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PRO-DAIRY

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DAIRY FARM BUSINESS SUMMARY

NEW YORK SMALL HERD FARMS, 65 COWS OR FEWER 1999



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1999 DAIRY FARM BUSINESS SUMMARY
Small Herd Dairy Farms
65 Cows or Fewer
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1999 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 1999 with herds of 65 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 1999 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. A DFBS Data Check-in Form can be used by non-DFBS participants to summarize their businesses.

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.

*The small herd summary is comprised of farms with 65 or fewer cows and that do not use a milking parlor. Many counties had farms that met this criteria in 1999. This report was written by Wayne A. Knoblauch, Professor, Farm Management; Mariane Kiraly, Cooperative Extension Educator in Delaware County; Carry Oostveen, Cooperative Extension Educator in Cayuga County; and Jason Karszes, Senior Extension Associate, Pro-Dairy. Linda Putnam was in charge of data preparation. Faye Butts prepared the publication.

PROGRESS OF THE FARM BUSINESS

Although 1999 was a dry year across the state and milk prices fell 4 percent, farmers did make progress with their businesses. The year 1999 will be remembered as a successful year. Reasons why 1999 was a strong year included higher prices for beef (cull) cows, inexpensive feed, and government payments helping to replace income lost with lower prices. Also, farmers invested more in their businesses and paid off debt from dollars generated in 1998 and 1999. Unfortunately, accounts receivable declined considerably at the end of 1999 when milk prices dropped significantly.

It is valuable to compare your farm's performance to others in your region and size category. Not only can you determine where you fit in with the average numbers calculated from the data, but you can also see areas that are in need of improvement and areas that are performing well. Measuring and monitoring are increasingly important tasks in the dairy industry with shrinking margins.

Key indicators of profitability for dairy farms include operating cost per hundredweight, milk sold per cow, percent equity and net worth. From 1998 to 1999, operating cost to produce a hundredweight of milk declined from \$10.65 to \$10.22 or by 4 percent. The major reason for this decline was lower purchased feed and concentrate cost, which declined from \$3.84 per cwt. to \$3.54 per cwt.

Milk sold per cow increased 326 pounds from 17,607 pounds to 17,933 pounds or by 1.9 percent. Progress in cow comfort, increased adoption of rBST and inexpensive feed could have contributed to this increase. Better genetics continues to increase milk production per cow also.

Farmers were able to increase equity from 76 percent to 78 percent from 1998 to 1999. An increase in the amount of planned payments with money generated in 1998 and 1999 helped farmers pay off more debt. One factor which helped increase funds available was the increase in cull cow prices in 1999. Cattle sale income was up 49 percent. However, that also made for increases in prices for replacements, and supplies of heifers were short across the state. Producers who raised all their replacements were on the positive side of this equation.

End of year farm net worth increased from \$291,976 to \$318,239. Net farm income with appreciation was very close to 1998, at \$37,916 per farm; however, labor and management income per operator went down from \$9,655 to \$6,242.

The year 1999 was a profitable year and saw farmers continue to improve their operations. Farmer plans during the end of 1999 included income tax management, preparing for a steep decline in milk prices and keeping input costs low to be able to cash flow what would be a more difficult year in 2000.

PROGRESS OF THE FARM BUSINESS
Same 50 Small Herd Dairy Farms, 1998 & 1999

Selected Factors	Average of 50 Farms		Percent Change
	1998	1999	
<u>Size of Business</u>			
Average number of cows	49	49	0.0
Average number of heifers	34	34	0.0
Milk sold, lbs.	860,986	879,454	2.1
Worker equivalent	1.93	1.94	0.5
Total tillable acres	167	163	-2.4
<u>Rates of Production</u>			
Milk sold per cow, lbs.	17,607	17,933	1.9
Hay DM per acre, tons	2.0	1.9	-5.0
Corn silage per acre, tons	13.3	13.9	4.5
<u>Labor Efficiency & Costs</u>			
Cows per worker	25	25	0.0
Milk sold/worker, lbs.	446,107	453,327	1.6
Hired labor cost/cwt.	\$0.65	\$0.67	3.1
Hired labor cost/worker	\$18,182	\$16,401	-9.8
Hired labor cost as % of milk sales	4.2%	4.5%	7.1
<u>Cost Control</u>			
Grain & conc. purchased as % of milk sales	25%	24%	-4.0
Grain & conc. per cwt. milk	\$3.84	\$3.54	-7.8
Dairy feed & crop expense per cwt. milk	\$5.06	\$4.77	-5.7
Labor & mach. costs/cow	\$1,230	\$1,368	11.2
Total farm operating costs per cwt. sold	\$12.23	\$12.36	1.1
Interest costs per cwt. milk	\$0.81	\$0.79	-2.5
Milk marketing costs per cwt. milk sold	\$0.71	\$0.81	14.1
Operating cost of producing cwt. of milk	\$10.65	\$10.22	-4.0
<u>Capital Efficiency</u> (average for the year)			
Farm capital per cow	\$7,620	\$8,172	7.2
Mach. & equip. per cow	\$1,547	\$1,769	14.4
Asset turnover ratio	0.41	0.40	-2.4
<u>Income Generation</u>			
Gross milk sales per cow	\$2,734	\$2,678	2.0
Gross milk sales per cwt.	\$15.56	\$14.92	-4.1
Net milk sales per cwt.	\$14.85	\$14.11	-5.0
Dairy cattle sales per cow	\$112	\$167	49.1
Dairy calf sales per cow	\$23	\$30	30.4
<u>Profitability</u>			
Net farm income w/o apprec.	\$32,350	\$28,674	-11.4
Net farm income w/apprec.	\$38,275	\$37,916	-0.9
Labor & mgt. income per oper./manager	\$ 9,655	\$6,242	-35.3
Rate of return on equity capital w/o apprec.	0.02%	-1.2%	-6100
Rate of return on all capital w/o apprec.	1.89%	0.8%	-57.7
<u>Financial Summary</u>			
Farm net worth, end year	\$291,976	\$318,239	9.0
Debt to asset ratio	0.24	0.22	-8.3
Farm debt per cow	\$1,851	\$1,821	-1.6

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 (65 or fewer cows) group of dairy farms.

BUSINESS CHARACTERISTICS 61 Small Herd Dairy Farms, 1999

Type of Farm	Number	Milking System	Number
Dairy	61	Bucket & carry	2
Part-time dairy	0	Dumping station	4
Dairy cash-crop	0	Pipeline	55
Certified organic milk producer	1	Herringbone parlor	0
Rotational grazing farms	27	Other parlor	0
Type of Ownership	Number	Production Records	Number
Owner	61	Testing service	40
Renter	0	On-farm system	2
		Other	2
Type of Business	Number	None	17
Sole Proprietorship	50	bST Usage	Number
Partnership	11	Used on <25% of herd	3
Corporation	0	Used on 25-75% of herd	4
Type of Barn	Number	Used on >75% of herd	2
Stanchion or Tie-Stall	58	Stopped using in 1999	0
Freestall	1	Not used in 1999	52
Combination	2	Business Record System	Number
Milking Frequency	Number	Account Book	30
2 times per day	59	Accounting Service	10
3 times per day	1	On-farm computer	17
Other	1	Other	4

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 1999.

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.

CASH AND ACCRUAL FARM EXPENSES
61 Small Herd Dairy Farms, 1999

Expense Item	Cash Paid	-	Change in Inventory or Prepaid Expense	+	Change in Accounts Payable	=	Accrual Expenses
<u>Hired Labor</u>	\$ 5,442		\$ 0	<<	\$ 0		\$ 5,442
<u>Feed</u>							
Dairy grain & concentrate	31,097		789		-389		29,919
Dairy roughage	4,313		506		-136		3,670
Nondairy	0		0		0		0
<u>Machinery</u>							
Machinery hire, rent & lease	1,683		0	<<	52		1,735
Machinery repairs & farm vehicle exp.	8,665		23		-74		8,568
Fuel, oil & grease	2,801		49		0		2,752
<u>Livestock</u>							
Replacement livestock	3,290		0	<<	0		3,290
Breeding	1,826		40		-13		1,773
Veterinary & medicine	2,793		31		-79		2,683
Milk marketing	6,565		0	<<	2		6,567
Bedding	655		79		0		576
Milking supplies	3,930		-1		-6		3,924
Cattle lease & rent	31		0	<<	0		31
Custom boarding	464		0	<<	0		464
bST	410		0		0		410
Other livestock expense	2,581		3		0		2,578
<u>Crops</u>							
Fertilizer & lime	3,700		273		11		3,438
Seeds & plants	1,709		75		-34		1,600
Spray, other crop expense	1,042		4		30		1,068
<u>Real Estate</u>							
Land, building & fence repair	2,716		-96		-10		2,802
Taxes	4,051		-22	<<	-23		4,051
Rent & lease	1,370		0	<<	-20		1,350
<u>Other</u>							
Insurance	2,446		8	<<	0		2,438
Utilities (farm share)	4,578		0	<<	-127		4,451
Interest paid	6,857		0	<<	0		6,857
Miscellaneous	1,617		16		8		1,609
Total Operating	\$106,634		\$ 1,776		\$ -809		\$ 104,049
Expansion livestock	112		0	<<	0		112
Machinery depreciation							9,674
Building depreciation							2,685
TOTAL ACCRUAL EXPENSES							\$ 116,520

Change in prepaid expenses (noted above 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.

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 1999 but not paid for. A decrease is subtracted because it represents payment for resources used before 1999.

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
61 Small Herd Dairy Farms, 1999

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts
Milk sales	\$ 126,599				\$ -2,981		\$ 123,617
Dairy cattle	7,041		\$ 1,406		8		8,456
Dairy calves	1,441				1		1,442
Other livestock	166		-104		-1		61
Crops	708		-382		19		344
Government receipts	5,110		-66 *		34		5,077
Custom machine work	289				2		291
Gas tax refund	115				2		117
Other	<u>3,404</u>				<u>-60</u>		3,344
Less nonfarm noncash capital**		(-)	<u>0**</u>			(-)	<u>0</u>
Total Receipts	\$ 144,871		\$ 854		\$ -2,975		\$ 142,750

*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 1999 for the 2000 crop year in excess of funds earned for 1999. Likewise, a decrease is added to cash government receipts because it represents funds earned for 1999 but received in 1998.

Changes in accounts receivable are calculated by subtracting beginning year balances from end year balances. Payments in January 2000 for milk produced in December 1999 compared to January 1999 payments for milk produced in 1998 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.

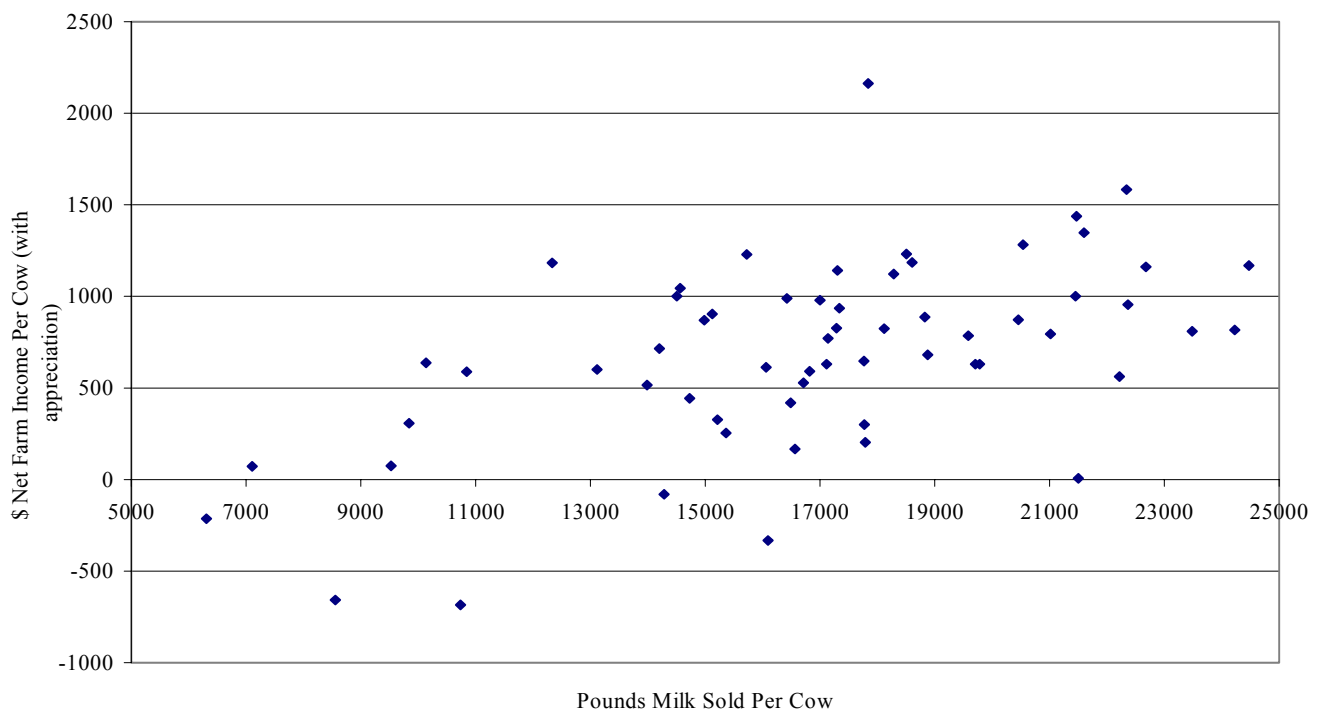
NET FARM INCOME
61 Small Herd Dairy Farms, 1999

Item	Average 61 Farms		Top 25% Farms*	
	Total	Per Cow	Total	Per Cow
Total accrual receipts	\$ 142,750		\$ 155,743	
Appreciation: Livestock	2,680		1,378	
Machinery	3,450		2,145	
Real Estate	2,285		2,554	
Other Stock & Certificates	79		-184	
Total Including Appreciation	\$ 151,244		\$ 161,636	
Total accrual expenses	- 116,520		- 108,645	
Net Farm Income (with appreciation)	\$ 34,724	\$ 709	\$ 52,991	\$ 1,104
Net Farm Income (without appreciation)	\$ 26,230	\$ 535	\$ 47,098	\$ 981

*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 (with 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
61 Small Herd Dairy Farms, 1999



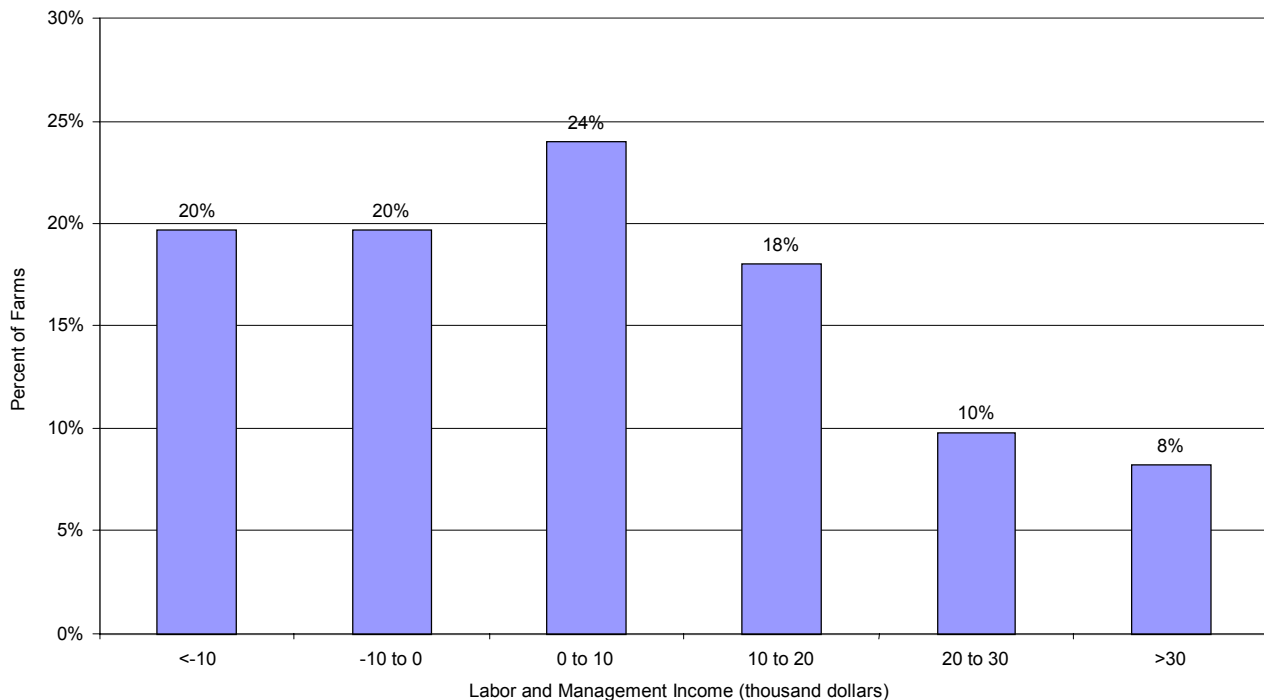
Labor and management income is the return which farm operators receive for their labor and management used in the farm business. Appreciation is not included as part of the return to labor and management because it results from ownership of assets rather than management of the farm business. Labor and 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
61 Small Herd Dairy Farms, 1999

Item	Average 61 Farms	Top 25% Farms
Net farm income without appreciation	\$ 26,230	\$ 47,098
Family labor unpaid @ \$1,800 per month	- 6,300	- 3,960
Interest on \$301,400 average equity capital @ 5% real rate (\$261,936 average equity capital for top 25% farms)	<u>- 15,070</u>	<u>- 13,097</u>
Labor & Management Income per farm (1.31 Operators/farm) (1.21 operators per farm for top 25% farms)	\$ 4,860	\$ 30,041
Labor & Management Income per Operator/Manager	\$ 3,710	\$ 24,827

Labor and management income per operator averaged \$3,710 on these 61 farms in 1999. The range in labor and management income per operator was from about -\$50,000 to more than \$50,000. Returns to labor and management were negative on 40% of the farms. Labor and management income per operator was between \$0 and \$20,000 on 42% of the farms while 18% showed labor and management incomes of \$20,000 or more per operator.

DISTRIBUTION OF LABOR & MANAGEMENT INCOME PER OPERATOR
61 Small Herd Dairy Farms, 1999



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
61 Small Herd Dairy Farms, 1999

Item	Average 61 Farms	Top 25% Farm
Net farm income with appreciation	\$ 34,724	\$ 52,991
Family labor unpaid @\$1,800 per month	- 6,300	- 3,960
Value of operators' labor & management	- <u>27,358</u>	- <u>23,267</u>
Return on equity capital with appreciation	\$ 1,066	\$ 25,764
Interest paid	+ <u>6,857</u>	+ <u>5,972</u>
Return on total capital with appreciation	\$ 7,923	\$ 31,736
Return on equity capital without appreciation	\$ -7,428	\$ 19,871
Return on total capital without appreciation	\$ -571	\$ 25,843
Rate of return on average equity capital:		
with appreciation	0.4%	9.8%
without appreciation	-2.5%	7.6%
Rate of return on average total capital:		
with appreciation	2.0%	9.4%
without appreciation	-0.1%	7.7%
Net farm income from operations ratio	0.18	0.30

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 1999, lease payments were discounted by 8.5 percent to obtain their present value.

Advanced government receipts are included as current liabilities. Government payments received in 1999 that are for participation in the 2000 program are the end year balance and payments received in 1998 for participation in the 1999 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.

1999 FARM BUSINESS & NONFARM BALANCE SHEET
61 Small Herd Dairy Farms, 1999

Farm Assets	Jan. 1	Dec. 31	Farm Liabilities & Net Worth	Jan. 1	Dec. 31
<u>Current</u>			<u>Current</u>		
Farm cash, checking & savings	\$ 4,418	\$ 5,936	Accounts payable	\$ 3,565	\$ 2,756
Accounts receivable	12,155	9,179	Operating debt	3,520	2,970
Prepaid expenses	70	55	Short Term	715	429
Feed & supplies	21,136	22,544	Advanced govt. receipts	9	75
			Current Portion:		
			Intermediate	7,307	8,268
			Long Term	<u>3,233</u>	<u>2,772</u>
Total Current	\$ 37,779	\$ 37,714	Total Current	\$ 18,348	\$ 17,271
<u>Intermediate</u>			<u>Intermediate</u>		
Dairy cows:			Structured debt		
owned	\$ 51,211	\$ 53,788	1-10 years	\$ 29,205	\$ 31,699
leased	100	78	Financial lease		
Heifers	20,524	22,022	(cattle/machinery)	315	717
Bulls & other livestock	500	408	Farm Credit stock	<u>898</u>	<u>912</u>
Mach. & equip. owned	80,566	89,964	Total Intermediate	\$ 30,418	\$ 33,328
Mach. & equip. leased	215	639			
Farm Credit stock	898	912			
Other stock/certificate	<u>1,915</u>	<u>2,129</u>			
Total Intermediate	\$ 155,929	\$ 169,940			
<u>Long Term</u>			<u>Long Term</u>		
Land & buildings:			Structured debt		
owned	\$ 194,819	\$ 198,475	>10 years	\$ 47,514	\$ 44,978
leased	<u>196</u>	<u>113</u>	Financial lease		
Total Long Term	\$ 195,015	\$ 198,588	(structures)	<u>196</u>	<u>113</u>
			Total Long Term	\$ 47,710	\$ 45,091
Total Farm Assets	\$ 388,723	\$ 406,242	Total Farm Liab.	\$ 96,476	\$ 95,690
			FARM NET WORTH	\$ 292,247	\$ 310,552

Nonfarm Assets, Liabilities & Net Worth (Average of 42 farms reporting)

Assets	Jan. 1	Dec. 31	Liabilities & Net Worth	Jan. 1	Dec. 31
Personal cash, checking & savings	\$ 3,003	\$ 3,258	Nonfarm Liabilities	\$ 5,688	\$ 6,198
Cash value life insurance	4,829	5,271			
Nonfarm real estate	9,931	9,931			
Auto (personal share)	4,395	4,632			
Stocks & bonds	4,208	5,629			
Household furnishings	10,217	10,424			
All other nonfarm assets	<u>8,190</u>	<u>9,190</u>			
Total Nonfarm Assets	\$ 44,773	\$ 48,335	NONFARM NET WORTH	\$ 39,085	\$ 42,137

Farm & Nonfarm Assets, Liabilities, and Net Worth*

	Jan. 1	Dec. 31
Total Assets	\$ 433,496	\$ 454,577
Total Liabilities	<u>102,164</u>	<u>101,888</u>
TOTAL FARM & NONFARM NET WORTH	\$ 331,332	\$ 352,689

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

The following condensed balance sheet, including deferred taxes, contains average data from only those farmers who elected to provide the additional information required to compute deferred taxes. Deferred taxes represent an estimate of the taxes that would be paid if the farm were sold at year end fair market values on the date of the balance sheet. Accuracy is dependent on the accuracy of the market values and the tax basis data provided. Any tax liability for assets other than livestock, machinery, land, buildings and nonfarm assets is excluded. It is assumed that all gain on purchased livestock and machinery is ordinary gain and that listed market values are net of selling costs. The effects of investment tax credit carryover and recapture, carryover of operating losses, alternative minimum taxes and other than average exemptions and deductions are excluded because they have only minor influence on the taxes of most farms. The dramatic impact of including deferred taxes is clear. Total liabilities were increased 65 percent on these 7 farms by including deferred taxes.

Deferred taxes on these seven farms totaled an average of \$326,603, roughly one-third of the pretax net worth. Percent equity decreased from 69 percent to 49 percent when deferred taxes are included on these farms. When examining net worth, especially as a source of cash for retirement or other purposes, deferred taxes become an important consideration. Deferred taxes in this calculation specify that all assets were sold during one tax year. Therefore, tax management strategies such as making sales in more than one year or installment sales warrant careful consideration to reduce income tax liabilities.

CONDENSED BALANCE SHEET INCLUDING DEFERRED TAXES

December 31, 1999

7 New York Dairy Farms, 1999

Assets			Liabilities & Net Worth
			Current debts & payables
			\$ 104,636
			Current deferred taxes
			<u>70,588</u>
Total Current Assets	\$ 224,367		Total Current Liabilities
			\$ 175,224
			Intermediate debts & leases
			\$ 199,528
			Intermediate deferred taxes
			<u>176,934</u>
Total Inter. Assets	\$ 780,678		Total Intermediate Liabilities
			\$ 376,762
			Long term debts & leases
			\$ 195,758
			Long term deferred taxes
			<u>75,434</u>
Total Long Term Assets	<u>\$ 619,939</u>		Total Long Term Liabilities
			\$ 271,192
TOTAL FARM ASSETS	\$ 1,624,984		TOTAL FARM LIABILITIES
			\$ 822,878
			Farm Net Worth
			\$ 802,106
			Percent Equity (Farm)
			49%
			Nonfarm debts
			\$ 0
			Nonfarm deferred taxes
			<u>3,647</u>
Total Nonfarm Assets	\$ 107,096		Total Nonfarm Liabilities
			\$ 3,647
TOTAL ASSETS	\$ 1,732,080		TOTAL LIABILITIES
			\$ 826,525
			Total Net Worth
			\$ 905,555
			Percent Equity (Total)
			52%

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

61 Small Herd Dairy Farms, 1999

Item	Average 61 Farms		Top 25% Farm	
<u>Financial Ratios - Farm:</u>				
Percent equity		76%		79%
Debt/asset ratio: total		0.24		0.21
long-term		0.23		0.25
intermediate/current		0.24		0.18
Leverage ratio		0.31		0.26
Current ratio		2.18		2.83
Working capital	\$20,443	As % of total Expenses: 18%	\$24,725	23%
<u>Farm Debt Analysis:</u>				
Accounts payable as % of total debt		3%		1%
Long-term liabilities as a % of total debt		47%		51%
Current & inter. liabilities as a % of total debt		53%		49%
Cost of term debt (weighted average)		6.9%		6.8%
<u>Farm Debt Levels:</u>				
	<u>Per Cow</u>	<u>Per Tillable Acre Owned</u>	<u>Per Cow</u>	<u>Per Tillable Acre Owned</u>
Total farm debt	\$1,953	\$911	\$1,510	\$805
Long-term debt	920	429	769	410
Intermediate & long term	1,600	747	1,229	655
Intermediate & current debt	1,033	482	740	395

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

61 Small Herd Dairy Farms, 1999

Item	Average 61 Farms			
	Real Estate		Machinery & Equipment	
Value beginning of year		\$ 194,819		\$ 80,566
Purchases	\$ 6,481*		\$ 14,157	
Gift & inheritance	+ 375		+ 1,771	
Lost capital	- 2,800			
Sales	- 0		- 305	
Depreciation	- 2,685		- 9,674	
Net investment		= 1,371		= 5,948
Appreciation		+ 2,285		+ 3,450
Value end of year		\$ 198,475		\$ 89,964

*\$30 land and \$6,451 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)
61 Small Herd Dairy Farms, 1999

Item	Average 61 Farms	Top 25% Farms
Beginning of year farm net worth	\$ 292,247	\$ 249,264
Net farm income w/o appreciation	\$ 26,230	\$ 47,098
+Nonfarm cash income	+ 8,300	+ 4,464
-Personal withdrawals & family expenditures excluding nonfarm borrowings	<u>- 26,431</u>	<u>- 34,105</u>
RETAINED EARNINGS	+ \$ 8,099	+\$ 17,457
Nonfarm noncash transfers to farm	\$ 2,146	\$ 2,774
+Cash used in business from nonfarm capital	+ 2,524	+ 234
-Note or mortgage from farm real estate sold (nonfarm)	<u>- 0</u>	<u>- 0</u>
CONTRIBUTED/WITHDRAWN CAPITAL	+ \$ 4,670	+\$ 3,008
Appreciation	\$ 8,494	\$ 5,893
-Lost capital	<u>- 2,800</u>	- 607
CHANGE IN VALUATION EQUITY	+ \$ 5,694	+\$ 5,286
IMBALANCE/ERROR	<u>- 158</u>	<u>- \$ 408</u>
End of year net worth*	= \$ 310,552	=\$ 274,607
<u>Change in Net Worth</u>		
Without appreciation	\$ 9,811	\$ 19,450
With appreciation	\$ 18,305	\$ 25,343

*May not add 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

61 Small Herd Dairy Farms, 1999

Item	Average 61 Farms	
<u>Cash Flow from Operating Activities</u>		
Cash farm receipts	\$ 144,871	
- Cash farm expenses	<u>106,634</u>	
= Net cash farm income		\$ 38,237
Personal withdrawals & family expenses including nonfarm debt payments	\$ 27,123	
- Nonfarm income	<u>8,300</u>	
- Net cash withdrawals from the farm		<u>\$ 18,823</u>
= Net Provided by Operating Activities		\$ 19,414
<u>Cash Flow From Investing Activities</u>		
Sale of assets: machinery	\$ 305	
+ real estate	0	
+ other stock & cert.	<u>19</u>	
= Total asset sales		\$ 324
Capital purchases: expansion livestock	\$ 112	
+ machinery	14,157	
+ real estate	6,481	
+ other stock & cert.	<u>154</u>	
- Total invested in farm assets		<u>\$ 20,904</u>
= Net Provided by Investment Activities		\$ -20,580
<u>Cash Flow From Financing Activities</u>		
Money borrowed (intermediate & long term)	\$ 18,985	
+ Money borrowed (short term)	134	
+ Increase in operating debt	0	
+ Cash from nonfarm capital used in business	2,524	
+ Money borrowed - nonfarm	<u>692</u>	
= Cash inflow from financing		\$ 22,335
Principal payments (intermediate & long term)	\$ 18,528	
+ Principal payments (short term)	419	
+ Decrease in operating debt	<u>550</u>	
- Cash outflow for financing		<u>\$ 19,497</u>
= Net Provided by Financing Activities		\$ 2,838
<u>Cash Flow From Reserves</u>		
Beginning farm cash, checking & savings		\$ 4,418
- Ending farm cash, checking & savings		<u>5,936</u>
= Net Provided from Reserves		\$ -1,518
Imbalance (error)		<u>\$ 154</u>

ANNUAL CASH FLOW STATEMENT
15 Top 25% Small Herd Dairy Farms, 1999

Item	Top 25% Farms	
<u>Cash Flow from Operating Activities</u>		
Cash farm receipts	\$ 156,537	
- Cash farm expenses	<u>103,263</u>	
= Net cash farm income		\$ 53,274
Personal withdrawals & family expenses including nonfarm debt payments	\$ 33,324	
- Nonfarm income	<u>4,464</u>	
- Net cash withdrawals from the farm		<u>\$ 28,860</u>
= Net Provided by Operating Activities		\$ 24,414
<u>Cash Flow From Investing Activities</u>		
Sale of assets: machinery	\$ 767	
+ real estate	0	
+ other stock & cert.	<u>0</u>	
= Total asset sales		\$ 767
Capital purchases: expansion livestock	\$ 0	
+ machinery	14,750	
+ real estate	1,475	
+ other stock & cert.	<u>304</u>	
- Total invested in farm assets		<u>\$ 16,529</u>
= Net Provided by Investment Activities		\$ -15,762
<u>Cash Flow From Financing Activities</u>		
Money borrowed (intermediate & long term)	\$ 7,128	
+ Money borrowed (short term)	0	
+ Increase in operating debt	0	
+ Cash from nonfarm capital used in business	234	
+ Money borrowed - nonfarm	<u>-782</u>	
= Cash inflow from financing		\$ 6,580
Principal payments (intermediate & long term)	\$ 12,880	
+ Principal payments (short term)	400	
+ Decrease in operating debt	<u>165</u>	
- Cash outflow for financing		<u>\$ 13,445</u>
= Net Provided by Financing Activities		\$ -6,865
<u>Cash Flow From Reserves</u>		
Beginning farm cash, checking & savings		\$ 3,756
- Ending farm cash, checking & savings		<u>5,134</u>
= Net Provided from Reserves		\$ -1,378
Imbalance (error)		\$ 409

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 2000. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 2000 debt payments shown below.

FARM DEBT PAYMENTS PLANNED

Small Herd Dairy Farms, 1998 & 1999

Debt Payments	Same 50 Dairy Farms			Same 15 Top 25% Farms		
	1999 Payments		Planned 2000	1999 Payments		Planned 2000
	Planned	Made		Planned	Made	
Long-term	\$ 6,967	\$ 11,023	\$ 6,196	\$ 6,347	\$ 7,191	\$ 6,062
Intermediate-term	11,194	15,782	11,544	10,861	11,484	9,423
Short-term	475	549	207	320	423	80
Operating (net reduction)	794	729	574	468	165	674
Accounts payable (net reduction)	429	346	0	270	215	0
Total	\$ 19,859	\$ 28,429	\$ 18,521	\$ 18,266	\$ 19,478	\$ 16,239
Per cow	\$ 405	\$ 580		\$ 381	\$ 406	
Per cwt. 1999 milk	\$ 2.26	\$ 3.23		\$ 2.03	\$ 2.17	
Percent of total 1999 receipts	13%	19%		12%	13%	
Percent of 1999 milk receipts	15%	22%		13%	14%	

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 1999 (as of December 31, 1998) that could have been made with the amount available for debt service in 1999. Farmers who did not participate in DFBS in 1998 have their 1999 cash flow coverage ratio based on planned debt payments for 2000.

COVERAGE RATIOS

Same 50 Small Herd Dairy Farms, 1998 & 1999

Item	Average	Item	Average
<u>Cash Flow Coverage Ratio</u>		<u>Debt Coverage Ratio</u>	
Cash farm receipts	\$152,472	Net farm income (w/o apprec.)	\$28,674
- Cash farm expenses	110,826	+ Depreciation	12,673
+ Interest paid (cash)	6,945	+ Interest paid (accrual)	6,945
- Net personal withdrawals from farm ⁹	19,971	- Net personal withdrawals from farm*	19,971
(A) = Amount Available for Debt Service	\$ 28,620	(A') = Repayment Capacity	\$28,321
(B) = Debt Payments Planned for 1999 (as of December 31, 1998)	\$ 19,859	(B) = Debt Payments Planned for 1999 (as of December 31, 1998)	\$19,859
(A/B)= Cash Flow Coverage Ratio for 1999	1.44	(A'/B)= Debt Coverage Ratio for 1999	1.43

Same 15 Top 25% Dairy Farms, 1998 & 1999			
(A) = Amount Available for Debt Service	\$ 29,604	(A') = Repayment Capacity	\$ 32,294
(B) = Debt Payments Planned for 1999	18,266	(B) = Debt Payments Planned for 1999	18,266
(A/B)= Cash Flow Coverage Ratio for 1999	1.62	(A'/B)= Debt Coverage Ratio for 1999	1.77

*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
61 Small Herd Dairy Farms, 1999

Item	Average 61 Farms		
	Per Cow	Per Cwt.	Total
Number cows and cwt. milk	49	8,354	
<u>Accrual Operating Receipts</u>			
Milk	\$ 2,523	\$ 14.80	\$ 123,617
Dairy cattle	173	1.01	8,456
Dairy calves	29	0.17	1,442
Other livestock	1	0.01	61
Crops	7	0.04	344
Misc. receipts	180	1.06	8,829
Total	\$ 2,913	\$ 17.09	\$ 142,750
<u>Accrual Operating Expenses</u>			
Hired labor	\$ 111	\$ 0.65	\$ 5,442
Dairy grain & concentrate	611	3.58	29,919
Dairy roughage	75	0.44	3,670
Nondairy feed	0	0.00	0
Mach. hire/rent/lease	35	0.21	1,735
Mach. repair & farm vehicle expense	175	1.03	8,568
Fuel, oil & grease	56	0.33	2,752
Replacement livestock	67	0.39	3,290
Breeding	36	0.21	1,773
Vet & medicine	55	0.32	2,683
Milk marketing	134	0.79	6,567
Bedding	12	0.07	576
Milking supplies	80	0.47	3,924
Cattle lease	1	0.00	31
Custom boarding	9	0.06	464
bST expense	8	0.05	410
Other livestock expense	53	0.31	2,578
Fertilizer & lime	70	0.41	3,438
Seeds & plants	33	0.19	1,600
Spray/other crop expenses	22	0.13	1,068
Land, building, fence repair	57	0.34	2,802
Taxes	83	0.48	4,051
Real estate rent/lease	28	0.16	1,350
Insurance	50	0.29	2,438
Utilities	91	0.53	4,451
Miscellaneous	33	0.19	1,609
Total Less Interest Paid	\$ 1,984	\$ 11.63	\$ 97,192
<u>Net Accrual Operating Income</u>			
(without interest paid)	\$ 930	\$ 5.45	\$ 45,558
- Change in livestock/crop inventory*	17	0.10	854
- Change in accounts receivable	-61	-0.36	-2,975
- Change in feed/supply inventory**	36	0.21	1,776
+ Change in accts. Payable***	-17	-0.10	-809
NET CASH FLOW	\$ 920	\$ 5.40	\$ 45,094
- Net personal withdrawals from farm (see footnote on p. 16)	\$ 370	\$ 2.17	\$ 18,131
Available for Farm Debt Payments & Investments	\$ 550	\$ 3.23	\$ 26,963
- Farm debt payments	548	3.21	26,842
Available for Farm Investment	\$ 2	\$ 0.01	\$ 121
- Capital purchases: cattle, machinery & improvements	\$ 427	\$ 2.50	\$ 20,904

*Includes change in advance government receipts.

**Includes change in prepaid expenses.

***Excludes change in interest account payable.

ANNUAL CASH FLOW WORKSHEET
15 Top 25% Small Herd Dairy Farms, 1999

Item	Average Top 25% Farms		
	Per Cow	Per Cwt.	Total
No. cows or cwt. milk	48	8,986	
<u>Accrual Operating Receipts</u>			
Milk	\$ 2,866	\$ 15.31	\$ 137,561
Dairy cattle	193	1.03	9,241
Dairy calves	35	0.19	1,699
Other livestock	0	0.00	-10
Crops	-1	0.00	-38
Misc. receipts	152	0.81	7,291
Total	\$ 3,245	\$ 17.33	\$ 155,743
<u>Accrual Operating Expenses</u>			
Hired labor	\$ 84	\$ 0.45	\$ 4,018
Dairy grain & concentrate	584	3.12	28,013
Dairy roughage	104	0.56	5,013
Nondairy feed	0	0.00	0
Mach. hire/rent/lease	19	0.10	935
Mach. repair & farm vehicle expense	171	0.91	8,192
Fuel, oil & grease	49	0.26	2,346
Replacement livestock	98	0.52	4,680
Breeding	34	0.18	1,650
Vet & medicine	54	0.29	2,605
Milk marketing	165	0.88	7,914
Bedding	10	0.05	467
Milking supplies	94	0.50	4,505
Cattle lease	3	0.01	124
Custom boarding	7	0.03	313
bST expense	13	0.07	609
Other livestock expense	35	0.19	1,680
Fertilizer & lime	69	0.37	3,297
Seeds & plants	32	0.17	1,558
Spray/other crop expenses	12	0.07	587
Land, building, fence repair	35	0.18	1,662
Taxes	70	0.37	3,362
Real estate rent/lease	33	0.17	1,569
Insurance	46	0.25	2,216
Utilities	104	0.56	4,995
Miscellaneous	31	0.17	1,497
Total Less Interest Paid	\$ 1,954	\$ 10.44	\$ 93,807
<u>Net Accrual Operating Income</u>			
(without interest paid)	\$ 1,290	\$ 6.89	\$ 61,936
- Change in livestock/crop inventory*	37	0.20	1,775
- Change in accounts receivable	-54	-0.29	-2,570
- Change in feed/supply inventory**	68	0.36	3,269
+ Change in accounts payable***	-4	-0.02	-214
NET CASH FLOW	\$ 1,234	\$ 6.59	\$ 59,246
- Net personal withdrawals from farm(see footnote p.16)	\$ 618	\$ 3.30	\$ 29,642
Available for Farm Debt Payments & Investments	\$ 617	\$ 3.29	\$ 29,604
- Farm debt payments	406	2.17	19,479
Available for Farm Investment	\$ 211	\$ 1.13	\$ 10,125
- Capital purchases: cattle, machinery & improvements	\$ 344	\$ 1.84	\$ 16,529

*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 61 Small Herd Dairy Farms, 1999

Item	Average 61 Farms			Top 25% Farm		
<u>Land</u>	<u>Owned</u>	<u>Rented</u>	<u>Total</u>	<u>Owned</u>	<u>Rented</u>	<u>Total</u>
Tillable	105	60	165	90	61	150
Nontillable	41	13	54	27	12	39
Other nontillable	<u>72</u>	<u>3</u>	<u>75</u>	<u>58</u>	<u>13</u>	<u>71</u>
Total	218	76	294	175	86	260
<u>Crop Yields</u>	<u>Farms</u>	<u>Acres*</u>	<u>Prod/Acre</u>	<u>Farms</u>	<u>Acres</u>	<u>Prod/Acre</u>
Hay crop	55	115	1.85 tn DM	13	110	2.08 tn DM
Corn silage	44	37	12.41 tn	9	32	13.34 tn
			4.22 tn DM			4.50 tn DM
Other forage	5	30	0.60 tn DM	2	30	1.17 tn DM
Total forage	57	142	2.31 tn DM	13	137	2.44 tn DM
Corn grain	9	37	98 bu	2	41	91 bu
Oats	7	16	41 bu	0	0	0 bu
Wheat	1	35	64 bu	0	0	0 bu
Other crops	8	31		3	44	
Tillable pasture	26	43		6	41	
Idle	8	15		1	17	
Total Tillable Acres	61	165		15	150	

*This column represents the average acreage for the farms producing that crop. Average acreages including those farms not producing were hay crop 104, corn silage 27, corn grain 5, oats 2, tillable pasture 18, and idle 2.

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 61 Small Herd Dairy Farms, 1999

Item	Average 61 Farms	Top 25% Farm
Total tillable acres per cow	3.37	3.13
Total forage acres per cow	2.71	2.46
Harvested forage dry matter, tons per cow	6.24	6.02

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

CROP RELATED ACCRUAL EXPENSES

Small Herd Dairy Farms Reporting, 1999

Item	Total Per Till. Acre	All Corn Per Acre	Corn Silage Per Ton DM	Corn Grain Per Dry Sh. Bu.	Hay Crop		Pasture	
					Per Acre	Per Ton DM	Per Till. Acre	Per Total Acre
No. of farms reporting	61	10			9		5	
Ave. number of acres	165	45			86		34	62
Fert. & lime	\$ 20.84	\$ 44.91	\$ 10.85	\$ 0.50	\$ 13.72	\$ 6.15	\$ 33.97	\$ 18.63
Seeds & plants	9.70	33.83	8.17	0.37	10.91	4.89	23.12	12.68
Spray & other crop exp.	6.47	38.35	9.27	0.42	1.33	0.59	0.00	0.00
TOTAL	\$ 37.01	\$ 117.09	\$ 28.29	\$ 1.29	\$ 25.96	\$ 11.63	\$ 57.09	\$ 31.31
Top 25% Farms								
No. of farms reporting	15	1			2		1	
Ave. number of acres	150	15			71		0	27
Fert. & lime	\$ 21.98	\$ 19.53	\$ 3.26	\$ 0.00	\$ 9.39	\$ 3.37	\$ 0.00	\$ 11.78
Seeds & plants	10.39	27.00	4.50	0.00	6.75	2.42	0.00	0.00
Spray & other crop exp.	3.91	50.67	8.44	0.00	0.93	0.33	0.00	0.00
TOTAL	\$ 36.28	\$ 97.20	\$ 16.20	\$ 0.00	\$ 17.07	\$ 6.12	\$ 0.00	\$ 11.78

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

61 Small Herd Dairy Farms, 1999

Machinery Expense	Average 61 Farms		Top 25% Farms	
	Total Expenses	Per Till. Acre	Total Expenses	Per Till. Acre
Fuel, oil & grease	\$ 2,752	\$ 16.68	\$ 2,346	\$ 15.64
Mach. repair & vehicle exp.	8,568	51.93	8,192	54.61
Machine hire, rent & lease	1,735	10.52	935	6.23
Interest (5%)	4,285	25.97	4,145	27.63
Depreciation	9,674	58.63	6,074	40.49
Total	\$ 27,014	\$ 163.72	\$ 21,692	\$ 144.61

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
61 Small Herd Dairy Farms, 1999

Item	Dairy Cows		Heifer					
	No.	Value	Bred		Open		Calves	
			No.	Value	No.	Value	No.	Value
<u>Average 61 Farms:</u>								
Beg. year (owned)	49	\$ 51,211	12	\$ 10,696	12	\$ 7,011	10	\$ 2,817
+ Change w/o apprec.		790		215		333		68
+ Appreciation		<u>1,787</u>		<u>354</u>		<u>313</u>		<u>215</u>
End year (owned)	49	\$ 53,788	12	\$ 11,265	13	\$ 7,657	11	\$ 3,100
End including leased	49							
Average number	49		33	(all age groups)				
<u>Top 25% Farms:</u>								
Beg. year (owned)	48	\$ 49,443	9	\$ 8,207	10	\$ 4,963	9	\$ 2,278
+ Change w/o apprec.		1,037		1,223		90		-296
+ Appreciation		<u>533</u>		<u>313</u>		<u>440</u>		<u>85</u>
End year (owned)	48	\$ 51,013	11	\$ 9,743	10	\$ 5,493	8	\$ 2,067
End including leased	48							
Average number	48		29	(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
61 Small Herd Dairy Farms, 1999

Item	Average 61 Farms	Top 25% Farms
Total milk sold, lbs.	835,449	898,566
Milk sold per cow, lbs.	17,217	18,825
Average milk plant test, percent butterfat	3.66	3.60

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
61 Small Herd Dairy Farms, 1999

Item	Average 61 Farms		Top 25% Farms	
	Number	Percent*	Number	Percent*
Cows sold for beef	11	22.4	13	27.1
Cows sold for dairy	1	2.0	0	0.0
Cows died	2	4.1	2	4.2
Culling rate**		26.5		31.3

*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**
61 Small Herd Dairy Farms, 1999

Item	Average 61 Farms			Top 25% Farms		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
<u>Accrual Cost of Producing Milk</u>						
Operating costs	\$ 85,028	\$ 1,735	\$ 10.18	\$ 81,597	\$ 1,700	\$ 9.08
Purchased inputs costs	\$ 97,387	\$ 1,987	\$ 11.66	\$ 90,463	\$ 1,885	\$ 10.07
Total Costs	\$ 146,115	\$ 2,982	\$ 17.49	\$ 130,787	\$ 2,725	\$ 14.55
<u>Accrual Receipts</u>						
From Milk	\$ 123,617	\$ 2,523	\$ 14.80	\$ 137,561	\$ 2,866	\$ 15.31
Net Milk Receipts	\$ 117,050	\$ 2,389	\$ 14.01	\$ 129,647	\$ 2,701	\$ 14.43
Net Farm Income without Apprec.	\$ 26,230	\$ 535	\$ 3.14	\$ 47,098	\$ 981	\$ 5.24
Net Farm Income with Apprec.	\$ 34,724	\$ 709	\$ 4.16	\$ 52,991	\$ 1,104	\$ 5.90

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
61 Small Herd Dairy Farms, 1999

Item	Average 61 Farms		Top 25% Farms	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purchased dairy grain & concentrate	\$ 611	\$ 3.58	\$ 584	\$ 3.12
Purchased dairy roughage	75	0.44	104	0.56
Total Purchased Dairy Feed	\$ 686	\$ 4.02	\$ 688	\$ 3.68
Purchased grain & conc. as % of milk receipts		24%		20%
Purchased feed & crop exp.	\$ 810	\$ 4.75	\$ 801	\$ 4.28
Purchased feed & crop exp. as % of milk receipts		32%		28%
Breeding	\$ 36	\$ 0.21	\$ 34	\$ 0.18
Veterinary & medicine	55	0.32	54	0.29
Milk marketing	134	0.79	165	0.88
Bedding	12	0.07	10	0.05
Milking supplies	80	0.47	94	0.50
Cattle lease	1	0.00	3	0.01
Custom boarding	9	0.06	7	0.03
bST	8	0.05	13	0.07
Other livestock expense	53	0.31	35	0.19

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
61 Small Herd Dairy Farms, 1999

Item	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
<u>Average 61 Farms:</u>				
Farm capital	\$197,753	\$8,112	\$2,409	\$3,786
Real estate		4,016		1,874
Machinery & equipment	42,633	1,749	519	
<u>Ratios</u>				
Asset turnover	Operating Expense 0.38	Interest Expense 0.68	Depreciation Expense 0.05	0.09
<u>Top 25% Farms:</u>				
Farm capital	\$202,228	\$7,036	\$2,251	\$3,752
Real estate		3,045		1,624
Machinery & equipment	49,635	1,727	553	
<u>Ratios</u>				
Asset turnover	Operating Expense 0.48	Interest Expense 0.60	Depreciation Expense 0.04	0.06

LABOR FORCE INVENTORY AND ANALYSIS

61 Small Herd Dairy Farms, 1999

Labor Force	Months	Age	Years of Educ.	Value of Labor & Mgmt.
<u>Average 61 Farms:</u>				
Operator number 1	13.4	46	13	\$ 22,505
Operator number 2	2.9	48	13	4,853
Family paid	1.6			
Family unpaid	3.5			
Hired	2.6			
Total	24.1	/ 12 = 2.01 Worker Equivalent 1.31 Operator/Manager Equivalent		
<u>Top 25% Farms:</u> Total				
Operator's	20.0	/ 12 = 1.67 Worker Equivalent 1.21 Operator/Manager Equivalent		

Labor Efficiency	Average 61 Farms		Top 25% Farms	
	Total	Per Worker	Total	Per Worker
Cows, average number	49	24	48	29
Milk sold, pounds	835,449	415,646	898,566	538,063
Tillable acres	165	82	150	90
Work units	501	249	473	283

Labor Costs	Average 61 Farms			Top 25% Farms		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Value of operator(s)						
labor (\$1,800/mo.)	\$ 29,340	\$ 599	\$ 3.51	\$26,640	\$ 555	\$ 2.96
Family unpaid (\$1,800/mo.)	6,300	129	0.75	3,960	83	0.44
Hired	5,442	111	0.65	4,018	84	0.45
Total Labor	\$ 41,082	\$ 838	\$ 4.92	\$34,618	\$ 721	\$ 3.85
Machinery Cost	\$ 27,014	\$ 551	\$ 3.23	\$21,692	\$ 452	\$ 2.41
Total Labor & Mach.	\$ 68,096	\$ 1,390	\$ 8.15	\$56,310	\$ 1,173	\$ 6.26
Hired labor expense per hired worker equivalent		\$15,549			\$16,072	
Hired labor expense as % of milk sales		4.4%			2.9%	

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 50 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 Small Herd Dairy Farms, 1998 & 1999

Selected Factors	Average of Same 50 Farms*		Same 15 Top 25% Farms*	
	1998	1999	1998	1999
<u>Size of Business</u>				
Average number of cows	49	49	48	48
Average number of heifers	34	34	28	29
Milk sold, lbs.	860,986	879,454	832,898	898,566
Worker equivalent	1.93	1.94	1.76	1.67
Total tillable acres	167	163	164	150
<u>Rates of Production</u>				
Milk sold per cow, lbs.	17,607	17,933	17,473	18,825
Hay DM per acre, tons	2.0	1.9	2.0	2.1
Corn silage per acre, tons	13.3	13.9	13.5	13.5
<u>Labor Efficiency</u>				
Cows per worker	25	25	27	29
Milk sold/worker, lbs.	446,107	453,327	473,238	538,063
<u>Cost Control</u>				
Grain & conc. purchased as % of milk sales	25%	24%	23%	20%
Dairy feed & crop exp.				
per cwt. milk	\$ 5.06	\$ 4.77	\$ 4.64	\$ 4.28
Labor & mach. costs/cow	\$ 1,230	\$ 1,368	\$ 1,100	\$ 1,173
Operating cost of producing cwt. of milk	\$ 10.65	\$ 10.22	\$ 9.81	\$ 9.08
<u>Capital Efficiency**</u>				
Farm capital per cow	\$ 7,620	\$ 8,172	\$ 6,588	\$ 7,036
Mach. & equip. per cow	\$ 1,547	\$ 1,769	\$ 1,517	\$ 1,727
Asset turnover ratio	0.41	0.40	0.47	0.48
<u>Profitability</u>				
Net farm income w/o apprec.	\$ 32,350	\$ 28,674	\$ 40,126	\$ 47,098
Net farm income w/apprec.	\$ 38,275	\$ 37,916	\$ 45,596	\$ 52,991
Labor & mgt. income per operator/manager	\$ 9,655	\$ 6,242	\$ 19,092	\$ 24,827
Rate of return on equity capital w/appreciation	2.1%	1.8%	7.4%	9.8%
Rate of return on all capital w/appreciation	3.5%	3.1%	7.6%	9.4%
<u>Financial Summary</u>				
Farm net worth, end year	\$ 291,976	\$ 318,239	\$ 248,848	\$ 274,607
Debt to asset ratio	0.24	0.22	0.24	0.21
Farm debt per cow	\$ 1,851	\$ 1,821	\$ 1,631	\$ 1,510

*Farms participating both years.

**Average for the year.

RECEIPTS AND EXPENSES PER COW AND PER CWT.
Same 50 Small Herd Dairy Farms, 1998 & 1999

Item	1998		1999	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	49		49	
Cwt. Of Milk Sold		8,610		8,795
<u>ACCRUAL OPERATING RECEIPTS</u>				
Milk	\$ 2,734	\$ 15.56	\$ 2,678	\$ 14.92
Dairy cattle	112	0.64	167	0.93
Dairy calves	23	0.13	30	0.17
Other livestock	2	0.01	3	0.02
Crops	35	0.20	16	0.09
Miscellaneous receipts	<u>111</u>	<u>0.63</u>	<u>171</u>	<u>0.95</u>
Total Receipts	\$ 3,017	\$ 17.17	\$ 3,065	\$ 17.08
<u>ACCRUAL OPERATING EXPENSES</u>				
Hired labor	\$ 114	\$ 0.65	\$ 120	\$ 0.67
Dairy grain & concentrate	675	3.84	636	3.54
Dairy roughage	82	0.47	88	0.49
Nondairy feed	1	0.00	0	0.00
Machine hire/rent/lease	33	0.19	36	0.20
Mach. repair & vehicle exp.	168	0.96	174	0.97
Fuel, oil & grease	52	0.29	54	0.30
Replacement livestock	45	0.25	73	0.40
Breeding	39	0.22	39	0.22
Veterinary & medicine	59	0.34	57	0.31
Milk marketing	126	0.71	146	0.81
Bedding	14	0.08	12	0.07
Milking supplies	76	0.43	86	0.48
Cattle lease	0	0.00	1	0.00
Custom boarding	6	0.04	12	0.06
bST expense	9	0.05	10	0.06
Other livestock expense	28	0.16	53	0.30
Fertilizer & lime	72	0.41	75	0.42
Seeds & plants	33	0.19	35	0.20
Spray/other crop expense	26	0.15	22	0.12
Land, building, fence repair	40	0.23	58	0.33
Taxes	82	0.47	82	0.46
Real estate rent/lease	44	0.25	27	0.15
Insurance	50	0.28	51	0.28
Utilities	92	0.52	95	0.53
Interest paid	143	0.81	142	0.79
Miscellaneous	<u>40</u>	<u>0.23</u>	<u>36</u>	<u>0.20</u>
Total Operating Expenses	\$ 2,149	\$ 12.23	\$ 2,218	\$ 12.36
Expansion Livestock	6	0.03	3	0.02
Machinery Depreciation	149	0.85	202	1.12
Real Estate Depreciation	<u>52</u>	<u>0.30</u>	<u>57</u>	<u>0.32</u>
Total Expenses	\$ 2,357	\$ 13.41	\$ 2,480	\$ 13.82
Net Farm Income Without Appreciation	\$ 660	\$ 3.76	\$ 585	\$ 3.26

RECEIPTS AND EXPENSES PER COW AND PER CWT.
Same 15 Top 25% Small Herd Dairy Farms, 1998 & 1999

Item	1998		1999	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	48		48	
Cwt. Of Milk Sold		8,329		8,986
<u>ACCRUAL OPERATING RECEIPTS</u>				
Milk	\$ 2,697	\$ 15.54	\$ 2,866	\$ 15.31
Dairy cattle	101	0.58	193	1.03
Dairy calves	28	0.16	35	0.19
Other livestock	-2	-0.01	0	0.00
Crops	48	0.27	-1	0.00
Miscellaneous receipts	<u>141</u>	<u>0.81</u>	<u>152</u>	<u>0.81</u>
Total Receipts	\$ 3,013	\$ 17.36	\$ 3,245	\$ 17.33
<u>ACCRUAL OPERATING EXPENSES</u>				
Hired labor	\$ 83	\$ 0.48	\$ 84	\$ 0.45
Dairy grain & concentrate	612	3.53	584	3.12
Dairy roughage	102	0.59	104	0.56
Nondairy feed	0	0.00	0	0.00
Machine hire/rent/lease	21	0.12	19	0.10
Mach. repair & vehicle exp.	171	0.99	171	0.91
Fuel, oil & grease	47	0.27	49	0.26
Replacement livestock	67	0.39	98	0.52
Breeding	37	0.21	34	0.18
Veterinary & medicine	48	0.27	54	0.29
Milk marketing	137	0.79	165	0.88
Bedding	14	0.08	10	0.05
Milking supplies	70	0.40	94	0.50
Cattle lease	0	0.00	3	0.01
Custom boarding	2	0.01	7	0.03
bST expense	8	0.05	13	0.07
Other livestock expense	28	0.16	35	0.19
Fertilizer & lime	45	0.26	69	0.37
Seeds & plants	33	0.19	32	0.17
Spray/other crop expense	12	0.07	12	0.07
Land, building, fence repair	36	0.21	35	0.18
Taxes	80	0.46	70	0.37
Real estate rent/lease	48	0.28	33	0.17
Insurance	42	0.24	46	0.25
Utilities	93	0.54	104	0.56
Interest paid	130	0.75	124	0.66
Miscellaneous	<u>52</u>	<u>0.30</u>	<u>31</u>	<u>0.17</u>
Total Operating Expenses	\$ 2,018	\$ 11.63	\$ 2,079	\$ 11.10
Expansion Livestock	0	0.01	0	0.00
Machinery Depreciation	98	0.56	127	0.68
Real Estate Depreciation	61	0.35	58	0.31
Total Expenses	\$ 2,177	\$ 12.55	\$ 2,263	\$ 12.09
Net Farm Income Without Appreciation	\$ 836	\$ 4.82	\$ 981	\$ 5.24

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

61 Small Herd Dairy Farms, 1999

Size of Business			Rate of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(11)*	(11)	(11)	(10)	(9)	(9)	(11)	(11)
3.08	62	1,232,667	22,403	3.5	22	39	781,405
2.27	55	1,027,466	19,094	2.4	17	30	492,745
1.89	50	849,517	17,218	1.9	13	25	398,028
1.61	44	680,643	15,440	1.5	10	21	346,879
1.25	33	421,452	10,845	1.0	8	16	227,890

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)		
\$ 346	16%	\$ 322	\$ 968	\$ 442	\$ 3.31	0.0%	5.3%
509	21	462	1,234	649	3.99	1.3	15.6
576	23	560	1,383	773	4.74	3.1	22.3
699	27	648	1,619	943	5.17	4.5	28.5
909	36	802	1,973	1,232	6.74	8.4	40.6

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)
\$ 3,334	\$ 7.53	\$ 14.15	\$ 66,555	\$ 58,790	\$ 31,675	\$ 48,302
2,912	8.92	15.86	48,375	36,481	12,679	24,213
2,508	10.22	17.19	35,759	25,213	4,406	17,479
2,260	11.43	19.38	24,940	16,510	-3,896	10,959
1,580	14.01	26.60	820	-3,374	-26,054	-7,279

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

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 314 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

314 New York Dairy Farms, 1999

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(11)*	(11)	(11)	(10)	(9)	(9)	(11)	(11)
18.6	851	19,987,607	25,069	5.3	23	55	1,213,661
9.9	418	9,126,584	23,355	4.0	20	47	1,009,282
7.0	279	5,925,301	22,344	3.4	19	44	888,653
5.3	198	3,903,863	21,492	3.0	17	40	798,241
4.2	145	2,857,909	20,435	2.6	16	37	731,684

3.5	111	2,145,630	19,413	2.3	15	34	660,719
3.0	87	1,605,859	18,334	2.0	14	31	597,681
2.5	71	1,261,635	17,209	1.7	12	28	493,858
2.0	56	1,003,180	15,764	1.5	10	24	390,912
1.4	40	588,644	12,475	1.0	8	18	281,530

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
(10)	(10)	(11)	(11)	(10)	(10)
\$365	15%	\$278	\$778	\$506	\$3.25
519	20	381	933	703	3.81
590	22	427	1,028	805	4.25
653	23	463	1,111	866	4.48
700	24	504	1,164	921	4.67

743	25	541	1,223	971	4.88
793	27	582	1,299	1,021	5.05
852	28	624	1,398	1,089	5.29
916	30	701	1,540	1,163	5.71
1,036	37	845	1,847	1,300	6.78

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

**FARM BUSINESS CHART FOR
FARM MANAGEMENT COOPERATORS**
314 New York Dairy Farms, 1999

Milk Receipts Per Cow	Milk Receipts Per Cwt.	Oper. Cost Milk Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cow	Total Cost Production Per Cwt.
(10)	(10)	(10)	(10)	(10)	(10)
\$3,817	\$16.50	\$1,200	\$7.89	\$2,176	\$12.45
3,461	15.56	1,635	9.24	2,532	13.42
3,293	15.27	1,832	9.90	2,752	13.97
3,160	15.05	1,998	10.35	2,864	14.48
3,046	14.86	2,137	10.78	2,987	14.98

2,908	14.73	2,262	11.20	3,101	15.43
2,743	14.58	2,367	11.66	3,211	16.16
2,529	14.39	2,479	12.10	3,306	16.79
2,320	14.12	2,636	12.76	3,459	17.98
1,838	13.61	2,955	14.43	3,867	22.84

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
(3)	(10)	(3)	(3)	(10)	(3)	(3)
\$578,366	\$1,174	0.33	\$668,929	\$1,351	\$454,170	\$318,071
222,031	863	0.25	270,325	1,035	150,302	88,408
136,405	763	0.22	180,888	922	82,986	54,378
96,263	663	0.19	124,395	824	54,339	39,122
74,615	550	0.17	91,554	697	38,704	26,018

56,349	464	0.14	69,234	615	25,330	15,699
39,420	376	0.11	53,026	520	13,406	9,369
26,824	290	0.09	38,225	405	1,342	876
15,421	173	0.06	26,086	282	-11,196	-10,038
-10,114	-114	-0.06	4,679	12	-42,427	-38,149

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 33-37.

Financial Analysis Chart

The farm financial analysis chart on page 30 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, 12, 16 and 23 of this publication. References to DFBS output page numbers for participating dairy farmers are provided in the table headings.

FINANCIAL ANALYSIS CHART
314 New York Dairy Farms, 1999

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
(8)*	(12)	(8)	(8)	(8)	(5)	(5)	(5)
\$128	\$1,177	5.71	7.13	4%	\$217	57%	30.96
247	868	2.38	2.84	8	929	34	5.03
333	757	1.88	2.19	11	1,464	27	3.54
383	675	1.61	1.75	13	1,862	22	2.73
430	599	1.38	1.52	14	2,343	18	2.10
476	546	1.17	1.28	16	2,758	13	1.71
521	486	1.04	1.10	18	3,067	9	1.45
581	406	0.89	0.94	21	3,426	5	1.20
710	300	0.70	0.73	24	3,882	-2	0.91
922	69	0.29	0.31	37	5,125	-17	0.55
Solvency				Profitability			
Leverage Ratio**	Percent Equity	Debt/Asset Ratio		Percent Rate of Return with appreciation on:			
		Current & Intermediate	Long Term	Equity	Investment***		
(5)	(5)	(5)	(5)	(3)	(3)		
0.06	98%	0.03	0.00	36%	19%		
0.17	88	0.11	0.00	19	14		
0.29	80	0.19	0.04	14	11		
0.40	73	0.26	0.18	11	9		
0.56	66	0.33	0.29	8	8		
0.70	60	0.39	0.38	6	6		
0.90	54	0.47	0.46	3	4		
1.13	48	0.55	0.56	0	3		
1.50	40	0.64	0.73	-3	0		
3.91	23	0.88	1.19	-31	-5		
Efficiency (Capital)							
Asset Turnover (ratio)	Real Estate Investment Per Cow	Machinery Investment Per Cow	Total Farm Assets Per Cow	Change in Net Worth w/Appreciation	Farm Net Worth, End Year		
(11)	(11)	(11)	(11)	(6)	(4)		
.85	\$1,210	\$527	\$4,275	\$449,790	\$3,107,799		
.72	1,808	775	5,134	169,937	1,452,198		
.64	2,109	944	5,668	93,388	1,021,329		
.59	2,336	1,082	6,126	59,438	804,166		
.54	2,628	1,204	6,555	42,597	644,876		
.50	2,935	1,348	6,999	29,284	547,645		
.46	3,307	1,493	7,497	20,531	429,658		
.41	3,836	1,738	8,214	12,457	347,748		
.35	4,552	2,103	9,192	838	251,306		
.25	6,622	2,899	11,691	-47,361	124,028		

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

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

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

Comparison by Type of Barn and Herd Size

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

The table on page 32 includes the average values for the resulting five groups of dairy farms. The average size of farms in the five groups ranges from 47 cows on the small conventional farms to 601 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. The large conventional farms showed average profits somewhat higher than the small freestall farm businesses.

Farm business charts have been computed for each of the five housing and herd size categories and are on pages 33-37. 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 46-55 of the 1999 State Summary*. As herd size increases, the average profitability generally increases (page 46)*. Net farm income without appreciation averaged \$21,114 per farm for the less than 50 cow farms and \$639,672 per farm for those with 600 cows and over. This relationship generally holds for all measures of profitability including rate of return on capital.

Farm net worth increases rapidly as herd size increases (pages 50-53)*, even though percent equity was higher on the smaller farms. The group with more than 600 cows demonstrated the strongest ability to make debt payments.

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 54-55)*. The farms with 600 and more cows per farm averaged 42 percent more milk sold per cow than the smallest farms. All of the groups with 75 or more cows averaged above 18,000 pounds of milk sold per cow while the farms smaller than 75 cows averaged 17,125 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 363,719 pounds at the lowest herd size category up to 1,118,658 pounds at the largest size category.

*Wayne A. Knoblauch, Linda D. Putnam and Jason Karszes, Dairy Farm Management Business Summary, New York, 1999, Department of Agricultural, Resource, and Managerial Economics, Cornell University, R.B. 2000-03, October 2000.

SELECTED BUSINESS FACTORS BY TYPE OF BARN AND HERD SIZE

292 New York Dairy Farms, 1999

Item	Farms with:	Conventional		Freestall		
		<= 60 Cows	>60 Cows	<=150 Cows	151-300 Cows	≥300 Cows
Number of farms		53	52	63	55	69
<u>Cropping Program Analysis</u>						
Total Tillable acres		163	296	308	557	1,149
Tillable acres rented*		60	124	141	261	531
Hay crop acres*		104	177	164	266	486
Corn silage acres*		27	61	85	196	515
Hay crop, tons DM/acre		1.9	2.2	2.4	2.7	3.6
Corn silage, tons/acre		11.8	14.7	14.1	15.2	17.3
Oats, bushels/acre		38	63	45	61	36
Forage DM per cow, tons		6.6	8.2	7.7	7.9	7.9
Tillable acres/cow		3.5	3.4	2.9	2.5	1.9
Fert. & lime exp./tillable acre		\$19.93	\$22.70	\$26.23	\$33.97	\$36.28
Total machinery costs		\$25,558	\$47,622	\$56,876	\$119,638	\$285,367
Machinery cost/tillable acre		\$157	\$161	\$185	\$215	\$248
<u>Dairy Analysis</u>						
Number of cows		47	87	105	219	601
Number of heifers		34	70	74	165	436
Milk sold, lbs.		794,585	1,572,844	2,019,084	4,572,742	13,630,992
Milk sold/cow, lbs.		16,920	18,027	19,267	20,833	22,694
Operating cost of prod. milk/cwt.		\$10.15	\$10.40	\$11.34	\$11.27	\$11.34
Total cost of prod. milk/cwt.		\$17.63	\$15.88	\$15.85	\$14.65	\$13.70
Price/cwt. milk sold		\$14.86	\$14.85	\$14.85	\$14.98	\$14.89
Purchased dairy feed/cow		\$694	\$648	\$787	\$790	\$911
Purchased dairy feed/cwt. milk		\$4.11	\$3.58	\$4.09	\$3.78	\$4.02
Purchased grain & conc. as % milk rec.		25%	23%	25%	24%	25%
Purchased feed & crop exp./cwt. milk		\$4.82	\$4.55	\$5.01	\$4.67	\$4.75
<u>Capital Efficiency</u>						
Farm capital/worker		\$195,392	\$210,516	\$252,922	\$249,401	\$266,995
Farm capital/cow		\$8,315	\$7,453	\$7,347	\$6,514	\$5,931
Farm capital/tillable acre owned		\$3,794	\$3,770	\$4,619	\$4,820	\$5,768
Real estate/cow		\$4,222	\$3,298	\$3,330	\$2,561	\$2,269
Machinery investment/cow		\$1,734	\$1,565	\$1,423	\$1,239	\$1,004
Asset turnover ratio		0.37	0.43	0.46	0.58	0.67
<u>Labor Efficiency</u>						
Worker equivalent		2.00	3.08	3.05	5.72	13.35
Operator/manager equivalent		1.33	1.59	1.46	1.79	2.13
Milk sold/worker, lbs.		397,293	510,664	661,995	799,430	1,021,048
Cows/worker		24	28	34	38	45
Labor cost/cow		\$872	\$709	\$614	\$617	\$653
Labor cost/tillable acre		\$251	\$208	\$209	\$243	\$342
<u>Profitability & Balance Sheet Analysis</u>						
Net farm income (without appreciation)		\$25,834	\$50,194	\$45,437	\$115,430	\$337,256
Labor & management income/operator		\$3,537	\$12,243	\$10,141	\$38,510	\$113,628
Rate Return on all capital with appreciation		2.0%	4.8%	4.5%	9.5%	12.3%
Farm debt/cow		\$1,967	\$1,965	\$2,633	\$2,607	\$2,901
Percent equity		76%	74%	64%	61%	52%

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

FARM BUSINESS CHART FOR SMALL CONVENTIONAL STALL DAIRY FARMS

53 Conventional Stall Dairy Farms with 60 or Less Cows, New York, 1999

Size of Business			Rates of Production			Labor Efficiency	
Worker Equiv- Alient	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)
3.36	60	1,249,557	23,442	4.1	24	42	866,834
2.82	57	1,097,188	21,649	3.2	20	34	623,722
2.49	54	997,166	19,974	2.7	17	31	511,506
2.16	52	951,687	18,273	2.3	15	27	431,444
1.98	51	842,501	17,468	2.0	14	26	405,806

1.83	47	771,571	16,658	1.8	11	25	382,448
1.71	46	700,887	15,691	1.6	10	23	352,446
1.52	42	636,598	14,698	1.4	10	20	326,229
1.39	37	553,671	13,054	1.2	8	18	266,346
1.12	30	319,766	8,782	0.9	6	15	193,003

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		
(10)	(10)	(11)	(11)	(10)	(10)		
\$291	15%	\$284	\$892	\$398	\$3.31		
435	19	370	1,109	509	3.52		
495	21	430	1,222	630	3.81		
537	22	482	1,301	697	4.14		
558	22	540	1,361	745	4.56		

601	24	580	1,453	784	4.87		
670	27	614	1,585	898	5.13		
735	30	670	1,707	1,036	5.65		
818	33	742	1,847	1,154	6.58		
1,066	43	857	2,090	1,343	7.58		

Value and Cost of Production			Profitability				
Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Apprec.		Labor & Mgmt. Inc. Per Oper.	Change in Net Worth w/Apprec.	
(10)	(10)	(10)	Total	Per Cow	(3)	(6)	
\$3,495	\$6.88	\$13.66	\$67,606	\$1,399	\$37,900	\$56,577	
3,255	8.35	14.90	51,727	1,028	24,910	41,828	
3,049	8.67	15.48	39,496	861	15,940	25,057	
2,849	9.12	16.35	34,679	735	12,211	22,037	
2,554	9.98	16.91	29,487	652	8,205	18,746	

2,423	10.53	17.89	23,104	532	2,786	15,378	
2,294	11.17	19.10	19,484	418	22	12,474	
2,169	11.68	20.80	14,070	264	-6,642	9,145	
1,960	12.74	23.78	4,661	104	-14,728	2,663	
1,208	15.67	29.51	-11,863	-369	-37,507	-11,715	

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

FARM BUSINESS CHART FOR LARGE CONVENTIONAL STALL DAIRY FARMS

52 Conventional Stall Dairy Farms with More Than 60 Cows, New York, 1999

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
(11)*	(11)	(11)	(10)	(9)	(9)	(11)	(11)
4.87	154	2,730,517	24,029	4.4	24	42	770,362
4.07	106	1,955,695	20,762	3.2	20	38	701,390
3.63	98	1,847,727	19,622	2.8	19	35	659,484
3.24	89	1,657,243	18,787	2.5	18	32	602,209
3.17	81	1,504,242	18,451	2.1	16	30	568,430

2.93	77	1,441,765	17,688	2.0	15	29	524,998
2.72	74	1,362,999	17,211	1.9	14	27	461,326
2.52	70	1,232,960	16,396	1.7	12	25	405,822
2.26	67	1,168,162	15,643	1.4	9	22	371,817
1.80	64	1,018,863	14,002	1.0	7	19	315,077

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		
(10)	(10)	(11)	(11)	(10)	(10)		
\$320	12%	\$283	\$887	\$514	\$3.03		
464	18	422	988	635	3.48		
538	20	466	1,072	710	3.77		
568	21	515	1,164	774	4.07		
608	22	562	1,237	824	4.39		

646	24	591	1,307	857	4.64		
687	26	629	1,414	881	4.95		
723	28	650	1,496	919	5.28		
769	30	700	1,644	970	5.68		
902	35	837	1,799	1,140	6.74		

Value and Cost of Production			Profitability				
Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Apprec.		Labor & Mgmt. Inc. Per Oper.	Change in Net Worth w/Apprec.	
(10)	(10)	(10)	Total	Per Cow	(3)	(6)	
\$3,471	\$7.60	\$13.02	\$118,857	\$1,145	\$54,023	\$81,736	
3,082	8.82	14.10	83,539	916	37,675	47,776	
2,928	9.47	14.49	70,691	847	29,425	36,423	
2,810	9.74	15.22	62,069	689	21,755	31,469	
2,728	10.20	15.87	51,419	574	17,112	26,330	

2,661	10.76	16.40	42,228	489	12,169	21,569	
2,553	11.12	16.86	33,666	449	7,566	17,147	
2,436	11.51	17.41	29,170	371	1,784	13,183	
2,280	12.03	18.26	21,667	294	-9,900	2,177	
2,051	13.97	20.60	3,657	64	-34,295	-20,718	

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

FARM BUSINESS CHART FOR SMALL FREESTALL DAIRY FARMS

63 Freestall Barn Dairy Farms with 150 or Less Cows, New York, 1999

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
(11)*	(11)	(11)	(10)	(9)	(9)	(11)	(11)
4.88	147	3,202,363	23,465	5.7	21	59	1,099,774
4.15	141	2,826,420	22,587	3.4	19	46	932,011
3.76	132	2,591,385	21,572	3.0	17	43	819,869
3.40	121	2,430,389	20,668	2.6	17	39	741,613
3.22	115	2,225,447	19,876	2.3	16	38	686,560

2.90	108	2,035,131	19,182	2.1	14	34	640,699
2.59	95	1,724,716	18,501	1.9	13	32	602,729
2.37	85	1,479,864	17,675	1.6	11	29	572,122
2.11	74	1,250,141	15,995	1.4	10	28	497,571
1.62	49	839,593	12,201	1.1	7	19	324,190

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		
(10)	(10)	(11)	(11)	(10)	(10)		(10)
\$398	16%	\$278	\$755	\$504	\$3.37		
532	20	394	907	757	4.15		
612	22	422	1,002	872	4.48		
648	24	455	1,073	911	4.76		
680	25	520	1,125	935	4.95		

739	26	542	1,182	981	5.10		
775	27	595	1,236	1,033	5.31		
833	29	682	1,400	1,093	5.55		
929	31	776	1,552	1,176	6.08		
1,063	37	908	1,859	1,348	6.82		

Value and Cost of Production			Profitability				
Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Apprec.		Labor & Mgmt. Inc. Per Oper.	Change in Net Worth w/Apprec.	
(10)	(10)	(10)	Total	Per Cow	(3)	(6)	
\$3,499	\$8.40	\$13.54	\$105,781	\$892	\$59,306	\$132,279	
3,279	9.73	14.11	90,022	792	42,957	61,621	
3,117	10.28	14.75	77,375	686	35,110	49,786	
3,056	10.85	15.38	67,071	571	17,345	41,699	
2,995	11.16	15.91	54,109	521	12,461	34,045	

2,883	11.46	16.41	36,762	419	7,745	26,599	
2,748	11.83	16.66	25,170	293	-692	18,504	
2,557	12.33	17.19	16,133	199	-7,054	10,198	
2,352	13.43	18.04	8,502	92	-13,987	1,712	
1,871	14.47	21.75	-6,797	-60	-32,477	-11,848	

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

FARM BUSINESS CHART FOR MEDIUM FREESTALL DAIRY FARMS
55 Freestall Barn Dairy Farms with 151-300 Cows, New York, 1999

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
(11)*	(11)	(11)	(10)	(9)	(9)	(11)	(11)
8.90	297	6,965,476	25,959	4.8	23	55	1,180,513
7.39	280	6,123,854	24,416	3.8	20	50	994,280
6.60	258	5,579,962	23,228	3.3	18	47	882,331
6.10	238	5,288,803	22,273	3.1	18	42	846,958
5.83	228	4,804,482	21,486	2.9	17	41	812,892

5.57	214	4,348,085	20,629	2.6	16	38	784,754
4.96	198	3,939,776	19,499	2.4	15	36	750,910
4.61	185	3,565,149	18,557	2.2	14	34	701,611
4.29	173	3,283,627	17,405	1.8	11	31	660,157
3.96	156	2,811,352	15,725	1.2	9	28	583,431

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	
(10)	(10)	(11)	(11)	(10)	(10)	
\$448	14%	\$349	\$803	\$700	\$3.36	
637	21	417	896	819	4.11	
680	22	455	968	864	4.33	
723	23	501	1,054	936	4.46	
749	25	537	1,141	962	4.59	

782	26	564	1,214	987	4.89	
819	27	591	1,305	1,015	4.97	
870	28	622	1,380	1,059	5.15	
909	30	703	1,478	1,151	5.64	
1,038	36	812	1,617	1,296	6.40	

Value and Cost of Production			Profitability			
Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Apprec.		Labor & Mgmt. Inc. Per Oper.	Change in Net Worth w/Apprec.
(10)	(10)	(10)	Total	Per Cow	(3)	(6)
\$4,048	\$9.11	\$12.57	\$307,993	\$1,287	\$155,954	\$302,351
3,626	9.86	13.22	217,554	861	110,405	188,506
3,430	10.34	13.79	163,915	757	68,703	146,148
3,298	10.51	14.20	136,148	690	56,765	125,984
3,204	10.89	14.76	128,773	589	45,661	99,684

3,078	11.73	15.08	107,451	484	34,085	73,593
2,918	12.16	15.39	86,609	410	22,418	58,794
2,776	12.72	16.08	64,416	321	11,250	40,024
2,593	13.22	16.68	30,768	158	-3,441	11,494
2,329	14.40	17.78	-26,452	-123	-47,671	-67,566

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

FARM BUSINESS CHART FOR LARGE FREESTALL DAIRY FARMS
69 Freestall Barn Dairy Farms with 300 or More Cows, New York, 1999

Size of Business			Rates of Production			Labor Efficiency	
Worker Equiv- Alient	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)
30.13	1,492	35,463,663	25,925	6.1	24	59	1,398,957
19.38	916	21,330,989	24,421	5.0	21	53	1,234,591
15.37	677	15,899,554	23,720	4.4	20	49	1,126,537
14.46	589	13,831,992	23,381	4.0	19	47	1,064,267
12.13	530	11,689,937	22,842	3.8	19	46	1,009,216
10.93	445	9,793,417	22,157	3.6	17	45	966,074
9.84	406	9,089,815	21,648	3.4	16	43	929,661
8.92	389	8,628,060	21,040	2.9	15	40	872,738
8.13	367	7,712,372	20,420	2.1	14	38	802,159
6.61	322	5,989,077	17,594	1.4	11	33	669,307
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		
(10)	(10)	(11)	(11)	(10)	(10)		
\$617	32%	\$246	\$731	\$841	\$3.97		
691	28	368	899	922	4.35		
756	27	409	1,022	978	4.44		
809	27	442	1,088	1,014	4.59		
839	26	471	1,130	1,055	4.70		
871	25	494	1,164	1,101	4.82		
901	24	515	1,191	1,134	5.00		
928	23	548	1,231	1,161	5.13		
973	22	605	1,312	1,214	5.38		
1,042	20	725	1,441	1,312	6.05		
Value and Cost of Production			Profitability				
Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Apprec.		Labor & Mgmt. Inc. Per Oper.	Change in Net Worth w/Apprec.	
(10)	(10)	(10)	Total	Per Cow	(3)	(6)	
\$3,948	\$9.10	\$11.71	\$1,117,509	\$1,035	\$737,887	\$797,943	
3,654	10.15	12.53	679,305	841	331,566	520,123	
3,550	10.70	12.97	426,163	752	209,766	338,284	
3,455	11.13	13.54	305,873	638	140,966	242,994	
3,369	11.51	14.02	258,146	534	98,432	182,176	
3,265	11.81	14.33	225,101	437	73,125	149,863	
3,197	12.11	14.70	182,181	369	57,971	100,949	
3,107	12.37	14.99	143,273	312	39,379	65,273	
2,988	12.85	15.22	101,868	250	21,884	15,739	
2,681	13.34	16.13	44,602	103	-20,310	-89,510	

*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 Specific.
2. Goals should be Measurable.
3. Goals should be Achievable but challenging.
4. Goals should be Rewarding.
5. Goals should be Timed with a designated date by which the goal will be achieved.

Goal setting on a dairy farm should be a process for writing down and agreeing on goals that you have already given some thought to. It is also important to remember that once you write out your goals they are not cast in concrete. If a change takes place which has a major impact on the farm business, the goals should be reworked to accommodate that change. Refer to your goals as often as necessary to keep the farm business progressing.

It is important to identify both objectives (long-range) and goals (short-range) when looking at the future of your farm business.

A suggested format for writing out your goals is as follows:

- a. Begin with a mission statement which describes why the business exists based on the preferences and values of the owners.
- b. Identify 4-6 objectives.
- c. Identify SMART goals.

Worksheet for Setting Goals

I. Mission and Objectives

Worksheet for Setting Goals (Continued)

II. Goals What	How	When	Who is Responsible
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
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_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Summarize Your Business Performance

The Farm Business and Financial Analysis Charts on pages 27-30 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 14)

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 16)

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 16)

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

Debt to Asset Ratios - (defined on page 12)

Deferred Taxes - (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 16.

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 12)

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 22)

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 22)

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 22)

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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