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# **DAIRY FARM BUSINESS SUMMARY**

*JUNE 2009*



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## ***NEW YORK SMALL HERD FARMS, 80 COWS OR FEWER 2008***



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**2008 DAIRY FARM BUSINESS SUMMARY**  
**Small Herd Dairy Farms**  
**80 Cows or Fewer**  
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## 2008 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 2008 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 2008 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 2008. 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 2008, the dairy industry experienced high milk prices but also escalating input costs that eroded profits. Fuel, feed and fertilizer rose to unprecedented levels. Margins decreased in this unfavorable environment and by the end of the year, farmers were uneasy about a looming recession.

The average number of cows per farm was 52, unchanged from 2007. Heifer inventory increased by 2.5 percent and replacements continued to be very expensive. Total milk sold was up just 0.1 percent and milk sold per cow was up by 1.3 percent due to steady demand for dairy products and genetic improvement. Worker equivalent went up 0.5 percent and could be attributed to more money to spend and a few more head to manage. Hay yield increased to 2.2 tons per acre due to favorable weather. Corn silage yield was unchanged at 17.2 tons per acre.

Cows per worker remained unchanged at 25 cows per worker with a little more labor for a few more cows. Milk sold per worker was down incrementally 0.4 percent. Hired labor costs were down 2.9 percent per hundredweight, probably due to streamlining operations. The labor itself actually cost just 0.5 percent more than in 2007. Grain and concentrate as a percentage of milk sales rose dramatically by 29.2 percent due to competing interests in grain for ethanol production. Dairy feed and crop expenses rose by 19.7 percent as it cost more to make crops given the increase in crop inputs such as fuel and fertilizer. Total farm operating expenses were up 7.5 percent to \$17.51 per hundredweight because of the general increase in nearly all inputs. Interest costs fell as rates charged by vendors and banks decreased due to the looming recession. The increase in the operating cost to produce a hundredweight of milk (11.8 percent) revealed that even the best producers could not contain costs as input costs rose, and higher costs appear to be here to stay. Energy, feed, fuel and parts all cost a lot more than they did just a few years ago and very few will be able to maintain a profitable margin if milk prices fall as expected in the worldwide recession.

Farm capital per cow continues to rise, up 5.9 percent as a result of competing interests in farmland. Machinery, even used, holds its value as metal and manufacturing costs rise and machinery and equipment per cow rose 10.7 percent. Asset turnover ratio fell 15.4 percent, with farmers being very cautious to invest.

Gross milk sales per cow fell 4.4 percent due to moderating milk prices in the second half of the year. Sales per hundredweight were down 5.7 percent for the same reason. Farmers' net price was down 6.5 percent as deductions for transportation of milk increased. Beef prices remained high and dairy cattle sales per cow rose 22.2 percent. Bull calves did not bring much money and heifer calves were lower at year's end. There was little assistance needed from government programs and government payments were down 43.8 percent.

Farmers had lower net farm incomes, with or without appreciation, down dramatically (43.8 percent) from 2007, at \$28,117 and \$31,972, respectively. Labor and management incomes were in negative territory at -\$5,257. Rates of return on equity capital without appreciation averaged -2.8 percent and -1.4 percent was the return on all capital without appreciation. Debt accrued in 2008 increased and farm debt per cow rose 0.9 percent to \$2,116, which is still respectable. Foreboding of recessionary times in 2009 kept most farmers on the edge of their seats at year's end. Off-farm income became critical to keep farm families going. Many spouses looked for work off the farm to supplement family living.

**PROGRESS OF THE FARM BUSINESS**  
Same 39 Small Herd Dairy Farms, 2007 & 2008

Selected Factors	Average of 39 Farms		Percent Change
	2007	2008	
<u>Size of Business</u>			
Average number of cows	52	52	0.0
Average number of heifers	40	41	2.5
Milk sold, lbs.	975,626	976,710	0.1
Worker equivalent	2.09	2.10	0.5
Total tillable acres	173	172	-0.6
<u>Rates of Production</u>			
Milk sold per cow, lbs.	18,624	18,867	1.3
Hay DM per acre, tons	1.8	2.2	22.2
Corn silage per acre, tons	17.2	17.2	0.0
<u>Labor Efficiency &amp; Costs</u>			
Cows per worker	25	25	0.0
Milk sold/worker, lbs.	466,807	465,100	-0.4
Hired labor cost/cwt.	\$1.02	\$0.99	-2.9
Hired labor cost/worker	\$18,633	\$18,722	0.5
Hired labor cost as % of milk sales	5.0%	5.1%	2.0
<u>Cost Control</u>			
Grain & concentrate purchased as % of milk sales	24%	31%	29.2
Grain & concentrate per cwt. milk	\$5.01	\$6.01	20.0
Dairy feed & crop expense per cwt. milk	\$6.35	\$7.60	19.7
Labor & machinery costs/cow	\$1,842	\$1,927	4.6
Total farm operating expenses per cwt. sold	\$16.29	\$17.51	7.5
Interest costs per cwt. milk	\$0.69	\$0.56	-18.8
Milk marketing costs per cwt. milk sold	\$1.08	\$1.19	10.2
Operating cost of producing cwt. of milk	\$13.46	\$15.05	11.8
<u>Capital Efficiency</u> (average for the year)			
Farm capital per cow*	\$11,880	\$12,576	5.9
Machinery & equipment per cow	\$2,152	\$2,382	10.7
Asset turnover ratio*	0.39	0.33	-15.4
<u>Income Generation</u>			
Gross milk sales per cow	\$3,817	\$3,648	-4.4
Gross milk sales per cwt.	\$20.49	\$19.33	-5.7
Net milk sales per cwt.	\$19.41	\$18.15	-6.5
Dairy cattle sales per cow	\$176	\$215	22.2
Dairy calf sales per cow	\$37	\$23	-37.8
Government receipts per cwt.	\$0.64	\$0.36	-43.8
<u>Profitability</u>			
Net farm income without appreciation	\$54,680	\$28,117	-48.6
Net farm income with appreciation	\$71,769	\$31,972	-55.5
Labor & management income per oper./manager	\$20,267	\$-5,257	-125.9
Rate of return on equity capital without apprec.	3.1%	-2.8%	-190.3
Rate of return on all capital without appreciation	3.7%	-1.4%	-137.8
<u>Financial Summary</u>			
Farm net worth, end year	\$498,120	\$502,664	0.9
Debt to asset ratio	0.18	0.18	0.0
Farm debt per cow	\$2,096	\$2,116	0.9

\*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

46 Small Herd Dairy Farms, 2008

Type of Farm	Number	Milking System	Number
Dairy	46	Bucket & carry	0
Part-time dairy	0	Dumping station	0
Dairy cash-crop	0	Pipeline	46
Certified organic milk producer	0	Herringbone parlor	0
Rotational grazing farms	15	Other parlor	0
Type of Ownership	Number	Production Records	Number
Owner	37	Testing service	40
Renter	9	On-farm system	0
		Other	0
		None	6
Type of Business	Number	bST Usage (optional reporting)	Number
Sole Proprietorship	41	Used consistently	3
Partnership	5	Used inconsistently	1
Corporation	0	Started usage in 2008	0
		Stopped usage in 2008	0
		Not used in 2008	20
		Average percent usage, if used	76%
Type of Barn	Number	Business Record System	Number
Stanchion or Tie-Stall	43	Account Book	15
Freestall	2	Accounting Service	9
Combination	1	On-farm computer	20
		Other	2
Milking Frequency	Number		
2 times per day	44		
3 times per day	1		
Other	1		
Breed of Herd	Percent		
Holstein	83		
Jersey	7		
Other	9		

### 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 2008.

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**

46 Small Herd Dairy Farms, 2008

Expense Item	Cash Paid	-	Change in Inventory or Prepaid Expense	+	Change in Accounts Payable	=	Accrual Expenses
<u>Hired Labor</u>	\$ 9,949		\$ 0	<<	\$ 18		\$ 9,967
<u>Feed</u>							
Dairy grain & concentrate	59,576		-179		743		60,498
Dairy roughage	5,087		514		996		5,569
Nondairy	40		13		0		27
Professional nutritional services	0		0	<<	0		0
<u>Machinery</u>							
Machinery hire, rent & lease	3,010		0	<<	0		3,010
Machinery repairs & farm vehicle exp.	13,208		29		292		13,472
Fuel, oil & grease	9,784		-68		200		10,052
<u>Livestock</u>							
Replacement livestock	1,145		0	<<	15		1,160
Breeding	3,184		-22		36		3,242
Veterinary & medicine	5,956		-18		95		6,069
Milk marketing	11,759		0	<<	14		11,773
Bedding	2,418		15		0		2,403
Milking supplies	4,509		31		-24		4,454
Cattle lease & rent	0		0	<<	0		0
Custom boarding	533		0	<<	-1		532
bST	507		19		1		489
Livestock professional fees	844		-14	<<	0		858
Other livestock expense	3,318		-2		33		3,353
<u>Crops</u>							
Fertilizer & lime	5,087		-401		211		5,699
Seeds & plants	1,780		-371		60		2,211
Spray, other crop expense	1,872		-60		135		2,066
Crop professional fees	61		0	<<	-1		60
<u>Real Estate</u>							
Land, building & fence repair	2,956		-70		-25		3,001
Taxes	4,803		0	<<	3		4,806
Rent & lease	2,233		0	<<	0		2,233
<u>Other</u>							
Insurance	3,336		-3	<<	-19		3,319
Utilities (farm share)	6,973		-17	<<	-18		6,972
Interest paid	6,424		0	<<	23		6,447
Other professional fees	786		0	<<	0		786
Miscellaneous	1,262		-12		121		1,395
Total Operating	\$172,400		\$ -616		\$ 2,909		\$ 175,925
Expansion livestock	545		0	<<	0		545
Extraordinary expense	251		0	<<	0		251
Machinery depreciation							11,311
Building depreciation							3,279
<b>TOTAL ACCRUAL EXPENSES</b>							<b>\$ 191,311</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 2008 but not paid for. A decrease is subtracted because it represents payment for resources used before 2008.

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**

46 Small Herd Dairy Farms, 2008

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts
Milk sales	\$ 195,888				\$ -4,198		\$ 191,690
Dairy cattle	11,274		\$ 1,501		-14		12,761
Dairy calves	1,304		136		0		1,440
Other livestock	1,835		557		0		2,392
Crops	1,102		2,323		-101		3,325
Government receipts	3,447		0 *		123		3,570
Custom machine work	744				0		744
Gas tax refund	66				0		66
Other	<u>3,252</u>				<u>91</u>		3,344
Less nonfarm noncash capital**		(-)	<u>0</u> **			(-)	<u>0</u>
Total Receipts	\$ 218,913		\$ 4,517		\$ -4,098		\$ 219,332

\*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 2008 for the 2009 crop year in excess of funds earned for 2008. Likewise, a decrease is added to cash government receipts because it represents funds earned for 2008 but received in 2007.

Changes in accounts receivable are calculated by subtracting beginning year balances from end year balances. Payments in January 2009 for milk produced in December 2008 compared to January 2008 payments for milk produced in 2007 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.

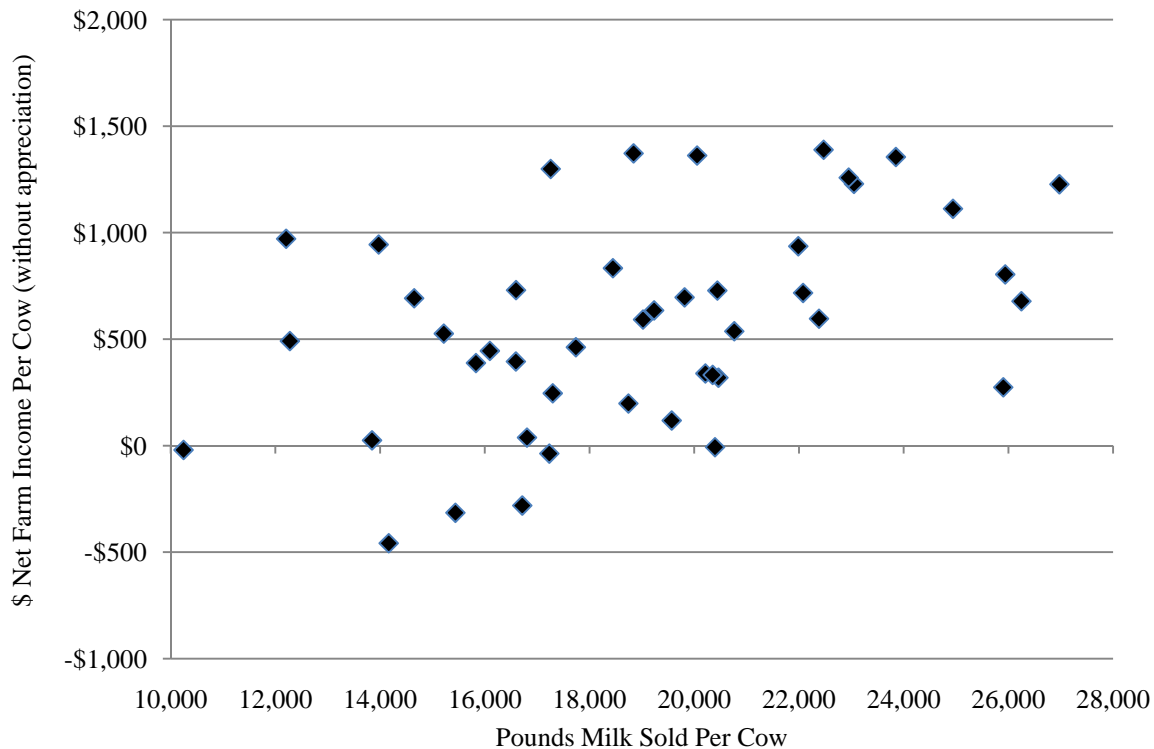
**NET FARM INCOME**  
46 Small Herd Dairy Farms, 2008

Item	Average 46 Farms		Top 25% Farms*	
	Total	Per Cow	Total	Per Cow
Total accrual receipts	\$ 219,332		\$ 241,702	
Appreciation: Livestock	-706		-1,225	
Machinery	3,468		-489	
Real Estate	1,169		1,059	
Other Stock & Certificates	119		8	
Total Including Appreciation	\$ 223,382		\$ 241,054	
Total accrual expenses	- 191,311		- 186,031	
Net Farm Income (with appreciation)	\$ 32,071	\$ 609	\$ 55,024	\$ 1,028
Net Farm Income (without appreciation)	\$ 28,021	\$ 532	\$ 55,671	\$ 1,041

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

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

**NET FARM INCOME PER COW AND MILK PER COW**  
46 Small Herd Dairy Farms, 2008



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

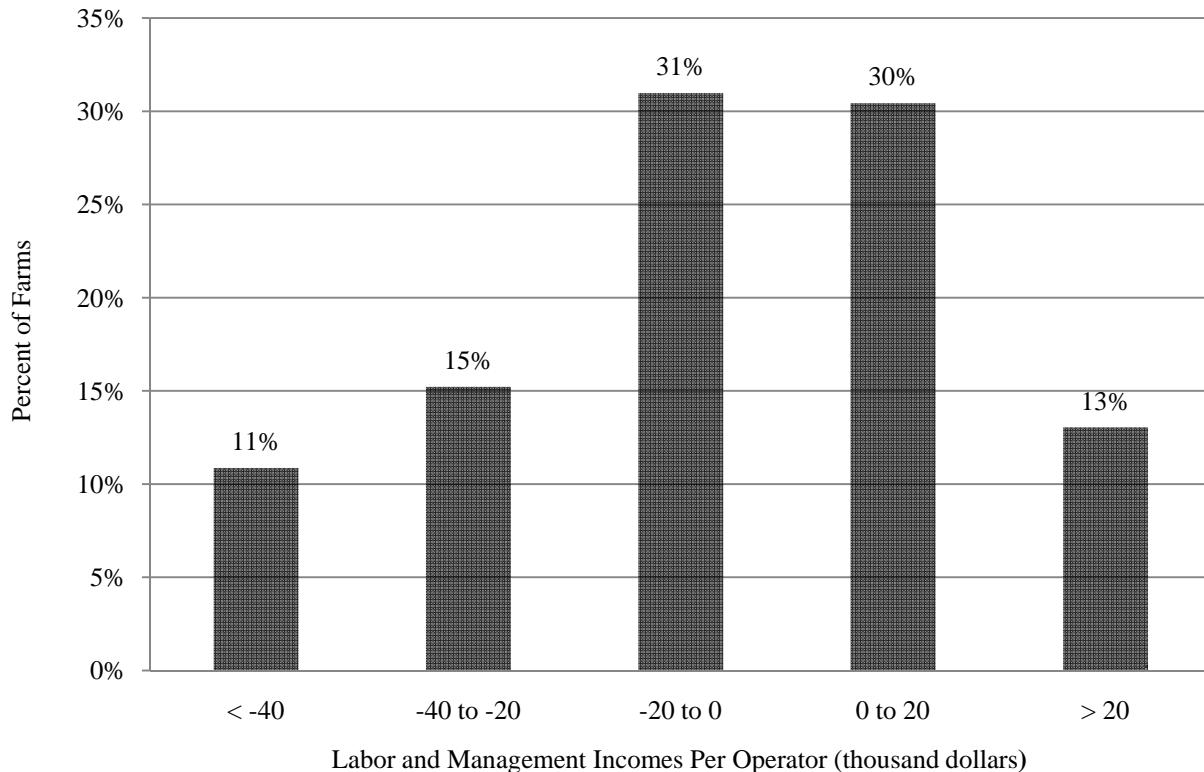
46 Small Herd Dairy Farms, 2008

Item	Average 46 Farms	Top 25% Farms
Net farm income without appreciation	\$ 28,021	\$ 55,671
Family labor unpaid @ \$2,500 per month	- 9,652	- 3,563
Interest on \$481,690 average equity capital @ 5% real rate (\$522,182 average equity capital for top 25% farms)	- <u>24,085</u>	- <u>26,109</u>
Labor & Management Income per farm (1.13 Operators/farm) (1.00 operators per farm for top 25% farms)	\$ -5,716	\$ 26,000
Labor & Management Income per Operator/Manager	\$ -5,058	\$ 26,000

Labor and management income per operator averaged \$-5,058 on these 46 Farms in 2008. The range in labor and management income per operator was from less than \$-90,000 to more than \$73,000. Returns to labor and management were less than \$-20,000 on 26 percent of the farms. Labor and management incomes per operator were between \$-20,000 and \$0 on 31 percent of the farms while 43 percent had labor and management incomes per operator greater than \$0.

### DISTRIBUTION OF LABOR & MANAGEMENT INCOMES PER OPERATOR

46 Small Herd Dairy Farms, 2008



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**  
46 Small Herd Dairy Farms, 2008

Item	Average 46 Farms	Top 25% Farms
Net farm income with appreciation	\$ 32,071	\$ 55,024
Family labor unpaid @ \$2,500 per month	- 9,652	- 3,563
Value of operators' labor & management	- <u>31,478</u>	- <u>28,083</u>
Return on equity capital with appreciation	\$ -9,060	\$ 23,378
Interest paid	+ <u>6,447</u>	+ <u>4,296</u>
Return on total capital with appreciation	\$ -2,613	\$ 27,673
Return on equity capital without appreciation	\$ -13,110	\$ 24,025
Return on total capital without appreciation	\$ -6,663	\$ 28,321
Rate of return on average equity capital:		
with appreciation	-1.9%	4.5%
without appreciation	-2.7%	4.6%
Rate of return on average total capital:		
with appreciation	-0.4%	4.6%
without appreciation	-1.1%	4.7%
Net farm income from operations ratio	0.13	0.23

**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 2008, 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 2008 that are for participation in the 2009 program are the end year balance and payments received in 2007 for participation in the 2008 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.

**2008 FARM BUSINESS & NONFARM BALANCE SHEET**

46 Small Herd Dairy Farms, 2008

Farm Assets	Jan. 1	Dec. 31	Farm Liabilities & Net Worth	Jan. 1	Dec. 31
<u>Current</u>			<u>Current</u>		
Farm cash, checking & savings	\$ 5,680	\$ 4,498	Accounts payable	\$ 6,319	\$ 9,228
Accounts receivable	15,686	11,588	Operating debt	3,218	3,864
Prepaid expenses	177	142	Short Term	38	265
Feed & supplies	39,544	41,285	Advanced govt. receipts	0	0
			Current Portion:		
			Intermediate	9,872	12,619
			Long Term	4,138	4,159
Total Current	\$ 61,087	\$ 57,513	Total Current	\$ 23,585	\$ 30,135
<u>Intermediate</u>			<u>Intermediate</u>		
Dairy cows:			Structured debt		
owned	\$ 87,184	\$ 86,563	1-10 years	\$ 59,980	\$ 54,059
leased	0	0	Financial lease		
Heifers	45,627	47,155	(cattle/machinery)	369	259
Bulls & other livestock	1,958	2,538	Farm Credit stock	397	384
Mach. & equip. owned	121,604	130,306	Total Intermediate	\$ 60,746	\$ 54,702
Mach. & equip. leased	369	259			
Farm Credit stock	397	384			
Other stock/certificate	2,777	3,080			
Total Intermediate	\$ 259,916	\$ 270,285			
<u>Long Term</u>			<u>Long Term</u>		
Land & buildings:			Structured debt		
owned	\$ 287,256	\$ 287,854	>10 years	\$ 46,608	\$ 44,755
leased	323	169	Financial lease		
Total Long Term	\$ 287,579	\$ 288,023	(structures)	323	169
			Total Long Term	\$ 46,931	\$ 44,924
Total Farm Assets	\$ 608,582	\$ 615,821	Total Farm Liabilities	\$ 131,262	\$ 129,761
			FARM NET WORTH	\$ 477,320	\$ 486,060

## Nonfarm Assets, Liabilities &amp; Net Worth (Average of 22 farms reporting)

Assets	Jan. 1	Dec. 31	Liabilities & Net Worth	Jan. 1	Dec. 31
Personal cash, checking & savings	\$ 14,706	\$ 15,052	Nonfarm Liabilities	\$ 570	\$ 1,231
Cash value life insurance	14,760	15,385			
Nonfarm real estate	32,500	32,409			
Auto (personal share)	7,055	7,714			
Stocks & bonds	35,542	28,177			
Household furnishings	12,841	12,705			
All other nonfarm assets	1,545	1,507			
Total Nonfarm Assets	\$118,949	\$112,947	NONFARM NET WORTH	\$118,379	\$111,716

Farm & Nonfarm Assets, Liabilities, and Net Worth*	Jan. 1	Dec. 31
Total Assets	\$ 727,531	\$ 728,768
Total Liabilities	131,832	130,992
<b>TOTAL FARM &amp; NONFARM NET WORTH</b>	<b>\$ 595,699</b>	<b>\$ 597,776</b>

\*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**  
46 Small Herd Dairy Farms, 2008

Item	Average 46 Farms		Top 25% Farm	
<u>Financial Ratios - Farm:</u>				
Percent equity		79%		87%
Debt/asset ratio: total		0.21		0.13
long-term		0.16		0.05
intermediate/current		0.26		0.20
Leverage ratio		0.27		0.15
Current ratio		1.91		2.44
Working capital	\$27,379	As % of total Expenses:	\$38,536	21%
<u>Farm Debt Analysis:</u>				
Accounts payable as % of total debt		7%		13%
Long-term liabilities as a % of total debt		35%		17%
Current & intermediate liabilities as a % of total debt		65%		83%
Cost of term debt (weighted average)		4.4%		4.3%
<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	\$2,427	\$1,531	\$1,481	\$656
Long-term debt	840	530	245	109
Intermediate & long term	1,864	1,176	993	440
Intermediate & current debt	1,587	1,001	1,236	547

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**  
46 Small Herd Dairy Farms, 2008

Item	Average 46 Farms			
	Real Estate		Machinery & Equipment	
Value beginning of year	\$	287,256	\$	121,604
Purchases	\$	3,936*	\$	16,597
Gift & inheritance	+	0	+	0
Lost capital	-	1,228	-	0
Sales	-	0	-	53
Depreciation	-	3,279	-	11,311
Net investment	=	-571	=	5,234
Appreciation	+	1,169	+	3,468
Value end of year	\$	287,854	\$	130,306

\*\$0 land and \$3,936 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)

46 Small Herd Dairy Farms, 2008

Item	Average 46 Farms	Top 25% Farms
Beginning of year farm net worth	\$477,320	\$ 510,418
Net farm income without appreciation	\$ 28,021	\$ 55,671
+Nonfarm cash income	+ 5,600	+ 7,400
-Personal withdrawals & family expenditures excluding nonfarm borrowings	- 34,401	- 42,306
RETAINED EARNINGS	+ \$ -779	+\$ 20,766
Nonfarm noncash transfers to farm	\$ 0	\$ 0
+Cash used in business from nonfarm capital	+ 3,964	+ 1,492
-Note or mortgage from farm real estate sold (nonfarm)	- 0	- 0
CONTRIBUTED/WITHDRAWN CAPITAL	+ \$ 3,964	+\$ 1,492
Appreciation	\$ 4,050	\$ -648
-Lost capital	- 1,228	- 411
CHANGE IN VALUATION EQUITY	+ \$ 2,822	+\$ -1,059
IMBALANCE/ERROR	- \$ -2,734	- \$ -2,330
End of year net worth*	= \$ 486,061	=\$ 533,947
<u>Change in Net Worth</u>		
Without appreciation	\$ 4,691	\$24,176
With appreciation	\$ 8,741	\$23,529

\*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**  
46 Small Herd Dairy Farms, 2008

Item	Average 46 Farms	
<b><u>Cash Flow from Operating Activities</u></b>		
Cash farm receipts	\$ 218,913	
- Cash farm expenses	172,400	
- Extraordinary expense	<u>251</u>	
= Net cash farm income		\$ 46,262
Personal withdrawals & family expenses including nonfarm debt payments	\$ 35,540	
- Nonfarm income	<u>5,600</u>	
- Net cash withdrawals from the farm		<u>\$ 29,939</u>
= Net Provided by Operating Activities		\$ 16,323
<b><u>Cash Flow From Investing Activities</u></b>		
Sale of assets: machinery	\$ 53	
+ real estate	0	
+ other stock & cert.	<u>2</u>	
= Total asset sales		\$ 55
Capital purchases: expansion livestock	\$ 545	
+ machinery	16,597	
+ real estate	3,936	
+ other stock & cert.	<u>185</u>	
- Total invested in farm assets		<u>\$ 21,263</u>
= Net Provided by Investment Activities		\$ -21,208
<b><u>Cash Flow From Financing Activities</u></b>		
Money borrowed (intermediate & long term)	\$ 17,877	
+ Money borrowed (short term)	330	
+ Increase in operating debt	646	
+ Cash from nonfarm capital used in business	3,964	
+ Money borrowed - nonfarm	<u>1,139</u>	
= Cash inflow from financing		\$ 23,956
Principal payments (intermediate & long term)	\$ 22,884	
+ Principal payments (short term)	103	
+ Decrease in operating debt	<u>0</u>	
- Cash outflow for financing		<u>\$ 22,987</u>
= Net Provided by Financing Activities		\$ 969
<b><u>Cash Flow From Reserves</u></b>		
Beginning farm cash, checking & savings		\$ 5,680
- Ending farm cash, checking & savings		<u>4,498</u>
= Net Provided from Reserves		\$ 1,182
Imbalance (error)		<u>\$ -2,734</u>

**ANNUAL CASH FLOW STATEMENT**  
Top 25% Small Herd Dairy Farms, 2008

Item	Top 25% Farms	
<u>Cash Flow from Operating Activities</u>		
Cash farm receipts	\$ 232,342	
- Cash farm expenses	172,775	
- Extraordinary expense	<u>254</u>	
= Net cash farm income		\$ 59,313
Personal withdrawals & family expenses including nonfarm debt payments	\$ 42,304	
- Nonfarm income	<u>7,400</u>	
- Net cash withdrawals from the farm		\$ <u>34,903</u>
= Net Provided by Operating Activities		\$ 24,409
<u>Cash Flow From Investing Activities</u>		
Sale of assets: machinery	\$ 136	
+ real estate	0	
+ other stock & cert.	<u>7</u>	
= Total asset sales		\$ 143
Capital purchases: expansion livestock	\$ 50	
+ machinery	20,213	
+ real estate	2,310	
+ other stock & cert.	<u>329</u>	
- Total invested in farm assets		\$ <u>22,901</u>
= Net Provided by Investment Activities		\$ -22,758
<u>Cash Flow From Financing Activities</u>		
Money borrowed (intermediate & long term)	\$ 8,054	
+ Money borrowed (short term)	0	
+ Increase in operating debt	0	
+ Cash from nonfarm capital used in business	1,492	
+ Money borrowed - nonfarm	<u>0</u>	
= Cash inflow from financing		\$ 9,546
Principal payments (intermediate & long term)	\$ 1 2,623	
+ Principal payments (short term)	0	
+ Decrease in operating debt	<u>482</u>	
- Cash outflow for financing		\$ <u>13,105</u>
= Net Provided by Financing Activities		\$ -3,560
<u>Cash Flow From Reserves</u>		
Beginning farm cash, checking & savings		\$ 7,979
- Ending farm cash, checking & savings		<u>8,401</u>
= Net Provided from Reserves		\$ -422
Imbalance (error)		\$ -2,330

## 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 2009. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 2009 debt payments shown below.

### FARM DEBT PAYMENTS PLANNED

Small Herd Dairy Farms, 2007 & 2008

Debt Payments	Same 39 Dairy Farms			Same 10 Top 25% Farms		
	2008 Payments		Planned 2009	2008 Payments		Planned 2009
	Planned	Made		Planned	Made	
Long-term	\$ 6,176	\$ 7,164	\$ 6,269	\$ 3,199	\$ 3,250	\$ 2,761
Intermediate-term	13,508	18,258	13,599	8,226	8,485	8,490
Short-term	0	81	248	0	0	0
Operating (net reduction)	77	657	192	0	1,094	500
Accounts payable (net reduction)	229	746	0	130	936	0
Total	\$ 19,990	\$ 26,905	\$ 20,309	\$ 11,555	\$ 13,765	\$ 11,751
Per cow	\$ 386	\$ 520		\$ 222	\$ 265	
Per cwt. 2008 milk	\$ 2.05	\$ 2.75		\$ 1.15	\$ 1.37	
Percent of total 2008 receipts	9%	13%		5%	6%	
Percent of 2008 milk receipts	10%	14%		6%	7%	

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 2008 (as of December 31, 2007) that could have been made with the amount available for debt service in 2008. Farmers who did not participate in DFBS in 2007 have their 2008 cash flow coverage ratio based on planned debt payments for 2009.

### COVERAGE RATIOS

Same 39 Small Herd Dairy Farms, 2007 & 2008

Item	Average	Item	Average
<u>Cash Flow Coverage Ratio</u>		<u>Debt Coverage Ratio</u>	
Cash farm receipts	\$215,581	Net farm income (without appreciation)	\$28,117
- Cash farm expenses	168,505	+ Depreciation	13,421
+ Interest paid (cash)	5,446	+ Interest paid (accrual)	5,473
- Net personal withdrawals from farm*	27,561	- Net personal withdrawals from farm*	27,561
(A) = Amount Available for Debt Service	\$ 24,961	(A') = Repayment Capacity	\$19,450
(B) = Debt Payments Planned for 2008 (as of December 31, 2007)	\$ 19,990	(B) = Debt Payments Planned for 2008 (as of December 31, 2007)	\$19,990
(A/B) = Cash Flow Coverage Ratio for 2008	1.25	(A'/B) = Debt Coverage Ratio for 2008	0.97
-----			
Same 10 Top 25% Dairy Farms, 2007 & 2008			
(A) = Amount Available for Debt Service	\$ 31,464	(A') = Repayment Capacity	\$ 31,863
(B) = Debt Payments Planned for 2008	11,555	(B) = Debt Payments Planned for 2008	11,555
(A/B) = Cash Flow Coverage Ratio for 2008	2.72	(A'/B) = Debt Coverage Ratio for 2008	2.76

\*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

46 Small Herd Dairy Farms, 2008

Item	Average 46 Farms		
	Per Cow	Per Cwt.	Total
Number cows and cwt. milk	53	10,008	
<u>Accrual Operating Receipts</u>			
Milk	\$3,642	\$19.15	\$191,690
Dairy cattle	242	1.28	12,761
Dairy calves	27	0.14	1,440
Other livestock	45	0.24	2,392
Crops	63	0.33	3,325
Miscellaneous receipts	<u>147</u>	<u>0.77</u>	<u>7,724</u>
Total	\$4,167	\$21.92	\$219,332
<u>Accrual Operating Expenses</u>			
Hired labor	\$ 189	\$ 1.00	\$ 9,967
Dairy grain & concentrate	1,149	6.04	60,498
Dairy roughage	106	0.56	5,569
Nondairy feed	1	0.00	27
Professional nutritional services	0	0.00	0
Machinery hire/rent/lease	57	0.30	3,010
Machinery repair & farm vehicle expense	256	1.35	13,472
Fuel, oil & grease	191	1.00	10,052
Replacement livestock	22	0.12	1,160
Breeding	62	0.32	3,242
Veterinary & medicine	115	0.61	6,069
Milk marketing	224	1.18	11,773
Bedding	46	0.24	2,403
Milking supplies	85	0.45	4,454
Cattle lease	0	0.00	0
Custom boarding	10	0.05	532
bST expense	9	0.05	489
Livestock professional fees	16	0.09	858
Other livestock expense	64	0.34	3,353
Fertilizer & lime	108	0.57	5,699
Seeds & plants	42	0.22	2,211
Spray & other crop expenses	39	0.21	2,066
Crop professional fees	1	0.01	60
Land, building, fence repair	57	0.30	3,001
Taxes	91	0.48	4,806
Real estate rent/lease	42	0.22	2,233
Insurance	63	0.33	3,319
Utilities	132	0.70	6,972
Miscellaneous	<u>41</u>	<u>0.22</u>	<u>2,181</u>
Total Less Interest Paid	\$3,220	\$16.93	\$169,478
<u>Net Accrual Operating Income (without interest paid)</u>	\$ 947	\$ 4.98	\$ 49,854
- Change in livestock/crop inventory*	86	0.45	4,517
- Change in accounts receivable	-78	-0.41	-4,098
- Change in feed/supply inventory**	-12	-0.06	-616
+ Change in accts. payable***	<u>55</u>	<u>0.29</u>	<u>2,886</u>
NET CASH FLOW	\$1,006	\$ 5.29	\$ 52,937
- Net personal withdrawals from farm (see footnote on p. 15)	<u>496</u>	<u>2.61</u>	<u>26,083</u>
Available for Farm Debt Payments & Investments	\$ 510	\$ 2.68	\$ 26,854
- Farm debt payments	<u>578</u>	<u>3.04</u>	<u>30,413</u>
Available for Farm Investment	\$ -68	\$ -0.36	\$ -3,559
- Capital purchases: cattle, machinery & improvements	<u>404</u>	<u>2.12</u>	<u>21,263</u>
Additional Capital Needed	\$ 472	\$ 2.48	\$ 24,822

\*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, 2008

Item	Average Top 25% Farms		
	Per Cow	Per Cwt.	Total
Number of cows or cwt. milk	54	10,907	
<u>Accrual Operating Receipts</u>			
Milk	\$3,834	\$18.81	\$205,110
Dairy cattle	289	1.42	15,452
Dairy calves	52	0.26	2,792
Other livestock	66	0.33	3,549
Crops	117	0.57	6,247
Miscellaneous receipts	<u>160</u>	<u>0.78</u>	<u>8,552</u>
Total	\$4,518	\$22.16	\$241,702
<u>Accrual Operating Expenses</u>			
Hired labor	\$ 244	\$ 1.20	\$ 13,061
Dairy grain & concentrate	1,116	5.48	59,732
Dairy roughage	114	0.56	6,081
Nondairy feed	0	0.00	0
Professional nutritional services	0	0.00	0
Machinery hire/rent/lease	34	0.16	1,797
Machinery repair & farm vehicle expense	260	1.28	13,921
Fuel, oil & grease	182	0.89	9,728
Replacement livestock	17	0.08	908
Breeding	66	0.32	3,545
Veterinary & medicine	109	0.53	5,817
Milk marketing	194	0.95	10,394
Bedding	45	0.22	2,410
Milking supplies	71	0.35	3,781
Cattle lease	0	0.00	0
Custom boarding	10	0.05	521
bST expense	12	0.06	617
Livestock professional fees	20	0.10	1,077
Other livestock expense	47	0.23	2,507
Fertilizer & lime	167	0.82	8,915
Seeds & plants	46	0.23	2,480
Spray & other crop expenses	21	0.10	1,123
Crop professional fees	2	0.01	119
Land, building, fence repair	57	0.28	3,032
Taxes	95	0.47	5,088
Real estate rent/lease	40	0.20	2,136
Insurance	43	0.21	2,311
Utilities	128	0.63	6,822
Miscellaneous	<u>48</u>	<u>0.24</u>	<u>2,590</u>
Total Less Interest Paid	\$3,187	\$15.63	\$170,509
<u>Net Accrual Operating Income (without interest paid)</u>	\$1,331	\$6.53	\$71,193
- Change in livestock/crop inventory*	222	1.09	11,853
- Change in accounts receivable	-47	-0.23	-2,493
- Change in feed/supply inventory**	-31	-0.15	-1,680
+ Change in accounts payable***	<u>5</u>	<u>0.02</u>	<u>261</u>
NET CASH FLOW	\$1,192	\$ 5.85	\$ 63,774
- Net personal withdrawals from farm (see footnote p.15)	<u>609</u>	<u>2.99</u>	<u>32,586</u>
Available for Farm Debt Payments & Investments	\$ 583	\$ 2.86	\$ 31,188
- Farm debt payments	<u>343</u>	<u>1.68</u>	<u>18,341</u>
Available for Farm Investment	\$ 240	\$ 1.18	\$ 12,847
- Capital purchases: cattle, machinery & improvements	<u>428</u>	<u>2.10</u>	<u>22,901</u>
Additional Capital Needed	\$ 188	\$ 0.92	\$ 10,054

\*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

46 Small Herd Dairy Farms, 2008

Item	Average 46 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	85	85	170	124	75	199
Nontillable	48	23	71	40	13	53
Other nontillable	69	16	85	90	0	90
Total	202	124	326	254	88	342
<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	44	123	2.11 tn DM	11	145	2.11 tn DM
Corn silage	32	29	17.93 tn	7	29	19.87 tn
			6.01 tn DM			6.85 tn DM
Other forage	5	22	1.15 tn DM	0	0	0.00 tn DM
Total forage	44	147	2.65 tn DM	11	164	2.63 tn DM
Corn grain	8	33	136 bu	2	24	149 bu
Oats	4	20	60 bu	2	21	56 bu
Wheat	2	6	56 bu	0	0	0 bu
Other crops	11	40		4	50	
Tillable pasture	9	35		4	50	
Idle	7	44		3	34	
Total Tillable Acres	46	170		12	199	

\*This column represents the average acreage for the farms producing that crop. Average acreages including those farms not producing were hay crop 118, corn silage 20, corn grain 6, oats 2, tillable pasture 7, and idle 7.

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

44 Small Herd Dairy Farms, 2008\*\*

Item	Average 44 Farms	Top 25% Farm
Total tillable acres per cow	3.39	4.10
Total forage acres per cow	2.79	3.10
Harvested forage dry matter, tons per cow	7.39	8.15

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

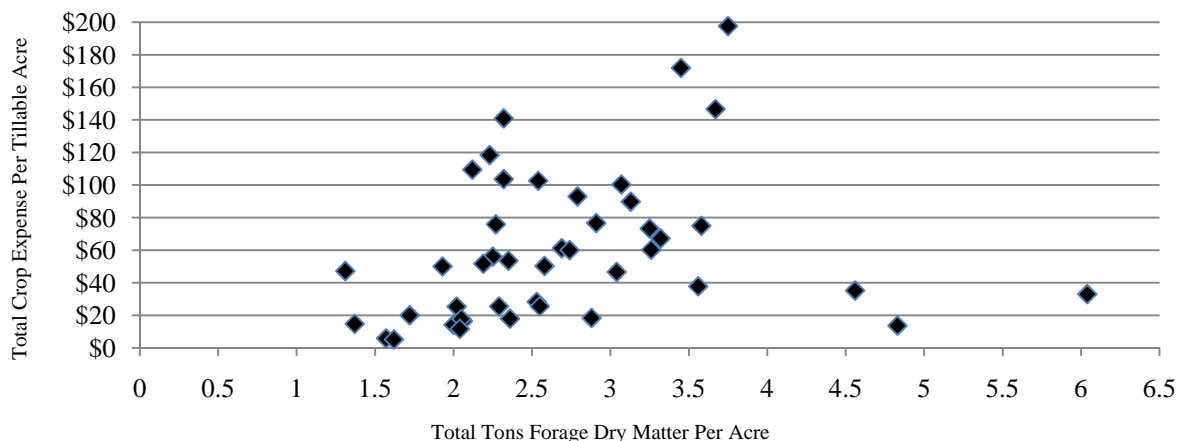
**Cropping Analysis** (continued)

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 15 farms, 7 of which are in the "top 25% farms" group.

**CROP RELATED ACCRUAL EXPENSES**  
Small Herd Dairy Farms Reporting Forage Production, 2008

Item	Average 44 farms		Top 25% Farms	
	Total Per Tillable Acre			
Number of farms reporting	44		11	
Average number of acres	178		217	
Fertilizer & lime expenses	\$	34.55	\$	52.34
Seeds & plants		12.69		13.44
Spray & other crop expenses		12.87		6.38
<b>TOTAL</b>	\$	<b>60.11</b>	\$	<b>72.16</b>

**Crop Expense Per Acre and Total Forage Production Per Acre**  
44 Small Herd Farms That Grow Forages, 2008



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**  
44 Small Herd Dairy Farms That Grow Forages, 2008

Machinery Expense	Average 44 Farms		Top 25% Farms	
	Total Expenses	Per Tillable Acre	Total Expenses	Per Tillable Acre
Fuel, oil & grease	\$ 10,063	\$ 56.51	\$ 9,845	\$ 45.44
Machinery repair & vehicle expense	13,393	75.21	13,160	60.75
Machine hire, rent & lease	3,058	17.17	1,899	8.76
Interest (5%)	6,487	36.43	6,793	31.36
Depreciation	<u>11,582</u>	<u>65.04</u>	<u>8,208</u>	<u>37.89</u>
<b>Total</b>	\$ 44,584	\$ 250.36	\$ 39,905	\$ 184.20

**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**  
46 Small Herd Dairy Farms, 2008

Item	Dairy Cows		Heifer					
	No.	Value	Bred		Open		Calves	
			No.	Value	No.	Value	No.	Value
<u>Average 46 Farms:</u>								
Beg. year (owned)	53	\$ 87,184	12	\$ 19,470	15	\$ 17,566	13	\$ 8,591
+ Change w/o apprec.		-371		2,004		-133		136
+ Appreciation		<u>-250</u>		<u>-55</u>		<u>-272</u>		<u>-152</u>
End year (owned)	53	\$ 86,563	14	\$ 21,418	16	\$ 17,162	13	\$ 8,575
End including leased	53							
Average number	53		41	(all age groups)				
<u>Top 25% Farms:</u>								
Beg. year (owned)	53	\$ 82,154	10	\$ 15,692	14	\$ 14,783	13	\$ 7,783
+ Change w/o apprec.		3,454		1,792		496		767
+ Appreciation		<u>-575</u>		<u>-213</u>		<u>-450</u>		<u>-233</u>
End year (owned)	55	\$ 85,033	12	\$ 17,271	15	\$ 14,829	14	\$ 8,317
End including leased	55							
Average number	54		38	(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**  
46 Small Herd Dairy Farms, 2008

Item	Average 46 Farms	Top 25% Farms
Total milk sold, lbs.	1,000,814	1,090,717
Milk sold per cow, lbs.	19,016	20,387
Average milk plant test, percent butterfat (average of farms reporting)	3.87	3.84

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**  
46 Small Herd Dairy Farms, 2008

Item	Average 46 Farms		Top 25% Farms	
	Number	Percent*	Number	Percent*
Cows sold for beef	11	20.7	10	19.5
Cows sold for dairy	1	2.5	1	2.0
Cows died	3	5.4	2	3.3
Culling rate**		26.0		23.0

\*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**  
46 Small Herd Dairy Farms, 2008

Item	Average 46 Farms			Top 25% Farms		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
<u>Accrual Cost of Producing Milk</u>						
Operating costs	\$ 148,828	\$ 2,828	\$ 14.87	\$ 138,263	\$ 2,584	\$ 12.68
Purchased inputs costs	\$ 163,669	\$ 3,110	\$ 16.35	\$ 149,439	\$ 2,793	\$ 13.70
Total costs	\$ 228,884	\$ 4,349	\$ 22.87	\$ 207,194	\$ 3,873	\$ 19.00
<u>Accrual Receipts From Milk</u>						
Net Milk Receipts	\$ 191,690	\$ 3,642	\$ 19.15	\$ 205,110	\$ 3,834	\$ 18.81
Net Farm Income	\$ 179,917	\$ 3,420	\$ 17.98	\$ 194,717	\$ 3,589	\$ 17.85
Net Farm Income without Appreciation	\$ 28,021	\$ 532	\$ 2.80	\$ 55,671	\$ 1,041	\$ 5.10
Net Farm Income with Appreciation	\$ 32,071	\$ 609	\$ 3.20	\$ 55,024	\$ 1,028	\$ 5.04

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**  
46 Small Herd Dairy Farms, 2008

Item	Average 46 Farms		Top 25% Farms	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purchased dairy grain & concentrate	\$ 1,149	\$ 6.04	\$ 1,116	\$ 5.48
Purchased dairy roughage	106	0.56	114	0.56
Total Purchased Dairy Feed	\$ 1,255	\$ 6.60	\$ 1,230	\$ 6.03
Purchased grain & conc. as % of milk receipts		32%		29%
Purchased feed & crop expense	\$ 1,446	\$ 7.60	\$ 1,466	\$ 7.19
Purchased feed & crop expense as % of milk receipts		40%		37%
Breeding	\$ 62	\$ 0.32	\$ 66	\$ 0.32
Veterinary & medicine	115	0.61	109	0.53
Milk marketing	224	1.18	194	0.95
Bedding	46	0.24	45	0.22
Milking supplies	85	0.45	71	0.35
Cattle lease	0	0.00	0	0.00
Custom boarding	10	0.05	10	0.05
bST	9	0.05	12	0.06
Livestock professional fees	16	0.09	20	0.10
Other livestock expense	64	0.34	47	0.23

**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**  
46 Small Herd Dairy Farms, 2008

Item	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
<u>Average 46 Farms:</u>				
Farm capital*	\$319,640	\$13,196	\$3,922	\$6,432
Real estate*		6,912		3,369
Machinery & equipment	59,561	2,399	741	
<u>Ratios</u>				
Asset turnover*	Operating Expense 0.33	Interest Expense 0.78	Depreciation Expense 0.03	0.07
<u>Top 25% Farms:</u>				
Farm capital*	\$339,206	\$ 12,202	\$2,975	\$4,758
Real estate*		5,842		2,278
Machinery & equipment	68,732	2,402	647	
<u>Ratios</u>				
Asset turnover*	Operating Expense 0.37	Interest Expense 0.71	Depreciation Expense 0.02	0.05

\*Excludes rented farms.

**LABOR FORCE INVENTORY AND ANALYSIS**  
46 Small Herd Dairy Farms, 2008

Labor Force	Months	Age	Years of Education	Value of Labor & Management
<u>Average 46 Farms:</u>				
Operator number 1	13.5	49	13	\$ 28,174
Operator number 2	1.7	54	13	3,304
Family paid	2.8			
Family unpaid	3.9			
Hired	<u>3.6</u>			
Total	25.4	/ 12 = 2.12 Worker Equivalent 1.13 Operator/Manager Equivalent		
<u>Top 25% Farms: Total</u>				
Operator's	22.4	/ 12 = 1.87 Worker Equivalent 1.00 Operator/Manager Equivalent		

Labor Efficiency	Average 46 Farms		Top 25% Farms	
	Total	Per Worker	Total	Per Worker
Cows, average number	53	25	54	29
Milk sold, pounds	1,000,814	473,198	1,090,717	584,313
Tillable acres	170	81	199	106

Labor Costs	Average 46 Farms			Top 25% Farms		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Value of operator(s)						
labor (\$2,500/month)	\$37,792	\$ 718	\$ 3.78	\$32,325	\$ 604	\$ 2.96
Family unpaid (\$2,500/month)	9,642	183	0.96	3,550	66	0.33
Hired	<u>9,967</u>	<u>189</u>	<u>1.00</u>	<u>13,061</u>	<u>244</u>	<u>1.20</u>
Total Labor	\$57,401	\$ 1,091	\$ 5.74	\$48,936	\$ 915	\$ 4.49
Machinery Cost	<u>\$44,159</u>	<u>\$ 839</u>	<u>\$ 4.41</u>	<u>\$39,837</u>	<u>\$ 745</u>	<u>\$ 3.65</u>
Total Labor & Machinery	\$101,560	\$ 1,930	\$ 10.15	\$88,773	\$ 1,659	\$ 8.14
Hired labor expense per hired worker equivalent		\$18,718			\$19,470	
Hired labor expense as % of milk sales		5.2%			6.4%	

## 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 39 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 39 Small Herd Dairy Farms, 2007 & 2008

Selected Factors	Average of Same 39 Farms*		Average of Same 10 Top 25% Farms*	
	2007	2008	2007	2008
<u>Size of Business</u>				
Average number of cows	52	52	51	52
Average number of heifers	40	41	38	38
Milk sold, lbs.	975,626	976,710	953,922	1,004,340
Worker equivalent	2.09	2.10	1.75	1.76
Total tillable acres	173	172	216	217
<u>Rates of Production</u>				
Milk sold per cow, lbs.	18,624	18,867	18,559	19,314
Hay DM per acre, tons	1.8	2.2	1.6	2.1
Corn silage per acre, tons	17.2	17.2	17.8	18.7
<u>Labor Efficiency</u>				
Cows per worker	25	25	29	30
Milk sold/worker, lbs.	466,807	465,100	545,098	570,648
<u>Cost Control</u>				
Grain & concentrate purchased as % of milk sales	24%	31%	21%	28%
Dairy feed & crop expense per cwt. milk	\$ 6.35	\$ 7.60	\$ 5.77	\$ 7.16
Labor & machinery costs/cow	\$ 1,842	\$ 1,927	\$ 1,757	\$ 1,647
Operating cost of producing cwt. of milk	\$ 13.46	\$ 15.05	\$ 11.33	\$ 13.04
<u>Capital Efficiency**</u>				
Farm capital per cow***	\$ 11,880	\$ 12,576	\$ 10,840	\$ 11,325
Machinery & equipment per cow	\$ 2,152	\$ 2,382	\$ 2,271	\$ 2,574
Asset turnover ratio***	0.39	0.33	0.43	0.38
<u>Profitability</u>				
Net farm income w/o appreciation	\$ 54,680	\$ 28,117	\$ 71,106	\$ 51,648
Net farm income with appreciation	\$ 71,769	\$ 31,972	\$ 80,721	\$ 50,726
Labor & management income per operator/manager	\$ 20,267	\$ -5,257	\$ 41,431	\$ 23,157
Rate of return on equity capital with appreciation	6.7%	-2.0%	9.3%	3.4%
Rate of return on all capital with appreciation	6.6%	-0.7%	8.7%	3.7%
<u>Financial Summary</u>				
Farm net worth, end year	\$ 498,120	\$ 502,664	\$ 511,613	\$ 523,114
Debt to asset ratio	0.18	0.18	0.12	0.12
Farm debt per cow	\$ 2,096	\$ 2,116	\$ 1,367	\$ 1,401

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

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

Same 39 Small Herd Dairy Farms, 2007 &amp; 2008

Item	2007		2008	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	52		52	
Cwt. Of Milk Sold		9,756		9,767
<b><u>ACCRUAL OPERATING RECEIPTS</u></b>				
Milk	\$3,817	\$20.49	\$3,648	\$19.33
Dairy cattle	176	0.94	215	1.14
Dairy calves	37	0.20	23	0.12
Other livestock	41	0.22	24	0.13
Crops	76	0.41	56	0.30
Miscellaneous receipts	197	1.06	145	0.77
Total Receipts	\$4,343	\$23.32	\$4,111	\$21.79
<b><u>ACCRUAL OPERATING EXPENSES</u></b>				
Hired labor	\$ 190	\$ 1.02	\$ 187	\$ 0.99
Dairy grain & concentrate	933	5.01	1,134	6.01
Dairy roughage	76	0.41	99	0.52
Nondairy feed	0	0.00	1	0.00
Professional nutritional services	2	0.01	0	0.00
Machine hire/rent/lease	60	0.32	66	0.35
Mach. repair & vehicle exp.	290	1.56	248	1.31
Fuel, oil & grease	140	0.75	193	1.03
Replacement livestock	24	0.13	14	0.07
Breeding	57	0.31	63	0.34
Veterinary & medicine	104	0.56	115	0.61
Milk marketing	201	1.08	224	1.19
Bedding	38	0.20	45	0.24
Milking supplies	95	0.51	83	0.44
Cattle lease	0	0.00	0	0.00
Custom boarding	8	0.04	11	0.06
bST expense	8	0.04	7	0.04
Livestock professional fees	27	0.14	18	0.10
Other livestock expense	57	0.31	64	0.34
Fertilizer & lime	97	0.52	117	0.62
Seeds & plants	37	0.20	44	0.24
Spray/other crop expense	37	0.20	39	0.21
Crop professional fees	2	0.01	1	0.01
Land, building, fence repair	55	0.29	62	0.33
Taxes	96	0.51	93	0.49
Real estate rent/lease	33	0.18	36	0.19
Insurance	60	0.32	64	0.34
Utilities	136	0.73	133	0.71
Interest paid	128	0.69	106	0.56
Other professional fees	16	0.09	17	0.09
Miscellaneous	26	0.14	21	0.11
Total Operating Expenses	\$3,034	\$16.29	\$3,303	\$17.51
Expansion Livestock	0	0.00	0	0.00
Extraordinary Expense	5	0.03	6	0.03
Machinery Depreciation	197	1.06	199	1.05
Real Estate Depreciation	62	0.34	61	0.32
Total Expenses	\$3,298	\$17.72	\$3,569	\$18.91
Net Farm Income Without Appreciation	\$1,044	\$ 5.60	\$ 543	\$ 2.88

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

Same 10 Top 25% Small Herd Dairy Farms, 2007 &amp; 2008

Item	2007		2008	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	51		52	
Cwt. Of Milk Sold		9,539		10,043
<b><u>ACCRUAL OPERATING RECEIPTS</u></b>				
Milk	\$3,762	\$20.27	\$3,727	\$19.30
Dairy cattle	176	0.95	199	1.03
Dairy calves	48	0.26	51	0.27
Other livestock	76	0.41	70	0.36
Crops	138	0.74	119	0.61
Miscellaneous receipts	<u>230</u>	<u>1.24</u>	<u>182</u>	<u>0.94</u>
Total Receipts	\$4,430	\$23.87	\$4,348	\$22.51
<b><u>ACCRUAL OPERATING EXPENSES</u></b>				
Hired labor	\$ 214	\$ 1.15	\$ 249	\$ 1.29
Dairy grain & concentrate	791	4.26	1,045	5.41
Dairy roughage	65	0.35	61	0.32
Nondairy feed	0	0.00	0	0.00
Professional nutritional services	0	0.00	0	0.00
Machine hire/rent/lease	51	0.27	37	0.19
Mach. repair & vehicle exp.	341	1.84	247	1.28
Fuel, oil & grease	145	0.78	189	0.98
Replacement livestock	6	0.03	5	0.03
Breeding	67	0.36	66	0.34
Veterinary & medicine	84	0.45	106	0.55
Milk marketing	151	0.81	176	0.91
Bedding	21	0.11	32	0.16
Milking supplies	80	0.43	72	0.37
Cattle lease	0	0.00	0	0.00
Custom boarding	8	0.04	12	0.06
bST expense	8	0.04	8	0.04
Livestock professional fees	30	0.16	20	0.10
Other livestock expense	39	0.21	42	0.22
Fertilizer & lime	144	0.77	200	1.03
Seeds & plants	43	0.23	52	0.27
Spray/other crop expense	25	0.14	22	0.11
Crop professional fees	3	0.02	3	0.01
Land, building, fence repair	45	0.24	64	0.33
Taxes	103	0.56	103	0.53
Real estate rent/lease	25	0.14	31	0.16
Insurance	51	0.28	49	0.26
Utilities	118	0.64	122	0.63
Interest paid	64	0.34	74	0.38
Other professional fees	16	0.09	27	0.14
Miscellaneous	<u>33</u>	<u>0.18</u>	<u>26</u>	<u>0.14</u>
Total Operating Expenses	\$2,770	\$14.93	\$3,139	\$16.25
Expansion Livestock	0	0.00	1	0.01
Extraordinary Expense	7	0.04	6	0.03
Machinery Depreciation	191	1.03	141	0.73
Real Estate Depreciation	<u>79</u>	<u>0.43</u>	<u>68</u>	<u>0.35</u>
Total Expenses	\$3,047	\$16.43	\$3,355	\$17.37
Net Farm Income Without Appreciation	\$1,383	\$ 7.45	\$ 993	\$ 5.14

**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**

46 Small Herd Dairy Farms, 2008

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)
3.30	72	1,541,356	24,702	3.4	26	42	830,800
2.51	62	1,123,175	21,007	2.4	21	30	589,995
2.01	53	992,747	19,320	2.1	17	26	462,912
1.61	45	832,405	16,925	1.9	15	21	386,556
1.25	33	563,028	13,783	1.5	12	17	289,159

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)
\$ 694	21%	\$ 548	\$ 1,348	\$ 890	\$ 5.24	0.6%	9.2%
996	29	677	1,705	1,180	6.61	3.0	15.7
1,160	32	860	1,998	1,402	7.23	5.2	21.1
1,331	35	997	2,264	1,701	8.59	7.2	24.9
1,603	45	1,197	2,739	2,067	10.71	12.4	32.2

Value and Cost of Milk Production			Profitability			Change in Net Worth with Appreciation
Milk Receipts Per Cow	Operating Cost Production Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income with Appreciation	Net Farm Income w/o Appreciation	Labor & Mgmt. Income Per Operator	
(12)	(12)	(12)	(4)	(4)	(4)	(8)
\$ 4,758	\$ 11.67	\$ 18.85	\$ 74,115	\$ 70,477	\$ 33,794	\$ 41,606
4,026	13.72	21.88	41,754	37,052	6,759	24,495
3,676	15.06	23.26	30,729	27,742	-2,277	6,752
3,260	16.22	24.85	21,984	16,918	-14,227	-2,717
2,656	18.17	30.59	-4,197	-8,075	-48,059	-22,915

\*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, 2008

<u>Animals Entering Herd</u>	Average
Number calving in 2008 for first time	221.0
Animals purchased, %*	4.5%
Animals raised by farm, %**	95.5%
 <u>Current Heifer Inventory</u>	
Raised on dairy, %	78.6%
Raised by a custom grower, %	21.4%

\* 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, 221 animals calved for the first time in 2008. The breakdown on these animals for source was 4.5 percent purchased and 95.5 percent raised by the farm. Of the current heifer inventory, 78.6 percent were raised on the dairy and 21.4 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, 15 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**  
15 Small Herd Dairy Farms, 2008

	Pounds	Percent	Price/Pound	Total	\$/Cwt of Milk
<b>BASE FARM PRICE</b>					
Butterfat	36,447	3.78%	\$ 1.56	\$ 56,785	\$ 5.90
Protein	30,154	3.13%	\$ 3.86	\$ 116,490	\$ 12.09
Solids	54,300	5.64%	\$ 0.06	\$ 3,381	\$ 0.35
<b>Total Component Contribution</b>					<b>\$18.34</b>
<b>PPD</b>	963,211			\$ 5,349	<b>\$ 0.56</b>
<b>Base Farm Price</b>					<b>\$ 18.90</b>
<b>Premiums</b>					
Quality				\$ 2,510	\$ 0.26
Volume				\$ 128	\$ 0.01
Market Premiums				\$ 1,590	\$ 0.17
<b>Total Premiums</b>					<b>\$ 0.44</b>
<b>BASE FARM PRICE + PREMIUM</b>					<b>\$ 19.33</b>
<hr style="border-top: 1px dashed black;"/>					
<b>Deductions</b>					
Promo				\$ 1,445	\$ 0.15
Hauling + Stop Charges.				\$ 7,766	\$ 0.81
Market Fees & Coop Dues				\$ 1,306	\$ 0.14
<b>Total Deductions</b>					<b>\$ 1.09</b>
<b>BASE FARM PRICE + PREMIUMS - DEDUCTIONS</b>					<b>\$ 18.24</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>				\$ 933	<b>\$ 0.10</b>
<b>NET PRICE RECEIVED ON FARM, ALL SOURCES</b>					<b>\$ 18.34</b>
<b>PPD - Hauling, per cwt.</b>					\$ -0.25
<b>PPD - Hauling + Market Premiums, per cwt.</b>					\$ -0.09
<b>Net Marketing Value, per cwt. (PPD + Total Premiums - Total Deductions)</b>					\$ -0.10

\*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 21 farms is 56 cows.

**MILK PRICE INFORMATION BY QUARTILE\***  
(Each Category Sorted Independently)  
15 Small Herd Dairy Farms, 2008

	Lowest Quartile	←—————→	Highest Quartile	
Butterfat, %	3.59	3.80	3.95	4.13
Protein, %	2.97	3.03	3.19	3.55
Other Solids, %	5.54	5.64	5.67	5.72
Butterfat, \$ per Cwt.	5.59	5.93	6.14	6.50
Protein, \$ per Cwt.	11.50	11.91	12.45	13.31
Other solids, \$ per Cwt.	0.31	0.32	0.34	0.44
<b>Total Component Value per Cwt.</b>	<b>\$ 17.60</b>	<b>\$ 18.13</b>	<b>\$ 18.89</b>	<b>\$ 20.05</b>
PPD, \$ per Cwt.	0.17	0.54	0.70	0.94
<b>Base Farm Price per Cwt.</b>	<b>\$ 18.17</b>	<b>\$ 18.69</b>	<b>\$ 19.24</b>	<b>\$ 20.78</b>
Quality, \$ per Cwt.	0.03	0.11	0.17	0.61
Volume, \$ per Cwt.	0.00	0.00	0.01	0.06
Market premium, \$ per Cwt.	-0.33	0.27	0.43	0.59
Total Premium, \$ per Cwt.	<b>0.02</b>	<b>0.39</b>	<b>0.61</b>	<b>0.82</b>
<b>Base Farm Price + Premiums per Cwt.</b>	<b>\$ 18.72</b>	<b>\$ 19.05</b>	<b>\$ 19.72</b>	<b>\$ 21.06</b>
Promotion, \$ per Cwt.	0.15	0.15	0.15	0.15
Hauling, \$ per Cwt.	0.47	0.72	1.05	1.31
Market fees & coop dues per Cwt.	0.00	0.09	0.21	0.32
<b>Total Marketing Expenses per Cwt.</b>	<b>\$ 0.69</b>	<b>\$ 1.05</b>	<b>\$ 1.40</b>	<b>\$ 1.65</b>
<b>Base + Premiums – Deductions per Cwt.</b>	<b>\$ 17.47</b>	<b>\$ 17.94</b>	<b>\$ 18.71</b>	<b>19.85</b>
Futures contract, forward contracting, \$ per Cwt.	0.00	0.00	0.00	0.00
<b>Total Marketing Income, \$ per Cwt.</b>	<b>\$ 0.00</b>	<b>\$ 0.00</b>	<b>\$ 0.00</b>	<b>\$ 0.00</b>
<b>Patronage Dividends, \$ per Cwt.</b>	<b>\$ 0.00</b>	<b>\$ 0.00</b>	<b>\$ 0.00</b>	<b>\$ 0.38</b>
<b>Net Price Received From All Sources, \$ per Cwt.</b>	<b>\$ 17.47</b>	<b>\$ 17.94</b>	<b>\$ 18.96</b>	<b>\$ 19.99</b>
PPD - hauling, \$ per Cwt.	-0.65	-0.42	-0.16	0.23
PPD - hauling + mkt premiums, \$ per Cwt.	-0.55	-0.17	0.16	0.38
<b>Net Marketing Value, \$ per Cwt. (PPD + Total Premiums – Total Deductions)</b>	<b>-0.63</b>	<b>-0.30</b>	<b>-0.04</b>	<b>0.46</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 250 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

250 New York Dairy Farms, 2007

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)
28.1	1,314	32,322,710	26,645	5.2	26	61	1,309,445
17.1	773	18,291,548	24,891	4.0	23	50	1,121,656
11.9	494	11,182,833	23,916	3.5	21	46	1,026,711
8.1	346	7,739,127	23,029	3.1	20	43	943,700
5.2	217	4,765,001	21,916	2.8	19	40	849,317
-----							
4.0	149	2,798,701	20,742	2.6	18	36	764,401
3.2	108	2,051,550	19,708	2.4	17	34	662,962
2.7	80	1,444,394	18,062	2.1	16	30	569,954
2.2	60	1,035,063	15,732	1.8	15	25	454,811
1.6	41	684,234	12,412	1.2	12	20	314,396

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)
\$515	15%	\$430	\$1,088	\$705	\$4.28
726	19	551	1,294	948	4.96
814	20	605	1,373	1,067	5.45
894	22	648	1,436	1,160	5.77
991	23	700	1,513	1,262	5.95
-----					
1,066	25	757	1,595	1,341	6.22
1,134	26	821	1,693	1,426	6.60
1,205	27	899	1,817	1,511	7.00
1,305	29	995	2,020	1,609	7.44
1,492	35	1,251	2,388	1,831	9.03

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

**FARM BUSINESS CHART FOR  
FARM MANAGEMENT COOPERATORS**  
250 New York Dairy Farms, 2007

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)
\$5,473	\$22.53	\$1,631	\$9.70	\$2,801	\$14.86
5,036	21.38	2,096	11.55	3,306	16.34
4,850	20.97	2,385	12.46	3,536	16.99
4,689	20.70	2,632	12.97	3,708	17.60
4,473	20.48	2,812	13.56	3,885	18.16
-----					
4,247	20.32	2,990	14.03	4,024	18.91
4,002	20.12	3,139	14.57	4,173	19.99
3,719	19.87	3,353	15.44	4,351	21.53
3,252	19.62	3,627	16.41	4,566	23.15
2,599	19.04	4,077	19.13	5,111	28.29

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)
\$1,658,164	\$1,985	0.37	\$2,258,907	\$2,580	\$1,350,735	\$828,820
881,033	1,602	0.31	1,159,819	2,039	690,457	422,319
593,261	1,424	0.28	786,149	1,861	459,165	250,521
385,119	1,262	0.26	537,897	1,674	267,642	163,957
227,152	1,131	0.23	323,558	1,540	154,444	94,290
-----						
142,549	1,021	0.21	182,217	1,407	91,721	57,044
102,171	909	0.19	131,539	1,231	56,345	42,053
68,086	722	0.16	97,870	987	30,338	23,345
43,034	467	0.11	63,898	733	2,284	1,427
3,007	67	0.01	21,902	280	-41,030	-36,506

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**  
250 New York Dairy Farms, 2007

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)
\$92	\$1,522	6.22	9.80	2%	\$203	55%	36.91
233	1,106	2.82	4.47	6	992	38	5.77
315	977	2.24	3.60	8	1,678	30	4.12
387	881	1.91	3.09	10	2,100	26	3.23
454	813	1.65	2.74	11	2,515	23	2.59
517	737	1.44	2.29	12	2,881	19	2.21
566	655	1.26	1.88	13	3,265	14	1.83
626	534	1.08	1.60	15	3,711	10	1.52
735	377	0.84	1.11	19	4,170	4	1.07
1,007	-5	-0.08	0.02	28	5,777	-12	0.49
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)	
0.02	98%	0.01	0.00	0.54	0.00	0.02	
0.11	90	0.09	0.00	0.59	0.01	0.03	
0.19	84	0.15	0.01	0.62	0.02	0.04	
0.29	78	0.20	0.10	0.65	0.03	0.05	
0.36	74	0.25	0.21	0.67	0.03	0.05	
0.45	69	0.29	0.29	0.69	0.04	0.06	
0.54	65	0.34	0.39	0.71	0.05	0.07	
0.67	60	0.42	0.50	0.73	0.05	0.08	
0.94	52	0.53	0.63	0.78	0.06	0.10	
1.68	39	0.70	0.89	0.87	0.09	0.14	
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)	
0.95	\$1,504	\$634	\$5,726	\$1,980,666	55%	29%	
0.78	2,240	876	6,959	969,490	36	24	
0.72	2,696	1,111	7,431	612,376	29	21	
0.68	3,012	1,358	7,894	396,561	23	18	
0.62	3,388	1,559	8,452	238,455	19	15	
0.57	3,752	1,792	9,113	137,890	14	12	
0.50	4,339	2,003	10,060	98,507	11	10	
0.44	5,105	2,256	11,046	69,452	7	7	
0.37	6,374	2,599	12,687	37,054	3	4	
0.26	10,220	3,766	16,830	-5,198	-7	-2	

\*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 45 cows on the small conventional farms to 765 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 35-39. By comparing the farm's performance on the most appropriate business chart, a farm manager will be better able to evaluate his or her business performance.

### **Herd Size Comparisons**

A detailed comparison of profitability, financial situation and business analysis factors across herd sizes is contained on pages 48-60 of the 2007 State Summary\*. As herd size increases, the net farm income profitability generally increases (page 48)\*. Net farm income without appreciation averaged \$36,257 per farm for the less than 50 cow farms and \$1,156,991 per farm for those with more than 600 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 herd size categories saw an increase in net worth during 2007. The largest herd size category experienced an increase in net worth of \$1,301,770. However, percent equity went down as assets increased. The largest herds had the lowest percent equity; while the smaller herds averaged 79 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 600 and more cows per farm averaged 34 percent more milk sold per cow than the smallest farms. All of the groups with 200 or more cows averaged above 20,000 pounds of milk sold per cow while the farms smaller than 200 cows averaged 18,431 pounds of milk sold per cow. Farm capital per cow generally decreased as herd size increased. Milk sold per worker increased dramatically as herd size increased, ranging from 411,770 pounds at the lowest herd size category up to 1,130,956 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, 2007, Department of Applied Economics and Management, Cornell University, R.B. 2008-03, October 2008.

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

235 New York Dairy Farms, 2007

Item	Farms with:	Conventional		Freestall		
		<= 60 Cows	>60 Cows	<=150 Cows	151-300 Cows	≥300 Cows
Number of farms		32	35	41	36	91
<u>Cropping Program Analysis</u>						
Total Tillable acres		173	264	256	546	1,502
Tillable acres rented*		81	107	131	260	782
Hay crop acres*		134	177	165	259	663
Corn silage acres*		18	54	63	163	572
Hay crop, tons DM/acre		1.9	2.5	2.5	2.7	3.3
Corn silage, tons/acre		17	17.5	17.0	18.8	19.0
Oats, bushels/acre		25	60.5	0	48	71
Forage DM per cow, tons		8.3	8.8	8.3	8.3	7.9
Tillable acres/cow		4.0	3.1	2.7	2.6	2.0
Fertilizer & lime expense/tillable acre		\$29.91	\$27.65	\$36.31	\$52.78	\$45.47
Total machinery costs		\$37,126	\$69,721	\$85,153	\$178,009	\$524,509
Machinery cost/tillable acre		\$208	\$265	\$301	\$321	\$349
<u>Dairy Analysis</u>						
Number of cows		45	86	102	215	765
Number of heifers		36	72	84	170	617
Milk sold, lbs.		803,437	1,540,743	1,907,152	4,669,673	18,323,557
Milk sold/cow, lbs.		18,055	17,999	18,676	21,759	23,957
Operating cost of producing milk/cwt.		\$13.22	\$14.03	\$13.90	\$13.98	\$14.03
Total cost of producing milk/cwt.		\$22.57	\$21.09	\$20.39	\$18.35	\$16.98
Price/cwt. milk sold		\$20.32	\$20.46	\$20.85	\$20.31	\$20.30
Purchased dairy feed/cow		\$938	\$942	\$1,076	\$1,087	\$1,244
Purchased dairy feed/cwt. milk		\$5.19	\$5.23	\$5.76	\$5.00	\$5.19
Purchased grain & concentrate as % of milk receipts		24%	25%	25%	23%	24%
Purchased feed & crop expense/cwt milk		\$6.12	\$6.11	\$6.81	\$6.18	\$6.08
<u>Capital Efficiency</u>						
Farm capital/worker		\$303,979	\$310,146	\$341,029	\$384,576	\$364,434
Farm capital/cow		\$12,842	\$10,507	\$9,818	\$9,282	\$8,086
Farm capital/tillable acre owned		\$6,210	\$5,749	\$8,013	\$6,970	\$8,588
Real estate/cow		\$6,988	\$4,728	\$4,296	\$3,825	\$3,118
Machinery investment/cow		\$2,426	\$2,310	\$2,058	\$1,707	\$1,328
Asset turnover ratio		0.35	0.43	0.48	0.58	0.73
<u>Labor Efficiency</u>						
Worker equivalent		1.88	2.90	2.94	5.18	16.97
Operator/manager equivalent		1.09	1.34	1.45	1.65	1.96
Milk sold/worker, lbs.		427,929	530,986	649,796	901,336	1,079,497
Cows/worker		24	30	35	41	45
Labor cost/cow		\$1,136	915	\$829	\$747	\$776
Labor cost/tillable acre		\$292	\$297	\$331	\$294	\$395
<u>Profitability &amp; Balance Sheet Analysis</u>						
Net farm income (without appreciation)		\$43,748	\$76,448	\$100,892	\$233,622	\$909,264
Labor & management income/operator		\$11,942	\$25,590	\$37,718	\$94,556	\$363,992
Rate return on all capital with appreciation		4.2%	7.0%	9.1%	14.0%	20.7%
Farm debt/cow		\$2,310	\$2,473	\$2,505	\$2,393	\$2,985
Percent equity		82%	77%	75%	75%	65%

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

**FARM BUSINESS CHART FOR SMALL CONVENTIONAL STALL DAIRY FARMS**  
32 Conventional Stall Dairy Farms with 60 or Less Cows, New York, 2007

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)
2.86	58	1,099,232	24,446	2.9	25	39	810,088
2.40	53	1,036,401	22,911	3.6	22	33	707,891
2.16	51	996,659	21,564	2.4	20	29	588,257
2.03	48	941,296	20,915	2.3	18	26	488,972
1.95	47	874,710	20,045	2.1	18	25	438,230
1.88	45	833,652	17,757	1.9	16	23	397,870
1.70	43	816,327	16,563	1.8	15	20	365,041
1.55	40	727,982	15,284	1.6	14	20	337,736
1.44	36	574,365	13,818	1.3	14	19	300,938
1.20	31	358,434	10,386	0.8	12	17	217,459

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)	
\$487	16%	\$471	\$1,355	\$662	\$4.41	
669	20	621	1,669	863	5.12	
706	21	680	1,762	906	5.46	
777	23	721	1,830	962	5.64	
829	24	772	1,881	996	5.81	
895	25	832	2,103	1,171	6.08	
963	25	937	2,245	1,280	6.51	
1,028	27	1,019	2,364	1,335	7.09	
1,119	28	1,125	2,425	1,418	7.79	
1,239	31	1,371	2,646	1,548	9.10	

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)
\$4,908	\$9.25	\$16.77	\$103,687	\$2,080	\$71,795	\$104,731
4,584	10.36	19.62	77,384	1,791	39,495	71,980
4,528	12.16	20.88	66,142	1,398	33,110	54,915
4,199	12.44	21.86	55,982	1,195	27,372	49,040
3,957	12.83	22.67	49,561	1,103	21,721	41,663
3,596	13.51	23.35	40,986	1,024	11,107	30,723
3,396	14.23	24.80	36,123	874	3,731	27,089
3,166	14.85	25.92	28,950	695	-3,995	23,231
2,875	16.16	29.89	15,510	388	-21,220	17,838
2,181	21.36	34.70	-9,637	-162	-30,844	-18,866

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

**FARM BUSINESS CHART FOR LARGE CONVENTIONAL STALL DAIRY FARMS**  
35 Conventional Stall Dairy Farms with More Than 60 Cows, New York, 2007

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)
4.27	136	2,417,111	26,067	4.6	24	48	831,609
3.76	118	2,153,052	22,077	3.6	22	43	741,411
3.28	104	1,991,129	21,085	3.2	21	40	675,874
3.21	92	1,737,093	19,592	2.9	19	35	659,682
3.11	86	1,572,605	18,910	2.7	17	33	627,227
2.99	78	1,463,017	18,038	2.5	17	29	576,019
2.75	72	1,331,867	17,037	2.2	17	27	512,065
2.46	69	1,251,344	16,032	2.1	16	24	443,686
2.30	66	1,102,026	14,590	1.8	15	22	354,283
1.67	63	930,008	12,554	1.3	11	20	295,072

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)	
\$380	13%	\$425	\$1,230	\$567	\$3.84	
580	17	569	1,335	780	4.53	
753	19	608	1,443	955	4.91	
822	21	723	1,530	1,046	5.43	
911	24	808	1,684	1,100	5.87	
983	26	859	1,840	1,189	6.48	
1,102	28	937	1,954	1,252	7.01	
1,145	32	992	2,072	1,364	7.68	
1,272	35	1,049	2,258	1,516	8.71	
1,605	42	1,278	2,555	1,765	9.77	

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)
\$5,152	\$9.81	\$16.75	\$150,946	\$1,927	\$96,499	\$210,929
4,540	11.49	18.01	129,912	1,443	65,644	133,891
4,215	12.26	19.10	118,299	1,353	55,584	119,683
4,048	12.85	20.21	114,228	1,259	50,698	101,908
3,896	13.78	21.15	99,121	1,055	44,709	91,344
3,749	14.89	22.07	80,009	962	25,060	82,915
3,476	15.59	22.79	60,271	803	14,508	66,619
3,308	16.81	24.10	51,427	499	2,785	39,546
3,086	17.81	26.26	24,184	332	-18,266	21,345
2,526	20.92	28.74	-6,350	-77	-39,115	4,583

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

**FARM BUSINESS CHART FOR SMALL FREESTALL DAIRY FARMS**  
41 Freestall Barn Dairy Farms with 150 or Less Cows, New York, 2007

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)
4.33	145	3,038,782	24,012	5.0	26	54	1,049,507
4.00	136	2,651,052	22,366	3.9	21	45	833,822
3.63	127	2,331,685	21,003	3.6	20	41	774,651
3.26	113	2,253,098	19,918	2.9	19	37	687,389
3.00	106	2,097,298	19,204	2.5	18	35	659,654
2.81	99	1,908,138	18,480	2.3	17	34	615,421
2.50	94	1,654,700	17,724	2.2	16	32	581,302
2.31	86	1,420,979	16,048	2.0	15	31	537,002
2.18	71	1,184,373	14,658	1.6	14	29	483,454
1.66	57	806,565	12,031	1.1	12	24	387,904

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)	
\$566	17%	\$412	\$1,101	\$724	\$4.63	
705	19	552	1,307	956	5.48	
796	22	585	1,364	1,078	6.01	
848	24	637	1,441	1,116	6.15	
923	25	686	1,527	1,187	6.77	
999	26	758	1,582	1,314	6.98	
1,085	27	830	1,708	1,387	7.11	
1,158	29	935	1,856	1,533	7.29	
1,264	30	1,143	2,084	1,625	8.03	
1,449	39	1,397	2,414	1,744	11.20	

Value and Cost of Production			Profitability			
Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation
			Total	Per Cow		
(12)	(12)	(12)	(4)	(12)	(4)	(8)
\$4,904	\$9.62	\$16.89	\$204,925	\$1,633	\$101,149	\$240,026
4,606	11.45	18.02	160,620	1,466	78,127	152,756
4,427	12.27	18.70	148,490	1,387	58,021	141,631
4,228	12.86	19.04	130,702	1,214	52,201	127,558
4,034	13.32	19.48	112,330	1,144	46,071	112,525
3,832	13.84	20.74	94,681	1,049	38,670	97,598
3,622	14.70	21.83	82,277	921	28,098	81,001
3,323	16.46	23.25	62,049	665	10,720	73,081
3,058	18.00	25.06	35,857	377	-2,391	49,312
2,610	19.88	29.84	1,774	-60	-29,731	23,250

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

**FARM BUSINESS CHART FOR MEDIUM FREESTALL DAIRY FARMS**  
36 Freestall Barn Dairy Farms with 151-300 Cows, New York, 2007

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)
7.83	294	6,792,548	26,424	4.8	28	65	1,236,400
6.89	284	6,372,431	24,496	3.9	23	57	1,068,408
6.52	252	6,016,780	24,111	3.6	22	54	1,029,794
5.91	247	5,602,690	23,628	3.3	19	48	1,016,717
5.47	233	5,215,650	23,159	3.2	18	43	972,076
4.95	210	4,627,626	22,198	2.8	18	39	919,212
4.67	189	4,093,227	20,680	2.3	17	38	885,395
4.41	173	3,762,683	19,839	2.1	17	37	800,010
3.87	165	3,351,085	19,235	1.8	15	35	751,921
2.90	155	2,388,376	14,614	1.5	12	30	606,594

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)	
\$540	14%	\$511	\$1,067	\$723	\$3.91	
743	18	586	1,281	1,042	5.00	
823	20	685	1,366	1,132	5.75	
924	22	745	1,457	1,271	5.89	
1,069	24	818	1,567	1,352	6.02	
1,127	26	884	1,676	1,459	6.37	
1,199	26	911	1,744	1,537	6.82	
1,278	27	977	1,808	1,598	7.11	
1,353	29	1,137	2,018	1,660	7.56	
1,384	31	1,347	2,150	1,806	8.28	

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)
\$5,199	\$10.03	\$14.97	\$522,171	\$2,072	\$221,725	\$468,328
4,985	11.52	16.51	424,140	1,874	196,716	388,206
4,923	12.70	17.26	344,509	1,578	176,569	358,154
4,861	13.67	17.85	288,759	1,246	157,837	329,288
4,690	14.06	18.30	254,690	1,142	137,360	260,976
4,501	15.29	19.15	215,859	1,031	84,888	222,178
4,291	15.81	20.29	189,827	859	60,076	195,828
4,068	16.05	21.31	136,788	634	40,883	138,575
3,938	16.69	22.05	74,094	433	8,882	94,801
2,876	19.07	23.32	46,657	278	-32,490	49,839

\*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, 2007

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)
35.08	1,745	43,004,232	27,708	5.7	26	60	1,442,799
25.81	1,128	27,970,111	25,873	4.6	23	53	1,228,772
21.66	995	23,835,953	25,285	3.9	22	50	1,175,249
18.59	865	20,478,846	24,607	3.6	20	47	1,134,274
15.92	695	17,089,191	24,064	3.3	20	46	1,090,405
14.17	599	13,917,572	23,604	3.1	19	44	1,040,403
12.37	500	11,748,180	22,960	2.9	18	42	991,802
10.60	436	9,928,631	22,459	2.6	17	41	940,420
9.32	396	8,949,216	21,325	2.4	16	37	868,410
7.29	337	7,514,627	19,524	2.0	14	31	722,816

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)	
\$790	18%	\$479	\$1,110	\$1,053	\$4.69	
914	20	558	1,285	1,192	5.23	
1,012	21	612	1,356	1,267	5.57	
1,053	22	643	1,403	1,339	5.73	
1,125	23	673	1,442	1,412	5.89	
1,173	24	720	1,496	1,459	6.11	
1,222	25	764	1,560	1,500	6.39	
1,281	26	817	1,620	1,582	6.68	
1,373	27	900	1,710	1,698	7.10	
1,578	31	989	1,899	1,958	7.58	

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)
\$5,766	\$10.81	\$14.51	\$2,337,300	\$2,043	\$1,103,132	\$2,686,277
5,344	12.31	15.59	1,362,553	1,708	746,602	1,778,284
5,125	12.83	16.14	1,144,933	1,530	566,178	1,286,712
5,010	13.31	16.57	969,379	1,430	461,248	1,058,420
4,860	13.78	16.88	829,297	1,308	395,098	935,098
4,788	14.11	17.13	719,767	1,167	313,715	774,985
4,700	14.39	17.55	618,874	1,042	257,134	645,479
4,538	14.89	17.83	519,316	937	197,335	543,433
4,314	15.79	18.29	416,726	788	152,336	421,480
3,985	16.81	20.23	247,977	442	46,295	205,528

\*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.

**bST Usage** - An estimate of the percentage of herd, on average, that was supplemented with bovine somatotropin during the year.

**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)
2009-05	Dairy Farm Business Summary, New York Large Herd Farms, 300 Cows or Larger, 2008	(\$16.00)	Karszes, J., Knoblauch, W. and L. Putnam
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