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DAIRY FARM BUSINESS SUMMARY

JULY 2013 *E.B. 2013-13*

NEW YORK SMALL HERD FARMS, 120 COWS OR FEWER, 2012

You can't manage what you can't measure.
But if you measure it, you can improve it!

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2012 DAIRY FARM BUSINESS SUMMARY
Small Herd Dairy Farms
120 Cows or Fewer
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2012 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 2012 with herds of 120 cows or fewer.

Small farms are facing increasing management challenges in their efforts to control costs and remain profitable. This publication reports the average performance and characteristics of small farms and the average of the Top 50 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 2012 DFBS individual farm report received by participating dairy farmers. The analysis tables have a column that compares the average to the top 50% 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 register and 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. More information about the Dairy Farm Business Summary and Analysis Project may be found at http://dfbs.dyson.cornell.edu/ .

This report features:

(1) an income statement including accrual adjustments for farm business expenses and receipts, as well as measures of profitability with and without appreciation,

(2) a complete balance sheet with analytical ratios;

(3) a statement of owner equity which shows the sources of the change in owner equity during the year;

(4) a cash flow statement and debt repayment ability analysis;

(5) an analysis of crop acreage, yields, and expenses;

(6) an analysis of dairy livestock numbers, production, and expenses;

(7) a capital and labor efficiency analysis; and

(8) progress of the farm business over the past two years.

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*The small herd summary is comprised of farms with 120 or fewer cows. Many counties had farms that met this criteria in 2012. 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. Cathryn Dymond was in charge of data and publication preparation.

PROGRESS OF THE FARM BUSINESS

2012 was a year of extremes across the country. Unusually dry weather in the Midwest and portions of New York greatly influenced corn and soybean yields making for record high prices for purchased grains with corresponding small inventories of ending stocks. Input costs increased dramatically and farmers had to make do with less capital expenditures and took less profit, if any, out of their farms.

The same 25 farms participated in both 2011 and 2012 for this report. Average farm size grew 2.7% from 75 to 77 cows while heifer inventory stayed the same at 64. Tillable acres rose 2.7%, matching the increase in herd size. Hay DM ton/acres fell from 2.2 tons to 1.9 tons or 13.6% due to dry weather. Corn silage/acre increased 3.1% to 16.8 tons/acres due to advances in corn varieties' ability to perform in dry weather. Milk sold per cow decreased 1.6% likely due to lesser quality/quantity of forage and expensive purchased grain. Worker equivalents rose 1.6% reflecting the need for more help with more cows, cropland and perhaps reflecting family members working off the farm. Cows per worker stayed the same at 31. Milk sold/worker fell slightly by 0.1%.

Hired labor cost per hundredweight fell 3.8% percent from $1.32 to $1.27, reflecting a lowering of the average cost per worker equivalent on these farms; as cost per worker dropped 4%. Hired labor as a percent of milk sales rose 3.3% reflecting lower milk prices and more labor.

Grain and concentrate purchased as a percent of milk sales increased 17% from 29% to 34%. Grain and concentrate per hundredweight of milk increased from $6.26 per hundredweight to $6.79 per hundredweight or 8.5%. Dairy feed and crop expense/cwt increased 8.8% in response to higher fuel, seed, and crop expenses. Total farm operating expenses per hundredweight sold increased 12.3% from $18.42 to $20.68. Interest costs fell 9.8%, driven by lower interest rates even as borrowed capital increased slightly. Milk marketing costs rose 4.3% with higher fuel and transportation costs passed on to farmers by haulers. The operating cost of producing milk per hundredweight grew 0.2% from $15.33 to $15.36 as changes to non-milk income largely offset the increase in input costs druing the year and as farmers monitored inputs closely.

Farm capital per cow increased 3.3 percent and machinery and equipment per cow was down 1.6% with few new investments for replacement of equipment. An 11.1% decrease in the asset turnover ratio was the result of decreasing milk price coupled with a small decrease in milk production per cow.

Gross sales per hundredweight fell from $21.63 to $19.95 per hundredweight, or 7.8%. Gross milk sales per cow fell 8.7% from $4,279 per cow to $3,907 due to lower milk pricesand less milk per cow. At the same time, beef prices rose continually and that helped generate more cash flow. Dairy cattle sales per cow went from $209 to $243, an increase of 16.3%. Calf sales per cow declined from $35 to $10, a 71.4% decrease with farmers not wanting to feed excess heifers and a glut of animals on the market. An increase in government receipts from $0.58 per hundredweight to $0.85 per hundredweight was due to MILC payments late in the year.

Net farm income without appreciation fell from $68,888 to $45,330, a 34.2% decrease. Net farm income with appreciation fell to $59,577. Labor and management income per operator fell from from $20,647 to- $3,278 or 115.9%. A positive rate of return on equity of 0.4% was due to farmers stretching each dollar and forgoing purchases. The rate of return on all capital without appreciation fell 78.6 percent. Farm net worth continues to rise (5.1%) due to an increase in land values. Farm debt per cow grew 6.8% from $2,779 to $2,967 as farmers tried to keep up with increased input costs and capital investments.

2012 was a stressful time with farmers coping with high feed prices, lower milk income, and less money for family living, investments, or equipment replacement. Farms showed slightly positive returns, it was not without a lot of juggling and a reluctance to go into debt to feed expensive grain but rather to take a little less milk, make cows comfortable, and limit purchases and input costs to more closely match the conditions at hand.

The importance of trend analysis is to identify what areas changed, ask why they changed, and look at what you can do differently in the future to influence that change. Comparing your business' performance with average data from these DFBS dairy farms can help you establish goals for your business. It is equally important to determine the progress your business has made over the past two or three years, to compare this progress to your goals, and to set goals for the future.

PROGRESS OF THE FARM BUSINESS

Same 25 Small Herd Dairy Farms, 2011 & 2012

Selected Factors	Average of 25 Farms 2011	Average of 25 Farms 2012	Percent Change
Size of Business			
Average number of cows	75	77	2.7
Average number of heifers	64	64	0.0
Milk sold, pounds	1,487,710	1,510,445	1.5
Worker equivalent	2.43	2.47	1.6
Total tillable acres	225	231	2.7
Rates of Production			
Milk sold per cow, pounds	19,783	19,586	-1.0
Hay DM per acre, tons	2.2	1.9	-13.6
Corn silage per acre, tons	16.3	16.8	3.1
Labor Efficiency & Costs			
Cows per worker	31	31	0.0
Milk sold per worker, pounds	612,226	611,516	-0.1
Hired labor cost per hundredweight	$1.32	$1.27	-3.8
Hired labor cost per worker	$8,060	$7,737	-4.0
Hired labor cost as % of milk sales	6.1%	6.3%	3.3
Cost Control			
Grain & concentrate purchased as % of milk sales	29%	34%	17.2
Grain & concentrate per hundredweight milk	$6.26	$6.79	8.5
Dairy feed & crop expense per cwt. milk	$7.92	$8.62	8.8
Labor & machinery costs per cow	$1,908	$1,909	0.1
Total farm operating expenses per cwt. sold	$18.42	$20.68	12.3
Interest costs per hundredweight milk	$0.61	$0.55	-9.8
Milk marketing costs per cwt. milk sold	$1.16	$1.21	4.3
Operating cost of producing cwt. of milk	$15.33	$15.36	0.2
Capital Efficiency (average for the year)			
Farm capital per cow*	$11,646	$12,026	3.3
Machinery & equipment per cow	$2,496	$2,455	-1.6
Asset turnover ratio*	0.45	0.40	-11.1
Income Generation			
Gross milk sales per cow	$4,279	$3,907	-8.7
Gross milk sales per hundredweight	$21.63	$19.95	-7.8
Net milk sales per hundredweight	$20.46	$18.74	-8.4
Dairy cattle sales per cow	$209	$243	16.3
Dairy calf sales per cow	$35	$10	-71.4
Government receipts per hundredweight	$0.58	$0.85	46.6
Profitability			
Net farm income without appreciation	$68,888	$45,330	-34.2
Net farm income with appreciation	$93,149	$59,577	-36.0
Labor & management income per oper./manager	$20,647	$-3,278	-115.9
Rate of return on equity capital with appreciation	6.0%	0.4%	-93.3
Rate of return on all capital with appreciation	5.6%	1.2%	-78.6
Financial Summary			
Farm net worth, end year	$690,664	$726,163	5.1
Debt to asset ratio	0.23	0.24	4.3
Farm debt per cow	$2,779	$2,967	6.8

*Rented farms are excluded from these factors.

SUMMARY AND ANALYSIS OF THE FARM BUSINESS

Business Characteristics

Planning optimal management strategies is a crucial component of operating a successful farm. Various combinations of farm resources, enterprises, business arrangements, and management techniques are used by the dairy farmers. The following table shows important farm business characteristics and the number of farms with each characteristic.

BUSINESS CHARACTERISTICS
34 Small Herd Dairy Farms, 2012

Type of Farm	Number
Dairy	34
Part-time dairy	0
Dairy cash-crop	0
Certified organic milk producer	0
Rotational grazing farms	11

Type of Ownership	Number
Owner	30
Renter	4

Type of Business	Number
Sole Proprietorship	28
Partnership	5
LLC	1

Type of Barn	Number
Stanchion or Tie-Stall	20
Freestall	14
Combination	0

Milking Frequency	Number
2 times per day	33
3 times per day	0
Other	1

Milking System	Number
Bucket & carry	0
Dumping station	1
Pipeline	20
Herringbone parlor	7
Other parlor	6

Production Records	Number
Testing service	26
On-farm system	2
Other	1
None	5

Business Record System	Number
Account Book	11
Accounting Service	3
On-farm computer	20
Other	0

Breed of Herd	Percent
Holstein	86
Jersey	5
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 2012.

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

34 Small Herd Dairy Farms, 2012

Expense Item	Cash Paid	-	Change in Inventory or Prepaid Expense	+	Change in Accounts Payable	=	Accrual Expenses
Hired Labor	$ 19,139	$	0	<<	$ -48		$ 19,091
Feed							
Dairy grain & concentrate	97,099		331		2,306		99,075
Dairy roughage	6,504		332		797		6,969
Nondairy	40		0		0		40
Professional nutritional services	40		0	<<	0		40
Machinery							
Machinery hire, rent & lease	6,781		0	<<	1,816		8,597
Machinery repairs & farm vehicle exp.	17,958		-13		62		18,033
Fuel, oil & grease	14,542		-108		242		14,891
Livestock							
Replacement livestock	3,359		0	<<	-272		3,087
Breeding	3,855		34		-2		3,819
Veterinary & medicine	6,955		-16		-104		6,867
Milk marketing	17,176		0	<<	50		17,226
Bedding	3,909		-18		31		3,958
Milking supplies	6,388		30		-71		6,286
Cattle lease & rent	65		0	<<	0		65
Custom boarding	1,190		0	<<	-35		1,156
bST	354		0		0		354
Livestock professional fees	1,636		-29	<<	0		1,665
Other livestock expense	3,359		-16		-9		3,365
Crops							
Fertilizer & lime	7,057		-479		61		7,597
Seeds & plants	5,934		-154		-40		6,048
Spray, other crop expense	3,629		-125		-7		3,747
Crop professional fees	6		0	<<	0		6
Real Estate							
Land, building & fence repair	4,901		-21		-11		4,911
Taxes	6,675		0	<<	0		6,675
Rent & lease	4,543		0	<<	0		4,543
Other							
Insurance	4,537		-184	<<	-50		4,671
Utilities (farm share)	8,803		0	<<	-2		8,801
Interest paid	7,167		0	<<	0		7,167
Other professional fees	1,372		0	<<	29		1,402
Miscellaneous	1,236		9		2		1,229
Total Operating	$266,208		$-426		$4,745		$271,379
Expansion livestock	1,090		0	<<	0		1,090
Extraordinary expense	361		0	<<	0		361
Machinery depreciation							15,396
Building depreciation							4,879
TOTAL ACCRUAL EXPENSES							$293,105

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 2012 but not paid for. A decrease is subtracted because it represents payment for resources used before 2012.

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

34 Small Herd Dairy Farms, 2012

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts
Milk sales	$ 281,220				$ 986		$ 282,206
Dairy cattle	18,189		$ 929		0		19,117
Dairy calves	2,300		-1,493		0		807
Other livestock	573		529		0		1,102
Crops	2,561		11,024		274		13,858
Government receipts	12,065		0 *		-232		11,832
Custom machine work	394				0		394
Gas tax refund	145				0		145
Other	5,170				-91		5,079
Less nonfarm noncash capital**		(-)	0 **			(-)	0
Total Receipts	$ 322,617		$ 10,988		$ 936		$ 334,542

*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 2012 for the 2013 crop year in excess of funds earned for 2012. Likewise, a decrease is added to cash government receipts because it represents funds earned for 2012 but received in 2011.

Changes in accounts receivable are calculated by subtracting beginning year balances from end year balances. Payments in January 2013 for milk produced in December 2012 compared to January 2012 payments for milk produced in 2011 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.

* 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.

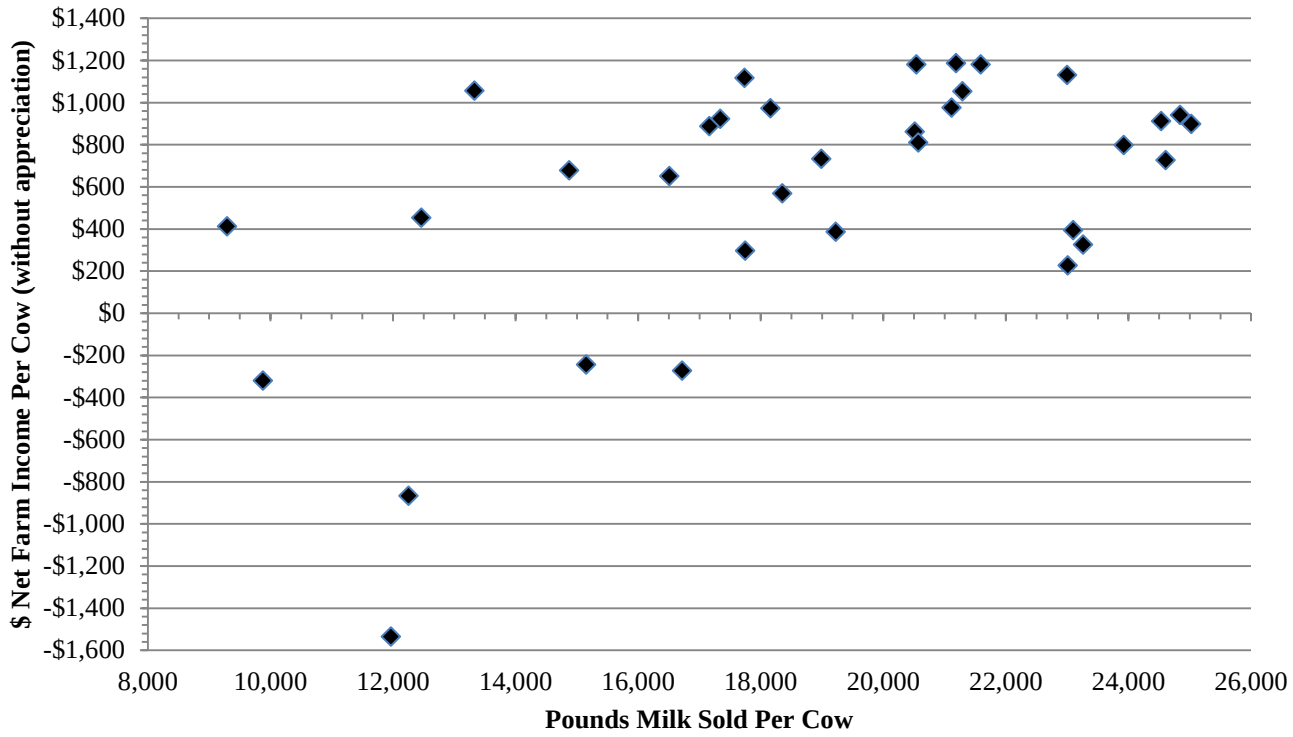
NET FARM INCOME
34 Small Herd Dairy Farms, 2012

Item	Average 34 Farms Total	Average 34 Farms Per Cow	Top 50% Farms* Total	Top 50% Farms* Per Cow
Total accrual receipts	$ 334,542		$ 426,048	
Appreciation: Livestock	1,483		2,545	
Machinery	1,585		2,049	
Real Estate	10,369		10,472	
Other Stock & Certificates	135		0	
Total Including Appreciation	$ 348,113		$ 441,113	
Total accrual expenses	- 293,105		- 347,570	
Net Farm Income (with appreciation)	$ 55,008	$ 753	$ 93,543	$1,096
Net Farm Income (without appreciation)	$ 41,437	$ 567	$ 78,570	$ 919

*Top 50% 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
34 Small Herd Dairy Farms, 2012



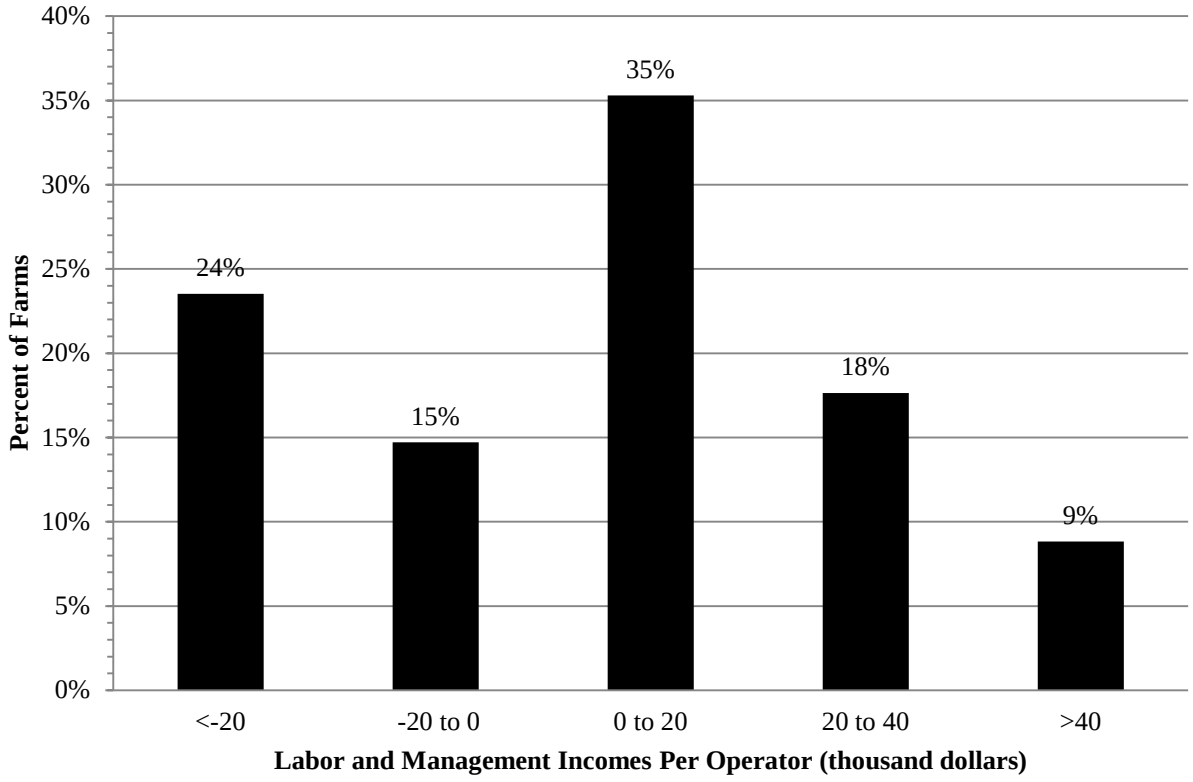
Labor and management income is the return which farm operators receive for their labor and management used in the farm business. Appreciation is not included as part of the return to labor and management because it results from ownership of assets rather than management of the farm business. Labor and 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
34 Small Herd Dairy Farms, 2012

Item	Average 34 Farms	Top 50% Farms
Net farm income without appreciation	$ 41,437	$ 78,478
Family labor unpaid @ $2,550 per month	- 12,686	- 14,269
Interest on $629,123 average equity capital @ 5% real rate	- 31,456	- 36,574
($731,483 average equity capital for top 50% farms)		
Labor & Management Income per farm (1.22 Operators/farm)	$ -2,706	$ 27,635
(1.18 operators per farm for top 50% farms)		
Labor & Management Income per Operator/Manager	$ -2,218	$ 23,419

Labor and management income per operator averaged $-2,218 on these 34 farms in 2012. The range in labor and management income per operator was from less than $-214,300 to more than $51,400. Returns to labor and management were less than $0 on 38 percent of the farms. Labor and management incomes per operator were between $0 and $40,000 on 53 percent of the farms while 9 percent had labor and management incomes per operator greater than $40,000.

DISTRIBUTION OF LABOR & MANAGEMENT INCOMES PER OPERATOR
34 Small Herd Dairy Farms, 2012



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
34 Small Herd Dairy Farms, 2012

Item	Average 34 Farms	Top 50% Farms
Net farm income with appreciation	$ 55,008	$ 93,543
Family labor unpaid @ $2,550 per month	- 12,686	- 14,269
Value of operators' labor & management	- 42,926	- 43,382
Return on equity capital with appreciation	$ -605	$ 35,892
Interest paid	+ 7,167	+ 8,652
Return on total capital with appreciation	$ 6,562	$ 44,544
Return on equity capital without appreciation	$ -14,176	$ 20,826
Return on total capital without appreciation	$ -7,009	$ 29,478
Rate of return on average equity capital:		
with appreciation	-0.1%	4.9%
without appreciation	-2.3%	2.8%
Rate of return on average total capital:		
with appreciation	0.8%	4.6%
without appreciation	-0.9%	3.0%
Net farm income from operations ratio	0.12	0.18

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 2012, lease payments were discounted by 7 percent to obtain their present value.

Advanced government receipts are included as current liabilities. Government payments received in 2012 that are for participation in the 2013 program are the end year balance and payments received in 2011 for participation in the 2012 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.

2012 FARM BUSINESS & NONFARM BALANCE SHEET

34 Small Herd Dairy Farms, 2012

Farm Assets	Jan. 1	Dec. 31	Farm Liabilities & Net Worth	Jan. 1	Dec. 31
Current			Current		
Farm cash, checking & savings	$ 7,774	$ 6,804	Accounts payable	$ 11,226	$ 15,997
Accounts receivable	23,144	24,081	Operating debt	5,015	6,199
Prepaid expenses	235	21	Short Term	1,072	2,848
Feed & supplies	64,614	75,426	Advanced govt. receipts	0	0
			Current Portion:		
			Intermediate	20,674	23,488
			Long Term	2,489	3,430
Total Current	$ 95,767	$ 106,332	Total Current	$ 40,476	$ 51,963
Intermediate			Intermediate		
Dairy cows:			Structured debt		
owned	$ 102,868	$ 104,279	1-10 years	$ 119,013	$ 88,558
leased	0	252	Financial lease		
Heifers	53,980	53,488	(cattle/machinery)	276	309
Bulls & other livestock	1,653	2,182	Farm Credit stock	731	731
Mach. & equip. owned	171,166	170,271	Total Intermediate	$ 120,019	$ 89,598
Mach. & equip. leased	276	57			
Farm Credit stock	731	731			
Other stock/certificate	18,802	20,335			
Total Intermediate	$ 349,475	$ 351,593			
			Long Term		
Long Term			Structured debt		
Land & buildings:			>10 years	$ 40,006	$ 57,029
owned	$ 352,474	$ 389,337	Financial lease		
leased	0	0	(structures)	0	0
Total Long Term	$ 352,474	$ 389,337	Total Long Term	$ 40,006	$ 57,029
			Total Farm Liabilities	$ 200,501	$ 198,590
Total Farm Assets	$ 797,716	$ 847,262	FARM NET WORTH	$ 597,215	$ 648,672

Nonfarm Assets, Liabilities & Net Worth (Average of 17 farms reporting)

Assets	Jan. 1	Dec. 31	Liabilities & Net Worth	Jan. 1	Dec. 31
Personal cash, checking & savings	$ 27,684	$ 27,214	Nonfarm Liabilities	$ 6,883	$ 5,864
Cash value life insurance	22,137	23,434			
Nonfarm real estate	26,176	26,176			
Auto (personal share)	8,765	7,882			
Stocks & bonds	37,069	37,377			
Household furnishings	9,588	9,588			
All other nonfarm assets	9,454	13,051			
Total Nonfarm Assets	$140,874	$144,722	NONFARM NET WORTH	$133,990	$138,858

Farm & Nonfarm Assets, Liabilities, and Net Worth*	Jan. 1	Dec. 31
Total Assets	$ 938,590	$ 991,984
Total Liabilities	207,384	204,454
TOTAL FARM & NONFARM NET WORTH	$ 731,206	$ 787,530

*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
34 Small Herd Dairy Farms, 2012

Item			Average 34 Farms		Top 50% Farm	
Financial Ratios - Farm:						
Percent equity			77%		74%	
Debt/asset ratio: total			0.23		0.26	
long-term			0.15		0.17	
intermediate/current			0.31		0.33	
Leverage ratio			0.31		0.34	
Current ratio			2.05		1.91	
Working capital	$54,369	As % of total Expenses:	19%	$57,685	17%	
Farm Debt Analysis:						
Accounts payable as % of total debt			8%		5%	
Long-term liabilities as a % of total debt			29%		31%	
Current & intermediate liabilities as a % of total debt			71%		69%	
Cost of term debt (weighted average)			5.0%		4.1%	
Farm Debt Levels:		Per Cow	Per Tillable Acre Owned	Per Cow	Per Tillable Acre Owned	
Total farm debt		$2,737	$1,881	$3,013	$2,168	
Long-term debt		786	540	942	678	
Intermediate & long term		2,021	1,389	2,286	1,645	
Intermediate & current debt		1,951	1,341	2,071	1,490	

Farm inventory balance is an accounting of the value of assets used on the balance sheet and the changes that occur from the beginning to end of year. Changes in the livestock inventory are included in the dairy analysis. Net investment indicates whether the capital stock is being expanded (positive) or depleted (negative).

FARM INVENTORY BALANCE
34 Small Herd Dairy Farms, 2012

Item	Average 34 Farms			
	Real Estate		Machinery & Equipment	
Value beginning of year		$ 352,474		$ 171,166
Purchases	$ 37,247*		$ 18,252	
Gift & inheritance	+ 0		+ 0	
Lost capital	- 5,874			
Sales	- 0		- 5,335	
Depreciation	- 4,879		- 15,396	
Net investment		= 26,494		= -2,480
Appreciation		+ 10,369		+ 1,585
Value end of year		$ 389,337		$ 170,271

*$17,348 land and $19,899 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)
34 Small Herd Dairy Farms, 2012

Item	Average 34 Farms		Top 50% Farms	
Beginning of year farm net worth		$609,574		$701,155
Net farm income without appreciation	$ 41,437		$ 78,478	
+Nonfarm cash income	+ 9,114		+ 7,309	
-Personal withdrawals & family expenditures excluding nonfarm borrowings	- 36,484		- 45,103	
RETAINED EARNINGS		+ $ 14,067		+ $ 40,684
Nonfarm noncash transfers to farm	$ 0		$ 0	
+Cash used in business from nonfarm capital	+ 15,607		+ 11,753	
-Note or mortgage from farm real estate sold (nonfarm)	- 0		- 0	
CONTRIBUTED/WITHDRAWN CAPITAL		+ $ 15,607		+ $ 11,753
Appreciation	$ 13,571		$ 15,065	
-Lost capital	- 5,874		- 6,551	
CHANGE IN VALUATION EQUITY		+ $ 7,697		+$ 8,514
IMBALANCE/ERROR		- $ -1,726		- $ 295
End of year net worth*		= $ 648,672		=$ 761,811

Change in Net Worth		
Without appreciation	$ 25,527	$45,591
With appreciation	$ 39,098	$60,656

*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
34 Small Herd Dairy Farms, 2012

Item			Average 34 Farms	
Cash Flow from Operating Activities				
	Cash farm receipts	$ 322,617		
-	Cash farm expenses	266,208		
-	Extraordinary expense	361		
=	Net cash farm income		$ 56,048	
	Personal withdrawals & family expenses including nonfarm debt payments	$ 36,481		
-	Nonfarm income	9,114		
-	Net cash withdrawals from the farm		$ 27,367	
=	Net Provided by Operating Activities			$ 28,681
Cash Flow From Investing Activities				
	Sale of assets: machinery	$ 5,335		
	+ real estate	0		
	+ other stock & cert.	121		
=	Total asset sales		$ 5,456	
	Capital purchases: expansion livestock	$ 1,090		
	+ machinery	18,252		
	+ real estate	37,247		
	+ other stock & cert.	1,519		
-	Total invested in farm assets		$ 58,107	
=	Net Provided by Investment Activities			$ -52,651
Cash Flow From Financing Activities				
	Money borrowed (intermediate & long term)	$ 41,319		
+	Money borrowed (short term)	2,395		
+	Increase in operating debt	1,185		
+	Cash from nonfarm capital used in business	15,607		
+	Money borrowed - nonfarm	-3		
=	Cash inflow from financing		$ 60,503	
	Principal payments (intermediate & long term)	$ 38,858		
+	Principal payments (short term)	618		
+	Decrease in operating debt	0		
-	Cash outflow for financing		$ 39,475	
=	Net Provided by Financing Activities			$ 21,027
Cash Flow From Reserves				
	Beginning farm cash, checking & savings		$ 7,774	
-	Ending farm cash, checking & savings		6,804	
=	Net Provided from Reserves			$ 970
Imbalance (error)				$ -1,974

ANNUAL CASH FLOW STATEMENT

Top 50% Small Herd Dairy Farms, 2012

Item			Top 50% Farms	
Cash Flow from Operating Activities				
	Cash farm receipts	$ 394,847		
-	Cash farm expenses	316,410		
-	Extraordinary expense	0		
=	Net cash farm income		$ 78,437	
	Personal withdrawals & family expenses including nonfarm debt payments	$ 45,098		
-	Nonfarm income	7,309		
-	Net cash withdrawals from the farm		$ 37,789	
=	Net Provided by Operating Activities			$ 40,648
Cash Flow From Investing Activities				
	Sale of assets: machinery	$ 326		
	+ real estate	0		
	+ other stock & cert.	0		
=	Total asset sales		$ 326	
	Capital purchases: expansion livestock	$ 1,209		
	+ machinery	21,748		
	+ real estate	57,191		
	+ other stock & cert.	2,255		
-	Total invested in farm assets		$ 82,403	
=	Net Provided by Investment Activities			$ -82,076
Cash Flow From Financing Activities				
	Money borrowed (intermediate & long term)	$ 60,081		
+	Money borrowed (short term)	2,507		
+	Increase in operating debt	1,173		
+	Cash from nonfarm capital used in business	11,753		
+	Money borrowed - nonfarm	-5		
=	Cash inflow from financing		$ 75,509	
	Principal payments (intermediate & long term)	$ 36,393		
+	Principal payments (short term)	119		
+	Decrease in operating debt	0		
-	Cash outflow for financing		$ 36,512	
=	Net Provided by Financing Activities			$ 38,996
Cash Flow From Reserves				
	Beginning farm cash, checking & savings		$ 11,350	
-	Ending farm cash, checking & savings		9,067	
=	Net Provided from Reserves			$ 2,283
Imbalance (error)				$ 148

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 2013. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 2013 debt payments shown below.

FARM DEBT PAYMENTS PLANNED

Small Herd Dairy Farms, 2011 & 2012

	Same 29 Dairy Farms			Same 16 Top 50% Farms		
	2012 Payments		Planned	2012 Payments		Planned
Debt Payments	Planned	Made	2013	Planned	Made	2013
Long-term	$ 5,336	$ 4,720	$ 6,161	$ 6,861	$ 5,748	$ 8,073
Intermediate-term	29,123	38,063	28,161	36,371	38,725	38,296
Short-term	1,145	783	1,128	1,382	162	664
Operating (net reduction)	0	361	86	0	654	63
Accounts payable (net reduction)	0	897	414	0	900	0
Total	$ 35,605	$ 44,823	$ 35,950	$ 44,615	$ 46,188	$ 47,095
Per cow	$ 492	$ 619		$ 519	$ 537	
Per cwt. 2012 milk	$ 2.57	$ 3.23		$ 2.48	$ 2.57	
Percent of total 2012 receipts	11%	14%		11%	11%	
Percent of 2012 milk receipts	13%	16%		13%	13%	

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 2012 (as of December 31, 2011) that could have been made with the amount available for debt service in 2012. Farmers who did not participate in DFBS in 2011 have their 2012 cash flow coverage ratio based on planned debt payments for 2013.

COVERAGE RATIOS

Same 29 Small Herd Dairy Farms, 2011 & 2012

Item	Average	Item	Average
Cash Flow Coverage Ratio		Debt Coverage Ratio	
Cash farm receipts	$316,821	Net farm income (without appreciation)	$43,754
- Cash farm expenses	259,843	+ Depreciation	20,833
+ Interest paid (cash)	7,376	+ Interest paid (accrual)	7,376
- Net personal withdrawals from farm*	25,706	- Net personal withdrawals from farm*	25,706
(A) = Amount Available for Debt Service	$ 38,648	(A') = Repayment Capacity	$46,257
(B) = Debt Payments Planned for 2012 (as of December 31, 2011)	$ 35,605	(B) = Debt Payments Planned for 2012 (as of December 31, 2011)	$35,605
(A/ B)= Cash Flow Coverage Ratio for 2012	1.09	(A'/B)= Debt Coverage Ratio for 2012	1.30

Same 16 Top 50% Dairy Farms, 2011 & 2012

(A) = Amount Available for Debt Service	$49,485	(A') = Repayment Capacity	$76,061
(B) = Debt Payments Planned for 2012	$44,615	(B) = Debt Payments Planned for 2012	$44,615
(A/ B)= Cash Flow Coverage Ratio for 2012	1.11	(A'/B)= Debt Coverage Ratio for 2012	1.70

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

ANNUAL CASH FLOW WORKSHEET

34 Small Herd Dairy Farms, 2012

Item	Average 34 Farms Per Cow	Per Cwt.	Total
Number cows and cwt. milk	73	14,055	
Accrual Operating Receipts			
Milk	$3,861	$20.08	$282,206
Dairy cattle	262	1.36	19,117
Dairy calves	11	0.06	807
Other livestock	15	0.08	1,102
Crops	190	0.99	13,858
Miscellaneous receipts	239	1.24	17,451
Total	$4,577	$23.80	$334,542
Accrual Operating Expenses			
Hired labor	$ 261	$ 1.36	$ 19,091
Dairy grain & concentrate	1,356	7.05	99,075
Dairy roughage	95	0.50	6,969
Nondairy feed	1	0.00	40
Professional nutritional services	1	0.00	40
Machinery hire/rent/lease	118	0.61	8,597
Machinery repair & farm vehicle expense	247	1.28	18,033
Fuel, oil & grease	204	1.06	14,891
Replacement livestock	42	0.22	3,087
Breeding	52	0.27	3,819
Veterinary & medicine	94	0.49	6,867
Milk marketing	236	1.23	17,226
Bedding	54	0.28	3,958
Milking supplies	86	0.45	6,286
Cattle lease	1	0.00	65
Custom boarding	16	0.08	1,156
bST expense	5	0.03	354
Livestock professional fees	23	0.12	1,665
Other livestock expense	46	0.24	3,365
Fertilizer & lime	104	0.54	7,597
Seeds & plants	83	0.43	6,048
Spray & other crop expenses	51	0.27	3,747
Crop professional fees	0	0.00	6
Land, building, fence repair	67	0.35	4,911
Taxes	91	0.47	6,675
Real estate rent/lease	62	0.32	4,543
Insurance	64	0.33	4,671
Utilities	120	0.63	8,801
Other professional fees	19	0.10	1,402
Miscellaneous	17	0.09	1,229
Total Less Interest Paid	$3,615	$18.80	$264,212
Net Accrual Operating Income (without interest paid)	962	5.00	70,330
- Change in livestock/crop inventory*	150	0.78	10,988
- Change in accounts receivable	13	0.07	936
- Change in feed/supply inventory**	-6	-0.03	-426
+ Change in accts. payable***	65	0.34	4,745
NET CASH FLOW	$ 870	$ 4.52	$ 63,576
- Net personal withdrawals from farm (see footnote on p. 15)	351	1.82	25,619
Available for Farm Debt Payments & Investments	$ 519	$ 2.70	$ 37,957
- Farm debt payments	651	3.38	47,573
Available for Farm Investment	$-132	$-0.68	$ -9,615
- Capital purchases: cattle, machinery & improvements	795	4.13	58,107
Additional Capital Needed	$ 927	$ 4.82	$ 67,722

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

***Excludes change in interest account payable.

ANNUAL CASH FLOW WORKSHEET

Top 50% Small Herd Dairy Farms, 2012

Item	Average Top 50% Farms		
	Per Cow	Per Cwt.	Total
Number of cows or cwt. milk	85	17,679	
Accrual Operating Receipts			
Milk	$4,135	$19.96	$352,934
Dairy cattle	376	1.82	32,129
Dairy calves	13	0.06	1,108
Other livestock	11	0.06	977
Crops	210	1.01	17,924
Miscellaneous receipts	246	1.19	20,977
Total	$4,992	$24.10	$426,048
Accrual Operating Expenses			
Hired labor	$ 234	$ 1.13	$ 19,970
Dairy grain & concentrate	1,371	6.62	117,025
Dairy roughage	117	0.57	10,010
Nondairy feed	0	0.00	0
Professional nutritional services	1	0.00	80
Machinery hire/rent/lease	128	0.62	10,957
Machinery repair & farm vehicle expense	247	1.19	21,042
Fuel, oil & grease	208	1.01	17,779
Replacement livestock	30	0.14	2,552
Breeding	59	0.28	5,019
Veterinary & medicine	87	0.42	7,383
Milk marketing	251	1.21	21,462
Bedding	67	0.32	5,718
Milking supplies	85	0.41	7,245
Cattle lease	2	0.01	129
Custom boarding	11	0.05	947
bST expense	5	0.02	426
Livestock professional fees	20	0.10	1,749
Other livestock expense	50	0.24	4,250
Fertilizer & lime	128	0.62	10,902
Seeds & plants	90	0.43	7,653
Spray & other crop expenses	45	0.22	3,878
Crop professional fees	0	0.00	12
Land, building, fence repair	62	0.30	5,302
Taxes	80	0.39	6,852
Real estate rent/lease	60	0.29	5,125
Insurance	61	0.29	5,208
Utilities	122	0.59	10,443
Other professional fees	23	0.11	1,993
Miscellaneous	19	0.09	1,662
Total Less Interest Paid	$3,665	$17.69	$312,775
Net Accrual Operating Income (without interest paid)	1,327	6.41	113,273
- Change in livestock/crop inventory*	315	1.52	26,914
- Change in accounts receivable	50	0.24	4,287
- Change in feed/supply inventory**	-15	-0.07	-1,311
+ Change in accounts payable***	43	0.21	3,706
NET CASH FLOW	$1,020	$ 4.93	$ 87,089
- Net personal withdrawals from farm (see footnote p.15)	442	2.13	37,714
Available for Farm Debt Payments & Investments	$ 578	$ 2.79	$ 49,374
- Farm debt payments	544	2.63	46,434
Available for Farm Investment	$ 34	$ 0.17	$ 2,941
- Capital purchases: cattle, machinery & improvements	965	4.66	82,403
Additional Capital Needed	$ 931	$ 4.49	$ 79,462

*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
34 Small Herd Dairy Farms, 2012

Item	Average 34 Farms			Top 50% Farm		
Land	Owned	Rented	Total	Owned	Rented	Total
Tillable	106	114	220	121	137	258
Nontillable	25	14	39	22	11	33
Other nontillable	79	11	90	89	1	90
Total	209	139	348	233	148	381
Crop Yields	Farms	Acres*	Production/Acre	Farms	Acres	Production/Acre
Hay crop	32	159	1.93 tn DM	16	183	1.72 tn DM
Corn silage	26	64	16.61 tn	13	82	16.96 tn
			5.65 tn DM			5.86 tn DM
Other forage	3	28	3.95 tn DM	1	35	4.51 tn DM
Total forage	32	213	2.86 tn DM	16	252	2.84 tn DM
Corn grain	7	21	117 bu	3	28	131 bu
Oats	0	0	0 bu	0	0	0 bu
Wheat	2	20	48 bu	0	0	0 bu
Other crops	6	22		1	33	
Tillable pasture	6	52		3	79	
Idle	3	15		0	0	
Total Tillable Acres	34	220		17	258	

*This column represents the average acreage for the farms producing that crop. Average acreages including those farms not producing were hay crop 150, corn silage 49, corn grain 4, oats 0, tillable pasture 9, and idle 1.

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
32 Small Herd Dairy Farms, 2012**

Item	Average 32 Farms	Top 50% Farm
Total tillable acres per cow	3.12	3.11
Total forage acres per cow	2.86	2.86
Harvested forage dry matter, tons per cow	8.18	8.11

**Excludes farms that do not harvest forages.

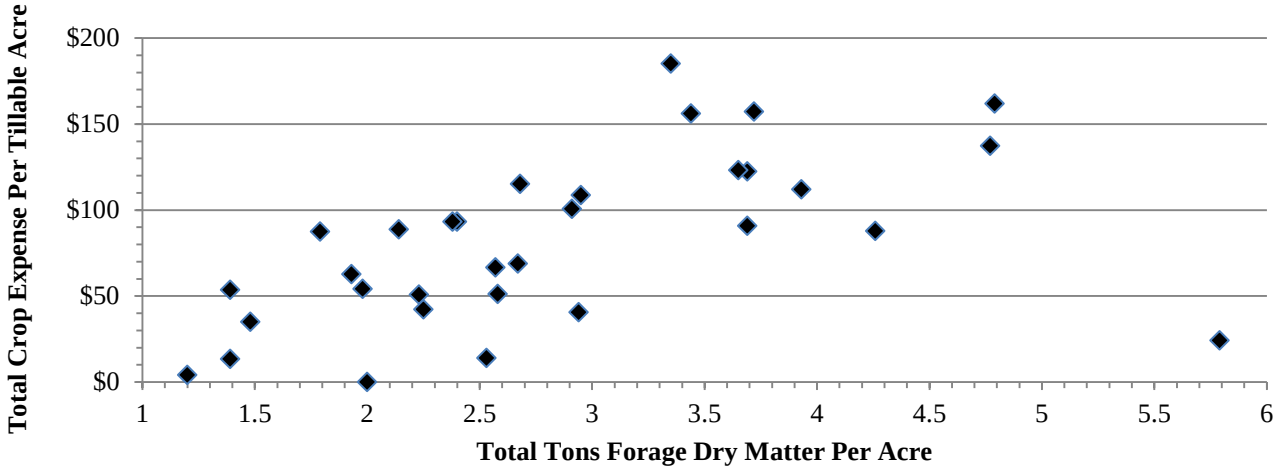
Cropping Analysis (continued)

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 11 farms, 6 of which are in the "top 50% farms" group.

CROP RELATED ACCRUAL EXPENSES
Small Herd Dairy Farms Reporting Forage Production, 2012

Item	Average 32 farms	Top 50% Farms
	Total Per Tillable Acre	
Number of farms reporting	32	16
Average number of acres	216	232
Fertilizer & lime expenses	$ 36.98	$ 46.96
Seeds & plants	27.16	31.66
Spray & other crop expenses	17.10	15.35
TOTAL	$ 81.24	$ 93.97

CROP EXPENSE PER ACRE AND TOTAL FORAGE PRODUCTION PER ACRE
32 Small Herd Farms That Grow Forages, 2012



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
32 Small Herd Dairy Farms That Grow Forages, 2012

Machinery Expense	Average 32 Farms Total Expenses	Average 32 Farms Per Tillable Acre	Top 50% Farms Total Expenses	Top 50% Farms Per Tillable Acre
Fuel, oil & grease	$ 15,566	$ 66.82	$ 18,890	$ 68.87
Machinery repair & vehicle expense	18,935	81.28	22,300	81.30
Machine hire, rent & lease	8,573	36.80	11,403	41.57
Interest (5%)	8,938	38.37	10,728	39.11
Depreciation	16,046	68,87	19,223	70.08
Total	$ 68,058	$ 292.14	$ 82,545	$ 300.93

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
34 Small Herd Dairy Farms, 2012

	Dairy Cows		Heifer					
			Bred		Open		Calves	
Item	No.	Value	No.	Value	No.	Value	No.	Value
Average 34 Farms:								
Beg. year (owned)	72	$ 102,868	20	$ 26,032	23	$ 17,777	19	$ 10,171
+ Change w/o apprec.		1,022		-733		640		-1,493
+ Appreciation		388		46		1,476		-428
End year (owned)	72	$ 104,279	19	$ 25,345	24	$ 19,893	17	$ 8,249
End including leased	73							
Average number	73		61	(all age groups)				
Top 50% Farms:								
Beg. year (owned)	82	$121,756	24	$ 30,541	24	$ 20,631	24	$ 13,488
+ Change w/o apprec.		10,415		2,228		1,485		-1,780
+ Appreciation		0		31		3,006		-492
End year (owned)	88	$132,171	25	$ 32,800	27	$ 25,122	22	$ 11,216
End including leased	87							
Average number	85		73	(all age groups)				

Total milk sold and milk sold per cow are extremely valuable measures of size and productivity, respectively, on the dairy farm. These measures of milk output are based on pounds of milk marketed during the year. Farm managers on DHI should compare milk sold per cow with their rolling herd average on the test date nearest December 31 to see how close the DHI estimate of milk produced is to actual milk sales.

MILK PRODUCTION
34 Small Herd Dairy Farms, 2012

Item	Average 34 Farms	Top 50% Farms
Total milk sold, lbs.	1,405,521	1,767,944
Milk sold per cow, lbs.	19,230	20,714
Average milk plant test, percent butterfat (average of farms reporting)	2.55	2.75

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
34 Small Herd Dairy Farms, 2012

	Average 34 Farms		Top 50% Farms	
Item	Number	Percent*	Number	Percent*
Cows sold for beef	17	23.9	20	23.6
Cows sold for dairy	3	4.6	1	1.5
Cows died	3	4.2	3	3.7
Culling rate**		28.0		27.0

*Percent of average number of cows in the herd.
**Cows sold for beef plus cows died.

The cost of producing milk has been compiled using the whole farm method and is featured in the following table. Accrual receipts from milk sales can be compared with the accrual costs of producing milk per cow and per hundredweight of milk. Using the whole farm method, operating costs of producing milk are estimated by deducting nonmilk accrual receipts from total accrual operating expenses including expansion livestock purchased. Purchased inputs cost of producing milk are the operating costs plus depreciation. Total costs of producing milk include the operating costs of producing milk plus depreciation on machinery and buildings, the value of unpaid family labor, the value of operators' labor and management, and the interest charge for using equity capital.

ACCRUAL RECEIPTS FROM DAIRY, COSTS OF PRODUCING MILK, AND PROFITABILITY

34 Small Herd Dairy Farms, 2012

Item	Average 34 Farms			Top 50% Farms		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Accrual Cost of Producing Milk						
Operating costs	$ 220,133	$ 3,012	$ 15.66	$ 249,521	$ 2,924	$ 14.11
Purchased inputs costs	$ 240,770	$ 3,294	$ 17.13	$ 274,456	$ 3,216	$ 15.52
Total costs	$ 327,839	$ 4,485	$ 23.33	$ 368,682	$ 4,320	$ 20.85
Accrual Receipts From Milk	$ 282,206	$ 3,861	$ 20.08	$ 352,934	$ 4,135	$ 19.96
Net Milk Receipts	$ 264,981	$ 3,625	$ 18.85	$ 331,472	$ 3,884	$ 18.75
Net Farm Income without Appreciation	$ 41,437	$ 567	$ 2.95	$ 78,478	$ 919	$ 4.44
Net Farm Income with Appreciation	$ 55,008	$ 753	$ 3.91	$ 93,543	$ 1,096	$ 5.29

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

34 Small Herd Dairy Farms, 2012

Item	Average 34 Farms		Top 50% Farms	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purchased dairy grain & concentrate	$ 1,356	$ 7.05	$ 1,371	$ 6.62
Purchased dairy roughage	95	0.50	117	0.57
Total Purchased Dairy Feed	$ 1,451	$ 7.55	$ 1,488	$ 7.19
Purchased grain & conc. as % of milk receipts	35%		33%	
Purchased feed & crop expense	$ 1,689	$ 8.78	$ 1,751	$ 8.46
Purchased feed & crop expense as % of milk receipts	43%		43%	
Breeding	$ 52	$ 0.27	$ 59	$ 0.28
Veterinary & medicine	94	0.49	87	0.42
Milk marketing	236	1.23	251	1.21
Bedding	54	0.28	67	0.32
Milking supplies	86	0.45	85	0.41
Cattle lease	1	0.00	2	0.01
Custom boarding	16	0.08	11	0.05
bST	5	0.03	5	0.02
Livestock professional fees	23	0.12	20	0.10
Other livestock expense	46	0.24	50	0.24

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

34 Small Herd Dairy Farms, 2012

Item	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
Average 34 Farms:				
Farm capital*	$375,469	$12,026	$4,007	$7,577
Real estate*		5,654		3,562
Machinery & equipment	76,656	2,455	818	
Ratios				
Asset turnover*	Operating Expense	Interest Expense	Depreciation Expense	
0.40	0.78	0.02	0.07	
Top 50% Farms:				
Farm capital*	$396,464	$ 11,729	$3,746	$7,971
Real estate*		5,481		3,725
Machinery & equipment	78,925	2,335	746	
Ratios				
Asset turnover*	Operating Expense	Interest Expense	Depreciation Expense	
0.45	0.74	0.02	0.06	

*Excludes rented farms.

LABOR FORCE INVENTORY AND ANALYSIS

34 Small Herd Dairy Farms, 2012

Labor Force	Months	Age	Years of Education	Value of Labor & Management
Average 34 Farms:				
Operator number 1	13.3	49	14	$ 35,397
Operator number 2	2.6	46	14	7,088
Operator number 3	0.2	80	14	441
Family paid	1.5			
Family unpaid	4.9			
Hired	6.3			
Total	28.9	/ 12 = 2.41 Worker Equivalent		
		1.22 Operator/Manager Equivalent		
Top 50% Farms: Total	30.0	/ 12 = 2.50 Worker Equivalent		
Operator's		1.18 Operator/Manager Equivalent		

Labor	Average 34 Farms		Top 50% Farms	
Efficiency	Total	Per Worker	Total	Per Worker
Cows, average number	73	30	85	34
Milk sold, pounds	1,405,521	583,809	1,767,944	707,178
Tillable acres	220	91	258	103

	Average 34 Farms			Top 50% Farms		
Labor Costs	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Value of operator(s) labor ($2,550/month)	$41,964	$ 574	$ 2.99	$42,406	$ 497	$ 2.40
Family unpaid ($2,550/month)	12,688	174	0.90	14,274	167	0.81
Hired	19,091	261	1.36	19,970	234	1.13
Total Labor	$73,743	$ 1,009	$ 5.25	$76,650	$ 898	$ 4.34
Machinery Cost	$65,461	$ 896	$ 4.66	$78,226	$ 917	$ 4.42
Total Labor & Machinery	$139,204	$ 1,905	$ 9.90	$154,876	$ 1,815	$ 8.76
Hired labor expense per hired worker equivalent		$29,109			$29,224	
Hired labor expense as % of milk sales		6.8%			5.7%	

COMPARATIVE ANALYSIS OF THE FARM BUSINESS

Comparison to Top 50 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 25 farms and the top 50% 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 25 Small Herd Dairy Farms, 2011 & 2012

	Average of Same 25 Farms*		Average of Same 14 Top 50% Farms*	
Selected Factors	2011	2012	2011	2012
Size of Business				
Average number of cows	75	77	83	87
Average number of heifers	64	64	74	75
Milk sold, lbs.	1,487,710	1,510,445	1,751,538	1,853,929
Worker equivalent	2.43	2.47	2.51	2.60
Total tillable acres	225	231	253	265
Rates of Production				
Milk sold per cow, lbs.	19,783	19,586	21,012	21,240
Hay DM per acre, tons	2.2	1.90	2.0	1.7
Corn silage per acre, tons	16.3	16.80	17.1	16.8
Labor Efficiency				
Cows per worker	31	31	33	34
Milk sold/worker, lbs.	612,226	611,516	697,824	713,050
Cost Control				
Grain & concentrate purchased as % of milk sales	29%	34%	29%	34%
Dairy feed & crop expense per cwt. milk	$ 7.92	$ 8.62	$ 8.05	$ 8.67
Labor & machinery costs/cow	$ 1,908	$ 1,909	$ 1,890	$ 1,849
Operating cost of producing cwt. of milk	$ 15.33	$ 15.32	$ 15.32	$ 14.28
Capital Efficiency**				
Farm capital per cow***	$ 11,646	$ 12,026	$ 11,639	$ 12,055
Machinery & equipment per cow	$ 2,496	$ 2,455	$ 2,408	$ 2,384
Asset turnover ratio***	0.45	0.40	0.47	0.44
Profitability				
Net farm income w/o appreciation	$ 68,888	$ 45,882	$ 84,601	$ 80,154
Net farm income with appreciation	$ 93,149	$ 59,577	$ 112,195	$ 98,428
Labor & management income per operator/manager	$ 20,647	$ -2,822	$ 30,353	$ 21,636
Rate of return on equity capital with appreciation	6.0%	0.4%	7.6%	4.9%
Rate of return on all capital with appreciation	5.6%	1.2%	6.7%	4.5%
Financial Summary				
Farm net worth, end year	$ 690,664	$ 726,163	$ 754,008	$ 821,192
Debt to asset ratio	0.23	0.24	0.25	0.26
Farm debt per cow	$ 2,779	$ 2,967	$ 2,944	$ 3,163

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

RECEIPTS AND EXPENSES PER COW AND PER CWT.

Same 29 Small Herd Dairy Farms, 2011 & 2012

	2011		2012	
Item	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	70		72	
Cwt. of Milk Sold		13,605		13,860
ACCRUAL OPERATING RECEIPTS				
Milk	$4,202	$21.64	$3,821	$19.96
Dairy cattle	216	1.11	250	1.31
Dairy calves	34	0.18	7	0.04
Other livestock	16	0.08	19	0.10
Crops	126	0.65	219	1.14
Miscellaneous receipts	207	1.07	241	1.26
Total Receipts	$4,801	$24.72	$4,556	$23.80
ACCRUAL OPERATING EXPENSES				
Hired labor	$ 242	$ 1.25	$ 230	$ 1.20
Dairy grain & concentrate	1,217	6.27	1,302	6.80
Dairy roughage	97	0.50	111	0.58
Nondairy feed	1	0.01	1	0.00
Professional nutritional services	1	0.01	1	0.00
Machine hire/rent/lease	81	0.42	118	0.61
Mach. repair & vehicle exp.	262	1.35	251	1.31
Fuel, oil & grease	210	1.08	204	1.07
Replacement livestock	42	0.22	46	0.24
Breeding	54	0.28	53	0.28
Veterinary & medicine	103	0.53	93	0.49
Milk marketing	227	1.17	233	1.22
Bedding	46	0.24	52	0.27
Milking supplies	98	0.51	80	0.42
Cattle lease	0	0.00	1	0.01
Custom boarding	28	0.14	19	0.10
bST expense	9	0.05	6	0.03
Livestock professional fees	18	0.09	22	0.11
Other livestock expense	51	0.26	45	0.23
Fertilizer & lime	114	0.59	109	0.57
Seeds & plants	72	0.37	84	0.44
Spray/other crop expense	40	0.21	47	0.24
Crop professional fees	3	0.01	0	0.00
Land, building, fence repair	75	0.39	66	0.34
Taxes	81	0.42	93	0.48
Real estate rent/lease	62	0.32	61	0.32
Insurance	73	0.38	64	0.34
Utilities	125	0.64	122	0.64
Interest paid	117	0.60	102	0.53
Other professional fees	13	0.07	19	0.10
Miscellaneous	21	0.11	17	0.09
Total Operating Expenses	$3,585	$18.46	$3,649	$19.07
Expansion Livestock	2	0.01	9	0.05
Extraordinary Expense	0	0.00	6	0.03
Machinery Depreciation	251	1.29	214	1.12
Real Estate Depreciation	66	0.34	73	0.38
Total Expenses	$3,904	$20.10	$3,951	$20.65
Net Farm Income Without Appreciation	$ 897	$ 4.62	$ 604	$ 3.16

RECEIPTS AND EXPENSES PER COW AND PER CWT.

Same 16 Top 50% Small Herd Dairy Farms, 2011 & 2012

	2011		2012	
Item	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	82		86	
Cwt. Of Milk Sold		17,041		17,961
ACCRUAL OPERATING RECEIPTS				
Milk	$4,542	$21.77	$4,175	$19.98
Dairy cattle	192	0.92	384	1.84
Dairy calves	37	0.18	10	0.05
Other livestock	10	0.05	12	0.06
Crops	152	0.73	222	1.06
Miscellaneous receipts	231	1.11	249	1.19
Total Receipts	$5,164	$24.76	$5,053	$24.18
ACCRUAL OPERATING EXPENSES				
Hired labor	$ 243	$ 1.16	$ 234	$ 1.12
Dairy grain & concentrate	1,284	6.16	1,386	6.63
Dairy roughage	111	0.53	124	0.59
Nondairy feed	0	0.00	0	0.00
Professional nutritional services	2	0.01	1	0.00
Machine hire/rent/lease	99	0.47	126	0.61
Mach. repair & vehicle exp.	275	1.32	247	1.18
Fuel, oil & grease	224	1.07	213	1.02
Replacement livestock	35	0.17	32	0.15
Breeding	62	0.30	62	0.29
Veterinary & medicine	108	0.52	91	0.43
Milk marketing	247	1.18	250	1.19
Bedding	51	0.25	67	0.32
Milking supplies	104	0.50	84	0.40
Cattle lease	0	0.00	2	0.01
Custom boarding	15	0.07	12	0.06
bST expense	10	0.05	5	0.03
Livestock professional fees	19	0.09	20	0.10
Other livestock expense	51	0.24	49	0.23
Fertilizer & lime	144	0.69	135	0.64
Seeds & plants	84	0.40	95	0.45
Spray/other crop expense	41	0.20	48	0.23
Crop professional fees	4	0.02	0	0.00
Land, building, fence repair	68	0.33	66	0.31
Taxes	78	0.37	82	0.39
Real estate rent/lease	64	0.30	63	0.30
Insurance	69	0.33	63	0.30
Utilities	126	0.61	123	0.59
Interest paid	118	0.57	101	0.48
Other professional fees	13	0.06	23	0.11
Miscellaneous	19	0.09	20	0.10
Total Operating Expenses	$3,768	$18.06	$3,821	$18.28
Expansion Livestock	1	0.00	14	0.06
Extraordinary Expense	0	0.00	0	0.00
Machinery Depreciation	256	1.23	217	1.04
Real Estate Depreciation	75	0.36	82	0.39
Total Expenses	$4,100	$19.65	$4,134	$19.77
Net Farm Income Without Appreciation	$1,064	$5.10	$ 919	$ 4.40

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

34 Small Herd Dairy Farms, 2012

Size of Business			Rate 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)
3.63	116	2,538,685	24,365	3.5	21	44	946,728
2.90	98	1,792,414	22,041	2.3	17	37	664,533
2.45	73	1,302,030	19,478	1.8	15	32	585,149
1.90	49	1,017,420	16,909	1.5	9	26	486,893
1.34	37	538,937	12,008	0.8	0	18	282,783

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)
$ 756	24%	$ 481	$ 1,363	$ 936	$ 6.19	0.0%	8.4%
1,115	31	715	1,647	1,379	7.66	1.9	19.4
1,329	34	856	1,853	1,734	8.69	4.0	24.6
1,575	39	1,026	2,212	1,957	10.05	5.4	29.9
1,862	48	1,430	2,919	2,310	11.47	10.5	35.0

Value and Cost of Milk Production			Profitability			
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	Change in Net Worth with Appreciation
(12)	(12)	(12)	(4)	(4)	(4)	(8)
$ 4,924	$ 12.81	$ 19.34	$ 138,386	$ 107,283	$ 39,493	$ 124,038
4,371	13.96	21.36	84,103	72,236	17,636	65,852
3,886	14.94	22.88	55,522	45,059	6,449	35,585
3,387	15.98	26.01	34,277	27,372	-7,878	20,313
2,436	21.97	37.96	-25,338	-35,359	-71,377	-38,165

*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
15 New York Dairy Farms, 2012

Animals Entering Herd	Average
Number calving in 2012 for first time	353
Animals purchased, %*	4.0%
Animals raised by farm, %**	96.0%
Current Heifer Inventory	
Raised on dairy, %	87.1%
Raised by a custom grower, %	12.8%

* Animals purchased are animals purchased from a different farm and were not the farms genetics.
**Animals raised by farm are animals that were born on the farm and entered the herd, which includes animals raised by the farm or custom grower.

On the average farm, 353 animals calved for the first time in 2012. The breakdown on the source of these animals was 4.0 percent purchased and 96.0 percent raised on the farm. Of the current heifer inventory, 87.1 percent were raised on the dairy and 12.8 percent were raised by a custom grower. There is increased interest in evaluating the dairy replacement enterprise.

Milk Income and Marketing Expense Breakdown

Starting January 1st, 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, 98 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 cwt. 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. A line item in this section is the expense associated with utilizing forward contracting or hedging programs to market milk, such as commissions or broker fees. 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. For participating farms, the net farm price can be found on page 13 of the DFBS report.

The table on page 9 reports the averages for these different areas. The table on page 10 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 fifths. Numbers for the different areas will not add to the totals for that quintile 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
20 Small Herd Dairy Farms, 2012

	Pounds	Percent	Price/Pound	Total	$/Cwt of Milk
BASE FARM PRICE					
Butterfat	57,989	3.87%	$1.72	$ 99,866	$6.67
Protein	46,769	3.12%	$3.05	$142,509	$9.52
Solids	87,024	5.81%	$0.41	$ 35,284	$2.36
Total Component Contribution					$ 18.55
PPD	1,496,897			$ 7,658	$ 0.51
Base Farm Price					$ 19.06
Premiums					
Quality				$ 3,654	$0.24
Volume				$ 1,449	$0.10
Market Premiums				$ 5,613	$0.37
Total Premiums					$ 0.72
BASE FARM PRICE + PREMIUM					$ 19.78
Deductions					
Promo				$ 2,303	$0.15
Hauling + Stop Charges.				$ 14,577	$0.97
Market Fees & Coop Dues				$ 1,173	$0.08
Total Deductions					$ 1.21
BASE FARM PRICE + PREMIUMS - DEDUCTIONS					$ 18.57
Marketing Programs					
Futures Contracts, Forward Contracting, Etc.				$ 0	$ 0.00
Total Marketing Income					$ 0.00
Patronage Dividends				$ 5,364	$ 0.36
NET PRICE RECEIVED ON FARM, ALL SOURCES					**$ 18.93**
PPD - Hauling, per cwt.					$ -0.46
PPD - Hauling + Market Premiums, per cwt.					$ -0.09
Net Marketing Value, per cwt. (PPD + Total Preimums – Total Deductions)					$ 0.02

*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 20 farms is 76 cows.

MILK PRICE INFORMATION BY QUARTILE*
(Each Category Sorted Independently)
20 Small Herd Dairy Farms, 2012

	Lowest Quartile	←	→	Highest Quartile
Butterfat, %	3.69	3.82	3.93	4.20
Protein, %	3.00	3.10	3.13	3.33
Other Solids, %	5.64	5.76	5.86	6.29
Butterfat, $ per Cwt.	6.32	6.60	6.79	7.07
Protein, $ per Cwt.	9.16	9.41	9.58	10.00
Other solids, $ per Cwt.	2.29	2.35	2.37	2.46
Total Component Value per Cwt.	**$ 17.94**	**$ 18.32**	**$ 18.66**	**$ 19.47**
PPD, $ per Cwt.	0.16	0.45	0.60	0.94
Base Farm Price per Cwt.	**$ 18.48**	**$ 18.95**	**$ 19.26**	**$ 19.85**
Quality, $ per Cwt.	0.03	0.14	0.23	0.62
Volume, $ per Cwt.	0.00	0.03	0.11	0.17
Market premium, $ per Cwt.	0.03	0.23	0.40	1.13
Total Premium, $ per Cwt.	**0.24**	**0.52**	**0.74**	**1.61**
Base Farm Price + Premiums per Cwt.	**$ 19.02**	**$ 19.49**	**$ 20.03**	**$ 21.11**
Promotion, $ per Cwt.	0.15	0.15	0.15	0.15
Hauling, $ per Cwt.	0.48	0.83	1.11	1.38
Market fees & coop dues per Cwt.	0.00	0.04	0.08	0.15
Total Marketing Expenses per Cwt.	**$ 0.61**	**$ 1.08**	**$ 1.38**	**$ 1.62**
Base + Premiums – Deductions per Cwt.	**$ 17.75**	**$ 18.35**	**$ 18.78**	**$ 20.10**
Futures contract, forward contracting, $ per Cwt.	0.00	0.00	0.00	0.00
Total Marketing Income, $ per Cwt.	**$ 0.00**	**$ 0.00**	**$ 0.00**	**$ 0.00**
Patronage Dividends, $ per Cwt.	**$ 0.00**	**$ 0.03**	**$ 0.27**	**$ 0.79**
Net Price Received From All Sources, $ per Cwt.	**$ 17.95**	**$ 18.52**	**$ 19.24**	**$ 20.34**
PPD - hauling, $ per Cwt.	**-0.82**	**-0.45**	**-0.38**	**0.01**
PPD - hauling + mkt premiums, $ per Cwt.	**-0.64**	**-0.25**	**-0.01**	**1.04**
Net Marketing Value, $ per Cwt. (PPD + Total Premiums – Total Deductions)	**- 0.55**	**-0.13**	**0.11**	**1.16**

*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 190 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

190 New York Dairy Farms, 2011

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)
37.4	1,706	43,858,755	27,706	5.3	23	63	1,458,922
22.9	1,021	26,336,021	26,440	4.4	20	51	1,243,329
17.6	785	20,082,453	25,674	3.9	18	48	1,167,110
14.1	612	14,432,284	24,907	3.6	18	45	1,088,025
10.6	466	11,020,599	24,206	3.4	17	42	1,010,627
7.0	325	7,344,654	23,151	3.1	16	40	925,116
4.7	174	3,679,214	21,982	2.8	15	37	793,037
3.1	108	2,120,345	20,278	2.3	14	33	667,413
2.3	69	1,296,787	17,715	2.1	13	28	550,182
1.6	45	726,923	12,283	1.6	10	21	343,454

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)
$651	18%	$493	$1,152	$898	$5.24
1,014	23	651	1,413	1,300	6.42
1,136	26	716	1,533	1,473	6.94
1,258	27	779	1,625	1,617	7.24
1,384	28	843	1,691	1,739	7.55
1,475	29	901	1,759	1,827	7.82
1,564	31	960	1,842	1,936	8.19
1,653	32	1,038	1,933	2,030	8.61
1,731	34	1,126	2,102	2,150	9.24
1,947	38	1,384	2,606	2,388	10.66

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

FARM BUSINESS CHART FOR
FARM MANAGEMENT COOPERATORS
190 New York Dairy Farms, 2011

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)
$6,127	$23.60	$1,932	$12.19	$3,184	$16.71
5,705	22.51	2,646	13.62	3,969	17.95
5,520	22.08	3,015	14.29	4,328	18.65
5,369	21.81	3,355	14.98	4,506	19.22
5,188	21.63	3,601	15.53	4,650	19.75
4,959	21.41	3,740	16.05	4,757	20.34
4,719	21.21	3,881	16.62	4,910	21.30
4,381	21.00	4,083	17.35	5,104	22.92
3,837	20.75	4,353	17.88	5,317	25.38
2,658	20.24	4,711	19.90	5,728	31.41

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)
$2,341,294	$1,900	0.31	$2,707,050	$2,395	$1,794,884	$864,454
1,264,736	1,606	0.27	1,485,514	1,927	951,356	476,538
867,967	1,344	0.23	1,079,176	1,610	628,200	311,166
616,369	1,165	0.20	792,265	1,395	457,712	212,547
438,110	1,017	0.18	552,379	1,238	289,617	153,689
274,291	913	0.16	349,944	1,111	150,363	84,765
143,833	773	0.14	185,513	994	66,657	48,741
80,696	612	0.12	109,297	833	29,919	20,449
34,852	399	0.09	56,294	566	-10,042	-8,376
-10,917	-25	-0.01	15,314	222	-90,536	-56,785

Farm Business Charts for farms with freestall barns and 200 cows or less, 200-400 cows, and more than 400 cows; and farms with conventional barns with less than 60 cows and 60 cows and more 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

190 New York Dairy Farms, 2011

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)
$ 63	$1,607	10.52	13.41	3%	$ 133	57%	48.32
283	1,339	3.30	4.56	5	1,137	41	6.16
419	1,157	2.47	3.36	7	1,841	31	3.96
485	989	1.96	2.79	9	2,316	26	3.17
575	867	1.64	2.34	10	2,787	21	2.54
642	750	1.45	1.96	11	3,167	17	2.01
703	641	1.23	1.61	13	3,635	13	1.74
799	558	1.02	1.30	15	4,210	10	1.43
932	444	0.88	0.83	17	4,916	4	1.05
1,446	86	0.24	0.08	25	6,691	-13	0.41

Solvency				Operational Ratios		
		Debt/Asset Ratio				
Leverage Ratio**	Percent Equity	Current & Intermediate	Long Term	Operating Expense Ratio	Interest Expense Ratio	Depreciation Expense Ratio
(7)	(7)	(7)	(7)	(14)	(14)	(14)
0.01	99%	0.01	0.00	0.61	0.00	0.02
0.12	89	0.09	0.00	0.65	0.01	0.04
0.20	83	0.17	0.01	0.68	0.01	0.04
0.27	79	0.24	0.10	0.70	0.01	0.05
0.35	74	0.27	0.19	0.73	0.02	0.06
0.48	68	0.32	0.30	0.75	0.02	0.06
0.61	62	0.37	0.39	0.77	0.03	0.07
0.75	57	0.43	0.49	0.79	0.03	0.08
0.98	51	0.54	0.59	0.82	0.04	0.10
1.91	38	0.73	0.83	0.89	0.08	0.14

Efficiency (Capital)					Profitability	
					Percent Rate of Return with Appreciation on:	
Asset Turnover (ratio)	Real Estate Investment Per Cow	Machinery Investment Per Cow	Total Farm Assets Per Cow	Change in Net Worth With Appreciation	Equity	Investment***
(14)	(14)	(14)	(14)	(8)	(4)	(4)
0.92	$1,960	$662	$6,389	$2,323,290	35%	23%
0.77	2,744	1,032	7,721	1,203,378	25	17
0.70	3,065	1,335	8,235	886,807	22	15
0.65	3,357	1,567	8,929	659,342	19	14
0.61	3,684	1,735	9,627	394,739	16	12
0.57	4,277	1,884	10,269	256,529	12	10
0.52	4,745	2,046	11,111	116,070	9	8
0.47	5,543	2,367	11,989	63,416	6	5
0.39	6,721	2,816	13,236	23,571	0	1
0.27	9,736	4,002	16,747	-6,842	-18	-4

*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 993 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, as well as the highest 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 2011 State Summary*. In most years, as herd size increases, the net farm income increases (page 48)*; and that was generally the case for 2011. Net farm income without appreciation averaged $25,530 per farm for the less than 60 cow farms and $1,187,170 per farm for those with more than 900 cows. Return to all capital without appreciation generally increased as herd size increased. With herd sizes between 60 and 200 cows, many farms find it difficult to find a low cost combination of technology and labor to produce milk. Thus profits are lower for these herds than other herd sizes.

Assets, liabilities and financial measures are presented on pages 55-58*. All herd size categories saw an increase in net worth during 2011. The largest herd size category experienced an increase in net worth of $1,565,749. However, percent equity varied as herd size increased. The 200 to 399 and 600 to 899 herd size categories had the lowest percent equity at 68 percent; while the 100 to 199 herd size category averaged the highest percent equity at 76 percent.

Crop yields showed little relationship to herd size, but fertilizer and lime expenses, and machinery cost per tillable acre generally increased as herd size increased (pages 59-60)*. The farms with more than 900 cows averaged more milk sold per cow than any other size category (page 60). With 25,689 pounds of milk sold per cow, farms in the largest herd size group averaged 9.3 percent more milk output per cow than the average of all herds in the summary with less than 900 cows. Farm capital per cow generally decreased as herd size increased. Milk sold per worker increased dramatically as herd size increased, ranging from 403,817 pounds at the lowest herd size category up to 1,144,223 pounds at the largest size category.

*Wayne A. Knoblauch, Linda D. Putnam, Jason Karszes, Richard Overton, and Cathryn Dymond, Dairy Farm Management Business Summary, New York, 2011, Charles H. Dyson School of Applied Economics and Management, Cornell University, R.B. 2012-01, November 2012.

SELECTED BUSINESS FACTORS BY TYPE OF BARN AND HERD SIZE

190 New York Dairy Farms, 2011

Item Farms with:	Conventional <= 60 Cows	Conventional >60 Cows	Freestall <=200 Cows	Freestall 200-400 Cows	Freestall ≥400 Cows
Number of farms	19	16	34	29	81
Cropping Program Analysis					
Total Tillable acres	162	262	314	695	1,971
Tillable acres rented*	70	111	128	337	961
Hay crop acres*	126	170	185	322	812
Corn silage acres*	16	51	77	241	793
Hay crop, tons DM/acre	2.0	2.9	2.8	3.4	3.5
Corn silage, tons/acre	13.8	15.1	15.7	15.5	16.8
Oats, bushels/acre	36	0	26	62	40
Forage DM per cow, tons	7.3	10.0	8.1	7.5	7.6
Tillable acres/cow	3.6	3.3	2.7	2.1	2.0
Fertilizer & lime expense/tillable acre	$30.12	$32.10	$50.37	$53.43	$57.47
Total machinery costs	$42,752	$76,737	$117,280	$305,214	$827,012
Machinery cost/tillable acre	$265	$293	$341	$428	$420
Dairy Analysis					
Number of cows	45	79	122	345	993
Number of heifers	36	69	102	289	865
Milk sold, lbs.	753,119	1,560,301	2,552,966	8,372,391	25,195,786
Milk sold/cow, lbs.	16,736	19,656	20,986	24,278	25,369
Operating cost of producing milk/cwt.	$15.62	$15.73	$15.80	$15.89	$15.59
Total cost of producing milk/cwt.	$26.65	$23.22	$22.14	$19.60	$18.87
Price/cwt. milk sold	$21.22	$21.24	$21.65	$21.67	$21.66
Purchased dairy feed/cow	$1,092	$1,228	$1,441	$1,612	$1,642
Purchased dairy feed/cwt. milk	$6.53	$6.25	$6.87	$6.64	$6.47
Purchased grain & concentrate as % of milk receipts	28%	28%	30%	29%	28%
Purchased feed & crop expense/cwt milk	$7.45	$7.45	$8.12	$7.66	$7.56
Capital Efficiency					
Farm capital/worker	$313,036	$330,689	$396,926	$391,603	$431,126
Farm capital/cow	$12,939	$11,498	$11,485	$9,187	$9,559
Farm capital/tillable acre owned	$6,361	$6,039	$7,487	$8,850	$9,402
Real estate/cow	$6,522	$5,120	$5,451	$3,661	$3,865
Machinery investment/cow	$2,957	$2,550	$2,170	$1,664	$1,559
Asset turnover ratio	0.36	0.43	0.46	0.67	0.67
Labor Efficiency					
Worker equivalent	1.87	2.75	3.52	8.09	22.02
Operator/manager equivalent	1.08	1.08	1.56	1.79	2.36
Milk sold/worker, lbs.	403,817	566,524	725,790	1,035,333	1,144,223
Cows/worker	24	29	35	43	45
Labor cost/cow	$1,206	$1,000	$870	$800	$817
Labor cost/tillable acre	$336	$303	$337	$397	$411
Profitability & Balance Sheet Analysis					
Net farm income (without appreciation)	$25,530	$56,823	$108,118	$370,111	$1,187,170
Labor & management income/operator	$-6,817	$8,089	$29,650	$145,678	$367,715
Rate return on all capital with appreciation	1.6%	3.2%	5.7%	13.2%	14.5%
Farm debt/cow	$3,654	$2,295	$2,813	$2,900	$3,095
Percent equity	73%	80%	76%	69%	69%

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

FARM BUSINESS CHART FOR SMALL CONVENTIONAL STALL DAIRY FARMS

19 Conventional Stall Dairy Farms with 60 or Less Cows, New York, 2011

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)
2.45	52	1,060,903	22,928	2.5	19	34	639,886
2.15	49	1,000,778	20,391	2.2	17	29	508,524
1.90	47	830,676	18,419	2.1	15	25	423,294
1.63	43	623,732	13,630	1.9	12	21	303,771
1.36	36	326,453	8,627	1.4	9	18	219,300

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)
$356	15%	$532	$1,445	$530	$4.51
829	26	699	1,957	1,038	6.68
1,097	30	1,066	2,202	1,316	7.73
1,228	32	1,193	2,496	1,543	8.74
1,418	39	1,397	3,016	1,758	10.12

Value and Cost of Production			Profitability			
Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation
			Total	Per Cow		
(12)	(12)	(12)	(4)	(12)	(4)	(8)
$1,896	$12.62	$20.91	$70,861	$1,462	$38,133	$95,059
2,895	14.37	24.99	41,125	872	9,259	42,317
3,885	15.88	27.63	19,609	439	-10,914	17,409
4,353	17.04	33.22	10,766	239	-20,832	8,337
4,769	22.83	40.66	-3,376	-67	-38,229	-10,918

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

FARM BUSINESS CHART FOR LARGE CONVENTIONAL STALL DAIRY FARMS

16 Conventional Stall Dairy Farms with 60 or More Cows, New York, 2011

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)
3.54	111	2,141,481	25,602	5.0	23	45	870,097
3.19	86	1,961,529	22,102	3.9	17	34	643,842
3.06	74	1,628,656	19,478	3.3	16	28	593,902
2.56	68	1,266,317	18,345	2.5	14	25	514,001
1.76	63	992,718	14,422	1.8	11	22	376,121

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)
$724	20%	$652	$1,511	$1,005	$6.22
1,024	27	861	1,870	1,367	6.96
1,183	28	963	1,983	1,481	7.38
1,336	30	1,093	2,146	1,599	7.85
1,587	36	1,371	2,573	2,010	9.11

Value and Cost of Production			Profitability			
Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation
			Total	Per Cow		
(12)	(12)	(12)	(4)	(12)	(4)	(8)
$3,022	$13.06	$19.27	$133,426	$1,604	$75,235	$136,406
3,832	14.95	21.62	99,750	1,271	59,749	68,749
4,301	16.62	24.02	62,735	869	8,195	28,405
4,747	17.47	26.56	19,942	292	-21,279	1,732
5,367	18.48	29.55	-9,598	-102	-53,596	-20,189

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

FARM BUSINESS CHART FOR SMALL FREESTALL DAIRY FARMS

34 Freestall Barn Dairy Farms with 200 Cows or less, New York, 2011

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)
6.69	196	4,816,821	26,525	4.4	25	54	1,130,181
5.48	178	3,827,953	24,433	4.0	21	46	967,628
4.85	163	3,592,270	23,241	3.5	20	42	870,368
4.08	142	3,099,431	22,359	3.0	18	40	807,104
3.47	126	2,740,776	21,306	2.8	18	38	741,724
3.28	115	2,418,826	20,714	2.4	17	35	705,607
2.80	108	2,111,667	20,227	2.1	15	34	677,478
2.44	95	1,708,958	18,346	1.9	13	33	632,015
2.13	79	1,354,314	17,028	1.6	12	28	581,307
1.66	62	1,153,216	14,811	1.3	7	24	488,540

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)
$986	21%	$492	$1,233	$1,202	$5.70
1,040	23	661	1,491	1,345	6.91
1,094	27	759	1,639	1,469	7.30
1,151	30	800	1,719	1,537	7.82
1,295	31	868	1,761	1,668	8.49
1,380	32	940	1,809	1,794	9.01
1,484	34	1,042	1,878	1,908	9.49
1,576	35	1,109	1,939	1,980	9.74
1,679	37	1,236	2,145	2,175	10.22
1,844	39	1,637	2,664	2,487	11.96

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 Total	Net Farm Income Without Appreciation Per Cow	Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation
(12)	(12)	(12)	(4)	(12)	(4)	(8)
$5,623	$11.64	$18.13	$309,645	$1,695	$98,221	$273,142
5,303	13.76	19.79	189,815	1,462	75,581	135,100
5,032	14.67	20.73	162,624	1,265	66,482	112,881
4,879	15.34	21.57	130,902	1,152	44,943	102,419
4,663	15.92	22.74	112,521	960	38,683	90,235
4,459	16.25	23.26	100,585	817	30,991	73,605
4,360	16.82	24.27	71,173	673	17,544	53,753
4,110	17.83	25.78	55,571	544	129	30,341
3,642	18.44	27.49	33,286	348	-12,266	16,884
3,155	20.59	28.57	4,406	35	-41,130	-78

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

FARM BUSINESS CHART FOR MEDIUM FREESTALL DAIRY FARMS

29 Freestall Barn Dairy Farms with 201-500 Cows, New York, 2011

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)
13.43	492	12,342,242	27,586	5.4	24	66	1,560,317
12.24	429	11,055,460	26,199	5.0	20	53	1,275,873
9.66	403	10,177,139	25,507	4.8	19	50	1,174,836
8.73	394	9,696,525	25,132	3.9	18	48	1,101,010
8.08	373	9,247,542	24,724	3.6	17	45	1,081,307
7.25	348	8,248,830	24,486	3.4	16	43	1,027,021
6.67	311	7,450,754	24,005	3.2	15	41	1,005,557
6.02	285	6,800,439	22,954	3.0	14	39	941,534
5.77	248	5,866,675	21,971	2.4	13	36	855,463
4.81	214	4,161,591	18,924	2.0	10	30	736,578

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)
$902	19%	$492	$1,088	$1,170	$5.54
1,168	24	689	1,384	1,499	6.29
1,337	26	750	1,557	1,729	7.10
1,411	26	824	1,620	1,797	7.26
1,459	28	873	1,669	1,892	7.72
1,550	29	931	1,727	1,947	7.82
1,651	30	984	1,823	2,012	8.09
1,740	33	1,054	1,870	2,043	8.40
1,782	35	1,095	2,014	2,166	8.99
1,984	38	1,223	2,113	2,616	11.60

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 Total	Net Farm Income Without Appreciation Per Cow	Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation
(12)	(12)	(12)	(4)	(12)	(4)	(8)
$6,223	$12.91	$17.00	$747,370	$1,963	$480,762	$864,087
5,791	13.89	17.83	603,488	1,547	309,922	637,345
5,572	14.40	18.45	533,428	1,353	249,929	447,768
5,415	15.09	19.24	470,467	1,181	207,696	408,127
5,296	15.57	19.50	388,664	1,035	159,165	357,731
5,171	15.82	20.00	339,929	976	128,026	313,133
5,118	16.94	20.54	290,788	929	94,696	271,778
4,911	17.78	21.26	243,934	883	62,292	169,348
4,697	18.32	21.95	167,617	647	40,786	111,890
4,049	20.55	24.61	41,177	81	-61,315	28,523

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

FARM BUSINESS CHART FOR LARGE FREESTALL DAIRY FARMS

81 Freestall Barn Dairy Farms with 500 or More Cows, New York, 2011

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)
47.61	2,200	56,907,808	28,496	5.6	22	60	1,548,611
30.86	1,403	35,558,525	26,903	4.5	20	53	1,364,857
26.14	1,152	30,049,740	26,449	4.2	19	50	1,264,583
23.01	1,020	26,030,101	26,146	3.8	18	48	1,217,166
20.03	923	23,819,465	25,696	3.6	17	46	1,176,958
18.06	825	21,135,870	25,143	3.4	16	45	1,131,272
16.95	731	18,725,448	24,632	3.2	16	43	1,085,596
15.24	652	15,803,407	24,044	3.0	15	42	1,024,229
13.06	569	13,646,139	23,160	2.7	14	39	951,408
10.68	517	11,938,515	21,472	2.2	13	33	780,879

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)
$999	19%	$628	$1,304	$1,343	$5.55
1,255	24	694	1,458	1,633	6.56
1,393	26	739	1,515	1,733	6.97
1,488	27	800	1,558	1,799	7.23
1,560	28	845	1,646	1,860	7.51
1,600	29	883	1,690	1,968	7.76
1,667	30	928	1,754	2,045	7.98
1,709	32	975	1,837	2,118	8.39
1,804	33	1,041	1,903	2,225	8.69
2,037	36	1,149	2,200	2,397	9.39

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 Total	Net Farm Income Without Appreciation Per Cow	Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation
(12)	(12)	(12)	(4)	(12)	(4)	(8)
$6,272	$12.42	$16.20	$3,175,353	$2,034	$1,101,533	$3,052,327
5,958	13.62	17.46	1,805,062	1,771	739,309	1,881,286
5,740	14.32	17.91	1,493,130	1,612	532,546	1,493,201
5,596	14.89	18.36	1,301,607	1,369	477,512	1,172,062
5,508	15.49	18.79	1,034,126	1,160	398,694	1,023,672
5,420	16.10	19.23	919,036	1,050	304,255	918,412
5,328	16.58	19.49	803,853	939	246,846	793,469
5,200	17.13	20.05	657,193	828	194,751	706,356
4,935	17.61	20.48	525,373	729	156,770	547,226
4,683	18.43	22.48	271,438	415	30,792	311,863

*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 **S**pecific.

2. Goals should be **M**easurable.

3. Goals should be **A**chievable but challenging.

4. Goals should be **R**ewarding.

5. Goals should be **T**imed 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

_____

_____

_____

_____

_____

_____

_____

_____

Worksheet for Setting Goals (Continued)

II. Goals

What	How	When	Who is Responsible

Summarize Your Business Performance

The Farm Business and Financial Analysis Charts on pages 26 and 30-32 can be used to help identify strengths and weaknesses of your farm business. Identify three major strengths and three areas of your farm business that need improvement.

Strengths:	Needs improvement:

GLOSSARY AND LOCATION OF COMMON TERMS

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

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

Accrual Expenses - (defined on page 5)

Accrual Receipts - (defined on page 6)

Annual Cash Flow Statement - (defined on page 13)

Appreciation - (defined on page 7)

Asset Turnover Ratio - The ratio of total farm income to total farm assets, calculated by dividing total accrual operating receipts plus appreciation by average total farm assets.

Balance Sheet - A "snapshot" of the business financial position at a given point in time, usually December 31. The balance sheet equates the value of assets to liabilities plus net worth.

Capital Efficiency - The amount of capital invested per production unit. Relatively high investments per worker with low to moderate investments per cow imply efficient use of capital.

Cash From Nonfarm Capital Used in the Business - Transfers of money from nonfarm savings or investments to the farm business where it is used to pay operating expenses, make debt payments and/or capital purchases.

Cash Flow Coverage Ratio - (defined on page 15)

Cash Paid - (defined on page 4)

Cash Receipts - (defined on page 6)

Change in Accounts Payable - (defined on page 5)

Change in Accounts Receivable - (defined on page 6)

Change in Inventory - (defined on page 4)

Culling Rate – Culling rate is calculated by dividing the number of animals that left the herd for culling purposes and that died, by the average number of milking and dry cows for the year.

Current Portion - (defined on page 9)

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

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

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

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

Debt Coverage Ratio – (defined on page 15)

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

Debt to Asset Ratios - (defined on page 11)

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

Dry Matter - The amount or proportion of dry material that remains after all water is removed. Commonly used to measure dry matter percent and tons of dry matter in feed.

Equity Capital - The farm operator/manager's owned capital or farm net worth.

Expansion Livestock - Purchased dairy cattle and other livestock that cause an increase in herd size from the beginning to the end of the year.

Farm Debt Payments as Percent of Milk Sales - Amount of milk income committed to debt repayment, calculated by dividing planned debt payments by total milk receipts. A reliable measure of repayment ability, see page 15.

Farm Debt Payments Per Cow - Planned or scheduled debt payments per cow represent the repayment plan scheduled at the beginning of the year divided by the average number of cows for the year. This measure of repayment ability is used in the Financial Analysis Chart.

Financial Lease - A long-term non-cancellable contract giving the lessee use of an asset in exchange for a series of lease payments. The term of a financial lease usually covers a major portion of the economic life of the asset. The lease is a substitute for purchase. The lessor retains ownership of the asset.

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

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

Income Statement - A complete and accurate account of farm business receipts and expenses used to measure profitability over a period of time such as one year or one month.

Interest Expense Ratio – Accrual interest expense divided by total accrual receipts.

Labor and Management Income - (defined on page 8)

Labor and Management Income Per Operator - The return to the owner/manager's labor and management per full-time operator.

Labor Efficiency - Production capacity and output per worker.

Leverage Ratio - (defined on page 11)

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

Net Farm Income - (defined on page 7)

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

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

Net Worth - The value of assets less liabilities equal net worth. It is the equity the owner has in owned assets.

Operating Costs of Producing Milk - (defined on page 21)

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

Opportunity Costs - The cost or charge made for using a resource based on its value in its most likely alternative use. The opportunity cost of a farmer's labor and management is the value he/she would receive if employed in his/her most qualified alternative position.

Other Livestock Expenses - All other dairy herd and livestock expenses not included in more specific categories. Other livestock expenses include; bST, DHIC, registration fees and transfers.

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

Personal Withdrawals and Family Expenditures Including Nonfarm Debt Payments - All the money removed from the farm business for personal or nonfarm use including family living expenses, health and life insurance, income taxes, nonfarm debt payments, and investments.

Profitability - The return or net income the owner/manager receives for using one or more of his or her resources in the farm business. True "economic profit" is what remains after deducting all the costs including the opportunity costs of the owner/manager's labor, management, and equity capital.

Purchased Inputs Cost of Producing Milk - (defined on page 21)

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

Repayment Analysis - An evaluation of the business' ability to make planned debt payments.

Replacement Livestock - Dairy cattle and other livestock purchased to replace those that were culled or sold from the herd during the year.

Return on Equity Capital - (defined on page 9)

Return on Total Capital - (defined on page 9)

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

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

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

Whole Farm Method - A procedure used to calculate costs of producing milk on dairy farms without using enterprise cost accounts. All non-milk receipts are assigned a cost equal to their sale value and deducted from total farm expenses to determine the costs of producing milk.

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

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OTHER A.E.M. EXTENSION BULLETINS

EB No	Title	Fee (if applicable)	Author(s)
2013-12	Dairy Farm Business Summary, Western New York Region, 2012	($12.00)	Knoblauch, W., Dymond, C., Karszes, J., Hanchar, J., Grace, J., Carlberg, V. and J. Petzen
2013-11	Dairy Farm Business Summary, New York Large Herd Farms, 300 Cows or Larger, 2012	($16.00)	Karszes, J., Knoblauch, W. and C. Dymond
2013-10	Milking Center Cost Study, New York State, 2010-2011		Howland, B., Karszes, J. and K. Skellie
2013-09	Marketing Module 8 - Promotion		Gómez, M. and S .Cuellar-Healey
2013-09i	Marketing Module 8 - Promotion Example		Cuellar-Healey, S. and M. Gómez
2013-09ii	Marketing Module 8 - Promotion Teaching Slides		Cuellar-Healey, S. and M. Gómez
2013-08i	Marketing Module 7 - Placement/Distribution Example		Cuellar-Healey, S. and M. Gómez
2013-08ii	Marketing Module 7 - Placement/Distribution Teaching Slides		Cuellar-Healey, S. and M. Gómez
2013-08	Marketing Module 7 - Placement/Distribution		Cuellar-Healey, S. and M. Gómez
2013-07	Marketing Module 6 - Price		Gómez, M. and S .Cuellar-Healey
2013-07i	Marketing Module 6 - Price Teaching Example		Cuellar-Healey, S. and M. Gómez
2013-07ii	Marketing Module 6 - Price Teaching Slides		Cuellar-Healey, S. and M. Gómez
2013-06	Marketing Module 5 - Product		Gómez, M. and S .Cuellar-Healey
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