

# **DAIRY FARM BUSINESS SUMMARY**

## **WESTERN AND CENTRAL PLAIN REGION 2001**



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**2001 DAIRY FARM BUSINESS SUMMARY**  
**Western and Central Plain Region**  
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## 2001 DAIRY FARM BUSINESS SUMMARY WESTERN AND CENTRAL PLAIN REGION\*

### 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 the Western and Central Plain Region for 2001.

#### **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 regional report follows the same general format as the 2001 DFBS individual farm report received by participating dairy farmers. The analysis tables have an open column or section labeled My Farm. It may be used by any dairy farm manager who wants to compare his or her business with the average data of this region. The individual farm data, the regional 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.

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\*The Western and Central Plain Region of New York State, with the number of participating farms in parentheses, is comprised of Cayuga (10), Erie (6), Genesee (6), Livingston (8), Ontario (2), Orleans (1), Wayne (1), and Wyoming (37) counties. This report was written by Wayne A. Knoblauch, Professor, Farm Management; Linda Putnam was in charge of data preparation. Faye Butts prepared the publication. Farm business data were collected by Cooperative Extension Educator Judith Barry; Regional Specialists John Hanchar and Steve Richards; Senior Extension Associate Jason Karszes; and Farm Consultants Kathleen English, Tim Terry, and George Allhusen.

## 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 in this region. The following table shows important farm business characteristics and the number of farms with each characteristic.

**BUSINESS CHARACTERISTICS**  
71 Western and Central Plain Region Dairy Farms, 2001

Type of Farm	Number	Milking System	Number
Dairy	68	Bucket & carry	0
Part-time dairy	0	Dumping station	0
Dairy cash-crop	3	Pipeline	8
Certified organic milk producer	0	Herringbone conventional exit	22
Rotational grazing farm	6	Herringbone rapid exit	15
		Parallel	21
		Parabone	3
		Rotary	0
		Other	2
Type of Ownership	Number	Production Records	Number
Owner	63	Testing Service	61
Renter	8	On Farm System	8
		Other	2
		None	0
Type of Business	Number	bST Usage	Number
Sole Proprietorship	32	Used on <25% of herd	8
Partnership	16	Used on 25-75% of herd	25
Limited Liability Corporation	10	Used on >75% of herd	23
Subchapter S Corporation	12	Stopped using in 2001	1
Subchapter C Corporation	1	Not used in 2001	14
Type of Barn	Number	Business Record System	Number
Stanchion or Tie-Stall	3	Account Book	9
Freestall	63	Accounting Service	4
Combination	5	On-farm computer	56
		Other	2
Milking Frequency	Number		
2 times per day	31		
3 times per day	34		
Other	6		

The averages used in this report were compiled using data from all the participating dairy farms in this region unless noted otherwise. There are full-time dairy farms, part-time farms, dairy cash-crop farms, farms with confined herds, farms with grazing herds, farm renters, partnerships, and corporations included in the average. Average data for these specific types of farms are presented in the State Business Summary.

### 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 2001.

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**  
71 Western and Central Plain Region Dairy Farms, 2001

Expense Item	Cash Paid	-	Change in Inventory or Prepaid Expense	+	Change in Accounts Payable	=	Accrual Expenses
<u>Hired Labor</u>	\$ 290,946		\$ 1,413	<<	\$ 1,031		\$ 290,564
<u>Feed</u>							
Dairy grain & concentrate	442,459		8,637		-2,586		431,236
Dairy roughage	37,136		4,905		52		32,283
Nondairy	410		0		0		410
<u>Machinery</u>							
Machinery hire, rent & lease	52,722		-742	<<	-2,195		51,269
Machinery repairs & farm vehicle exp.	76,264		2,033		-681		73,550
Fuel, oil & grease	32,027		243		-670		31,113
<u>Livestock</u>							
Replacement livestock	19,257		0	<<	242		19,499
Breeding	20,305		205		-310		19,790
Veterinary & medicine	65,449		1,232		-986		63,230
Milk marketing	63,773		0	<<	383		64,156
Bedding	28,913		222		-377		28,315
Milking supplies	34,323		1,640		-595		32,088
Cattle lease & rent	7,007		-74	<<	502		7,583
Custom boarding	37,730		86	<<	-269		37,375
bST	33,279		414		-404		32,461
Other livestock expense	12,521		63		99		12,557
<u>Crops</u>							
Fertilizer & lime	33,295		459		-1,316		31,519
Seeds & plants	24,946		2,772		-801		21,372
Spray, other crop expense	29,941		-447		-556		29,832
<u>Real Estate</u>							
Land, building & fence repair	24,648		450		139		24,337
Taxes	18,004		-51	<<	-291		17,763
Rent & lease	35,399		1,166	<<	-356		33,877
<u>Other</u>							
Insurance	14,696		270	<<	62		14,488
Utilities (farm share)	34,832		154	<<	8		34,685
Interest paid	97,273		-247	<<	-755		96,765
Miscellaneous	17,513		-306		-102		17,717
Total Operating	\$1,585,067		\$ 24,499		\$-10,733		\$1,549,835
Expansion livestock	31,412		0	<<	629		32,041
Machinery depreciation							73,011
Building depreciation							62,817
<b>TOTAL ACCRUAL EXPENSES</b>							<b>\$1,717,704</b>

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 2001 but not paid for. A decrease is subtracted because it represents payment for resources used before 2001.

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**  
71 Western and Central Plain Region Dairy Farms, 2001

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts
Milk sales	\$1,694,729				\$ 15,404		\$ 1,710,133
Dairy cattle	75,187		\$ 40,316		-42		115,462
Dairy calves	21,862				-50		21,812
Other livestock	2,990		851		0		3,841
Crops	18,699		-4,508		2,919		17,110
Government receipts	28,613		-102 *		-1,373		27,138
Custom machine work	4,414				-204		4,210
Gas tax refund	460				0		460
Other	<u>29,645</u>				<u>726</u>		30,372
Less nonfarm noncash capital**		(-)	<u>0</u> **			(-)	<u>0</u>
Total Receipts	\$1,876,601		\$ 36,557		\$ 17,381		\$ 1,930,538

\*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 2001 for the 2002 crop year in excess of funds earned for 2001. Likewise, a decrease is added to cash government receipts because it represents funds earned for 2001 but received in 2000.

Changes in accounts receivable are calculated by subtracting beginning year balances from end year balances. Payments in January 2002 for milk produced in December 2001 compared to January 2001 payments for milk produced in 2000 are included as a change in accounts receivable in determining accrual milk sales.

Accrual receipts represent the value of all farm commodities produced and services actually generated by the farm business during the year.

### **Profitability Analysis**

Farm operators\* contribute labor, management, and equity capital to their businesses and the combination of these resources, and the other resources used in the business, determines profitability. Farm profitability can be measured as the return to all family resources or as the return to one or more individual resources such as labor and management.

The return to any individual resource must be viewed as an estimate because the cost of other family resources must be approximated to calculate returns to the selected resource. For example, the costs of operator and family labor and management must be approximated to calculate the returns to equity capital.

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\* Operators are the individuals who are integrally involved in the operation and management of the farm business. They are not limited to those who are the owner of a sole proprietorship or are formally a member of the partnership or corporation.

Net farm income is the return to the farm operators and other unpaid family members for their labor, management, and equity capital. It is the farm family's net annual return from working, managing, and financing the farm business. This is not a measure of cash available from the year's business operation. Cash flow is evaluated later in this report.

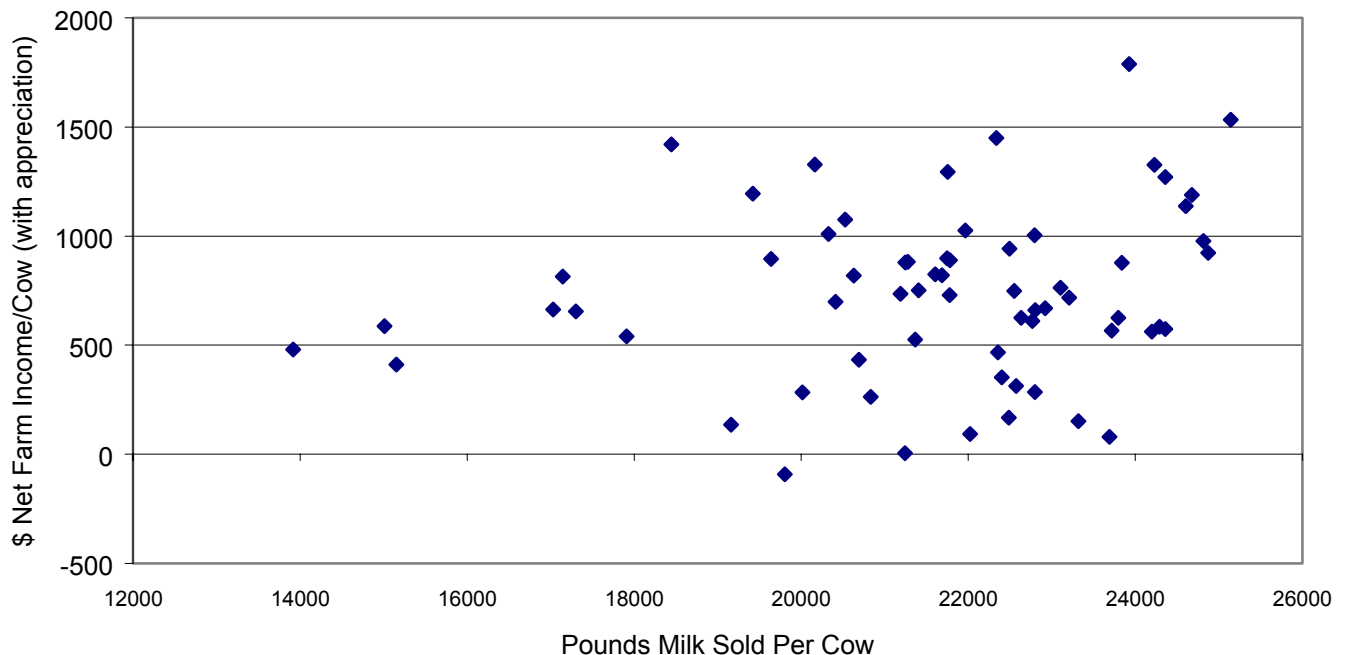
Net farm income is computed both with and without appreciation. Appreciation represents the change in values caused by annual changes in prices of livestock, machinery, real estate inventory, and stocks and certificates (other than Farm Credit stock required for loan borrowings). Appreciation is a major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

**NET FARM INCOME**  
71 Western and Central Plain Region Dairy Farms, 2001

Item	Average		My Farm	
	Total	Per Cow	Total	Per Cow
Total accrual receipts	\$ 1,930,538		\$ _____	
Appreciation: Livestock	92,377		_____	
Machinery	5,817		_____	
Real Estate	55,069		_____	
Other Stock & Certificates	1,907		_____	
Total Including Appreciation	\$ 2,085,708		\$ _____	
Total accrual expenses	- 1,717,704		- _____	
Net Farm Income (with appreciation)	\$ 368,004	\$ 749	\$ _____	\$ _____
Net Farm Income (without appreciation)	\$ 212,834	\$ 433	\$ _____	\$ _____

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/COW AND MILK/COW**  
71 Western and Central Plain Region Dairy Farms, 2001





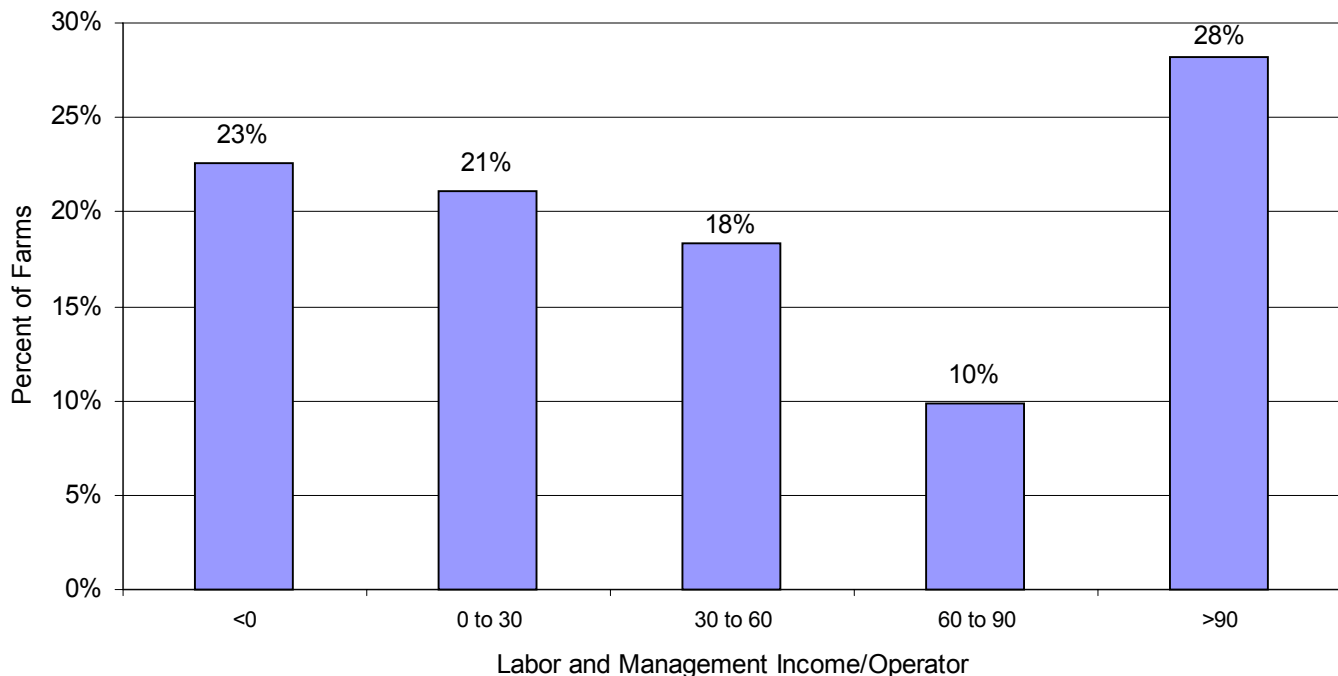
Labor and management income is the return which farm operators receive for their labor and management used in the farm business. Appreciation is not included as part of the return to labor and management because it results from ownership of assets rather than management of the farm business. Labor and 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**  
71 Western and Central Plain Region Dairy Farms, 2001

Item	Average	My Farm
Net farm income without appreciation	\$ 212,834	\$ _____
Family labor unpaid @ \$2,000 per month	- 3,800	- _____
Interest on \$1,611,206 average equity capital @ 5% real rate	<u>- 80,560</u>	- _____
Labor & Management Income per farm (1.98 Operators/farm)	\$ 128,474	\$ _____
Labor & Management Income per Operator/Manager	\$ 64,886	\$ _____

Labor and management income per operator averaged \$64,886 on these 71 farms in 2001. The range in labor and management income per operator was from about \$-140,000 to more than \$1,000,000. Returns to labor and management were negative on 23% of the farms. Labor and management income per operator was between \$0 and \$60,000 on 39% of the farms while 38% showed labor and management incomes of \$60,000 or more per operator.

**DISTRIBUTION OF LABOR AND MANAGEMENT INCOMES PER OPERATOR**  
71 Western and Central Plain Region Dairy Farms, 2001



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 (market value) 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 (market value). 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**  
71 Western and Central Plain Region Dairy Farms, 2001

Item	Average	My Farm
Net farm income with appreciation	\$ 368,004	\$ _____
Family labor unpaid @\$2,000 per month	- 3,800	- _____
Value of operators' labor & management	<u>- 75,086</u>	- _____
Return on equity capital with appreciation	\$ 289,118	\$ _____
Interest paid	<u>+ 96,765</u>	+ _____
Return on total capital with appreciation	\$ 385,883	\$ _____
Return on equity capital without appreciation	\$ 133,948	\$ _____
Return on total capital without appreciation	\$ 230,713	\$ _____
Rate of return on average equity capital:		
with appreciation	17.9%	_____ %
without appreciation	8.3%	_____ %
Rate of return on average total capital:		
with appreciation	12.3%	_____ %
without appreciation	7.4%	_____ %
Net Farm Income from Operations Ratio	0.11	_____

**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 2001, lease payments were discounted by 7.75 percent to obtain their present value.

Advanced government receipts are included as current liabilities. Government payments received in 2001 that are for participation in the 2002 program are the end year balance and payments received in 2000 for participation in the 2001 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.

## 2001 FARM BUSINESS &amp; NONFARM MARKET VALUE BALANCE SHEET

71 Western and Central Plain Region Dairy Farms, 2001

Farm Assets	Jan. 1	Dec. 31	Farm Liabilities & Net Worth	Jan. 1	Dec. 31
<u>Current</u>			<u>Current</u>		
Farm cash, checking & savings	\$ 15,337	\$ 11,103	Accounts payable	\$ 51,196	\$ 41,091
Accounts receivable	109,603	126,984	Operating debt	156,179	175,694
Prepaid expenses	7,072	9,049	Short Term	3,390	13,595
Feed & supplies	341,243	359,257	Advanced govt. receipts	0	102
			Current Portion:		
			Intermediate	91,252	127,144
			Long Term	<u>38,688</u>	<u>52,915</u>
Total Current	\$ 473,255	\$ 506,393	Total Current	\$ 340,706	\$ 410,540
<u>Intermediate</u>			<u>Intermediate</u>		
Dairy cows:			Structured debt		
owned	\$ 494,211	\$ 567,168	1-10 years	\$ 520,608	\$ 537,058
leased	17,293	15,607	Financial lease		
Heifers	238,901	298,888	(cattle/machinery)	53,205	42,735
Bulls & other livestock	4,443	5,043	Farm Credit stock	<u>10,662</u>	<u>11,060</u>
Mach. & equip. owned	460,953	509,955	Total Intermediate	\$ 584,475	\$ 590,853
Mach. & equip. leased	35,912	27,128			
Farm Credit stock	10,662	11,060			
Other stock/certificate	<u>80,093</u>	<u>89,886</u>			
Total Intermediate	\$ 1,342,468	\$1,524,735			
<u>Long Term</u>			<u>Long Term</u>		
Land & buildings:			Structured debt		
owned	\$ 1,158,637	\$1,268,645	>10 years	\$ 562,285	\$ 562,862
leased	<u>3,939</u>	<u>3,745</u>	Financial lease		
Total Long Term	\$ 1,162,576	\$1,272,390	(structures)	<u>3,939</u>	<u>3,745</u>
			Total Long Term	\$ 566,224	\$ 566,607
Total Farm Assets	\$2,978,299	\$3,303,518	Total Farm Liab.	\$1,491,405	\$1,568,000
			FARM NET WORTH	\$1,486,894	\$1,735,518

## Nonfarm Assets, Liabilities &amp; Net Worth (Average of 34 farms reporting)

Assets	Jan. 1	Dec. 31	Liabilities & Net Worth	Jan. 1	Dec. 31
Personal cash, checking & savings	\$ 1,960	\$ 3,169	Nonfarm Liabilities	\$ 1,325	\$ 2,548
Cash value life insurance	25,675	29,530			
Nonfarm real estate	15,628	14,676			
Auto (personal share)	7,454	8,222			
Stocks & bonds	20,993	21,282			
Household furnishings	16,735	16,838			
All other nonfarm assets	<u>10,565</u>	<u>7,804</u>			
Total Nonfarm Assets	\$ 99,010	\$ 101,521	NONFARM NET WORTH	\$ 97,685	\$ 98,973

Farm & Nonfarm Assets, Liabilities, and Net Worth*	Jan. 1	Dec. 31
Total Assets	\$3,077,309	\$3,405,039
Total Liabilities	<u>1,492,730</u>	<u>1,570,548</u>
TOTAL FARM & NONFARM NET WORTH	\$1,584,579	\$1,834,491

\*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 farm liabilities were increased 69 percent on these 32 farms by including deferred taxes.

Deferred taxes on these farms totaled an average of \$482,931 roughly one-third of the pretax net worth. Percent equity for the farm decreased from 66 percent to 43 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, 2001

32 New York Dairy Farms, 2001

Assets		Liabilities & Net Worth	
		Current debts & payables	\$ 193,082
		Current deferred taxes	<u>101,163</u>
Total Current Assets	\$ 301,520	Total Current Liabilities	\$ 294,245
		Intermediate debts & leases	\$ 254,454
		Intermediate deferred taxes	<u>236,038</u>
Total Inter. Assets	\$ 948,173	Total Intermediate Liabilities	\$ 490,492
		Long term debts & leases	\$ 237,602
		Long term deferred taxes	<u>138,020</u>
Total Long Term Assets	<u>\$ 782,854</u>	Total Long Term Liabilities	\$ 375,622
TOTAL FARM ASSETS	\$ 2,032,546	TOTAL FARM LIABILITIES	\$ 1,160,359
		Farm Net Worth	\$ 872,187
		Percent Equity (Farm)	42.91%
		Nonfarm debts	\$ 4,064
		Nonfarm deferred taxes	<u>7,710</u>
Total Nonfarm Assets	\$ 63,879	Total Nonfarm Liabilities	\$ 11,774
TOTAL ASSETS	\$ 2,096,425	TOTAL LIABILITIES	\$ 1,172,133
		Total Net Worth	\$ 924,292
		Percent Equity (Total)	44.09%

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 dollars 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

71 Western and Central Plain Region Dairy Farms, 2001

Item	Average		My Farm	
<u>Financial Ratios - Farm:</u>				
Percent equity	53%		_____	%
Debt/asset ratio: total	0.47		_____	
long-term	0.45		_____	
intermediate/current	0.49		_____	
Leverage Ratio:	0.90		_____	
Current Ratio:	1.23		_____	
Working capital	\$95,853	As % of total expenses:	6%	
<u>Farm Debt Analysis:</u>				
Accounts payable as % of total debt	3%		_____	%
Long-term liabilities as a % of total debt	36%		_____	%
Current & inter. liabilities as a % of total debt	64%		_____	%
Cost of term debt (weighted average)	5.4%		_____	%
<u>Farm Debt Levels:</u>				
	<u>Per Cow</u>	<u>Per Tillable Acre Owned</u>	<u>Per Cow</u>	<u>Per Tillable Acre Owned</u>
Total farm debt	\$ 3,111	\$ 3,387	\$ _____	\$ _____
Long-term debt	1,124	1,224	_____	_____
Intermediate & long term	2,297	2,500	_____	_____
Intermediate & current debt	1,987	2,163	_____	_____

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

71 Western and Central Plain Region Dairy Farms, 2001

Item	Average of Region's Farms			
	Real Estate		Machinery & Equipment	
Value beginning of year	\$ 1,158,637		\$ 460,953	
Purchases	\$ 172,778*		\$ 122,396	
Gift & inheritance	+ 1,160		+ 346	
Lost capital	- 44,946			
Sales	- 11,236		- 6,546	
Depreciation	- 62,817		- 73,011	
Net investment	= 54,939		= 43,185	
Appreciation	+ 55,069		+ 5,817	
Value end of year	\$ 1,268,645		\$ 509,955	

\*\$37,964 land and \$134,814 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)**

71 Western and Central Plain Region Dairy Farms, 2001

Item	Average	My Farm
Beginning of year farm net worth	\$1,486,894	\$ _____
Net farm income w/o appreciation	\$ 212,834	\$ _____
+Nonfarm cash income	+ 3,495	+ _____
-Personal withdrawals & family expenditures excluding nonfarm borrowings	- 82,319	- _____
RETAINED EARNINGS	+ \$ 134,010	+\$ _____
Nonfarm noncash transfers to farm	\$ 1,506	\$ _____
+Cash used in business from nonfarm capital	+ 3,688	+ _____
-Note or mortgage from farm real estate sold (nonfarm)	- 0	- _____
CONTRIBUTED/WITHDRAWN CAPITAL	+ \$ 5,194	+\$ _____
Appreciation	\$ 155,170	\$ _____
-Lost capital	- 44,946	- _____
CHANGE IN VALUATION EQUITY	+ \$ 110,224	+\$ _____
IMBALANCE/ERROR	- 804	- \$ _____
End of year net worth*	= \$1,735,518	=\$ _____
<u>Change in Net Worth</u>		
Without appreciation	\$ 93,454	\$ _____
With appreciation	\$ 248,624	\$ _____

\*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**  
71 Western and Central Plain Region Dairy Farms, 2001

Item	Average	
<b><u>Cash Flow from Operating Activities</u></b>		
Cash farm receipts	\$ 1,876,601	
- Cash farm expenses	<u>1,585,067</u>	
= Net cash farm income		\$ 291,534
Personal withdrawals & family expenses including nonfarm debt payments	\$ 83,018	
- Nonfarm income	<u>3,495</u>	
- Net cash withdrawals from the farm		\$ <u>79,523</u>
= Net Provided by Operating Activities		\$ 212,011
<b><u>Cash Flow From Investing Activities</u></b>		
Sale of assets: machinery	\$ 6,546	
+ real estate	11,236	
+ other stock & cert.	<u>4,827</u>	
= Total asset sales		\$ 22,609
Capital purchases: expansion livestock	\$ 31,412	
+ machinery	122,396	
+ real estate	172,778	
+ other stock & cert.	<u>12,713</u>	
- Total invested in farm assets		\$ <u>339,299</u>
= Net Provided by Investment Activities		\$ -316,690
<b><u>Cash Flow From Financing Activities</u></b>		
Money borrowed (intermediate & long term)	\$ 239,478	
+ Money borrowed (short term)	13,080	
+ Increase in operating debt	19,515	
+ Cash from nonfarm capital used in business	3,688	
+ Money borrowed - nonfarm	<u>699</u>	
= Cash inflow from financing		\$ 276,460
Principal payments (intermediate & long term)	\$ 172,332	
+ Principal payments (short term)	2,875	
+ Decrease in operating debt	<u>0</u>	
- Cash outflow for financing		\$ <u>175,207</u>
= Net Provided by Financing Activities		\$ 101,253
<b><u>Cash Flow From Reserves</u></b>		
Beginning farm cash, checking & savings		\$ 15,337
- Ending farm cash, checking & savings		<u>11,103</u>
= Net Provided from Reserves		\$ 4,234
Imbalance (error)		\$ 808

## ANNUAL CASH FLOW STATEMENT

Item	My Farm		
<u>Cash Flow from Operating Activities</u>			
Cash farm receipts	\$ _____		
- Cash farm expenses	_____		
= Net cash farm income		\$ _____	
Personal withdrawals & family expenses including nonfarm debt payments	\$ _____		
- Nonfarm income	_____		
- Net cash withdrawals from the farm		\$ _____	
= Net Provided by Operating Activities			\$ _____
<u>Cash Flow From Investing Activities</u>			
Sale of assets:      machinery	\$ _____		
+ real estate	_____		
+ other stock & cert.	_____		
= Total asset sales		\$ _____	
Capital purchases:    expansion livestock	\$ _____		
+ machinery	_____		
+ real estate	_____		
+ other stock & cert.	_____		
- Total invested in farm assets		\$ _____	
= Net Provided by Investment Activities			\$ _____
<u>Cash Flow From Financing Activities</u>			
Money borrowed (intermediate & long term)	\$ _____		
+ Money borrowed (short term)	_____		
+ Increase in operating debt	_____		
+ Cash from nonfarm capital used in business	_____		
+ Money borrowed - nonfarm	_____		
= Cash inflow from financing		\$ _____	
Principal payments (intermediate & long term)	\$ _____		
+ Principal payments (short term)	_____		
+ Decrease in operating debt	_____		
- Cash outflow for financing		\$ _____	
= Net Provided by Financing Activities			\$ _____
<u>Cash Flow From Reserves</u>			
Beginning farm cash, checking & savings		\$ _____	
- Ending farm cash, checking & savings		_____	
= Net Provided from Reserves			\$ _____
Imbalance (error)			\$ _____



### 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 2002. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 2002 debt payments shown below.

#### FARM DEBT PAYMENTS PLANNED

Same 70 Western and Central Plain Region Dairy Farms, 2000 & 2001

Debt Payments	Average			My Farm		
	2001 Payments		Planned	2001 Payments		Planned
	Planned	Made	2002	Planned	Made	2002
Long term	\$ 89,142	\$ 118,491	\$ 88,350	\$ _____	\$ _____	\$ _____
Intermediate term	144,157	146,036	159,117	_____	_____	_____
Short term	3,187	2,953	7,824	_____	_____	_____
Operating (net reduction)	5,471	0	8,052	_____	_____	_____
Accounts payable (net reduction)	2,518	10,257	143	_____	_____	_____
Total	\$ 244,475	\$ 277,737	\$263,486	\$ _____	\$ _____	\$ _____
Per cow	\$ 495	\$ 562		\$ _____	\$ _____	
Per cwt. 2001 milk	\$ 2.24	\$ 2.54		\$ _____	\$ _____	
Percent of total 2001 farm receipts	13%	14%		_____	_____	
Percent of 2001 milk receipts	14%	16%		_____	_____	

The cash flow coverage ratio and debt coverage ratio measure the ability of the farm business to meet its planned debt payment schedule. The ratios show the percentage of payments planned for 2001 (as of December 31, 2000) that could have been made with the amount available for debt service in 2001. Farmers who did not participate in DFBS in 2000 have their 2001 ratios based on planned debt payments for 2002.

#### COVERAGE RATIOS

Same 70 Western and Central Plain Region Dairy Farms, 2000 & 2001

Item	Average	Item	Average
<u>Cash Flow Coverage Ratio</u>		<u>Debt Coverage Ratio</u>	
Cash farm receipts	\$ 1,886,977	Net farm income (w/o apprec.)	\$ 214,207
- Cash farm expenses	1,593,431	+ Depreciation	136,471
+ Interest paid (cash)	97,363	+ Interest paid (accrual)	96,848
- Net personal withdrawals from farm*	78,880	- Net personal withdrawals from farm*	78,880
(A) = Amount Available for Debt Service	\$ 312,029	(A') = Repayment Capacity	\$ 368,646
(B) = Debt Payments Planned for 2001 (as of December 31, 2000)	\$ 244,475	(B) = Debt Payments Planned for 2001 (as of December 31, 2000)	\$ 244,475
(A/B) = Cash Flow Coverage Ratio for 2001	1.28	(A'/B) = Debt Coverage Ratio for 2001	1.51

\*Personal withdrawals and family expenditures less nonfarm income and nonfarm money borrowed. If family withdrawals are excluded, or inaccurately included, the ratios will be incorrect.

## ANNUAL CASH FLOW WORKSHEET

Item	Regional Average		My Farm	Expected Change	2002 Projection
	Per Cow	Per Cwt.	Per Cow/ Per Cwt.		
Average no. of cows	491				
Total cwt. of milk sold		108,659			
<u>Accrual Operating Receipts</u>					
Milk	\$ 3,483	\$ 15.74	\$ _____	_____	\$ _____
Dairy cattle	235	1.06	_____	_____	_____
Dairy calves	44	0.20	_____	_____	_____
Other livestock	8	0.04	_____	_____	_____
Crops	35	0.16	_____	_____	_____
Misc. Receipts	127	0.57	_____	_____	_____
Total	\$ 3,932	\$ 17.77	\$ _____	_____	\$ _____
<u>Accrual Operating Expenses</u>					
Hired labor	\$ 592	\$ 2.67	\$ _____	_____	\$ _____
Dairy grain & concentrate	878	3.97	_____	_____	_____
Dairy roughage	66	0.30	_____	_____	_____
Nondairy feed	1	0.00	_____	_____	_____
Mach. hire, rent & lease	104	0.47	_____	_____	_____
Mach. repair & vehicle exp.	150	0.68	_____	_____	_____
Fuel, oil & grease	63	0.29	_____	_____	_____
Replacement livestock	40	0.18	_____	_____	_____
Breeding	40	0.18	_____	_____	_____
Vet & medicine	129	0.58	_____	_____	_____
Milk marketing	131	0.59	_____	_____	_____
Bedding	58	0.26	_____	_____	_____
Milking supplies	65	0.30	_____	_____	_____
Cattle lease	15	0.07	_____	_____	_____
Custom boarding	76	0.34	_____	_____	_____
bST	66	0.30	_____	_____	_____
Other livestock exp.	26	0.12	_____	_____	_____
Fertilizer & lime	64	0.29	_____	_____	_____
Seeds & plants	44	0.20	_____	_____	_____
Spray & other crop exp.	61	0.27	_____	_____	_____
Land, bldg., fence repair	50	0.22	_____	_____	_____
Taxes	36	0.16	_____	_____	_____
Real estate rent & lease	69	0.31	_____	_____	_____
Insurance	30	0.13	_____	_____	_____
Utilities	71	0.32	_____	_____	_____
Miscellaneous	36	0.16	_____	_____	_____
Total Less Interest Paid	\$ 2,959	\$ 13.37	\$ _____	_____	\$ _____
<u>Net Accrual Operating Income</u>					
(without interest paid)	Total				
	\$ 477,468		\$ _____		\$ _____
- Change in livestock & crop invent.*	36,557		_____		_____
- Change in accounts receivable	17,381		_____		_____
- Change in feed & supply inventory**	24,499		_____		_____
+ Change in accounts payable***	-9,978		_____		_____
NET CASH FLOW	\$ 388,807		\$ _____		\$ _____
- Net family withdrawals	\$ 78,824		_____		_____
Available for Farm	\$ 309,983		\$ _____		_____
- Farm debt payments	277,095		_____		_____
Available for Farm Investment	\$ 32,888		\$ _____		\$ _____
- Capital purchases	339,299		_____		_____
Additional Capital Needed	\$ 306,411		\$ _____		\$ _____

\*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**  
71 Western and Central Plain Region Dairy Farms, 2001

Item	Average			My Farm		
<u>Land</u>	<u>Owned</u>	<u>Rented</u>	<u>Total</u>	<u>Owned</u>	<u>Rented</u>	<u>Total</u>
Tillable	464	479	943	_____	_____	_____
Nontillable	29	15	44	_____	_____	_____
Other nontillable	<u>101</u>	<u>7</u>	<u>108</u>	_____	_____	_____
Total	594	501	1,095	_____	_____	_____
<u>Crop Yields</u>	<u>Farms</u>	<u>Acres*</u>	<u>Prod/Acre</u>	<u>Acres</u>	<u>Prod/Acre</u>	
Hay crop	61	436	3.33 tn DM	_____	_____	tn DM
Corn silage	58	429	16.04 tn	_____	_____	tn
			5.27 tn DM	_____	_____	tn DM
Other forage	3	31	2.19 tn DM	_____	_____	tn DM
Total forage	61	844	4.27 tn DM	_____	_____	tn DM
Corn grain	23	211	107 bu	_____	_____	bu
Oats	5	34	61 bu	_____	_____	bu
Wheat	20	101	58 bu	_____	_____	bu
Other crops	26	189		_____	_____	
Tillable pasture	19	90		_____	_____	
Idle	13	102		_____	_____	
Total Tillable Acres	71	943		_____	_____	

\*This column represents the average acreage for the farms producing that crop. Average acreages including those farms not producing were hay crop 374, corn silage 350, corn grain 68, oats 2, tillable pasture 24, and idle 19.

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**  
71 Western and Central Plain Region Dairy Farms, 2001

Item	Average	My Farm
Total tillable acres per cow	1.92	_____
Total forage acres per cow	1.48	_____
Harvested forage dry matter, tons per cow	6.31	_____

**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 6 farms in the region.

**CROP RELATED ACCRUAL EXPENSES**

Western and Central Plain Region Dairy Farms Reporting, 2001

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	71	6			7		0	
Ave. number of acres	943	254			209		0	0
Fert. & lime	\$ 33.42	\$ 19.60	\$ 3.45	\$ 0.19	\$ 25.49	\$ 4.26	\$ 0.00	\$ 0.00
Seeds & plants	22.66	35.96	6.34	0.34	15.05	2.52	0.00	0.00
Spray & other crop exp.	31.64	48.22	8.50	0.46	16.33	2.73	0.00	0.00
TOTAL	\$ 87.72	\$ 103.78	\$ 18.29	\$ 0.99	\$ 56.87	\$ 9.51	\$ 0.00	\$ 0.00

My Farm

Fert. & lime	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____
Seeds & plants	_____	_____	_____	_____	_____	_____	_____	_____
Spray & other crop exp.	_____	_____	_____	_____	_____	_____	_____	_____
TOTAL	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____

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**

71 Western and Central Plain Region Dairy Farms, 2001

Machinery Expense	Average		My Farm	
	Total Expenses	Per Till. Acre	Total Expenses	Per Till. Acre
Fuel, oil & grease	\$ 31,113	\$ 32.99	\$ _____	\$ _____
Mach. repair & vehicle exp.	73,550	78.00	_____	_____
Machine hire, rent & lease	51,269	54.37	_____	_____
Interest (5%)	25,849	27.41	_____	_____
Depreciation	73,011	77.42	_____	_____
Total	\$ 254,792	\$ 270.19	\$ _____	\$ _____

**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 6 and 7.

**DAIRY HERD INVENTORY**

71 Western and Central Plain Region Dairy Farms, 2001

Item	Dairy Cows		Heifer					
	No.	Value	Bred		Open		Calves	
	No.	Value	No.	Value	No.	Value	No.	Value
Beg. year (owned)	460	\$ 494,211	138	\$ 135,333	112	\$ 68,949	97	\$ 34,620
+ Change w/o apprec.		22,863		2,706		8,797		5,948
+ Appreciation		<u>50,094</u>		<u>21,522</u>		<u>11,821</u>		<u>9,192</u>
End year (owned)	480	\$ 567,168	139	\$ 159,561	123	\$ 89,567	112	\$ 49,760
End including leased	504							
Average number	491		368	(all age groups)				

**My Farm:**

Beg. year (owned)	_____	\$ _____	_____	\$ _____	_____	\$ _____	_____	\$ _____
+ Change w/o apprec.		_____		_____		_____		_____
+ Appreciation		_____		_____		_____		_____
End year (owned)	_____	\$ _____	_____	\$ _____	_____	\$ _____	_____	\$ _____
End including leased	_____							
Average number	_____		_____	(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.

**MILK PRODUCTION**

71 Western and Central Plain Region Dairy Farms, 2001

Item	Average	My Farm
Total milk sold, lbs.	10,865,930	_____
Milk sold per cow, lbs.	22,116	_____
Average milk plant test, percent butterfat	3.61%	_____

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**

71 Western and Central Plain Region Dairy Farms, 2001

Item	Average		My Farm	
	Number	Percent*	Number	Percent*
Cows sold for beef	131	26.7	_____	_____
Cows sold for dairy	13	2.6	_____	_____
Cows died	25	5.1	_____	_____
Culling rate**		31.8		_____

\*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**

71 Western and Central Plain Region Dairy Farms, 2001

Item	Average			My Farm		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
<u>Accrual Cost of Producing Milk</u>						
Operating costs	\$ 1,361,471	\$ 2,773	\$ 12.53	\$ _____	\$ _____	\$ _____
Purchased inputs costs	\$ 1,497,299	\$ 3,049	\$ 13.78	\$ _____	\$ _____	\$ _____
Total Costs	\$ 1,656,745	\$ 3,374	\$ 15.25	\$ _____	\$ _____	\$ _____
<u>Accrual Receipts From Milk</u>						
Net Milk Receipts	\$ 1,710,133	\$ 3,483	\$ 15.74	\$ _____	\$ _____	\$ _____
Net Farm Income without Apprec.	\$ 212,834	\$ 433	\$ 1.96	\$ _____	\$ _____	\$ _____
Net Farm Income with Apprec.	\$ 368,004	\$ 749	\$ 3.39	\$ _____	\$ _____	\$ _____

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**

71 Western and Central Plain Region Dairy Farms, 2001

Item	Average		My Farm	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purchased dairy grain & concentrate	\$ 878	\$ 3.97	\$ _____	\$ _____
Purchased dairy roughage	66	0.30	_____	_____
Total Purchased Dairy Feed	\$ 944	\$ 4.27	\$ _____	\$ _____
Purchased grain & conc. as % of milk receipts		25%	_____ %	_____ %
Purchased feed & crop exp. as % of milk receipts	\$ 1,113	\$ 5.03	\$ _____	\$ _____
Purchased feed & crop exp. as % of milk receipts		32%	_____ %	_____ %
Breeding	\$ 40	\$ 0.18	\$ _____	\$ _____
Veterinary & medicine	129	0.58	_____	_____
Milk marketing	131	0.59	_____	_____
Bedding	58	0.26	_____	_____
Milking supplies	65	0.30	_____	_____
Cattle lease	15	0.07	_____	_____
Custom boarding	76	0.34	_____	_____
bST	66	0.30	_____	_____
Other livestock expense	26	0.12	_____	_____

**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. When evaluating a business, the relationship between capital efficiency and labor efficiency should be explored. For example, if capital efficiency shows high capital investment per worker or per cow, labor efficiency should be high reflecting use of capital to make labor more effective. However, if capital investment is high per worker or per cow, and labor efficiency is low, a problem may exist on that farm.

**CAPITAL EFFICIENCY**

71 Western and Central Plain Region Dairy Farms, 2001

Item	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
Farm capital	\$ 300,278	\$ 6,397	\$ 3,331	\$ 6,784
Real estate		2,480		2,630
Machinery & equipment	49,424	1,053	548	
<u>Ratios</u>				
Asset turnover	Operating Expense	Interest Expense	Depreciation Expense	
0.66	0.77	0.05	0.07	
<u>My Farm</u>				
Farm capital	\$ _____	\$ _____	\$ _____	\$ _____
Real estate	_____	_____	_____	_____
Machinery & equipment	_____	_____	_____	_____
<u>Ratios</u>				
Asset turnover	Operating Expense	Interest Expense	Depreciation Expense	
_____	_____	_____	_____	

**LABOR FORCE INVENTORY**

71 Western and Central Plain Region Dairy Farms, 2001

Labor Force	Months	Age	Years of Educ.	Value of Labor & Mgmt.
Operator number 1	13.8	45	14	\$ 43,215
Operator number 2	6.2	39	14	19,752
Operator number 3	3.6	39	14	12,119
Family paid	7.5			
Family unpaid	1.9			
Hired	<u>92.5</u>			
Total	125.5	/ 12 = 10.46 Worker Equivalent 1.98 Operator/Manager Equivalent		
<u>My Farm:</u> Total				
Operator's	_____	/ 12 = _____ Worker Equivalent / 12 = _____ Operator/Manager Equivalent		

Small conventional stall operations of 60 or less cows should strive for labor efficiency of 600,000 or more pounds of milk sold per worker. Large conventional stall operations should strive for 850,000 or more pounds of milk sold per worker. Small free stall operations of less than 300 cows should strive for 1,000,000 pounds of milk sold per worker and large free stall operations with more than 300 cows should strive for over 1,200,000 pounds of milk sold per worker.

Labor costs and machinery costs should also be evaluated both individually and jointly. The more machinery or technology at a worker's disposal, the less time, and therefore cost, that should be required to get work accomplished. Striving for labor and machinery costs per cow of less than \$1,000 on small conventional stall barns, less than \$900 on large conventional stall barns, less than \$850 on small free stall barns and below \$750 on large free stall barns should be a goal.

### LABOR EFFICIENCY

71 Western and Central Plain Region Dairy Farms, 2001

Labor Efficiency	Average		My Farm	
	Total	Per Worker	Total	Per Worker
Cows, average number	491	47	_____	_____
Milk sold, pounds	10,865,930	1,038,808	_____	_____
Tillable acres	943	90	_____	_____
Work units	4,761	455	_____	_____

### LABOR AND MACHINERY COSTS

71 Western and Central Plain Region Dairy Farms, 2001

Labor Costs	Average			My Farm		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Value of operator(s) labor (\$2,000/mo.)	\$ 47,400	\$ 97	\$ 0.44	\$ _____	\$ _____	\$ _____
Family unpaid (\$2,000/mo.)	3,800	8	0.03	_____	_____	_____
Hired	<u>290,564</u>	<u>592</u>	<u>2.67</u>	_____	_____	_____
Total Labor	\$ 341,764	\$ 696	\$ 3.15	\$ _____	\$ _____	\$ _____
Machinery Cost	\$ <u>254,792</u>	\$ <u>519</u>	\$ <u>2.34</u>	\$ _____	\$ _____	\$ _____
Total Labor & Mach.	\$ 596,556	\$ 1,215	\$ 5.49	\$ _____	\$ _____	\$ _____
Hired labor expense per hired worker equivalent			\$ 34,868	\$ _____		
Hired labor expense as % of milk sales			17.0%	_____ %		



## COMPARATIVE ANALYSIS OF THE FARM BUSINESS

### Progress of the Farm Business

Comparing your business with average data from regional DFBS cooperators that participated in both of the last two years can be helpful to establishing your goals for these parameters. 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 70 Western and Central Plain Region Dairy Farms, 2000 & 2001

Selected Factors	Average of 70 Farms*		My Farm		
	2000	2001	2000	2001	Goal
<u>Size of Business</u>					
Average number of cows	463	494	_____	_____	_____
Average number of heifers	349	369	_____	_____	_____
Milk sold, lbs.	10,343,749	10,923,262	_____	_____	_____
Worker equivalent	10.18	10.47	_____	_____	_____
Total tillable acres	893	942	_____	_____	_____
<u>Rates of Production</u>					
Milk sold per cow, lbs.	22,350	22,117	_____	_____	_____
Hay DM per acre, tons	4.1	3.3	_____	_____	_____
Corn silage per acre, tons	16.3	16.0	_____	_____	_____
<u>Labor Efficiency</u>					
Cows per worker	45	47	_____	_____	_____
Milk sold/worker, lbs.	1,016,085	1,043,292	_____	_____	_____
<u>Cost Control</u>					
Grain & conc. purchased as % of milk sales	27%	25%	_____ %	_____ %	_____ %
Dairy feed & crop exp. per cwt. milk	\$ 4.57	\$ 5.03	\$ _____	\$ _____	\$ _____
Labor & mach. costs/cow	\$ 1,175	\$ 1,212	\$ _____	\$ _____	\$ _____
Operating cost of producing cwt. of milk	\$ 11.61	\$ 12.53	\$ _____	\$ _____	\$ _____
<u>Capital Efficiency**</u>					
Farm capital per cow	\$ 6,222	\$ 6,393	\$ _____	\$ _____	\$ _____
Mach. & equip. per cow	\$ 1,046	\$ 1,052	\$ _____	\$ _____	\$ _____
Asset turnover ratio	0.59	0.66	_____	_____	_____
<u>Profitability</u>					
Net farm income w/o apprec.	\$ 49,970	\$ 214,207	\$ _____	\$ _____	\$ _____
Net farm income w/apprec.	\$ 132,459	\$ 368,690	\$ _____	\$ _____	\$ _____
Labor & mgt. income per operator/manager	\$ -14,153	\$ 66,299	\$ _____	\$ _____	\$ _____
Rate of return on equity capital w/appreciation	3.9%	17.9%	_____ %	_____ %	_____ %
Rate of return on all capital w/appreciation	5.7%	12.3%	_____ %	_____ %	_____ %
<u>Financial Summary</u>					
Farm net worth, end year	\$1,471,808	\$ 1,746,840	\$ _____	\$ _____	\$ _____
Debt to asset ratio	0.50	0.47	_____	_____	_____
Farm debt per cow	\$ 3,067	\$ 3,110	\$ _____	\$ _____	\$ _____

\*Farms participating both years.

\*\*Average for the year.

**RECEIPTS AND EXPENSES PER COW AND PER CWT.**  
Same 70 Western and Central Plain Region Dairy Farms, 2000 & 2001

Item	2000		2001	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	463		494	
Cwt. Of Milk Sold		103,437		109,233
<u>ACCRUAL OPERATING RECEIPTS</u>				
Milk	\$ 2,955	\$ 13.23	\$ 3,480	\$ 15.74
Dairy cattle	241	1.08	236	1.07
Dairy calves	43	0.19	44	0.20
Other livestock	9	0.04	8	0.04
Crops	71	0.32	34	0.15
Miscellaneous receipts	184	0.82	127	0.57
Total Receipts	3,502	15.68	3,929	17.77
<u>ACCRUAL OPERATING EXPENSES</u>				
Hired labor	\$ 572	\$ 2.56	\$ 593	\$ 2.68
Dairy grain & concentrate	800	3.58	879	3.98
Dairy roughage	66	0.30	66	0.30
Nondairy feed	0	0.00	1	0.00
Machine hire/rent/lease	104	0.47	104	0.47
Mach. repair & vehicle exp.	139	0.62	149	0.68
Fuel, oil & grease	67	0.30	63	0.29
Replacement livestock	55	0.24	40	0.18
Breeding	35	0.16	40	0.18
Veterinary & medicine	125	0.56	129	0.58
Milk marketing	133	0.59	131	0.59
Bedding	54	0.24	58	0.26
Milking supplies	70	0.31	66	0.30
Cattle lease	16	0.07	16	0.07
1	58	0.26	75	0.34
bST expense	62	0.28	66	0.30
Other livestock expense	26	0.12	26	0.12
Fertilizer & lime	64	0.29	64	0.29
Seeds & plants	45	0.20	43	0.19
Spray/other crop expense	44	0.20	60	0.27
Land, building, fence repair	48	0.22	50	0.23
Taxes	32	0.14	36	0.16
Real estate rent/lease	68	0.30	69	0.31
Insurance	28	0.13	30	0.13
Utilities	65	0.29	70	0.32
Interest paid	230	1.03	196	0.89
Miscellaneous	40	0.18	36	0.16
Total Operating Expenses	\$ 3,049	\$ 13.65	\$ 3,153	\$ 14.26
Expansion Livestock	91	0.41	66	0.30
Machinery Depreciation	137	0.61	148	0.67
Real Estate Depreciation	117	0.52	129	0.58
Total Expenses	\$ 3,394	\$ 15.19	\$ 3,495	\$ 15.81
Net Farm Income Without Appreciation	\$ 108	\$ 0.48	\$ 434	\$ 1.96

### 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** 71 Western and Central Plain Region Dairy Farms, 2001

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)
24.32	1,201	27,253,890	24,782	5.1	20	62	1,277,979
12.51	601	13,665,346	23,048	3.8	18	51	1,114,826
8.07	364	7,473,575	22,023	3.2	16	46	1,026,282
5.27	220	4,672,018	20,898	2.8	14	40	820,567
2.69	98	1,904,894	16,845	1.7	11	28	577,492

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)	
\$ 537	17%	\$332	\$ 896	\$ 773	\$3.89	
760	23	448	1,083	1,001	4.80	
866	25	525	1,198	1,117	5.03	
933	27	615	1,362	1,196	5.46	
1,053	31	837	1,758	1,385	6.45	

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)
\$3,856	\$10.06	\$13.75	\$1,075,746	\$643,044	\$326,071	\$818,206
3,601	11.37	14.85	440,072	238,586	90,718	290,388
3,467	12.44	15.92	232,545	123,583	40,469	147,263
3,289	13.22	16.54	126,718	77,344	13,608	66,032
2,665	14.60	18.69	-8,185	-2,969	-55,356	-56,954

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

### **Supplementary Information**

Each year DFBS cooperators volunteer to complete supplementary data collection forms looking at selected management aspects of the business or specific research areas being studied. This is in addition to the normal DFBS data collection form. Two areas that were examined this year were the source of dairy replacements and the breakdown of the milk income and marketing expenses. Following is a summary of this information.

#### **SOURCE OF DAIRY REPLACEMENTS** 46 New York Dairy Farms, 2001

<u>Animals Entering Herd</u>	Average
Number calving in 2001 for first time	160
Animals purchased, % <sup>1</sup>	18%
Animals raised by farm, % <sup>2</sup>	82%
 <u>Current Heifer Inventory</u>	
Raised on dairy, %	79%
Raised by a custom grower, %	21%

<sup>1</sup> Animals purchased are animals purchased from a different farm and were not the farms genetics.

<sup>2</sup> Animals raised by farm are animals that were born on the farm and entered the herd, which includes animals raised by the farm or custom grower.

On the average farm, 160 animals calved for the first time in 2001. The breakdown on these animals for source was 18% purchased and 82% raised by the farm. Of the current heifer inventory, 79% were raised on the dairy and 21% were being raised by a custom grower. There is increased interest in evaluating the dairy replacement enterprise.

### **Milk Income and Marketing Expense Breakdown**

Starting January 1<sup>st</sup>, 2000, the northeast switched to multiple components pricing, which changed the format of the milk check and how farmers received payment for their milk. To examine the breakdown of the gross milk income and the marketing expenses, 59 farms filled out a detailed form for all the different sources of income for milk sales and the milk marketing expenses on an accrual basis. This information is reported in the following two tables. The tables are divided into six different areas, each representing a different area of income or expenses.

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

The table on page 26 reports the averages for these different areas. The table on page 27 contains the range for each of the individual lines of the report. This table is in farm business chart format with each item sorted independently and ranked by fifths. Numbers for the different areas will not add to the totals for that quintile or to the net price received because the highest farms for each item were averaged, not the same farms throughout the six areas. This table shows the range of income and expenses received by farms for all the different areas.

For your individual farm, compare your accrual numbers following this same format to look at how you compare to other farms in your region and to identify possible areas to generate additional revenue.

**AVERAGE MILK INCOME AND MARKETING REPORT**  
59 Western and Central Plain Region Dairy Farms, 2001

	Pounds	Percent	Price/Pound	Total	\$/Cwt of Milk
<b>BASE FARM PRICE</b>					
Butterfat	417,545.46	3.66%	\$ 1.8436	\$ 769,931.92	\$ 6.75
Protein	337,071.24	2.95%	\$ 1.9610	\$ 660,023.66	\$ 5.79
Solids	651,647.53	5.59%	\$ 0.1369	\$ 88,586.37	\$ 0.76
<b>Total Component Contribution</b>					\$ 13.31
<b>PPD</b>	11,491,355.03		\$ 1.5928	\$ 185,244.03	\$ 1.59
<b>Base Farm Price</b>					\$ 14.90
<b>Premiums</b>					
Quality				\$ 20,899.19	\$ 0.16
Volume				\$ 37,034.92	\$ 0.26
Market Premiums				\$ 45,223.80	\$ 0.28
<b>Total Premiums</b>					\$ 0.71
<b>BASE FARM PRICE + PREMIUM</b>					\$ 15.61
<hr style="border-top: 1px dashed black;"/>					
<b>Deductions</b>					
Promo				\$ 17,308.92	\$ 0.15
Hauling + Stop Charges.				\$ 45,510.76	\$ 0.43
Market Fees & Coop Dues				\$ 5,814.53	\$ 0.05
Futures/Contract Fees				\$ 0.00	\$ 0.00
<b>Total Deductions</b>					\$ 0.63
<b>BASE FARM PRICE + PREMIUMS - DEDUCTIONS</b>					\$ 14.97
<b>Marketing Programs</b>					
Compact				\$ 43.24	\$ 0.00
Futures Contracts, Forward Contracting, Etc.				(\$ 8,677.53)	(\$ 0.06)
<b>Total Marketing Income</b>					(\$ 0.06)
<b>Patronage Dividends</b>				\$ 13,658.71	\$ 0.23
<b>NET PRICE RECEIVED ON FARM, ALL SOURCES</b>					\$ 15.14
<b>PPD - Hauling, per cwt.</b>					\$ 1.16
<b>PPD - Hauling + Market Premiums, per cwt.</b>					\$ 1.44

**MILK PRICE INFORMATION BY QUINTILE**  
 (Each Category Sorted Independently)  
 59 Western and Central Plain Region Dairy Farms, 2001

	Lowest Quintile	←	→	Highest Quintile	
Butterfat, %	3.42	3.59	3.66	3.72	3.94
Protein, %	2.79	2.90	2.96	2.99	3.13
Other Solids, %	5.07	5.66	5.71	5.75	5.79
Butterfat, \$ per Cwt.	6.33	6.61	6.73	6.84	7.25
Protein, \$ per Cwt.	5.48	5.70	5.78	5.88	6.10
Other solids, \$ per Cwt.	0.72	0.75	0.77	0.77	0.82
<b>Total Component Value per Cwt.</b>	<b>\$ 12.64</b>	<b>\$ 13.15</b>	<b>\$ 13.27</b>	<b>\$ 13.43</b>	<b>\$ 14.03</b>
PPD, \$ per Cwt.	1.38	1.53	1.58	1.65	1.82
<b>Base Farm Price per Cwt.</b>	<b>\$ 14.20</b>	<b>\$ 14.72</b>	<b>\$ 14.91</b>	<b>\$ 15.06</b>	<b>\$ 15.60</b>
Quality, \$ per Cwt.	.04	.11	.16	.21	.30
Volume, \$ per Cwt.	.00	.07	.22	.36	.66
Market premium, \$ per Cwt.	-.01	.10	.22	.30	.78
Total Premium, \$ per Cwt.	.19	.46	.67	.94	1.26
<b>Base Farm Price + Premiums per Cwt.</b>	<b>\$ 14.69</b>	<b>\$ 15.29</b>	<b>\$ 15.59</b>	<b>\$ 15.89</b>	<b>\$ 16.57</b>
Promotion, \$ per Cwt.	.15	.15	.15	.15	.15
Hauling, \$ per Cwt.	.30	.38	.43	.49	.58
Market fees & coop dues per Cwt.	.00	.03	.05	.07	.10
Futures/contract fees, \$ per Cwt.	.00	.00	.00	.00	.00
<b>Total Marketing Expenses per Cwt.</b>	<b>\$ .48</b>	<b>\$ .58</b>	<b>\$ .62</b>	<b>\$ .69</b>	<b>\$ .80</b>
<b>Base + Premiums – Deductions per Cwt.</b>	<b>\$ 14.04</b>	<b>\$ 14.68</b>	<b>\$ 14.96</b>	<b>\$ 15.25</b>	<b>\$ 15.93</b>
Compact, \$ per Cwt.	.00	.00	.00	.00	.01
Futures contract, forward contracting, \$ per Cwt.	-.51	.00	.00	.00	.19
<b>Total Marketing Income, \$ per Cwt.</b>	<b>\$ -.50</b>	<b>\$ .00</b>	<b>\$ .00</b>	<b>\$ .00</b>	<b>\$ .19</b>
<b>Patronage Dividends, \$ per Cwt.</b>	<b>\$ .00</b>	<b>\$ .00</b>	<b>\$ .01</b>	<b>\$ .10</b>	<b>\$ 1.03</b>
<b>Net Price Received From All Sources, \$ per Cwt.</b>	<b>\$ 14.23</b>	<b>\$ 14.82</b>	<b>\$ 15.14</b>	<b>\$ 15.40</b>	<b>\$ 16.13</b>
PPD - hauling, \$ per Cwt.	.89	1.08	1.16	1.23	1.44
PPD - hauling + mkt premiums, \$ per Cwt.	1.06	1.23	1.36	1.49	2.05

### 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 294 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

294 New York Dairy Farms, 2000

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)
20.6	957	22,198,446	25,404	5.5	22	59	1,256,953
11.1	471	10,590,578	23,680	4.2	18	49	1,032,913
7.3	307	6,481,814	22,820	3.6	17	44	907,871
5.5	215	4,364,487	21,770	3.3	16	40	815,510
4.4	155	3,100,320	20,774	3.1	15	37	747,605
-----							
3.6	119	2,222,882	19,591	2.8	14	34	673,029
3.1	91	1,682,014	18,314	2.5	13	31	584,433
2.6	71	1,270,526	16,853	2.2	11	28	489,958
2.1	56	999,849	15,288	1.9	10	24	407,682
1.4	39	534,983	11,742	1.3	6	18	284,367

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)	
\$326	15%	\$263	\$792	\$503	\$3.24	
502	22	372	969	680	3.85	
588	24	420	1,057	765	4.17	
639	25	463	1,121	831	4.41	
705	27	502	1,186	895	4.57	
-----						
753	28	534	1,248	949	4.70	
797	29	575	1,321	1,013	4.91	
847	31	620	1,421	1,070	5.17	
913	33	688	1,540	1,140	5.56	
1,049	39	934	1,894	1,301	6.49	

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

**FARM BUSINESS CHART FOR  
FARM MANAGEMENT COOPERATORS**  
294 New York Dairy Farms, 2000

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)	
\$3,458	\$15.53	\$1,115	\$7.42	\$1,992	\$12.02	
3,148	14.16	1,510	8.81	2,421	13.14	
3,014	13.85	1,723	9.38	2,655	13.68	
2,908	13.60	1,903	9.84	2,809	14.18	
2,775	13.37	2,055	10.32	2,955	14.65	
-----						
2,616	13.17	2,189	10.86	3,058	15.09	
2,465	13.00	2,349	11.57	3,207	15.77	
2,285	12.79	2,475	12.03	3,333	16.66	
2,017	12.57	2,693	12.85	3,531	18.34	
1,569	12.10	3,046	15.10	3,925	23.20	
-----						
Profitability						
Net Farm Income Without Appreciation			Net Farm Income With Appreciation		Labor & Management Income	
Total	Per Cow	As % of Total Accrual Receipts	Total	Per Cow	Per Farm	Per Operator
(3)	(10)	(3)	(3)	(10)	(3)	(3)
\$295,646	\$939	0.28	\$394,582	\$1,204	\$182,415	\$101,405
123,950	643	0.21	177,673	835	61,791	36,385
77,197	523	0.17	114,922	707	30,556	21,128
55,750	424	0.13	85,577	602	19,433	12,413
43,028	343	0.11	65,516	508	8,094	5,760
-----						
29,681	254	0.08	51,646	431	-3,700	-2,958
18,501	161	0.05	39,963	332	-13,870	-10,917
5,293	56	0.02	22,976	211	-28,414	-21,054
-17,461	-125	-0.04	9,708	55	-54,924	-41,251
-153,963	-436	-0.20	-99,776	-278	-242,811	-171,152

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 6, 10, 14 and 20 of this publication. References to DFBS output page numbers for participating dairy farmers are provided in the table headings.



**FINANCIAL ANALYSIS CHART**  
294 New York Dairy Farms, 2000

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)
\$107	\$862	6.61	6.60	4%	\$373	47%	14.02
234	693	1.76	1.91	9	1,046	29	3.89
319	610	1.40	1.57	12	1,545	23	2.80
378	550	1.24	1.31	14	2,035	19	2.22
447	491	1.10	1.07	17	2,452	15	1.85
-----							
495	432	0.96	0.89	19	2,742	11	1.56
549	377	0.83	0.75	20	3,010	7	1.29
607	319	0.72	0.54	23	3,365	1	0.99
693	215	0.57	0.28	27	3,921	-5	0.78
935	-2	-0.72	-1.59	41	5,296	-23	0.38

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)
-0.13	96%	0.05	0.00	23%	15%
0.16	86	0.13	0.00	11	9
0.27	79	0.19	0.07	8	7
0.38	73	0.27	0.20	5	6
0.51	66	0.34	0.30	3	5
-----					
0.68	60	0.41	0.39	2	3
0.89	53	0.47	0.45	-1	2
1.15	47	0.53	0.55	-4	0
1.52	40	0.63	0.72	-10	-3
4.32	21	0.95	1.14	-39	-8

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)	
.78	\$1,228	\$551	\$4,388	\$243,497	\$3,289,413	
.65	1,828	837	5,275	109,676	1,630,823	
.59	2,139	975	5,899	53,346	1,171,081	
.54	2,385	1,114	6,250	37,622	909,405	
.49	2,638	1,264	6,653	26,228	730,445	
-----						
.46	2,921	1,416	7,062	14,324	616,811	
.43	3,299	1,601	7,604	5,269	466,827	
.38	3,861	1,810	8,370	-9,057	359,003	
.32	4,621	2,210	9,416	-32,304	244,172	
.24	6,800	3,108	11,955	-223,967	101,057	

\*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 45 cows on the small conventional farms to 634 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 48-57 of the 2000 State Summary\*. As herd size increases, the average profitability generally increases (page 48)\*. Net farm income without appreciation averaged \$13,624 per farm for the less than 50 cow farms and \$110,976 per farm for those with 400-599 cows. The farms with 600 and more cows, however, averaged \$57,262 net farm income. This relationship generally holds for all measures of profitability including rate of return on capital.

Assets, liabilities and financial measures are presented on pages 52-55\*. All herd size categories except the group with more than 600 cows saw an increase in net worth during 2000. The second largest herd size category experienced an increase in net worth of over \$78,000. However, percent equity went down as herd size increased. The largest herds had 49% equity; while the smaller herds averaged 73%.

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 56-57)\*. The farms with 600 and more cows per farm averaged 40 percent more milk sold per cow than the smallest farms. All of the groups with 150 or more cows averaged above 20,000 pounds of milk sold per cow while the farms smaller than 150 cows averaged 17,920 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 372,445 pounds at the lowest herd size category up to 1,099,279 pounds at the largest size category.

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\*Wayne A. Knoblauch, Linda D. Putnam, and Jason Karszes, Dairy Farm Management Business Summary, New York, 2000, Department of Applied Economics and Management, Cornell University, R.B. 2001-06, October 2001.

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

271 New York Dairy Farms, 2000

Item	Farms with:	Conventional		Freestall		
		<= 60 Cows	>60 Cows	<=150 Cows	151-300 Cows	≥300 Cows
Number of farms		47	49	52	50	73
<u>Cropping Program Analysis</u>						
Total Tillable acres		153	301	312	566	1,231
Tillable acres rented*		63	144	136	258	585
Hay crop acres*		91	188	160	267	545
Corn silage acres*		22	55	77	162	521
Hay crop, tons DM/acre		2.4	2.4	2.7	2.9	3.9
Corn silage, tons/acre		10.7	12.1	13.4	14.2	15.9
Oats, bushels/acre		36	62	43	0	53
Forage DM per cow, tons		6.6	8.1	7.5	7.1	7.6
Tillable acres/cow		3.4	3.6	2.9	2.6	1.9
Fert. & lime exp./tillable acre		\$15.62	\$20.06	\$24.46	\$27.98	\$30.14
Total machinery costs		\$24,372	\$43,631	\$59,105	\$116,659	\$315,691
Machinery cost/tillable acre		\$159	\$145	\$189	\$206	\$256
<u>Dairy Analysis</u>						
Number of cows		45	84	106	215	634
Number of heifers		31	68	76	164	479
Milk sold, lbs.		757,129	1,516,293	2,031,299	4,512,934	14,336,614
Milk sold/cow, lbs.		16,754	18,153	19,090	21,012	22,611
Operating cost of prod. milk/cwt.		\$10.13	\$10.09	\$10.70	\$10.79	\$11.65
Total cost of prod. milk/cwt.		\$17.37	\$15.45	\$15.53	\$14.54	\$14.14
Price/cwt. milk sold		\$13.50	\$13.41	\$13.42	\$13.41	\$13.37
Purchased dairy feed/cow		\$706	\$663	\$793	\$793	\$887
Purchased dairy feed/cwt. milk		\$4.20	\$3.67	\$4.14	\$3.78	\$3.92
Purchased grain & conc. as % milk rec.		26%	26%	29%	27%	28%
Purchased feed & crop exp./cwt. milk		\$4.83	\$4.48	\$4.93	\$4.58	\$4.59
<u>Capital Efficiency</u>						
Farm capital/worker		\$192,833	\$210,236	\$250,597	\$277,139	\$278,490
Farm capital/cow		\$8,099	\$7,684	\$7,447	\$7,090	\$6,110
Farm capital/tillable acre owned		\$4,050	\$4,085	\$4,485	\$4,933	\$5,987
Real estate/cow		\$3,943	\$3,326	\$3,242	\$2,951	\$2,332
Machinery investment/cow		\$1,724	\$1,734	\$1,574	\$1,422	\$1,055
Asset turnover ratio		0.36	0.39	0.44	0.50	0.60
<u>Labor Efficiency</u>						
Worker equivalent		1.89	3.07	3.15	5.50	13.91
Operator/manager equivalent		1.27	1.60	1.51	1.90	2.20
Milk sold/worker, lbs.		400,597	493,907	644,857	820,533	1,030,670
Cows/worker		24	27	34	39	46
Labor cost/cow		\$877	\$768	\$658	\$625	\$672
Labor cost/tillable acre		\$258	\$214	\$223	\$237	\$346
<u>Profitability &amp; Balance Sheet Analysis</u>						
Net farm income (without appreciation)		\$15,281	\$33,027	\$29,093	\$60,619	\$80,355
Labor & management income/operator		\$-3,409	\$1,396	\$-2,074	\$3,914	\$-10,427
Rate Return on all capital with appreciation		-0.2%	2.8%	2.6%	5.4%	5.6%
Farm debt/cow		\$2,131	\$2,220	\$2,494	\$2,490	\$2,936
Percent equity		74%	72%	66%	65%	51%

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

**FARM BUSINESS CHART FOR SMALL CONVENTIONAL STALL DAIRY FARMS**

47 Conventional Stall Dairy Farms with 60 or Less Cows, New York, 2000

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)
2.85	59	1,184,090	24,298	4.4	19	41	737,749
2.58	56	1,129,999	22,172	3.4	16	36	638,835
2.44	54	1,013,578	20,570	3.1	14	32	540,866
2.19	52	947,897	19,045	2.9	14	28	463,474
2.02	50	862,961	16,800	2.6	12	25	426,694
-----							
1.85	47	738,483	15,587	2.3	12	23	392,797
1.56	44	630,214	15,220	2.2	10	22	351,696
1.45	39	507,907	13,898	2.0	8	20	325,782
1.28	33	439,973	11,838	1.7	6	18	253,783
1.11	26	327,449	9,330	1.3	4	14	176,722
-----							
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)		
\$194	13%	\$187	\$940	\$363	\$3.13		
345	19	331	1,059	519	3.62		
446	22	404	1,112	601	3.93		
498	24	448	1,244	652	4.44		
569	25	500	1,380	732	4.63		
-----							
635	27	541	1,483	819	4.85		
707	28	588	1,628	936	5.14		
778	32	630	1,740	1,035	5.48		
863	37	808	1,971	1,129	6.26		
1,041	46	1,159	2,251	1,390	7.37		
-----							
Value and Cost of Production			Profitability				
Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Inc. Per Oper.	Change in Net Worth w/Apprec.	
(10)	(10)	(10)	Total	Per Cow	(3)	(6)	
\$3,312	\$6.11	\$13.29	\$49,608	\$1,119	\$26,607	\$70,500	
3,064	7.97	14.00	40,256	907	14,401	26,167	
2,768	8.59	15.03	31,138	717	9,832	19,588	
2,498	9.04	15.60	25,323	571	6,635	15,848	
2,360	9.28	16.27	20,095	464	463	12,055	
-----							
2,162	10.00	17.56	15,942	347	-3,894	6,954	
1,986	10.57	18.98	10,371	241	-7,861	2,656	
1,865	11.52	21.06	5,388	120	-11,933	-439	
1,596	12.98	23.26	-3,923	-86	-16,670	-8,611	
1,182	19.49	33.14	-26,348	-598	-52,874	-25,066	

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

**FARM BUSINESS CHART FOR LARGE CONVENTIONAL STALL DAIRY FARMS**  
49 Conventional Stall Dairy Farms with More Than 60 Cows, New York, 2000

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)
5.03	150	2,699,009	25,553	4.8	22	43	814,235
4.29	104	1,889,767	22,227	3.6	19	36	714,931
3.83	92	1,761,822	20,732	3.2	17	34	635,982
3.31	82	1,630,902	19,683	2.9	15	31	599,481
3.09	77	1,503,161	18,607	2.6	14	30	548,510
-----							
2.78	74	1,379,333	18,081	2.4	13	29	511,015
2.59	72	1,315,225	17,317	2.1	11	26	455,048
2.29	69	1,213,663	16,035	1.9	10	23	397,645
2.11	66	1,115,117	14,730	1.6	8	20	341,077
1.72	62	891,474	11,591	1.1	5	17	269,302
-----							
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)		
\$324	13%	\$250	\$856	\$483	\$2.74		
449	20	349	1,026	583	3.56		
512	22	379	1,104	683	3.93		
566	24	434	1,157	741	4.17		
601	26	476	1,231	801	4.36		
-----							
671	28	510	1,297	841	4.49		
725	29	541	1,400	902	4.76		
766	32	606	1,482	982	5.42		
868	35	736	1,726	1,048	5.75		
990	43	1,057	1,970	1,155	6.54		
-----							
Value and Cost of Production			Profitability				
Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Inc. Per Oper.	Change in Net Worth w/Apprec.	
(10)	(10)	(10)	Total	Per Cow	(3)	(6)	
\$3,401	\$7.44	\$12.22	\$92,439	\$968	\$31,719	\$60,742	
2,954	8.45	13.16	60,120	743	25,789	45,881	
2,753	8.87	13.79	53,878	660	18,118	40,451	
2,611	9.52	14.48	47,879	573	11,781	34,324	
2,501	9.82	15.03	38,743	485	6,497	24,829	
-----							
2,417	10.12	15.68	30,916	391	354	15,733	
2,318	10.74	16.23	23,300	312	-3,288	9,618	
2,161	11.55	17.54	14,388	172	-10,586	4,258	
1,997	12.44	19.60	6,646	82	-23,099	-7,357	
1,523	14.22	21.31	-26,157	-343	-52,804	-35,406	

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

**FARM BUSINESS CHART FOR SMALL FREESTALL DAIRY FARMS**  
52 Freestall Barn Dairy Farms with 150 or Less Cows, New York, 2000

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds of Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(11)*	(11)	(11)	(10)	(9)	(9)	(11)	(11)
4.87	148	3,199,560	24,120	4.8	23	56	1,048,182
4.09	139	2,860,086	22,597	4.1	19	45	924,780
3.57	130	2,581,768	21,365	3.5	17	41	803,527
3.41	121	2,380,865	20,613	3.2	16	38	727,653
3.25	115	2,201,860	19,844	2.8	15	36	695,165
-----							
3.10	108	1,994,872	18,738	2.6	14	33	642,385
2.92	101	1,736,932	17,864	2.5	13	31	548,991
2.74	88	1,558,048	16,574	2.1	12	29	500,428
2.26	77	1,223,280	15,549	1.9	10	26	451,212
1.71	53	952,982	13,671	1.5	7	22	370,448
-----							
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)		
\$455	21%	\$302	\$832	\$628	\$3.74		
581	24	403	954	760	4.02		
612	25	451	1,043	802	4.46		
636	27	509	1,119	889	4.76		
705	28	539	1,224	909	5.04		
-----							
742	30	569	1,285	928	5.17		
790	31	616	1,328	981	5.26		
835	33	669	1,464	1,071	5.40		
962	35	712	1,533	1,186	5.77		
1,082	38	982	1,780	1,333	6.69		
-----							
Value and Cost of Production			Profitability				
Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Inc. Per Oper.	Change in Net Worth w/Apprec.	
(10)	(10)	(10)	Total	Per Cow	(3)	(6)	
\$3,258	\$7.64	\$12.45	\$121,180	\$994	\$40,616	\$95,041	
3,995	8.72	14.01	70,925	562	20,630	54,117	
2,876	9.40	14.43	50,256	463	14,436	41,453	
2,783	10.03	14.79	41,929	404	8,550	32,570	
2,633	10.94	15.19	33,701	307	4,039	24,799	
-----							
2,513	11.41	15.80	23,141	222	-7,147	13,443	
2,390	11.74	17.04	12,930	121	-13,498	3,469	
2,246	12.22	17.86	3,838	48	-22,369	-10,682	
2,044	12.85	19.21	-10,805	-100	-31,458	-23,446	
1,831	13.64	20.06	-35,309	-363	-57,305	-55,607	

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

**FARM BUSINESS CHART FOR MEDIUM FREESTALL DAIRY FARMS**  
50 Freestall Barn Dairy Farms with 151-300 Cows, New York, 2000

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)
8.30	288	6,434,236	25,883	5.4	22	59	1,215,382
6.79	269	5,908,975	24,463	4.2	18	52	1,019,102
6.22	245	5,454,487	23,468	3.6	17	45	915,984
5.90	230	4,956,696	22,455	3.2	16	41	879,804
5.60	223	4,613,474	21,319	2.9	15	40	832,647
-----							
5.33	211	4,248,120	20,389	2.8	14	39	806,335
4.96	193	3,923,770	19,524	2.6	12	36	768,070
4.48	173	3,653,608	18,926	2.5	12	33	717,699
4.06	160	3,281,138	17,872	2.2	10	32	654,454
3.39	154	2,654,833	15,256	1.9	8	28	552,702

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)
\$467	17%	\$339	\$733	\$687	\$3.27
591	21	396	886	773	3.95
626	24	431	971	820	4.36
690	25	472	1,071	872	4.43
732	26	514	1,134	916	4.54
-----					
773	27	566	1,215	953	4.65
805	29	598	1,322	1,008	4.79
828	30	668	1,424	1,070	4.88
897	32	722	1,505	1,135	5.03
1,046	35	828	1,621	1,301	5.89

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)
\$3,557	\$8.28	\$11.49	\$184,598	\$826	\$81,249	\$197,613
3,302	9.28	13.02	141,381	633	40,842	125,579
3,081	9.47	13.73	107,117	534	25,853	89,833
2,975	9.81	13.96	79,992	408	15,387	56,930
3,851	10.39	14.15	68,720	335	6,705	39,479
-----						
2,721	10.93	14.58	53,728	258	-2,193	28,073
2,603	11.65	15.03	38,476	168	-9,002	12,598
2,533	11.91	15.61	18,432	83	-18,474	-1,691
2,420	12.60	16.64	-14,207	-69	-32,159	-30,565
2,071	14.36	19.38	-72,061	-382	-93,564	-61,382

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

**FARM BUSINESS CHART FOR LARGE FREESTALL DAIRY FARMS**

73 Freestall Barn Dairy Farms with 300 or More Cows, New York, 2000

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds of Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(11)*	(11)	(11)	(10)	(9)	(9)	(11)	(11)
30.94	1,544	35,553,590	26,050	6.7	21	64	1,415,863
20.87	954	22,116,437	24,421	5.1	19	55	1,266,772
16.62	738	17,499,215	23,932	4.4	18	52	1,183,234
14.94	643	14,775,220	23,419	3.9	17	49	1,093,607
13.12	581	13,251,145	23,127	3.7	17	47	1,038,650
11.76	503	11,314,507	22,733	3.5	16	45	991,470
10.84	431	9,740,391	22,313	3.4	15	43	939,611
8.95	395	8,834,767	21,672	3.2	14	41	872,484
7.71	353	7,544,666	20,198	2.9	14	38	800,252
6.10	318	5,722,977	16,228	1.8	12	32	697,692
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)		
\$480	35%	\$299	\$825	\$666	\$3.54		
670	32	395	997	840	4.08		
755	30	439	1,065	932	4.23		
794	28	479	1,130	995	4.41		
818	28	501	1,160	1,041	4.54		
856	27	525	1,215	1,070	4.62		
884	26	557	1,244	1,093	4.69		
912	25	588	1,269	1,144	4.89		
965	24	634	1,349	1,188	5.27		
1,078	19	759	1,499	1,339	5.77		
Value and Cost of Production			Profitability				
Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Inc. Per Oper.	Change in Net Worth w/Apprec.	
(10)	(10)	(10)	Total	Per Cow	(3)	(6)	
\$3,599	\$8.93	\$11.78	\$504,555	\$779	\$175,082	\$376,879	
3,288	9.98	12.71	282,055	481	91,076	238,708	
3,173	10.28	13.21	216,765	398	62,942	177,214	
3,081	10.66	13.54	168,346	317	39,725	142,491	
3,030	11.10	13.76	107,365	260	22,753	89,279	
3,000	11.64	14.25	80,340	162	2,641	33,443	
2,945	12.04	14.60	45,580	100	-20,137	-18,618	
2,869	12.62	14.95	-9,145	-19	-58,155	-82,100	
2,729	13.26	15.73	-80,428	-154	-103,378	-156,148	
2,222	14.25	17.08	-406,566	-406	-393,270	-542,304	

\*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

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## GLOSSARY AND LOCATION OF COMMON TERMS

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

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

**Accrual Expenses** - (defined on page 3)

**Accrual Receipts** - (defined on page 4)

**Annual Cash Flow Statement** - (defined on page 12)

**Appreciation** - (defined on page 5)

**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 14)

**Cash Paid** - (defined on page 2)

**Cash Receipts** - (defined on page 4)

**Change in Accounts Payable** - (defined on page 3)

**Change in Accounts Receivable** - (defined on page 4)

**Change in Inventory** - (defined on page 2)

**Cost of Term Debt** - A weighted average of the cost of borrowed capital to the farm. Calculate by multiplying end of year principal of each loan that is borrowed by the interest rate for each loan at that time. Add up each amount that is calculated for each loan and then divide by total amount of borrowed funds. Do not include accounts payable, operating debt or advanced government receipts. This information is found on pages 8 & 9 of the data entry form.

**Culling Rate** - (defined on page 18)

**Current Portion** - (defined on page 7)

**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.

**Debt Coverage Ratio** – (defined on page 14)

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

**Debt to Asset Ratios** - (defined on page 10)

**Deferred Taxes** - (defined on page 9)

**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 14.

**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-cancelable 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 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.

**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.

**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 6)

**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 10)

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

**Net Farm Income** - (defined on page 5)

**Net Farm Income from Operations Ratio** - (defined on page 7)

**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 19)

**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 19)

**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 7)

**Return on Total Capital** - (defined on page 7)

**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 19)

**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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