

# **DAIRY FARM BUSINESS SUMMARY**

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## **NEW YORK LARGE HERD FARMS, 300 COWS OR LARGER 1995**

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**LARGE HERD DAIRY FARMS**  
**300 Cows or Larger**

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# **1995 DAIRY FARM BUSINESS SUMMARY LARGE HERD DAIRY FARMS<sup>1</sup>**

## **INTRODUCTION**

Dairy farmers throughout New York State have been participating in Cornell Cooperative Extension's Farm Business Summary and Analysis Program since the early 1950's. Managers of each participating farm business receive a comprehensive summary and analysis of the farm business. The information in this report represents an average of the data submitted from dairy farms with herds of 300 cows and larger in New York State for 1995.

### **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 projections of planned changes within the business.

### **Format**

This report is comprised of four sections. The first section charts the progress of the large herd farm business over two years. Twenty-eight of the large herd farms participated in the summary the last two years. The average of selected business factors are presented for these farms and the changes that occurred from 1994 to 1995 are calculated.

The summary and analysis section lists the average data for the 34 large herd farms that participated in the 1995 DFBS program. The format follows that of the individual farm DFBS printout and contains a brief explanation of each table and chart.

The third section contains the income and expense profiles for the 300 cow and larger farms on a per cow and per cwt. of milk basis.

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

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<sup>1</sup>The large herd summary is comprised of farms with 300 or more cows. Cayuga, Cortland, Erie, Genesee, Livingston, Ontario, Otsego, Saratoga, Tioga, Washington, Wayne and Wyoming counties had farms of this size in 1995. This report was written by Jason Karszes, Cooperative Extension agent for Erie and Wyoming counties and Stuart F. Smith, Senior Extension Associate, Farm Management. Linda Putnam was in charge of data preparation. Melody Clark prepared the publication.

## PROGRESS OF THE FARM BUSINESS

Comparing your business with average data from large DFBS dairy farms that participated in both of the last two years can be helpful in establishing your goals for these parameters. It is equally important for you 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. Please refer to the table on Page 3 for selected factors from 28 farms with over 300 cows that participated in this DFBS project over the last two years.

From 1994 to 1995 the average large herd grew 9.8 percent by adding 55 cows. With this increase in herd size debt per cow fell 2.8 percent to \$2,567 per cow. Investment per cow also fell 2 percent to \$5,724 per cow. Two years of herd growth was achieved by investing only \$2,400 in new land and buildings per additional cow and adding \$1,900 of debt per additional cow.

Milk sold per cow increased 134 pounds a cow, or 0.7 percent. This small increase in milk production per cow coupled with the increase in herd size increased milk marketed from 1994 to 1995 by 10.6 percent to 13,409,242 pounds per farm.

The increase in herd size contributed to a small gain in labor efficiency. The 9.8 percent increase in herd size led to an 8.8 percent average increase in worker equivalent on the farms<sup>2</sup>. Cows per worker equivalent increased by 2.2 percent to 47 and milk sold per worker equivalent increased by 1.7 percent to 1,019,714 pounds.

The cost to operate the farm decreased 3.5 percent from \$12.27 per cwt. in 1994 to \$11.83 per cwt. in 1995. This reflects increased efficiency and improved cost control on these farms. Labor costs per worker equivalent stayed flat, which led to a decrease in labor costs per cwt. of milk marketed of 1.5 percent. Dairy feed and crop expenses fell 9 percent to \$4.15 per cwt. of milk. While internal cost management controlled by the manager improved, external factors led to some cost increases on these farms. Interest rates and milk marketing costs per cwt. of milk increased during the year, even with a 10 percent increase in milk shipped off the farm. Milk marketing costs increased by \$0.10 to \$0.61 per cwt. and interest costs per cwt. increased by \$0.08 to \$0.93 per cwt.

The average milk price received on these farms fell \$0.40 to \$13.02 per cwt. This decrease in milk price coupled with the increase in milk marketing costs led to a \$0.50 decrease in the net price received on the farm. The decline in beef and calf prices continued into 1995. Accrual dairy cattle income fell 8.3 percent and calf sales decreased 30.8 percent per cow.

The efforts to control costs and increase milk output largely offset the decrease in prices received by farmers. Profit levels from 1994 to 1995 stayed relatively steady. Net farm income without appreciation only fell 2.3 percent while net farm income with appreciation increased 5.9 percent. The rate of return on equity capital with appreciation fell 5.1 percent to 11 percent while the rate of return on all capital increased slightly to 9.5 percent. Labor and management income per operator fell 18 percent to \$58,891. This was due to an increase in the average number of operators from 1.89 to 2.10 per farm in addition to the lower average net farm income without appreciation.

<sup>2</sup>Please note that in the table on Page 3, the 1995 column has two numbers for worker equivalent and labor efficiency measures. For 1995 the method used to calculate worker equivalent was changed to incorporate the number of hours actually worked by the owner/operators instead of using a standard 12 months for each full-time owner/operator of the business. The 13.15 worker equivalent represents the worker equivalent for 1995 calculated in the same manner as in 1994. The 13.30 worker equivalent represents the worker equivalent calculated under the new method. The numbers in parentheses in the table on Page 3 are calculated in the same manner as 1994 and can be used for direct comparisons between 1994 and 1995.

**PROGRESS OF THE FARM BUSINESS**  
Same 28 Large Herd Dairy Farms, 1994 & 1995

Selected Factors	Average of 28 Farms		Percent Change
	1994	1995	
<u>Size of Business</u>			
Average number of cows	559	614	9.8
Average number of heifers	417	452	8.4
Milk sold, lbs.	12,122,605	13,409,242	10.6
Worker equivalent*	(12.09)	13.30 (13.15)	10.0 (8.8)
Total tillable acres	1,084	1,165	7.5
<u>Rates of Production</u>			
Milk sold per cow, lbs.	21,689	21,833	0.7
Hay DM per acre, tons	3.46	3.39	-2.0
Corn silage per acre, tons	16.6	17.3	4.2
<u>Labor Efficiency &amp; Costs</u>			
Cows per worker*	(46)	46 (47)	----- (2.2)
Milk sold/worker, 1,000 lbs.*	(1,003)	1,008 (1,020)	0.5 (1.7)
Hired labor cost/cwt.	\$2.40	\$2.37	-1.3
Hired labor cost/worker	\$24,094	\$23,921	-0.7
Hired labor cost as % of milk sales	18%	18%	-----
<u>Cost Control</u>			
Grain & conc. purchased as % of milk sales	28%	27%	-3.6
Dairy feed & crop expense per cwt. milk	\$4.56	\$4.15	-9.0
Labor & mach. costs/cow	\$926	\$924	-0.2
Total farm operating costs per cwt. sold	12.27	11.83	-3.5
Interest costs per cwt. milk	0.85	0.93	9.4
Milk marketing costs per cwt. milk sold	0.51	0.61	19.6
Operating cost of producing cwt. of milk	\$10.52	\$10.33	-1.8
<u>Capital Efficiency(average for the year)</u>			
Farm capital per cow	\$5,844	\$5,724	-2.1
Mach. & equip. per cow	\$830	\$841	1.3
Asset turnover ratio	0.59	0.58	-1.7
<u>Income Generation</u>			
Gross milk sales per cow	\$2,911	\$2,842	-2.4
Gross milk sales per cwt.	\$13.42	\$13.02	-3.0
Net milk sales per cwt.	\$12.91	\$12.41	-3.9
Dairy cattle sales per cow	\$252	\$231	-8.3
Dairy calf sales per cow	\$39	\$27	-30.8
<u>Profitability</u>			
Net farm income w/o apprec.	\$225,049	\$219,885	-2.3
Net farm income w/apprec.	\$270,431	\$286,434	5.9
Labor & mgt. income per oper./manager	\$71,886	\$58,891	-18.1
Rate of return on equity capital w/ apprec.	11.6%	11.0%	-5.2
Rate of return on all capital w/ apprec.	9.4%	9.5%	1.1
<u>Financial Summary</u>			
Farm net worth, end year	\$1,831,562	\$1,976,136	7.9
Debt to asset ratio	0.46	0.46	-----
Farm debt per cow	\$2,635	\$2,567	-2.6

\*Data in ( ) were calculated with operator not exceeding 12 months. See page 2.

## 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

34 Large Herd Dairy Farms, 1995

Type of Farm	Number	Type of Barn	Number
Dairy	34	Stanchion/Tie-Stall	0
		Freestall	33
		Combination	1
Type of Ownership	Number	Milking System	Number
Owner	34	Pipeline	1
		Herringbone parlor	23
		Other parlor	10
Type of Business	Number	Milking Frequency	Number
Single proprietorship	10	2x/day	5
Partnership	11	3x/day	24
Corporation	13	Other	5
Business Record System	Number	Production Records	Number
AgriFax (mail-in only)	5	DHIC	26
On-Farm Computer	26	Owner-Sampler	2
Other	3	Other	6
		None	0
BST Usage	Number		
<25%	3		
25-75%	24		
>75%	2		
Stopped Use in 1995	2		
Not Used	3		

### Income Statement

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

Cash paid is the actual cash outlay during the year and does not necessarily represent the cost of goods and services actually used in 1995.

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**

34 Large Herd Dairy Farms, 1995

Expense Item	Cash Paid	-	Change in Inventory or Prepaid Expense	+	Change in Accounts Payable	=	Accrual Expenses
<u>Hired Labor</u>	\$288,366		\$-1,050 <<		\$2,020		\$291,436
<u>Feed</u>							
Dairy grain & concentrate	424,925		-4,432		4,125		433,482
Dairy roughage	12,623		-82		-103		12,602
Nondairy	204		-13		0		217
<u>Machinery</u>							
Mach. hire, rent/lease	22,423		586 <<		742		22,579
Mach. rep. & farm veh. exp	67,203		178		1,433		68,458
Fuel, oil & grease	27,267		25		309		27,551
<u>Livestock</u>							
Replacement livestock	14,243		0 <<		0		14,243
Breeding	15,478		-57		232		15,767
Vet & medicine	51,073		324		-143		50,606
Milk marketing	76,935		0 <<		0		76,935
Bedding	28,642		656		304		28,290
Milk supplies	34,537		361		325		34,501
Cattle lease/rent	5,035		0 <<		-53		4,982
Custom boarding	9,557		0 <<		164		9,721
Other livestock expense	52,054		907		-178		50,969
<u>Crops</u>							
Fertilizer & lime	33,951		1,789		389		32,551
Seeds & plants	20,478		-2		5		20,485
Spray, other crop exp.	27,151		2,155		1,009		26,005
<u>Real Estate</u>							
Land/bldg./fence repair	18,050		263		2		17,789
Taxes	20,968		-18 <<		0		20,986
Rent & lease	27,916		225 <<		83		27,774
<u>Other</u>							
Insurance	14,939		254 <<		16		14,701
Utilities (farm share)	41,612		298 <<		406		41,720
Interest paid	118,949		0 <<		756		119,705
Miscellaneous	<u>22,511</u>		<u>145</u>		<u>133</u>		<u>22,499</u>
Total Operating Expenses	\$1,477,090		\$2,512		\$11,976		\$1,486,554
Expansion livestock	\$41,859		0 <<		0		\$41,859
Machinery depreciation							\$62,065
Building depreciation							<u>\$73,968</u>
<b>Total Accrual Expenses</b>							<b>\$1,664,446</b>

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 1995 funds used to prepay 1996 leases exceed the amount of 1995 leases prepaid in 1994, the amount of this excess is subtracted to exclude it from 1995 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 1995 but not paid for. A decrease is subtracted because the resource was used before 1995.

**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**  
34 Large Herd Dairy Farms, 1995

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts
Milk sales	\$1,608,422				\$ 20,107		\$ 1,628,529
Dairy cattle	68,177		\$ 77,998		23		146,198
Dairy calves	15,655				0		15,655
Other livestock	2,726		724		0		3,450
Crops	7,992		32,023		-201		39,814
Government receipts	17,938		-506 *		-857		16,575
Custom machine work	1,589				134		1,723
Gas tax refund	1,057				1		1,058
Other	15,139				597		15,736
Less nonfarm noncash cap.**			(-) 0				(-) 0
Total Receipts	\$1,738,695		\$ 110,239		\$ 19,804		\$ 1,868,738

\*Change in advanced government receipts.

\*\*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 1995 for the 1996 crop year in excess of funds earned for 1995. Likewise, a decrease is added to cash government receipts because it represents funds earned for 1995 but received in 1994.

**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>3</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.

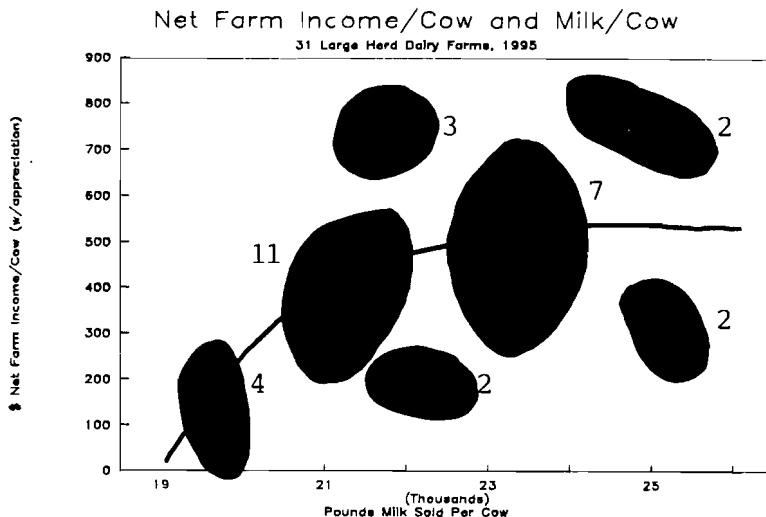
Net farm income is the return to the farm operators and other unpaid family members for their labor, management, and equity capital. It is the farm family's net annual return from working, managing, financing, and owning the farm business. This is not a measure of cash available from the year's business 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 34 Large Herd Dairy Farms, 1995

Item	Average		My Farm	
	Total	Per Cow	Total	Per Cow
Total accrual receipts	\$ 1,868,738		\$ _____	
Appreciation: Livestock	-8,125		_____	
Machinery	2,134		_____	
Real Estate	67,082		_____	
Other Stock/Certificates	3,018		_____	
Total Including Appreciation	\$ 1,932,847		\$ _____	
Total accrual expenses	1,664,446		- _____	
Net Farm Income (with appreciation)	\$ 268,401	\$466	\$ _____	\$ _____
Net Farm Income (w/o appreciation)	\$ 204,292	\$355	\$ _____	\$ _____

The chart below shows the relationship between net farm income per cow (with appreciation) and pounds of milk sold per cow. Generally, farms with a higher production per cow have higher profitability per cow.



All but three of the 34 farms fall into one of the seven spots. The number of farms in each is indicated. The trend line represents the average of the 31 farms.

<sup>3</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.

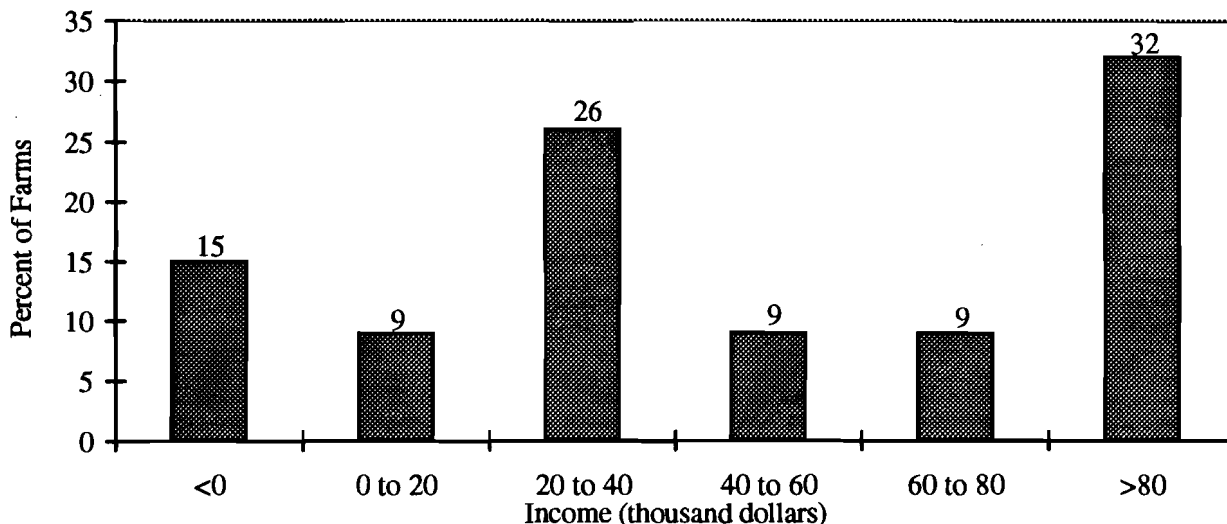
Labor and management income is the return which farm operators receive for their labor and management used in operating the farm business. Appreciation is not included as part of the return to labor and management because it results from ownership of assets rather than management of the farm business. 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**  
34 Large Herd Dairy Farms, 1995

Item	Average	My Farm
Net farm income without appreciation	\$ 204,292	\$ _____
Family labor unpaid @ \$1,450 per month	- 1,508	- _____
Interest on \$1,761,948 average equity capital @ 5% real rate	- 88,097	- _____
Labor & Management Income per Farm (2.20 operators/farm)	\$ 114,687	\$ _____
Labor & Management Income per Operator/Manager	\$ 52,130	\$ _____

Labor and management income per operator averaged \$52,130 on these 34 farms in 1995. The range in labor and management income per operator was from less than \$-63,000 to more than \$445,000. Returns to labor and management were negative on 15 percent of the farms. Labor and management income per operator ranged from \$0 to \$40,000 on 35 percent of the farms while 32 percent showed labor and management incomes of \$80,000 or more per operator.

**Distribution of Labor & Management Incomes per Operator**  
34 Large Herd Dairy Farms, 1995



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 34 Large Herd Dairy Farms, 1995

Item	Average	My Farm
Net farm income with appreciation	\$ 268,401	\$ _____
Family labor unpaid @ \$1,450 per month	- 1,508	- _____
Value of operators' labor & management	<u>75,065</u>	_____
Return on equity capital with appreciation	\$ 191,828	\$ _____
Interest paid	+ 119,705	+ _____
Return on total capital with appreciation	\$ 311,533	\$ _____
Return on equity capital without appreciation	\$ 127,719	\$ _____
Return on total capital without appreciation	\$ 247,424	\$ _____
Rate of return on average equity capital:		
with appreciation	10.89%	_____ %
without appreciation	7.25%	_____ %
Rate of return on average total capital:		
with appreciation	9.50%	_____ %
without appreciation	7.55%	_____ %

### 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 1995, leases were discounted by 9.25 percent.

Advanced government receipts are included as current liabilities. Government payments received in 1995 that are for participation in the 1996 program are the end year balance and payments received in 1994 for participation in the 1995 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.

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 and date on 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. However, they could be important.

### CONDENSED BALANCE SHEET INCLUDING DEFERRED TAXES

December 31, 1995

Average of 6 New York Dairy Farms Reporting Data, 1995

ASSETS		LIABILITIES & NET WORTH	
		Current debts & payables	\$118,850
		Current deferred taxes	<u>43,461</u>
Total Current Assets	\$ 155,248	Total Current Liabilities	\$162,311
		Intermediate debts & leases	\$158,238
		Intermediate deferred taxes	<u>175,448</u>
Total Intermediate Assets	\$ 612,205	Total Intermediate Liabilities	\$333,686
		Long term debts & leases	\$162,640
		Long term deferred taxes	<u>98,241</u>
Total Long Term Assets	\$ 537,541	Total Long Term Liabilities	\$260,881
TOTAL FARM ASSETS	\$1,304,993	TOTAL FARM LIABILITIES	\$756,877
		Farm Net Worth	\$548,116
		Percent Equity (Farm)	42%
		Nonfarm debts	\$ 1,017
		Nonfarm deferred taxes	<u>16,719</u>
Total Nonfarm Assets	\$ 65,961	Total Nonfarm Liabilities	\$ 17,735
TOTAL ASSETS	\$1,370,954	TOTAL LIABILITIES	\$774,612
		Total Net Worth	\$596,342
		Percent Equity (Total)	44%

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 34 Large Herd Dairy Farms, 1995

Item	Average	My Farm
<u>Financial Ratios - Farm:</u>		
Percent equity	54%	_____ %
Debt/asset ratio: total	0.46	_____
long-term	0.44	_____
intermediate/current	0.47	_____
<u>Farm Debt Analysis:</u>		
Accounts payable as % of total debt	3%	_____ %
Long-term liabilities as a % of total debt	41%	_____ %
Current & intermediate liabilities as a % of total debt	59%	_____ %

<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	\$ 2,574	\$2,396	\$ _____	\$ _____
Long-term debt	1,062	989	_____	_____
Long-term & intermediate	2,051	1,910	_____	_____
Intermediate & current debt	1,512	1,408	_____	_____

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 34 Large Herd Dairy Farms, 1995

Item	Average of 31 Farms	
	<u>Real Estate</u>	<u>Machinery &amp; Equipment</u>
Value beginning of year	\$ 1,380,127	\$ 440,691
Purchases	\$ 128,806	\$ 83,293
Gift/inheritance	+ 0	+ 0
Lost capital	- 43,379	
Sales	- 3,863	- 3,642
Depreciation	- 73,968	- 62,065
Net investment	= 7,596	= 17,586
Appreciation	+ 67,082	+ 2,134
Value end of year	\$ 1,454,805	\$ 460,411

\*\$19,666 land and \$109,140 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)

34 Large Herd Dairy Farms, 1995

Item	Average	My Farm
Beginning of year farm net worth	\$ 1,690,479	\$ _____
Net farm income w/o appreciation	\$ 204,292	\$ _____
+ Nonfarm cash income	+ 6,080	+ _____
- Personal withdrawals & family expenditures excluding nonfarm borrowings	- 102,885	- _____
Retained Earnings	+ 107,487	+ _____
Nonfarm noncash transfers to farm	\$ 0	\$ _____
+ Cash used in business from nonfarm capital	+ 16,886	+ _____
- Note/mortgage from farm real estate sold (nonfarm)	- 0	- _____
Contributed/Withdrawn Capital	+ 16,886	+ _____
Appreciation	\$ 64,109	\$ _____
- Lost capital	- 43,379	- _____
Change in Valuation Equity	+ 20,730	+ _____
Imbalance/Error	- 2,175	- _____
End of year farm net worth*	=\$ 1,833,416	=\$ _____
Change in net worth w/apprec.	\$ 142,937	\$ _____
<u>Change in Net Worth</u>		
Without appreciation	\$ 78,828	\$ _____
With appreciation	\$ 142,937	\$ _____

\*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**

34 Large Herd Dairy Farms, 1995

Item		Average	
<u>Cash Flow from Operating Activities</u>			
Cash farm receipts	\$ 1,738,695		
- Cash farm expenses	<u>1,477,090</u>		
= Net cash farm income		\$ 261,609	
Nonfarm income	\$ 6,080		
- Personal withdrawals/family expenses including nonfarm debt payments	<u>102,884</u>		
+ Net cash nonfarm income		<u>\$ -96,804</u>	
= Net Provided by Operating Activities			\$ 164,805
<u>Cash Flow From Investing Activities</u>			
Sale of Assets: Machinery	\$ 3,642		
+ real estate	3,863		
+ other stock/cert.	<u>2,627</u>		
= Total asset sales		\$ 10,132	
Capital purchases: expansion livestock	\$ 41,859		
+ machinery	83,293		
+ real estate	128,806		
+ other stock/cert.	<u>4,404</u>		
- Total invested in farm assets		<u>\$ 258,362</u>	
= Net Provided by Investment Activities			\$ -248,230
<u>Cash Flow From Financing Activities</u>			
Money borrowed (inter. & long term)	\$ 227,274		
+ Money borrowed (short-term)	9,166		
+ Increase in operating debt	7,073		
+ Cash from nonfarm cap. used in business	16,886		
+ Money borrowed - nonfarm	<u>-1</u>		
= Cash inflow from financing		\$ 260,398	
Principal payments (inter. & long-term)	\$ 161,101		
+ Principal payments (short-term)	11,877		
+ Decrease in operating debt	<u>0</u>		
- Cash outflow for financing		<u>\$ 172,978</u>	
= Net Provided by Financing Activities			\$ 87,420
<u>Cash Flow From Business</u>			
Beginning farm cash, checking & savings		\$ 19,539	
- Ending farm cash, checking & savings		<u>21,359</u>	
= Net Provided from Reserves			<u>\$ -1,820</u>
<u>Imbalance (error)</u>			<u>\$ 2,175</u>



## ANNUAL CASH FLOW STATEMENT

Item	My Farm	
<b><u>Cash Flow from Operating Activities</u></b>		
Cash farm receipts	\$ _____	
- Cash farm expenses	_____	
= Net cash farm income		\$ _____
Nonfarm income	\$ _____	
- Personal withdrawals/family expenses including nonfarm debt payments	_____	
+ Net cash nonfarm income		\$ _____
= Net Provided by Operating Activities		\$ _____
<b><u>Cash Flow From Investing Activities</u></b>		
Sale of Assets: Machinery	\$ _____	
+ real estate	_____	
+ other stock/cert.	_____	
= Total asset sales		\$ _____
Capital purchases: expansion livestock	\$ _____	
+ machinery	_____	
+ real estate	_____	
+ other stock/cert.	_____	
- Total invested in farm assets		\$ _____
= Net Provided by Investment Activities		\$ _____
<b><u>Cash Flow From Financing Activities</u></b>		
Money borrowed (inter. & long term)	\$ _____	
+ Money borrowed (short-term)	_____	
+ Increase in operating debt	_____	
+ Cash from nonfarm cap. used in business	_____	
+ Money borrowed - nonfarm	_____	
= Cash inflow from financing		\$ _____
Principal payments (inter. & long-term)	\$ _____	
+ Principal payments (short-term)	_____	
+ Decrease in operating debt	_____	
- Cash outflow for financing		\$ _____
= Net Provided by Financing Activities		\$ _____
<b><u>Cash Flow From Business</u></b>		
Beginning farm cash, checking & savings		\$ _____
- Ending farm cash, checking & savings		_____
= Net Provided from Reserves		\$ _____
<b><u>Imbalance (error)</u></b>		\$ _____

## 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 1996. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 1996 debt payments shown below.

### FARM DEBT PAYMENTS PLANNED Same 28 Large Herd Dairy Farms, 1994 & 1995

Debt Payments	Average			My Farm		
	1995 Payments		Planned 1996	1995 Payments		Planned 1996
	Planned	Made		Planned	Made	
Long-term	\$ 101,745	\$ 136,623	\$ 108,193	\$ _____	\$ _____	\$ _____
Intermediate-term	137,745	155,698	143,526	_____	_____	_____
Short-term	13,716	14,941	13,666	_____	_____	_____
Operating (net reduction)	3,832	0	18,452	_____	_____	_____
Accounts payable (net reduction)	4,059	0	2,079	_____	_____	_____
Total	\$ 261,097	\$ 307,262	\$ 285,916	\$ _____	\$ _____	\$ _____
Per cow	\$ 425	\$ 500		\$ _____	\$ _____	
Per cwt. 1995 milk	\$ 1.95	\$ 2.29		\$ _____	\$ _____	
Percent of total 1995 receipts	13%	15%		_____	_____	
Percent of 1995 milk receipts	15%	18%		_____	_____	

The cash flow coverage ratio measures the ability of the farm business to meet its planned debt payments schedule. The ratio shows the percentage of payments planned for 1995 (as of December 31, 1994) that could have been made with the amount available for debt service in 1995. Farmers who did not participate in DFBS in 1994 have their 1995 cash flow coverage ratio based on planned debt payments for 1996.

### CASH FLOW COVERAGE RATIO Same 28 Large Herd Dairy Farms, 1994 & 1995

Item	Average	My Farm
Cash farm receipts	\$ 1,859,428	\$ _____
- Cash farm expenses	1,582,398	_____
+ Interest paid	124,254	_____
- Net personal withdrawals from farm**	100,956	_____
(A) = Amount Available for Debt Service	\$ 300,328	\$ _____
(B) = Debt Payments Planned for 1995 (as of 12/31/94)	\$ 261,097	\$ _____
(A+B) = Cash Flow Coverage Ratio for 1995	1.15	_____

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

## ANNUAL CASH FLOW WORKSHEET

34 Large Herd Dairy Farms, 1995

Item	Regional Average		Total
	Per Cow	Per Cwt.	
No. cows and cwt. milk	575.6	125,290.1	
<u>Accrual Operating Receipts</u>			
Milk	\$ 2,829.27	\$13.00	\$ 1,628,529
Dairy cattle	253.99	1.17	146,198
Dairy calves	27.20	0.12	15,655
Other livestock	5.99	0.03	3,450
Crops	69.17	0.32	39,814
Misc. receipts	60.97	0.28	35,092
Total	\$ 3,246.59	\$14.92	\$ 1,868,739
<u>Accrual Operating Expenses</u>			
Hired labor	\$ 506.32	\$2.33	\$ 291,436
Dairy grain & concentrate	753.10	3.46	433,482
Dairy roughage	21.89	0.10	12,602
Nondairy feed	0.38	0.00	217
Mach. hire/rent/lease	39.23	0.18	22,579
Mach. repair & farm vehicle expense	118.93	0.55	68,457
Fuel, oil & grease	47.86	0.22	27,551
Replacement livestock	24.74	0.11	14,243
Breeding	27.39	0.13	15,767
Vet & medicine	87.92	0.40	50,606
Milk marketing	133.66	0.61	76,935
Bedding	49.15	0.23	28,290
Milking supplies	59.94	0.27	34,501
Cattle lease	8.66	0.04	4,982
Custom boarding	16.89	0.08	9,721
Other livestock expense	88.55	0.41	50,969
Fertilizer & lime	56.55	0.26	32,551
Seeds & plants	35.59	0.16	20,485
Spray/other crop expenses	45.18	0.21	26,005
Land, building, fence repair	30.91	0.14	17,789
Taxes	36.46	0.17	20,986
Real estate rent/lease	48.25	0.22	27,774
Insurance	25.54	0.12	14,701
Utilities	72.48	0.33	41,720
Miscellaneous	39.09	0.18	22,499
Total Less Interest Paid	\$ 2,374.64	\$10.91	\$ 1,366,843
<u>Net Accrual Operating Income</u>			
(without interest paid)	\$ 871.95	\$4.01	\$ 501,896
- Change in livestock/crop inventory*	191.52	0.88	110,239
- Change in accounts receivable	34.41	0.16	19,804
- Change in feed/supply inventory**	4.37	0.02	2,512
+ Change in accts. payable***	19.49	0.09	11,220
NET CASH FLOW	\$ 661.16	\$3.04	\$ 380,561
- Net personal withdrawals from farm (see footnote on p. 16)	\$ 168.18	\$0.77	\$ 96,805
Available for Farm Debt Payments & Investments	\$ 492.97	\$2.27	\$ 283,756
- Farm debt payments	502.22	2.31	286,078
Available for Farm Investment	\$ -9.25	\$-0.04	\$ -5,322
- Capital purchases: cattle, machinery & improvements	\$ 448.86	\$2.07	\$ 258,362

\*Includes change in advance government receipts.

\*\*Includes change in prepaid expenses.

\*\*\*Excludes change in interest account payable.

## ANNUAL CASH FLOW WORKSHEET

Item	My Farm		1996 Projection
	Per Cow or Per Cwt.	Expected Change	
No. cows or cwt. milk			
<u>Accrual Operating Receipts</u>			
Milk	\$	\$	\$
Dairy cattle			
Dairy calves			
Other livestock			
Crops			
Misc. receipts			
Total	\$	\$	\$
<u>Accrual Operating Expenses</u>			
Hired labor	\$	\$	\$
Dairy grain & concentrate			
Dairy roughage			
Nondairy feed			
Mach. hire/rent/lease			
Mach. repair & farm vehicle expense			
Fuel, oil & grease			
Replacement livestock			
Breeding			
Vet & medicine			
Milk marketing			
Bedding			
Milking supplies			
Cattle lease			
Custom boarding			
Other livestock expense			
Fertilizer & lime			
Seeds & plants			
Spray/other crop expenses			
Land, building, fence repair			
Taxes			
Real estate rent/lease			
Insurance			
Utilities			
Miscellaneous			
Total Less Interest Paid	\$	\$	\$
<u>Net Accrual Operating Income</u>			
(without interest paid)	\$	\$	\$
- Change in livestock/crop inventory*			
- Change in accounts receivable			
- Change in feed/supply inventory**			
+ Change in accounts payable***			
<b>NET CASH FLOW</b>	\$	\$	\$
- Net personal withdrawals from farm(see footnote p.16)	\$	\$	\$
Available for Farm Debt Payments & Investments	\$	\$	\$
- Farm debt payments			
Available for Farm Investment	\$	\$	\$
- Capital purchases: cattle, machinery & improvements	\$	\$	\$
<b>Additional Capital Needed</b>	\$	\$	\$

\*Includes change in advance government receipts.

\*\*Includes change in prepaid expenses.

\*\*\*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**

34 Large Herd Dairy Farms, 1995

Item	Average			My Farm		
<u>Land</u>	<u>Owned</u>	<u>Rented</u>	<u>Total</u>	<u>Owned</u>	<u>Rented</u>	<u>Total</u>
Tillable	652	465	1,117	_____	_____	_____
Nontillable	63	3	66	_____	_____	_____
Other nontillable	202	15	217	_____	_____	_____
Total	917	483	1,400	_____	_____	_____
<u>Crop Yields</u>	<u>Farms</u>	<u>Acres*</u>	<u>Prod/Acre</u>	<u>Acres</u>	<u>Prod/Acre</u>	
Hay crop	34	455	3.43 tn DM	_____	_____	tn DM
Corn silage	34	447	17.36 tn	_____	_____	tn
			5.93 tn DM	_____	_____	tn DM
Other forage	3	68	1.00 tn DM	_____	_____	tn DM
Total forage	34	908	4.64 tn DM	_____	_____	tn DM
Corn grain	22	181	116.54 bu	_____	_____	bu
Oats	3	60	50.80 bu	_____	_____	bu
Wheat	7	69	57.11 bu	_____	_____	bu
Other crops	10	110		_____	_____	
Tillable pasture	9	66		_____	_____	
Idle	14	56		_____	_____	
Total Tillable Acres	34	1,117		_____	_____	

\*This column represents the average acreage for the farms producing that crop. Average acreages including those farms not producing were corn grain 117, oats 5, tillable pasture 17, and idle 23.

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**

34 Large Herd Dairy Farms, 1995

Item	Average	My Farm
Total tillable acres per cow	1.94	_____
Total forage acres per cow	1.58	_____
Harvested forage dry matter, tons per cow	7.32	_____

**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 not used on these farms.

**CROP RELATED ACCRUAL EXPENSES**

Large Herd Dairy Farms Reporting, 1995

Item	Total Per Till. Acre	All Corn Per Acre	Corn Silage Per Ton DM	Corn Grain Per Dry Sh. Bu.	Hay Crop	
					Per Acre	Per Ton DM
No. of farms reporting	34	12			11	
Ave. number of acres	1,117	640			467	
Fert./lime	\$ 29.14	\$ 41.08	\$ 7.17	\$ 0.35	\$ 15.36	\$ 4.10
Seed/plants	18.34	28.60	4.99	0.24	8.92	2.38
Spray/other crop exp.	23.28	42.38	7.40	0.36	4.22	1.13
TOTAL	\$ 70.76	\$ 112.06	\$ 19.56	\$ 0.95	\$ 28.50	\$ 7.61
<b>My Farm:</b>						
Fert./lime	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____
Seeds/plants	_____	_____	_____	_____	_____	_____
Spray/other crop exp.	_____	_____	_____	_____	_____	_____
TOTAL	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____

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**

34 Large Herd Dairy Farms, 1995

Machinery Expense Item	Average		My Farm	
	Total Expenses	Per Till. Acre	Total Expenses	Per Till. Acre
Fuel, oil & grease	\$ 27,551	\$ 24.67	\$ _____	\$ _____
Mach. repairs & farm veh. exp.	68,457	61.29	_____	_____
Machine hire, rent & lease	22,579	20.21	_____	_____
Interest (5%)	22,528	20.17	_____	_____
Depreciation	62,065	55.56	_____	_____
Total	\$ 203,179	\$ 181.90	\$ _____	\$ _____

**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 7 and 8.

**DAIRY HERD INVENTORY**  
34 Large Herd Dairy Farms, 1995

Item	Dairy Cows		Heifers				Calves	
	No.	Value	Bred		Open		No.	Value
Beginning year (owned)	532	\$ 538,621	161	\$ 142,876	134	\$ 68,246	108	\$ 32,606
+ Change w/o apprec.		57,081		5,451		14,714		753
+ Appreciation		<u>-4,203</u>		<u>-1,304</u>		<u>-1,410</u>		<u>-754</u>
End year (owned)	587	\$ 591,499	169	\$ 147,023	162	\$ 81,550	112	\$ 32,605
End including leased	607							
Average number	576		425 (all age groups)					

**My Farm:**

Beginning year (owned)	_____	\$ _____	_____	\$ _____	_____	\$ _____	_____	\$ _____
+ Change w/o apprec.		_____		_____		_____		_____
+ Appreciation		_____		_____		_____		_____
End of year (owned)	_____	\$ _____	_____	\$ _____	_____	\$ _____	_____	\$ _____
End including leased	_____							
Average number	_____		_____ (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**  
34 Large Herd Dairy Farms, 1995

Item	Average	My Farm
Total milk sold, lbs.	12,529,009	_____
Milk sold per cow, lbs.	21,766	_____
Average milk plant test, percent butterfat	3.61	_____

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

34 Large Herd Dairy Farms, 1995

Item	Average			My Farm		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
<u>Accrual Costs of Producing Milk</u>						
Operating costs	\$ 1,288,204	\$ 2,238	\$10.28	\$ _____	\$ _____	\$ _____
Purchased inputs costs	\$ 1,424,237	\$ 2,474	\$11.37	\$ _____	\$ _____	\$ _____
Total Costs	\$ 1,588,907	\$ 2,760	\$12.68	\$ _____	\$ _____	\$ _____
<u>Accrual Receipts From Milk</u>						
Net Farm Income w/o apprec.	\$ 1,628,529	\$ 2,829	\$13.00	\$ _____	\$ _____	\$ _____
Net Farm Income with apprec.	\$ 204,292	\$ 355	\$1.63	\$ _____	\$ _____	\$ _____
Net Farm Income with apprec.	\$ 268,401	\$ 466	\$2.14	\$ _____	\$ _____	\$ _____

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

34 Large Herd Dairy Farms, 1995

Item	Average		My Farm	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purchased dairy grain & conc.	\$ 753	\$3.46	\$ _____	\$ _____
Purchased dairy roughage	22	0.10	_____	_____
Total Purchased Dairy Feed	\$ 775	\$3.56	\$ _____	\$ _____
Purchased grain & conc. as % of milk receipts		27%		__%
Purchased feed & crop exp.	\$ 912	\$4.19	\$ _____	\$ _____
Purchased feed & crop exp. as % of milk receipts		32%		__%
Breeding	\$ 27	\$0.13	\$ _____	\$ _____
Veterinary & medicine	88	0.40	_____	_____
Milk marketing	134	0.61	_____	_____
Bedding	49	0.23	_____	_____
Milking supplies	60	0.28	_____	_____
Cattle lease	9	0.04	_____	_____
Custom boarding	17	0.08	_____	_____
Other livestock expenses	89	0.41	_____	_____



### 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**

34 Large Herd Dairy Farms, 1995

Item	Average 34 Farms	
Total Accrual Operating Expenses	\$	1,486,554
Expansion Livestock, Accrual	+	<u>41,859</u>
1. Total Accrual Operating Expenses, Including Expansion Livestock		\$ 1,528,413
Total Accrual Receipts	\$	1,868,738
Milk Sales, Accrual	-	<u>1,628,529</u>
2. Total Accrual Nonmilk Receipts		- <u>240,209</u>
3. Operating Costs of Producing Milk		\$ 1,288,204
Cwt. of Milk Sold	+	125,290.1
Operating Costs/Cwt.	=	\$10.28
Machinery Depreciation	+	62,065
Building Depreciation	+	<u>73,968</u>
4. Purchased Inputs Cost of Producing Milk		\$ 1,424,237
Cwt. of Milk Sold	+	125,290.1
Purchased Inputs Cost/Cwt.	=	\$11.37
Family Labor Unpaid (\$1,450/month)	+	1,508
Real Interest on Equity Cap.	+	88,097
Value of Operating Labor & Management	+	<u>75,065</u>
5. Total Costs of Producing Milk		\$ 1,588,907
Cwt. Milk Sold	+	125,290.1
Total Costs/Cwt.	=	\$12.68

## 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**

34 Large Herd Farms, 1995

Item	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
Farm capital	\$ 258,884	\$ 5,697	\$ 2,936	\$ 5,029
Real estate		2,463		2,174
Machinery & equipment	39,293	865	446	
Asset turnover ratio	.59			
<b>My Farm:</b>				
Farm capital	\$ _____	\$ _____	\$ _____	\$ _____
Real estate		_____		_____
Machinery & equipment	_____	_____	_____	
Asset turnover ratio	_____			

### **LABOR FORCE INVENTORY AND ANALYSIS**

34 Large Herd Dairy Farms, 1995

Labor Force	Months	Age	Years of Education	Value of Labor & Mgmt.
Operator number 1	13.80	46	14	\$ 40,294
Operator number 2	7.88	41	14	20,059
Operator number 3	7.16	39	13	14,712
Family paid	3.76			
Family unpaid	1.04			
Hired	118.35			
Total	151.99	/ 12 = 12.67 Worker Equivalent		
		2.20 Operator/Manager Equivalent		
<b>My Farm: Total</b>	_____	/ 12 = _____ Worker Equivalent		
<b>Operator's</b>	_____	/ 12 = _____ Operator/Manager Equivalent		
Labor Efficiency	Average		My Farm	
	Total	Per Worker	Total	Per Worker
Cows, average number	576	45	_____	_____
Milk sold, pounds	12,529,009	989,167	_____	_____
Tillable acres	1,117	88	_____	_____
Work units	5,627	444	_____	_____

Labor Costs	Average			My Farm		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Value of operator(s) labor (\$1,450/mo.)	\$ 41,818	\$ 73	\$0.33	\$ _____	\$ _____	\$ _____
Family unpaid (\$1,450/mo.)	1,508	3	0.01	_____	_____	_____
Hired	291,435	506	2.33	_____	_____	_____
Total Labor	\$ 334,761	\$ 582	\$2.67	\$ _____	\$ _____	\$ _____
Machinery Cost	203,179	353	1.62	_____	_____	_____
Total Labor & Mach.	\$ 537,940	\$ 935	\$4.29	\$ _____	\$ _____	\$ _____

# INCOME AND EXPENSE PROFILE

Use the following two tables to make an income and expense profile for your dairy farm business. 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

34 Large Herd Dairy Farms, 1995

Item	QUINTILE				
	1	2	3	4	5
<b>Accrual Operating Receipts</b>					
Milk	\$3,250	\$2,936	\$2,800	\$2,691	\$2,497
Dairy cattle	532	284	244	195	130
Dairy calves	53	31	26	21	9
Other livestock	47	4	1	0	-3
Crops	200	95	58	19	-43
Misc. receipts	144	81	54	35	14
Total Operating Receipts	\$3,802	\$3,450	\$3,197	\$3,047	\$2,957
<b>Accrual Operating Expenses</b>					
Hired labor	\$352	\$440	\$501	\$552	\$604
Dairy grain & concentrate	593	695	784	841	911
Dairy roughage	0	0	4	27	98
Nondairy feed	0	0	0	0	4
Mach. hire/rent/lease	0	5	17	32	136
Mach. repair & farm veh. exp.	67	112	129	144	195
Fuel, oil & grease	31	44	51	65	85
Replacement livestock	0	0	5	23	97
Breeding	12	19	24	37	65
Vet & medicine	61	78	85	99	127
Milk marketing	97	124	139	151	239
Bedding	15	31	44	59	77
Milking supplies	35	44	59	74	108
Cattle lease	0	0	0	7	24
Custom boarding	0	0	0	2	103
Other livestock expense	35	80	91	107	136
Fertilizer & lime	20	38	58	83	137
Seeds & plan,ts	17	31	38	45	65
Spray/other crop expenses	17	37	46	65	92
Land, building, fence repair	8	20	29	41	58
Taxes	20	28	35	46	67
Real estate rent/lease	14	34	46	57	109
Insurance	16	20	25	31	50
Utilities	52	61	74	90	118
Interest	98	177	208	237	320
Miscellaneous	11	22	30	41	74
Total Operating Expenses	\$2,324	\$2,494	\$2,600	\$2,731	\$2,973
Expansion Livestock	0	0	16	132	300
Machinery Depreciation	70	84	103	127	213
Building Depreciation	60	79	97	120	266
Net Farm Income w/o Apprec.	\$683	\$445	\$367	\$234	\$58

**RECEIPTS AND EXPENSES PER CWT. OF MILK SOLD**  
**34 Large Herd Dairy Farms, 1995**

Item	QUINTILE				
	1	2	3	4	5
<u>Accrual Operating Receipts</u>					
Milk	\$13.61	\$13.16	\$12.97	\$12.84	\$12.58
Dairy cattle	2.55	1.36	1.11	.88	.59
Dairy calves	.24	.14	.12	.09	.04
Other livestock	.25	.02	.00	.00	-.01
Crops	.96	.43	.26	.08	-.21
Misc. receipts	.69	.37	.25	.16	.06
<b>Total Operating Receipts</b>	<b>\$17.11</b>	<b>\$15.38</b>	<b>\$14.89</b>	<b>\$14.43</b>	<b>\$13.92</b>
<u>Accrual Operating Expenses</u>					
Hired labor	\$1.55	\$2.10	\$2.33	\$2.51	\$2.82
Dairy grain & concentrate	2.77	3.29	3.60	3.78	4.09
Dairy roughage	.00	.00	.02	.12	.48
Nondairy feed	.00	.00	.00	.00	.02
Mach. hire/rent/lease	.00	.02	.08	.15	.60
Mach. repair & farm veh. exp.	.31	.52	.59	.65	.91
Fuel, oil & grease	.14	.20	.25	.31	.38
Replacement livestock	.00	.00	.02	.11	.44
Breeding	.05	.09	.11	.18	.30
Vet & medicine	.28	.36	.40	.48	.56
Milk marketing	.46	.58	.64	.71	1.02
Bedding	.07	.14	.20	.26	.35
Milking supplies	.16	.21	.27	.34	.47
Cattle lease	.00	.00	.00	.03	.11
Custom boarding	.00	.00	.00	.01	.44
Other livestock expense	.17	.36	.42	.46	.64
Fertilizer & lime	.09	.18	.26	.37	.63
Seeds & plants	.08	.14	.17	.20	.32
Spray/other crop expenses	.08	.17	.22	.30	.44
Land, building, fence repair	.04	.10	.13	.18	.25
Taxes	.09	.12	.17	.21	.32
Real estate rent/lease	.07	.15	.21	.25	.50
Insurance	.07	.09	.11	.14	.23
Utilities	.24	.28	.34	.42	.52
Interest	.43	.80	.97	1.08	1.57
Miscellaneous	.05	.10	.13	.19	.35
<b>Total Operating Expenses</b>	<b>\$10.99</b>	<b>\$11.56</b>	<b>\$11.90</b>	<b>\$12.32</b>	<b>\$13.55</b>
Expansion Livestock	.00	.00	.07	.60	1.41
Machinery Depreciation	.32	.39	.44	.60	1.02
Building Depreciation	.27	.36	.44	.59	1.22
<b>Net Farm Income w/o Apprec.</b>	<b>\$3.10</b>	<b>\$2.08</b>	<b>\$1.66</b>	<b>\$1.07</b>	<b>\$0.28</b>

## 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 five figures in each column represent the average of each 20 percent or quintile of farms included in this summary. Each column of the chart is independent of the others. The farms which are in the top 20 percent for one factor would not necessarily be the same farms which make up the 20 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 34 Large Herd Dairy Farms, 1995

Worker Equivalent	Size of Business		Rates of Production			Labor Efficiency	
	Number of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(11)*	(11)	(11)	(10)	(9)	(9)	(11)	(11)
21.9	1,164	25,431,176	24,418	5.1	21	55	1,232,866
13.6	569	12,351,481	22,545	3.8	19	46	1,016,110
10.3	430	9,527,485	21,559	3.2	18	43	940,694
9.1	364	7,888,103	20,946	2.6	15	39	850,035
7.8	315	6,599,767	19,158	2.1	11	34	695,171

#### Cost Control

Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
(10)	(10)	(11)	(11)	(10)	(10)
\$584	21%	\$250	\$771	\$766	\$3.59
680	25	313	880	869	3.96
774	27	355	951	937	4.33
832	29	404	1,026	991	4.54
906	32	535	1,148	1,101	5.04

Hired Labor Expense			Expenses Per Cwt.		
Per Cwt.	Per Hired Worker Equiv.	As % of Milk Sales	Milk Marketing	Veterinary & Medicine	Other Livestock
(11)	(CALC)	(CALC)	(10)	(10)	(10)
\$1.55	\$20,959	12%	\$0.46	\$0.28	\$0.17
2.10	24,682	16	0.58	0.36	0.36
2.33	28,542	18	0.64	0.40	0.42
2.51	30,276	19	0.71	0.48	0.46
2.82	34,981	22	1.02	0.56	0.64

\*() = 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)

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)
\$187	\$47	\$1,790	\$8.61	\$2,327	\$11.40
233	59	2,128	9.84	2,653	12.34
252	70	2,245	10.30	2,778	12.77
274	80	2,370	10.95	2,969	13.26
331	116	2,612	11.42	3,196	14.19

## Expense Ratios

Operating	Depreciation	Interest
(CALC)	(CALC)	(CALC)
66.5%	4.3%	2.9%
73.4	5.3	5.4
75.6	6.4	6.3
79.9	7.9	7.2
84.1	13.1	10.1

## 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)	(CALC)	(10)	(10)	(10)
\$13.61	\$12.76	\$3,250	\$532	\$53
13.16	12.54	2,936	284	31
12.97	12.35	2,800	244	26
12.84	12.20	2,691	195	21
12.58	11.97	2,497	130	9

## Debt Management

Farm Debt Per Cow		Cost of Borrowed Capital	Planned Debt Payments	
Total	Intermediate & Long Term		Per Cow	Per Cwt.
(5)	(5)	(CALC)	(8)	(8)
\$1,137	\$851	5.6%	\$246	\$1.16
2,125	1,622	8.0	341	1.68
2,611	1,927	8.5	435	2.08
2,900	2,314	9.3	510	2.40
3,622	3,058	9.9	593	2.89

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.	
(12)	(12)	(CALC)	(CALC)	(8)
\$891	\$4.03	\$314	\$1.41	1.63
737	3.41	226	1.01	1.20
623	2.86	168	0.79	1.04
558	2.60	126	0.58	0.93
420	1.94	56	0.27	0.76
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)
\$4,301	\$1,238	\$549	\$19,927	0.78
5,165	2,018	667	22,518	0.64
5,718	2,469	823	25,479	0.58
6,056	2,762	1,000	27,989	0.54
7,319	3,575	1,375	31,884	0.48
Solvency				
Percent Equity	Leverage Ratio	Debt to Asset Ratios		
		Total	Current/Intermed.	Long Term
(5)	(CALC)	(5)	(5)	(5)
78%	0.32	0.20	0.19	0.05
58	0.71	0.40	0.38	0.25
52	0.85	0.47	0.45	0.42
48	1.00	0.52	0.56	0.57
37	1.77	0.62	0.71	0.72
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)
\$218,386	17.7%	23.3%	12.4%	15.3%
88,367	9.9	13.8	8.9	10.9
44,031	5.3	8.2	6.7	8.2
21,527	2.9	4.2	5.2	6.1
-25,252	-4.2	-0.2	1.7	3.2
Net Farm Income Without Appreciation		Net Farm Income From Operations	Net Income Efficiency	
Per Cow	Per Cwt.	Ratio	Ratio	
(10)	(10)	(CALC)	(CALC)	
\$683	\$3.10	18.7%	19.5%	
445	2.08	13.9	11.4	
367	1.66	11.2	7.1	
234	1.07	7.1	4.9	
58	0.28	1.9	2.5	

## 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

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## Worksheet for Setting Goals (Continued)

## II. Goals

[illegible]

## Summarize Your Business Performance

The Farm Business Charts on pages 27-29 can be used to help identify strengths and weaknesses of your farm business. Identify three major strengths and three areas of your farm business that need improvement.

**Strengths:**

**Needs improvement:**

## GLOSSARY AND LOCATION OF COMMON TERMS

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

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

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

**Accrual Expenses** - (defined on page 6)

**Accrual Receipts** - (defined on page 6)

**Annual Cash Flow Statement** - (defined on page 14)

**Appreciation** - (defined on page 7)

**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 16)

**Cash Paid** - (defined on page 4)

**Cash Receipts** - (defined on page 6)

**Change in Accounts Payable** - (defined on page 6)

**Change in Accounts Receivable** - (defined on page 6)

**Change in Inventory** - (defined on page 4)

**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.

**Current Portion** - (defined on page 9)

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

**Debt to Asset Ratios** - (defined on page 10)

**Deferred Taxes** - (defined on page 9)

**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 16.

**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 equivalent (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 8)

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

**Net Farm Income** - (defined on page 7).

**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 22).

**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.

**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) times 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).

**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 22).

**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 9).

**Return on Total Capital** - (defined on page 9).

**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 22).

**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.

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