22	60	0.25
Milking supplies	74	0.35	60	0.27	74	0.32
Cattle lease & rent	8	0.04	4	0.02	25	0.11
Custom boarding	32	0.15	31	0.14	45	0.19
bST expense	55	0.26	58	0.26	74	0.31
Other livestock expense	35	0.16	42	0.19	17	0.07
Fertilizer & lime	61	0.29	70	0.32	73	0.31
Seeds & plants	47	0.22	47	0.21	39	0.16
Spray & other crop expense	49	0.23	61	0.28	47	0.20
Land, building & fence repair	56	0.26	47	0.21	57	0.24
Taxes & rent	95	0.44	91	0.41	98	0.42
Utilities	63	0.30	56	0.25	58	0.25
Interest paid	177	0.83	216	0.98	169	0.72
Misc. (including insurance)	59	0.27	73	0.33	61	0.26
Total Operating Expenses	\$2,757	\$12.96	\$2,934	\$13.32	\$3,044	\$12.95
Expansion livestock	91	0.43	96	0.44	41	0.17
Machinery depreciation	123	0.58	146	0.66	125	0.53
Building depreciation	80	0.38	130	0.59	115	0.49
Total Accrual Expenses	\$3,051	\$14.35	\$3,306	\$15.01	\$3,325	\$14.14
<b>ACCRUAL RECEIPTS</b>						
Milk sales	\$3,130	\$14.71	\$3,296	\$14.97	\$3,510	\$14.94
Dairy cattle	213	1.00	226	1.02	195	0.83
Dairy calves	28	0.13	27	0.12	25	0.11
Other livestock	8	0.04	4	0.02	4	0.02
Crops	60	0.28	99	0.45	108	0.46
Miscellaneous receipts	123	0.58	117	0.53	120	0.51
Total Accrual Receipts	\$3,562	\$16.74	\$3,769	\$17.11	\$3,961	\$16.86
<b>PROFITABILITY ANALYSIS (Total)</b>						
Net farm income (without appreciation)	\$182,753		\$222,039		\$616,641	
Net farm income (with appreciation)	\$224,034		290,496		\$719,900	
Labor & management income	\$131,946		136,446		\$468,445	
Number of operators	1.88		2.06		2.48	
Labor & management income/operator	\$70,184		\$66,236		\$188,889	
Rates of return on:	Equity capital w/o apprec.		9.1%		17.3%	
	Equity capital w/ apprec.		13.2%		20.9%	
	All capital w/o apprec.		8.2%		11.9%	
	All capital w/ apprec.		10.4%		13.7%	

**SELECTED BUSINESS FACTORS FOR THREE LARGE HERD GROUPS**

70 Large Herd Dairy Farms, 1999

Item	23 Farms with 300-400 Cows	25 Farms with 400-600 Cows	22 Farms with ≥ 600 Cows
<u>Cropping Program Analysis</u>			
Total Tillable acres	695	984	1,742
Tillable acres rented <sup>19</sup>	382	412	846
Hay crop acres <sup>19</sup>	277	440	733
Corn silage acres <sup>19</sup>	281	438	804
Hay crop, tons DM/acre	3.1	3.3	4.0
Corn silage, tons/acre	17.0	16.8	18.0
Forage DM per cow, tons	6.9	8.2	8.1
Tillable acres/cow	1.9	2.1	1.8
Fertilizer & lime expense/tillable acre	\$31.56	\$34.41	\$40.64
Machinery cost/tillable acre	\$231	\$240	\$264
<u>Dairy Analysis</u>			
Number of cows	358	481	969
Number of heifers	227	361	736
Milk sold, lbs.	7,617,926	10,593,119	22,770,022
Milk sold/cow, lbs.	21,292	22,038	23,496
Operating cost of prod. milk/cwt.	\$11.35	\$11.62	\$11.21
Total cost of prod. milk/cwt.	\$13.75	\$14.34	\$13.36
Price/cwt. milk sold	\$14.71	\$14.97	\$14.94
Purchased dairy feed/cow	\$848	896	\$940
Purchased dairy feed/cwt. milk	\$3.99	4.07	\$4.00
Purchased grain & concentrate as % of milk receipts	24%	26%	26%
Purchased feed & crop expense/cwt. milk	\$4.73	\$4.88	\$4.68
<u>Capital Efficiency</u>			
Farm capital/worker	\$224,477	\$275,835	\$274,808
Farm capital/cow	\$5,217	6,406	\$5,825
Real estate/cow	\$1,924	2,552	\$2,134
Machinery investment/cow	\$862	1,121	\$972
Asset turnover ratio	0.70	0.61	0.70
<u>Labor Efficiency</u>			
Worker equivalent	8.32	11.17	20.54
Operator/manager equivalent	1.88	2.06	2.48
Milk sold/worker, lbs.	915,616	948,354	1,108,570
Cows/worker	43	43	47
Labor cost/cow	\$592	\$643	\$680
<u>Financial Measures</u>			
Percent equity	52%	53%	53%
Debt/asset ratio - long term	0.46	0.48	0.45
Debt/asset ratio - intermediate & current	0.49	0.46	0.49
Change in net worth with appreciation	\$117,433	\$134,994	\$431,388
Total farm debt per cow	\$2,566	\$3,010	\$2,835
Debt payments made per cow	\$641	\$875	\$400
Debt payments as % of milk sales	20%	26%	11%
Amount available for debt service	\$199,345	\$307,974	\$602,146
Debt coverage ratio for 1999	1.19	1.51	2.26

<sup>19</sup>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

23 Large Herd Dairy Farms with 300 – 400 Cows, 1999

Item	QUINTILE				
	1	2	3	4	5
<u>Accrual Operating Receipts</u>					
Milk	\$3,600	\$3,338	\$3,160	\$2,982	\$2,658
Dairy cattle	538	267	184	102	29
Dairy calves	62	36	25	17	8
Other livestock	41	5	2	0	-2
Crops	232	116	53	11	-61
Misc. receipts	225	156	121	97	42
Total Operating Receipts	\$4,162	\$3,813	\$3,593	\$3,367	\$2,979
<u>Accrual Operating Expenses</u>					
Hired labor	\$254	\$341	\$525	\$593	\$665
Dairy grain & concentrate	609	683	751	832	960
Dairy roughage	0	0	34	114	378
Nondairy feed	0	0	0	0	0
Mach. hire/rent/lease	3	26	65	97	208
Mach. repair & farm veh. exp.	51	111	153	216	309
Fuel, oil & grease	18	42	52	59	77
Replacement livestock	0	0	7	145	290
Breeding	7	19	29	43	55
Vet & medicine	48	69	85	108	190
Milk marketing	54	94	115	134	166
Bedding	11	21	33	51	86
Milking supplies	36	50	62	89	149
Cattle lease	0	0	0	3	42
Custom boarding	0	0	0	54	129
bST expense	2	30	62	80	116
Other livestock expense	8	20	32	53	74
Fertilizer & lime	8	43	69	92	116
Seeds & plants	9	29	50	65	95
Spray/other crop expenses	3	28	55	73	103
Land, building, fence repair	5	37	58	68	124
Taxes	7	22	28	42	63
Real estate rent/lease	5	19	38	80	206
Insurance	13	20	25	35	60
Utilities	44	56	61	75	86
Interest	83	141	165	222	306
Miscellaneous	6	16	29	39	73
Total Operating Expenses	\$2,322	\$2,612	\$2,762	\$2,938	\$3,254
Expansion Livestock	0	0	0	50	454
Machinery Depreciation	47	95	116	157	225
Building Depreciation	12	70	84	109	136
Net Farm Income w/o Apprec.	\$883	\$700	\$581	\$346	\$148

**RECEIPTS AND EXPENSES PER CWT. OF MILK SOLD**  
23 Large Herd Dairy Farms With 300 – 400 Cows, 1999

Item	QUINTILE				
	1	2	3	4	5
<u>Accrual Operating Receipts</u>					
Milk	\$15.65	\$15.14	\$14.71	\$14.41	\$14.06
Dairy cattle	2.51	1.37	0.81	0.49	0.14
Dairy calves	.29	.16	.11	.08	.04
Other livestock	.20	.02	.01	.00	-.01
Crops	1.15	.54	.24	.05	-.28
Misc. receipts	1.09	.77	.55	.46	.20
Total Operating Receipts	\$18.37	\$17.70	\$16.86	\$16.13	\$15.33
<u>Accrual Operating Expenses</u>					
Hired labor	\$1.29	\$1.64	\$2.51	\$2.77	\$2.94
Dairy grain & concentrate	2.89	3.24	3.56	4.00	4.57
Dairy roughage	.00	.00	.17	.49	1.75
Nondairy feed	.00	.00	.00	.00	.00
Mach. hire/rent/lease	.01	.13	.31	.50	.95
Mach. repair & farm veh. exp.	.24	.56	.74	.96	1.44
Fuel, oil & grease	.09	.21	.25	.27	.36
Replacement livestock	.00	.00	.03	.69	1.37
Breeding	.03	.09	.14	.22	.25
Vet & medicine	.22	.34	.41	.52	.86
Milk marketing	.26	.42	.57	.63	.80
Bedding	.05	.10	.17	.25	.40
Milking supplies	.16	.25	.30	.41	.68
Cattle lease	.00	.00	.00	.01	.20
Custom boarding	.00	.00	.00	.24	.61
bST expense	.01	.14	.28	.37	.54
Other livestock expense	.03	.11	.16	.25	.33
Fertilizer & lime	.04	.20	.35	.44	.60
Seeds & plants	.04	.14	.24	.32	.46
Spray/other crop expenses	.02	.13	.26	.37	.51
Land, building, fence repair	.02	.18	.28	.33	.54
Taxes	.03	.10	.14	.23	.30
Real estate rent/lease	.03	.09	.18	.37	1.03
Insurance	.06	.09	.11	.16	.34
Utilities	.22	.26	.29	.35	.41
Interest	.39	.66	.80	1.14	1.40
Miscellaneous	.02	.07	.13	.18	.36
Total Operating Expenses	\$11.03	\$12.66	\$13.31	\$13.89	\$14.90
Expansion Livestock	.00	.00	.00	.21	2.10
Machinery Depreciation	.23	.44	.55	.75	1.17
Building Depreciation	.07	.34	.41	.50	.62
Net Farm Income w/o Apprec.	\$3.81	\$3.31	\$2.58	\$1.82	\$0.74

**RECEIPTS AND EXPENSES PER COW**  
25 Large Herd Dairy Farms With 400 – 600 Cows, 1999

Item	QUINTILE				
	1	2	3	4	5
<u>Accrual Operating Receipts</u>					
Milk	3,708	3,430	\$3,252	\$3,140	\$2,896
Dairy cattle	475	279	174	127	51
Dairy calves	44	33	26	21	11
Other livestock	24	1	0	0	-3
Crops	334	98	35	11	-6
Misc. receipts	213	147	105	68	44
<b>Total Operating Receipts</b>	<b>\$4,326</b>	<b>\$3,903</b>	<b>\$3,704</b>	<b>\$3,506</b>	<b>\$3,301</b>
<u>Accrual Operating Expenses</u>					
Hired labor	\$365	\$452	\$507	\$594	\$720
Dairy grain & concentrate	684	775	842	908	987
Dairy roughage	0	3	20	62	197
Nondairy feed	0	0	0	0	0
Mach. hire/rent/lease	3	25	57	124	198
Mach. repair & farm veh. exp.	90	121	143	190	246
Fuel, oil & grease	30	40	43	51	80
Replacement livestock	0	0	11	68	197
Breeding	14	31	37	43	64
Vet & medicine	65	92	110	135	178
Milk marketing	50	98	109	122	150
Bedding	26	37	41	53	82
Milking supplies	23	42	52	71	108
Cattle lease	0	0	0	0	22
Custom boarding	0	0	0	31	124
bST expense	3	54	67	76	88
Other livestock expense	8	17	30	54	99
Fertilizer & lime	20	43	61	80	142
Seeds & plants	23	40	48	56	69
Spray/other crop expenses	19	53	60	72	104
Land, building, fence repair	8	30	43	64	95
Taxes	12	22	30	49	61
Real estate rent/lease	18	35	46	68	112
Insurance	19	25	32	39	48
Utilities	28	42	50	65	93
Interest	86	168	221	266	345
Miscellaneous	6	23	37	48	82
<b>Total Operating Expenses</b>	<b>\$2,500</b>	<b>\$2,828</b>	<b>\$2,934</b>	<b>\$3,077</b>	<b>\$3,305</b>
Expansion Livestock	0	0	1	111	354
Machinery Depreciation	60	92	124	163	280
Building Depreciation	67	89	112	135	230
<b>Net Farm Income w/o Apprec.</b>	<b>\$961</b>	<b>\$521</b>	<b>\$351</b>	<b>\$282</b>	<b>\$161</b>

**RECEIPTS AND EXPENSES PER CWT. OF MILK SOLD**  
25 Large Herd Dairy Farms With 400 – 600 Cows, 1999

Item	QUINTILE				
	1	2	3	4	5
<u>Accrual Operating Receipts</u>					
Milk	\$16.11	\$15.05	\$14.81	\$14.62	\$14.45
Dairy cattle	2.25	1.26	.80	.57	.23
Dairy calves	.20	.15	.12	.09	.05
Other livestock	.11	.01	.00	.00	-.01
Crops	1.49	.45	.16	.06	-.02
Misc. receipts	1.01	.65	.45	.33	.21
Total Operating Receipts	\$19.04	\$17.77	\$16.81	\$16.30	\$15.72
<u>Accrual Operating Expenses</u>					
Hired labor	\$1.66	\$2.16	\$2.42	\$2.64	\$3.16
Dairy grain & concentrate	3.24	3.58	3.79	4.03	4.56
Dairy roughage	.00	.01	.09	.29	.83
Nondairy feed	.00	.00	.00	.00	.00
Mach. hire/rent/lease	.01	.11	.28	.57	.87
Mach. repair & farm veh. exp.	.42	.54	.64	.91	1.12
Fuel, oil & grease	.14	.18	.20	.23	.37
Replacement livestock	.00	.00	.05	.32	.86
Breeding	.07	.14	.16	.21	.30
Vet & medicine	.29	.44	.50	.63	.79
Milk marketing	.23	.43	.50	.55	.74
Bedding	.12	.16	.19	.26	.36
Milking supplies	.11	.20	.24	.31	.49
Cattle lease	.00	.00	.00	.00	.10
Custom boarding	.00	.00	.00	.15	.57
bST expense	.01	.24	.31	.35	.39
Other livestock expense	.04	.08	.13	.26	.45
Fertilizer & lime	.09	.22	.28	.36	.65
Seeds & plants	.10	.18	.23	.25	.32
Spray/other crop expenses	.09	.24	.29	.34	.45
Land, building, fence repair	.03	.14	.20	.30	.44
Taxes	.05	.09	.14	.23	.28
Real estate rent/lease	.08	.16	.22	.29	.52
Insurance	.09	.12	.14	.17	.22
Utilities	.13	.19	.25	.30	.40
Interest	.36	.77	1.02	1.26	1.62
Miscellaneous	.02	.11	.17	.22	.38
Total Operating Expenses	\$11.66	\$13.05	\$13.49	\$14.02	\$14.78
Expansion Livestock	.00	.00	.01	.49	1.73
Machinery Depreciation	.27	.43	.56	.76	1.28
Building Depreciation	.31	.41	.52	.63	1.02
Net Farm Income w/o Apprec.	\$4.05	\$2.54	\$1.58	\$1.31	\$0.76



**RECEIPTS AND EXPENSES PER COW**  
22 Large Herd Dairy Farms With 600 or More Cows, 1999

Item	QUINTILE				
	1	2	3	4	5
<u>Accrual Operating Receipts</u>					
Milk	\$3,878	\$3,641	\$3,517	\$3,389	\$3,242
Dairy cattle	344	223	188	123	84
Dairy calves	47	33	26	22	16
Other livestock	20	4	1	0	-1
Crops	237	174	131	61	-50
Misc. receipts	339	141	104	77	38
<b>Total Operating Receipts</b>	<b>\$4,366</b>	<b>\$4,102</b>	<b>\$3,943</b>	<b>\$3,844</b>	<b>\$3,665</b>
<u>Accrual Operating Expenses</u>					
Hired labor	\$428	\$535	\$587	\$704	\$823
Dairy grain & concentrate	837	878	906	945	1,033
Dairy roughage	0	4	14	43	128
Nondairy feed	0	0	0	0	0
Mach. hire/rent/lease	15	35	79	154	253
Mach. repair & farm veh. exp.	87	117	163	182	279
Fuel, oil & grease	27	40	51	57	75
Replacement livestock	0	1	11	41	234
Breeding	18	32	38	45	61
Vet & medicine	95	117	126	134	155
Milk marketing	49	79	91	115	157
Bedding	27	45	58	73	93
Milking supplies	39	55	79	92	141
Cattle lease	0	0	4	16	99
Custom boarding	0	0	6	27	126
bST expense	40	66	79	89	97
Other livestock expense	4	10	15	24	49
Fertilizer & lime	26	48	75	94	160
Seeds & plants	20	31	38	48	64
Spray/other crop expenses	10	27	38	68	122
Land, building, fence repair	22	38	60	68	120
Taxes	16	23	31	37	52
Real estate rent/lease	24	53	64	82	138
Insurance	13	20	26	32	51
Utilities	35	53	59	76	94
Interest	74	152	182	213	308
Miscellaneous	15	28	33	48	69
<b>Total Operating Expenses</b>	<b>\$2,725</b>	<b>\$2,965</b>	<b>\$3,086</b>	<b>\$3,252</b>	<b>\$3,448</b>
Expansion Livestock	0	0	1	49	127
Machinery Depreciation	57	94	154	175	211
Building Depreciation	40	79	105	171	235
<b>Net Farm Income w/o Apprec.</b>	<b>\$929</b>	<b>\$772</b>	<b>\$650</b>	<b>\$469</b>	<b>\$316</b>

**RECEIPTS AND EXPENSES PER CWT. OF MILK SOLD**  
22 Large Herd Dairy Farms With 600 or More Cows, 1999

Item	QUINTILE				
	1	2	3	4	5
<u>Accrual Operating Receipts</u>					
Milk	\$15.59	\$15.13	\$14.93	\$14.73	\$14.53
Dairy cattle	1.49	.94	.83	.52	.35
Dairy calves	.20	.14	.11	.09	.07
Other livestock	.09	.02	.00	.00	.00
Crops	.98	.76	.57	.26	-.22
Misc. receipts	1.52	.59	.45	.32	.16
Total Operating Receipts	\$17.93	\$17.29	\$17.00	\$16.64	\$15.83
<u>Accrual Operating Expenses</u>					
Hired labor	\$1.87	\$2.28	\$2.52	\$2.94	\$3.47
Dairy grain & concentrate	3.52	3.80	3.97	4.06	4.24
Dairy roughage	.00	.02	.06	.20	.53
Nondairy feed	.00	.00	.00	.00	.00
Mach. hire/rent/lease	.06	.15	.32	.68	1.09
Mach. repair & farm veh. exp.	.36	.50	.70	.77	1.21
Fuel, oil & grease	.11	.17	.21	.25	.32
Replacement livestock	.00	.00	.05	.18	1.03
Breeding	.08	.14	.17	.20	.25
Vet & medicine	.41	.50	.53	.57	.67
Milk marketing	.21	.34	.40	.48	.66
Bedding	.12	.19	.25	.30	.40
Milking supplies	.16	.24	.34	.41	.58
Cattle lease	.00	.00	.02	.07	.42
Custom boarding	.00	.00	.03	.12	.55
bST expense	.17	.28	.32	.38	.43
Other livestock expense	.02	.04	.06	.10	.22
Fertilizer & lime	.11	.21	.32	.42	.68
Seeds & plants	.09	.13	.16	.19	.29
Spray/other crop expenses	.04	.12	.16	.30	.51
Land, building, fence repair	.09	.16	.25	.29	.52
Taxes	.07	.10	.14	.16	.23
Real estate rent/lease	.10	.23	.27	.35	.61
Insurance	.05	.09	.11	.14	.21
Utilities	.15	.22	.25	.33	.41
Interest	.31	.65	.76	.91	1.37
Miscellaneous	.07	.12	.14	.20	.30
Total Operating Expenses	\$11.39	\$12.69	\$13.19	\$13.78	\$15.05
Expansion Livestock	.00	.00	.01	.20	.54
Machinery Depreciation	.25	.40	.63	.74	.91
Building Depreciation	.17	.35	.46	.71	.94
Net Farm Income w/o Apprec.	\$3.93	\$3.19	\$2.74	\$2.04	\$1.35

## 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, 1999

Worker Equivalent (11) <sup>20</sup>	Size of Business		Rates of Production			Labor Efficiency	
	Number of Cows (11)	Pounds Milk Sold (11)	Pounds Milk Sold Per Cow (10)	Tons Hay Crop DM/Acre (9)	Tons Corn Silage Per Acre (9)	Cows Per Worker (11)	Pounds Milk Sold Per Worker (11)
28.9	1,432	33,889,300	25,746	6.1	24	61	1,405,113
18.7	870	20,354,259	24,298	5.0	21	53	1,234,591
15.5	657	15,439,570	23,595	4.4	20	49	1,126,537
14.2	576	13,363,660	23,139	4.0	19	47	1,064,267
11.5	501	11,009,423	22,488	3.9	18	46	1,010,537
10.7	436	9,586,699	22,105	3.6	17	44	965,119
9.6	403	9,007,285	21,588	3.4	16	43	922,519
8.8	386	8,445,238	21,034	2.9	15	40	864,428
7.8	356	7,354,759	20,252	2.3	14	37	790,804
6.1	320	5,975,628	17,586	1.4	11	33	669,307

### Cost Control

Grain Bought Per Cow (10)	% Grain is of Milk Receipts (10)	Machinery Costs Per Cow (11)	Labor & Machinery Costs Per Cow (11)	Feed & Crop Expenses Per Cow (10)	Feed & Crop Expenses Per Cwt. Milk (10)
\$617	20%	\$228	\$705	\$830	\$3.87
688	22	368	906	908	4.33
738	23	415	1,025	962	4.42
809	24	443	1,078	1,007	4.58
832	25	467	1,119	1,046	4.70
860	26	490	1,158	1,095	4.82
890	27	510	1,184	1,130	4.98
917	27	542	1,225	1,160	5.11
967	28	597	1,292	1,205	5.34
1,034	32	696	1,399	1,303	6.05

<sup>20</sup> ( ) = 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)
\$1.34	\$18,503	9%	\$0.18	\$0.21	\$0.01
1.55	25,185	11	0.26	0.32	0.04
2.00	26,278	13	0.36	0.39	0.05
2.21	27,695	15	0.39	0.45	0.07
2.36	28,304	16	0.45	0.48	0.09
2.51	29,769	17	0.49	0.51	0.12
2.64	31,318	18	0.52	0.54	0.15
2.80	33,610	19	0.58	0.59	0.22
2.98	35,822	20	0.65	0.69	0.29
3.42	39,853	22	0.84	0.86	0.43

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)
\$163	\$26	\$1,920	\$9.10	\$2,569	\$11.71
245	57	2,286	10.15	2,795	12.59
287	65	2,393	10.67	2,846	13.04
309	69	2,452	11.13	2,957	13.49
325	75	2,506	11.46	3,068	13.97
343	83	2,588	11.81	3,142	14.31
366	92	2,629	12.09	3,227	14.66
399	98	2,704	12.33	3,265	14.93
441	111	2,823	12.82	3,399	15.14
1,931	161	3,102	13.41	3,605	16.04

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)
\$11	\$0.05	11%	23	63%	2%	1%
39	0.18	31	28	68	4	3
56	0.24	42	30	70	4	4
64	0.29	48	31	72	5	4
71	0.32	52	34	74	6	5
75	0.33	55	35	75	7	5
81	0.36	59	37	78	7	6
86	0.38	63	38	79	8	7
93	0.41	68	40	81	9	8
110	0.51	81	45	86	12	9

## 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)
\$16.14	\$15.47	\$3,907	\$546	\$61
15.39	14.82	3,620	353	39
15.19	14.68	3,501	263	34
14.97	14.55	3,433	221	31
14.84	14.45	3,344	185	26
14.75	14.31	3,257	162	23
14.65	14.23	3,193	122	21
14.55	14.13	3,114	104	18
14.42	13.97	2,978	83	14
14.12	13.68	2,681	15	7

## 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)
\$986	\$564	5.3%	\$175	\$0.73
1,734	1,238	6.9	344	1.49
2,198	1,508	7.3	386	1.75
2,704	1,941	7.4	428	1.92
2,868	2,183	7.5	462	2.05
2,964	2,362	7.8	498	2.25
3,244	2,580	8.1	518	2.34
3,469	2,776	8.5	558	2.65
3,829	3,170	9.0	661	3.09
4,529	3,764	9.7	805	3.77

## Cash Flow Analysis

Amount Available for Family Living, Debt Service & Investment		Personal Withdrawals & Family Expenditures		Cash Flow Coverage Ratio
Per Cow	Per Cwt.	Per Cow	Per Cwt.	Ratio
(Optional Page 12)		(CALC)	(CALC)	(8)
\$1,260	\$5.31	\$454	\$2.08	6.23
1,059	4.72	350	1.53	1.94
970	4.33	268	1.22	1.72
898	4.14	230	1.00	1.50
839	3.85	204	0.90	1.33
783	3.54	155	0.71	1.14
717	3.29	129	0.61	0.98
627	2.96	105	0.48	0.86
547	2.59	79	0.38	0.76
467	2.09	49	0.21	0.50

## 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)
\$3,549	\$676	\$426	\$19,296	1.14
4,670	1,457	607	24,136	0.81
5,178	1,725	758	25,149	0.76
5,403	1,942	859	25,889	0.72
5,673	2,130	986	27,071	0.69
5,946	2,240	1,037	27,973	0.64
6,316	2,398	1,089	29,415	0.61
6,686	2,656	1,183	31,521	0.58
7,113	3,080	1,437	33,670	0.54
8,088	3,677	1,694	37,098	0.47

## Solvency

Percent Equity	Leverage Ratio	Debt to Asset Ratios		
		Total	Current/Intermed.	Long Term
(5)	(5)	(5)	(5)	(5)
81%	0.24	0.19	0.18	0.00
68	0.48	0.32	0.29	0.07
62	0.60	0.38	0.34	0.23
58	0.73	0.42	0.40	0.35
53	0.90	0.47	0.48	0.40
49	1.03	0.51	0.52	0.49
45	1.21	0.55	0.57	0.58
41	1.46	0.59	0.63	0.66
35	1.90	0.65	0.68	0.76
25	3.73	0.75	0.75	1.27

## 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)
\$687,868	39.3%	47.2%	21.0%	23.2%
311,464	24.8	30.6	15.7	18.3
185,915	19.2	27.2	13.0	16.3
127,090	15.6	21.1	11.5	14.4
88,392	12.7	17.6	9.6	12.3
68,643	9.3	14.4	8.1	10.4
56,892	7.7	11.7	7.3	9.1
40,769	5.6	9.0	6.4	8.1
23,485	2.6	6.9	4.9	6.9
-20,310	-0.9	1.6	2.4	3.5

## Profitability, Continued

Net Farm Income Without Appreciation		Net Farm Income From Operations	Net Income Efficiency
Per Cow	Per Cwt.	Ratio	Ratio
(10)	(10)	(3)	(CALC)
\$1,012	\$4.39	25%	25%
831	3.51	21	20
734	3.16	19	17
637	2.92	17	14
534	2.36	14	11
429	1.97	11	9
361	1.67	10	8
305	1.44	9	7
247	1.17	7	5
112	0.53	3	3

### 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 Specific.
2. Goals should be Measurable.
3. Goals should be Achievable but challenging.
4. Goals should be Rewarding.
5. Goals should designate a Time 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

---



---



---



---



---



---



---



---





## 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 10).

**Accrual Receipts** - (defined on page 10).

**Annual Cash Flow Statement** - (defined on page 18).

**Appreciation** - (defined on page 11).

**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 20).

**Cash Paid** - (defined on page 6).

**Cash Receipts** - (defined on page 8).

**Change in Accounts Payable** - (defined on page 8).

**Change in Accounts Receivable** - (defined on page 8).

**Change in Inventory** - (defined on page 6).

**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 11).

**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 20).

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

**Debt to Asset Ratios** - (defined on page 16).

**Deferred Taxes** - (defined on page 15).

**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 lessee 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 12).

**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 11).

**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 27).

**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 27).

**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 13).

**Return on Total Capital** - (defined on page 13).

**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 27).

**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

	Page(s)		Page(s)
Accounts Payable .....	10, 14	Financial Lease .....	14
Accounts Receivable .....	10, 14	Income Statement.....	8
Accrual Expenses .....	9, 10	Inflows .....	18
Accrual Receipts.....	10	Labor & Mgmt. Income .....	12
Acreage.....	23	Labor & Mgmt. Income Per Oper.....	12
Advanced Government Receipts .....	13, 14	Labor Efficiency .....	29
Age .....	29	Land Resources .....	23
Amount Available for Debt Service .....	20	Liquidity.....	16
Annual Cash Flow Statement .....	18	Lost Capital .....	16
Appreciation .....	11, 17, 25	Machinery Expenses .....	9, 24
Asset Turnover Ratio.....	28	Milking Frequency.....	8
Balance Sheet .....	14	Milk Production .....	25
Barn Type .....	8	Milking System .....	8
Business Type.....	8	Money Borrowed .....	18
Capital Efficiency .....	29	Net Farm Income.....	11
Cash From Nonfarm Capital Used in		Net Investment .....	16
Business .....	18	Net Worth.....	14
Cash Flow Coverage Ratio .....	20	Number of Cows .....	25
Cash Paid .....	8	Operating Costs of Producing Milk .....	27, 28
Cash Receipts .....	10, 18	Opportunity Cost.....	13
Change in Accounts Payable .....	10	Other Livestock Expenses.....	9
Change in Accounts Receivable .....	10	Outflows.....	18
Change in Inventory .....	9, 10	Percent Equity .....	15, 16
Change in Net Worth.....	17	Personal Withdrawals and Family	
Crop Expenses .....	9, 24	Expenditures Including Nonfarm	
Crop/Dairy Ratios.....	23	Debt Payment.....	18
Current Portion .....	13, 14	Principal Payments.....	18
Dairy (farm).....	8	Profitability .....	11
Dairy Cash-Crop (farm).....	8	Purchased Inputs Cost.....	27, 28
Debt Coverage Ratio .....	20	Receipts.....	10
Debt per Cow.....	16	Record System .....	8
Debt to Asset Ratios .....	16	Repayment Analysis.....	20
Deferred Taxes .....	15	Replacement Livestock .....	9
Depreciation.....	9, 16	Retained Earnings .....	17
Dry Matter .....	23	Return on Equity Capital.....	13
Education .....	29	Return on Total Capital.....	13
Equity Capital .....	13	Solvency.....	16
Expansion Livestock.....	9, 18	Total Costs of Producing Milk.....	27, 28
Expenses .....	9	Whole Farm Method .....	27, 28
Farm Business Chart.....	40, 41, 42, 43	Worker Equivalent .....	29
Farm Debt Payments as Percent		Yields Per Acre .....	23
of Milk Sales.....	20		
Farm Debt Payments Per Cow .....	20		

**OTHER A.R.M.E. EXTENSION BULLETINS**

<u>EB No</u>	<u>Title</u>	<u>Fee (if applicable)</u>	<u>Author(s)</u>
2000-03	Dairy Farm Business Summary, Western and Central Plain Region, 1999	(\$8 ea.)	Knoblauch, W.A., L.D. Putnam, J. Karszes, S. Richards, J. Hanchar, C. Oostveen, B. Dehm, G. Allhusen and V. Smith
2000-02	DFBS, A Guide to Processing Dairy Farm Business Summaries in County and Regional Extension Offices for DFBS Version 4.3		Putnam, L.D. and W.A. Knoblauch
2000-01	Developing a Strategic Marketing Plan for Horticultural Firms		White, G.B. and W.L. Uva
99-22	Fruit Farm Business Summary, Lake Ontario Region, New York, 1998		White, G.B., A.M. DeMarree and L.D. Putnam
	Fruit Farm Business Summary, Lake Ontario Region, New York, 1997		White, G.B., A.M. DeMarree and L.D. Putnam
99-20	New York Economic Handbook 2000		A.R.M.E. Staff
99-19	Management of Hispanic Employees on New York Dairy Farms: A Survey of Farm Managers		Maloney, T.R.
99-18	Department Series Publications, June 1992 through December 1998		Peters, C.
99-17	Dairy Farm Business Summary, Intensive Grazing Farms, New York, 1998	(\$12 ea.)	Conneman, G., C. Crispell, J. Grace, J. Karszes, E. Staehr, L. Torbert, L.D. Putnam, B. Casey and J. Degni
99-16	Dairy Farm Business Summary, Eastern New York Renter Summary, 1998	(\$12 ea.)	Knoblauch, W.A. and L.D. Putnam
99-15	Income Tax Management and Reporting for Small Businesses and Farms	(\$15 ea.)	Cuykendall, C.H. and G.J. Bouchard
	Dairy Farm Business Summary, Northern New York Region, 1998	(\$8 ea.)	Milligan, R.A., L.D. Putnam, G. Yarnall, W. Van Loo, P. Murray and A. Deming

To order single copies of ARME publications, write to: Publications, Department of Agricultural, Resource, and Managerial Economics, Warren Hall, Cornell University, Ithaca, NY 14853-7801. If a fee is indicated, please include a check or money order made payable to Cornell University for the amount of your purchase. Visit our Web site (<http://www.cals.cornell.edu/dept/arml/>) for a more complete list of recent bulletins.