

# **DAIRY FARM BUSINESS SUMMARY**

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## ***NEW YORK SMALL HERD FARMS, 80 COWS OR FEWER 2009***



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**2009 DAIRY FARM BUSINESS SUMMARY**  
**Small Herd Dairy Farms**  
**80 Cows or Fewer**  
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## 2009 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 2009 with herds of 80 cows or fewer and no milking parlors.

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 2009 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 80 or fewer cows and that do not use a milking parlor. Many counties had farms that met this criteria in 2009. 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.

## PROGRESS OF THE FARM BUSINESS

In 2009, dairy farmers experienced the lowest milk prices in many years and input costs did not change much from 2008. Negative margins were common and farmers borrowed unprecedented amounts of money in order to cash flow. To compound the price-cost squeeze; poor, wet weather contributed to lower yields and lower quality forages. Farmers needed to buy more concentrated feed to make up the difference. What was referred to as “The Dairy Crisis” would have been worse if small farms did not have the MILC payments from the federal government.

A 1.9 percent change from 54 to 55 cows in size with no change in young stock at 44 contributed to a 0.4 percent increase in milk pounds sold. Worker equivalent remained the same at 2.12 as farmers held the line on labor. Milk sold per cow declined 1.7 percent due to poorer crop quality and less grain feeding. Corn silage yield per ton was down 8.8 percent due to extremely wet weather with fewer growing degree days.

Cows per worker increased from 25 to 26 as no new labor was added. Milk sold per worker rose just 0.4 percent as farmers were tighter with feed and had poorer forages. Hired labor cost per hundredweight dropped 8.5 percent due to less seasonal help and more family labor to combat the cash flow issues. However, cost per worker jumped 22.4 percent as farmers competed to hire workers and needed to pay more to attract and retain them. Certainly, as milk prices fell, the hired labor cost as a percent of milk sales would rise—and it did, by a whopping 30.9 percent.

Low milk prices affected the grain and concentrate purchased as a percent of milk sales, increasing from 30 percent to 38 percent, a 26 percent increase. Farmers can only cut feed costs so much as feed is integral to milk production and small farms generally do not grow much of their own grains. They did reduce feed expenses as much as possible to minimize low milk price impact, spending \$5.12 per hundredweight compared to \$5.84 per hundredweight in 2008. All other expenses were pared down including crop expenses and machinery costs to reduce total operating expenses over 11 percent from \$17.49 to \$15.51. Interest costs fell 3.6 percent while milk marketing costs rose 3.3 percent mainly due to market conditions.

This group of dairy farmers was able to pare down total operating costs to \$12.57 from \$14.81 or a 15.1 percent change. Small farms do tend to be more flexible on cost control than large farms in a downturn. Farm capital per cow rose 1.2 percent along with machinery and equipment per cow up 1 percent. However, farmers invested very little in new equipment. A 25 percent decrease in the asset turnover ratio resulted from lower profits.

Gross milk sales per cow were down over 31 percent from \$3,650 per cow to \$2,514 per cow due to low milk prices. Milk sales per hundredweight dropped from \$19.37 to \$13.57 per hundredweight, nearly 30 percent. Lower beef and calf prices did little to mitigate low milk prices with cow sales down 23 percent and calf sales down 80 percent. MILC generated more government receipts, up from \$0.41 per hundredweight to \$1.58 per hundredweight, but this did not begin to make up what was lost in milk sales.

Net farm income without appreciation fell from \$31,544 to \$-4,689. Farmers lost, on average, \$-34,296 in labor and management income per operator. A large negative return on assets of -11.2 percent and -7.9 percent on all capital made farmers question their place in the dairy business and some exited. Farm debt per cow rose 14.7 percent as farmers borrowed to keep up with expenses.

Overall, 2009 was a year most would like to forget as they repay the money borrowed in 2009. Farm operators may wonder if changes to the Farm Bill in 2012 will come soon enough to justify staying in business.

**PROGRESS OF THE FARM BUSINESS**  
Same 33 Small Herd Dairy Farms, 2008 & 2009

Selected Factors	Average of 33 Farms		Percent Change
	2008	2009	
<u>Size of Business</u>			
Average number of cows	54	55	1.9
Average number of heifers	44	44	0.0
Milk sold, lbs.	1,016,797	1,020,438	0.4
Worker equivalent	2.13	2.13	0.0
Total tillable acres	167	172	3.0
<u>Rates of Production</u>			
Milk sold per cow, lbs.	18,851	18,523	-1.7
Hay DM per acre, tons	2.2	2.3	4.6
Corn silage per acre, tons	17.1	15.6	-8.8
<u>Labor Efficiency &amp; Costs</u>			
Cows per worker	25	26	4.0
Milk sold/worker, lbs.	477,369	479,079	0.4
Hired labor cost/cwt.	\$1.06	\$0.97	-8.5
Hired labor cost/worker	\$21,506	\$26,327	22.4
Hired labor cost as % of milk sales	5.5%	7.2%	30.9
<u>Cost Control</u>			
Grain & concentrate purchased as % of milk sales	30%	38%	26.7
Grain & concentrate per cwt. milk	\$5.84	\$5.12	-12.3
Dairy feed & crop expense per cwt. milk	\$7.29	\$6.54	-10.3
Labor & machinery costs/cow	\$1,939	\$1,800	-7.2
Total farm operating expenses per cwt. sold	\$17.49	\$15.51	-11.3
Interest costs per cwt. milk	\$0.56	\$0.54	-3.6
Milk marketing costs per cwt. milk sold	\$1.21	\$1.25	3.3
Operating cost of producing cwt. of milk	\$14.81	\$12.57	-15.1
<u>Capital Efficiency(average for the year)</u>			
Farm capital per cow*	\$11,523	\$11,657	1.2
Machinery & equipment per cow	\$2,293	\$2,315	1.0
Asset turnover ratio*	0.36	0.27	-25.0
<u>Income Generation</u>			
Gross milk sales per cow	\$3,650	\$2,514	-31.1
Gross milk sales per cwt.	\$19.37	\$13.57	-29.9
Net milk sales per cwt.	\$18.16	\$12.32	-32.2
Dairy cattle sales per cow	\$190	\$146	-23.2
Dairy calf sales per cow	\$30	\$6	-80.0
Government receipts per cwt.	\$0.41	\$1.58	-285.4
<u>Profitability</u>			
Net farm income without appreciation	\$31,544	\$-4,689	-114.9
Net farm income with appreciation	\$33,898	\$-2,871	-108.5
Labor & management income per oper./manager	\$-3,416	\$-34,296	-904.0
Rate of return on equity capital without apprec.	-2.4%	-11.2%	-366.7
Rate of return on all capital without appreciation	-1.0%	-7.9%	-690.0
<u>Financial Summary</u>			
Farm net worth, end year	\$478,816	\$482,482	0.8
Debt to asset ratio	0.20	0.23	15.0
Farm debt per cow	\$2,207	\$2,532	14.7

\*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

39 Small Herd Dairy Farms, 2009

Type of Farm	Number	Milking System	Number
Dairy	39	Bucket & carry	0
Part-time dairy	0	Dumping station	1
Dairy cash-crop	0	Pipeline	38
Certified organic milk producer	0	Herringbone parlor	0
Rotational grazing farms	12	Other parlor	0
Type of Ownership	Number	Production Records	Number
Owner	35	Testing service	32
Renter	4	On-farm system	1
		Other	0
Type of Business	Number	None	6
Sole Proprietorship	34	Business Record System	Number
Partnership	4	Account Book	11
LLC	1	Accounting Service	11
Type of Barn	Number	On-farm computer	17
Stanchion or Tie-Stall	37	Other	0
Freestall	1		
Combination	1	Breed of Herd	Percent
Milking Frequency	Number	Holstein	84
2 times per day	38	Jersey	6
3 times per day	1	Other	10
Other	0		

### Income Statement

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

Cash paid is the actual cash outlay during the year and does not necessarily represent the cost of goods and services actually used in 2009.

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**

39 Small Herd Dairy Farms, 2009

Expense Item	Cash Paid	-	Change in Inventory or Prepaid Expense	+	Change in Accounts Payable	=	Accrual Expenses
<u>Hired Labor</u>	\$ 9,812		\$ 0	<<	\$ 42		\$ 9,854
<u>Feed</u>							
Dairy grain & concentrate	49,533		-169		2,086		51,788
Dairy roughage	5,093		-416		-397		5,112
Nondairy	4		0		0		4
Professional nutritional services	0		0	<<	0		0
<u>Machinery</u>							
Machinery hire, rent & lease	3,179		0	<<	77		3,256
Machinery repairs & farm vehicle exp.	10,040		103		-427		9,511
Fuel, oil & grease	6,470		-45		-84		6,431
<u>Livestock</u>							
Replacement livestock	442		0	<<	-18		424
Breeding	2,844		-21		-46		2,819
Veterinary & medicine	4,443		-4		60		4,506
Milk marketing	12,350		0	<<	-22		12,328
Bedding	1,909		-97		0		2,006
Milking supplies	5,057		4		-33		5,019
Cattle lease & rent	0		0	<<	0		0
Custom boarding	388		0	<<	0		388
bST	580		4		0		576
Livestock professional fees	587		-85	<<	64		736
Other livestock expense	3,711		28		24		3,706
<u>Crops</u>							
Fertilizer & lime	3,957		-143		79		4,179
Seeds & plants	1,944		-195		208		2,347
Spray, other crop expense	2,194		-40		-103		2,131
Crop professional fees	359		0	<<	-69		290
<u>Real Estate</u>							
Land, building & fence repair	2,403		18		71		2,456
Taxes	4,439		0	<<	412		4,851
Rent & lease	1,947		0	<<	0		1,947
<u>Other</u>							
Insurance	4,005		-22	<<	59		4,087
Utilities (farm share)	7,270		0	<<	-2		7,268
Interest paid	7,143		0	<<	-27		7,116
Other professional fees	855		0	<<	0		855
Miscellaneous	1,260		-7		112		1,378
Total Operating	\$154,217		\$ -1,086		\$ 2,064		\$ 157,367
Expansion livestock	31		0	<<	0		31
Extraordinary expense	128		0	<<	0		128
Machinery depreciation							10,914
Building depreciation							4,170
<b>TOTAL ACCRUAL EXPENSES</b>							<b>\$ 172,610</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 2009 but not paid for. A decrease is subtracted because it represents payment for resources used before 2009.

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**

39 Small Herd Dairy Farms, 2009

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts
Milk sales	\$ 137,703				\$ -298		\$ 137,405
Dairy cattle	7,184	\$	-68		-108		7,009
Dairy calves	1,057		-567		0		490
Other livestock	485		-129		0		355
Crops	597		250		-21		826
Government receipts	16,079		0 *		-90		15,989
Custom machine work	656				0		656
Gas tax refund	225				0		225
Other	<u>3,629</u>				<u>-78</u>		3,552
Less nonfarm noncash capital**		(-)	<u>0</u> **			(-)	<u>0</u>
Total Receipts	\$ 167,616	\$	-514	\$	-594	\$	166,508

\*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 2009 for the 2010 crop year in excess of funds earned for 2009. Likewise, a decrease is added to cash government receipts because it represents funds earned for 2009 but received in 2008.

Changes in accounts receivable are calculated by subtracting beginning year balances from end year balances. Payments in January 2010 for milk produced in December 2009 compared to January 2009 payments for milk produced in 2008 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.

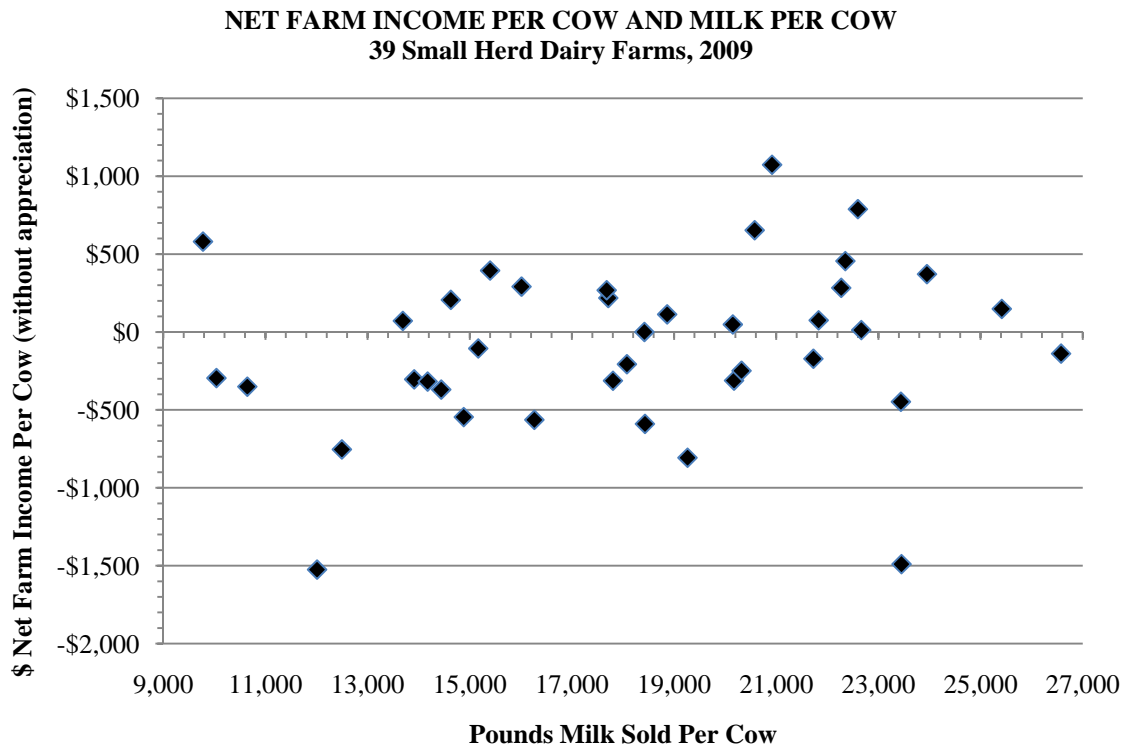
Net farm income is computed both with and without appreciation. Appreciation represents the change in values caused by annual changes in prices of livestock, machinery, real estate inventory, and stocks and certificates (other than Farm Credit). Appreciation is a major factor contributing to changes in farm net worth and must be included for a complete profitability analysis.

**NET FARM INCOME**  
39 Small Herd Dairy Farms, 2009

Item	Average 39 Farms		Top 25% Farms*	
	Total	Per Cow	Total	Per Cow
Total accrual receipts	\$ 166,508		\$ 178,197	
Appreciation: Livestock	-4,674		-7,410	
Machinery	1,763		-309	
Real Estate	5,010		1,616	
Other Stock & Certificates	<u>-11</u>		<u>32</u>	
Total Including Appreciation	\$ 168,596		\$ 172,126	
Total accrual expenses	- 172,610		- 161,880	
Net Farm Income (with appreciation)	\$ -4,014	\$ -72	\$ 10,246	\$ 194
Net Farm Income (without appreciation)	\$ -6,102	\$ -110	\$ 16,317	\$ 309

\*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.



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.

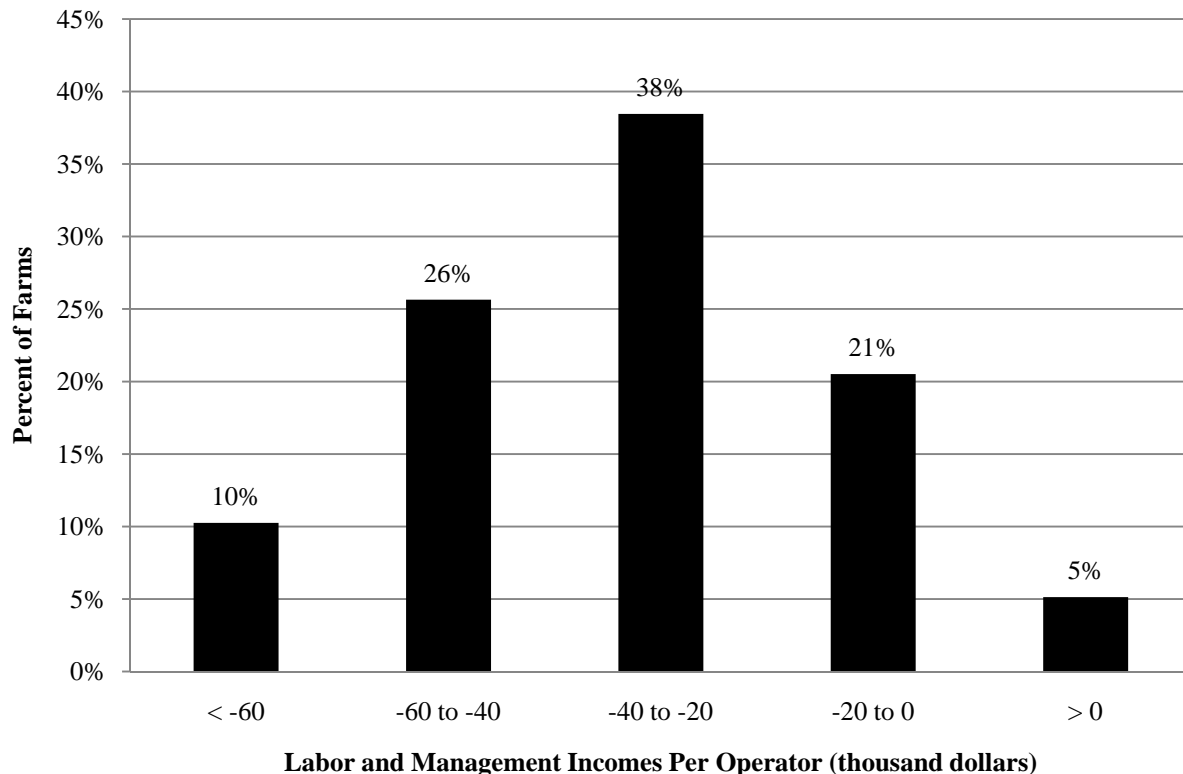
### LABOR AND MANAGEMENT INCOME

39 Small Herd Dairy Farms, 2009

Item	Average 39 Farms	Top 25% Farms
Net farm income without appreciation	\$ -6,102	\$ 16,317
Family labor unpaid @ \$2,500 per month	- 11,974	- 4,575
Interest on \$443,636 average equity capital @ 5% real rate (\$558,832 average equity capital for top 25% farms)	- <u>22,252</u>	- <u>27,942</u>
Labor & Management Income per farm (1.23 Operators/farm) (1.00 operators per farm for top 25% farms)	\$ -40,328	\$ -16,200
Labor & Management Income per Operator/Manager	\$ -32,787	\$ -14,727

Labor and management income per operator averaged \$-32,787 on these 39 farms in 2009. The range in labor and management income per operator was from less than \$-119,000 to more than \$18,000. Returns to labor and management were less than \$-40,000 on 36 percent of the farms. Labor and management incomes per operator were between \$-40,000 and \$0 on 59 percent of the farms while 5 percent had labor and management incomes per operator greater than \$0.

### DISTRIBUTION OF LABOR & MANAGEMENT INCOMES PER OPERATOR 39 Small Herd Dairy Farms, 2009



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**  
39 Small Herd Dairy Farms, 2009

Item	Average 39 Farms	Top 25% Farms
Net farm income with appreciation	\$ -4,014	\$ 10,246
Family labor unpaid @ \$2,500 per month	- 11,974	- 4,575
Value of operators' labor & management	- <u>38,751</u>	- <u>32,730</u>
Return on equity capital with appreciation	\$ -54,740	\$ -27,059
Interest paid	+ <u>7,116</u>	+ <u>5,483</u>
Return on total capital with appreciation	\$ -47,624	\$ -21,576
Return on equity capital without appreciation	\$ -56,827	\$ -20,988
Return on total capital without appreciation	\$ -49,712	\$ -15,505
Rate of return on average equity capital:		
with appreciation	-12.3%	-4.8%
without appreciation	-12.8%	-3.8%
Rate of return on average total capital:		
with appreciation	-7.9%	-3.4%
without appreciation	-8.2%	-2.4%
Net farm income from operations ratio	-0.04	0.09

**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 2009, lease payments were discounted by 8.15 percent to obtain their present value.

Advanced government receipts are included as current liabilities. Government payments received in 2009 that are for participation in the 2010 program are the end year balance and payments received in 2008 for participation in the 2009 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.

**2009 FARM BUSINESS & NONFARM BALANCE SHEET**

39 Small Herd Dairy Farms, 2009

Farm Assets			Farm Liabilities & Net Worth		
	Jan. 1	Dec. 31		Jan. 1	Dec. 31
<u>Current</u>			<u>Current</u>		
Farm cash, checking & savings	\$ 6,463	\$ 5,430	Accounts payable	\$ 9,866	\$ 11,930
Accounts receivable	12,688	12,095	Operating debt	2,609	2,898
Prepaid expenses	138	31	Short Term	923	1,142
Feed & supplies	38,154	37,424	Advanced govt. receipts	0	0
			Current Portion:		
			Intermediate	9,379	11,020
			Long Term	<u>4,145</u>	<u>4,959</u>
Total Current	\$ 57,443	\$ 54,980	Total Current	\$ 26,921	\$ 31,949
<u>Intermediate</u>			<u>Intermediate</u>		
Dairy cows:			Structured debt		
owned	\$ 87,174	\$ 85,485	1-10 years	\$ 57,566	\$ 56,990
leased	0	0	Financial lease		
Heifers	47,945	44,280	(cattle/machinery)	187	28
Bulls & other livestock	2,325	2,242	Farm Credit stock	<u>258</u>	<u>264</u>
Mach. & equip. owned	123,399	121,508	Total Intermediate	\$ 58,011	\$ 57,282
Mach. & equip. leased	187	28			
Farm Credit stock	258	264			
Other stock/certificate	<u>2,818</u>	<u>2,932</u>			
Total Intermediate	\$ 264,107	\$ 256,739			
<u>Long Term</u>			<u>Long Term</u>		
Land & buildings:			Structured debt		
owned	\$ 274,946	\$ 301,670	>10 years	\$ 67,932	\$ 80,518
leased	<u>0</u>	<u>0</u>	Financial lease		
Total Long Term	\$ 274,946	\$ 301,670	(structures)	<u>0</u>	<u>0</u>
			Total Long Term	\$ 67,932	\$ 80,518
Total Farm Assets	\$ 596,496	\$ 613,389	Total Farm Liabilities	\$ 152,865	\$ 169,749
			FARM NET WORTH	\$ 443,631	\$ 443,640

## Nonfarm Assets, Liabilities &amp; Net Worth (Average of 20 farms reporting)

Assets			Liabilities & Net Worth		
	Jan. 1	Dec. 31		Jan. 1	Dec. 31
Personal cash, checking & savings	\$19,342	\$17,783	Nonfarm Liabilities	\$ 1,499	\$ 2,286
Cash value life insurance	9,475	9,451			
Nonfarm real estate	19,950	19,950			
Auto (personal share)	6,225	6,375			
Stocks & bonds	18,024	21,130			
Household furnishings	9,650	9,650			
All other nonfarm assets	<u>4,700</u>	<u>4,700</u>			
Total Nonfarm Assets	\$87,366	\$89,038	NONFARM NET WORTH	\$ 85,867	\$ 86,752

Farm & Nonfarm Assets, Liabilities, and Net Worth*			Jan. 1	Dec. 31
Total Assets			\$683,862	\$702,427
Total Liabilities			<u>154,364</u>	<u>172,035</u>
TOTAL FARM & NONFARM NET WORTH			\$ 529,498	\$ 530,392

\*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**  
39 Small Herd Dairy Farms, 2009

Item	Average 39 Farms		Top 25% Farm	
<u>Financial Ratios - Farm:</u>				
Percent equity		72%		87%
Debt/asset ratio: total		0.28		0.13
long-term		0.27		0.13
intermediate/current		0.29		0.13
Leverage ratio		0.38		0.15
Current ratio		1.72		2.56
Working capital	\$23,031	As % of total Expenses:	\$38,019	23%
<u>Farm Debt Analysis:</u>				
Accounts payable as % of total debt		7%		9%
Long-term liabilities as a % of total debt		47%		50%
Current & intermediate liabilities as a % of total debt		53%		50%
Cost of term debt (weighted average)		4.1%		4.4%
<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	\$2,974	\$1,831	\$1,495	\$971
Long-term debt	1,411	869	750	487
Intermediate & long term	2,414	1,487	1,053	684
Intermediate & current debt	1,563	963	745	484

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**  
39 Small Herd Dairy Farms, 2009

Item	Average 39 Farms	
	Real Estate	Machinery & Equipment
Value beginning of year	\$ 274,946	\$ 123,399
Purchases	\$ 19,571*	\$ 5,758
Gift & inheritance	+ 8,793	+ 2000
Lost capital	- 1,195	
Sales	- 1,285	- 498
Depreciation	- 4,170	- 10,914
Net investment	= 21,714	= -3,654
Appreciation	+ 5,010	+ 1,763
Value end of year	\$ 301,670	\$ 121,508

\*\$12,718 land and \$6,853 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)**  
39 Small Herd Dairy Farms, 2009

Item	Average 39 Farms	Top 25% Farms
Beginning of year farm net worth	\$443,631	\$ 557,749
Net farm income without appreciation	\$ -6,102	\$ 16,317
+Nonfarm cash income	+ 11,185	+ 10,619
-Personal withdrawals & family expenditures excluding nonfarm borrowings	- 22,958	- 27,535
RETAINED EARNINGS	+ \$ -17,874	+\$ -598
Nonfarm noncash transfers to farm	\$ 10,793	\$ 0
+Cash used in business from nonfarm capital	+ 4,905	+ 7,821
-Note or mortgage from farm real estate sold (nonfarm)	- 0	- 0
CONTRIBUTED/WITHDRAWN CAPITAL	+ \$ 15,698	+\$ 7,821
Appreciation	\$ 2,087	\$ -6,071
-Lost capital	- 1,195	- 450
CHANGE IN VALUATION EQUITY	+ \$ 892	+\$ -6,521
IMBALANCE/ERROR	- \$ -1,293	- \$ -1,464
End of year net worth*	= \$ 443,640	=\$ 559,915
<u>Change in Net Worth</u>		
Without appreciation	\$ -2,078	\$8,237
With appreciation	\$ 9	\$2,166

\*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**  
39 Small Herd Dairy Farms, 2009

Item	Average 39 Farms	
<b><u>Cash Flow from Operating Activities</u></b>		
Cash farm receipts	\$ 167,616	
- Cash farm expenses	154,217	
- Extraordinary expense	<u>128</u>	
= Net cash farm income		\$ 13,271
Personal withdrawals & family expenses including nonfarm debt payments	\$ 23,580	
- Nonfarm income	<u>11,185</u>	
- Net cash withdrawals from the farm		<u>\$ 12,395</u>
= Net Provided by Operating Activities		\$ 876
<b><u>Cash Flow From Investing Activities</u></b>		
Sale of assets: machinery	\$ 498	
+ real estate	1,285	
+ other stock & cert.	<u>0</u>	
= Total asset sales		\$ 1,783
Capital purchases: expansion livestock	\$ 31	
+ machinery	5,758	
+ real estate	19,571	
+ other stock & cert.	<u>125</u>	
- Total invested in farm assets		<u>\$ 25,484</u>
= Net Provided by Investment Activities		\$ -23,702
<b><u>Cash Flow From Financing Activities</u></b>		
Money borrowed (intermediate & long term)	\$ 38,361	
+ Money borrowed (short term)	718	
+ Increase in operating debt	289	
+ Cash from nonfarm capital used in business	4,905	
+ Money borrowed - nonfarm	<u>623</u>	
= Cash inflow from financing		\$ 44,896
Principal payments (intermediate & long term)	\$ 23,897	
+ Principal payments (short term)	498	
+ Decrease in operating debt	<u>0</u>	
- Cash outflow for financing		<u>\$ 24,396</u>
= Net Provided by Financing Activities		\$ 20,500
<b><u>Cash Flow From Reserves</u></b>		
Beginning farm cash, checking & savings		\$ 6,463
- Ending farm cash, checking & savings		<u>5,430</u>
= Net Provided from Reserves		\$ 1,033
Imbalance (error)		<u>\$ -1,293</u>



**ANNUAL CASH FLOW STATEMENT**  
Top 25% Small Herd Dairy Farms, 2009

Item	Top 25% Farms	
<u>Cash Flow from Operating Activities</u>		
Cash farm receipts	\$ 172,476	
- Cash farm expenses	149,414	
- Extraordinary expense	<u>0</u>	
= Net cash farm income		\$ 23,062
Personal withdrawals & family expenses including nonfarm debt payments	\$ 28,455	
- Nonfarm income	<u>10,619</u>	
- Net cash withdrawals from the farm		\$ <u>17,835</u>
= Net Provided by Operating Activities		\$ 5,227
<u>Cash Flow From Investing Activities</u>		
Sale of assets: machinery	\$ 470	
+ real estate	0	
+ other stock & cert.	<u>0</u>	
= Total asset sales		\$ 470
Capital purchases: expansion livestock	\$ 120	
+ machinery	6,534	
+ real estate	2,604	
+ other stock & cert.	<u>304</u>	
- Total invested in farm assets		\$ <u>9,562</u>
= Net Provided by Investment Activities		\$ -9,092
<u>Cash Flow From Financing Activities</u>		
Money borrowed (intermediate & long term)	\$ 8,122	
+ Money borrowed (short term)	989	
+ Increase in operating debt	0	
+ Cash from nonfarm capital used in business	7,821	
+ Money borrowed - nonfarm	<u>920</u>	
= Cash inflow from financing		\$ 17,852
Principal payments (intermediate & long term)	\$ 14,206	
+ Principal payments (short term)	0	
+ Decrease in operating debt	<u>159</u>	
- Cash outflow for financing		\$ <u>14,365</u>
= Net Provided by Financing Activities		\$ 3,488
<u>Cash Flow From Reserves</u>		
Beginning farm cash, checking & savings		\$ 6,608
- Ending farm cash, checking & savings		<u>7,694</u>
= Net Provided from Reserves		\$ -1,086
Imbalance (error)		\$ -1,464

## 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 2010. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 2010 debt payments shown below.

### FARM DEBT PAYMENTS PLANNED

Small Herd Dairy Farms, 2008 & 2009

Debt Payments	Same 33 Dairy Farms			Same 10 Top 25% Farms		
	2009 Payments		Planned 2010	2009 Payments		Planned 2010
	Planned	Made		Planned	Made	
Long-term	\$ 8,761	\$ 11,511	\$ 8,034	\$ 11,693	\$ 12,430	\$ 8,364
Intermediate-term	14,048	15,728	12,380	7,305	7,335	8,692
Short-term	81	458	297	0	0	980
Operating (net reduction)	136	993	491	450	444	0
Accounts payable (net reduction)	61	1,537	439	0	268	0
Total	\$ 23,086	\$ 30,227	\$ 21,640	\$ 19,448	\$ 20,476	\$ 18,036
Per cow	\$ 419	\$ 549		\$ 368	\$ 388	
Per cwt. 2009 milk	\$ 2.26	\$ 2.96		\$ 1.94	\$ 2.04	
Percent of total 2009 receipts	14%	18%		11%	11%	
Percent of 2009 milk receipts	17%	22%		14%	15%	

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 2009 (as of December 31, 2008) that could have been made with the amount available for debt service in 2009. Farmers who did not participate in DFBS in 2008 have their 2009 cash flow coverage ratio based on planned debt payments for 2010.

### COVERAGE RATIOS

Same 33 Small Herd Dairy Farms, 2008 & 2009

Item	Average	Item	Average
<u>Cash Flow Coverage Ratio</u>		<u>Debt Coverage Ratio</u>	
Cash farm receipts	\$168,902	Net farm income (without appreciation)	\$-4,689
- Cash farm expenses	154,337	+ Depreciation	14,964
+ Interest paid (cash)	5,522	+ Interest paid (accrual)	5,490
- Net personal withdrawals from farm*	<u>12,053</u>	- Net personal withdrawals from farm*	<u>12,053</u>
(A) = Amount Available for Debt Service	\$ 8,035	(A') = Repayment Capacity	\$3,712
(B) = Debt Payments Planned for 2009 (as of December 31, 2008)	\$ 23,086	(B) = Debt Payments Planned for 2009 (as of December 31, 2008)	\$23,086
(A/B)= Cash Flow Coverage Ratio for 2009	0.35	(A'/B)= Debt Coverage Ratio for 2009	0.16
-----			
Same 10 Top 25% Dairy Farms, 2008 & 2009			
(A) = Amount Available for Debt Service	\$11,786	(A') = Repayment Capacity	\$14,722
(B) = Debt Payments Planned for 2009	19,448	(B) = Debt Payments Planned for 2009	19,448
(A/B)= Cash Flow Coverage Ratio for 2009	0.61	(A'/B)= Debt Coverage Ratio for 2009	0.76

\*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

39 Small Herd Dairy Farms, 2009

Item	Average 39 Farms		
	Per Cow	Per Cwt.	Total
Number cows and cwt. milk	56	10,195	
<u>Accrual Operating Receipts</u>			
Milk	\$2,468	\$13.48	\$137,405
Dairy cattle	126	0.69	7,009
Dairy calves	9	0.05	490
Other livestock	6	0.03	355
Crops	15	0.08	826
Miscellaneous receipts	<u>367</u>	<u>2.00</u>	<u>20,422</u>
Total	\$2,991	\$16.33	\$166,508
<u>Accrual Operating Expenses</u>			
Hired labor	\$ 177	\$ 0.97	\$ 9,854
Dairy grain & concentrate	930	5.08	51,788
Dairy roughage	92	0.50	5,112
Nondairy feed	0	0.00	4
Professional nutritional services	0	0.00	0
Machinery hire/rent/lease	58	0.32	3,256
Machinery repair & farm vehicle expense	171	0.93	9,511
Fuel, oil & grease	116	0.63	6,431
Replacement livestock	8	0.04	424
Breeding	51	0.28	2,819
Veterinary & medicine	81	0.44	4,506
Milk marketing	221	1.21	12,328
Bedding	36	0.20	2,006
Milking supplies	90	0.49	5,019
Cattle lease	0	0.00	0
Custom boarding	7	0.04	388
bST expense	10	0.06	576
Livestock professional fees	13	0.07	736
Other livestock expense	67	0.36	3,706
Fertilizer & lime	75	0.41	4,179
Seeds & plants	42	0.23	2,347
Spray & other crop expenses	38	0.21	2,131
Crop professional fees	5	0.03	290
Land, building, fence repair	44	0.24	2,456
Taxes	87	0.48	4,851
Real estate rent/lease	35	0.19	1,947
Insurance	73	0.40	4,087
Utilities	131	0.71	7,268
Miscellaneous	<u>40</u>	<u>0.22</u>	<u>2,233</u>
Total Less Interest Paid	\$2,699	\$14.74	\$150,251
<u>Net Accrual Operating Income (without interest paid)</u>	\$ 292	\$ 1.59	\$ 16,257
- Change in livestock/crop inventory*	-9	-0.05	-514
- Change in accounts receivable	-11	-0.06	-594
- Change in feed/supply inventory**	-20	-0.11	-1,086
+ Change in accts. payable***	<u>38</u>	<u>0.21</u>	<u>2,091</u>
NET CASH FLOW	\$ 369	\$ 2.01	\$ 20,542
- Net personal withdrawals from farm (see footnote on p. 15)	<u>200</u>	<u>1.09</u>	<u>11,144</u>
Available for Farm Debt Payments & Investments	\$ 169	\$ 0.92	\$ 9,398
- Farm debt payments	<u>619</u>	<u>3.38</u>	<u>34,445</u>
Available for Farm Investment	\$ -450	\$-2.46	\$-25,047
- Capital purchases: cattle, machinery & improvements	<u>458</u>	<u>2.50</u>	<u>25,484</u>
Additional Capital Needed	\$ 908	\$ 4.96	\$ 50,531

\*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, 2009

Item	Average Top 25% Farms		
	Per Cow	Per Cwt.	Total
Number of cows or cwt. milk	53	10,019	
<u>Accrual Operating Receipts</u>			
Milk	\$2,640	\$13.91	\$139,375
Dairy cattle	285	1.50	15,064
Dairy calves	-8	-0.04	-400
Other livestock	4	0.02	208
Crops	46	0.24	2,405
Miscellaneous receipts	<u>408</u>	<u>2.15</u>	<u>21,545</u>
Total	\$3,375	\$17.79	\$178,197
<u>Accrual Operating Expenses</u>			
Hired labor	\$ 203	\$ 1.07	\$ 10,695
Dairy grain & concentrate	816	4.30	43,073
Dairy roughage	142	0.75	7,513
Nondairy feed	0	0.00	15
Professional nutritional services	0	0.00	0
Machinery hire/rent/lease	74	0.39	3,896
Machinery repair & farm vehicle expense	191	1.01	10,087
Fuel, oil & grease	118	0.62	6,239
Replacement livestock	2	0.01	100
Breeding	78	0.41	4,096
Veterinary & medicine	79	0.42	4,183
Milk marketing	237	1.25	12,503
Bedding	34	0.18	1,803
Milking supplies	87	0.46	4,585
Cattle lease	0	0.00	0
Custom boarding	25	0.13	1,303
bST expense	14	0.08	760
Livestock professional fees	10	0.05	510
Other livestock expense	60	0.32	3,194
Fertilizer & lime	99	0.52	5,222
Seeds & plants	39	0.21	2,074
Spray & other crop expenses	45	0.24	2,360
Crop professional fees	10	0.05	524
Land, building, fence repair	42	0.22	2,218
Taxes	104	0.55	5,484
Real estate rent/lease	18	0.09	941
Insurance	71	0.38	3,765
Utilities	123	0.65	6,489
Miscellaneous	<u>54</u>	<u>0.29</u>	<u>2,861</u>
Total Less Interest Paid	\$2,774	\$14.62	\$146,489
<u>Net Accrual Operating Income (without interest paid)</u>	\$ 601	\$ 3.16	\$ 31,708
- Change in livestock/crop inventory*	124	0.65	6,548
- Change in accounts receivable	-16	-0.08	-828
- Change in feed/supply inventory**	12	0.06	611
+ Change in accounts payable***	<u>62</u>	<u>0.33</u>	<u>3,275</u>
NET CASH FLOW	\$ 543	\$ 2.86	\$ 28,651
- Net personal withdrawals from farm (see footnote p.15)	<u>319</u>	<u>1.68</u>	<u>16,865</u>
Available for Farm Debt Payments & Investments	\$ 223	\$ 1.18	\$ 11,786
- Farm debt payments	<u>388</u>	<u>2.04</u>	<u>20,476</u>
Available for Farm Investment	\$ -165	\$ -0.87	\$ -8,690
- Capital purchases: cattle, machinery & improvements	<u>181</u>	<u>0.95</u>	<u>9,562</u>
Additional Capital Needed	\$ 346	\$ 1.82	\$ 18,253

\*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

39 Small Herd Dairy Farms, 2009

Item	Average 39 Farms			Top 25% Farm		
<b>Land</b>	<b>Owned</b>	<b>Rented</b>	<b>Total</b>	<b>Owned</b>	<b>Rented</b>	<b>Total</b>
Tillable	93	82	175	85	91	176
Nontillable	43	20	63	36	19	55
Other nontillable	69	16	85	76	0	76
Total	205	117	323	197	110	307
<b>Crop Yields</b>	<b>Farms</b>	<b>Acres*</b>	<b>Production/Acre</b>	<b>Farms</b>	<b>Acres</b>	<b>Production/Acre</b>
Hay crop	38	134	2.35 tn DM	10	136	2.20 tn DM
Corn silage	28	36	15.73 tn	5	27	19.35 tn
			5.21 tn DM			6.29 tn DM
Other forage	3	11	1.56 tn DM	0	0	0.00 tn DM
Total forage	38	162	2.81 tn DM	10	149	2.58 tn DM
Corn grain	3	48	109 bu	0	0	0 bu
Oats	4	16	51 bu	0	0	0 bu
Wheat	2	15	41 bu	0	0	0 bu
Other crops	6	24		2	45	
Tillable pasture	8	23		2	47	
Idle	3	33		0	0	
Total Tillable Acres	39	175		10	176	

\*This column represents the average acreage for the farms producing that crop. Average acreages including those farms not producing were hay crop 131, corn silage 26, corn grain 4, oats 2, tillable pasture 5, and idle 3.

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

38 Small Herd Dairy Farms, 2009\*\*

Item	Average 38 Farms	Top 25% Farm
Total tillable acres per cow	3.20	3.33
Total forage acres per cow	2.89	2.83
Harvested forage dry matter, tons per cow	8.12	7.29

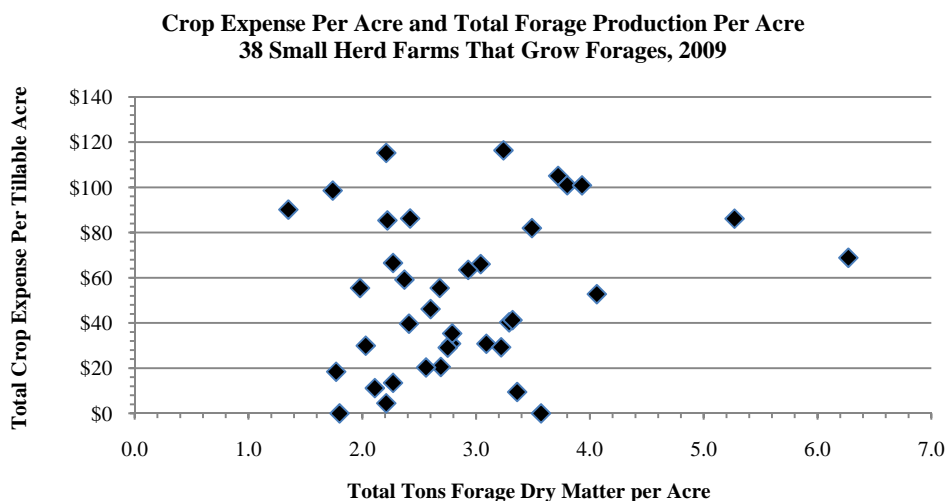
\*\*Excludes farms that do not harvest forages.

**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 12 farms, 4 of which are in the "top 25% farms" group.

**CROP RELATED ACCRUAL EXPENSES**  
Small Herd Dairy Farms Reporting Forage Production, 2009

Item	Average 38 farms		Top 25% Farms	
	Total Per Tillable Acre			
Number of farms reporting	38		10	
Average number of acres	179		176	
Fertilizer & lime expenses	\$	25.74	\$	29.67
Seeds & plants		14.27		11.78
Spray & other crop expenses		12.78		13.41
<b>TOTAL</b>	\$	<b>52.79</b>	\$	<b>54.86</b>



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**  
38 Small Herd Dairy Farms That Grow Forages, 2009

Machinery Expense	Average 44 Farms		Top 25% Farms	
	Total Expenses	Per Tillable Acre	Total Expenses	Per Tillable Acre
Fuel, oil & grease	\$ 6,503	\$ 36.31	\$ 6,239	\$ 35.45
Machinery repair & vehicle expense	9,395	52.45	10,087	57.31
Machine hire, rent & lease	3,342	18.66	3,896	22.13
Interest (5%)	6,226	34.76	5,736	32.59
Depreciation	<u>11,065</u>	<u>61.78</u>	<u>7,809</u>	<u>44.37</u>
<b>Total</b>	\$ 36,531	\$ 203.96	\$ 33,767	\$ 191.85

**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**  
39 Small Herd Dairy Farms, 2009

Item	Dairy Cows		Heifer					
	No.	Value	Bred		Open		Calves	
			No.	Value	No.	Value	No.	Value
<u>Average 39 Farms:</u>								
Beg. year (owned)	56	\$ 87,174	14	\$ 22,054	17	\$ 17,353	14	\$ 8,538
+ Change w/o apprec.		746		-1,733		919		-567
+ Appreciation		<u>-2,436</u>		<u>-838</u>		<u>-708</u>		<u>-738</u>
End year (owned)	56	\$ 85,485	14	\$ 19,482	18	\$ 17,565	13	\$ 7,233
End including leased	57							
Average number	56		45	(all age groups)				
<u>Top 25% Farms:</u>								
Beg. year (owned)	53	\$ 85,020	15	\$ 23,460	12	\$ 13,400	17	\$ 11,480
+ Change w/o apprec.		4,960		-3,510		5,495		-1,490
+ Appreciation		<u>-4,390</u>		<u>-1,330</u>		<u>-660</u>		<u>-1,150</u>
End year (owned)	55	\$ 85,590	13	\$ 18,620	18	\$ 18,235	14	\$ 8,840
End including leased	55							
Average number	53		44	(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**  
39 Small Herd Dairy Farms, 2009

Item	Average 39 Farms	Top 25% Farms
Total milk sold, lbs.	1,019,515	1,001,867
Milk sold per cow, lbs.	18,314	18,975
Average milk plant test, percent butterfat (average of farms reporting)	3.81	3.95

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**  
39 Small Herd Dairy Farms, 2009

Item	Average 39 Farms		Top 25% Farms	
	Number	Percent*	Number	Percent*
Cows sold for beef	12	22.3	13	24.1
Cows sold for dairy	1	0.6	1	1.3
Cows died	3	5.1	1	2.7
Culling rate**		27.0		27.0

\*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**  
39 Small Herd Dairy Farms, 2009

Item	Average 39 Farms			Top 25% Farms		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
<u>Accrual Cost of Producing Milk</u>						
Operating costs	\$ 128,295	\$ 2,305	\$ 12.58	\$ 113,270	\$ 2,145	\$ 11.31
Purchased inputs costs	\$ 143,507	\$ 2,578	\$ 14.08	\$ 123,058	\$ 2,331	\$ 12.28
Total costs	\$ 216,484	\$ 3,889	\$ 21.23	\$ 188,304	\$ 3,566	\$ 18.80
<u>Accrual Receipts From Milk</u>						
Net Milk Receipts	\$ 137,405	\$ 2,468	\$ 13.48	\$ 139,375	\$ 2,640	\$ 13.91
Net Farm Income	\$ 125,077	\$ 2,221	\$ 12.27	\$ 126,872	\$ 2,380	\$ 12.66
without Appreciation	\$ -6,102	\$ -110	\$ -0.60	\$ 16,317	\$ 309	\$ 1.63
with Appreciation	\$ -4,014	\$ -72	\$ -0.39	\$ 10,246	\$ 194	\$ 1.02

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**  
39 Small Herd Dairy Farms, 2009

Item	Average 39 Farms		Top 25% Farms	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purchased dairy grain & concentrate	\$ 930	\$ 5.08	\$ 816	\$ 4.30
Purchased dairy roughage	92	0.50	142	0.75
Total Purchased Dairy Feed	\$ 1,022	\$ 5.58	\$ 958	\$ 5.05
Purchased grain & conc. as % of milk receipts		37%		32%
Purchased feed & crop expense	\$ 1,183	\$ 6.46	\$ 1,151	\$ 6.07
Purchased feed & crop expense as % of milk receipts		47%		43%
Breeding	\$ 51	\$ 0.28	\$ 78	\$ 0.41
Veterinary & medicine	81	0.44	79	0.42
Milk marketing	221	1.21	237	1.25
Bedding	36	0.20	34	0.18
Milking supplies	90	0.49	87	0.46
Cattle lease	0	0.00	0	0.00
Custom boarding	7	0.04	25	0.13
bST	10	0.06	14	0.08
Livestock professional fees	13	0.07	10	0.05
Other livestock expense	67	0.36	60	0.32



**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**  
39 Small Herd Dairy Farms, 2009

Item	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
<u>Average 39 Farms:</u>				
Farm capital*	\$289,642	\$11,264	\$3,635	\$6,001
Real estate*		5,717		3,046
Machinery & equipment	56,741	2,202	702	
<u>Ratios</u>				
Asset turnover*	Operating Expense 0.27	Interest Expense 0.90	Depreciation Expense 0.05	0.09
<u>Top 25% Farms:</u>				
Farm capital*	\$384,732	\$ 12,169	\$3,651	\$7,577
Real estate*		6,167		3,840
Machinery & equipment	68,694	2,173	652	
<u>Ratios</u>				
Asset turnover*	Operating Expense 0.27	Interest Expense 0.82	Depreciation Expense 0.03	0.05

\*Excludes rented farms.

**LABOR FORCE INVENTORY AND ANALYSIS**  
39 Small Herd Dairy Farms, 2009

Labor Force	Months	Age	Years of Education	Value of Labor & Management
<u>Average 39 Farms:</u>				
Operator number 1	13.3	48	13	\$ 31,369
Operator number 2	3.1	46	13	7,382
Family paid	2.3			
Family unpaid	4.8			
Hired	<u>2.4</u>			
Total	25.9	/ 12 = 2.16 Worker Equivalent 1.23 Operator/Manager Equivalent		
<u>Top 25% Farms: Total</u>				
Operator's	20.1	/ 12 = 1.67 Worker Equivalent 1.10 Operator/Manager Equivalent		

Labor Efficiency	Average 39 Farms		Top 25% Farms	
	Total	Per Worker	Total	Per Worker
Cows, average number	56	26	53	32
Milk sold, pounds	1,019,515	472,544	1,001,867	598,726
Tillable acres	175	81	176	105

Labor Costs	Average 39 Farms			Top 25% Farms		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Value of operator(s)						
labor (\$2,500/month)	\$41,025	\$ 737	\$ 4.02	\$34,550	\$ 654	\$ 3.45
Family unpaid (\$2,500/month)	11,975	215	1.17	4,575	87	0.46
Hired	<u>9,854</u>	<u>177</u>	<u>0.97</u>	<u>10,695</u>	<u>203</u>	<u>1.07</u>
Total Labor	\$62,854	\$ 1,129	\$ 6.17	\$49,820	\$ 944	\$ 4.97
Machinery Cost	<u>\$36,240</u>	<u>\$ 651</u>	<u>\$ 3.55</u>	<u>\$33,767</u>	<u>\$ 640</u>	<u>\$ 3.37</u>
Total Labor & Machinery	\$99,094	\$ 1,780	\$ 9.72	\$83,587	\$ 1,583	\$ 8.34
Hired labor expense per hired worker equivalent		\$25,213			\$28,970	
Hired labor expense as % of milk sales		7.2%			7.7%	

## 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 33 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 33 Small Herd Dairy Farms, 2008 & 2009

Selected Factors	Average of Same 33 Farms*		Average of Same 10 Top 25% Farms*	
	2008	2009	2008	2009
<u>Size of Business</u>				
Average number of cows	54	55	53	53
Average number of heifers	44	44	43	44
Milk sold, lbs.	1,016,797	1,020,438	998,393	1,001,867
Worker equivalent	2.13	2.13	1.71	1.67
Total tillable acres	167	172	174	176
<u>Rates of Production</u>				
Milk sold per cow, lbs.	18,851	18,523	18,981	18,975
Hay DM per acre, tons	2.2	2.3	2.1	2.2
Corn silage per acre, tons	17.1	15.6	22.1	19.4
<u>Labor Efficiency</u>				
Cows per worker	25	26	31	32
Milk sold/worker, lbs.	477,369	479,079	583,856	599,921
<u>Cost Control</u>				
Grain & concentrate purchased as % of milk sales	30%	38%	26%	31%
Dairy feed & crop expense per cwt. milk	\$ 7.29	\$ 6.54	\$ 6.31	\$ 6.07
Labor & machinery costs/cow	\$ 1,939	\$ 1,800	\$ 1,742	\$ 1,583
Operating cost of producing cwt. of milk	\$ 14.81	\$ 12.57	\$ 13.67	\$ 11.31
<u>Capital Efficiency**</u>				
Farm capital per cow***	\$ 11,523	\$ 11,657	\$ 12,177	\$ 12,169
Machinery & equipment per cow	\$ 2,293	\$ 2,315	\$ 2,123	\$ 2,173
Asset turnover ratio***	0.36	0.27	0.34	0.27
<u>Profitability</u>				
Net farm income w/o appreciation	\$ 31,544	\$ -4,689	\$ 48,050	\$ 16,317
Net farm income with appreciation	\$ 33,898	\$ -2,871	\$ 46,125	\$ 10,246
Labor & management income per operator/manager	\$ -3,416	\$ -34,296	\$ 15,746	\$ -14,727
Rate of return on equity capital with appreciation	-1.9%	-10.8%	2.2%	-4.8%
Rate of return on all capital with appreciation	-0.6%	-7.6%	2.6%	-3.4%
<u>Financial Summary</u>				
Farm net worth, end year	\$ 478,816	\$ 482,482	\$ 561,073	\$ 559,915
Debt to asset ratio	0.20	0.23	0.13	0.13
Farm debt per cow	\$ 2,207	\$ 2,532	\$ 1,628	\$ 1,495

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

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

Same 33 Small Herd Dairy Farms, 2008 &amp; 2009

Item	2008		2009	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	54		55	
Cwt. of Milk Sold		10,168		10,204
<b><u>ACCRUAL OPERATING RECEIPTS</u></b>				
Milk	\$3,650	\$19.37	\$2,514	\$13.57
Dairy cattle	190	1.01	146	0.79
Dairy calves	30	0.16	6	0.03
Other livestock	29	0.15	6	0.03
Crops	95	0.51	16	0.09
Miscellaneous receipts	<u>175</u>	<u>0.93</u>	<u>372</u>	<u>2.01</u>
Total Receipts	\$4,170	\$22.12	\$3,060	\$16.52
<b><u>ACCRUAL OPERATING EXPENSES</u></b>				
Hired labor	\$ 199	\$ 1.06	\$ 180	\$ 0.97
Dairy grain & concentrate	1,101	5.84	948	5.12
Dairy roughage	90	0.47	93	0.50
Nondairy feed	1	0.00	0	0.00
Professional nutritional services	0	0.00	0	0.00
Machine hire/rent/lease	66	0.35	58	0.32
Mach. repair & vehicle exp.	258	1.37	175	0.95
Fuel, oil & grease	191	1.01	115	0.62
Replacement livestock	20	0.10	9	0.05
Breeding	63	0.33	53	0.29
Veterinary & medicine	109	0.58	83	0.45
Milk marketing	227	1.21	231	1.25
Bedding	42	0.22	39	0.21
Milking supplies	82	0.43	87	0.47
Cattle lease	0	0.00	0	0.00
Custom boarding	10	0.05	8	0.04
bST expense	7	0.04	12	0.07
Livestock professional fees	17	0.09	13	0.07
Other livestock expense	69	0.37	73	0.39
Fertilizer & lime	100	0.53	82	0.44
Seeds & plants	43	0.23	44	0.24
Spray/other crop expense	39	0.21	40	0.22
Crop professional fees	3	0.01	4	0.02
Land, building, fence repair	63	0.33	48	0.26
Taxes	96	0.51	93	0.50
Real estate rent/lease	44	0.24	34	0.19
Insurance	66	0.35	76	0.41
Utilities	141	0.75	132	0.71
Interest paid	106	0.56	100	0.54
Other professional fees	19	0.10	17	0.09
Miscellaneous	<u>30</u>	<u>0.16</u>	<u>25</u>	<u>0.14</u>
Total Operating Expenses	\$3,297	\$17.49	\$2,873	\$15.51
Expansion Livestock	14	0.07	1	0.00
Extraordinary Expense	6	0.03	0	0.00
Machinery Depreciation	206	1.09	201	1.08
Real Estate Depreciation	<u>62</u>	<u>0.33</u>	<u>71</u>	<u>0.38</u>
Total Expenses	\$3,585	\$19.01	\$3,146	\$16.97
Net Farm Income Without Appreciation	\$ 585	\$ 3.10	\$ -85	\$ -0.46

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

Same 10 Top 25% Small Herd Dairy Farms, 2008 &amp; 2009

Item	2008		2009	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	53		53	
Cwt. Of Milk Sold		9,984		10,019
<b><u>ACCRUAL OPERATING RECEIPTS</u></b>				
Milk	\$3,691	\$19.45	\$2,640	\$13.91
Dairy cattle	125	0.66	285	1.50
Dairy calves	55	0.29	-8	-0.04
Other livestock	78	0.41	4	0.02
Crops	112	0.59	46	0.24
Miscellaneous receipts	<u>149</u>	<u>0.79</u>	<u>408</u>	<u>2.15</u>
Total Receipts	\$4,210	\$22.18	\$3,375	\$17.79
<b><u>ACCRUAL OPERATING EXPENSES</u></b>				
Hired labor	\$ 193	\$ 1.02	\$ 203	\$ 1.07
Dairy grain & concentrate	950	5.00	816	4.30
Dairy roughage	75	0.39	142	0.75
Nondairy feed	0	0.00	0	0.00
Professional nutritional services	0	0.00	0	0.00
Machine hire/rent/lease	137	0.72	74	0.39
Mach. repair & vehicle exp.	214	1.12	191	1.01
Fuel, oil & grease	192	1.01	118	0.62
Replacement livestock	9	0.05	2	0.01
Breeding	68	0.36	78	0.41
Veterinary & medicine	99	0.52	79	0.42
Milk marketing	245	1.29	237	1.25
Bedding	42	0.22	34	0.18
Milking supplies	87	0.46	87	0.46
Cattle lease	0	0.00	0	0.00
Custom boarding	33	0.17	25	0.13
bST expense	7	0.04	14	0.08
Livestock professional fees	21	0.11	10	0.05
Other livestock expense	69	0.36	60	0.32
Fertilizer & lime	112	0.59	99	0.52
Seeds & plants	48	0.25	39	0.21
Spray/other crop expense	14	0.07	45	0.24
Crop professional fees	0	0.00	10	0.05
Land, building, fence repair	68	0.36	42	0.22
Taxes	91	0.48	104	0.55
Real estate rent/lease	31	0.17	18	0.09
Insurance	47	0.25	71	0.38
Utilities	133	0.70	123	0.65
Interest paid	86	0.45	104	0.55
Other professional fees	27	0.14	24	0.13
Miscellaneous	<u>17</u>	<u>0.09</u>	<u>30</u>	<u>0.16</u>
Total Operating Expenses	\$3,113	\$16.40	\$2,878	\$15.17
Expansion Livestock	0	0.00	2	0.01
Extraordinary Expense	6	0.03	0	0.00
Machinery Depreciation	160	0.84	148	0.78
Real Estate Depreciation	<u>18</u>	<u>0.09</u>	<u>37</u>	<u>0.20</u>
Total Expenses	\$3,297	\$17.36	\$3,065	\$16.16
Net Farm Income Without Appreciation	\$ 913	\$ 4.81	\$ 309	\$ 1.63

**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**

39 Small Herd Dairy Farms, 2009

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)
3.34	75	1,598,246	24,012	4.0	24	39	795,972
2.46	63	1,122,189	21,270	2.7	19	31	606,191
2.03	53	1,005,959	18,589	2.2	15	27	490,879
1.74	49	873,337	15,559	1.9	14	24	374,983
1.37	42	570,185	12,094	1.5	9	19	274,907

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)
\$ 523	25%	\$ 405	\$ 1,224	\$ 698	\$ 4.68	0.8%	12.1%
778	35	557	1,582	979	5.90	2.4	17.8
917	39	637	1,822	1,172	6.43	3.8	22.6
1,044	43	785	2,065	1,341	6.88	5.8	26.8
1,343	46	963	2,357	1,663	8.13	12.6	35.3

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)
\$ 3,234	\$ 9.25	\$ 17.40	\$ 37,686	\$ 31,170	\$ -2,147	\$ 70,119
2,850	11.43	19.68	11,961	11,196	-20,196	13,256
2,516	12.45	21.05	-763	-3,431	-29,112	-9,308
2,129	13.65	23.18	-17,764	-18,805	-44,824	-23,415
1,603	16.84	29.22	-45,978	-45,980	-72,183	-41,841

\*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** 36 New York Dairy Farms, 2009

<u>Animals Entering Herd</u>	Average
Number calving in 2009 for first time	267
Animals purchased, %*	3.9%
Animals raised by farm, %**	96.1%
<u>Current Heifer Inventory</u>	
Raised on dairy, %	86.4%
Raised by a custom grower, %	13.5%

\* 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, 267 animals calved for the first time in 2009. The breakdown on these animals for source was 3.9 percent purchased and 96.1 percent raised by the farm. Of the current heifer inventory, 86.4 percent were raised on the dairy and 13.5 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, 14 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**  
14 Small Herd Dairy Farms, 2009

	Pounds	Percent	Price/Pound	Total	\$/Cwt of Milk
<b>BASE FARM PRICE</b>					
Butterfat	44,931	3.80%	\$ 1.24	\$ 55,851	\$ 4.72
Protein	36,765	3.11%	\$ 2.18	\$ 80,149	\$ 6.78
Solids	67,022	5.67%	\$ 0.06	\$ 3,818	\$ 0.32
<b>Total Component Contribution</b>					<b>\$11.82</b>
<b>PPD</b>	1,182,559			\$ 10,254	<b>\$ 0.87</b>
<b>Base Farm Price</b>					<b>\$ 12.69</b>
<b>Premiums</b>					
Quality				\$ 2,195	\$ 0.19
Volume				\$ 1,450	\$ 0.12
Market Premiums				\$ 2,993	\$ 0.25
<b>Total Premiums</b>					<b>\$ 0.56</b>
<b>BASE FARM PRICE + PREMIUM</b>					<b>\$ 13.25</b>
<b>Deductions</b>					
Promo				\$ 1,798	\$ 0.15
Hauling + Stop Charges.				\$ 7,140	\$ 0.60
Market Fees & Coop Dues				\$ 2,623	\$ 0.22
<b>Total Deductions</b>					<b>\$ 0.98</b>
<b>BASE FARM PRICE + PREMIUMS - DEDUCTIONS</b>					<b>\$ 12.27</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>				\$ 2,288	<b>\$ 0.19</b>
<b>NET PRICE RECEIVED ON FARM, ALL SOURCES</b>					<b>\$ 12.47</b>
<b>PPD - Hauling, per cwt.</b>					\$ 0.26
<b>PPD - Hauling + Market Premiums, per cwt.</b>					\$ 0.52
<b>Net Marketing Value, per cwt. (PPD + Total Premiums - Total Deductions)</b>					\$ 0.45

\*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 14 farms is 64 cows.

**MILK PRICE INFORMATION BY QUARTILE\***  
(Each Category Sorted Independently)  
14 Small Herd Dairy Farms, 2009

	Lowest Quartile	←	→	Highest Quartile
Butterfat, %	3.60	3.75	3.88	4.11
Protein, %	2.96	3.04	3.16	3.36
Other Solids, %	5.61	5.64	5.69	5.73
Butterfat, \$ per Cwt.	4.42	4.69	4.87	5.15
Protein, \$ per Cwt.	6.52	6.73	6.94	7.10
Other solids, \$ per Cwt.	0.26	0.31	0.35	0.38
<b>Total Component Value per Cwt.</b>	<b>\$ 11.29</b>	<b>\$ 11.73</b>	<b>\$ 12.12</b>	<b>\$ 12.55</b>
PPD, \$ per Cwt.	0.69	0.80	0.86	1.23
<b>Base Farm Price per Cwt.</b>	<b>\$ 12.26</b>	<b>\$ 12.52</b>	<b>\$ 12.97</b>	<b>\$ 13.42</b>
Quality, \$ per Cwt.	0.01	0.12	0.24	0.47
Volume, \$ per Cwt.	0.00	0.02	0.07	0.37
Market premium, \$ per Cwt.	0.05	0.22	0.42	0.55
Total Premium, \$ per Cwt.	<b>0.31</b>	<b>0.49</b>	<b>0.76</b>	<b>0.86</b>
<b>Base Farm Price + Premiums per Cwt.</b>	<b>\$ 13.82</b>	<b>\$ 13.15</b>	<b>\$ 13.56</b>	<b>\$ 13.92</b>
Promotion, \$ per Cwt.	0.15	0.15	0.15	0.15
Hauling, \$ per Cwt.	0.37	0.62	0.70	0.85
Market fees & coop dues per Cwt.	0.08	0.16	0.21	0.43
<b>Total Marketing Expenses per Cwt.</b>	<b>\$ 0.74</b>	<b>\$ 0.93</b>	<b>\$ 1.05</b>	<b>\$ 1.26</b>
<b>Base + Premiums – Deductions per Cwt.</b>	<b>\$ 11.68</b>	<b>\$ 12.20</b>	<b>\$ 12.63</b>	<b>13.10</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>\$ 0.07</b>	<b>\$ 0.73</b>
<b>Net Price Received From All Sources, \$ per Cwt.</b>	<b>\$ 11.79</b>	<b>\$ 12.27</b>	<b>\$ 12.66</b>	<b>\$ 13.63</b>
PPD - hauling, \$ per Cwt.	<b>0.07</b>	<b>0.16</b>	<b>0.31</b>	<b>0.58</b>
PPD - hauling + mkt premiums, \$ per Cwt.	<b>0.16</b>	<b>0.57</b>	<b>0.71</b>	<b>0.84</b>
<b>Net Marketing Value, \$ per Cwt. (PPD + Total Premiums – Total Deductions)</b>	<b>0.13</b>	<b>0.47</b>	<b>0.64</b>	<b>0.79</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 224 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

224 New York Dairy Farms, 2008

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)
32.8	1,533	39,079,582	27,697	6.1	26	59	1,326,776
20.0	889	22,462,174	25,870	4.5	24	50	1,157,759
14.5	611	14,559,571	25,141	4.0	22	45	1,076,028
10.2	418	9,850,776	24,024	3.6	20	43	997,782
6.4	268	6,021,499	22,918	3.2	19	41	901,438
-----							
4.6	174	3,611,005	21,728	2.9	18	37	811,553
3.7	120	2,377,960	20,580	2.6	18	33	693,912
3.0	88	1,660,416	19,188	2.2	17	30	597,784
2.2	61	1,124,937	17,039	1.9	15	26	483,790
1.5	41	685,993	13,434	1.4	11	19	338,064

#### 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)
\$634	19%	\$513	\$1,152	\$866	\$4.95
959	24	622	1,380	1,201	6.06
1,095	27	699	1,525	1,364	6.52
1,203	29	745	1,601	1,501	6.97
1,320	30	794	1,661	1,628	7.27
-----					
1,369	32	854	1,735	1,719	7.60
1,436	33	914	1,820	1,812	7.93
1,531	35	975	1,958	1,914	8.29
1,637	36	1,047	2,119	2,019	9.03
1,825	44	1,279	2,502	2,227	10.86

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

**FARM BUSINESS CHART FOR  
FARM MANAGEMENT COOPERATORS**  
224 New York Dairy Farms, 2008

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)
\$5,365	\$21.41	\$1,884	\$11.32	\$3,081	\$16.12
5,015	20.29	2,583	13.04	3,768	17.60
4,821	19.82	2,899	13.89	3,987	18.32
4,624	19.58	3,166	14.44	4,214	19.16
4,431	19.39	3,291	15.10	4,454	19.83
-----					
4,233	19.22	3,457	15.72	4,604	20.50
3,978	19.05	3,641	16.39	4,761	21.63
3,756	18.87	3,841	16.92	4,960	23.00
3,294	18.64	4,132	17.66	5,192	24.67
2,654	18.09	4,549	20.42	5,734	30.18

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)
\$1,346,592	\$1,434	0.28	\$1,458,571	\$1,591	\$920,860	\$468,664
572,148	1,115	0.22	668,588	1,204	345,048	182,305
343,548	918	0.19	426,417	1,022	192,506	104,268
210,965	762	0.15	252,603	870	98,620	56,724
139,296	637	0.13	138,473	726	48,388	29,921
-----						
79,180	489	0.10	81,064	575	16,947	12,975
40,234	378	0.08	48,498	444	-1,848	-1,568
25,534	243	0.05	32,757	318	-23,654	-17,104
7,719	76	0.02	18,529	141	-55,848	-42,482
-77,207	-474	-0.15	-61,730	-421	-198,298	-132,376

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**  
224 New York Dairy Farms, 2008

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)
\$143	\$1,336	6.35	7.84	1%	\$148	50%	39.50
276	1,032	2.54	2.91	4	975	33	5.40
371	888	1.97	2.13	7	1,665	27	3.44
462	779	1.65	1.77	9	2,156	22	2.65
529	710	1.44	1.40	10	2,557	18	2.29
595	646	1.20	1.12	12	3,090	14	1.91
650	514	1.01	0.89	13	3,563	10	1.56
720	413	0.83	0.54	15	3,970	6	1.20
841	275	0.60	0.10	17	4,480	0	0.93
1,348	-175	-0.73	-1.26	25	6,127	-14	-0.10
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)	
0.01	99%	0.01	0.00	0.64	0.00	0.02	
0.10	91	0.08	0.00	0.69	0.01	0.04	
0.20	84	0.16	0.01	0.73	0.02	0.04	
0.27	79	0.22	0.09	0.75	0.02	0.05	
0.36	75	0.26	0.19	0.78	0.02	0.06	
0.47	69	0.31	0.29	0.80	0.03	0.07	
0.58	64	0.37	0.39	0.82	0.03	0.07	
0.73	59	0.44	0.49	0.85	0.04	0.08	
0.94	52	0.53	0.61	0.89	0.05	0.10	
1.75	38	0.71	0.91	1.03	0.08	0.16	
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)	
0.81	\$1,557	\$708	\$6,228	\$777,839	23%	15%	
0.70	2,522	1,006	7,389	355,241	14	11	
0.65	2,865	1,261	7,985	200,304	10	8	
0.60	3,170	1,451	8,546	98,920	8	7	
0.55	3,579	1,670	9,149	45,034	5	5	
0.50	4,002	1,895	9,774	19,198	2	3	
0.45	4,584	2,097	10,751	4,250	0	1	
0.40	5,364	2,331	11,819	-13,122	-2	0	
0.34	6,416	2,668	13,177	-48,343	-5	-2	
0.23	12,244	3,784	19,391	-296,970	-16	-9	

\*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 44 cows on the small conventional farms to 839 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, and the greatest 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 32-36. 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 2008 State Summary\*. As herd size increases, the net farm income profitability generally increases (page 48)\*. Net farm income without appreciation averaged \$28,655 per farm for the less than 50 cow farms and \$894,127 per farm for those with more than 900 cows. Return to all capital without appreciation also generally increased as herd size increased.

Assets, liabilities and financial measures are presented on pages 55-58\*. All but one herd size category saw an increase in farm net worth during 2008. The largest herd size category experienced an increase in net worth of \$325,434. However, percent equity generally went down as assets increased. The largest herds had the lowest percent equity; while the smaller herds averaged 82 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 (Table 50). With 25,338 pounds of milk sold per cow, farms in the largest herd size group averaged 10.2 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 438,645 pounds at the lowest herd size category up to 1,187,893 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, 2008, Department of Applied Economics and Management, Cornell University, R.B. 2009-01, November 2009.

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

209 New York Dairy Farms, 2008

Item	Farms with:	Conventional		Freestall		
		<= 60 Cows	>60 Cows	<=150 Cows	151-300 Cows	≥300 Cows
Number of farms		28	25	32	33	91
<b><u>Cropping Program Analysis</u></b>						
Total Tillable acres		148	275	260	575	1,677
Tillable acres rented*		70	113	127	295	862
Hay crop acres*		112	177	168	276	753
Corn silage acres*		14	54	59	158	621
Hay crop, tons DM/acre		2.0	2.3	2.8	3.1	3.8
Corn silage, tons/acre		16	16.3	18.3	18.2	20.3
Oats, bushels/acre		56	65	65	57	67
Forage DM per cow, tons		7.2	8.9	9.4	9.0	8.5
Tillable acres/cow		3.5	3.3	2.9	2.8	2.0
Fertilizer & lime expense/tillable acre		\$35.17	\$38.96	\$43.94	\$67.91	\$52.35
Total machinery costs		\$36,614	\$74,760	\$87,600	\$188,402	\$661,071
Machinery cost/tillable acre		\$239	\$269	\$297	\$328	\$394
<b><u>Dairy Analysis</u></b>						
Number of cows		44	85	98	207	839
Number of heifers		36	75	82	170	708
Milk sold, lbs.		810,642	1,667,050	1,874,904	4,495,717	20,976,580
Milk sold/cow, lbs.		18,576	19,511	19,071	21,759	25,011
Operating cost of producing milk/cwt.		\$14.17	\$16.74	\$15.70	\$15.15	\$15.18
Total cost of producing milk/cwt.		\$23.61	\$23.52	\$22.57	\$19.94	\$18.31
Price/cwt. milk sold		\$19.26	\$19.75	\$19.72	\$19.17	\$19.20
Purchased dairy feed/cow		\$1,142	\$1,250	\$1,405	\$1,306	\$1,532
Purchased dairy feed/cwt. milk		\$6.15	\$6.41	\$7.37	\$6.00	\$6.12
Purchased grain & concentrate as % of milk receipts		30%	32%	33%	30%	30%
Purchased feed & crop expense/cwt milk		\$7.15	\$7.50	\$8.53	\$7.48	\$7.15
<b><u>Capital Efficiency</u></b>						
Farm capital/worker		\$325,442	\$325,868	\$328,683	\$405,246	\$396,365
Farm capital/cow		\$13,423	\$11,328	\$10,197	\$9,885	\$8,918
Farm capital/tillable acre owned		\$7,569	\$5,958	\$7,550	\$7,273	\$9,177
Real estate/cow		\$7,270	\$5,256	\$4,468	\$4,018	\$3,424
Machinery investment/cow		\$2,451	\$2,213	\$1,940	\$1,844	\$1,453
Asset turnover ratio		0.31	0.37	0.44	0.49	0.62
<b><u>Labor Efficiency</u></b>						
Worker equivalent		1.80	2.97	3.05	5.04	18.86
Operator/manager equivalent		1.09	1.33	1.56	1.75	2.07
Milk sold/worker, lbs.		450,148	560,510	614,387	892,007	1,111,980
Cows/worker		24	29	32	41	44
Labor cost/cow		\$1,159	951	\$916	\$777	\$818
Labor cost/tillable acre		\$342	\$296	\$346	\$279	\$409
<b><u>Profitability &amp; Balance Sheet Analysis</u></b>						
Net farm income (without appreciation)		\$29,002	\$24,437	\$42,268	\$117,777	\$558,256
Labor & management income/operator		\$-3,900	\$-16,583	\$-1,300	\$21,991	\$148,631
Rate return on all capital with appreciation		-0.6%	-1.2%	1.21%	3.4%	8.4%
Farm debt/cow		\$2,295	\$2,300	\$2,434	\$2,773	\$3,062
Percent equity		83%	80%	77%	72%	66%

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

**FARM BUSINESS CHART FOR SMALL CONVENTIONAL STALL DAIRY FARMS**  
28 Conventional Stall Dairy Farms with 60 or Less Cows, New York, 2008

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)
2.88	60	1,133,862	25,439	3.6	25	45	819,641
2.67	54	1,050,363	23,057	2.6	22	35	771,282
2.39	52	1,016,316	22,177	2.2	20	32	655,772
2.04	50	1,000,533	20,471	2.1	17	29	553,922
1.82	47	936,226	20,011	2.0	16	26	474,086
-----							
1.58	45	856,797	19,031	2.0	15	24	432,346
1.47	42	796,058	17,997	2.0	14	22	377,183
1.42	39	700,175	15,491	1.8	13	20	344,999
1.30	33	462,020	14,261	1.7	12	18	315,972
1.08	23	341,718	11,402	1.5	10	15	224,700

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)	
\$494	18%	\$504	\$1,320	\$572	\$4.15	
714	21	590	1,567	904	5.33	
819	24	617	1,799	1,038	5.87	
927	28	710	1,902	1,148	6.27	
1,035	29	839	2,037	1,229	6.74	
-----						
1,105	30	930	2,161	1,377	7.07	
1,231	32	1,019	2,273	1,528	7.58	
1,368	34	1,065	2,402	1,728	8.59	
1,464	42	1,161	2,556	1,935	10.00	
1,929	53	1,245	3,105	2,254	11.54	

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)
\$4,892	\$10.94	\$18.48	\$73,153	\$1,381	\$36,723	\$41,598
4,577	12.28	20.82	58,303	1,296	25,217	28,550
4,406	12.97	21.65	44,824	1,033	17,904	24,793
4,070	13.49	22.51	34,422	904	8,753	18,716
3,752	13.73	23.40	31,646	750	4,598	13,386
-----						
3,654	14.17	24.31	29,137	698	-3,198	4,726
3,413	15.13	24.91	26,562	588	-4,764	-939
2,903	16.30	26.48	19,822	472	-14,948	-4,994
2,685	17.20	32.37	12,464	311	-28,034	-15,179
2,241	17.74	37.80	-15,834	-663	-58,592	-47,298

\*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, 2008

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)
4.30	132	2,565,738	26,074	4.4	26	52	952,241
3.92	109	2,300,217	24,714	4.0	25	43	833,627
3.62	102	2,211,757	23,018	3.2	22	42	724,289
3.51	99	1,848,498	22,665	2.8	20	36	671,010
3.42	86	1,762,869	21,206	2.7	18	32	631,629
3.12	85	1,634,115	19,199	2.6	17	29	623,430
2.89	77	1,459,410	17,845	2.5	16	28	580,964
2.44	70	1,357,649	16,895	2.1	15	26	491,001
2.11	67	1,227,908	16,088	1.9	15	21	437,037
1.72	68	1,086,954	15,121	1.4	11	17	279,205

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)	
\$613	15%	\$522	\$1,174	\$944	\$4.60	
942	25	624	1,462	1,085	5.83	
1,069	30	742	1,647	1,233	6.74	
1,126	31	825	1,765	1,316	7.19	
1,229	33	919	1,914	1,440	7.55	
1,389	34	969	2,005	1,587	7.78	
1,452	36	1,036	2,120	1,707	7.86	
1,564	37	1,082	2,244	1,831	9.07	
1,647	43	1,196	2,448	1,928	9.39	
1,774	55	1,392	2,553	2,047	12.32	

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)
\$5,090	\$12.41	\$18.34	\$108,180	\$1,422	\$71,675	\$73,056
4,826	13.82	20.44	84,803	1,280	19,669	46,508
4,563	14.95	21.80	69,998	968	10,703	34,745
4,305	15.67	22.54	47,961	544	7,011	33,104
4,080	16.56	23.64	41,232	444	3,032	21,650
3,897	17.61	24.72	31,889	338	-7,800	6,171
3,681	18.43	25.77	19,292	217	-30,012	-6,608
3,303	19.32	26.81	3,397	39	-49,045	-20,877
3,156	21.16	28.02	-26,252	-326	-54,247	-46,718
2,965	23.41	30.91	-59,464	-631	-86,937	-74,973

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

### FARM BUSINESS CHART FOR SMALL FREESTALL DAIRY FARMS

32 Freestall Barn Dairy Farms with 150 or Less Cows, New York, 2008

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)
4.72	142	3,038,165	24,143	5.3	25	54	985,482
4.27	128	2,621,967	22,730	4.7	22	45	867,912
3.78	122	2,500,310	21,502	4.0	20	39	736,455
3.48	114	2,318,454	20,972	3.3	20	35	667,616
3.26	104	2,026,110	19,797	3.0	18	33	599,694
3.09	96	1,770,963	18,935	2.6	18	30	568,110
2.75	91	1,648,134	18,431	2.4	17	29	537,099
2.39	85	1,491,443	16,715	2.0	16	28	505,801
2.11	70	1,223,254	14,822	1.7	14	27	484,630
1.51	56	714,322	11,768	1.2	10	25	382,187

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)	
\$605	23%	\$409	\$1,076	\$840	\$5.76	
887	27	599	1,346	1,212	6.87	
1,092	31	650	1,558	1,421	7.61	
1,260	33	720	1,642	1,501	8.19	
1,335	34	783	1,687	1,618	8.46	
1,353	35	854	1,772	1,740	9.07	
1,371	36	896	1,955	1,822	9.34	
1,397	37	1,000	2,049	1,940	9.87	
1,511	38	1,167	2,237	2,056	10.74	
1,659	42	1,466	2,535	2,271	12.12	

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)
\$4,590	\$10.77	\$17.18	\$167,055	\$1,444	\$97,341	\$174,828
4,446	14.25	19.79	129,532	1,122	42,953	88,112
4,362	15.01	20.63	72,508	832	23,772	50,653
4,020	15.20	22.13	45,653	520	10,569	20,785
3,910	15.98	22.72	33,327	332	-1,772	12,980
3,835	16.43	23.38	28,293	248	-6,683	9,679
3,525	16.78	23.99	20,979	228	-14,067	5,207
3,281	17.07	25.41	14,526	170	-22,855	-2,639
2,955	18.22	28.18	6,298	67	-36,296	-25,570
2,466	22.65	34.28	-52,058	-654	-57,882	-57,421

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



**FARM BUSINESS CHART FOR MEDIUM FREESTALL DAIRY FARMS**  
33 Freestall Barn Dairy Farms with 151-300 Cows, New York, 2008

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)
7.36	278	7,176,719	27,103	7.0	29	60	1,247,970
6.59	254	5,820,432	25,495	4.7	25	55	1,114,505
6.17	239	5,602,646	24,277	4.0	23	52	1,054,051
5.42	230	5,029,286	23,068	3.6	21	48	997,473
5.09	219	4,663,184	22,155	3.2	19	42	967,149
-----							
4.88	202	4,345,222	21,258	3.0	18	40	929,109
4.70	191	4,102,740	20,560	2.5	17	38	846,682
4.43	180	3,843,664	19,837	2.3	16	36	754,320
3.80	162	3,243,073	18,578	2.1	14	34	696,412
3.21	153	2,447,759	15,638	1.2	10	31	606,982

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)	
\$623	17%	\$593	\$1,151	\$821	\$4.48	
938	24	720	1,389	1,240	6.13	
1,055	27	790	1,523	1,391	6.55	
1,187	29	833	1,611	1,599	7.28	
1,266	30	886	1,665	1,717	8.00	
-----						
1,343	32	927	1,784	1,769	8.18	
1,379	34	971	1,823	1,864	8.28	
1,422	36	1,007	1,896	1,932	8.51	
1,532	38	1,052	2,005	2,013	8.91	
1,908	40	1,344	2,183	2,201	10.34	

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)
\$5,135	\$10.29	\$15.70	\$395,626	\$1,685	\$176,178	\$260,998
4,977	12.59	17.95	234,334	1,147	81,267	166,236
4,654	14.27	19.29	210,396	909	58,981	110,196
4,502	15.13	19.69	160,334	688	45,943	96,181
4,302	15.73	20.26	116,567	561	24,543	59,925
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4,069	16.36	20.71	98,847	455	17,437	25,814
3,969	16.93	21.48	69,667	358	4,006	13,372
3,825	17.60	22.33	40,423	200	-13,082	-2,327
3,518	18.16	23.78	10,482	64	-30,256	-80,452
2,916	20.41	25.96	-43,569	-278	-119,823	-267,334

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

**FARM BUSINESS CHART FOR LARGE FREESTALL DAIRY FARMS**  
91 Freestall Barn Dairy Farms with 300 or More Cows, New York, 2008

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)
40.30	2,019	51,009,186	28,787	6.8	26	56	1,443,325
28.93	1,245	32,113,692	26,903	4.9	24	51	1,244,520
23.56	1,052	27,010,448	26,129	4.3	22	48	1,191,250
20.82	915	22,767,153	25,703	4.0	21	46	1,145,727
17.27	752	19,505,571	25,335	3.8	20	44	1,109,855
15.69	657	15,987,491	24,684	3.6	20	43	1,058,967
13.68	569	13,699,103	24,059	3.3	19	42	1,024,107
11.86	466	11,295,704	23,305	3.1	18	41	970,167
10.26	418	9,740,588	22,319	2.9	18	37	894,884
7.55	349	8,070,836	20,610	2.2	15	32	800,062
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)		
\$1,067	23%	\$574	\$1,235	\$1,375	\$5.66		
1,193	26	671	1,385	1,491	6.25		
1,314	28	710	1,491	1,592	6.69		
1,355	29	739	1,552	1,669	6.95		
1,420	30	767	1,602	1,729	7.16		
1,507	31	807	1,646	1,841	7.37		
1,559	32	858	1,695	1,897	7.63		
1,625	33	912	1,753	1,973	7.85		
1,698	35	974	1,861	2,097	8.17		
1,840	37	1,088	2,082	2,265	8.86		
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)	
\$5,629	\$12.22	\$15.78	\$1,887,971	\$1,405	\$692,856	\$1,135,029	
5,196	13.45	16.82	1,039,969	1,102	329,736	558,075	
5,063	14.04	17.51	783,841	978	250,878	429,314	
4,950	14.41	17.97	551,204	852	167,602	352,923	
4,834	15.03	18.22	444,975	749	134,288	291,503	
4,728	15.59	18.55	360,114	627	108,639	186,631	
4,606	16.15	19.20	291,916	493	67,941	109,671	
4,455	16.72	19.72	214,414	385	31,966	221	
4,301	17.26	20.26	156,958	240	-31,395	-76,560	
4,050	18.19	21.49	-78,095	-69	-187,505	-483,862	

\*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

EB No	Title	Fee (if applicable)	Author(s)
2010-07	Dairy Farm Business Summary, Hudson and Central New York Region, 2009	(\$12.00)	Knoblauch, W., Putnam, L., Karszes, J., Buxton, S., Shoen, K., Hadcock, S., Kiraly, M., Hulle, L., Smith, R, Skellie, K., Conneman, G. and R. Overton
2010-06	Dairy Farm Business Summary, Northern NY Region, 2009	(\$12.00)	Knoblauch, W., Putnam, L., Karszes, J., Murray, P., Vokey, F., Prosper, J., Deming, A., Balbian, D., Buxton, S., Manning, J., Collins, B. and R. Overton
2010-05	Dairy Farm Business Summary, Western NY Region, 2009	(\$12.00)	Knoblauch, W., Putnam, L., Karszes, J., Hanchar, J., Grace, J., Carlberg, V., Petzen, J., Welch, D., Ames, M., Overton, R. and K. Skellie
2010-04	Dairy Farm Business Summary, New York Large Herd Farms, 300 Cows or Larger, 2009	(\$16.00)	Karszes, J., Knoblauch, W. and L. Putnam
2010-03	The Effectiveness of Farm-to-Chef Marketing of Local Foods: an Empirical Assessment from Columbia County, NY"		Schmit, T., Lucke, A. and S. Hadcock
2010-02	Business Planning for the Agriculture Sector: A guide to business plan development for Start-up to Mid-Size Operations	(\$12.00)	Perry, J. and R. Overton
2010-01	When to Exit Dairy Farming: The Value of Waiting		Tauer, L. and J. Dressler
2009-22	Marketing the Unique Story of Your Farm Business for Success		Schmit, T., Hulcoop, L. and R. Weybright
2009-21	Dairy Farm Business Summary, New York Dairy Farm Renters, 2008	(\$16.00)	Knoblauch, W. and L. Putnam
2009-20	New York Economic Handbook 2010	(\$10.00)	Extension Staff
2009-19	Fruit Farm Business Summary, Lake Ontario Region New York, 2008		White, G., DeMaree, A. and J. Neyhard
2009-18	2009 Federal Reference Manual for Regional Schools, Income Tax Management and Reporting for Small Businesses and Farms	(\$25.00)	Bouchard, G. and J. Bennett

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