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DAIRY FARM BUSINESS SUMMARY

DECEMBER 2004 E.B. 2004-21

PRO-DAIRY

NEW YORK SMALL HERD FARMS, 80 COWS OR FEWER 2003

Wayne A. Knoblauch
Linda D. Putnam
Mariane Kiraly
Jason Karszes

Department of Applied Economics and Management
College of Agriculture and Life Sciences
Cornell University, Ithaca, New York 14853-7801

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Small Herd Dairy Farms
80 Cows or Fewer
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2003 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 2003 with herds of 80 cows or fewer and no milking parlors.

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

Program Objective

The primary objective of the dairy farm business summary, DFBS, is to help farm managers improve the business and financial management of their business through appropriate use of historical data and the application of modern farm business analysis techniques. This information can also be used to establish goals that enable the business to better fulfill its mission. In short, DFBS provides business and financial information needed in identifying and evaluating strengths and weaknesses of the farm business.

Format Features

This report follows the same general format as the 2003 DFBS individual farm report received by participating dairy farmers. The analysis tables have a column that compares the average to the top 25% of the farms by rate of return on all capital without appreciation. This report may be used by any dairy farm manager who wants to compare his or her business with the average data of small farms. The individual farm data, the averages and other data can then be used to establish goals for the business. Non-DFBS participants can download a DFBS Data Check-in Form at http://dfbs.cornell.edu. After collecting the data on the form, it can be entered in the U. S. Top Dairies business summary program at the same web site to obtain a summary of their business.

This report features:

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

(2) a complete balance sheet with analytical ratios;

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

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

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

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

(7) a capital and labor efficiency analysis; and

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

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*The small herd summary is comprised of farms with 80 or fewer cows and that do not use a milking parlor. Many counties had farms that met this criteria in 2003. This report was written by Wayne A. Knoblauch, Professor, Farm Management; Mariane Kiraly, Cooperative Extension Educator in Delaware County; and Jason Karszes, Senior Extension Associate, Pro-Dairy. Linda Putnam was in charge of data preparation.

PROGRESS OF THE FARM BUSINESS

2003 will be remembered as one of the worst years for the dairy industry in recent history. However, many historic events strategically worked together in 2003 to make 2004 much better. The unexpected discovery of BSE, worse than usual weather, and the CWT program converged to affect the future of dairy farming in the U.S.

The average herd size of small dairies in the 2003 summary was up by one cow or 1.8 percent over 2002 to 58 cows. Milk sold was down by 1.2 percent and milk per cow was down 2.1 percent largely due to poor crops made in wet weather that were of lesser quality. Although hay dry matter per acre was up 14.3 percent, this was the result of heavy spring rains resulting in a bumper crop of less than desirable quality first cutting. Lower corn silage yields (down nearly 3.3 percent) resulted from excessively wet weather especially around planting time. Extremely low milk prices forced farmers to trim labor as it became a larger portion of a shrinking milk check. Worker equivalents decreased 3.4 percent and cows per worker increased 4 percent. While total labor decreased, hired labor cost as a percent of milk sales jumped 4.9 percent after a 20 percent jump the previous year as health costs continue to rise and benefits become more expensive overall.

Twenty-five-year low milk prices continuing from 2002 forced farmers to cut back on many expenses associated with producing milk, resulting in lower labor and machinery costs per cow, down 1.2 percent, but there were several things outside their control. Purchased feed costs grew to 33 percent of milk sales as a result of shrinking milk checks and poor crops. Luckily, feed was relatively cheap in 2003, and farmers could make up somewhat for the poor hay crop. Farmers cut back on many new investments, even with interest rates at record lows. Existing credit became cheaper and interest costs per hundredweight fell 10 percent. This was a bright light to young and start-up dairies that carry more debt than established dairies. However, increasing costs for most other inputs made the operating cost of producing a hundredweight of milk rise 9.1 percent to $10.55 per hundredweight.

In January of 2003, the World Trade Organization ruled that Canada needed to comply and end the illegal export subsidy of dairy products. By May, raw milk imports were stopped and finished dairy products were reduced. Also in May, BSE was found in Canada. This alarming news sent the beef markets into a tailspin. Confidence in beef fell in the U.S. as well. A 25.4 percent drop in dairy cattle sales per cow resulted, along with a 3.8 percent drop in dairy calf sales per cow. However, the Canadian border closed and milk cow replacements ceased to enter the U.S. market. This would eventually help tighten up the milk market and the replacement market. Tighter restrictions on the mobility of cull cows also forced dairy farmers to cull cows earlier and eliminated the market for downer cows.

Perhaps the most significant event in 2003 was the planning and implementation of the CWT program, a farmer-driven and farmer-controlled self-help program designed to improve milk prices. Large dairy cooperatives worked with the National Milk Producers Federation to agree to reduce cow numbers, increase imports, and limit milk production in a voluntary program. Informational meetings were held across the country and the concept drew strong support. By July, 70 percent of dairy farmers were committed to the program and funded it with $.05 per hundredweight The prospect of removing 33,000 cows from the national herd had a stimulating effect on the milk markets. Even before those cows were eventually retired, milk prices began to rise as supplies were decreasing nationwide and demand rose.

The MILC program continued to pay farmers until late in the year. For small farms, the MILC program provided just enough support to keep them in business during the long milk price slump. However, the assistance did not significantly help larger herds.

Net farm income without appreciation was down 25 percent from 2002 on top of a 47 percent decline the year before. Net farm income with appreciation saw a 20.2 percent increase as cows and real estate became more valuable. There was a negative return to labor and management income, falling 54.2 percent from last year; a 28 percent decline in return to equity capital without appreciation; and a 46.2 percent decline in the rate of return to all capital. Total farm net worth increased a little, by 2.6 percent. Farm debt per cow changed little, decreasing by 0.9 percent.

National and international events have an ever-increasing affect on the dairy industry. Hopefully, small farms can continue to be profitable in a volatile milk price environment. More small dairy farmers are interested in diversifying their operations to reduce risk and to have a more consistent income stream.

PROGRESS OF THE FARM BUSINESS
Same 31 Small Herd Dairy Farms, 2002 & 2003

Selected Factors	Average of 31 Farms 2002	2003	Percent Change
Size of Business			
Average number of cows	57	58	1.8
Average number of heifers	41	40	-2.4
Milk sold, lbs.	1,071,490	1,058,470	-1.2
Worker equivalent	2.32	2.24	-3.4
Total tillable acres	202	203	0.5
Rates of Production			
Milk sold per cow, lbs.	18,661	18,260	-2.1
Hay DM per acre, tons	2.1	2.4	14.3
Corn silage per acre, tons	12.2	11.8	-3.3
Labor Efficiency & Costs			
Cows per worker	25	26	4.0
Milk sold/worker, lbs.	461,849	472,531	2.3
Hired labor cost/cwt.	$0.77	$0.83	7.8
Hired labor cost/worker	$15,981	$14,255	-10.8
Hired labor cost as % of milk sales	6.1%	6.4%	4.9
Cost Control			
Grain & conc. purchased as % of milk sales	30%	33%	10.0
Grain & conc. per cwt. milk	$3.85	$4.21	9.4
Dairy feed & crop expense per cwt. milk	$4.74	$5.11	7.8
Labor & mach. costs/cow	$1,558	$1,539	-1.2
Total farm operating expenses per cwt. sold	$12.80	$13.43	4.9
Interest costs per cwt. milk	$0.60	$0.54	-10.0
Milk marketing costs per cwt. milk sold	$0.99	$0.97	-2.0
Operating cost of producing cwt. of milk	$9.67	$10.55	9.1
Capital Efficiency(average for the year)			
Farm capital per cow	$8,996	$8,989	-0.1
Mach. & equip. per cow	$1,960	$1,938	1.1
Asset turnover ratio	0.34	0.34	0.0
Income Generation			
Gross milk sales per cow	$2,393	$2,364	-1.2
Gross milk sales per cwt.	$12.73	$12.96	1.8
Net milk sales per cwt.	$11.74	$11.99	2.1
Dairy cattle sales per cow	$181	$135	-25.4
Dairy calf sales per cow	$52	$50	-3.8
Government receipts per cwt.	$1.56	$1.53	-1.9
Profitability			
Net farm income w/o apprec.	$16,828	$12,624	-25.0
Net farm income w/apprec.	$18,954	$22,778	20.2
Labor & mgt. income per oper./manager	$-8,278	$-12,766	-54.2
Rate of return on equity capital w/o apprec.	-5.0%	-6.4%	-28.0
Rate of return on all capital w/o apprec.	-2.6%	-3.8%	-46.2
Financial Summary			
Farm net worth, end year	$391,236	$401,444	2.6
Debt to asset ratio	0.24	0.23	-4.2
Farm debt per cow	$2,126	$2,107	-0.9

SUMMARY AND ANALYSIS OF THE FARM BUSINESS

Business Characteristics

Planning optimal management strategies is a crucial component of operating a successful farm. Various combinations of farm resources, enterprises, business arrangements, and management techniques are used by the dairy farmers. The following table shows important farm business characteristics and the number of farms with each characteristic. Farms with a parlor milking system were eliminated from the small herd (80 or fewer cows) group of dairy farms.

BUSINESS CHARACTERISTICS
50 Small Herd Dairy Farms, 2003

Type of Farm	Number
Dairy	50
Part-time dairy	0
Dairy cash-crop	0
Certified organic milk producer	0
Rotational grazing farms	12

Type of Ownership	Number
Owner	50
Renter	0

Type of Business	Number
Sole Proprietorship	39
Partnership	9
Corporation	2

Type of Barn	Number
Stanchion or Tie-Stall	48
Freestall	0
Combination	2

Milking Frequency	Number
2 times per day	49
3 times per day	1
Other	0

Breed of Herd	Percent
Holstein	90
Jersey	6
Other	4

Milking System	Number
Bucket & carry	0
Dumping station	2
Pipeline	48
Herringbone parlor	0
Other parlor	0

Production Records	Number
Testing service	39
On-farm system	1
Other	1
None	9

bST Usage	Number
Used consistently	10
Used inconsistently	3
Started usage in 2003	0
Stopped usage in 2003	0
Not used in 2003	37
Average percent usage, if used	62%

Business Record System	Number
Account Book	19
Accounting Service	9
On-farm computer	17
Other	5

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 2003.

Change in inventory: Increases in inventories of supplies and other purchased inputs are subtracted in computing accrual expenses because they represent purchased inputs not actually used during the year. Decreases in purchased inventories are added to expenses because they represent inputs purchased in a prior year and used this year.

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

CASH AND ACCRUAL FARM EXPENSES
50 Small Herd Dairy Farms, 2003

Expense Item	Cash Paid	-	Change in Inventory or Prepaid Expense	+	Change in Accounts Payable	=	Accrual Expenses
Hired Labor	$ 8,840		$ -14	<<	$ 50		$ 8,904
Feed							
Dairy grain & concentrate	41,949		-338		1,105		43,392
Dairy roughage	2,479		-80		70		2,629
Nondairy	8		0		0		8
Professional nutritional services	31		0	<<	0		31
Machinery							
Machinery hire, rent & lease	2,879		0	<<	-57		2,822
Machinery repairs & farm vehicle exp.	10,332		-19		257		10,608
Fuel, oil & grease	4,596		27		44		4,613
Livestock							
Replacement livestock	3,307		0	<<	122		3,429
Breeding	2,985		37		2		2,951
Veterinary & medicine	4,795		-153		29		4,977
Milk marketing	9,668		0	<<	-9		9,659
Bedding	1,496		-12		-25		1,483
Milking supplies	3,704		0		-5		3,699
Cattle lease & rent	2		0	<<	0		2
Custom boarding	1,028		0	<<	-3		1,025
bST	887		11		-11		865
Livestock professional fees	761		0	<<	18		779
Other livestock expense	3,223		-21		57		3,301
Crops							
Fertilizer & lime	3,212		-315		205		3,732
Seeds & plants	1,576		25		126		1,677
Spray, other crop expense	1,651		99		60		1,612
Crop professional fees	74		0	<<	-3		71
Real Estate							
Land, building & fence repair	2,304		13		156		2,447
Taxes	5,756		-5	<<	-4		5,757
Rent & lease	2,511		0	<<	8		2,519
Other							
Insurance	3,028		0	<<	1		3,029
Utilities (farm share)	6,289		0	<<	-17		6,272
Interest paid	6,209		0	<<	0		6,209
Other professional fees	579		52	<<	0		527
Miscellaneous	1,403		-19		31		1,453
Total Operating	$137,563		$ -713		$ 2,208		$ 140,484
Expansion livestock	204		0	<<	0		204
Extraordinary expense	0		0	<<	0		0
Machinery depreciation							10,422
Building depreciation							3,533
TOTAL ACCRUAL EXPENSES							$ 154,642

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 2003 but not paid for. A decrease is subtracted because it represents payment for resources used before 2003.

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

CASH AND ACCRUAL FARM RECEIPTS
50 Small Herd Dairy Farms, 2003

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts
Milk sales	$ 138,126				$ 1,051		$ 139,177
Dairy cattle	8,771		$ 162		97		9,030
Dairy calves	2,568		233		-32		2,769
Other livestock	427		-429		0		-2
Crops	885		1,229		158		2,272
Government receipts	15,859		60 *		-316		15,603
Custom machine work	270				118		388
Gas tax refund	161				0		161
Other	2,658				-85		2,573
Less nonfarm noncash capital**		(-)	0**			(-)	0
Total Receipts	$ 169,725		$ 1,255		$ 991		$ 171,971

*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 2003 for the 2004 crop year in excess of funds earned for 2003. Likewise, a decrease is added to cash government receipts because it represents funds earned for 2003 but received in 2002.

Changes in accounts receivable are calculated by subtracting beginning year balances from end year balances. Payments in January 2004 for milk produced in December 2003 compared to January 2003 payments for milk produced in 2002 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.

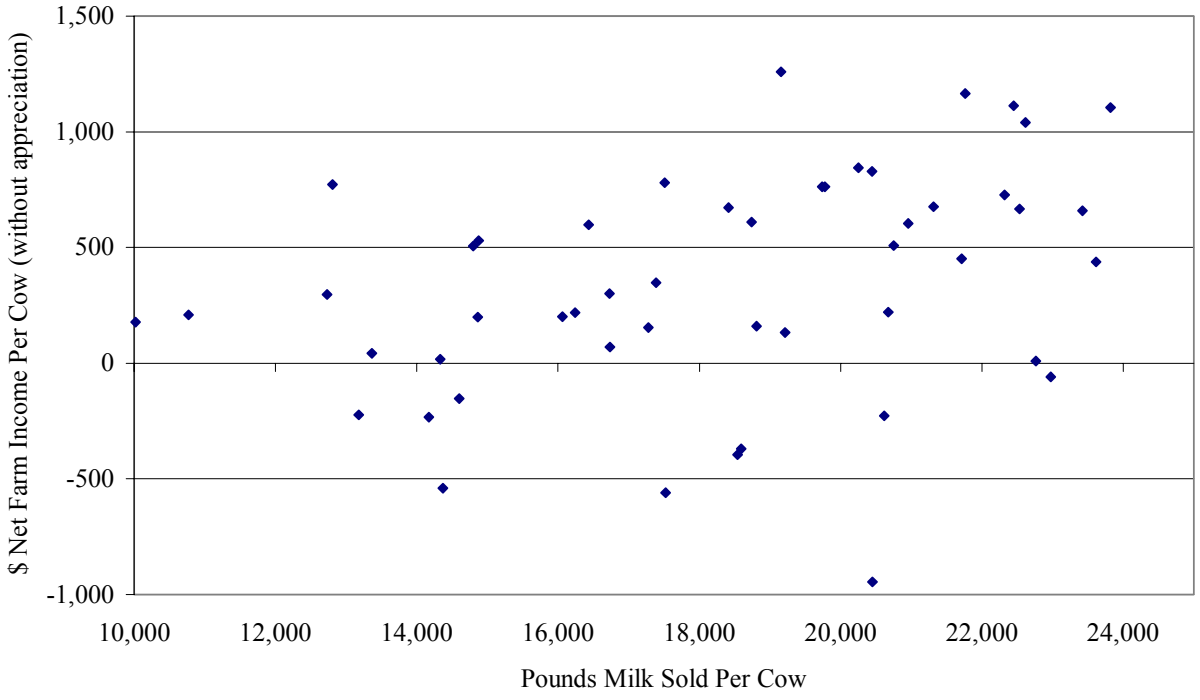
NET FARM INCOME
50 Small Herd Dairy Farms, 2003

Item	Average 50 Farms Total	Average 50 Farms Per Cow	Top 25% Farms* Total	Top 25% Farms* Per Cow
Total accrual receipts	$ 171,971		$ 189,091	
Appreciation: Livestock	1,961		877	
Machinery	1,658		1,449	
Real Estate	9,283		10,505	
Other Stock & Certificates	338		-119	
Total Including Appreciation	$ 185,211		$ 201,803	
Total accrual expenses	- 154,642		- 146,271	
Net Farm Income (with appreciation)	$ 30,569	$ 527	$ 55,532	$ 974
Net Farm Income (without appreciation)	$ 17,329	$ 299	$ 42,820	$ 751

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

The chart below shows the relationship between net farm income per cow (without appreciation) and pounds of milk sold per cow. Generally, farms with a higher production per cow have higher profitability per cow.

NET FARM INCOME PER COW AND MILK PER COW
50 Small Herd Dairy Farms, 2003



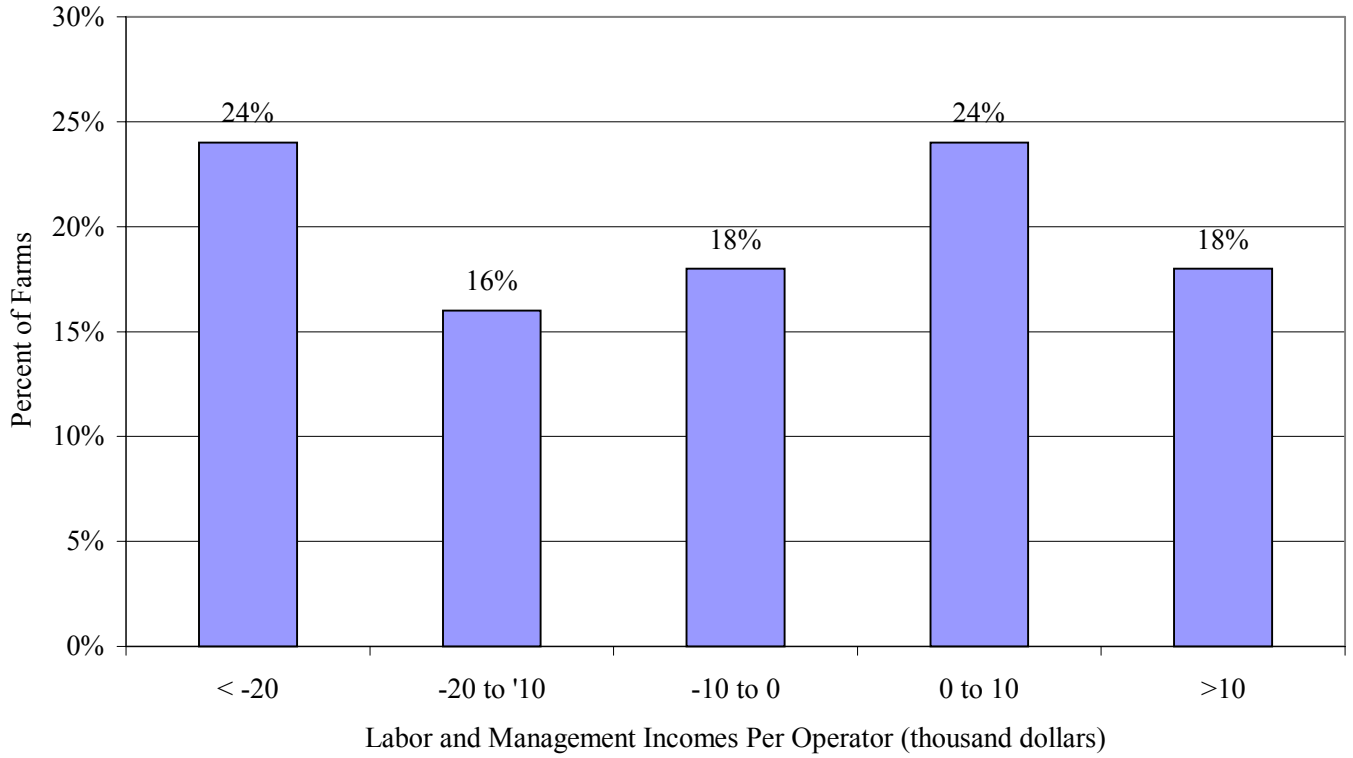
Labor and management income is the return which farm operators receive for their labor and management used in the farm business. Appreciation is not included as part of the return to labor and management because it results from ownership of assets rather than management of the farm business. Labor and management income is calculated by deducting a charge for unpaid family labor and the opportunity cost of equity capital, at a real interest rate of five percent, from net farm income excluding appreciation. The interest charge of five percent reflects the long-term average rate of return above inflation that a farmer might expect to earn in comparable risk investments.

LABOR AND MANAGEMENT INCOME
50 Small Herd Dairy Farms, 2003

Item	Average 50 Farms	Top 25% Farms
Net farm income without appreciation	$ 17,329	$ 42,820
Family labor unpaid @ $2,200 per month	- 11,246	- 4,129
Interest on $384,659 average equity capital @ 5% real rate	- 19,233	- 19,440
($388,803 average equity capital for top 25% farms)		
Labor & Management Income per farm (1.38 Operators/farm)	$ -13,150	$ 19,251
(1.10 operators per farm for top 25% farms)		
Labor & Management Income per Operator/Manager	$ -9,529	$ 17,501

Labor and management income per operator averaged $-9,529 on these 50 farms in 2003. The range in labor and management income per operator was from less than $-120,000 to more than $41,000. Returns to labor and management were negative on 58 percent of the farms. Labor and management income per operator was between $0 and $10,000 on 24 percent of the farms while 18 percent showed labor and management incomes of $10,000 or more per operator.

DISTRIBUTION OF LABOR & MANAGEMENT INCOMES PER OPERATOR
50 Small Herd Dairy Farms, 2003



Return on equity capital measures the net return remaining for the farmer's equity or owned capital after a charge has been made for the owner-operator's labor and management. The earnings or amount of net farm income allocated to labor and management is the opportunity cost of operators' labor and management estimated by the cooperators. Return on equity capital is calculated with and without appreciation. The rate of return on equity capital is determined by dividing the amount returned by the average farm net worth or equity capital. Rate of return on total capital is calculated by adding interest paid to the return on equity capital and then dividing by average farm assets. Net farm income from operations ratio is net farm income (without appreciation) divided by total accrual receipts.

RETURN ON EQUITY CAPITAL AND RETURN ON TOTAL CAPITAL
50 Small Herd Dairy Farms, 2003

Item	Average 50 Farms	Top 25% Farms
Net farm income with appreciation	$ 30,569	$ 55,532
Family labor unpaid @$2,200 per month	- 11,246	- 4,129
Value of operators' labor & management	- 30,557	- 25,923
Return on equity capital with appreciation	$ -11,234	$ 25,480
Interest paid	+ 6,209	+ 4,859
Return on total capital with appreciation	$ -5,025	$ 20,621
Return on equity capital without appreciation	$ -24,474	$ 12,768
Return on total capital without appreciation	$ -18,265	$ 7,909
Rate of return on average equity capital:		
with appreciation	-2.9%	6.6%
without appreciation	-6.4%	3.3%
Rate of return on average total capital:		
with appreciation	-1.0%	4.1%
without appreciation	-3.5%	1.6%
Net farm income from operations ratio	0.10	0.23

Farm and Family Financial Status

The first step in evaluating the financial position of the farm is to construct a balance sheet which identifies and values all the assets and liabilities of the business. The second step is to evaluate the relationship between assets, liabilities, and net worth and changes that occurred during the year.

Financial lease obligations are included in the balance sheet. The present value of all future payments is listed as a liability since the farmer is committed to make the payments by signing the lease. The present value is also listed as an asset, representing the future value the item has to the business. For 2003, lease payments were discounted by 5.5 percent to obtain their present value.

Advanced government receipts are included as current liabilities. Government payments received in 2003 that are for participation in the 2004 program are the end year balance and payments received in 2002 for participation in the 2003 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.

2003 FARM BUSINESS & NONFARM BALANCE SHEET
50 Small Herd Dairy Farms, 2003

Farm Assets	Jan. 1	Dec. 31	Farm Liabilities & Net Worth	Jan. 1	Dec. 31
Current			Current		
Farm cash, checking & savings	$ 5,140	$ 4,467	Accounts payable	$ 4,436	$ 6,644
Accounts receivable	10,095	11,087	Operating debt	6,554	6,608
Prepaid expenses	108	140	Short Term	118	300
Feed & supplies	33,491	33,974	Advanced govt. receipts	60	0
			Current Portion:		
			Intermediate	11,396	11,595
			Long Term	4,118	4,053
Total Current	$ 48,834	$ 49,668	Total Current	$ 26,682	$ 29,200
Intermediate			Intermediate		
Dairy cows:			Structured debt		
owned	$ 72,400	$ 73,676	1-10 years	$ 50,479	$ 48,705
leased	2	0	Financial lease		
Heifers	34,094	35,179	(cattle/machinery)	1,488	1,399
Bulls & other livestock	2,044	1,610	Farm Credit stock	840	824
Mach. & equip. owned	108,917	108,839	Total Intermediate	$ 52,807	$ 50,928
Mach. & equip. leased	1,486	1,399			
Farm Credit stock	840	824			
Other stock/certificate	2,867	3,351			
Total Intermediate	$ 222,650	$ 224,878			
			Long Term		
Long Term			Structured debt		
Land & buildings:			>10 years	$ 60,670	$ 60,904
owned	$ 246,766	$ 257,712	Financial lease		
leased	0	0	(structures)	0	0
Total Long Term	$ 246,766	$ 257,712	Total Long Term	$ 60,670	$ 60,904
			Total Farm Liab.	$ 140,159	$ 141,032
Total Farm Assets	$ 518,250	$ 532,258	FARM NET WORTH	$ 378,091	$ 391,226

Nonfarm Assets, Liabilities & Net Worth (Average of 27 farms reporting)

Assets	Jan. 1	Dec. 31	Liabilities & Net Worth	Jan. 1	Dec. 31
Personal cash, checking & savings	$ 4,081	$ 5,562	Nonfarm Liabilities	$ 1,270	$ 879
Cash value life insurance	12,305	13,294			
Nonfarm real estate	13,808	18,313			
Auto (personal share)	6,074	6,352			
Stocks & bonds	26,940	27,030			
Household furnishings	11,444	11,741			
All other nonfarm assets	2,239	2,146			
Total Nonfarm Assets	$ 76,891	$ 84,438	NONFARM NET WORTH	$ 75,621	$ 83,559

Farm & Nonfarm Assets, Liabilities, and Net Worth*	Jan. 1	Dec. 31
Total Assets	$ 595,141	$ 616,696
Total Liabilities	141,429	141,911
TOTAL FARM & NONFARM NET WORTH	$ 453,712	$ 474,785

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

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

BALANCE SHEET ANALYSIS
50 Small Herd Dairy Farms, 2003

Item			Average 50 Farms		Top 25% Farm
Financial Ratios - Farm:					
Percent equity			74%		77%
Debt/asset ratio: total			0.26		0.23
long-term			0.24		0.23
intermediate/current			0.29		0.23
Leverage ratio			0.36		0.30
Current ratio			1.70		2.02
Working capital	$20,468	As % of total Expenses:	13%	$23,207	16%
Farm Debt Analysis:					
Accounts payable as % of total debt			5%		2%
Long-term liabilities as a % of total debt			43%		48%
Current & intermediate liabilities as a % of total debt			57%		52%
Cost of term debt (weighted average)			4.5%		4.7%
Farm Debt Levels:		Per Cow	Per Tillable Acre Owned	Per Cow	Per Tillable Acre Owned
Total farm debt		$2,390	$1,166	$2,100	$973
Long-term debt		1,032	503	1,015	470
Intermediate & long term		1,895	924	1,703	789
Intermediate & current debt		1,358	662	1,085	503

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

FARM INVENTORY BALANCE
50 Small Herd Dairy Farms, 2003

Item	Average 50 Farms			
	Real Estate		Machinery & Equipment	
Value beginning of year		$ 246,766		$ 108,917
Purchases	$ 5,920*		$ 9,320	
Gift & inheritance	+ 1,000		+ 0	
Lost capital	- 1,234			
Sales	- 490		- 634	
Depreciation	- 3,533		- 10,422	
Net investment		= 1,663		= -1,736
Appreciation		+ 9,283		+ 1,658
Value end of year		$ 257,712		$ 108,839

*$3,034 land and $2,886 buildings and/or depreciable improvements.

The Statement of Owner Equity has two purposes. It allows (1) verification that the accrual income statement and market value balance sheet are consistent (in accountants terms, they reconcile) and (2) identification of the causes of change in equity that occurred on the farm during the year. The Statement of Owner Equity allows you to determine to what degree the change in equity was caused by (1) earnings from the business, and nonfarm income, in excess of withdrawals being retained in the business (called retained earnings), (2) outside capital being invested in the business or farm capital being removed from the business (called contributed/withdrawn capital) , (3) increases or decreases in the value (price) of assets owned by the business (called change in valuation equity), and (4) the error in the business cash flow accounting.

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

STATEMENT OF OWNER EQUITY (RECONCILIATION)
50 Small Herd Dairy Farms, 2003

Item	Average 50 Farms		Top 25% Farms	
Beginning of year farm net worth		$ 378,091		$ 376,575
Net farm income without appreciation	$ 17,329		$ 42,820	
+Nonfarm cash income	+ 8,123		+ 10,999	
-Personal withdrawals & family expenditures excluding nonfarm borrowings	- 29,530		- 38,339	
RETAINED EARNINGS		+ $ -4,078		+$ 15,480
Nonfarm noncash transfers to farm	$ 1,000		$ 0	
+Cash used in business from nonfarm capital	+ 4,105		+ 368	
-Note or mortgage from farm real estate sold (nonfarm)	- 0		- 0	
CONTRIBUTED/WITHDRAWN CAPITAL		+ $ 5,105		+$ 368
Appreciation	$ 13,240		$ 12,712	
-Lost capital	- 1,234		- 2,785	
CHANGE IN VALUATION EQUITY		+ $ 12,006		+$ 9,927
IMBALANCE/ERROR		- $ -102		- $ 1,319
End of year net worth*		= $ 391,226		=$ 401,031

Change in Net Worth		
Without appreciation	$ -105	$11,744
With appreciation	$13,135	$24,456

*May not add to total due to rounding.

Cash Flow Statement

Completing an annual cash flow statement is an important step in understanding the sources and uses of funds for the business. Understanding last year's cash flow is the first step toward planning and managing cash flow for the current and future years.

The annual cash flow statement is structured to show net cash provided by operating activities, investing activities, financing activities and from reserves. All cash inflows and outflows, including beginning and end balances, are included. Therefore, the sum of net cash provided from all four activities should be zero. Any imbalance is the error from incorrect accounting of cash inflows/outflows.

ANNUAL CASH FLOW STATEMENT
50 Small Herd Dairy Farms, 2003

Item			Average 50 Farms	
Cash Flow from Operating Activities				
Cash farm receipts		$ 169,725		
- Cash farm expenses		137,563		
- Extraordinary expense		0		
= Net cash farm income			$ 32,162	
Personal withdrawals & family expenses including nonfarm debt payments		$ 29,662		
- Nonfarm income		8,123		
- Net cash withdrawals from the farm			$ 21,539	
= Net Provided by Operating Activities				$ 10,623
Cash Flow From Investing Activities				
Sale of assets:	machinery	$ 634		
	+ real estate	490		
	+ other stock & cert.	39		
= Total asset sales			$ 1,163	
Capital purchases:	expansion livestock	$ 204		
	+ machinery	9,320		
	+ real estate	5,920		
	+ other stock & cert.	184		
- Total invested in farm assets			$ 15,628	
= Net Provided by Investment Activities				$ -14,465
Cash Flow From Financing Activities				
Money borrowed (intermediate & long term)		$ 14,751		
+ Money borrowed (short term)		370		
+ Increase in operating debt		54		
+ Cash from nonfarm capital used in business		4,105		
+ Money borrowed - nonfarm		132		
= Cash inflow from financing			$ 19,412	
Principal payments (intermediate & long term)		$ 16,155		
+ Principal payments (short term)		188		
+ Decrease in operating debt		0		
- Cash outflow for financing			$ 16,343	
= Net Provided by Financing Activities				$ 3,069
Cash Flow From Reserves				
Beginning farm cash, checking & savings			$ 5,140	
- Ending farm cash, checking & savings			4,467	
= Net Provided from Reserves				$ 673
Imbalance (error)				$ -100

ANNUAL CASH FLOW STATEMENT
Top 25% Small Herd Dairy Farms, 2003

Item			Top 25% Farms		
Cash Flow from Operating Activities					
Cash farm receipts		$ 182,082			
- Cash farm expenses		136,093			
- Extraordinary expense		0			
= Net cash farm income			$ 45,989		
Personal withdrawals & family expenses including nonfarm debt payments		$ 38,688			
- Nonfarm income		10,999			
- Net cash withdrawals from the farm			$ 27,689		
= Net Provided by Operating Activities				$	18,300
Cash Flow From Investing Activities					
Sale of assets:	machinery	$ 58			
	+ real estate	0			
	+ other stock & cert.	51			
= Total asset sales			$ 109		
Capital purchases:	expansion livestock	$ 508			
	+ machinery	10,199			
	+ real estate	13,794			
	+ other stock & cert.	355			
- Total invested in farm assets			$ 24,856		
= Net Provided by Investment Activities				$	-24,747
Cash Flow From Financing Activities					
Money borrowed (intermediate & long term)		$ 23,638			
+ Money borrowed (short term)		577			
+ Increase in operating debt		0			
+ Cash from nonfarm capital used in business		368			
+ Money borrowed - nonfarm		349			
= Cash inflow from financing			$ 24,932		
Principal payments (intermediate & long term)		$ 16,152			
+ Principal payments (short term)		423			
+ Decrease in operating debt		1,083			
- Cash outflow for financing			$ 17,658		
= Net Provided by Financing Activities				$	7,274
Cash Flow From Reserves					
Beginning farm cash, checking & savings			$ 4,147		
- Ending farm cash, checking & savings			3,654		
= Net Provided from Reserves				$	493
Imbalance (error)				$	1,320

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 2004. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 2004 debt payments shown below.

FARM DEBT PAYMENTS PLANNED
Small Herd Dairy Farms, 2002 & 2003

	Same 31 Dairy Farms			Same 8 Top 25% Farms		
	2003 Payments		Planned	2003 Payments		Planned
Debt Payments	Planned	Made	2004	Planned	Made	2004
Long-term	$ 6,139	$ 5,982	$ 6,503	$ 9,990	$ 9,922	$ 10,143
Intermediate-term	14,830	16,031	14,635	10,820	10,435	11,190
Short-term	27	311	421	0	715	255
Operating (net reduction)	483	3,868	632	1,724	2,003	0
Accounts payable (net reduction)	123	772	164	0	9	2
Total	$ 21,602	$ 26,964	$ 22,355	$ 22,534	$ 23,084	$ 21,590
Per cow	$ 372	$ 465		$ 395	$ 405	
Per cwt. 2003 milk	$ 2.04	$ 2.55		$ 1.94	$ 1.99	
Percent of total 2003 receipts	13%	16%		12%	12%	
Percent of 2003 milk receipts	16%	20%		15%	15%	

The cash flow coverage ratio and debt coverage ratio measure the ability of the farm business to meet its planned debt payments schedule. The ratios show the percentage of payments planned for 2003 (as of December 31, 2002) that could have been made with the amount available for debt service in 2003. Farmers who did not participate in DFBS in 2002 have their 2003 cash flow coverage ratio based on planned debt payments for 2004.

COVERAGE RATIOS
Same 31 Small Herd Dairy Farms, 2002 & 2003

Item	Average	Item	Average
Cash Flow Coverage Ratio		Debt Coverage Ratio	
Cash farm receipts	$170,140	Net farm income (without appreciation)	$12,624
- Cash farm expenses	138,808	+ Depreciation	12,872
+ Interest paid (cash)	5,696	+ Interest paid (accrual)	5,696
- Net personal withdrawals from farm*	20,208	- Net personal withdrawals from farm*	20,208
(A) = Amount Available for Debt Service	$ 16,820	(A') = Repayment Capacity	$10,984
(B) = Debt Payments Planned for 2003 (as of December 31, 2002)	$ 21,602	(B) = Debt Payments Planned for 2003 (as of December 31, 2002)	$21,602
(A/ B)= Cash Flow Coverage Ratio for 2003	0.78	(A'/B)= Debt Coverage Ratio for 2003	0.51

Same 8 Top 25% Dairy Farms, 2002 & 2003

(A) = Amount Available for Debt Service	$ 25,063	(A') = Repayment Capacity	$ 27,390
(B) = Debt Payments Planned for 2003	22,534	(B) = Debt Payments Planned for 2003	22,534
(A/ B)= Cash Flow Coverage Ratio for 2003	1.11	(A'/B)= Debt Coverage Ratio for 2003	1.22

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

ANNUAL CASH FLOW WORKSHEET

50 Small Herd Dairy Farms, 2003

Item	Average 50 Farms Per Cow	Per Cwt.	Total
Number cows and cwt. milk	58	10,644	
Accrual Operating Receipts			
Milk	$ 2,400	$ 13.08	$ 139,177
Dairy cattle	156	0.85	9,030
Dairy calves	48	0.26	2,769
Other livestock	0	0.00	-2
Crops	39	0.21	2,272
Miscellaneous receipts	323	1.76	18,725
Total	$ 2,965	$ 16.16	$ 171,971
Accrual Operating Expenses			
Hired labor	$ 154	$ 0.84	$ 8,904
Dairy grain & concentrate	748	4.08	43,392
Dairy roughage	45	0.25	2,629
Nondairy feed	0	0.00	8
Professional nutritional services	1	0.00	31
Mach. hire/rent/lease	49	0.27	2,822
Mach. repair & farm vehicle expense	183	1.00	10,608
Fuel, oil & grease	80	0.43	4,613
Replacement livestock	59	0.32	3,429
Breeding	51	0.28	2,951
Vet & medicine	86	0.47	4,977
Milk marketing	167	0.91	9,659
Bedding	26	0.14	1,483
Milking supplies	64	0.35	3,699
Cattle lease	0	0.00	2
Custom boarding	18	0.10	1,025
bST expense	15	0.08	865
Livestock professional fees	13	0.07	779
Other livestock expense	57	0.31	3,301
Fertilizer & lime	64	0.35	3,732
Seeds & plants	29	0.16	1,677
Spray/other crop expenses	28	0.15	1,612
Crop professional fees	1	0.01	71
Land, building, fence repair	42	0.23	2,447
Taxes	99	0.54	5,757
Real estate rent/lease	43	0.24	2,519
Insurance	52	0.28	3,029
Utilities	108	0.59	6,272
Miscellaneous	34	0.19	1,980
Total Less Interest Paid	$ 2,315	$ 12.62	$ 134,275
Net Accrual Operating Income (without interest paid)	$ 650	$ 3.54	$ 37,696
- Change in livestock/crop inventory*	22	0.12	1,255
- Change in accounts receivable	17	0.09	991
- Change in feed/supply inventory**	-12	-0.07	-713
+ Change in accts. payable***	38	0.21	2,208
NET CASH FLOW	$ 662	$ 3.61	$ 38,371
- Net personal withdrawals from farm (see footnote on p. 16)	$ 369	$ 2.01	$ 21,406
Available for Farm Debt Payments & Investments	$ 293	$ 1.59	$ 16,965
- Farm debt payments	441	2.41	25,606
Available for Farm Investment	$ -149	$ -0.81	$ -8,641
- Capital purchases: cattle, machinery & improvements	$ 269	$ 1.47	$ 15,628
Additional Capital Needed	$ 418	$ 2.28	$ 24,269

*Includes change in advance government receipts. **Includes change in prepaid expenses.
***Excludes change in interest account payable.

ANNUAL CASH FLOW WORKSHEET

Top 25% Small Herd Dairy Farms, 2003

Item	Average Top 25% Farms		
	Per Cow	Per Cwt.	Total
No. cows or cwt. milk	57	11,608	
Accrual Operating Receipts			
Milk	$ 2,640	$ 12.96	$ 150,466
Dairy cattle	234	1.15	13,360
Dairy calves	60	0.30	3,432
Other livestock	4	0.02	220
Crops	16	0.08	885
Misc. receipts	364	1.79	20,728
Total	$ 3,317	$ 16.29	$ 189,091
Accrual Operating Expenses			
Hired labor	$ 165	$ 0.81	$ 9,413
Dairy grain & concentrate	696	3.42	39,668
Dairy roughage	81	0.40	4,629
Nondairy feed	1	0.00	32
Professional nutritional services	0	0.00	12
Mach. hire/rent/lease	40	0.20	2,279
Mach. repair & farm vehicle expense	202	0.99	11,532
Fuel, oil & grease	77	0.38	4,400
Replacement livestock	27	0.13	1,562
Breeding	53	0.26	3,046
Vet & medicine	85	0.42	4,873
Milk marketing	172	0.84	9,789
Bedding	24	0.12	1,381
Milking supplies	69	0.34	3,951
Cattle lease	0	0.00	0
Custom boarding	21	0.11	1,220
bST expense	20	0.10	1,139
Livestock professional fees	14	0.07	787
Other livestock expense	51	0.25	2,931
Fertilizer & lime	61	0.30	3,450
Seeds & plants	29	0.14	1,676
Spray/other crop expenses	21	0.10	1,213
Crop professional fees	1	0.00	43
Land, building, fence repair	50	0.25	2,877
Taxes	96	0.47	5,455
Real estate rent/lease	30	0.15	1,688
Insurance	44	0.22	2,520
Utilities	106	0.52	6,018
Miscellaneous	38	0.19	2,204
Total Less Interest Paid	$ 2,277	$ 11.18	$ 129,788
Net Accrual Operating Income			
(without interest paid)	$ 1,040	$ 5.11	$ 59,303
- Change in livestock/crop inventory*	97	0.48	5,530
- Change in accounts receivable	26	0.13	1,479
- Change in feed/supply inventory**	41	0.20	2,309
+ Change in accounts payable***	15	0.07	862
NET CASH FLOW	$ 892	$ 4.38	$ 50,847
- Net personal withdrawals from farm (see footnote p.16)	$ 480	$ 2.36	$ 27,340
Available for Farm Debt Payments & Investments	$ 412	$ 2.03	$ 23,507
- Farm debt payments	396	1.95	22,580
Available for Farm Investment	$ 16	$ 0.08	$ 927
- Capital purchases: cattle, machinery & improvements	$ 436	$ 2.14	$ 24,856
Additional Capital Needed	$ 420	$ 2.06	$ 23,929

*Includes change in advance government receipts. **Includes change in prepaid expenses.
***Excludes change in interest account payable.

Cropping Analysis

The cropping program is an important part of the dairy farm business and often represents opportunities for improved productivity and profitability. A complete evaluation of what the available land resources are, how they are being used, the level of crop yields, and what it costs to produce crops is important in evaluating alternative cropping and feed purchasing alternatives.

LAND RESOURCES AND CROP PRODUCTION
50 Small Herd Dairy Farms, 2003

Item	Average 50 Farms			Top 25% Farm		
Land	Owned	Rented	Total	Owned	Rented	Total
Tillable	121	84	205	123	61	184
Nontillable	50	13	63	33	17	50
Other nontillable	83	8	91	102	5	107
Total	254	105	359	258	83	341
Crop Yields	Farms	Acres*	Prod/Acre	Farms	Acres	Prod/Acre
Hay crop	49	132	2.36 tn DM	12	119	2.55 tn DM
Corn silage	40	41	14.12 tn	11	39	15.05 tn
			4.76 tn DM			5.05 tn DM
Other forage	5	24	0.98 tn DM	2	21	2.00 tn DM
Total forage	49	167	2.83 tn DM	12	159	3.09 tn DM
Corn grain	14	35	106 bu	4	23	111 bu
Oats	4	24	56 bu	0	0	0 bu
Wheat	1	22	32 bu	0	0	0 bu
Other crops	5	14		0	0	
Tillable pasture	19	33		4	33	
Idle	17	46		4	58	
Total Tillable Acres	50	205		13	184	

*This column represents the average acreage for the farms producing that crop. Average acreages including those farms not producing were hay crop 129, corn silage 32, corn grain 10, oats 2, tillable pasture 12, and idle 16.

Average crop acres and yields compiled for the region are for the farms reporting each crop. Yields of forage crops have been converted to tons of dry matter using dry matter coefficients reported by the farmers. Grain production has been converted to bushels of dry grain equivalent based on dry matter information provided.

The following crop/dairy ratios indicate the relationship between forage production, forage production resources, and the dairy herd.

CROP/DAIRY RATIOS
50 Small Herd Dairy Farms, 2003

Item	Average 50 Farms	Top 25% Farm
Total tillable acres per cow	3.53	3.23
Total forage acres per cow	2.83	2.56
Harvested forage dry matter, tons per cow	7.98	7.95

Cropping Analysis (continued)

A number of cooperators have allocated crop expenses among the hay crop, corn, and other crops produced. Fertilizer and lime, seeds and plants, and spray and other crop expenses have been computed per acre and per production unit for hay and corn. Additional expense items such as fuels, labor, and machinery repairs are not included. Rotational grazing was used on 12 farms, 4 of which are in the "top 25% farms" group.

CROP RELATED ACCRUAL EXPENSES
Small Herd Dairy Farms Reporting, 2003

Item	Total Per Tillable Acre	All Corn Per Acre	Corn Silage Per Ton DM	Corn Grain Per Dry Sh. Bu.	Hay Crop Per Acre	Hay Crop Per Ton DM	Pasture Per Tillable Acre	Pasture Per Total Acre
No. of farms reporting	50	7			7		3	
Ave. number of acres	205	59			133		27	118
Fert. & lime	$ 18.20	$ 43.23	$ 8.15	$ 0.28	$ 16.27	$ 7.26	$ 37.88	$ 20.74
Seeds & plants	8.18	40.77	7.81	0.19	4.86	2.10	2.48	2.48
Spray & other crop expense	8.21	23.64	4.45	0.10	7.17	4.06	0.00	0.00
TOTAL	$ 34.59	$ 107.64	$ 20.41	$ 0.57	$ 28.30	$ 13.42	$ 40.36	$ 23.22
Top 25% Farms								
No. of farms reporting	13	3			3		0	
Ave. number of acres	184	49			159		0	0
Fert. & lime	$ 18.75	$ 40.43	$ 6.71	$ 0.23	$ 15.53	$ 6.74	$ 0.00	$ 0.00
Seeds & plants	9.11	43.68	7.29	0.21	5.00	1.70	0.00	0.00
Spray & other crop exp.	6.83	37.90	6.53	0.23	2.71	1.30	0.00	0.00
TOTAL	$ 34.69	$ 122.01	$ 20.53	$ 0.67	$ 23.24	$ 9.74	$ 0.00	$ 0.00

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
50 Small Herd Dairy Farms, 2003

Machinery Expense	Average 50 Farms Total Expenses	Average 50 Farms Per Tillable Acre	Top 25% Farms Total Expenses	Top 25% Farms Per Tillable Acre
Fuel, oil & grease	$ 4,613	$ 22.50	$ 4,400	$ 23.91
Mach. repair & vehicle exp.	10,608	51.75	11,532	62.67
Machine hire, rent & lease	2,822	13.77	2,279	12.39
Interest (5%)	5,516	26.91	5,228	28.41
Depreciation	10,422	50.84	8,664	47.09
Total	$ 33,981	$ 165.76	$ 32,103	$ 174.47

Dairy Analysis

Analysis of the dairy enterprise can reveal strengths and weaknesses of the dairy farm business. Information on this page should be used in conjunction with DHI and other dairy production information. Changes in dairy herd size and market values that occur during the year are identified in the table below. The change in inventory value without appreciation is attributed to physical changes in herd size and quality. Any change in inventory is included as an accrual farm receipt when calculating all of the profitability measures on pages 8 and 9.

DAIRY HERD INVENTORY
50 Small Herd Dairy Farms, 2003

	Dairy Cows		Heifer					
			Bred		Open		Calves	
Item	No.	Value	No.	Value	No.	Value	No.	Value
Average 50 Farms:								
Beg. year (owned)	58	$ 72,400	14	$ 16,301	15	$ 12,170	13	$ 5,623
+ Change w/o apprec.		-172		-24		358		233
+ Appreciation		1,448		252		82		184
End year (owned)	59	$ 73,676	14	$ 16,529	16	$ 12,610	14	$ 6,040
End including leased	59							
Average number	58		43	(all age groups)				
Top 25% Farms:								
Beg. year (owned)	55	$ 68,108	14	$ 16,577	14	$ 11,508	12	$ 6,085
+ Change w/o apprec.		1,938		1,362		885		1,131
+ Appreciation		585		338		-185		185
End year (owned)	57	$ 70,631	15	$ 18,277	15	$ 12,208	15	$ 7,401
End including leased	57							
Average number	57		43	(all age groups)				

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

MILK PRODUCTION
50 Small Herd Dairy Farms, 2003

Item	Average 50 Farms	Top 25% Farms
Total milk sold, lbs.	1,064,351	1,160,849
Milk sold per cow, lbs.	18,332	20,476
Average milk plant test, percent butterfat	3.68	3.64

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

ANIMALS LEAVING THE HERD
50 Small Herd Dairy Farms, 2003

	Average 50 Farms		Top 25% Farms	
Item	Number	Percent*	Number	Percent*
Cows sold for beef	13	22.4	10	17.5
Cows sold for dairy	1	1.7	1	1.8
Cows died	3	5.2	2	3.5
Culling rate**		27.6		21.1

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

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

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

50 Small Herd Dairy Farms, 2003

	Average 50 Farms			Top 25% Farms		
Item	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Accrual Cost of Producing Milk						
Operating costs	$ 107,895	$ 1,860	$ 10.14	$ 96,529	$ 1,693	$ 8.32
Purchased inputs costs	$ 121,849	$ 2,101	$ 11.45	$ 107,646	$ 1,889	$ 9.27
Total Costs	$ 182,885	$ 3,153	$ 17.18	$ 157,138	$ 2,757	$ 13.54
Accrual Receipts From Milk	$ 139,177	$ 2,400	$ 13.08	$ 150,466	$ 2,640	$ 12.96
Net Milk Receipts	$ 129,518	$ 2,233	$ 12.17	$ 140,677	$ 2,468	$ 12.12
Net Farm Income without Apprec.	$ 17,329	$ 299	$ 1.63	$ 42,820	$ 751	$ 3.69
Net Farm Income with Apprec.	$ 30,569	$ 527	$ 2.87	$ 55,532	$ 974	$ 4.78

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

DAIRY RELATED ACCRUAL EXPENSES

50 Small Herd Dairy Farms, 2003

	Average 50 Farms		Top 25% Farms	
Item	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purchased dairy grain & concentrate	$ 748	$ 4.08	$ 696	$ 3.42
Purchased dairy roughage	45	0.25	81	0.40
Total Purchased Dairy Feed	$ 793	$ 4.33	$ 777	$ 3.82
Purchased grain & conc. as % of milk receipts	31%		26%	
Purchased feed & crop exp.	$ 916	$ 4.99	$ 889	$ 4.37
Purchased feed & crop exp. as % of milk receipts	38%		34%	
Breeding	$ 51	$ 0.28	$ 53	$ 0.26
Veterinary & medicine	86	0.47	85	0.42
Milk marketing	167	0.91	172	0.84
Bedding	26	0.14	24	0.12
Milking supplies	64	0.35	69	0.34
Cattle lease	0	0.00	0	0.00
Custom boarding	18	0.10	21	0.11
bST	15	0.08	20	0.10
Other livestock expense	57	0.31	51	0.25

Capital and Labor Efficiency Analysis

Capital efficiency factors measure how effectively the capital is being used in the farm business. Measures of labor efficiency are key indicators of management's success in generating products per unit of labor input.

CAPITAL EFFICIENCY
50 Small Herd Dairy Farms, 2003

Item	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
Average 50 Farms:				
Farm capital	$234,488	$9,056	$2,562	$4,341
Real estate		4,349		2,085
Machinery & equipment	49,250	1,902	538	
Ratios				
Asset turnover	Operating Expense	Interest Expense	Depreciation Expense	
0.35	0.78	0.04	0.08	
Top 25% Farms:				
Farm capital	$282,056	$8,858	$2,744	$4,105
Real estate		4,288		1,987
Machinery & equipment	58,414	1,834	568	
Ratios				
Asset turnover	Operating Expense	Interest Expense	Depreciation Expense	
0.40	0.68	0.03	0.06	

LABOR FORCE INVENTORY AND ANALYSIS
50 Small Herd Dairy Farms, 2003

Labor Force	Months	Age	Years of Educ.	Value of Labor & Mgmt.
Average 50 Farms:				
Operator number 1	13.2	48	13	$ 25,160
Operator number 2	3.1	46	13	4,880
Operator number 3	0.4	54	12	517
Family paid	1.9			
Family unpaid	5.1			
Hired	3.2			
Total	26.9	/ 12 = 2.24 Worker Equivalent		
		1.38 Operator/Manager Equivalent		
Top 25% Farms: Total	21.5	/ 12 = 1.79 Worker Equivalent		
Operator's		1.10 Operator/Manager Equivalent		

Labor Efficiency	Average 50 Farms		Top 25% Farms	
	Total	Per Worker	Total	Per Worker
Cows, average number	58	26	57	32
Milk sold, pounds	1,064,351	475,157	1,160,849	648,519
Tillable acres	205	92	184	103

Labor Costs	Average 50 Farms			Top 25% Farms		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Value of operator(s) labor ($2,200/mo.)	$ 36,551	$ 630	$ 3.43	$29,091	$ 510	$ 2.51
Family unpaid ($2,200/mo.)	11,246	194	1.06	4,129	72	0.36
Hired	8,904	154	0.84	9,413	165	0.81
Total Labor	$ 56,701	$ 978	$ 5.33	$42,633	$ 747	$ 3.68
Machinery Cost	$ 33,981	$ 586	$ 3.19	$32,103	$ 563	$ 2.77
Total Labor & Machinery	$ 90,682	$ 1,564	$ 8.52	$74,736	$ 1,310	$ 6.45
Hired labor expense per hired worker equivalent		$20,951			$17,760	
Hired labor expense as % of milk sales		6.4%			6.3%	

COMPARATIVE ANALYSIS OF THE FARM BUSINESS

Comparison to Top 25 Percent

Comparing your business with average data from DFBS cooperators that participated in both of the last two years can be helpful in establishing your goals for these parameters. Both the average of the same 31 farms and the top 25% of farms based on rate of return of all assets without appreciation are presented below. It is equally important for you to determine the progress your business has made over the past two or three years, to compare this progress to your goals, and to set goals for the future.

PROGRESS OF THE FARM BUSINESS
Same 31 Small Herd Dairy Farms, 2002 & 2003

	Average of Same 31 Farms*		Average of Same 8 Top 25% Farms*	
Selected Factors	2002	2003	2002	2003
Size of Business				
Average number of cows	57	58	55	57
Average number of heifers	41	40	42	40
Milk sold, lbs.	1,071,490	1,058,470	1,102,707	1,161,119
Worker equivalent	2.32	2.24	2.01	1.93
Total tillable acres	202	203	191	191
Rates of Production				
Milk sold per cow, lbs.	18,661	18,260	20,049	20,237
Hay DM per acre, tons	2.1	2.4	2.0	2.4
Corn silage per acre, tons	12.2	11.8	13.2	14.9
Labor Efficiency				
Cows per worker	25	26	27	30
Milk sold/worker, lbs.	461,849	472,531	548,610	601,616
Cost Control				
Grain & concentrate purchased as % of milk sales	30%	33%	29%	27 %
Dairy feed & crop expense per cwt. milk	$ 4.74	$ 5.11	$ 4.45	$ 4.36
Labor & mach. costs/cow	$ 1,558	$ 1,539	$ 1,505	$ 1,332
Operating cost of producing cwt. of milk	$ 9.67	$ 10.55	$ 8.78	$ 8.73
Capital Efficiency**				
Farm capital per cow	$ 8,996	$ 8,989	$ 9,966	$ 9,843
Mach. & equip. per cow	$ 1,960	$ 1,938	$ 1,824	$ 1,835
Asset turnover ratio	0.34	0.34	0.33	0.35
Profitability				
Net farm income without apprec.	$ 16,828	$ 12,624	$ 24,371	$ 39,349
Net farm income with apprec.	$ 18,954	$ 22,778	$ 31,551	$ 50,670
Labor & management income per operator/manager	$ -8,278	$ -12,766	$ -2,719	$ 11,699
Rate of return on equity capital with appreciation	-4.5%	-3.9%	0.5%	4.9%
Rate of return on all capital with appreciation	-2.2%	-2.4%	1.4%	4.8%
Financial Summary				
Farm net worth, end year	$ 391,236	$ 401,444	$ 447,442	$ 469,026
Debt to asset ratio	0.24	0.23	0.19	0.18
Farm debt per cow	$ 2,126	$ 2,107	$ 1,824	$ 1,786

*Farms participating both years.
**Average for the year.

RECEIPTS AND EXPENSES PER COW AND PER CWT.
Same 31 Small Herd Dairy Farms, 2002 & 2003

	2002		2003	
Item	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	57		58	
Cwt. Of Milk Sold		10,715		10,585
ACCRUAL OPERATING RECEIPTS				
Milk	$ 2,393	$ 12.73	$ 2,364	$ 12.96
Dairy cattle	181	0.96	135	0.74
Dairy calves	52	0.27	50	0.27
Other livestock	25	0.13	1	0.01
Crops	0	0.00	4	0.02
Miscellaneous receipts	361	1.92	338	1.85
Total Receipts	$ 3,011	$ 16.02	$ 2,892	$ 15.85
ACCRUAL OPERATING EXPENSES				
Hired labor	$ 145	$ 0.77	$ 152	$ 0.83
Dairy grain & concentrate	723	3.85	769	4.21
Dairy roughage	34	0.18	30	0.17
Nondairy feed	1	0.01	0	0.00
Professional nutritional services	NA*	NA*	0	0.00
Machine hire/rent/lease	55	0.29	58	0.32
Mach. repair & vehicle exp.	187	1.00	192	1.05
Fuel, oil & grease	70	0.37	78	0.43
Replacement livestock	43	0.23	66	0.36
Breeding	56	0.30	53	0.29
Veterinary & medicine	90	0.48	86	0.47
Milk marketing	186	0.99	177	0.97
Bedding	21	0.11	23	0.13
Milking supplies	79	0.42	67	0.37
Cattle lease	1	0.00	0	0.00
Custom boarding	13	0.07	13	0.07
bST expense	13	0.07	14	0.08
Livestock professional fees	NA*	NA*	14	0.08
Other livestock expense	49	0.26	51	0.28
Fertilizer & lime	69	0.37	74	0.41
Seeds & plants	37	0.20	27	0.15
Spray/other crop expense	28	0.15	28	0.16
Crop professional fees	NA*	NA*	2	0.01
Land, building, fence repair	44	0.23	40	0.22
Taxes	86	0.46	103	0.56
Real estate rent/lease	37	0.20	38	0.21
Insurance	68	0.36	54	0.29
Utilities	114	0.60	111	0.61
Interest paid	113	0.60	98	0.54
Other professional fees	NA*	NA*	11	0.06
Miscellaneous	43	0.23	25	0.14
Total Operating Expenses	$ 2,406	$ 12.80	$ 2,452	$ 13.43
Expansion Livestock	31	0.16	2	0.01
Extraordinary Expense	NA*	NA*	0	0.00
Machinery Depreciation	207	1.10	163	0.89
Real Estate Depreciation	73	0.39	59	0.32
Total Expenses	$ 2,717	$ 14.45	$ 2,676	$ 14.65
Net Farm Income Without Appreciation	$ 294	$ 1.57	$ 216	$ 1.20

*NA = not available in 2002 data. Expense was included in other categories.

RECEIPTS AND EXPENSES PER COW AND PER CWT.
Same 8 Top 25% Small Herd Dairy Farms, 2002 & 2003

	2002		2003	
Item	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	55		57	
Cwt. Of Milk Sold		11,027		11,611
ACCRUAL OPERATING RECEIPTS				
Milk	$ 2,505	$ 12.49	$ 2,618	$ 12.85
Dairy cattle	185	0.92	181	0.89
Dairy calves	55	0.28	41	0.20
Other livestock	12	0.06	4	0.02
Crops	1	0.00	29	0.14
Miscellaneous receipts	383	1.91	400	1.97
Total Receipts	$ 3,141	$ 15.67	$ 3,273	$ 16.07
ACCRUAL OPERATING EXPENSES				
Hired labor	$ 184	$ 0.92	$ 200	$ 0.98
Dairy grain & concentrate	714	3.56	699	3.43
Dairy roughage	37	0.19	49	0.24
Nondairy feed	0	0.00	0	0.00
Professional nutritional services	NA*	NA*	0	0.00
Machine hire/rent/lease	42	0.21	60	0.29
Mach. repair & vehicle exp.	237	1.18	217	1.06
Fuel, oil & grease	76	0.38	85	0.42
Replacement livestock	4	0.02	31	0.15
Breeding	54	0.27	51	0.25
Veterinary & medicine	82	0.41	85	0.42
Milk marketing	184	0.92	195	0.96
Bedding	18	0.09	20	0.10
Milking supplies	67	0.33	74	0.36
Cattle lease	0	0.00	0	0.00
Custom boarding	7	0.04	8	0.04
bST expense	22	0.11	25	0.12
Livestock professional fees	NA*	NA*	14	0.07
Other livestock expense	58	0.29	45	0.22
Fertilizer & lime	73	0.36	81	0.40
Seeds & plants	37	0.19	34	0.17
Spray/other crop expense	30	0.15	25	0.12
Crop professional fees	NA*	NA*	0	0.00
Land, building, fence repair	40	0.20	36	0.18
Taxes	94	0.47	101	0.50
Real estate rent/lease	17	0.08	16	0.08
Insurance	56	0.28	44	0.22
Utilities	111	0.55	107	0.53
Interest paid	98	0.49	83	0.41
Other professional fees	NA*	NA*	9	0.04
Miscellaneous	52	0.26	37	0.18
Total Operating Expenses	$ 2,394	$ 11.94	$ 2,433	$ 11.94
Expansion Livestock	3	0.01	0	0.00
Extraordinary Expense	NA*	NA*	0	0.00
Machinery Depreciation	211	1.05	97	0.47
Real Estate Depreciation	90	0.45	53	0.26
Total Expenses	$ 2,698	$ 13.46	$ 2,583	$ 12.68
Net Farm Income Without Appreciation	$ 443	$ 2.21	$ 690	$ 3.39

*NA = not available in 2002 data. Expense was included in other categories.

Regional Farm Business Chart

The Farm Business Chart is a tool which can be used in analyzing your business. Compare your business by drawing a line through or near the figure in each column which represents your current level of performance. The five figures in each column represent the average of each 20 percent or quintile of farms included in the regional summary. Use this information to identify business areas where more challenging goals are needed.

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS
50 Small Herd Dairy Farms, 2003

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
(11)*	(11)	(11)	(10)	(9)	(9)	(11)	(11)
3.50	76	1,526,364	22,828	3.5	22	43	806,537
2.44	68	1,215,582	20,696	2.8	16	32	592,103
2.04	58	1,070,067	18,624	2.4	15	27	503,868
1.84	50	906,610	16,141	2.0	12	23	403,367
1.36	38	603,133	13,034	1.2	8	17	268,883

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
(10)	(10)	(11)	(11)	(10)	(10)		
$ 427	21%	$ 349	$ 1,047	$ 551	$ 3.64	0.0%	9.9%
632	26	473	1,372	787	4.19	1.3	17.0
740	30	568	1,497	890	4.66	3.3	22.2
844	33	678	1,767	1,028	5.43	5.7	25.9
1,035	44	879	2,362	1,229	6.78	12.7	37.0

Value and Cost of Production			Profitability			
Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income w/Apprec.	Net Farm Inc. w/o Apprec.	Labor & Mgt. Inc. Per Oper.	Change in Net Worth w/Apprec.
(10)	(10)	(10)	(3)	(3)	(3)	(6)
$ 2,970	$ 7.08	$ 13.25	$ 65,787	$ 47,564	$ 23,337	$ 55,617
2,702	8.32	14.71	46,428	36,130	5,539	25,691
2,451	9.67	17.21	30,365	20,340	-4,749	8,872
2,129	11.01	19.33	18,365	6,507	-17,028	1,255
1,701	13.94	24.24	-8,138	-23,902	-65,954	-25,771

*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. Two areas that were examined this year were the source of dairy replacements and the breakdown of the milk income and marketing expenses. Following is a summary of this information.

SOURCE OF DAIRY REPLACEMENTS
48 New York Dairy Farms, 2003

Animals Entering Herd	Average
Number calving in 2003 for first time	185
Animals purchased, %*	6%
Animals raised by farm, %**	94%
Current Heifer Inventory	
Raised on dairy, %	79%
Raised by a custom grower, %	21%

* 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, 185 animals calved for the first time in 2003. The breakdown on these animals for source was 6 percent purchased and 94 percent raised by the farm. Of the current heifer inventory, 79 percent were raised on the dairy and 21 percent were being raised by a custom grower. There is increased interest in evaluating the dairy replacement enterprise.

Milk Income and Marketing Expense Breakdown

Starting January 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, 29 small herd dairy farms filled out a detailed form for all the different sources of income for milk sales and the milk marketing expenses on an accrual basis. This information is reported in the following two tables. The tables are divided into six different areas, each representing a different area of income or expenses.

The first section looks at the value of the milk components on a per hundredweight basis. The second area looks at the Producer Price Differential. The third area looks at the premiums a farm receives. Any premiums not specifically noted as quality or volume related are included in market premiums. The fourth area looks at the expenses associated with marketing milk. A new line item in this section is the expenses associated with utilizing forward contracting or hedging programs to market milk, such as commission or broker fees. The fifth area is income from the compact program or from forward contracting or hedging programs. The sixth area is the patronage dividends or refunds from the milk cooperatives. Equity purchased in the milk cooperative utilizing a monthly deduction from the milk check or a percent of the patronage dividend is treated as a capital purchase and is not a milk marketing expense. The cumulative total for these six areas is the net price received on farms. Your net farm price can be found on page 10 of your farm's DFBS report.

The table on page 28 reports the averages for these different areas. The table on page 29 contains the range for each of the individual lines of the report. This table is in farm business chart format with each item sorted independently and ranked by thirds. Numbers for the different areas will not add to the totals for that third 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
29 Small Herd Dairy Farms, 2003

	Pounds	Percent	Price/Pound	Total	$/Cwt of Milk
BASE FARM PRICE					
Butterfat	41,529.86	3.71%	$ 1.200	$ 49,829.93	$ 4.45
Protein	33,510.76	2.99%	$ 2.345	$ 78,579.97	$ 7.02
Solids	63,327.79	5.66%	$ 0.015	$ 969.76	$ 0.09
Total Component Contribution					$11.56
PPD	1,119,410.00			$ 11,453.45	$ 1.02
Base Farm Price					$ 12.58
Premiums					
Quality				$ 1,715.93	$ 0.15
Volume				$ 456.66	$ 0.04
Market Premiums				$ 1,905.35	$ 0.17
Total Premiums					$ 0.36
BASE FARM PRICE + PREMIUM					$ 12.94
Deductions					
Promo				$ 1,815.45	$ 0.16
Hauling + Stop Charges.				$ 7,620.79	$ 0.68
Market Fees & Coop Dues				$ 663.00	$ 0.06
Total Deductions					$ 0.90
BASE FARM PRICE + PREMIUMS - DEDUCTIONS					$ 12.04
Marketing Programs					
Futures Contracts, Forward Contracting, Etc.				$ 0.00	$ 0.00
Total Marketing Income					$ 0.00
Patronage Dividends				$ 1,211.59	$ 0.11
NET PRICE RECEIVED ON FARM, ALL SOURCES					**$ 12.15**
PPD - Hauling, per cwt.					$ 0.34
PPD - Hauling + Market Premiums, per cwt.					$ 0.51
Net Marketing Value, per cwt. (PPD + Total Preimums – Total Deductions)					$ 0.48

*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.

MILK PRICE INFORMATION BY QUINTILE*
(Each Category Sorted Independently)
29 Small Herd Dairy Farms, 2003

	Lowest Quintile ←				→ Highest Quintile
Butterfat, %	3.48	3.63	3.68	3.79	3.94
Protein, %	2.85	2.94	2.98	3.03	3.18
Other Solids, %	5.40	5.63	5.67	5.70	5.80
Butterfat, $ per Cwt.	4.11	4.34	4.46	4.57	4.72
Protein, $ per Cwt.	6.72	6.91	7.02	7.08	7.42
Other solids, $ per Cwt.	-0.04	0.07	0.08	0.08	0.18
Total Component Value per Cwt.	**$ 11.04**	**$ 11.35**	**$ 11.54**	**$ 11.71**	**$ 12.11**
PPD, $ per Cwt.	0.59	0.79	0.98	1.16	1.58
Base Farm Price per Cwt.	**$ 12.05**	**$ 12.32**	**$ 12.54**	**$ 12.80**	**$ 13.21**
Quality, $ per Cwt.	.00	.01	.11	.23	.40
Volume, $ per Cwt.	.00	.00	.00	.03	.18
Market premium, $ per Cwt.	-.01	.06	.14	.24	.41
Total Premium, $ per Cwt.	**.14**	**.26**	**.35**	**.47**	**.60**
Base Farm Price + Premiums per Cwt.	**$ 12.33**	**$ 12.68**	**$ 12.95**	**$ 13.17**	**$ 13.62**
Promotion, $ per Cwt.	.15	.15	.15	.16	.20
Hauling, $ per Cwt.	.23	.53	.66	.83	1.25
Market fees & coop dues per Cwt.	.00	.02	.05	.07	.15
Total Marketing Expenses per Cwt.	**$ .48**	**$ .75**	**$ .85**	**$ 1.09**	**$ 1.47**
Base + Premiums – Deductions per Cwt.	**$ 11.38**	**$ 11.74**	**$ 12.04**	**$ 12.22**	**$ 12.67**
Futures contract, forward contracting, $ per Cwt.	.00	.00	.00	.00	.00
Total Marketing Income, $ per Cwt.	**$ .00**	**$ .00**	**$ .00**	**$ .00**	**$ .00**
Patronage Dividends, $ per Cwt.	**$ .00**	**$ .00**	**$ .00**	**$ .02**	**$ .50**
Net Price Received From All Sources, $ per Cwt.	**$ 11.43**	**$ 11.84**	**$ 12.17**	**$ 12.38**	**$ 12.77**
PPD - hauling, $ per Cwt.	**0.05**	**0.16**	**0.32**	**0.38**	**0.63**
PPD - hauling + mkt premiums, $ per Cwt.	**0.11**	**0.36**	**0.47**	**0.57**	**0.88**
Net Marketing Value, $ per Cwt. (PPD + Total Premiums – Total Deductions)	**0.15**	**0.32**	**0.46**	**0.62**	**0.84**

*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 201 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
201 New York Dairy Farms, 2003

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)
25.0	1,230	29,621,550	25,936	4.8	24	63	1,318,484
13.6	575	13,326,860	23,910	4.0	20	50	1,098,081
9.9	407	8,649,121	23,088	3.7	19	45	977,732
6.8	291	6,294,352	22,320	3.3	18	41	859,182
5.2	187	3,752,374	21,283	3.0	17	37	766,221
4.1	132	2,520,975	20,323	2.8	16	34	678,657
3.3	98	1,764,687	19,022	2.5	15	30	583,854
2.7	74	1,300,287	17,040	2.3	14	28	521,424
2.0	59	1,066,952	15,419	2.0	13	25	433,011
1.6	43	677,333	12,546	1.3	9	19	290,550

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)
$383	18%	$285	$819	$550	$3.42
566	24	385	1,015	737	4.02
654	26	429	1,125	842	4.34
744	28	466	1,224	914	4.54
802	30	501	1,288	998	4.75
858	31	543	1,379	1,056	5.01
901	32	588	1,461	1,108	5.33
956	34	637	1,544	1,170	5.60
1,028	37	725	1,697	1,244	6.05
1,161	45	1,032	2,273	1,391	7.19

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

FARM BUSINESS CHART FOR
FARM MANAGEMENT COOPERATORS
201 New York Dairy Farms, 2003

Milk Receipts Per Cow	Milk Receipts Per Cwt.	Operating Cost Milk Production Per Cow	Operating Cost Milk Production Per Cwt.	Total Cost Milk Production Per Cow	Total Cost Milk Production Per Cwt.
(12)	(12)	(12)	(12)	(12)	(12)
$3,463	$14.52	$1,091	$6.98	$2,080	$12.50
3,133	13.78	1,576	8.49	2,562	13.25
3,013	13.56	1,775	9.54	2,774	13.71
2,934	13.40	1,920	10.20	2,924	14.20
2,813	13.22	2,078	10.64	3,066	14.70
2,680	13.08	2,334	11.12	3,193	15.30
2,518	12.96	2,480	11.75	3,348	15.84
2,284	12.82	2,631	12.28	3,470	16.83
2,059	12.66	2,799	12.79	3,638	18.59
1,653	12.28	3,131	14.68	4,189	23.89

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)
$250,155	$892	0.27	$440,526	$1,286	$122,035	$75,039
113,434	617	0.19	204,354	847	42,519	26,487
67,691	446	0.14	123,989	623	20,099	12,896
47,327	337	0.11	83,175	498	4,975	4,430
38,324	228	0.07	61,522	420	-7,327	-4,784
26,926	147	0.05	46,056	317	-18,178	-11,346
10,601	79	0.02	32,938	235	-36,786	-22,928
-5,999	-30	-0.01	18,882	141	-61,125	-48,264
-34,173	-176	-0.06	-2,852	-21	-111,381	-77,244
-145,107	-498	-0.21	-75,812	-314	-247,974	-178,965

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

Financial Analysis Chart

The farm financial analysis chart on page 34 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
201 New York Dairy Farms, 2003

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)
$127	$764	2.76	3.09	5%	$322	45%	15.88
235	586	1.34	1.66	8	1,165	27	3.32
319	491	1.10	1.28	12	1,739	20	2.44
383	408	0.97	1.02	15	2,193	15	1.97
452	358	0.85	0.81	17	2,592	12	1.59
492	306	0.68	0.67	18	2,920	7	1.33
536	248	0.52	0.47	20	3,194	3	1.11
598	170	0.39	0.25	23	3,525	-1	0.94
666	29	0.11	-0.02	26	4,097	-7	0.75
834	-281	-0.98	-0.99	36	5,493	-22	0.40

Solvency				Operational Ratios		
		Debt/Asset Ratio				
Leverage Ratio[48]	Percent Equity	Current & Intermediate	Long Term	Operating Expense Ratio	Interest Expense Ratio	Depreciation Expense Ratio
(7)	(7)	(7)	(7)	(14)	(14)	(14)
0.03	97%	0.03	0.00	0.62	0.00	0.02
0.16	85	0.13	0.00	0.68	0.01	0.04
0.27	78	0.23	0.03	0.74	0.02	0.05
0.40	71	0.30	0.15	0.78	0.03	0.06
0.54	64	0.36	0.26	0.81	0.03	0.07
0.67	59	0.42	0.36	0.84	0.04	0.08
0.87	53	0.47	0.45	0.86	0.04	0.09
1.15	46	0.55	0.60	0.89	0.05	0.10
1.56	38	0.65	0.73	0.93	0.07	0.12
3.60	24	0.91	1.07	1.06	0.09	0.18

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[49]
(14)	(14)	(14)	(14)	(8)	(5)	(5)
.76	$1,401	$532	$4,654	$325,104	36%	12%
.61	1,963	838	5,604	126,563	10	8
.57	2,200	1,024	6,163	64,780	6	5
.52	2,439	1,170	6,562	41,577	4	4
.48	2,743	1,341	6,936	24,558	1	2
.45	3,033	1,528	7,479	12,738	0	1
.41	3,576	1,731	8,244	2,783	-2	0
.36	4,081	1,899	8,989	-9,267	-5	-2
.31	4,716	2,256	9,979	-33,514	-11	-4
.22	8,048	3,371	13,770	-162,076	-43	-10

*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 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 in the five groups ranges from 46 cows on the small conventional farms to 705 cows on the largest freestall farms.

The largest freestall farms averaged the highest milk output per cow and per worker, the lowest total cost of production and investment per cow, and the greatest returns to labor, management and capital. However, labor and management income per operator was the lowest for the large freestall farms.

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 48-57 of the 2003 State Summary*. As herd size increases, the average net farm income generally increases (page 48)*. Net farm income without appreciation averaged $25,514 per farm for the less than 50 cow farms and $71,328 per farm for those with more than 600 cows. No significant relationship to herd size exists with the other more comprehensive measure of profitability.

Assets, liabilities and financial measures are presented on pages 55-58*. All herd size categories saw an increase in net worth during 2003. The largest herd size category experienced an increase in net worth of over $100,000. However, percent equity went down as herd size increased. The largest herds had 49 percent equity; while the smaller herds averaged 78 percent.

Crop yields showed little relationship to herd size, but fertilizer and lime expenses, and machinery cost per tillable acre generally increased as herd size increased (pages 59-60)*. The farms with 600 and more cows per farm averaged 33 percent more milk sold per cow than the smallest farms. All of the groups with 200 or more cows averaged above 20,000 pounds of milk sold per cow while the farms smaller than 200 cows averaged 17,940 pounds of milk sold per cow. Farm capital per worker increased, and farm capital per cow decreased as herd size increased. Milk sold per worker increased dramatically as herd size increased, ranging from 369,404 pounds at the lowest herd size category up to 1,181,288 pounds at the largest size category.

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*Wayne A. Knoblauch, Linda D. Putnam, and Jason Karszes, "Dairy Farm Management Business Summary, New York State, 2003", Department of Applied Economics and Management, Cornell University, R.B. 2004-13, December 2004. This publication is available from the Cornell Cooperative Extension Resource Center, P. O. Box 3884, Ithaca, NY 14852-3884; e-mail resctr@cornell.edu; phone 607-255-2080; fax 607-255-9946; or order on-line with credit card: http://www.cce.cornell.edu/store

SELECTED BUSINESS FACTORS BY TYPE OF BARN AND HERD SIZE
188 New York Dairy Farms, 2003

	Conventional		Freestall		
Item Farms with:	<= 60 Cows	>60 Cows	<=150 Cows	151-300 Cows	≥300 Cows
Number of farms	26	39	27	30	66
Cropping Program Analysis					
Total Tillable acres	170	277	325	570	1,257
Tillable acres rented*	61	127	163	285	632
Hay crop acres*	110	169	186	288	561
Corn silage acres*	27	49	80	161	538
Hay crop, tons DM/acre	2.3	2.4	2.5	3.1	3.3
Corn silage, tons/acre	11.8	12.5	13.1	16.6	16.3
Oats, bushels/acre	48	59	0	27	62
Forage DM per cow, tons	8.4	7.7	8.1	8.5	7.3
Tillable acres/cow	3.7	3.3	3.1	2.6	1.8
Fertilizer & lime expense/tillable acre	$12.89	$24.61	$20.68	$29.93	$30.61
Total machinery costs	$26,855	$56,825	$64,268	$121,857	$324,672
Machinery cost/tillable acre	$158	$205	$198	$214	$258
Dairy Analysis					
Number of cows	46	84	104	218	705
Number of heifers	35	65	83	172	536
Milk sold, lbs.	810,510	1,543,699	1,884,952	4,754,403	16,385,330
Milk sold/cow, lbs.	17,694	18,456	18,131	21,763	23,243
Operating cost of producing milk/cwt.	$9.04	$10.25	$10.87	$11.40	$11.62
Total cost of producing milk/cwt.	$18.00	$16.28	$16.62	$15.01	$14.08
Price/cwt. milk sold	$13.11	$13.05	$13.48	$13.24	$13.21
Purchased dairy feed/cow	$722	$800	$817	$924	$993
Purchased dairy feed/cwt. milk	$4.10	$4.36	$4.51	$4.24	$4.27
Purchased grain & concentrate as % of milk receipts	30%	31%	32%	30%	30%
Purchased feed & crop expense/cwt milk	$4.70	$5.19	$5.31	$5.03	$4.89
Capital Efficiency					
Farm capital/worker	$218,878	$260,889	$281,215	$283,223	$290,369
Farm capital/cow	$10,325	$8,510	$8,707	$7,665	$6,256
Farm capital/tillable acre owned	$4,398	$4,734	$5,590	$5,863	$7,057
Real estate/cow	$5,428	$3,665	$4,071	$3,135	$2,429
Machinery investment/cow	$2,165	$1,953	$1,799	$1,531	$1,035
Asset turnover ratio	0.31	0.38	0.37	0.47	0.59
Labor Efficiency					
Worker equivalent	2.17	2.74	3.22	5.90	15.19
Operator/manager equivalent	1.41	1.47	1.75	1.96	2.24
Milk sold/worker, lbs.	373,507	563,394	585,389	805,831	1,078,692
Cows/worker	21	31	32	37	46
Labor cost/cow	$1,199	$803	$836	$751	$714
Labor cost/tillable acre	$325	$243	$268	$287	$401
Profitability & Balance Sheet Analysis					
Net farm income (without appreciation)	$22,587	$20,158	$22,586	$30,303	$63,716
Labor & management income/operator	$ -6,937	$-11,161	$-10,318	$-13,207	$-22,822
Rate return on all capital with appreciation	-0.8%	0.1%	0.4%	0.7%	4.1%
Farm debt/cow	$2,169	$2,187	$2,707	$2,897	$3,195
Percent equity	79%	74%	69%	63%	50%

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

FARM BUSINESS CHART FOR SMALL CONVENTIONAL STALL DAIRY FARMS
26 Conventional Stall Dairy Farms with 60 or Less Cows, New York, 2003

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)
3.67	56	1,109,882	23,136	3.7	24	33	667,243
2.86	53	1,043,120	22,206	3.0	20	27	560,048
2.30	51	978,532	20,794	2.8	17	26	508,185
2.02	49	915,550	19,922	2.5	14	25	442,702
1.96	47	824,668	18,211	2.3	12	23	357,871
1.87	43	734,172	15,399	2.1	11	20	325,700
1.83	41	668,343	14,083	1.9	9	19	302,022
1.71	38	573,247	13,178	1.8	7	18	268,606
1.45	35	496,154	12,767	1.3	7	17	255,769
1.17	32	390,003	10,395	0.9	6	12	160,271

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)
$273	16%	$325	$1,115	$397	$3.18
391	22	360	1,410	485	3.66
490	24	391	1,458	569	3.74
560	25	433	1,507	705	3.92
618	26	488	1,593	801	4.17
699	27	596	1,731	856	4.32
755	29	617	1,792	901	4.67
780	33	716	1,891	959	5.08
894	35	753	2,211	1,045	6.15
1,061	52	900	2,834	1,188	7.10

Value and Cost of Production			Profitability			
Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation
			Total	Per Cow		
(12)	(12)	(12)	(4)	(4)	(4)	(8)
$3,037	$5.97	$13.15	$46,599	$1,177	$25,697	$55,379
2,910	6.96	13.37	42,440	905	13,350	45,719
2,752	7.45	13.83	37,848	778	8,739	27,900
2,655	7.98	14.25	32,302	722	3,426	14,234
2,393	8.16	15.62	26,349	602	-2,976	5,441
2,030	8.54	17.61	14,136	337	-10,582	2,376
1,846	8.81	18.96	8,029	188	-15,409	358
1,740	10.01	22.12	3,027	57	-30,697	-2,605
1,576	11.36	23.03	-5,656	-139	-58,431	-17,431
1,342	13.01	28.23	-11,279	-226	-75,237	-22,077

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

FARM BUSINESS CHART FOR LARGE CONVENTIONAL STALL DAIRY FARMS
39 Conventional Stall Dairy Farms with More Than 60 Cows, New York, 2003

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)
4.33	128	2,480,488	24,587	3.8	22	46	913,187
4.02	113	2,064,677	22,223	3.3	17	42	767,520
3.26	95	1,792,182	20,781	3.0	16	37	716,061
3.03	84	1,592,234	19,762	2.8	16	34	649,028
2.80	77	1,495,290	18,590	2.6	15	32	572,800
2.33	75	1,342,008	17,444	2.2	15	30	543,307
2.19	71	1,247,751	16,558	2.1	14	29	504,377
2.02	67	1,183,972	16,090	1.8	13	27	459,061
1.72	61	1,121,068	14,621	1.4	12	24	408,766
1.39	60	975,197	13,998	1.1	9	19	353,789

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)
$337	15%	$187	$725	$601	$3.46
534	24	397	1,048	706	4.01
616	27	438	1,183	809	4.32
689	30	491	1,280	859	4.59
753	31	529	1,366	941	4.98
797	31	560	1,421	1,013	5.37
851	33	619	1,490	1,054	5.74
897	35	751	1,584	1,102	5.94
957	42	877	1,870	1,144	6.28
1,118	49	1,601	2,602	1,362	7.74

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)	(4)	(4)	(8)
$3,154	$6.25	$12.12	$84,474	$895	$36,504	$104,513
2,909	7.93	13.07	50,631	686	16,000	52,381
2,731	8.70	13.89	40,089	541	7,151	33,627
2,566	9.43	14.69	33,048	365	1,357	26,091
2,406	9.86	16.07	22,734	236	-4,643	14,081
2,306	10.36	16.54	13,722	174	-11,036	7,149
2,205	10.95	17.51	7,341	91	-19,119	1,584
2,116	12.32	18.57	-2,702	-30	-33,528	-4,119
1,932	13.16	19.60	-19,704	-263	-54,936	-16,837
1,768	15.23	22.56	-44,131	-681	-110,876	-47,078

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

FARM BUSINESS CHART FOR SMALL FREESTALL DAIRY FARMS
27 Freestall Barn Dairy Farms with 150 or Less Cows, New York, 2003

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)
4.73	145	3,110,143	23,536	4.8	24	54	895,796
4.14	133	2,671,575	21,628	3.5	19	39	797,982
4.02	127	2,368,929	20,373	3.0	17	36	709,995
3.72	120	2,249,915	18,492	2.7	17	35	618,377
3.23	109	1,895,226	17,509	2.5	16	32	586,826
2.94	96	1,499,022	16,690	2.3	15	30	545,695
2.56	79	1,311,013	15,422	2.0	14	29	490,715
2.16	76	1,155,130	14,195	1.9	13	28	436,366
1.92	66	1,081,992	13,336	1.7	13	25	396,636
1.45	50	551,000	10,404	0.9	10	21	218,126

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)
$361	19%	$322	$902	$465	$3.21
420	23	350	989	542	3.67
489	25	436	1,231	674	3.99
567	26	472	1,284	706	4.43
641	29	499	1,360	871	4.82
816	30	525	1,459	1,015	5.39
861	33	606	1,517	1,087	5.57
902	35	680	1,547	1,161	6.01
980	38	760	1,656	1,221	6.88
1,110	45	1,057	2,118	1,288	8.17

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)	(4)	(4)	(8)
$3,177	$6.02	$12.86	$76,318	$738	$36,962	$103,998
2,914	7.94	13.29	58,309	615	16,124	63,980
2,701	8.43	14.28	50,960	483	6,362	38,808
2,480	8.92	14.67	42,603	415	2,334	23,216
2,334	10.15	15.23	35,178	385	-2,419	14,387
2,218	10.67	15.79	26,487	293	-6,943	4,265
2,056	11.24	16.47	8,296	80	-15,163	-7,359
2,011	12.02	17.95	-8,263	-82	-42,352	-28,375
1,853	12.80	21.37	-50,018	-519	-102,907	-29,024
1,396	17.40	28.93	-84,038	-828	-139,277	-56,975

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

FARM BUSINESS CHART FOR MEDIUM FREESTALL DAIRY FARMS
30 Freestall Barn Dairy Farms with 151-300 Cows, New York, 2003

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)
8.99	293	7,180,933	25,924	4.8	24	54	1,177,351
7.25	281	6,102,208	23,808	4.5	21	46	995,532
6.54	265	5,895,258	23,241	4.0	19	43	944,900
6.11	251	5,743,313	22,686	3.8	18	41	902,975
6.00	236	5,434,222	22,071	3.4	17	40	857,952
5.63	218	4,158,601	21,635	2.9	17	40	829,656
5.35	172	3,746,069	21,023	2.5	16	35	747,407
5.05	163	3,431,341	19,855	2.3	14	31	637,721
4.21	157	3,219,276	18,690	2.1	13	28	547,672
3.86	150	2,632,809	16,255	1.4	11	25	513,789

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)
$574	19%	$358	$922	$793	$3.64
699	25	422	1,030	880	4.16
771	28	462	1,134	930	4.42
809	29	507	1,205	975	4.58
826	30	556	1,266	1,030	4.74
879	31	578	1,285	1,090	5.15
908	33	603	1,355	1,149	5.53
961	36	624	1,473	1,223	5.73
1,072	37	703	1,655	1,304	6.05
1,189	42	864	1,902	1,437	6.65

Value and Cost of Production			Profitability			
Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation
			Total	Per Cow		
(12)	(12)	(12)	(4)	(4)	(4)	(8)
$3,386	$8.08	$11.91	$175,042	$857	$73,658	$312,856
3,111	9.86	13.22	100,535	460	31,961	125,906
3,052	10.29	13.87	76,142	334	14,850	60,892
2,987	10.86	13.99	55,487	247	5,455	28,321
2,937	11.26	14.68	40,322	156	-5,366	23,835
2,921	11.58	15.33	25,071	106	-22,585	12,905
2,782	12.09	15.58	1,516	7	-42,634	1,447
2,667	12.22	16.35	-20,509	-111	-65,518	-21,899
2,494	12.91	18.25	-53,100	-267	-82,302	-64,426
2,167	15.53	19.28	-97,478	-544	-123,972	-143,748

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

FARM BUSINESS CHART FOR LARGE FREESTALL DAIRY FARMS
66 Freestall Barn Dairy Farms with 300 or More Cows, New York, 2003

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)
33.75	1,828	44,093,850	26,691	5.0	23	69	1,464,712
22.65	1,053	25,109,680	25,390	4.3	20	55	1,276,723
18.53	809	19,661,130	24,473	4.1	19	52	1,189,686
14.73	641	15,086,950	23,711	3.8	18	50	1,127,441
12.89	545	12,921,890	23,260	3.4	18	47	1,071,720
11.81	497	10,805,160	22,849	3.1	17	43	1,000,171
10.56	433	8,912,230	22,116	2.9	16	41	951,196
9.11	386	8,323,082	21,118	2.7	15	37	850,497
7.99	351	7,596,224	20,099	2.3	14	35	725,394
6.05	316	6,448,700	16,604	1.7	12	28	649,540

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)
$503	19%	$257	$781	$767	$3.59
718	26	368	946	885	4.32
785	27	390	1,022	991	4.49
838	28	424	1,079	1,031	4.65
876	30	455	1,123	1,082	4.75
925	30	488	1,199	1,128	4.90
971	32	520	1,265	1,180	5.11
1,013	33	558	1,341	1,243	5.28
1,094	36	608	1,435	1,294	5.52
1,189	38	701	1,549	1,451	6.13

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)	(4)	(4)	(8)
$3,626	$9.58	$12.68	$347,189	$492	$114,393	$510,949
3,357	10.30	13.07	218,955	346	44,915	225,029
3,206	10.52	13.41	171,828	246	25,104	162,642
3,106	10.82	13.62	114,721	167	-5,500	112,556
3,024	11.21	13.87	69,326	122	-13,847	51,904
2,955	11.56	14.23	38,897	70	-28,499	25,247
2,888	12.08	14.56	-3,410	-4	-50,616	-12,799
2,758	12.41	14.96	-45,167	-65	-75,580	-44,352
2,645	12.73	15.35	-120,296	-216	-156,252	-93,968
2,310	13.30	15.92	-251,318	-362	-271,681	-311,217

*Page number of the participant's DFBS 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.

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

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

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

Cash Flow Coverage Ratio - (defined on page 15)

Cash Paid - (defined on page 4)

Cash Receipts - (defined on page 6)

Change in Accounts Payable - (defined on page 5)

Change in Accounts Receivable - (defined on page 6)

Change in Inventory - (defined on page 4)

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

Current Portion - (defined on page 9)

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

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

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

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

Debt Coverage Ratio – (defined on page 15)

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

Debt to Asset Ratios - (defined on page 11)

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

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

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

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

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

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

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

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

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

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

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

Labor and Management Income - (defined on page 8)

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

Labor Efficiency - Production capacity and output per worker.

Leverage Ratio - (defined on page 11)

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

Net Farm Income - (defined on page 7)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Return on Equity Capital - (defined on page 9)

Return on Total Capital - (defined on page 9)

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

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

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

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

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

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OTHER A.E.M. EXTENSION BULLETINS

EB No	Title	Fee (if applicable)	Author(s)
2004-20	New York Economic Handbook 2005	($7.00)	Extension Staff
2004-19	Dairy Farm Business Summary, Northern New York Region, 2003	($12.00)	Knoblauch, W., Putnam, L., Karszes, J., Murray, P., Vokey, F., Ames, M., VanLoo, W., Nobles, C. and A. Deming
2004-18	Dairy Farm Business Summary, Western and Central Plateau Region, 2003	($12.00)	Knoblauch, W., Putnam, L., Karszes, J., Allhusen, G., Grace, J., Petzen, J. and A. Dufresne
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2004-12	Using Crop Insurance: Profiles of 13 Farmers Who Use Crop Insurance as a Risk Management Tool	($12.00)	Richards, S., Sheils, C., Jacobs, E., Ashton, J., McGonigal, J. and J. Forrett
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