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# **DAIRY FARM BUSINESS SUMMARY**

*JULY 2011*

*E.B. 2011-04*

## ***NEW YORK SMALL HERD FARMS, 120 COWS OR FEWER 2010***



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The Dairy Farm Business Summary and Analysis Project is funded in part by:



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**2010 DAIRY FARM BUSINESS SUMMARY**  
**Small Herd Dairy Farms**  
**120 Cows or Fewer**  
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## 2010 DAIRY FARM BUSINESS SUMMARY SMALL HERD DAIRY FARMS\*

### INTRODUCTION

Dairy farm managers 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 their farm business. The information in this report represents averages of the data submitted from dairy farms in New York for 2010 with herds of 120 cows or fewer.

Small farms are facing increasing management challenges in their efforts to control costs and remain profitable. This publication reports the average performance and characteristics of small farms and the average of the top 25 percent of those small farms with the highest rate of return on assets without appreciation. Thus, not only can the average performance of small farms be used as a benchmark, but the performance of the most profitable small farms as well. Identifying strengths and areas for improvement by comparing your business to that of similar farms is an important first step in focusing attention on ways to improve the business.

### **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 business through appropriate use of historical data and the application of modern farm business analysis techniques. This information can also be used to establish goals that enable the business to better fulfill its mission. In short, DFBS provides business and financial information needed in identifying and evaluating strengths and weaknesses of the farm business.

### **Format Features**

This report follows the same general format as the 2010 DFBS individual farm report received by participating dairy farmers. The analysis tables have a column that compares the average to the top 25% of the farms by rate of return on all capital without appreciation. This report may be used by any dairy farm manager who wants to compare his or her business with the average data of small farms. The individual farm data, the averages and other data can then be used to establish goals for the business. Non-DFBS participants can download a DFBS Data Check-in Form at <http://dfbs.cornell.edu>. After collecting the data on the form, it can be entered in the U. S. Top Dairies business summary program at the same web site to obtain a summary of their business.

This report features:

- (1) an income statement including accrual adjustments for farm business expenses and receipts, as well as measures of profitability with and without appreciation,
- (2) a complete balance sheet with analytical ratios;
- (3) a statement of owner equity which shows the sources of the change in owner equity during the year;
- (4) a cash flow statement and debt repayment ability analysis;
- (5) an analysis of crop acreage, yields, and expenses;
- (6) an analysis of dairy livestock numbers, production, and expenses;
- (7) a capital and labor efficiency analysis; and
- (8) progress of the farm business over the past two years.

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\*The small herd summary is comprised of farms with 120 or fewer cows. Many counties had farms that met this criteria in 2010. This report was written by Wayne A. Knoblauch, Professor, Farm Management; Mariane Kiraly, Cooperative Extension Educator in Delaware County; and Jason Karszes, Senior Extension Associate, Pro-Dairy. Linda Putnam was in charge of data preparation. Cathryn Dymond assisted with data and publication preparation.

## PROGRESS OF THE FARM BUSINESS

The year, 2010, was a time of recovery for dairy farmers who experienced the lowest milk prices in many years in 2009. Input costs slowly increased and positive margins were experienced by most. Excellent growing weather made the recovery even better and quality crops went into storage to help mitigate rising purchased grain costs later in the year. Sadly, many farm businesses closed their barn doors unwilling to suffer more losses with finicky milk markets. The stress of 2009 was just too much to bear and as some recovered, they decided to sell out.

A reshuffling of farms in the DFBS resulted in the small farm category being classified as dairy farms 120 cows or less. As a result of using that new group data, farm size increased by 1 cow to 72 and 1 heifer to 60. Milk sold per cow increased 2.1 percent likely due to genetic progress, excellent forage and reasonable purchased feed costs for much of the year. Worker equivalent rose 0.4 percent reflecting the need for more help and the ability to pay for it. Cows per worker stayed the same at 28 and milk sold per worker rose 3.4 percent as a result of good forage and stable feed costs for most of the year.

Hired labor cost per hundredweight dropped 3 percent due to better milk prices and more efficient labor. Hired labor cost per worker fell 12 percent perhaps due to an abundance of cheaper labor resulting from a poor economy and few job openings in other places. Certainly, as milk prices rose, the hired labor cost as a percent of milk sales would fall—and it did by 25 percent.

Higher milk prices affected the grain and concentrate purchased as a percent of milk sales, decreasing from 40 percent to 31 percent of milk sales, a 22.5 percent decrease. This made a huge difference in cash flow as farmers were able to pay off accounts over 30 days and catch up on loan payments. Grain and concentrate per hundredweight of milk remained fairly stable increasing slightly from \$5.47 per hundredweight to \$5.51 per hundredweight. Total farm operating expenses per hundredweight sold increased 2.2 percent from \$15.67 to \$16.02. Interest costs rose slightly, 1.8 percent, likely due to loans from 2009. Milk marketing costs fell slightly by 0.9 percent reflecting lower CWT deductions. The operating cost of producing milk per hundredweight rose 12.7 percent from the austerity of 2009 from \$12.51 to \$14.10 – a more realistic cost where farmers are not trimming every expense at the risk of losing milk or cows.

Farm capital per cow rose 1.4 percent and machinery and equipment per cow was up 3.1 percent with some new investment per replacement of equipment. A 17.2 increase in the asset turnover ratio resulted from a need to replace worn out equipment and maintain facilities since little was spent in 2009.

Gross milk sales per cow rose 32 percent from \$2,698 per cow to \$3,562 per cow due to higher milk prices. Milk sales per hundredweight rose from \$13.72 to \$17.74 per hundredweight, or 29.3 percent. At the same time, beef prices rose continually and that helped generate more cash flow to catch up. Dairy cattle sales per cow went from \$169 to \$210, an increase of 24.3 percent. Calf sales per cow also rose from \$10 to \$36, a 260 percent increase. There was only one MILC payment in 2011 resulting in a decrease of government receipts from \$1.58 per hundredweight to \$0.25 per hundredweight since milk prices were higher than the trigger prices that enable MILC payments.

Net farm income without appreciation rose from a loss of \$4,672 to a gain of \$32,185. Net farm income with appreciation was \$37,972 – a welcome relief from the losses of 2009. Farmers were still in a loss situation with labor and management income per operator of \$-6,189 since higher prices were mitigated by increasing inputs especially later in the year. A negative rate of return of -2.9 percent was an improvement over -9.6 percent of 2009. The rate of return on all capital without appreciation was -1.1 percent. Farm net worth continues to rise (3.3 percent) due to an increase in land values and farm debt per cow fell slightly to \$2,751.

The year, 2010, was a time of recovery for most and the final year for others who exited the dairy industry for good. Milk price variability, high input costs and a need to cover family living and insurance expenses were the factors that farmers looked at when deciding to go out of business. The stress levels of 2009 did not immediately disappear in 2010 due to large open accounts, pressure from bankers or simply pressure to survive.

**PROGRESS OF THE FARM BUSINESS**  
Same 43 Small Herd Dairy Farms, 2009 & 2010

Selected Factors	Average of 43 Farms		Percent Change
	2009	2010	
<u>Size of Business</u>			
Average number of cows	71	72	1.4
Average number of heifers	59	60	1.7
Milk sold, pounds	1,392,667	1,445,304	3.8
Worker equivalent	2.55	2.56	0.4
Total tillable acres	207	207	0
<u>Rates of Production</u>			
Milk sold per cow, pounds	19,673	20,080	2.1
Hay DM per acre, tons	2.2	2.2	0
Corn silage per acre, tons	16.3	16.5	1.2
<u>Labor Efficiency &amp; Costs</u>			
Cows per worker	28	28	0
Milk sold per worker, pounds	546,144	564,572	3.4
Hired labor cost per hundredweight	\$0.99	\$0.96	-3.0
Hired labor cost per worker	\$27,868	\$24,532	-12.0
Hired labor cost as % of milk sales	7.2%	5.4%	-25.0
<u>Cost Control</u>			
Grain & concentrate purchased as % of milk sales	40%	31%	-22.5
Grain & concentrate per hundredweight milk	\$5.47	\$5.51	0.7
Dairy feed & crop expense per cwt. milk	\$6.94	\$6.96	0.3
Labor & machinery costs per cow	\$1,787	\$1,817	1.7
Total farm operating expenses per cwt. sold	\$15.67	\$16.02	2.2
Interest costs per hundredweight milk	\$0.57	\$0.58	1.8
Milk marketing costs per cwt. milk sold	\$1.13	\$1.12	-0.9
Operating cost of producing cwt. of milk	\$12.51	\$14.10	12.7
<u>Capital Efficiency (average for the year)</u>			
Farm capital per cow*	\$11,661	\$11,821	1.4
Machinery & equipment per cow	\$2,322	\$2,394	3.1
Asset turnover ratio*	0.29	0.34	17.2
<u>Income Generation</u>			
Gross milk sales per cow	\$2,698	\$3,562	32.0
Gross milk sales per hundredweight	\$13.72	\$17.74	29.3
Net milk sales per hundredweight	\$12.59	\$16.62	32.0
Dairy cattle sales per cow	\$169	\$210	24.3
Dairy calf sales per cow	\$10	\$36	260.0
Government receipts per hundredweight	\$1.58	\$0.25	-84.2
<u>Profitability</u>			
Net farm income without appreciation	\$-4,672	\$32,185	788.9
Net farm income with appreciation	\$-1,699	\$37,972	2335.0
Labor & management income per oper./manager	\$-33,273	\$-6,189	81.4
Rate of return on equity capital without apprec.	-9.6%	-2.9%	69.8
Rate of return on all capital without appreciation	-6.4%	-1.1%	82.8
<u>Financial Summary</u>			
Farm net worth, end year	\$604,516	\$624,568	3.3
Debt to asset ratio	0.25	0.24	-4.0
Farm debt per cow	\$2,772	\$2,751	-0.8

\*Rented farms are excluded from these factors.

## SUMMARY AND ANALYSIS OF THE FARM BUSINESS

### Business Characteristics

Planning 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. The following table shows important farm business characteristics and the number of farms with each characteristic. Farms with a parlor milking system were eliminated from the small herd (80 or fewer cows) group of dairy farms.

### BUSINESS CHARACTERISTICS 50 Small Herd Dairy Farms, 2010

Type of Farm	Number	Milking System	Number
Dairy	50	Bucket & carry	0
Part-time dairy	0	Dumping station	0
Dairy cash-crop	0	Pipeline	31
Certified organic milk producer	0	Herringbone parlor	10
Rotational grazing farms	14	Other parlor	9
Type of Ownership	Number	Production Records	Number
Owner	46	Testing service	40
Renter	4	On-farm system	2
		Other	0
Type of Business	Number	None	8
Sole Proprietorship	36	Business Record System	Number
Partnership	12	Account Book	13
LLC	2	Accounting Service	10
Type of Barn	Number	On-farm computer	26
Stanchion or Tie-Stall	31	Other	1
Freestall	17	Breed of Herd	Percent
Combination	2	Holstein	85
Milking Frequency	Number	Jersey	4
2 times per day	48	Other	11
3 times per day	1		
Other	1		

### 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 2010.

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.

Change in prepaid expenses (noted by <<) is a net change in non-inventory expenses that have been paid in advance of their use. For example, prepaid lease expense on the beginning of year balance sheet represents last year's payment for use of the asset during this year. End of year prepaid expense represents payments made this year for next year's use of the asset. Adding payments made last year for this year's use of the asset, and subtracting payments made this year for next year's use of the asset is accomplished by subtracting the difference.



**CASH AND ACCRUAL FARM EXPENSES**  
50 Small Herd Dairy Farms, 2010

Expense Item	Cash Paid	-	Change in Inventory or Prepaid Expense	+	Change in Accounts Payable	=	Accrual Expenses
<u>Hired Labor</u>	\$ 12,055		\$ 90	<<	\$ 148		\$ 12,114
<u>Feed</u>							
Dairy grain & concentrate	76,908		684		-643		75,581
Dairy roughage	5,997		-1,090		-46		7,040
Nondairy	229		0		16		245
Professional nutritional services	33		0	<<	0		33
<u>Machinery</u>							
Machinery hire, rent & lease	4,464		90	<<	245		4,619
Machinery repairs & farm vehicle exp.	15,991		126		83		15,947
Fuel, oil & grease	10,989		55		106		11,040
<u>Livestock</u>							
Replacement livestock	1,315		0	<<	0		1315
Breeding	3789		-13		14		3,816
Veterinary & medicine	6590		-10		-243		6,358
Milk marketing	15,548		0	<<	-12		15,536
Bedding	2,761		28		37		2,770
Milking supplies	7,021		26		-47		6,947
Cattle lease & rent	6		0	<<	-6		0
Custom boarding	1,542		0	<<	-23		1,520
bST	609		-29		-12		626
Livestock professional fees	1167		-4	<<	42		1,213
Other livestock expense	3,399		-26		-60		3,365
<u>Crops</u>							
Fertilizer & lime	6,722		41		-35		6,646
Seeds & plants	4,325		533		-94		3,699
Spray, other crop expense	2,543		134		10		2,419
Crop professional fees	102		0	<<	3		105
<u>Real Estate</u>							
Land, building & fence repair	3,483		-67		-100		3,449
Taxes	5,872		-36	<<	338		6,246
Rent & lease	3,229		0	<<	0		3,229
<u>Other</u>							
Insurance	4,410		-41	<<	-47		4,404
Utilities (farm share)	8,960		1	<<	-68		8,891
Interest paid	8,457		0	<<	-107		8,350
Other professional fees	1,150		0	<<	-6		1,144
Miscellaneous	1,391		37		-81		1,273
Total Operating	\$221,057		\$ 530		\$ -587		\$ 219,940
Expansion livestock	1000		0	<<	0		1000
Extraordinary expense	0		0	<<	0		0
Machinery depreciation							14,967
Building depreciation							5,250
<b>TOTAL ACCRUAL EXPENSES</b>							<b>\$ 241,157</b>

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 2010 but not paid for. A decrease is subtracted because it represents payment for resources used before 2010.

Accrual expenses are an estimate of the costs of inputs, except operator/family labor and equity capital, actually used in this year's production. They are the cash paid, less changes in inventory and prepaid expenses, plus accounts payable.

**CASH AND ACCRUAL FARM RECEIPTS**  
50 Small Herd Dairy Farms, 2010

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts
Milk sales	\$ 240,672				\$ 2,089		\$ 242,761
Dairy cattle	11,443		\$ 2,760		126		14,328
Dairy calves	1,497		931		2		2,430
Other livestock	515		-935		71		-349
Crops	3,005		658		-542		3,121
Government receipts	3,166		-102 *		186		3,250
Custom machine work	624				-104		520
Gas tax refund	91				0		91
Other	<u>4,040</u>				<u>-284</u>		3,756
Less nonfarm noncash capital**		(-)	<u>0</u> **			(-)	<u>0</u>
Total Receipts	\$ 265,052		\$ 3,313		\$ 1,544		\$ 269,909

\*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 values 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 increase in advanced government receipts is subtracted from cash income because it represents income received in 2010 for the 2011 crop year in excess of funds earned for 2010. Likewise, a decrease is added to cash government receipts because it represents funds earned for 2010 but received in 2009.

Changes in accounts receivable are calculated by subtracting beginning year balances from end year balances. Payments in January 2011 for milk produced in December 2010 compared to January 2010 payments for milk produced in 2009 are included as a change in accounts receivable in determining accrual milk sales.

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\* 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.

The return to any individual resource must be viewed as an estimate because the cost of other family resources must be approximated to calculate returns to the selected resource. For example, the costs of operator and family labor and management must be approximated to calculate the returns to equity capital.

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\* Operators are the individuals who are integrally involved in the operation and management of the farm business. They are not limited to those who are the owner of a sole proprietorship or are formally a member of the partnership or corporation.

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, and financing 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.

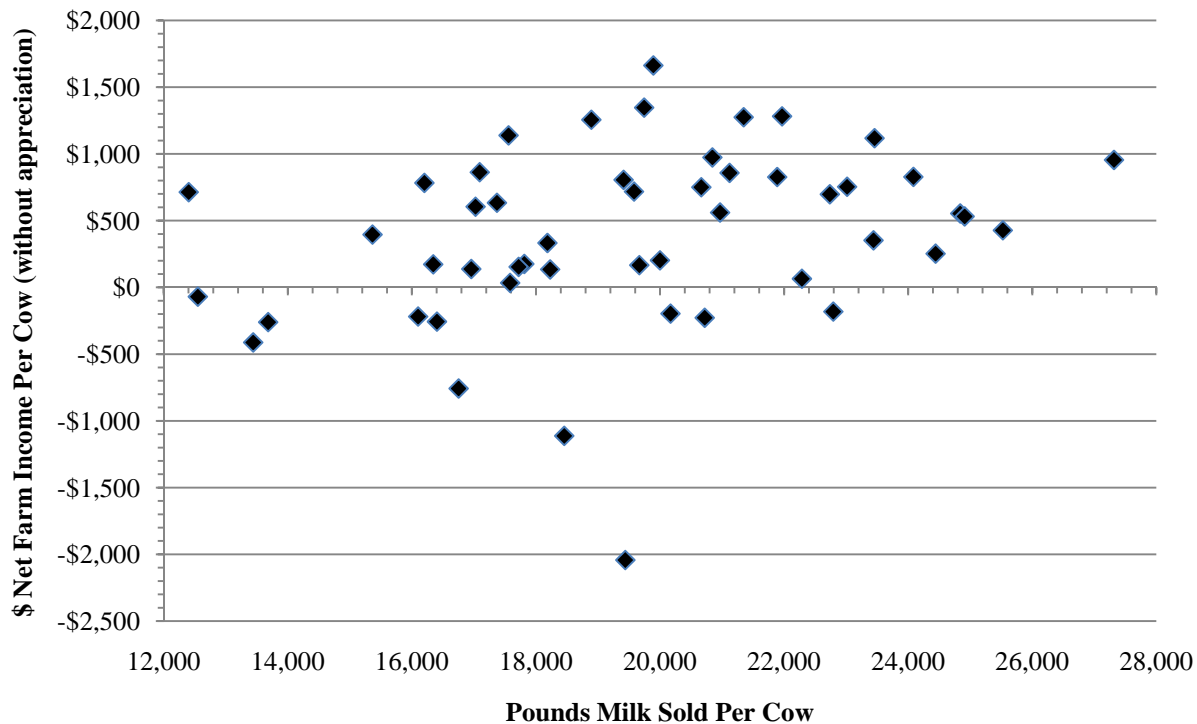
**NET FARM INCOME**  
50 Small Herd Dairy Farms, 2010

Item	Average 50 Farms		Top 25% Farms*	
	Total	Per Cow	Total	Per Cow
Total accrual receipts	\$ 269,909		\$ 334,509	
Appreciation: Livestock	-1,746		-2,615	
Machinery	2,518		353	
Real Estate	4,194		7,646	
Other Stock & Certificates	263		79	
Total Including Appreciation	\$ 275,138		\$ 339,972	
Total accrual expenses	- 241,157		- 262,094	
Net Farm Income (with appreciation)	\$ 33,981	\$ 494	\$ 77,877	\$1,024
Net Farm Income (without appreciation)	\$ 28,753	\$ 417	\$ 72,415	\$ 952

\*Top 25% of small herd farms by rate of return on all assets without appreciation.

The chart below shows the relationship between net farm income per cow (without appreciation) and pounds of milk sold per cow. Higher net farm incomes can be achieved across a range of production levels as a result of different management systems, such as grazing, being utilized by the participating dairies.

**NET FARM INCOME PER COW AND MILK PER COW**  
50 Small Herd Dairy Farms, 2010



Labor and management income is the return which farm operators receive for their labor and management used in 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 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.

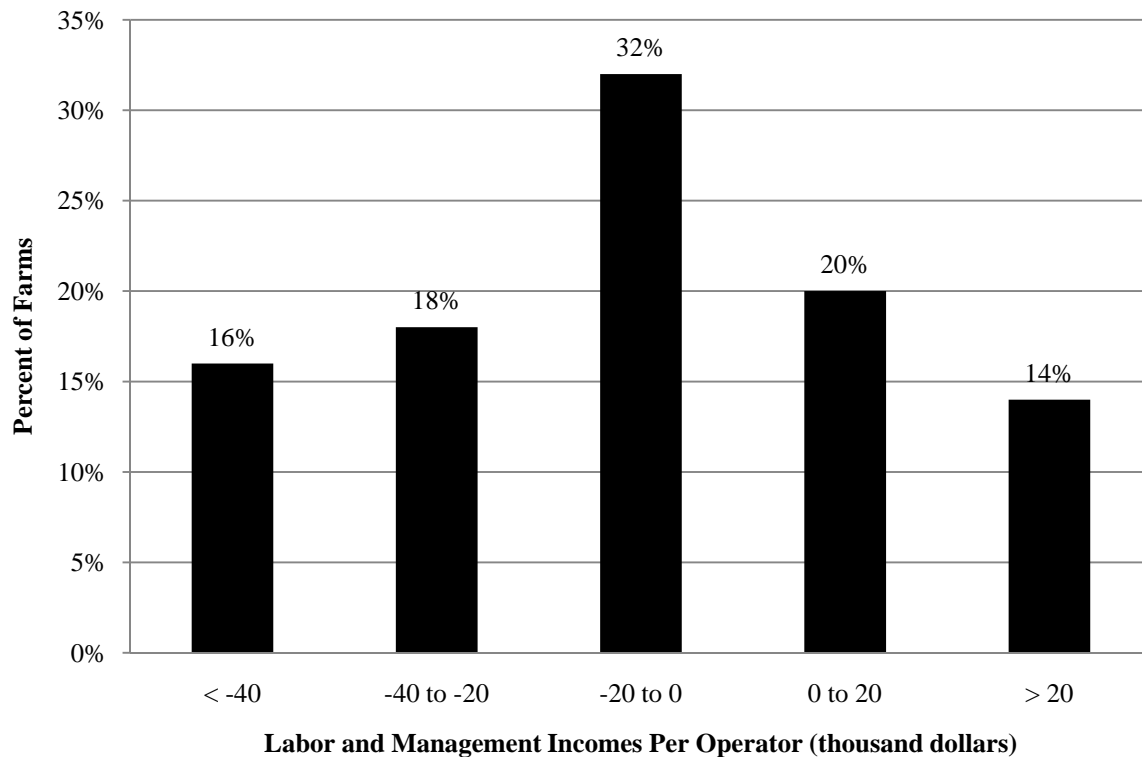
### LABOR AND MANAGEMENT INCOME

50 Small Herd Dairy Farms, 2010

Item	Average 50 Farms	Top 25% Farms
Net farm income without appreciation	\$ 28,753	\$ 72,415
Family labor unpaid @ \$2,500 per month	- 11,070	- 7,231
Interest on \$589,874 average equity capital @ 5% real rate (\$632,184 average equity capital for top 25% farms)	- <u>29,494</u>	- <u>31,609</u>
Labor & Management Income per farm (1.44 Operators/farm) (1.24 operators per farm for top 25% farms)	\$ -11,811	\$ 33,575
Labor & Management Income per Operator/Manager	\$ -8,202	\$ 27,077

Labor and management income per operator averaged \$-8,202 on these 50 farms in 2010. The range in labor and management income per operator was from less than \$-95,300 to more than \$73,500. Returns to labor and management were less than \$-20,000 on 34 percent of the farms. Labor and management incomes per operator were between \$-20,000 and \$0 on 32 percent of the farms while 34 percent had labor and management incomes per operator greater than \$0.

### DISTRIBUTION OF LABOR & MANAGEMENT INCOMES PER OPERATOR 50 Small Herd Dairy Farms, 2010



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. Rate of return on total capital is calculated by adding interest paid to the return on equity capital and then dividing by average farm assets. Net farm income from operations ratio is net farm income (without appreciation) divided by total accrual receipts.

**RETURN ON EQUITY CAPITAL AND RETURN ON TOTAL CAPITAL**  
50 Small Herd Dairy Farms, 2010

Item	Average 50 Farms	Top 25% Farms
Net farm income with appreciation	\$ 33,982	\$ 77,877
Family labor unpaid @ \$2,500 per month	- 11,070	- 7,231
Value of operators' labor & management	- <u>45,976</u>	- <u>42,385</u>
Return on equity capital with appreciation	\$ -23,064	\$ 28,262
Interest paid	+ <u>8,350</u>	+ <u>6,717</u>
Return on total capital with appreciation	\$ -14,714	\$ 34,979
Return on equity capital without appreciation	\$ -28,293	\$ 22,800
Return on total capital without appreciation	\$ -19,943	\$ 29,517
Rate of return on average equity capital:		
with appreciation	-3.9%	4.5%
without appreciation	-4.8%	3.6%
Rate of return on average total capital:		
with appreciation	-1.9%	4.5%
without appreciation	-2.5%	3.8%
Net farm income from operations ratio	0.11	0.22

**Farm and Family Financial Status**

The first step in evaluating the financial position of the farm is to construct a balance sheet which identifies and values 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 2010, lease payments were discounted by 7 percent to obtain their present value.

Advanced government receipts are included as current liabilities. Government payments received in 2010 that are for participation in the 2011 program are the end year balance and payments received in 2009 for participation in the 2010 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.

**2010 FARM BUSINESS & NONFARM BALANCE SHEET**

50 Small Herd Dairy Farms, 2010

Farm Assets			Farm Liabilities & Net Worth		
	Jan. 1	Dec. 31		Jan. 1	Dec. 31
<u>Current</u>			<u>Current</u>		
Farm cash, checking & savings	\$ 4,821	\$ 6,495	Accounts payable	\$ 17,976	\$ 17,389
Accounts receivable	17,858	19,402	Operating debt	6,682	5,876
Prepaid expenses	118	218	Short Term	1,233	1,220
Feed & supplies	51,393	52,481	Advanced govt. receipts	376	477
			Current Portion:		
			Intermediate	13,718	0
			Long Term	<u>3,593</u>	<u>4,167</u>
Total Current	\$ 74,190	\$ 78,595	Total Current	\$ 43,578	\$ 29,130
<u>Intermediate</u>			<u>Intermediate</u>		
Dairy cows:			Structured debt		
owned	\$ 100,303	\$ 100,751	1-10 years	\$ 86,089	\$ 97,795
leased	11	6	Financial lease		
Heifers	52,204	53,511	(cattle/machinery)	935	1,244
Bulls & other livestock	2,873	2,127	Farm Credit stock	<u>410</u>	<u>425</u>
Mach. & equip. owned	160,078	164,457	Total Intermediate	\$ 87,434	\$ 99,464
Mach. & equip. leased	924	1,239			
Farm Credit stock	410	425			
Other stock/certificate	<u>9,027</u>	<u>9,661</u>			
Total Intermediate	\$ 325,829	\$ 332,177			
<u>Long Term</u>			<u>Long Term</u>		
Land & buildings:			Structured debt		
owned	\$ 373,755	\$ 392,867	>10 years	\$ 68,992	\$ 69,069
leased	<u>0</u>	<u>0</u>	Financial lease		
Total Long Term	\$ 373,755	\$ 392,867	(structures)	<u>0</u>	<u>0</u>
			Total Long Term	\$ 68,992	\$ 69,069
Total Farm Assets	\$ 773,774	\$ 803,639	Total Farm Liabilities	\$ 200,003	\$ 197,663
			FARM NET WORTH	\$ 573,771	\$ 605,976

## Nonfarm Assets, Liabilities &amp; Net Worth (Average of 24 farms reporting)

Assets			Liabilities & Net Worth		
	Jan. 1	Dec. 31		Jan. 1	Dec. 31
Personal cash, checking & savings	\$ 16,695	\$ 18,511	Nonfarm Liabilities	\$ 2,514	\$ 2,755
Cash value life insurance	16,677	18,129			
Nonfarm real estate	34,664	35,417			
Auto (personal share)	6,978	6,333			
Stocks & bonds	21,992	24,449			
Household furnishings	10,000	10,042			
All other nonfarm assets	<u>5,405</u>	<u>5,901</u>			
Total Nonfarm Assets	\$112,411	\$118,782	NONFARM NET WORTH	\$109,897	\$116,028

Farm & Nonfarm Assets, Liabilities, and Net Worth*			Jan. 1	Dec. 31
Total Assets			\$ 886,185	\$922,421
Total Liabilities			<u>202,517</u>	<u>200,418</u>
TOTAL FARM & NONFARM NET WORTH			\$ 683,668	\$722,003

\*Assumes that average nonfarm assets and liabilities for the nonreporting farms were the same as for those reporting.

Balance sheet analysis involves examination of relative asset and debt levels for the business. Percent equity is calculated by dividing end of year net worth by end of year assets and multiplying by 100. The debt to asset ratio is compiled by dividing liabilities by assets. Low debt to asset ratios reflect business solvency and the potential capacity to borrow. The leverage ratio is the dollar of debt per dollar of equity, computed by dividing total farm liabilities by farm net worth. Debt levels per productive unit represent old standards that are still useful if used with measures of cash flow and repayment ability. A current ratio of less than 1.5 or that has been falling warrants additional evaluation. The amount of working capital that is adequate must be related to the size of the farm business.

**BALANCE SHEET ANALYSIS**  
50 Small Herd Dairy Farms, 2010

Item	Average 50 Farms		Top 25% Farm	
<u>Financial Ratios - Farm:</u>				
Percent equity		75%		82%
Debt/asset ratio: total		0.25		0.18
long-term		0.18		0.06
intermediate/current		0.31		0.26
Leverage ratio		0.33		0.21
Current ratio		2.86		2.48
Working capital	\$51,134	As % of total Expenses:	\$53,460	20%
<u>Farm Debt Analysis:</u>				
Accounts payable as % of total debt		9%		5%
Long-term liabilities as a % of total debt		35%		14%
Current & intermediate liabilities as a % of total debt		65%		86%
Cost of term debt (weighted average)		9.2%		3.5%
<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	\$2,828	\$1,804	\$1,824	\$1,386
Long-term debt	988	630	252	191
Intermediate & long term	2,435	1,553	1,353	1,028
Intermediate & current debt	1,840	1,173	1,572	1,194

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**  
50 Small Herd Dairy Farms, 2010

Item	Average 50 Farms	
	<u>Real Estate</u>	<u>Machinery &amp; Equipment</u>
Value beginning of year	\$ 373,755	\$ 160,078
Purchases	\$ 5,579*	\$ 16,965
Gift & inheritance	+ 17,120	+ 200
Lost capital	- 2,531	
Sales	- 0	- 337
Depreciation	- 5,250	- 14,967
Net investment	= 14,918	= 1,861
Appreciation	+ 4,194	+ 2,518
Value end of year	\$ 392,867	\$ 164,457

\*\$225 land and \$5,353 buildings and/or depreciable improvements.

The Statement of Owner Equity has two purposes. It allows (1) verification that the accrual income statement and market value balance sheet are 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) , (3) increases or decreases in the value (price) of assets owned by the business (called change in valuation equity), and (4) the error in the business cash flow accounting.

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

**STATEMENT OF OWNER EQUITY (RECONCILIATION)**  
50 Small Herd Dairy Farms, 2010

Item	Average 50 Farms	Top 25% Farms
Beginning of year farm net worth	\$573,771	\$ 614,289
Net farm income without appreciation	\$ 28,753	\$ 72,415
+Nonfarm cash income	+ 12,667	+ 4,155
-Personal withdrawals & family expenditures excluding nonfarm borrowings	- 36,255	- 54,974
RETAINED EARNINGS	+ \$ 5,164	+\$ 21,596
Nonfarm noncash transfers to farm	\$ 17,320	\$ 0
+Cash used in business from nonfarm capital	+ 6,042	+ 11,950
-Note or mortgage from farm real estate sold (nonfarm)	- 0	- 0
CONTRIBUTED/WITHDRAWN CAPITAL	+ \$ 23,362	+\$ 11,950
Appreciation	\$ 5,229	\$ 5,462
-Lost capital	- 2,531	- 2,683
CHANGE IN VALUATION EQUITY	+ \$ 2,698	+\$ 2,779
IMBALANCE/ERROR	- \$ -981	- \$ 535
End of year net worth*	= \$ 605,976	=\$ 650,080
<u>Change in Net Worth</u>		
Without appreciation	\$ 26,976	\$30,328
With appreciation	\$ 32,205	\$35,790

\*May not add to total 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**  
50 Small Herd Dairy Farms, 2010

Item	Average 50 Farms	
<b><u>Cash Flow from Operating Activities</u></b>		
Cash farm receipts	\$ 265,052	
- Cash farm expenses	221,057	
- Extraordinary expense	<u>0</u>	
= Net cash farm income		\$ 43,996
Personal withdrawals & family expenses including nonfarm debt payments	\$ 36,669	
- Nonfarm income	<u>12,667</u>	
- Net cash withdrawals from the farm		<u>\$ 24,002</u>
= Net Provided by Operating Activities		\$ 19,994
<b><u>Cash Flow From Investing Activities</u></b>		
Sale of assets: machinery	\$ 337	
+ real estate	0	
+ other stock & cert.	<u>229</u>	
= Total asset sales		\$ 566
Capital purchases: expansion livestock	\$ 1,000	
+ machinery	16,965	
+ real estate	5,579	
+ other stock & cert.	<u>600</u>	
- Total invested in farm assets		<u>\$ 24,144</u>
= Net Provided by Investment Activities		\$ -23,578
<b><u>Cash Flow From Financing Activities</u></b>		
Money borrowed (intermediate & long term)	\$ 25,819	
+ Money borrowed (short term)	1,112	
+ Increase in operating debt	0	
+ Cash from nonfarm capital used in business	6,042	
+ Money borrowed - nonfarm	<u>414</u>	
= Cash inflow from financing		\$ 33,387
Principal payments (intermediate & long term)	\$ 27,179	
+ Principal payments (short term)	1,124	
+ Decrease in operating debt	<u>806</u>	
- Cash outflow for financing		<u>\$ 29,109</u>
= Net Provided by Financing Activities		\$ 4,277
<b><u>Cash Flow From Reserves</u></b>		
Beginning farm cash, checking & savings		\$ 4,821
- Ending farm cash, checking & savings		<u>6,495</u>
= Net Provided from Reserves		\$ -1,674
Imbalance (error)		<u>\$ -981</u>

**ANNUAL CASH FLOW STATEMENT**  
Top 25% Small Herd Dairy Farms, 2010

Item	Top 25% Farms	
<u>Cash Flow from Operating Activities</u>		
Cash farm receipts	\$ 325,115	
- Cash farm expenses	246,709	
- Extraordinary expense	<u>0</u>	
= Net cash farm income		\$ 78,406
Personal withdrawals & family expenses including nonfarm debt payments	\$ 56,372	
- Nonfarm income	<u>4,155</u>	
- Net cash withdrawals from the farm		\$ <u>52,217</u>
= Net Provided by Operating Activities		\$ 26,189
<u>Cash Flow From Investing Activities</u>		
Sale of assets: machinery	\$ 31	
+ real estate	0	
+ other stock & cert.	<u>58</u>	
= Total asset sales		\$ 89
Capital purchases: expansion livestock	\$ 238	
+ machinery	23,387	
+ real estate	4,966	
+ other stock & cert.	<u>23</u>	
- Total invested in farm assets		\$ <u>28,614</u>
= Net Provided by Investment Activities		\$ -28,525
<u>Cash Flow From Financing Activities</u>		
Money borrowed (intermediate & long term)	\$ 30,779	
+ Money borrowed (short term)	0	
+ Increase in operating debt	0	
+ Cash from nonfarm capital used in business	11,950	
+ Money borrowed - nonfarm	<u>1,398</u>	
= Cash inflow from financing		\$ 44,127
Principal payments (intermediate & long term)	\$ 31,189	
+ Principal payments (short term)	1,467	
+ Decrease in operating debt	<u>5,330</u>	
- Cash outflow for financing		\$ <u>37,986</u>
= Net Provided by Financing Activities		\$ 6,141
<u>Cash Flow From Reserves</u>		
Beginning farm cash, checking & savings		\$ 8,773
- Ending farm cash, checking & savings		<u>12,043</u>
= Net Provided from Reserves		\$ -3,270
Imbalance (error)		\$ 535

## 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 2011. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 2011 debt payments shown below.

### FARM DEBT PAYMENTS PLANNED

Small Herd Dairy Farms, 2009 & 2010

Debt Payments	Same 43 Dairy Farms			Same 13 Top 25% Farms		
	2010 Payments		Planned 2011	2010 Payments		Planned 2011
	Planned	Made		Planned	Made	
Long-term	\$ 7,067	\$ 9,189	\$ 6,764	\$ 7,003	\$ 13,767	\$ 3,894
Intermediate-term	21,295	25,713	21,918	19,916	23,194	22,644
Short-term	773	1,322	681	1,478	1,474	316
Operating (net reduction)	516	3,253	633	1,154	7,194	0
Accounts payable (net reduction)	337	3,927	0	1,114	4,760	0
Total	\$ 29,988	\$ 43,405	\$ 29,996	\$ 30,665	\$ 50,390	\$ 26,854
Per cow	\$ 417	\$ 603		\$ 403	\$ 662	
Per cwt. 2010 milk	\$ 2.07	\$ 3.00		\$ 1.84	\$ 3.02	
Percent of total 2010 receipts	11%	15%		9%	15%	
Percent of 2010 milk receipts	12%	17%		10%	17%	

The cash flow coverage ratio and debt coverage ratio measure the ability of the farm business to meet its planned debt payments schedule. The ratios show the percentage of payments planned for 2010 (as of December 31, 2009) that could have been made with the amount available for debt service in 2010. Farmers who did not participate in DFBS in 2009 have their 2010 cash flow coverage ratio based on planned debt payments for 2011.

### COVERAGE RATIOS

Same 43 Small Herd Dairy Farms, 2009 & 2010

Item	Average	Item	Average
<u>Cash Flow Coverage Ratio</u>		<u>Debt Coverage Ratio</u>	
Cash farm receipts	\$281,023	Net farm income (without appreciation)	\$32,185
- Cash farm expenses	232,104	+ Depreciation	20,490
+ Interest paid (cash)	8,371	+ Interest paid (accrual)	8,422
- Net personal withdrawals from farm*	<u>26,378</u>	- Net personal withdrawals from farm*	<u>26,378</u>
(A) = Amount Available for Debt Service	\$ 30,913	(A') = Repayment Capacity	\$34,720
(B) = Debt Payments Planned for 2010 (as of December 31, 2009)	\$ 29,988	(B) = Debt Payments Planned for 2010 (as of December 31, 2009)	\$29,988
(A/B)= Cash Flow Coverage Ratio for 2010	1.03	(A'/B)= Debt Coverage Ratio for 2010	1.16
-----			
Same 13 Top 25% Dairy Farms, 2009 & 2010			
(A) = Amount Available for Debt Service	\$34,600	(A') = Repayment Capacity	\$47,675
(B) = Debt Payments Planned for 2010	\$30,665	(B) = Debt Payments Planned for 2010	\$30,665
(A/B)= Cash Flow Coverage Ratio for 2010	1.13	(A'/B)= Debt Coverage Ratio for 2010	1.55

\*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**  
50 Small Herd Dairy Farms, 2010

Item	Average 50 Farms		
	Per Cow	Per Cwt.	Total
Number cows and cwt. milk	69	13,709	
<u>Accrual Operating Receipts</u>			
Milk	\$3,524	\$17.71	\$242,761
Dairy cattle	208	1.05	14,328
Dairy calves	35	0.18	2,430
Other livestock	-5	-0.03	-349
Crops	45	0.23	3,121
Miscellaneous receipts	<u>111</u>	<u>0.56</u>	<u>7,618</u>
Total	\$3,919	\$19.69	\$269,909
<u>Accrual Operating Expenses</u>			
Hired labor	\$ 176	\$ 0.88	\$ 12,114
Dairy grain & concentrate	1,097	5.51	75,581
Dairy roughage	102	0.51	7,040
Nondairy feed	4	0.02	245
Professional nutritional services	1	0.00	33
Machinery hire/rent/lease	67	0.34	4,619
Machinery repair & farm vehicle expense	232	1.16	15,947
Fuel, oil & grease	160	0.81	11,040
Replacement livestock	19	0.10	1,315
Breeding	55	0.28	3,816
Veterinary & medicine	92	0.46	6,358
Milk marketing	226	1.13	15,536
Bedding	40	0.20	2,770
Milking supplies	101	0.51	6,947
Cattle lease	0	0.00	0
Custom boarding	22	0.11	1,520
bST expense	9	0.05	626
Livestock professional fees	18	0.09	1,213
Other livestock expense	49	0.25	3,365
Fertilizer & lime	96	0.48	6,646
Seeds & plants	54	0.27	3,699
Spray & other crop expenses	35	0.18	2,419
Crop professional fees	2	0.01	105
Land, building, fence repair	50	0.25	3,449
Taxes	91	0.46	6,246
Real estate rent/lease	47	0.24	3,229
Insurance	64	0.32	4,404
Utilities	129	0.65	8,891
Miscellaneous	<u>35</u>	<u>0.17</u>	<u>2,417</u>
Total Less Interest Paid	\$3,072	\$15.43	\$211,589
<u>Net Accrual Operating Income (without interest paid)</u>	\$ 847	\$ 4.25	\$ 58,320
- Change in livestock/crop inventory*	48	0.24	3,313
- Change in accounts receivable	22	0.11	1,544
- Change in feed/supply inventory**	8	0.04	530
+ Change in accts. payable***	<u>-7</u>	<u>-0.04</u>	<u>-480</u>
NET CASH FLOW	\$ 762	\$ 3.83	\$ 52,453
- Net personal withdrawals from farm (see footnote on p. 15)	<u>320</u>	<u>1.61</u>	<u>22,014</u>
Available for Farm Debt Payments & Investments	\$ 442	\$ 2.22	\$ 30,440
- Farm debt payments	<u>615</u>	<u>3.09</u>	<u>42,346</u>
Available for Farm Investment	\$ -173	\$-0.87	\$-11,906
- Capital purchases: cattle, machinery & improvements	<u>351</u>	<u>1.76</u>	<u>24,144</u>
Additional Capital Needed	\$ 523	\$ 2.63	\$ 36,050

\*Includes change in advance government receipts. \*\*Includes change in prepaid expenses.

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

**ANNUAL CASH FLOW WORKSHEET**

Top 25% Small Herd Dairy Farms, 2010

Item	Average Top 25% Farms		
	Per Cow	Per Cwt.	Total
Number of cows or cwt. milk	76	16,705	
<u>Accrual Operating Receipts</u>			
Milk	\$3,890	\$17.72	\$295,972
Dairy cattle	268	1.22	20,371
Dairy calves	50	0.23	3,819
Other livestock	1	0.00	39
Crops	47	0.21	3,549
Miscellaneous receipts	<u>141</u>	<u>0.64</u>	<u>10,760</u>
Total	\$4,397	\$20.02	\$334,509
<u>Accrual Operating Expenses</u>			
Hired labor	\$ 263	\$ 1.20	\$ 19,995
Dairy grain & concentrate	1,106	5.04	84,127
Dairy roughage	114	0.52	8,657
Nondairy feed	0	0.00	24
Professional nutritional services	0	0.00	0
Machinery hire/rent/lease	30	0.14	2,316
Machinery repair & farm vehicle expense	195	0.89	14,858
Fuel, oil & grease	164	0.75	12,491
Replacement livestock	16	0.07	1,246
Breeding	64	0.29	4,900
Veterinary & medicine	86	0.39	6,539
Milk marketing	240	1.09	18,280
Bedding	26	0.12	2,014
Milking supplies	103	0.47	7,850
Cattle lease	0	0.00	0
Custom boarding	48	0.22	3,615
bST expense	13	0.06	966
Livestock professional fees	17	0.08	1,299
Other livestock expense	47	0.21	3,580
Fertilizer & lime	103	0.47	7,858
Seeds & plants	41	0.19	3,144
Spray & other crop expenses	35	0.16	2,657
Crop professional fees	1	0.01	102
Land, building, fence repair	48	0.22	3,673
Taxes	75	0.34	5,714
Real estate rent/lease	46	0.21	3,528
Insurance	56	0.26	4,284
Utilities	117	0.53	8,904
Miscellaneous	<u>45</u>	<u>0.21</u>	<u>3,454</u>
Total Less Interest Paid	\$3,103	\$14.13	\$236,073
<u>Net Accrual Operating Income (without interest paid)</u>	\$1,294	\$ 5.89	\$ 98,436
- Change in livestock/crop inventory*	82	0.37	6,250
- Change in accounts receivable	41	0.19	3,145
- Change in feed/supply inventory**	12	0.05	901
+ Change in accounts payable***	<u>-40</u>	<u>-0.18</u>	<u>-3,017</u>
NET CASH FLOW	\$1,119	\$ 5.10	\$ 85,123
- Net personal withdrawals from farm (see footnote p.15)	<u>664</u>	<u>3.02</u>	<u>50,523</u>
Available for Farm Debt Payments & Investments	\$ 455	\$ 2.07	\$ 34,600
- Farm debt payments	<u>662</u>	<u>3.02</u>	<u>50,390</u>
Available for Farm Investment	\$ -208	\$-0.95	\$ -15,789
- Capital purchases: cattle, machinery & improvements	<u>376</u>	<u>1.71</u>	<u>28,614</u>
Additional Capital Needed	\$ 584	\$ 2.66	\$ 44,403

\*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, the level of crop yields, and what it costs to produce crops is important in evaluating alternative cropping and feed purchasing alternatives.

### LAND RESOURCES AND CROP PRODUCTION

50 Small Herd Dairy Farms, 2010

Item	Average 50 Farms			Top 25% Farm		
<u>Land</u>	<u>Owned</u>	<u>Rented</u>	<u>Total</u>	<u>Owned</u>	<u>Rented</u>	<u>Total</u>
Tillable	110	88	198	101	91	192
Nontillable	38	17	55	35	12	47
Other nontillable	75	10	85	87	0	87
Total	223	115	338	222	103	325
<u>Crop Yields</u>	<u>Farms</u>	<u>Acres*</u>	<u>Production/Acre</u>	<u>Farms</u>	<u>Acres</u>	<u>Production/Acre</u>
Hay crop	44	153	2.23 tn DM	12	140	2.29 tn DM
Corn silage	39	46	16.46 tn	10	37	17.72 tn
			5.70 tn DM			5.98 tn DM
Other forage	6	19	2.28 tn DM	2	20	2.08 tn DM
Total forage	45	192	2.95 tn DM	12	174	2.95 tn DM
Corn grain	10	30	123 bu	2	35	103 bu
Oats	6	19	44 bu	0	0	0 bu
Wheat	0	0	0 bu	0	0	0 bu
Other crops	8	22		2	25	
Tillable pasture	12	44		4	66	
Idle	7	14		0	0	
Total Tillable Acres	50	198		13	192	

\*This column represents the average acreage for the farms producing that crop. Average acreages including those farms not producing were hay crop 135, corn silage 36, corn grain 6, oats 2, tillable pasture 10, and idle 2.

Average crop acres and yields 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

45 Small Herd Dairy Farms, 2010\*\*

Item	Average 45 Farms	Top 25% Farm
Total tillable acres per cow	3.12	2.81
Total forage acres per cow	2.75	2.37
Harvested forage dry matter, tons per cow	8.13	6.98

\*\*Excludes farms that do not harvest forages.

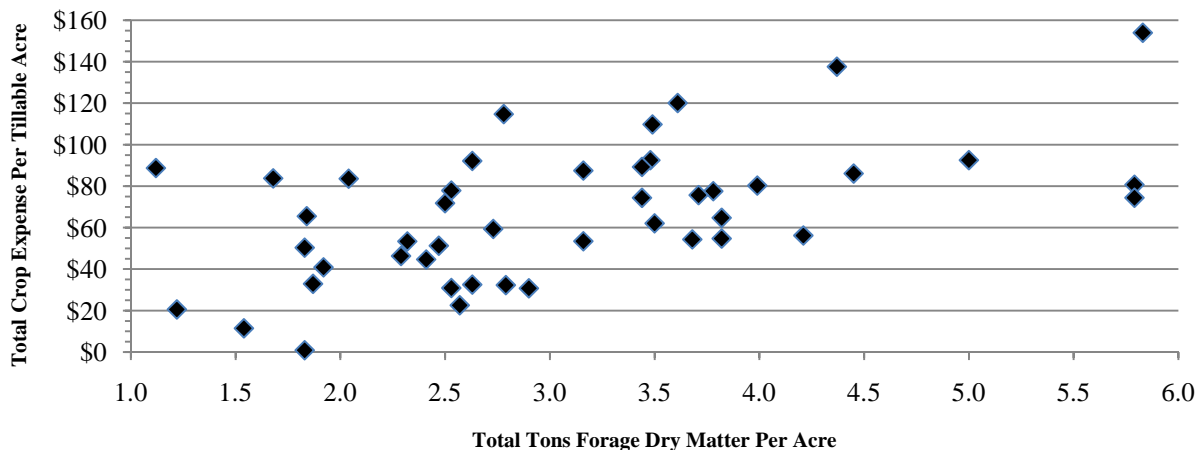
**Cropping Analysis** (continued)

Crop input costs per tillable acre are reported in the table below. The chart below shows the relationship between total forage dry matter per acre and total crop input costs. Intensive grazing was used on 14 farms, 5 of which are in the "top 25% farms" group.

**CROP RELATED ACCRUAL EXPENSES**  
Small Herd Dairy Farms Reporting Forage Production, 2010

Item	Average 45 farms		Top 25% Farms	
	Total Per Tillable Acre			
Number of farms reporting	45		12	
Average number of acres	218		206	
Fertilizer & lime expenses	\$	33.17	\$	40.76
Seeds & plants		19.75		17.66
Spray & other crop expenses		<u>14.12</u>		<u>15.90</u>
TOTAL	\$	67.04	\$	74.32

**CROP EXPENSE PER ACRE AND TOTAL FORGE PRODUCTION PER ACRE**  
45 Small Herd Farms That Grow Forages, 2010



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

**ACCRUAL MACHINERY EXPENSES**  
45 Small Herd Dairy Farms That Grow Forages, 2010

Machinery Expense	Average 45 Farms		Top 25% Farms	
	Total Expenses	Per Tillable Acre	Total Expenses	Per Tillable Acre
Fuel, oil & grease	\$ 11,593	\$ 53.19	\$ 12,768	\$ 61.85
Machinery repair & vehicle expense	16,696	76.60	15,396	74.59
Machine hire, rent & lease	4,594	21.08	1,964	9.52
Interest (5%)	8,840	40.56	9,491	45.98
Depreciation	<u>15,971</u>	<u>73.27</u>	<u>14,223</u>	<u>68.90</u>
Total	\$ 57,693	\$ 264.70	\$ 53,842	\$ 260.84

**Dairy Analysis**

Analysis of the dairy enterprise can reveal 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 8 and 9.

**DAIRY HERD INVENTORY**  
50 Small Herd Dairy Farms, 2010

Item	Dairy Cows		Heifer					
	No.	Value	Bred		Open		Calves	
			No.	Value	No.	Value	No.	Value
<u>Average 50 Farms:</u>								
Beg. year (owned)	68	\$ 100,303	18	\$ 25,294	22	\$ 18,997	15	\$ 7,913
+ Change w/o apprec.		1,609		2,605		-1,454		931
+ Appreciation		<u>-1,160</u>		<u>-322</u>		<u>-100</u>		<u>-353</u>
End year (owned)	69	\$ 100,751	20	\$ 27,576	21	\$ 17,443	17	\$ 8,492
End including leased	70							
Average number	69		56	(all age groups)				
<u>Top 25% Farms:</u>								
Beg. year (owned)	75	\$115,154	22	\$ 30,844	20	\$ 18,703	19	\$ 12,336
+ Change w/o apprec.		1,085		4,703		-2,538		2,240
+ Appreciation		<u>-1,188</u>		<u>-519</u>		<u>-123</u>		<u>-785</u>
End year (owned)	76	\$ 115,050	25	\$ 35,029	17	\$ 16,042	22	\$ 13,792
End including leased	77							
Average number	76		63	(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**  
50 Small Herd Dairy Farms, 2010

Item	Average 50 Farms	Top 25% Farms
Total milk sold, lbs.	1,370,896	1,670,534
Milk sold per cow, lbs.	19,903	21,958
Average milk plant test, percent butterfat (average of farms reporting)	3.77	3.67

Monitoring and evaluating culling practices and experiences on an annual basis are important herd management tools. Culling rate can have an affect on both milk per cow and profitability.

**ANIMALS LEAVING THE HERD**  
50 Small Herd Dairy Farms, 2010

Item	Average 50 Farms		Top 25% Farms	
	Number	Percent*	Number	Percent*
Cows sold for beef	17	24.3	22	28.6
Cows sold for dairy	1	1.8	2	3.0
Cows died	4	5.5	3	3.3
Culling rate**		30.0		32.0

\*Percent of average number of cows in the herd.

\*\*Cows sold for beef plus cows died.



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, COSTS OF PRODUCING MILK,  
AND PROFITABILITY**  
50 Small Herd Dairy Farms, 2010

Item	Average 50 Farms			Top 25% Farms		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
<u>Accrual Cost of Producing Milk</u>						
Operating costs	\$ 193,792	\$ 2,813	\$ 14.14	\$ 204,491	\$ 2,688	\$ 12.24
Purchased inputs costs	\$ 214,008	\$ 3,107	\$ 15.61	\$ 223,556	\$ 2,938	\$ 13.38
Total costs	\$ 300,548	\$ 4,363	\$ 21.92	\$ 304,781	\$ 4,006	\$ 18.24
<u>Accrual Receipts From Milk</u>						
Net Milk Receipts	\$ 242,761	\$ 3,524	\$ 17.71	\$ 295,972	\$ 3,890	\$ 17.72
Net Farm Income without Appreciation	\$ 227,225	\$ 3,299	\$ 16.57	\$ 277,691	\$ 3,650	\$ 16.62
Net Farm Income with Appreciation	\$ 28,753	\$ 417	\$ 2.10	\$ 72,415	\$ 952	\$ 4.33
Net Farm Income with Appreciation	\$ 33,982	\$ 493	\$ 2.48	\$ 77,877	\$ 1,024	\$ 4.66

The accrual operating expenses most commonly associated with the dairy enterprise are listed in the table below. Feed and crop expenses include total purchased dairy feed plus fertilizer, seeds, spray and other crop expenses.

**DAIRY RELATED ACCRUAL EXPENSES**  
50 Small Herd Dairy Farms, 2010

Item	Average 50 Farms		Top 25% Farms	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purchased dairy grain & concentrate	\$ 1,097	\$ 5.51	\$ 1,106	\$ 5.04
Purchased dairy roughage	102	0.51	114	0.52
Total Purchased Dairy Feed	\$ 1,200	\$ 6.03	\$ 1,220	\$ 5.55
Purchased grain & conc. as % of milk receipts		31%		28%
Purchased feed & crop expense	\$ 1,386	\$ 6.97	\$ 1,400	\$ 6.38
Purchased feed & crop expense as % of milk receipts		39%		35%
Breeding	\$ 55	\$ 0.28	\$ 64	\$ 0.29
Veterinary & medicine	92	0.46	86	0.39
Milk marketing	226	1.13	240	1.09
Bedding	40	0.20	26	0.12
Milking supplies	101	0.51	103	0.47
Cattle lease	0	0.00	0	0.00
Custom boarding	22	0.11	48	0.22
bST	9	0.05	13	0.06
Livestock professional fees	18	0.09	17	0.08
Other livestock expense	49	0.25	47	0.21

**Capital and Labor Efficiency Analysis**

Capital efficiency factors measure how effectively 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**  
50 Small Herd Dairy Farms, 2010

Item	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
<u>Average 50 Farms:</u>				
Farm capital*	\$318,027	\$11,450	\$3,993	\$7,196
Real estate*		5,565		3,497
Machinery & equipment	65,867	2,372	827	
<u>Ratios</u>				
Asset turnover*	Operating Expense 0.35	Interest Expense 0.79	Depreciation Expense 0.03	0.07
<u>Top 25% Farms:</u>				
Farm capital*	\$330,621	\$ 10,212	\$4,052	\$7,710
Real estate*		4,286		3,236
Machinery & equipment	76,281	2,356	935	
<u>Ratios</u>				
Asset turnover*	Operating Expense 0.44	Interest Expense 0.71	Depreciation Expense 0.02	0.06

\*Excludes rented farms.

**LABOR FORCE INVENTORY AND ANALYSIS**  
50 Small Herd Dairy Farms, 2010

Labor Force	Months	Age	Years of Education	Value of Labor & Management
<u>Average 50 Farms:</u>				
Operator number 1	13.3	49	14	\$ 31,912
Operator number 2	5.1	45	14	12,454
Operator number 3	1.0	47	12	1,610
Family paid	1.7			
Family unpaid	4.4			
Hired	<u>4.2</u>			
Total	29.7	/ 12 = 2.48 Worker Equivalent 1.44 Operator/Manager Equivalent		
<u>Top 25% Farms:</u> Total	28.2	/ 12 = 2.35 Worker Equivalent 1.24 Operator/Manager Equivalent		
Operator's				

Labor Efficiency	Average 50 Farms		Top 25% Farms	
	Total	Per Worker	Total	Per Worker
Cows, average number	69	28	76	32
Milk sold, pounds	1,370,896	553,525	1,670,534	711,875
Tillable acres	198	80	192	82

Labor Costs	Average 50 Farms			Top 25% Farms		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Value of operator(s)						
labor (\$2,500/month)	\$48,525	\$ 704	\$ 3.54	\$41,150	\$ 541	\$ 2.46
Family unpaid (\$2,500/month)	11,075	161	0.81	7,225	95	0.43
Hired	<u>12,114</u>	<u>176</u>	<u>0.88</u>	<u>19,995</u>	<u>263</u>	<u>1.20</u>
Total Labor	\$71,714	\$ 1,041	\$ 5.23	\$68,370	\$ 899	\$ 4.09
Machinery Cost	<u>\$54,740</u>	<u>\$ 795</u>	<u>\$ 3.99</u>	<u>\$52,368</u>	<u>\$ 688</u>	<u>\$ 3.13</u>
Total Labor & Machinery	\$126,454	\$ 1,836	\$ 9.22	\$120,738	\$ 1,587	\$ 7.23
Hired labor expense per hired worker equivalent		\$24,721			\$27,235	
Hired labor expense as % of milk sales		5.0%			6.8%	

## COMPARATIVE ANALYSIS OF THE FARM BUSINESS

### Comparison to Top 25 Percent

Comparing your business with average data from DFBS cooperators that participated in both of the last two years can be helpful in establishing your goals for these parameters. Both the average of the same 43 farms and the top 25% of farms based on rate of return of all assets without appreciation are presented below. 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.

### PROGRESS OF THE FARM BUSINESS Same 43 Small Herd Dairy Farms, 2009 & 2010

Selected Factors	Average of Same 43 Farms*		Average of Same 13 Top 25% Farms*	
	2009	2010	2009	2010
<u>Size of Business</u>				
Average number of cows	71	72	74	76
Average number of heifers	59	60	61	63
Milk sold, lbs.	1,392,667	1,445,304	1,591,830	1,670,534
Worker equivalent	2.55	2.56	2.27	2.35
Total tillable acres	207	207	205	192
<u>Rates of Production</u>				
Milk sold per cow, lbs.	19,673	20,080	21,556	21,958
Hay DM per acre, tons	2.2	2.2	2.2	2.3
Corn silage per acre, tons	16.3	16.5	15.1	17.7
<u>Labor Efficiency</u>				
Cows per worker	28	28	33	32
Milk sold/worker, lbs.	546,144	564,572	701,247	710,866
<u>Cost Control</u>				
Grain & concentrate purchased as % of milk sales	40%	31%	39%	28%
Dairy feed & crop expense per cwt. milk	\$ 6.94	\$ 6.96	\$ 6.87	\$ 6.38
Labor & machinery costs/cow	\$ 1,787	\$ 1,817	\$ 1,620	\$ 1,587
Operating cost of producing cwt. of milk	\$ 12.51	\$ 14.10	\$ 12.17	\$ 12.24
<u>Capital Efficiency**</u>				
Farm capital per cow***	\$ 11,661	\$ 11,821	\$ 10,248	\$ 10,212
Machinery & equipment per cow	\$ 2,322	\$ 2,394	\$ 2,301	\$ 2,356
Asset turnover ratio***	0.29	0.34	0.36	0.44
<u>Profitability</u>				
Net farm income w/o appreciation	\$ -4,672	\$ 32,185	\$ 5,789	\$ 72,415
Net farm income with appreciation	\$ -1,699	\$ 37,972	\$ 6,979	\$ 77,877
Labor & management income per operator/manager	\$ -33,273	\$ -6,189	\$ -27,037	\$ 27,077
Rate of return on equity capital with appreciation	-9.6%	-2.9%	-7.3%	4.5%
Rate of return on all capital with appreciation	-6.4%	-1.1%	-4.9%	4.5%
<u>Financial Summary</u>				
Farm net worth, end year	\$604,516	\$624,568	\$ 608,721	\$ 650,080
Debt to asset ratio	0.25	0.24	0.20	0.18
Farm debt per cow	\$ 2,772	\$ 2,751	\$ 1,947	\$ 1,824

\*Farms participating both years. \*\*Average for the year. \*\*\*Excludes rented farms.

**RECEIPTS AND EXPENSES PER COW AND PER CWT.**

Same 43 Small Herd Dairy Farms, 2009 &amp; 2010

Item	2009		2010	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	71		72	
Cwt. of Milk Sold		13,927		14,453
<b><u>ACCRUAL OPERATING RECEIPTS</u></b>				
Milk	\$2,698	\$13.72	\$3,562	\$17.74
Dairy cattle	169	0.86	210	1.05
Dairy calves	10	0.05	36	0.18
Other livestock	13	0.06	-6	-0.03
Crops	40	0.20	50	0.25
Miscellaneous receipts	<u>401</u>	<u>2.04</u>	<u>112</u>	<u>0.56</u>
Total Receipts	\$3,331	\$16.93	\$3,964	\$19.74
<b><u>ACCRUAL OPERATING EXPENSES</u></b>				
Hired labor	\$ 195	\$ 0.99	\$ 193	\$ 0.96
Dairy grain & concentrate	1,075	5.47	1,107	5.51
Dairy roughage	118	0.60	97	0.49
Nondairy feed	2	0.01	4	0.02
Professional nutritional services	0	0.00	1	0.00
Machine hire/rent/lease	65	0.33	63	0.32
Mach. repair & vehicle exp.	191	0.97	232	1.16
Fuel, oil & grease	136	0.69	157	0.78
Replacement livestock	6	0.03	19	0.10
Breeding	48	0.24	59	0.29
Veterinary & medicine	94	0.48	93	0.46
Milk marketing	222	1.13	226	1.12
Bedding	37	0.19	39	0.20
Milking supplies	91	0.46	102	0.51
Cattle lease	0	0.00	0	0.00
Custom boarding	41	0.21	25	0.12
bST expense	13	0.07	9	0.04
Livestock professional fees	12	0.06	18	0.09
Other livestock expense	59	0.30	51	0.26
Fertilizer & lime	76	0.39	100	0.50
Seeds & plants	57	0.29	55	0.28
Spray/other crop expense	38	0.19	35	0.18
Crop professional fees	1	0.00	2	0.01
Land, building, fence repair	56	0.28	49	0.25
Taxes	79	0.40	90	0.45
Real estate rent/lease	35	0.18	42	0.21
Insurance	62	0.32	63	0.32
Utilities	125	0.63	133	0.66
Interest paid	112	0.57	117	0.58
Other professional fees	15	0.08	17	0.08
Miscellaneous	<u>20</u>	<u>0.10</u>	<u>18</u>	<u>0.09</u>
Total Operating Expenses	\$3,082	\$15.67	\$3,217	\$16.02
Expansion Livestock	11	0.06	15	0.08
Extraordinary Expense	2	0.01	0	0.00
Machinery Depreciation	215	1.09	220	1.10
Real Estate Depreciation	<u>87</u>	<u>0.44</u>	<u>64</u>	<u>0.32</u>
Total Expenses	\$3,397	\$17.27	\$3,516	\$17.52
Net Farm Income Without Appreciation	\$ -66	\$ -0.34	\$ 447	\$ 2.23

**RECEIPTS AND EXPENSES PER COW AND PER CWT.**

Same 13 Top 25% Small Herd Dairy Farms, 2009 &amp; 2010

Item	2009		2010	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	74		76	
Cwt. Of Milk Sold		15,918		16,705
<b><u>ACCRUAL OPERATING RECEIPTS</u></b>				
Milk	\$2,964	\$13.75	\$3,890	\$17.72
Dairy cattle	198	0.92	268	1.22
Dairy calves	30	0.14	50	0.23
Other livestock	-1	0.00	1	0.00
Crops	11	0.05	47	0.21
Miscellaneous receipts	<u>428</u>	<u>1.99</u>	<u>141</u>	<u>0.64</u>
Total Receipts	\$3,631	\$16.85	\$4,397	\$20.02
<b><u>ACCRUAL OPERATING EXPENSES</u></b>				
Hired labor	\$ 289	\$ 1.34	\$ 263	\$ 1.20
Dairy grain & concentrate	1,152	5.35	1,106	5.04
Dairy roughage	170	0.79	114	0.52
Nondairy feed	0	0.00	0	0.00
Professional nutritional services	0	0.00	0	0.00
Machine hire/rent/lease	48	0.22	30	0.14
Mach. repair & vehicle exp.	180	0.84	195	0.89
Fuel, oil & grease	145	0.67	164	0.75
Replacement livestock	6	0.03	16	0.07
Breeding	59	0.27	64	0.29
Veterinary & medicine	93	0.43	86	0.39
Milk marketing	248	1.15	240	1.09
Bedding	20	0.09	26	0.12
Milking supplies	88	0.41	103	0.47
Cattle lease	1	0.00	0	0.00
Custom boarding	70	0.33	48	0.22
bST expense	19	0.09	13	0.06
Livestock professional fees	17	0.08	17	0.08
Other livestock expense	61	0.28	47	0.21
Fertilizer & lime	84	0.39	103	0.47
Seeds & plants	43	0.20	41	0.19
Spray/other crop expense	30	0.14	35	0.16
Crop professional fees	2	0.01	1	0.01
Land, building, fence repair	51	0.23	48	0.22
Taxes	67	0.31	75	0.34
Real estate rent/lease	42	0.20	46	0.21
Insurance	55	0.25	56	0.26
Utilities	107	0.49	117	0.53
Interest paid	103	0.48	88	0.40
Other professional fees	17	0.08	22	0.10
Miscellaneous	<u>25</u>	<u>0.12</u>	<u>24</u>	<u>0.11</u>
Total Operating Expenses	\$3,291	\$15.27	\$3,191	\$14.53
Expansion Livestock	0	0.00	3	0.01
Extraordinary Expense	0	0.00	0	0.00
Machinery Depreciation	178	0.83	181	0.82
Real Estate Depreciation	<u>83</u>	<u>0.39</u>	<u>70</u>	<u>0.32</u>
Total Expenses	\$3,552	\$16.49	\$3,445	\$15.68
Net Farm Income Without Appreciation	\$ 78	\$ 0.36	\$ 952	\$ 4.33

**Regional 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 the regional summary. Use this information to identify business areas where more challenging goals are needed.

**FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS**

50 Small Herd Dairy Farms, 2010

Size of Business			Rate of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(14)*	(12)	(12)	(12)	(11)	(11)	(14)	(14)
3.71	105	2,292,334	24,383	3.7	25	42	879,156
2.83	85	1,623,966	21,455	2.9	20	33	653,524
2.36	63	1,228,072	19,525	2.2	17	28	562,703
2.02	52	1,032,345	17,554	1.8	14	24	427,188
1.47	40	677,766	14,925	1.3	10	18	318,503

Cost Control					Culling Rates		
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	Death Rate	Sell Rate
(12)	(12)	(14)	(14)	(12)	(12)	(12)	(12)
\$ 661	20%	\$ 448	\$ 1,291	\$ 888	\$ 4.97	0.6%	8.4%
863	27	654	1,571	1,138	6.12	2.7	20.8
1,061	31	777	1,867	1,301	6.54	4.7	24.9
1,231	34	903	2,171	1,514	7.33	6.8	29.1
1,481	42	1,158	2,568	1,909	9.57	12.5	35.9

Value and Cost of Milk Production			Profitability			Change in Net Worth with Appreciation
Milk Receipts Per Cow	Operating Cost Production Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income with Appreciation	Net Farm Income w/o Appreciation	Labor & Mgmt. Income Per Operator	
(12)	(12)	(12)	(4)	(4)	(4)	(8)
\$ 4,314	\$ 10.21	\$ 17.70	\$ 107,123	\$ 89,503	\$ 33,550	\$ 171,175
3,760	12.87	20.53	53,715	49,123	3,087	23,862
3,454	13.93	22.18	36,499	32,196	-6,357	9,360
3,131	15.32	24.23	8,739	7,054	-23,387	-3,683
2,627	18.85	30.08	-36,167	-34,113	-58,750	-39,687

\*Page number of the participant's DFBS where the factor is located.

### **Supplementary Information**

Each year DFBS cooperators volunteer to complete supplementary data collection forms looking at selected management aspects of the business or specific research areas being studied. This is in addition to the normal DFBS data collection form. One area that was examined this year was the source of dairy replacements.

#### **SOURCE OF DAIRY REPLACEMENTS** 29 New York Dairy Farms, 2010

<u>Animals Entering Herd</u>	<u>Average</u>
Number calving in 2010 for first time	243
Animals purchased, %*	1%
Animals raised by farm, %**	99%
 <u>Current Heifer Inventory</u>	
Raised on dairy, %	92%
Raised by a custom grower, %	8%

\* Animals purchased are animals purchased from a different farm and were not the farms genetics.

\*\*Animals raised by farm are animals that were born on the farm and entered the herd, which includes animals raised by the farm or custom grower.

On the average farm, 243 animals calved for the first time in 2010. The breakdown on these animals for source was 1 percent purchased and 99 percent raised by the farm. Of the current heifer inventory, 92 percent were raised on the dairy and 8 percent were being raised by a custom grower. There is increased interest in evaluating the dairy replacement enterprise.

### **Milk Income and Marketing Expense Breakdown**

Starting January 1<sup>st</sup>, 2000, the northeast switched to multiple components pricing, which changed the format of the milk check and how farmers received payment for their milk. To examine the breakdown of the gross milk income and the marketing expenses, 23 small herd dairy farms filled out a detailed form for all the different sources of income for milk sales and the milk marketing expenses on an accrual basis. This information is reported in the following two tables. The tables are divided into six different areas, each representing a different area of income or expenses.

The first section looks at the value of the milk components on a per hundredweight basis. The second area looks at the Producer Price Differential. The third area looks at the premiums a farm receives. Any premiums not specifically noted as quality or volume related are included in market premiums. The fourth area looks at the expenses associated with marketing milk. Expenses associated with utilizing forward contracting or hedging programs to market milk, such as commission or broker fees, are included in market fees and cooperative dues. The fifth area is income from forward contracting or hedging programs. The sixth area is the patronage dividends or refunds from the milk cooperatives. Equity purchased in the milk cooperative utilizing a monthly deduction from the milk check or a percent of the patronage dividend is treated as a capital purchase and is not a milk marketing expense. The cumulative total for these six areas is the net price received on farms. Your net farm price can be found on page 12 of your farm's DFBS report.

The table on page 28 reports the averages for these different areas. The table on page 29 contains the range for each of the individual lines of the report. This table is in farm business chart format with each item sorted independently and ranked by quartile. Numbers for the different areas will not add to the totals for that quartile or to the net price received because the highest farms for each item were averaged, not the same farms throughout the six areas. This table shows the range of income and expenses received by farms for all the different areas.

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

**AVERAGE\* MILK INCOME AND MARKETING REPORT**  
23 Small Herd Dairy Farms, 2010

	Pounds	Percent	Price/Pound	Total	\$/Cwt of Milk
<b>BASE FARM PRICE</b>					
Butterfat	58,566	3.77%	\$ 1.86	\$ 108,967	\$ 7.01
Protein	47,614	3.06%	\$ 2.32	\$ 110,244	\$ 7.09
Solids	88,245	5.68%	\$ 0.17	\$ 15,233	\$ 0.98
<b>Total Component Contribution</b>					<b>\$15.08</b>
<b>PPD</b>	1,554,854			\$ 27,710	<b>\$ 1.78</b>
<b>Base Farm Price</b>					<b>\$ 16.86</b>
<b>Premiums</b>					
Quality				\$ 3,412	\$ 0.22
Volume				\$ 1,536	\$ 0.10
Market Premiums				\$ 5,496	\$ 0.35
<b>Total Premiums</b>					<b>\$ 0.67</b>
<b>BASE FARM PRICE + PREMIUM</b>					<b>\$ 17.53</b>
<hr style="border-top: 1px dashed black;"/>					
<b>Deductions</b>					
Promo				\$ 2,487	\$ 0.16
Hauling + Stop Charges.				\$ 11,425	\$ 0.73
Market Fees & Coop Dues				\$ 2,137	\$ 0.14
<b>Total Deductions</b>					<b>\$ 1.03</b>
<b>BASE FARM PRICE + PREMIUMS - DEDUCTIONS</b>					<b>\$ 16.50</b>
<b>Marketing Programs</b>					
Futures Contracts, Forward Contracting, Etc.				\$ 0	\$ 0.00
<b>Total Marketing Income</b>					<b>\$ 0.00</b>
<b>Patronage Dividends</b>				\$ 2,520	<b>\$ 0.16</b>
<b>NET PRICE RECEIVED ON FARM, ALL SOURCES</b>					<b>\$ 16.66</b>
<b>PPD - Hauling, per cwt.</b>					\$ 1.05
<b>PPD - Hauling + Market Premiums, per cwt.</b>					\$ 1.40
<b>Net Marketing Value, per cwt. (PPD + Total Preimums – Total Deductions)</b>					\$ 1.42

\*Each calculation of an average is independent of the others. Therefore, math operations on the detail will not result in the totals. However, detail in the "\$/Cwt of Milk" column will result in the totals. The average herd size of these 23 farms is 76 cows.



**MILK PRICE INFORMATION BY QUARTILE\***  
(Each Category Sorted Independently)  
23 Small Herd Dairy Farms, 2010

	Lowest Quartile	←—————→	Highest Quartile	
Butterfat, %	3.60	3.76	3.83	4.04
Protein, %	3.02	3.06	3.12	3.25
Other Solids, %	5.56	5.69	5.72	5.77
Butterfat, \$ per Cwt.	6.70	6.97	7.14	7.62
Protein, \$ per Cwt.	6.91	7.09	7.24	7.63
Other solids, \$ per Cwt.	0.84	1.01	1.02	1.04
<b>Total Component Value per Cwt.</b>	<b>\$ 14.71</b>	<b>\$ 15.09</b>	<b>\$ 15.38</b>	<b>\$ 16.04</b>
PPD, \$ per Cwt.	1.47	1.72	1.85	2.03
<b>Base Farm Price per Cwt.</b>	<b>\$ 16.47</b>	<b>\$ 16.79</b>	<b>\$ 17.24</b>	<b>\$ 17.78</b>
Quality, \$ per Cwt.	0.03	0.07	0.22	0.53
Volume, \$ per Cwt.	0.00	0.03	0.09	0.21
Market premium, \$ per Cwt.	0.02	0.22	0.40	0.58
Total Premium, \$ per Cwt.	<b>0.27</b>	<b>0.48</b>	<b>0.61</b>	<b>1.04</b>
<b>Base Farm Price + Premiums per Cwt.</b>	<b>\$ 17.16</b>	<b>\$ 17.53</b>	<b>\$ 17.77</b>	<b>\$ 18.22</b>
Promotion, \$ per Cwt.	0.15	0.15	0.15	0.15
Hauling, \$ per Cwt.	0.53	0.64	0.77	1.00
Market fees & coop dues per Cwt.	0.01	0.06	0.12	0.26
<b>Total Marketing Expenses per Cwt.</b>	<b>\$ 0.76</b>	<b>\$ 0.88</b>	<b>\$ 1.08</b>	<b>\$ 1.32</b>
<b>Base + Premiums – Deductions per Cwt.</b>	<b>\$ 16.08</b>	<b>\$ 16.53</b>	<b>\$ 16.78</b>	<b>17.26</b>
Futures contract, forward contracting, \$ per Cwt.	0.00	0.00	0.00	0.00
<b>Total Marketing Income, \$ per Cwt.</b>	<b>\$ 0.00</b>	<b>\$ 0.00</b>	<b>\$ 0.00</b>	<b>\$ 0.00</b>
<b>Patronage Dividends, \$ per Cwt.</b>	<b>\$ 0.00</b>	<b>\$ 0.00</b>	<b>\$ 0.00</b>	<b>\$ 0.77</b>
<b>Net Price Received From All Sources, \$ per Cwt.</b>	<b>\$ 16.15</b>	<b>\$ 16.56</b>	<b>\$ 16.84</b>	<b>\$ 17.88</b>
<b>PPD - hauling, \$ per Cwt.</b>	<b>0.71</b>	<b>0.93</b>	<b>1.08</b>	<b>1.40</b>
<b>PPD - hauling + mkt premiums, \$ per Cwt.</b>	<b>0.85</b>	<b>1.19</b>	<b>1.44</b>	<b>1.87</b>
<b>Net Marketing Value, \$ per Cwt. (PPD + Total Premiums – Total Deductions)</b>	<b>0.91</b>	<b>1.14</b>	<b>1.46</b>	<b>1.92</b>

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

### New York State Farm Business Charts

The Farm Business Chart is a tool which can be used in analyzing a business by drawing a line through the figure in each column which represents the current level of management performance. The figure at the top of each column is the average of the top 10 percent of the 204 farms for that factor. The other figures in each column are the average for the second 10 percent, third 10 percent, etc. **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 top 10 percent for any other factor.

The cost control factors are ranked from low to high, but the lowest cost is not necessarily the most profitable. In some cases, the "best" management position is somewhere near the middle or average. Many things affect the level of costs, and must be taken into account when analyzing the factors.

#### **FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS**

204 New York Dairy Farms, 2009

Size of Business			Rates of Production			Labor Efficiency	
Worker Equiv- alent (14)*	No. of Cows (12)	Pounds Milk Sold (12)	Pounds Milk Sold Per Cow (12)	Tons Hay Crop DM/Acre (11)	Tons Corn Silage Per Acre (11)	Cows Per Worker (14)	Pounds Milk Sold Per Worker (14)
34.5	1,662	43,168,090	27,708	5.5	26	63	1,442,513
21.6	969	24,026,822	26,204	4.4	22	51	1,195,505
16.1	715	17,158,049	25,098	3.9	21	47	1,103,896
12.2	512	11,954,459	24,083	3.5	19	43	1,022,874
8.2	359	8,336,747	23,176	3.2	18	40	927,078
-----							
5.4	203	4,407,937	21,930	2.8	17	37	823,127
4.0	136	2,631,526	20,554	2.5	16	34	701,150
3.1	96	1,831,947	19,097	2.3	15	31	618,720
2.4	68	1,198,114	17,092	1.9	13	28	520,658
1.6	47	789,780	13,066	1.5	8	21	346,599

Cost Control					
Grain Bought Per Cow (12)	% Grain is of Milk Receipts (12)	Machinery Costs Per Cow (14)	Labor & Machinery Costs Per Cow (14)	Feed & Crop Expenses Per Cow (12)	Feed & Crop Expenses Per Cwt. Milk (12)
\$556	24%	\$392	\$1,050	\$761	\$4.61
827	31	507	1,241	1,073	5.39
938	33	568	1,348	1,233	5.83
1,039	36	611	1,425	1,311	6.15
1,124	37	653	1,478	1,407	6.41
-----					
1,189	39	688	1,537	1,494	6.67
1,259	41	726	1,614	1,557	6.94
1,340	43	779	1,709	1,638	7.25
1,441	46	834	1,852	1,752	7.64
1,656	52	1,044	2,273	2,045	9.01

\*Page number of the participant's DFBS report where the factor is located.

**FARM BUSINESS CHART FOR  
FARM MANAGEMENT COOPERATORS**  
204 New York Dairy Farms, 2009

Milk Receipts Per Cow	Milk Receipts Per Cwt.	Operating Cost Milk Production Per Cow	Operating Cost Milk Production Per Cwt.	Total Cost Milk Production Per Cow	Total Cost Milk Production Per Cwt.
(12)	(12)	(12)	(12)	(12)	(12)
\$3,904	\$15.04	\$1,539	\$9.36	\$2,786	\$14.64
3,615	14.46	2,107	11.18	3,286	15.73
3,472	14.20	2,412	12.03	3,529	16.34
3,343	13.99	2,604	12.45	3,724	17.04
3,212	13.82	2,863	13.07	3,892	17.59
-----					
3,001	13.68	3,031	13.54	4,070	18.31
2,815	13.50	3,193	14.15	4,235	18.90
2,586	13.33	3,437	14.69	4,399	19.92
2,310	13.11	3,726	15.62	4,595	21.92
1,786	12.65	4,115	17.20	5,037	25.94

Profitability						
Net Farm Income Without Appreciation			Net Farm Income With Appreciation		Labor & Management Income	
Total	Per Cow	Operations Ratio	Total	Per Cow	Per Farm	Per Operator
(4)	(12)	(4)	(4)	(12)	(4)	(4)
\$189,108	\$621	0.17	\$316,867	\$689	\$44,796	\$29,113
50,933	261	0.08	73,223	359	-22,905	-15,857
21,392	129	0.03	32,127	166	-41,298	-27,377
4,190	25	0.01	6,546	49	-61,781	-39,543
-18,397	-107	-0.03	-19,455	-115	-89,481	-57,798
-----						
-41,720	-215	-0.06	-38,756	-234	-131,913	-80,521
-70,753	-353	-0.11	-65,741	-320	-219,725	-116,887
-156,846	-502	-0.14	-138,222	-476	-322,905	-187,439
-338,128	-636	-0.19	-294,082	-645	-553,193	-302,719
-861,956	-1,025	-0.35	-945,904	-1,058	-1,234,813	-758,790

Farm Business Charts for farms with freestall barns and 150 cows or less, 151-300 cows, and more than 300 cows; and farms with conventional barns with 60 cows or less and more than 60 cows are shown on pages 35-39.

**Financial Analysis Chart**

The farm financial analysis chart on page 32 is designed just like the Farm Business Chart and may be used to assess the financial health of the farm business. Most of the financial measures used in the chart are defined on pages 8, 11, 15 and 22 of this publication. References to DFBS output page numbers for participating dairy farmers are provided in the table headings.

**FINANCIAL ANALYSIS CHART**  
204 New York Dairy Farms, 2009

Liquidity (repayment)							
Planned Debt Payments Per Cow	Available for Debt Service Per Cow	Cash Flow Coverage Ratio	Debt Coverage Ratio	Debt Payments as Percent of Milk Sales	Debt Per Cow	Working Capital as % of Total Expenses	Current Ratio
(10)*	(16)	(10)	(10)	(10)	(7)	(7)	(7)
\$129	\$869	4.73	2.73	4%	\$207	48%	24.00
265	536	1.30	1.07	7	1,172	29	3.80
320	425	0.90	0.68	10	1,925	22	2.67
388	334	0.64	0.39	12	2,513	19	2.09
448	225	0.37	0.13	14	2,914	15	1.75
512	81	0.14	-0.03	17	3,517	11	1.48
592	-6	-0.06	-0.29	19	4,048	6	1.17
684	-132	-0.42	-0.57	22	4,632	0	0.94
841	-278	-0.73	-1.04	25	5,166	-6	0.72
1,321	-587	-1.87	-2.34	38	6,688	-25	0.30
Solvency				Operational Ratios			
Leverage Ratio**	Percent Equity	Debt/Asset Ratio		Operating Expense Ratio	Interest Expense Ratio	Depreciation Expense Ratio	
		Current & Intermediate	Long Term				
(7)	(7)	(7)	(7)	(14)	(14)	(14)	
0.08	98%	0.02	0.00	0.73	0.00	0.02	
0.19	88	0.11	0.00	0.83	0.01	0.04	
0.28	81	0.22	0.03	0.86	0.02	0.05	
0.39	75	0.27	0.11	0.89	0.02	0.06	
0.53	69	0.35	0.22	0.91	0.03	0.07	
0.73	60	0.42	0.33	0.95	0.04	0.08	
0.87	55	0.47	0.44	0.98	0.04	0.09	
1.06	49	0.56	0.53	1.03	0.05	0.11	
1.39	43	0.67	0.64	1.07	0.06	0.13	
3.03	26	0.89	0.98	1.19	0.11	0.18	
Efficiency (Capital)				Profitability			
Asset Turnover (ratio)	Real Estate Investment Per Cow	Machinery Investment Per Cow	Total Farm Assets Per Cow	Change in Net Worth With Appreciation	Percent Rate of Return with Appreciation on:		
					Equity	Investment***	
(14)	(14)	(14)	(14)	(8)	(4)	(4)	
0.63	\$1,882	\$607	\$6,103	\$130,552	4%	4%	
0.52	2,558	968	7,394	20,677	-1	1	
0.48	2,940	1,229	7,972	-8,052	-3	-1	
0.44	3,319	1,456	8,730	-30,384	-5	-2	
0.40	3,639	1,618	9,230	-54,874	-7	-4	
0.37	4,097	1,803	9,754	-91,665	-10	-5	
0.34	4,625	2,036	10,312	-168,225	-12	-7	
0.30	5,339	2,255	11,366	-272,257	-15	-8	
0.26	6,375	2,560	12,448	-460,184	-21	-10	
0.19	8,932	3,659	15,218	-1,243,274	-46	-16	

\*Page number of the participant's DFBS report where the factor is located.

\*\*Dollars of debt per dollar of equity, computed by dividing total liabilities by total equity.

\*\*\*Return on all farm capital (no deduction for interest paid) divided by total farm assets

### **Comparison by Type of Barn and Herd Size**

When analyzing a dairy farm business by comparing it to a group of farms, it is important that the group of farms have used as many of the same physical characteristics as possible as the farm being analyzed. To assist in this endeavor, dairy farms in the summary have been divided into those with freestall and those with conventional housing. Conventional housing includes stanchion and tiestall barns. Within each group, is a further classification by size of the dairy herd.

The table on page 34 includes the average values for the resulting five groups of dairy farms. The average size of farms in the five groups ranges from 48 cows on the small conventional farms to 881 cows on the largest freestall farms.

The largest freestall farms averaged the highest milk output per cow and per worker, the lowest total cost of production and investment per cow; however, in 2009 they had the lowest returns to labor, management and capital.

Farm business charts have been computed for each of the five housing and herd size categories and are on pages 35-39. By comparing the farm's performance on the most appropriate business chart, a farm manager will be better able to evaluate his or her business performance.

### **Herd Size Comparisons**

A detailed comparison of profitability, financial situation and business analysis factors across herd sizes is contained on pages 48-60 of the 2009 State Summary\*. In most years, as herd size increases, the net farm income increases (page 48)\*; however, that was not the case for 2009. All herd size categories averaged a negative net farm income without appreciation. Net farm income without appreciation averaged \$-1,939 per farm for the less than 60 cow farms and \$-490,500 per farm for those with more than 900 cows. Return to all capital without appreciation generally increased as herd size increased.

Assets, liabilities and financial measures are presented on pages 55-58\*. All herd size categories saw a decrease in net worth during 2009. The largest herd size category experienced a decrease in net worth of \$293,733. However, percent equity went down as assets increased. The 200 to 399 herd size category had the lowest percent equity; while the smaller herds averaged 77 percent.

Crop yields showed little relationship to herd size, but fertilizer and lime expenses, and machinery cost per tillable acre generally increased as herd size increased (pages 59-60)\*. The farms with more than 900 cows averaged more milk sold per cow than any other size category (page 60). With 25,229 pounds of milk sold per cow, farms in the largest herd size group averaged 8.8 percent more milk output per cow than the average of all herds in the summary with less than 900 cows. Farm capital per cow generally decreased as herd size increased. Milk sold per worker increased dramatically as herd size increased, ranging from 453,250 pounds at the lowest herd size category up to 1,217,421 pounds at the largest size category.

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\*Wayne A. Knoblauch, Linda D. Putnam, and Jason Karszes, Dairy Farm Management Business Summary, New York, 2009, Department of Applied Economics and Management, Cornell University, R.B. 2010-02, November 2010.

**SELECTED BUSINESS FACTORS BY TYPE OF BARN AND HERD SIZE**

191 New York Dairy Farms, 2009

Item	Farms with:	Conventional		Freestall		
		<= 60 Cows	>60 Cows	<=150 Cows	151-300 Cows	≥300 Cows
Number of farms		23	25	27	24	92
<u>Cropping Program Analysis</u>						
Total Tillable acres		153	327	239	556	1,711
Tillable acres rented*		82	132	113	250	878
Hay crop acres*		123	228	150	319	768
Corn silage acres*		18	53	57	139	681
Hay crop, tons DM/acre		2.3	2.2	2.6	2.7	3.6
Corn silage, tons/acre		16	13.3	16.1	18.6	19.0
Oats, bushels/acre		45	73	79	55	67
Forage DM per cow, tons		8.4	8.1	7.9	8.3	8.3
Tillable acres/cow		3.3	3.5	2.7	2.7	2.0
Fertilizer & lime expense/tillable acre		\$27.94	\$26.51	\$33.97	\$54.76	\$48.73
Total machinery costs		\$34,204	\$61,040	\$70,419	\$158,061	\$585,211
Machinery cost/tillable acre		\$214	\$187	\$243	\$284	\$336
<u>Dairy Analysis</u>						
Number of cows		48	93	103	210	881
Number of heifers		40	79	84	179	734
Milk sold, lbs.		854,175	1,713,249	1,981,491	4,605,848	22,034,738
Milk sold/cow, lbs.		17,844	18,446	19,328	21,928	25,024
Operating cost of producing milk/cwt.		\$12.16	\$13.13	\$12.42	\$13.03	\$13.81
Total cost of producing milk/cwt.		\$21.52	\$20.43	\$18.51	\$17.65	\$16.82
Price/cwt. milk sold		\$13.44	\$13.45	\$13.81	\$13.71	\$13.90
Purchased dairy feed/cow		\$891	\$1,044	\$1,207	\$1,155	\$1,358
Purchased dairy feed/cwt. milk		\$5.00	\$5.66	\$6.24	\$5.27	\$5.43
Purchased grain & concentrate as % of milk receipts		35%	41%	39%	38%	38%
Purchased feed & crop expense/cwt milk		\$5.99	\$6.58	\$7.21	\$6.36	\$6.38
<u>Capital Efficiency</u>						
Farm capital/worker		\$296,563	\$325,893	\$313,395	\$368,757	\$405,869
Farm capital/cow		\$11,523	\$11,298	\$9,538	\$9,481	\$8,905
Farm capital/tillable acre owned		\$7,765	\$5,385	\$7,760	\$6,504	\$9,408
Real estate/cow		\$5,772	\$5,506	\$4,368	\$3,994	\$3,563
Machinery investment/cow		\$2,383	\$2,200	\$1,763	\$1,741	\$1,505
Asset turnover ratio		0.26	0.26	0.34	0.38	0.46
<u>Labor Efficiency</u>						
Worker equivalent		1.86	3.22	3.11	5.41	19.32
Operator/manager equivalent		1.09	1.47	1.52	2.01	2.14
Milk sold/worker, lbs.		458,823	531,652	636,283	852,014	1,140,662
Cows/worker		26	29	33	39	46
Labor cost/cow		\$1,124	\$978	\$862	\$800	\$787
Labor cost/tillable acre		\$352	\$278	\$370	\$302	\$405
<u>Profitability &amp; Balance Sheet Analysis</u>						
Net farm income (without appreciation)		\$-2,315	\$-16,922	\$-1,745	\$-28,801	\$-260,522
Labor & management income/operator		\$-31,550	\$-47,833	\$-29,326	\$-49,465	\$-239,395
Rate return on all capital with appreciation		-7.0%	-6.9%	-5.0%	-4.9%	-3.2%
Farm debt/cow		\$2,661	\$3,160	\$2,921	\$3,177	\$3,388
Percent equity		77%	72%	68%	66%	61%

\*Average of all farms, not only those reporting data.

**FARM BUSINESS CHART FOR SMALL CONVENTIONAL STALL DAIRY FARMS**  
23 Conventional Stall Dairy Farms with 60 or Less Cows, New York, 2009

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds of Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(14)*	(12)	(12)	(12)	(11)	(11)	(14)	(14)
2.75	57	1,166,624	23,699	4.5	22	41	814,988
2.48	55	1,054,704	22,630	3.5	20	35	700,081
2.22	52	1,027,653	21,999	2.8	20	31	627,340
2.04	51	1,019,893	20,747	2.4	19	31	569,357
2.00	51	1,002,706	19,706	2.3	18	29	531,012
1.79	50	965,943	18,647	2.2	16	26	469,700
1.63	47	900,255	18,247	2.0	15	25	432,381
1.58	46	736,147	15,835	1.8	15	24	391,392
1.50	43	630,256	13,205	1.7	12	21	312,985
1.25	37	423,753	10,155	1.5	7	18	232,739

Cost Control						
Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk	
(12)	(12)	(14)	(14)	(12)	(12)	
\$366	21%	\$444	\$1,265	\$466	\$4.26	
622	28	528	1,482	827	4.74	
715	33	607	1,659	925	5.45	
798	36	645	1,746	1,016	6.07	
881	37	666	1,868	1,077	6.31	
938	39	754	1,991	1,173	6.46	
955	40	794	2,120	1,263	6.56	
1,054	40	879	2,160	1,319	6.86	
1,107	43	938	2,263	1,456	7.02	
1,269	44	1,126	2,473	1,633	7.49	

Value and Cost of Production			Profitability			
Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation
			Total	Per Cow		
(12)	(12)	(12)	(4)	(12)	(4)	(8)
\$3,220	\$7.64	\$16.31	\$44,417	\$931	\$10,108	\$60,332
3,074	10.10	18.97	30,319	617	-6,583	34,450
2,878	11.11	20.13	16,506	327	-12,640	26,646
2,804	11.35	20.62	10,951	212	-21,467	10,692
2,660	12.26	21.20	4,899	92	-23,274	1,252
2,528	12.90	22.42	1,350	30	-26,611	-3,844
2,404	13.41	23.00	-2,281	-53	-35,102	-9,513
2,174	13.59	25.02	-10,140	-225	-37,137	-17,266
1,774	14.46	27.53	-20,302	-415	-50,867	-24,671
1,322	19.81	34.87	-58,077	-1,274	-75,119	-38,682

\*Page number of the participant's DFBS report where the factor is located.

**FARM BUSINESS CHART FOR LARGE CONVENTIONAL STALL DAIRY FARMS**  
25 Conventional Stall Dairy Farms with More Than 60 Cows, New York, 2009

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(14)*	(12)	(12)	(12)	(11)	(11)	(14)	(14)
6.20	151	3,110,205	24,463	4.4	27	64	961,921
4.65	133	2,347,372	22,085	3.6	25	43	801,367
4.04	120	2,244,457	21,533	3.2	19	41	698,749
3.64	105	2,129,390	20,958	2.7	17	35	660,705
3.53	99	1,968,372	20,320	2.6	15	32	646,832
3.16	85	1,671,792	19,100	2.4	15	30	579,244
2.91	79	1,463,721	17,581	2.2	12	28	530,941
2.62	75	1,320,625	15,975	2.0	9	26	483,325
2.06	67	1,036,449	14,505	1.7	8	22	357,151
1.41	64	917,955	12,439	1.1	6	18	292,357

**Cost Control**

Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
(12)	(12)	(14)	(14)	(12)	(12)
\$586	24%	\$307	\$1,056	\$711	\$4.58
812	33	448	1,146	985	5.66
885	37	514	1,344	1,108	6.08
935	39	574	1,474	1,186	6.32
992	42	643	1,661	1,279	6.72
1,093	44	697	1,745	1,333	7.06
1,141	45	761	1,911	1,382	7.48
1,181	48	814	2,012	1,454	7.83
1,199	52	847	2,232	1,533	7.98
1,442	61	1,124	2,506	1,557	9.35

**Value and Cost of Production**

**Profitability**

Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation
			Total	Per Cow		
(12)	(12)	(12)	(4)	(12)	(4)	(8)
\$3,406	\$8.50	\$15.78	\$71,365	\$653	-\$3,608	\$154,271
3,074	11.50	18.04	24,951	362	-20,187	35,152
2,918	12.37	19.17	16,883	204	-24,084	16,525
2,739	13.03	20.71	9,331	107	-25,483	-3,254
2,720	13.82	21.78	-6,950	-84	-29,384	-14,599
2,605	14.27	22.40	-20,299	-201	-37,412	-23,170
2,300	15.29	22.87	-27,719	-327	-52,118	-28,093
2,175	15.98	23.43	-42,035	-459	-64,432	-50,046
1,912	16.12	23.86	-53,888	-602	-90,066	-87,164
1,695	16.80	27.23	-74,128	-768	-138,716	-130,673

\*Page number of the participant's DFBS report where the factor is located.



**FARM BUSINESS CHART FOR SMALL FREESTALL DAIRY FARMS**

27 Freestall Barn Dairy Farms with 150 or Less Cows, New York, 2009

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds of Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(14)*	(12)	(12)	(12)	(11)	(11)	(14)	(14)
4.46	148	3,266,103	25,870	4.7	21	46	1,035,790
4.22	138	2,853,280	23,508	4.5	19	39	872,668
3.96	132	2,555,275	22,143	3.8	18	36	746,248
3.55	122	2,428,802	20,385	3.1	18	35	677,152
3.35	107	2,104,906	20,109	2.8	17	34	647,301
3.12	100	1,911,494	19,133	2.7	17	33	617,446
2.87	95	1,719,822	18,025	2.5	15	32	589,966
2.61	86	1,484,959	17,310	2.3	15	31	546,787
2.29	74	1,300,764	16,502	1.8	14	29	501,267
1.85	61	1,099,570	13,877	1.5	9	26	426,547

**Cost Control**

Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
(12)	(12)	(14)	(14)	(12)	(12)
\$467	21%	\$314	\$1,023	\$787	\$4.48
769	30	479	1,273	1,128	5.87
896	34	514	1,380	1,210	6.43
987	38	545	1,449	1,250	6.80
1,069	40	607	1,507	1,293	7.18
1,119	43	698	1,569	1,449	7.51
1,172	45	749	1,658	1,564	7.91
1,319	47	833	1,769	1,649	8.79
1,415	51	910	1,864	1,774	9.06
1,614	53	935	1,985	2,386	11.07

**Value and Cost of Production****Profitability**

Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation
			Total	Per Cow		
(12)	(12)	(12)	(4)	(12)	(4)	(8)
\$3,523	\$8.77	\$15.39	\$66,096	\$703	\$7,874	\$68,524
3,279	10.02	15.68	45,760	439	7,181	43,616
3,072	10.81	17.07	41,317	385	1,281	20,745
2,880	11.65	17.91	32,225	302	-13,034	679
2,764	12.26	18.43	22,419	203	-14,720	-19,767
2,569	13.18	18.92	11,144	121	-33,906	-40,170
2,423	13.81	19.94	-14,163	-183	-45,973	-49,207
2,337	14.52	22.96	-36,946	-350	-55,457	-57,158
2,287	14.84	23.70	-54,221	-482	-63,526	-85,191
1,983	16.03	25.89	-78,278	-876	-83,719	-136,978

\*Page number of the participant's DFBS report where the factor is located.

**FARM BUSINESS CHART FOR MEDIUM FREESTALL DAIRY FARMS**  
24 Freestall Barn Dairy Farms with 151-300 Cows, New York, 2009

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(14)*	(12)	(12)	(12)	(11)	(11)	(14)	(14)
7.58	280	6,849,434	26,596	5.8	29	56	1,243,719
6.91	265	6,097,648	26,305	4.3	25	54	1,163,088
6.42	240	5,577,970	24,339	3.7	24	51	1,068,305
5.78	227	5,372,848	24,043	3.1	21	48	976,836
5.52	215	5,142,677	23,447	2.9	19	44	939,448
5.34	206	4,482,464	22,408	2.5	18	39	814,575
5.13	200	4,248,858	20,963	2.3	17	36	788,885
4.96	185	3,975,199	20,224	2.2	15	35	742,622
4.37	175	3,436,860	18,181	2.1	12	31	650,544
3.75	166	2,837,173	16,409	1.6	8	27	596,333

Cost Control						
Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk	
(12)	(12)	(14)	(14)	(12)	(12)	
\$768	26%	\$519	\$1,102	\$935	\$5.04	
849	29	584	1,212	1,159	5.32	
920	32	634	1,450	1,262	5.53	
1,051	36	692	1,531	1,321	6.29	
1,184	39	755	1,581	1,375	6.64	
1,226	42	769	1,607	1,511	6.77	
1,282	43	789	1,670	1,556	7.12	
1,310	45	816	1,723	1,573	7.30	
1,378	50	983	1,942	1,613	7.40	
1,628	52	1,344	2,392	1,955	8.20	

Value and Cost of Production			Profitability			
Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation
			Total	Per Cow		
(12)	(12)	(12)	(4)	(12)	(4)	(8)
\$3,700	\$10.05	\$14.18	\$223,400	\$893	\$66,995	\$66,133
3,516	10.87	15.96	115,179	458	6,815	6,362
3,405	11.66	16.54	70,222	363	-4,802	-35,701
3,382	12.10	17.38	37,526	187	-20,875	-59,710
3,308	12.83	17.76	-2,170	-9	-36,805	-84,042
3,047	14.46	18.40	-36,917	-173	-57,667	-90,400
2,880	14.78	19.08	-53,573	-294	-74,549	-108,938
2,699	14.91	20.32	-92,589	-472	-98,045	-139,590
2,454	16.40	21.78	-128,081	-555	-128,394	-204,765
2,245	19.53	24.68	-227,656	-1,208	-222,738	-242,405

\*Page number of the participant's DFBS report where the factor is located.

**FARM BUSINESS CHART FOR LARGE FREESTALL DAIRY FARMS**  
92 Freestall Barn Dairy Farms with 300 or More Cows, New York, 2009

Size of Business			Rates of Production			Labor Efficiency	
Worker Equiv- Alent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(14)*	(12)	(12)	(12)	(11)	(11)	(14)	(14)
41.78	2,143	56,150,342	28,614	5.9	26	63	1,607,559
29.50	1,301	33,356,512	26,931	4.6	23	53	1,315,236
23.66	1,084	27,294,228	26,276	4.2	21	50	1,233,968
21.32	936	23,124,149	25,815	3.9	20	48	1,168,917
18.51	816	20,257,627	25,133	3.6	19	47	1,121,327
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16.17	696	17,283,563	24,540	3.4	18	44	1,076,082
14.05	616	14,313,270	23,967	3.1	17	42	1,031,329
12.57	513	12,324,387	23,353	2.9	16	40	980,946
10.33	445	10,402,631	22,582	2.6	15	37	920,130
7.60	362	8,623,291	20,199	1.9	13	33	791,677

Cost Control						
Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk	
(12)	(12)	(14)	(14)	(12)	(12)	
\$1,735	28%	\$441	\$1,115	\$1,203	\$4.99	
1,522	32	555	1,252	1,380	5.63	
1,446	33	593	1,339	1,446	5.88	
1,372	36	631	1,381	1,507	6.11	
1,294	37	661	1,432	1,558	6.30	
-----						
1,258	38	685	1,470	1,620	6.56	
1,212	40	709	1,512	1,688	6.83	
1,157	42	751	1,583	1,755	7.12	
1,074	44	797	1,675	1,834	7.49	
907	50	890	1,872	2,115	8.65	

Value and Cost of Production			Profitability			
Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation
(12)	(12)	(12)	Total	Per Cow	(4)	(8)
\$4,050	\$11.23	\$14.31	\$267,895	\$335	\$30,240	\$195,183
3,782	12.23	15.39	81,042	118	-49,213	-11,763
3,648	12.62	15.91	13,375	22	-87,226	-83,254
3,561	13.08	16.29	-40,315	-65	-117,198	-190,702
3,494	13.49	16.70	-97,798	-146	-166,437	-262,591
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3,395	13.90	17.14	-206,354	-246	-212,462	-313,100
3,319	14.37	17.50	-310,032	-432	-266,975	-399,069
3,234	14.82	18.15	-411,532	-545	-374,959	-609,554
3,087	15.71	18.66	-584,504	-640	-503,718	-855,267
2,865	16.60	19.36	-1,178,954	-920	-1,046,215	-1,681,781

\*Page number of the participant's DFBS report where the factor is located.

## 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 desired 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 be Timed with a designated date by which the goal will be achieved.

Goal setting on a dairy farm should be 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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## GLOSSARY AND LOCATION OF COMMON TERMS

**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 5)

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

**Annual Cash Flow Statement** - (defined on page 13)

**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 15)

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

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

**Change in Accounts Payable** - (defined on page 5)

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

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

**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 9)

**Current Ratio** - Measures the extent to which current farm assets, if liquidated, would cover current farm liabilities. Calculated as current farm assets at end year divided by current farm liabilities at end year.

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

**Dairy Cash-Crop (farm)** - Operating and managing this farm is the full-time occupation of one or more people, cropland is owned but crop sales exceed 10 percent of accrual milk receipts.

**Death Rate** - The number of animals that died divided by the average number of milking and dry cows for the year.

**Debt Coverage Ratio** - (defined on page 15)

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

**Debt to Asset Ratios** - (defined on page 11)

**Depreciation Expense Ratio** – Machinery and building depreciation divided by total accrual receipts.

**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 15.

**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 as % of Milk Sales** - The percentage of the gross milk receipts that is used for labor expense. Divide accrual hired labor expense by accrual milk sales.

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

**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** – Accrual interest expense divided by total accrual receipts.

**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** - (defined on page 11)

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

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

**Net Farm Income from Operations Ratio** - (defined on page 9)

**Net Milk Receipts** – Accrual milk receipts less milk marketing expense.

**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 21)

**Operating Expense Ratio** – Total accrual expenses less interest and machinery and building depreciation, divided by total accrual receipts.

**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; bST, DHIC, registration fees and transfers.

**Part-Time Dairy (farm)** - Dairy farming is the primary enterprise, cropland is owned but operating and managing this farm is not a full-time occupation for one or more people.

**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.

**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 21)

**Renter** - Farm business owner/operator owns no tillable land and commonly rents all other farm real estate.

**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)

**Sell Rate** – The number of animals that were sold for culling purposes divided by the average number of milking and dry cows for the year.

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

**Total Costs of Producing Milk** - (defined on page 21)

**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.

**Working Capital** – A theoretical measure of the amount of funds available to purchase inputs and inventory items after the sale of current farm assets and payment of all current farm liabilities. Calculated as current farm assets at end year less current farm liabilities at end year.



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

<b>EB No</b>	<b>Title</b>	<b>Fee (if applicable)</b>	<b>Author(s)</b>
2011-03	Cost of Establishment and Production of Vinifera Grapes in the Finger Lakes Region of New York - 2010		White, G.
2011-02	Dairy Farm Business Summary, Western New York Region, 2010	(\$12.00)	Knoblauch, W., Putnam, L., Karszes, J., Hanchar, J., Grace, J., Carlberg., V., Petzen, J., Welch, D., Overton, R. and C. Dymond
2011-01	Dairy Farm Business Summary, New York Large Herd Farms, 300 Cows or Larger, 2010	(\$16.00)	Karszes, J., Knoblauch, W., Putnam, L. and A. Angell
2010-19	Legislative Actions on Overtime Pay and Collective Bargaining and Their Implications for Farm Employers In New York State, 2009-2010		Telega, L. and T. Maloney
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2010-17	New York Economic Outlook, 2011		Extension Staff
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