

June 1989

A.E. Ext. 89-14

# **DAIRY FARM BUSINESS SUMMARY**

## **WESTERN PLATEAU REGION 1988**

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1988 DAIRY FARM BUSINESS SUMMARY  
WESTERN PLATEAU REGION

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## 1988 DAIRY FARM BUSINESS SUMMARY WESTERN PLATEAU REGION\*

### INTRODUCTION

Dairy farmers throughout the State have been participating in Cornell Cooperative Extension's farm business summary and analysis program since the early 1950's. Each participating farmer receives a comprehensive business summary and analysis of his or her farm business. The information in this report represents an average of the data submitted from farms in the Western Plateau region.

### Program Objective

The primary objective of the dairy farm business summary, DFBS, is to help farm managers improve the financial management of their farm business through appropriate use of historical farm data and the application of modern farm business analysis techniques. In short, DFBS identifies the business and financial information farmers need and demonstrates how it should be used in identifying and evaluating the strengths and weaknesses of the farm business.

### Format Features

This regional report follows the same general format as in the 1988 DFBS printout received by all participating dairy farmers. Worksheets are included to give non-DFBS participants an opportunity to summarize their businesses. 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.

This report features:

- (1) an income statement including accrual accounting for farm business expenses and receipts, as well as measures of profitability with and without appreciation,
- (2) a complete balance sheet including financial ratios,
- (3) a cash flow summary including debt repayment ability,
- (4) a cropping program analysis,
- (5) a dairy program analysis, and
- (6) capital and labor efficiency analysis.

Micro DFBS, a computer program which enables Cooperative Extension agents and specialists to calculate and print individual farm business reports in their offices, is now being used by the dairy farm management field staff for 90 percent of the farms cooperating. This innovative approach provides faster processing of farm record data and increased use of the DFBS in farm management programs.

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\*This summary was prepared by George L. Casler, Department of Agricultural Economics, New York State College of Agriculture and Life Sciences, Cornell University, in cooperation with Cooperative Extension Agents Andrew Dufresne, Davis Hill, Joan Petzen, and Paul Westfall. The Western Plateau Region is comprised of Allegany, Cattaraugus, Chautauqua, and Steuben Counties. Linda Putnam was in charge of the data handling at Cornell. Renee Hoffman assisted with data entry.

## SUMMARY AND ANALYSIS OF THE FARM BUSINESS

Business Characteristics

Finding the right management strategies is an important part 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 farmers reporting these characteristics.

BUSINESS CHARACTERISTICS  
54 Western Plateau Region Dairy Farms, 1988

<u>Type of Farm</u>	<u>Number</u>	<u>Type of Barn</u>	<u>Number</u>
Dairy	54	Stanchion/Tie-Stall	23
Part-time dairy	0	Freestall	25
Dairy cash-crop	0	Combination	6
Part-time cash-crop dairy	0		
<u>Type of Ownership</u>	<u>Number</u>	<u>Milking System</u>	<u>Number</u>
Owner	51	Bucket & carry	1
Renter	3	Dumping station	8
		Pipeline	18
		Herringbone parlor	25
		Other parlor	2
<u>Type of Business</u>	<u>Number</u>	<u>Milking Frequency</u>	<u>Number</u>
Single proprietorship	36	2x/day	51
Partnership	14	3x/day	2
Corporation	4	Other	1
<u>Business Record System</u>	<u>Number</u>	<u>Production Records</u>	<u>Number</u>
ELFAC	6	DHIC	38
Account Book	29	Owner-Sampler	7
Agrifax (mail-in only)	6	Other	2
On-Farm Computer	2	None	7
Other	11		

The averages used in this report were compiled using data from all the participating dairy farms in this region unless noted otherwise. There may be regular dairy farms, part-time farms, dairy cash-crop farms, farm renters, partnerships, and corporations included in the average. These specific classifications are used to separate farms in the State Business Summary.

A part-time farm has less than six months of labor from all operators and total labor is less than 12 months.

A dairy cash-crop farm has cash receipts from crop sales that exceed 10 percent of accrual milk sales. These farms were summarized using 1987 data on page 56 of Smith, Stuart F., Wayne A. Knoblauch, and Linda D. Putnam, Dairy Farm Management Business Summary, New York, 1987, Cornell University, Department of Agricultural Economics, A.E. Res. 88-8, July 1988.

A farm renter does not own farm real estate at the end of the year or does not own tillable land. These farms were summarized using 1987 data in Putnam, Linda D. and Stuart F. Smith, Dairy Farm Business Summary, Eastern New York Renter Summary, 1987, Cornell University, Department of Agricultural Economics, A.E. Ext. 88-19, August 1988.

Income Statement

The accrual income statement begins with an accounting of all farm business expenses.

CASH AND ACCRUAL FARM EXPENSES  
54 Western Plateau Region Dairy Farms, 1988

Expense Item	Cash Paid +	Change in Inventory or Prepaid Expense* +	Change in Accounts Payable =	Accrual Expenses
<u>Hired Labor</u>	\$ 18,075	\$ 0	\$ 30	\$ 18,105
<u>Feed</u>				
Dairy grain & conc.	48,661	300	-222	48,739
Dairy roughage	1,876	-148	177	1,905
Nondairy	116	-3	0	113
<u>Machinery</u>				
Mach. hire, rent/lease	1,781	0	15	1,796
Machinery repairs/parts	11,216	0	-59	11,157
Auto exp. (farm share)	859	0	-4	855
Fuel, oil & grease	5,107	9	-4	5,112
<u>Livestock</u>				
Replacement livestock	1,340	0	-26	1,314
Breeding	2,287	16	-12	2,291
Vet & medicine	3,268	-26	-86	3,156
Milk marketing	6,298	0	0	6,298
Cattle lease/rent	294	0	0	294
Other livestock expense	7,011	-137	-82	6,792
<u>Crops</u>				
Fertilizer & lime	7,458	-326	23	7,155
Seeds & plants	3,281	-71	29	3,239
Spray, other crop exp.	2,937	-69	190	3,058
<u>Real Estate</u>				
Land/bldg./fence repair	2,791	-10	64	2,845
Taxes	5,030	0	154	5,184
Rent & lease	3,074	0	18	3,092
<u>Other</u>				
Insurance	2,915	-8	-4	2,903
Telephone (farm share)	532	0	4	536
Electricity (farm share)	4,627	0	-4	4,623
Interest paid	12,247	0	0	12,247
Miscellaneous	3,329	0	-50	3,279
Total Operating	\$156,410	\$ -473	\$ 151	\$156,088
Expansion livestock	1,031	0	56	1,087
Machinery depreciation				11,878
Building depreciation				6,226
TOTAL ACCRUAL EXPENSES				\$175,279

Cash paid is the actual amount of money paid out during the year and does not necessarily represent the cost of goods and services actually used.

Change in inventory: An increase in inventory is subtracted in computing accrual expenses because it represents purchased inputs not actually used during the year. A decrease in inventory is added to expenses because it represents the cost of inputs purchased in a prior year and used this year.

Changes in prepaid expenses apply to non-inventory categories. Include any expenses that have been paid in advance of their use, for example, 1989 rent paid in 1988. A positive change is the amount the prepayment account declined from beginning to end year, a negative change indicates an increase in the account.

Change in accounts payable: An increase in payables is added and a decrease is subtracted when calculating accrual expenses.

Accrual expenses are the costs of inputs actually used in this year's production.

Worksheets are provided to enable any dairy farmer to compute his or her accrual farm expenses and compare them with the averages on the previous page.

#### CASH AND ACCRUAL FARM EXPENSES WORKSHEET

Expense Item	Cash Paid	+	Change in Inventory or Prepaid Expense	+	Change in Accounts Payable	=	Accrual Expenses
<u>Hired Labor</u>	\$		\$		\$		\$
<u>Feed</u>							
Dairy grain & conc.							
Dairy roughage							
Nondairy							
<u>Machinery</u>							
Mach. hire, rent/lease							
Machinery repairs/parts							
Auto exp. (farm share)							
Fuel, oil & grease							
<u>Livestock</u>							
Replacement livestock							
Breeding							
Vet & medicine							
Milk marketing							
Cattle lease/rent							
Other livestock expense							
<u>Crops</u>							
Fertilizer & lime							
Seeds & plants							
Spray, other crop exp.							
<u>Real Estate</u>							
Land/bldg./fence repair							
Taxes							
Rent & lease							
<u>Other</u>							
Insurance							
Telephone (farm share)							
Electricity (farm share)							
Interest paid							
Miscellaneous							
Total Operating	\$		\$		\$		\$
Expansion livestock							
Machinery depreciation							
Building depreciation							
TOTAL ACCRUAL EXPENSES							\$

CASH AND ACCRUAL FARM RECEIPTS  
54 Western Plateau Region Dairy Farms, 1988

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts
Milk sales	\$171,585				\$ 1,746		\$173,331
Dairy cattle	12,780		\$ 1,925		0		14,705
Dairy calves	3,856				0		3,856
Other livestock	541		224		0		765
Crops	543		2,448		0		2,992
Government receipts	4,192		0*		-186		4,006
Custom machine work	132				0		132
Gas tax refund	186				3		190
Other	1,870				0		1,870
Less nonfarm noncash cap.**		(-)	0			(-)	0
Total Accrual Receipts	\$195,686		\$ 4,596		\$ 1,563		\$201,845

\*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 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 calculated. Changes in advanced government receipts are calculated by subtracting the end year balance from the beginning year balance (balances are listed with the current liabilities on the Balance Sheet).

Changes in accounts receivable are calculated by subtracting beginning year balances from end year balances. The January milk check for this December's marketings compared with the previous January's check is included as a change in accounts receivable.

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

CASH AND ACCRUAL FARM RECEIPT WORKSHEET

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts
Milk sales	\$ _____				\$ _____		\$ _____
Dairy cattle	_____		\$ _____		_____		_____
Dairy calves	_____		_____		_____		_____
Other livestock	_____		_____		_____		_____
Crops	_____		_____		_____		_____
Government receipts	_____		_____		_____		_____
Custom machine work	_____		_____		_____		_____
Gas tax refund	_____		_____		_____		_____
Other	_____		_____		_____		_____
Less gifts of cattle & crops		(-)	_____			(-)	_____
Total Accrual Receipts	\$ _____		\$ _____		\$ _____		\$ _____



## Profitability Analysis

Farm owners/operators contribute labor, management, and capital to their businesses and the best combination of these resources maximizes income. 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.

Net farm income is the total combined 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, financing, and owning 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 live-stock, machinery, real estate inventory, and stocks and certificates (other than FLB and PCA). Appreciation is a major factor contributing to changes in farm net worth and must be included for a complete profitability analysis.

### NET FARM INCOME 54 Western Plateau Region Dairy Farms, 1988

Item	Average	My Farm
Total accrual receipts	\$201,845	\$ _____
Appreciation: Livestock	4,748	_____
Machinery	4,160	_____
Real Estate	6,065	_____
Other Stock/Certificates	53	_____
Total Including Appreciation	\$216,871	\$ _____
Total accrual expenses	-175,279	- _____
Net Farm Income (with appreciation)	\$ 41,592	\$ _____
Net Farm Income (without appreciation)	\$ 26,566	\$ _____

Return to operators' labor, management, and equity capital measures the total business profits for the farm operator(s). It is calculated by deducting a charge for unpaid family labor from net farm income. Operators' labor is not included in unpaid family labor. Return to operators' labor, management, and equity capital has been calculated both with and without appreciation. Appreciation is considered an important part of the return to ownership of farm assets.

### RETURN TO OPERATORS' LABOR, MANAGEMENT, AND EQUITY 54 Western Plateau Region Dairy Farms, 1988

Item	Average		My Farm	
	With Apprec.	Without Apprec.	With Apprec.	Without Apprec.
Net farm income	\$ 41,592	\$ 26,566	\$ _____	\$ _____
Family labor unpaid @ \$700 per month	- 1,906	- 1,906	- _____	- _____
Return to operators' labor, management, & equity	\$ 39,686	\$ 24,660	\$ _____	\$ _____

Labor and management income is the return which farm operators receive for their labor and management used in operating 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 the opportunity cost of using equity capital at a real interest rate of five percent, from the return to operators' labor, management, and equity capital 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  
54 Western Plateau Region Dairy Farms, 1988

Item	Average	My Farm
Return to operators' labor, management, & equity without appreciation	\$ 24,660	\$ _____
Real interest @ 5% on \$343,045 average equity capital	- <u>17,152</u>	- _____
Labor & Management Income	\$ 7,508	\$ _____
Labor & Management Income per 1.33 Operator/Manager	\$ 5,645	\$ _____

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

RETURN ON EQUITY CAPITAL AND RETURN ON TOTAL CAPITAL  
54 Western Plateau Region Dairy Farms, 1988

Item	Average	My Farm
Return to operators' labor, management, & equity capital with appreciation	\$ 39,686	\$ _____
Value of operators' labor & management	- <u>24,172</u>	- _____
Return on equity capital with appreciation	\$ 15,514	\$ _____
Interest paid	\$ 12,247	\$ _____
Return on total capital with appreciation	\$ 27,761	\$ _____
Return on equity capital without appreciation	\$ 488	\$ _____
Return on total capital without appreciation	\$ 12,735	\$ _____
Rate of return on average equity capital:		
with appreciation	4.5%	_____ %
without appreciation	0.1%	_____ %
Rate of return on average total capital:		
with appreciation	5.6%	_____ %
without appreciation	2.6%	_____ %

Farm and Family Financial Status

The first step in evaluating the financial status of the farm is to construct a balance sheet which identifies 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.

1988 FARM BUSINESS & NONFARM BALANCE SHEET  
54 Western Plateau Region Dairy Farms, 1988

Farm Assets			Farm Liabilities & Net Worth		
	Jan. 1	Dec. 31		Jan. 1	Dec. 31
<u>Current</u>			<u>Current</u>		
Farm cash, checking & savings	\$ 6,310	\$ 9,143	Accounts payable	\$ 5,785	\$ 5,990
Accounts rec.	14,777	16,340	Operating debt	1,634	1,677
Prepaid exp.	0	8	Short-term	2,107	1,591
Feed & supplies	<u>37,643</u>	<u>40,556</u>	Advanced govt. rec.	<u>0</u>	<u>0</u>
Total	\$ 58,730	\$ 66,047	Total	\$ 9,526	\$ 9,257
<u>Intermediate</u>			<u>Intermediate</u>		
Dairy cows:			Structured debt		
owned	\$ 69,769	\$ 74,403	1-10 years	\$ 63,456	\$ 62,668
leased	162	135	Financial lease		
Heifers	29,642	31,734	(cattle/mach.)	1,282	1,298
Bulls/other lvstk.	1,071	1,241	FLB/PCA stock	<u>3,118</u>	<u>2,788</u>
Mach./eq. owned	89,313	92,801	Total	\$ 67,856	\$ 66,755
Mach./eq. leased	1,119	1,163			
FLB/PCA stock	3,118	2,788	<u>Long Term</u>		
Other stock/cert.	<u>4,487</u>	<u>4,616</u>	Structured debt		
Total	\$198,682	\$208,881	≥10 yrs	\$ 72,340	\$ 72,713
<u>Long-Term</u>			Financial lease		
Land/buildings:			(structures)	<u>980</u>	<u>677</u>
owned	\$223,895	\$228,301	Total	\$ 73,320	\$ 73,390
leased	<u>980</u>	<u>677</u>			
Total	\$224,875	\$228,978			
Total Farm Assets	\$482,287	\$503,907	Total Farm Liab.	\$150,702	\$149,402
			FARM NET WORTH	\$331,585	\$354,505
(Average for 30 farms reporting)			Nonfarm Liabilities*		
Nonfarm Assets*			& Net Worth		
	Jan. 1	Dec. 31		Jan. 1	Dec. 31
Personal cash, chkg. & savings	\$ 10,996	\$ 8,914	Nonfarm Liab.	\$ 1,639	\$ 1,723
Cash value life ins.	3,509	5,897	NONFARM NET WORTH	\$ 44,359	\$ 46,619
Nonfarm real estate	13,360	13,093			
Auto (personal sh.)	3,101	4,519	<u>FARM &amp; NONFARM*</u>	<u>Jan. 1</u>	<u>Dec. 31</u>
Stocks & bonds	3,559	4,001	Total Assets	\$528,285	\$552,249
Household furn.	8,433	8,557	Total Liabilities	<u>152,341</u>	<u>151,125</u>
All other	<u>3,039</u>	<u>3,361</u>	TOTAL FARM & NON-		
Total Nonfarm	\$ 45,998	\$ 48,342	FARM NET WORTH	\$375,944	\$401,124

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

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.

Advanced government receipts are included as current liabilities. Government payments received in 1988 that are for participation in the 1989 program are the end year balance and payments received in 1987 for participation in the 1988 program are the beginning year balance.

Date \_\_\_\_\_

# 1988 FARM BUSINESS & NONFARM BALANCE SHEET

Farm Assets			Farm Liabilities & Net Worth		
	Jan. 1	Dec. 31		Jan. 1	Dec. 31
<u>Current</u>			<u>Current</u>		
Farm cash, checking & savings			Accounts payable		
Accounts rec.			Operating debt:		
Prepaid expense					
Feed & supplies			Short Term:		
Total					
<u>Intermediate</u>			Adv. govt. rec.		
Dairy cows:			Total		
owned			<u>Intermediate</u>		
leased					
Heifers					
Bulls/other lvstk.					
Mach./eq. owned					
Mach./eq. leased					
FLB/PCA stock			Financial lease		
Other stock/cert.			(cattle/mach.)		
Total			FLB/PCA stock		
			Total		
<u>Long-Term</u>			<u>Long-Term</u>		
Land/buildings:					
owned					
leased					
Total			Financial lease		
			(structures)		
Total Farm Assets			Total		
			Total Farm Liab.		
			FARM NET WORTH		
<u>Nonfarm Assets</u>	<u>Jan. 1</u>	<u>Dec. 31</u>	<u>Nonfarm Liabilities &amp; Net Worth</u>	<u>Jan. 1</u>	<u>Dec. 31</u>
Personal cash, chkg. & savings			Nonfarm Liab.:		
Cash val. life ins.					
Nonfarm real est.					
Auto (pres. share)					
Stocks & bonds			Total Nonfarm		
Household furn.			Liabilities		
All other			Nonfarm		
Total Nonfarm			Net Worth		
<u>TOTAL FARM &amp; NONFARM</u>	<u>Jan. 1</u>	<u>Dec. 31</u>			
Total Farm & Nonfarm Assets					
Less Total Farm & Nonfarm Liabilities					
Farm & Nonfarm Net Worth					

Balance sheet analysis requires an examination of financial and debt ratios measuring levels of debt. Percent equity is calculated by dividing end of year net worth by end of year assets. The debt to asset ratio is compiled by dividing liabilities by assets. Low debt to asset ratios reflect strength in solvency and the potential capacity to borrow. Debt levels per unit of production include some old standards that are still useful if used with measures of cash flow and repayment ability. The change in farm net worth without appreciation is an excellent indicator of financial progress.

BALANCE SHEET ANALYSIS  
54 Western Plateau Region Dairy Farms, 1988

Item	Average	My Farm		
<u>Financial Ratios - Farm:</u>				
Percent equity	70%	_____ %		
Debt/asset ratio: total	0.30	_____		
long-term	0.32	_____		
intermediate/current	0.28	_____		
<u>Change in Net Worth:</u>				
Without appreciation	\$ 7,894	\$ _____		
With appreciation	22,920	\$ _____		
<u>Farm Debt Analysis:</u>				
Accounts payable as % of total debt	4%	_____ %		
Long-term liabilities as a % of total debt	49%	_____ %		
Current & inter. liab. as a % of total debt	51%	_____ %		
<u>Farm Debt Levels:</u>				
	Per Cow	Per Tillable Acre Owned	Per Cow	Per Tillable Acre Owned
Total farm debt	\$ 1,758	\$ 812	\$ _____	\$ _____
Long-term debt	863	399	_____	_____
Intermediate & current debt	894	413	_____	_____

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  
54 Western Plateau Region Dairy Farms, 1988

Item	Avg. of Regional Farms		My Farm	
	R.E.	Mach./Eq.	R.E.	Mach./Eq.
Value beg. of year	\$223,895	\$ 89,313	\$ _____	\$ _____
Purchases	\$ 7,094*	\$ 11,655	\$ _____	\$ _____
Gift/inheritance +	0	+ 0	+ _____	+ _____
Lost capital	- 1,925	--	- _____	- _____
Sales	- 603	- 450	- _____	- _____
Depreciation	- 6,226	- 11,878	- _____	- _____
Net investment	= -1,660	= -673	=+ _____	=+ _____
Appreciation	+ 6,066	+ 4,160	+ _____	+ _____
Value end of year	\$228,301	\$ 92,801	\$ _____	\$ _____

\*\$ 781 land and \$ 6,313 buildings and/or depreciable improvements.

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 compare all the cash inflows with all the cash outflows for the year. A complete list of cash inflows and cash outflows are identified in the following table. By definition, total cash inflows must equal total cash outflows when beginning and ending balances are included. Any imbalance is, therefore, the error from incorrect accounting of cash inflows and cash outflows.

ANNUAL CASH FLOW STATEMENT  
54 Western Plateau Region Dairy Farms, 1988

Item	Average	My Farm
<u>Cash Inflows</u>		
Beginning farm cash, checking & savings	\$ 6,310	\$ _____
Cash farm receipts	195,686	_____
Sale of assets: Machinery	450	_____
Real estate	599	_____
Other stock & certificate	353	_____
Money borrowed (intermediate & long-term)	19,729	_____
Money borrowed (short-term)	1,019	_____
Increase in operating debt	43	_____
Nonfarm income	5,196	_____
Cash from nonfarm capital used in the business	424	_____
Money borrowed - nonfarm	391	_____
Total	\$230,199	\$ _____
<u>Cash Outflows</u>		
Cash farm expenses	\$156,408	\$ _____
Capital purchases: Expansion livestock	1,031	_____
Machinery	11,655	_____
Real estate	7,094	_____
Other stock & certificate	429	_____
Principal payments (intermediate & long-term)	20,144	_____
Principal payments (short-term)	1,535	_____
Decrease in operating debt	0	_____
Personal withdrawals & family expenditures		_____
including nonfarm debt payments	21,597	_____
Ending farm cash, checking & savings	9,143	_____
Total	\$229,036	\$ _____
Imbalance (error)	\$ 1,163	\$ _____

Repayment Analysis

The second step in 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 1989. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 1989 debt payments shown below.

FARM DEBT PAYMENTS PLANNED  
Same 45 Western Plateau Region Dairy Farms, 1987 & 1988

Debt Payments	Average			My Farm		
	1988 Payments Planned	Made*	Planned 1989	1988 Payments Planned	Made	Planned 1989
Long-term	\$ 9,950	\$ 11,925	\$ 11,777	\$ _____	\$ _____	\$ _____
Intermediate-term	17,901	19,821	18,086	_____	_____	_____
Short-term	1,658	1,819	1,336	_____	_____	_____
Operating (net reduction)	56	0	392	_____	_____	_____
Accounts payable (net reduction)	1,230	549	704	_____	_____	_____
Total	\$ 30,795	\$ 34,113	\$ 32,295	\$ _____	\$ _____	\$ _____
Per cow	\$ 367	\$ 406		\$ _____	\$ _____	
Per cwt. 1988 milk	\$ 2.24	\$ 2.48		\$ _____	\$ _____	
Percent of total 1988 receipts	15%	17%		_____	_____	
Percent of 1988 milk receipts	17%	19%		_____	_____	

\*If refinancing of loans occurred in 1988, the refinanced amount is reflected in debt payments made.

The cash flow coverage ratio measures the ability of the farm business to meet its planned debt payment schedule. The ratio shows the percentage of planned payments that could have been made with last year's available cash flow. Farmers who did not participate in DFBS last year will find in their report a cash flow coverage ratio based on planned debt payments for 1989.

CASH FLOW COVERAGE RATIO  
Same 45 Western Plateau Region Dairy Farms, 1987 & 1988

Item	Average	My Farm
Cash farm receipts	\$198,734	\$ _____
- Cash farm expenses	157,756	_____
+ Interest paid	11,490	_____
- Net personal withdrawals from farm**	16,669	_____
(A) = Amount Available for Debt Service	\$ 35,799	\$ _____
(B) = Debt Payments Planned for 1988 (as of December 31, 1987)	\$ 30,795	\$ _____
(A ÷ B) = Cash Flow Coverage Ratio for 1988	1.16	_____

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

## ANNUAL CASH FLOW WORKSHEET

Item	Regional Average (per cow)	My Farm		Expected Change	1989 Projection
		Total	Per Cow		
Average number of cows	83				
<u>Accrual Oper. Receipts</u>					
Milk	\$ 2,080	\$	\$		\$
Dairy cattle	176				
Dairy calves	46				
Other livestock	9				
Crops	36				
Misc. receipts	74				
Total	\$ 2,422	\$	\$		\$
<u>Accrual Oper. Expenses</u>					
Hired labor	\$ 217	\$	\$		\$
Dairy grain & conc.	585				
Dairy roughage	23				
Nondairy feed	1				
Mach. hire/rent/lease	22				
Mach. rpr./parts & auto	144				
Fuel, oil & grease	61				
Replacement lvstk.	16				
Breeding	27				
Vet & medicine	38				
Milk marketing	76				
Cattle lease	4				
Other livestock exp.	81				
Fertilizer & lime	86				
Seeds & plants	39				
Spray/other crop exp.	37				
Land, bldg., fence repair	34				
Taxes	62				
Real estate rent/lease	37				
Insurance	35				
Utilities	62				
Miscellaneous	39				
Total Less Int. Paid	\$ 1,726				\$
<u>Net Accrual Operating Income</u>	(total)				
(without interest paid)	\$ 58,005	\$			\$
- Change in lvstk./crop inv.	4,597				
- Change in accts. rec.	1,563				
+ Change in feed/supply inv.	-473				
+ Change in accts. payable*	149				
NET CASH FLOW	\$ 51,521	\$			\$
- Net personal withdrawals & family expenditures	16,010				
Available for Farm Debt					
Payments & Investments	\$ 35,511	\$			\$
- Farm debt payments	33,696**				
Available for Farm Investment	\$ 1,815	\$			\$
- Capital purchases: cattle, machinery & improvements	\$ 20,209				
Additional Capital Needed		\$			\$

\*Excludes change in interest account payable.

\*\*See page 12.



Cropping Program Analysis

The cropping program is an important part of the dairy farm business and sometimes it is overlooked and neglected. A complete evaluation of available land resources, how they are being used, how well crops are producing and what it costs to produce them, is required to evaluate alternative cropping and feed purchasing choices.

LAND RESOURCES AND CROP PRODUCTION  
54 Western Plateau Region Dairy Farms, 1988

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	184	105	289	_____	_____	_____
Nontillable	56	13	69	_____	_____	_____
Other nontillable	127	14	141	_____	_____	_____
Total	367	132	499	_____	_____	_____
<u>Crop Yields</u>	<u>Farms</u>	<u>Acres</u>	<u>Prod/Acre</u>	<u>Acres</u>	<u>Prod/Acre</u>	
Hay crop	54	155	2.50 tn DM	_____	_____	tn DM
Corn silage	48	67	13.60 tn	_____	_____	tn
			4.51 tn DM	_____	_____	tn DM
Other forage	4	25	1.57 tn DM	_____	_____	tn DM
Total forage	54	217	3.05 tn DM	_____	_____	tn DM
Corn grain	27	50	87.89 bu	_____	_____	bu
Oats	20	37	36.20 bu	_____	_____	bu
Wheat	1	14	50.21 bu	_____	_____	bu
Other crops	3	38		_____	_____	
Tillable pasture	17	21		_____	_____	
Idle	27	47		_____	_____	
Total Tillable Acres	54	288		_____	_____	

Average crop acres and yields compiled for the region are for the number of 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 measures of crop management measure how efficiently the land resource is being used and how well total forage requirements are being met.

CROP MANAGEMENT FACTORS  
54 Western Plateau Region Dairy Farms, 1988

Item	Average	My Farm
Total tillable acres per cow	3.46	_____
Total forage acres per cow	2.60	_____
Harvested forage dry matter, tons per cow	7.93	_____

Cropping Program Analysis (continued)

A substantial number of cooperators have allocated crop expenses to 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.

CROP RELATED ACCRUAL EXPENSES  
Western Plateau Dairy Farms Reporting, 1988

Item	Total Per Till. Acre	Hay Crop		All Corn Per Acre	Corn Silage Per Ton DM	Corn Grain Per Dry Shell Bu.
		Per Acre	Per Ton DM			
Number of farms reporting	54	20		18		
Average number of acres	288	144		98		
Fertilizer & lime \$	24.80	\$ 7.72	\$ 3.09	\$ 18.51	\$ 4.10	\$ 0.21
Seeds & plants	11.22	4.07	1.63	7.35	1.63	0.08
Spray & other crop expense	10.60	1.72	0.69	11.39	2.53	0.13
Total	\$ 46.63	\$ 13.52	\$ 5.41	\$ 37.25	\$ 8.26	\$ 0.42

My Farm:

Fertilizer & lime	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____
Seeds & plants	_____	_____	_____	_____	_____	_____
Spray & other crop expense	_____	_____	_____	_____	_____	_____
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  
54 Western Plateau Region Dairy Farms, 1988

Machinery Expense Item	Average		My Farm	
	Total Expenses	Per Til. Acre	Total Expenses	Per Til. Acre
Fuel, oil & grease	\$ 5,112	\$ 17.72	\$ _____	\$ _____
Machinery repairs & parts	11,157	38.67	_____	_____
Machine hire, rent & lease	1,796	6.23	_____	_____
Auto expense (farm share)	855	2.96	_____	_____
Interest (5%)	4,553	15.78	_____	_____
Depreciation	11,878	41.17	_____	_____
Total	\$ 35,351	\$ 122.54	\$ _____	\$ _____

Dairy Program Analysis

Analysis of the dairy enterprise can tell a great deal about the 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. This increase in inventory is included as an accrual farm receipt when calculating all of the profitability measures on pages 6 and 7.

DAIRY HERD INVENTORY  
54 Western Plateau Region Dairy Farms, 1988

Item	Dairy Cows		Heifers					
	No.	Value	Bred		Open		Calves	
			No.	Value	No.	Value	No.	Value
Beg. year (owned)	82	\$ 69,769	29	\$ 17,796	20	\$ 8,215	19	\$ 3,631
+ Change w/o apprec.		2,043		-1,147		1,310		-281
+ Appreciation		<u>2,591</u>		<u>1,224</u>		<u>777</u>		<u>209</u>
End year (owned)	84	\$ 74,403	28	\$ 17,873	24	\$ 10,302	18	\$ 3,559
End incl. leased	85							
Average number	83		69 (all age groups)					

My Farm:

Beg. of year (owned)	___	\$ ___	___	\$ ___	___	\$ ___	___	\$ ___
+ Change w/o apprec.		___		___		___		___
+ Appreciation		___		___		___		___
End of year (owned)	___	\$ ___	___	\$ ___	___	\$ ___	___	\$ ___
End including leased	___							
Average number	___		___ (all age groups)					

Total milk sold and milk sold per cow are extremely valuable measures of productivity on the dairy farm. These measures of milk output are based on pounds of milk marketed during the year. Farm managers on DHI should compare milk sold per cow with their rolling herd average on the test date nearest December 31.

MILK PRODUCTION  
54 Western Plateau Region Dairy Farms, 1988

Item	Average	My Farm
Total milk sold, lbs.	1,351,157	_____
Milk sold per cow, lbs.	16,210	_____
Average milk plant test, percent butterfat	3.73	_____

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. Total costs of producing milk include the operating costs of producing milk plus depreciation on machinery and buildings, the value of operators' labor and management, and the interest charge for using equity capital. Note that the cost of labor, management, and equity capital has been excluded in the intermediate calculation.

ACCRUAL RECEIPTS FROM DAIRY AND COST OF PRODUCING MILK  
54 Western Plateau Region Dairy Farms, 1988

Item	Average			My Farm		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
<u>Accrual Costs of Producing Milk</u>						
Operating costs	\$128,661	\$ 1,544	\$ 9.52	\$ _____	\$ _____	\$ _____
Total costs w/o opers' labor, mgmt. & capital	\$148,671	\$ 1,784	\$ 11.00	\$ _____	\$ _____	\$ _____
Total Costs	\$189,995	\$ 2,279	\$ 14.06	\$ _____	\$ _____	\$ _____
<u>Accrual Receipts</u>						
From Milk	\$173,331	\$ 2,080	\$ 12.83	\$ _____	\$ _____	\$ _____

The accrual operating expenses most commonly associated with the dairy enterprise are listed in the table below. Analysis of these costs per unit of production enables further evaluation of the dairy enterprise.

DAIRY RELATED ACCRUAL EXPENSES  
54 Western Plateau Region Dairy Farms, 1988

Item	Average		My Farm	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purchased dairy grain & concentrates	\$ 585	\$ 3.61	\$ _____	\$ _____
Purchased dairy roughage	23	0.14	_____	_____
Total Purchased Dairy Feed	\$ 608	\$ 3.75	\$ _____	\$ _____
Purchased grain & conc. as % of milk receipts		28%		%
Purchased feed & crop exp.	\$ 769	\$ 4.74	\$ _____	\$ _____
Purchased feed & crop exp. as % of milk receipts		37%		%
Breeding	\$ 27	\$ 0.17	\$ _____	\$ _____
Veterinary & medicine	38	0.23	_____	_____
Milk marketing	76	0.47	_____	_____
Cattle lease	4	0.02	_____	_____
Other livestock expense	81	0.50	_____	_____

Capital and Labor Efficiency Analysis

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

CAPITAL EFFICIENCY  
54 Western Plateau Region Dairy Farms, 1988

Item	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
Farm capital	\$172,624	\$ 5,916	\$ 1,709	\$ 2,680
Real estate		2,723		1,233
Machinery & equipment	32,277	1,106	320	
Capital turnover, years	2.27			
<u>My Farm:</u>				
Farm capital	\$ _____	\$ _____	\$ _____	\$ _____
Real estate	_____	_____	_____	_____
Machinery & equipment	_____	_____	_____	_____
Capital turnover, years	_____			

LABOR FORCE INVENTORY AND ANALYSIS  
54 Western Plateau Region Dairy Farms, 1988

Labor Force	Months	Age	Years of Educ.	Value of Labor & Mgmt.
Operator number 1	11	46	13	\$ 17,469
Operator number 2	3	42	13	4,762
Operator number 3	1	39	12	1,941
Family paid	5			
Family unpaid	3			
Hired	10			
Total	34	÷ 12 =	2.86 Worker Equivalent	
			1.33 Operator/Manager Equiv.	
<u>My Farm: Total</u>				
Operator's	_____	÷ 12 = _____	Worker Equivalent	
	_____	÷ 12 = _____	Operator/Manager Equiv.	

Labor Efficiency	Average		My Farm	
	Total	Per Worker	Total	Per Worker
Cows, average number	83	29		
Milk sold, pounds	1,351,157	473,014		
Tillable acres	288	101		
Work units	892	312		

Labor Costs	Total	Average		Total	My Farm	
		Per Cow	Per Til. Acre		Per Cow	Per Til. Acre
Value of operator(s) labor (\$1,000/mo.)	\$ 15,981	\$ 192	\$55.40	\$ _____	\$ _____	\$ _____
Family unpd. (\$700/mo.)	1,906	23	6.61			
Hired	18,105	217	62.76			
Total Labor	\$ 35,992	\$ 432	\$124.76	\$ _____	\$ _____	\$ _____
Machinery Cost	\$ 35,351	\$ 424	\$122.54	\$ _____	\$ _____	\$ _____
Total Labor & Mach.	\$ 71,343	\$ 856	\$247.30	\$ _____	\$ _____	\$ _____

## COMPARATIVE ANALYSIS OF THE FARM BUSINESS

Progress of the Farm Business

Comparing your business with average data from regional DFBS co-operators that participated in both of the last two years is one part of a business checkup. It is equally important for you to determine the progress your business has made over the past two or three years and to set targets or goals for the future.

## PROGRESS OF THE FARM BUSINESS

Same 45 Western Plateau Region Dairy Farms, 1987 & 1988

Selected Factors	Average of 45 Farms*		My Farm		Goal
	1987	1988	1987	1988	
<u>Size of Business</u>					
Average number of cows	81	84			
Average number of heifers	69	69			
Milk sold, lbs.	1,297,686	1,373,750			
Worker equivalent	2.89	2.84			
Total tillable acres	272	278			
<u>Rates of Production</u>					
Milk sold per cow, lbs.	15,968	16,367			
Hay DM per acre, tons	2.66	2.58			
Corn silage per acre, tons	17	14			
<u>Labor Efficiency</u>					
Cows per worker	28	30			
Milk sold/worker, lbs.	448,624	484,536			
<u>Cost Control</u>					
Grain & conc. purchased as % of milk sales	25%	29%	%	%	%
Dairy feed & crop exp. per cwt. milk	\$ 4.28	\$ 4.81	\$	\$	\$
Labor & mach. costs/cow	\$ 837	\$ 842	\$	\$	\$
<u>Capital Efficiency**</u>					
Farm capital per cow	\$ 5,801	\$ 5,909	\$	\$	\$
Mach. & equip. per cow	\$ 1,052	\$ 1,094	\$	\$	\$
Capital turnover, years	2.24	2.27			
<u>Profitability</u>					
Net farm inc. w/o apprec.	\$ 26,318	\$ 28,632	\$	\$	\$
Net farm inc. w/apprec.	\$ 43,935	\$ 42,286	\$	\$	\$
Labor & mgt. income per oper./manager	\$ 7,084	\$ 8,966	\$	\$	\$
Rate of return on eq. capital w/apprec.	4.93%	4.47%	%	%	%
Rate of return on all capital w/apprec.	5.97%	5.57%	%	%	%
<u>Financial Summary</u>					
Farm net worth, end year	\$350,859	\$372,318	\$	\$	\$
Debt to asset ratio	0.27	0.26			
Farm debt per cow	\$ 1,580	\$ 1,561	\$	\$	\$

\*Farms participating both years.

\*\*Average for the year.

### 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 426 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.

References to DFBS output page numbers for participating dairy farmers are provided in the table headings.

#### FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS 426 New York Dairy Farms, 1987

Size of Business			Rates of Production			Labor Efficiency	
Worker Equiv- alent (DFBS pg. 10)	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
(10)	(10)	(10)	(9)	(8)	(8)	(10)	(10)
7.4	288	5,050,360	19,730	4.5	24	49	799,099
4.6	157	2,574,309	18,109	3.7	20	39	639,739
3.7	117	1,895,640	17,473	3.2	18	36	575,793
3.3	96	1,560,906	16,851	3.0	17	32	527,968
2.9	82	1,343,837	16,370	2.7	16	31	486,445
2.6	73	1,140,151	15,925	2.5	15	29	454,799
2.4	64	972,139	15,394	2.3	14	27	424,189
2.1	56	842,732	14,675	2.0	13	25	381,809
1.8	47	709,379	13,608	1.8	12	22	337,608
1.3	35	512,284	11,275	1.3	9	17	251,762

Cost Control					
Grain Bought Per Cow	% Feed is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
(9)	(9)	(10)	(10)	(9)	(9)
\$209	19%	\$220	\$ 524	\$349	\$2.46
312	24	285	631	469	3.11
383	27	320	690	531	3.47
431	29	351	734	573	3.68
468	31	383	778	627	3.93
508	33	415	831	678	4.19
547	35	451	894	711	4.40
595	36	493	953	759	4.70
666	39	549	1,033	823	5.01
769	44	706	1,190	943	5.63

The next section of the Farm Business Chart provides for comparative analysis of the value and costs of dairy production.

The profitability section shows the variation in farm income by decile and enables a dairy farmer to determine where he or she ranks by using several measures of farm profitability. Remember that each column is independently established and the farms making up the top decile in the first column will not necessarily be on the top of any other column. The dairy farmer who ranks at or near the top of most of these columns is in a very enviable position.

FARM BUSINESS CHART FOR FARM  
MANAGEMENT COOPERATORS  
426 New York Dairy Farms, 1987

Milk Receipts Per Cow	Dairy Receipts Per Cwt.	Oper. Cost Milk Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cow	Total Cost Production Per Cwt.
(9)	(9)	(9)	(9)	(9)	(9)
\$2,544	\$14.27	\$ 890	\$ 6.03	\$1,656	\$11.12
2,351	13.56	1,137	7.31	1,893	12.17
2,259	13.18	1,242	8.01	2,006	12.75
2,174	12.97	1,324	8.54	2,101	13.23
2,110	12.81	1,423	9.04	2,190	13.73
-----					
2,037	12.72	1,509	9.39	2,289	14.25
1,968	12.61	1,590	9.87	2,390	14.73
1,889	12.51	1,690	10.49	2,470	15.33
1,733	12.36	1,824	11.22	2,607	16.63
1,462	11.96	2,098	13.10	3,024	19.71

Profitability

Net Farm Income		Return to Operator's Labor, Management, & Equity Capital		Labor & Management Income	
With Appreciation	Without Appreciation	With Appreciation	Without Appreciation	Per Farm	Per Operator
(3)	(3)	(3)	(3)	(3)	(3)
\$197,621	\$136,964	\$196,383	\$136,268	\$95,478	\$71,503
92,938	62,277	91,549	61,167	36,159	28,206
75,433	46,889	74,352	44,671	25,310	20,638
59,966	37,085	58,410	35,784	19,308	14,620
50,071	29,409	48,144	28,474	13,697	9,894
-----					
40,312	24,442	38,795	23,170	7,936	6,437
32,360	17,870	30,644	15,931	2,912	2,277
23,593	12,737	21,911	10,230	-3,450	-2,909
16,232	4,764	14,494	2,719	-11,217	-9,828
-3,558	-17,210	-5,512	-18,986	-37,719	-32,962

Farm Business Charts for farms with freestall barns and 120 cows or less and more than 120 cows, and farms with conventional barns with 60 cows or less and more than 60 cows are discussed in the section on pages 23-28.



### Financial Analysis Chart

The farm financial analysis chart is designed just like the Farm Business Chart and may be used to measure the financial health of the farm business. Most of the financial measures used in the chart are defined on pages 7, 10, 12, and 18 of this publication. References to DFBS output page numbers for participating dairy farmers are provided in the table headings.

#### FINANCIAL ANALYSIS CHART 426 New York Dairy Farms, 1987

<u>Liquidity (repayment)</u>				
Debt Payments Made Per Cow (DFBS pg. 7)	Debt Payments as Percent of Milk Receipts (7)	Cash Flow Coverage Ratio (7)	Available for Debt Service Per Cow (11)	Debt Per Cow (5)
\$ 51	2%	14.14	\$937	\$ 96
210	10	2.18	710	636
303	15	1.63	634	1,137
373	18	1.35	569	1,508
441	21	1.22	520	1,840
500	24	1.06	466	2,199
568	29	0.93	414	2,523
646	33	0.79	340	2,904
808	40	0.57	246	3,407
1,610	81	-0.19	72	4,837

<u>Solvency</u>			<u>Efficiency &amp; Profitability</u>		
Percent Equity (DFBS pg. 5)	Debt/Asset Ratio		Total Farm Cap. Per Cow (10)	Capital Turnover (years) (10)	Rate of Return on Equity Cap. (3)
	Current & Intermediate (5)	Long Term (5)			
99%	0.00	0.00	\$3,792	1.47	35%
90	0.05	0.01	4,577	1.78	17
82	0.12	0.12	5,089	1.95	12
75	0.18	0.26	5,391	2.07	9
69	0.24	0.34	5,695	2.18	7
63	0.31	0.44	6,070	2.31	5
57	0.37	0.55	6,482	2.49	3
50	0.43	0.65	7,046	2.69	1
42	0.50	0.80	7,888	3.04	-3
22	0.77	1.21	9,829	4.07	-34

### Summarize Your Business Performance

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

Strengths: \_\_\_\_\_ Need Improvement: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

### Comparisons 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 used has as many of the same physical characteristics as possible as the farm being analyzed. To assist in this endeavor, dairy farms in the 1987 State Summary<sup>1</sup> have been divided into those with freestall and those with conventional housing. Within each group is a further classification by size of the dairy herd.

The table on page 24 shows the average values for the resulting four groups of dairy farms. Within each housing type, the larger herd size has the highest crop yields and pounds of milk sold per cow. The cost of producing milk was lower on the larger farms and labor efficiency greater. Profitability was also greater on the larger farms within each housing type.

Farm business charts have been computed for each of the four housing and herd size categories. From these charts on pages 25-28 the range in size of business, rates of production, labor efficiency, value and cost of producing milk, and profitability can be observed. The range in every category of business performance is tremendous.

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. Farm managers should remember, however, that their competition is not limited to the other farms in their own barn type and herd size category. They should observe how their management performance compares with farms in other categories as well.

### Herd Size Comparisons

A detailed comparison of profitability, financial situation, and business analysis factors across herd sizes is contained on pages 29-36. As herd size increases, the average profitability also increases (pages 29-30). Net farm income without appreciation was \$208,798 per farm for the 300 or more herd size group and \$11,140 per farm for those with less than 40 cows. This relationship holds for all measures of profitability including rate of return on equity capital.

As herd size increases, percent equity generally decreases (pages 31-34). The most dramatic decline occurs above 100 cows. However, farm net worth increases substantially as herd size increases. The average net worth for all size farms increased during 1987.

Crop yields increased as herd size increased, but fertilizer and lime expenses and machinery cost per tillable acre also increased (pages 35-36). Milk sold per cow also increased as herd size increased, ranging from 15,234 pounds on the farms with less than 40 cows to 18,808 pounds on farms with 300 or more cows. Farm capital per worker increased as herd size increased, while farm capital per cow decreased as herd size increased. Cows per worker increased dramatically as herd size increased, ranging from 22 at the lowest herd size category up to 45 at the largest size category.

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<sup>1</sup>Smith, Stuart F., Wayne A. Knoblauch, and Linda D. Putnam, Dairy Farm Management Business Summary, New York, 1987, Department of Agricultural Economics, Cornell University, A.E. Res. 88-8, July 1988.

SELECTED BUSINESS FACTORS BY TYPE OF BARN  
AND HERD SIZE  
426 New York Dairy Farms, 1987

Item	Farms with:		Freestall	
	Conventional	Freestall	≤120 Cows	>120 Cows
	≤60 Cows	>60 Cows		
Number of farms	117	151	72	86
<u>Cropping Program Analysis</u>				
Total Tillable acres	152	298	265	560
Tillable acres rented*	44	104	89	206
Hay crop acres*	93	167	138	221
Corn silage acres*	25	52	55	159
Hay crop, tons DM/acre	2.3	2.6	2.6	3.1
Corn silage, tons/acre	14.5	15.5	15.7	17.1
Oats, bushels/acre	52.7	59.8	52.1	51.1
Forage DM per cow, tons	7.5	8.2	8.0	7.6
Tillable acres/cow	3.4	3.4	3.2	2.6
Fert. & lime exp./til. acre	\$21.10	\$23.60	\$28.16	\$31.88
Total machinery costs	\$17,902	\$35,641	\$38,982	\$87,013
Machinery cost/tillable acre	\$118	\$120	\$147	\$155
<u>Dairy Analysis</u>				
Number of cows	45	88	83	213
Number of heifers	33	70	68	167
Milk sold, lbs.	701,939	1,404,638	1,336,813	3,631,580
Milk sold/cow, lbs.	15,446	15,949	16,026	17,012
Operating cost of prod. milk/cwt.	\$9.34	\$9.19	\$9.38	\$9.40
Total cost of prod. milk/cwt.	\$15.12	\$13.76	\$14.31	\$12.77
Price/cwt. milk sold	\$12.82	\$12.78	\$13.04	\$12.93
Purchased dairy feed/cow	\$507	\$496	\$498	\$559
Purchased dairy feed/cwt. milk	\$3.28	\$3.11	\$3.11	\$3.29
Purc. grain & conc. as % milk rec.	24%	24%	23%	24%
Purc. feed & crop exp./cwt. milk	\$4.05	\$3.99	\$4.09	\$4.21
<u>Capital Efficiency</u>				
Farm capital/worker	\$154,317	\$174,550	\$185,631	\$212,849
Farm capital/cow	\$6,467	\$6,056	\$6,166	\$5,522
Farm capital/til. acre owned	\$2,721	\$2,735	\$2,922	\$3,330
Real estate/cow	\$3,436	\$2,910	\$2,858	\$2,528
Machinery investment/cow	\$1,156	\$1,137	\$1,236	\$913
Capital turnover, years	2.51	2.34	2.34	1.96
<u>Labor Efficiency</u>				
Worker equivalent	1.90	3.06	2.77	5.54
Operator/manager equivalent	1.14	1.33	1.41	1.48
Milk sold/worker, lbs.	368,557	459,672	482,459	655,667
Cows/worker	24	29	30	39
Work units/worker	248	308	318	393
Labor cost/cow	\$432	\$388	\$393	\$403
Labor cost/tillable acre	\$129	\$115	\$124	\$154
<u>Profitability &amp; Balance Sheet Analysis</u>				
Net farm income (w/o apprec.)	\$14,305	\$31,007	\$27,432	\$77,458
Labor & mgmt. income/operator	\$2,778	\$8,414	\$6,525	\$27,394
Farm debt/cow	\$2,216	\$1,901	\$2,102	\$2,098
Percent equity	65%	69%	66%	62%

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

FARM BUSINESS CHART FOR SMALL CONVENTIONAL STALL DAIRY FARM  
117 Conventional Stall Dairy Farms with 60 or Less Cows, New York, 1987

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent (DFBS pg. 10)	No. of Cows (10)	Pounds Milk Sold (10)	Pounds Milk Sold Per Cow (9)	Tons Hay Crop DM/Acre (8)	Tons Corn Silage Per Acre (8)	Cows Per Worker (10)	Pounds Milk Sold Per Worker (10)
3.1	58	1,012,310	18,894	4.1	25	38	593,294
2.5	55	890,128	17,803	3.2	20	32	508,786
2.3	53	841,029	17,100	2.9	18	29	443,085
2.1	50	777,411	16,529	2.6	16	27	424,821
2.0	48	747,174	16,027	2.4	15	26	401,656
1.8	46	684,453	15,530	2.2	14	24	375,007
1.6	43	648,948	14,825	2.0	13	23	344,267
1.5	39	587,566	14,114	1.8	12	21	324,239
1.3	35	515,571	12,986	1.6	11	19	281,813
1.1	29	367,936	10,705	1.2	8	15	205,714

Cost Control

Grain Bought Per Cow (9)	% Feed is of Milk Receipts (9)	Machinery Costs Per Cow (10)	Labor & Machinery Costs Per Cow (10)	Feed & Crop Expenses Per Cow (9)	Feed & Crop Expenses Per Cwt. Milk (9)
\$239	20%	\$185	\$ 531	\$329	\$2.57
325	25	256	627	457	3.21
383	27	300	687	511	3.52
430	29	335	732	552	3.64
464	30	367	786	590	3.84
497	32	398	851	646	4.07
546	34	437	921	699	4.31
589	37	475	974	740	4.77
666	39	549	1,057	819	5.11
756	44	640	1,159	953	5.55

Value and Cost of Production			Profitability			
Milk Receipts Per Cow (9)	Oper. Cost Milk Per Cwt. (9)	Total Cost Production Per Cwt. (9)	Net Farm Income		Labor & Mgmt. Income	
			With Apprec. (3)	Without Apprec. (3)	Per Farm (3)	Per Oper. (3)
\$2,512	\$ 5.84	\$11.72	\$74,553	\$39,463	\$25,389	\$22,783
2,298	6.83	13.04	48,887	29,518	19,481	17,388
2,208	7.67	13.54	38,477	26,217	13,599	11,512
2,129	8.33	14.12	34,212	21,938	9,849	8,406
2,062	8.89	14.64	30,235	15,948	6,294	5,676
1,969	9.31	15.12	23,800	14,364	2,907	2,572
1,887	10.01	15.82	19,827	10,674	568	508
1,774	10.80	16.97	15,627	4,889	-3,763	-3,179
1,637	11.64	18.11	8,111	-1,628	-10,700	-9,683
1,350	13.39	20.88	-4,719	-14,006	-27,903	-26,962

**FARM BUSINESS CHART FOR LARGE CONVENTIONAL STALL DAIRY FARMS**  
**151 Conventional Stall Dairy Farms with More Than 60 Cows, New York, 1987**

Size of Business			Rates of Production			Labor Efficiency	
Worker Equiv- alent (DFBS pg. 10)	No. of Cows (10)	Pounds Milk Sold (10)	Pounds Milk Sold Per Cow (9)	Tons Hay Crop DM/Acre (8)	Tons Corn Silage Per Acre (8)	Cows Per Worker (10)	Pounds Milk Sold Per Worker (10)
5.6	163	2,674,310	19,172	4.5	22	44	673,277
3.9	112	1,819,161	17,935	3.7	19	37	603,935
3.5	94	1,583,874	17,322	3.2	18	34	555,170
3.1	87	1,425,022	16,735	3.0	17	32	517,283
3.0	82	1,318,364	16,412	2.6	16	30	484,731
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2.6	77	1,235,135	16,146	2.5	15	29	463,541
2.5	73	1,145,273	15,545	2.2	14	27	436,780
2.4	69	1,058,575	14,696	2.0	13	25	393,204
2.2	65	969,689	13,740	1.7	12	23	349,386
1.8	61	853,701	11,741	1.4	10	18	271,522

**Cost Control**

Grain Bought Per Cow (9)	% Feed is of Milk Receipts (9)	Machinery Costs Per Cow (10)	Labor & Machinery Costs Per Cow (10)	Feed & Crop Expenses Per Cow (9)	Feed & Crop Expenses Per Cwt. Milk (9)
\$202	18%	\$220	\$ 506	\$341	\$2.34
295	24	281	605	460	3.03
369	27	313	669	523	3.46
418	29	350	723	573	3.68
455	31	377	760	621	3.92
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510	32	407	797	670	4.16
548	34	445	863	694	4.34
591	36	478	938	740	4.54
656	37	532	1,015	798	4.84
754	42	677	1,164	893	5.31

Value and Cost of Production			Profitability			
Milk Receipts Per Cow (9)	Oper. Cost Milk Per Cwt. (9)	Total Cost Production Per Cwt. (9)	Net Farm Income		Labor & Mgmt. Income	
			With Apprec. (3)	Without Apprec. (3)	Per Farm (3)	Per Oper. (3)
\$2,452	\$ 6.24	\$11.00	\$110,663	\$78,030	\$54,066	\$41,523
2,323	7.28	11.99	80,747	55,205	34,079	29,685
2,216	7.92	12.47	69,626	46,659	27,268	23,376
2,138	8.35	12.91	58,272	41,337	22,167	16,361
2,092	8.74	13.42	50,783	34,419	16,612	11,210
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2,033	9.21	14.00	43,296	27,185	9,802	7,495
1,962	9.65	14.49	35,577	21,584	2,691	1,833
1,902	10.19	14.99	27,732	14,827	-4,619	-3,704
1,750	10.87	15.90	19,127	8,686	-10,022	-8,233
1,517	12.97	19.22	-2,597	-14,835	-36,963	-33,558

FARM BUSINESS CHART FOR SMALL FREESTALL DAIRY FARMS  
72 Freestall Barn Dairy Farms with 120 or Less Cows, New York, 1987

Size of Business			Rates of Production			Labor Efficiency	
Worker Equiv- alent (DFBS pg. 10)	No. of Cows (10)	Pounds Milk Sold (10)	Pounds Milk Sold Per Cow (9)	Tons Hay Crop DM/Acre (8)	Tons Corn Silage Per Acre (8)	Cows Per Worker (10)	Pounds Milk Sold Per Worker (10)
4.0	113	2,031,232	19,930	4.5	28	49	779,317
3.4	107	1,778,804	18,585	3.6	20	41	631,701
3.2	101	1,597,490	18,005	3.2	19	34	547,217
3.0	95	1,548,436	17,433	3.0	18	32	503,134
2.9	87	1,460,707	16,469	2.7	17	30	486,247
2.7	81	1,360,485	15,965	2.5	16	29	463,207
2.5	76	1,188,903	15,526	2.3	15	27	443,127
2.3	72	1,016,927	14,898	2.1	13	26	418,694
2.1	64	867,848	13,759	1.9	11	24	373,532
1.7	48	678,354	10,362	1.4	8	20	289,432

Cost Control

Grain Bought Per Cow (9)	% Feed is of Milk Receipts (9)	Machinery Costs Per Cow (10)	Labor & Machinery Costs Per Cow (10)	Feed & Crop Expenses Per Cow (9)	Feed & Crop Expenses Per Cwt. Milk (9)
\$197	19%	\$267	\$ 567	\$ 361	\$2.49
322	23	311	667	479	3.05
378	25	335	727	535	3.31
426	28	363	788	568	3.64
470	31	407	829	627	3.96
508	32	462	887	690	4.31
541	35	514	928	722	4.63
594	37	550	979	768	4.92
666	40	613	1,071	845	5.13
831	49	870	1,307	1,024	6.23

Value and Cost of Production			Profitability			
Milk Receipts Per Cow (9)	Oper. Cost Milk Per Cwt. (9)	Total Cost Production Per Cwt. (9)	Net Farm Income		Labor & Mgmt. Income	
			With Apprec. (3)	Without Apprec. (3)	Per Farm (3)	Per Oper. (3)
\$2,594	\$ 6.29	\$11.99	\$108,959	\$85,873	\$61,245	\$34,091
2,419	7.89	12.78	78,885	55,778	32,705	22,189
2,293	8.32	13.07	64,609	42,618	21,656	16,354
2,225	8.81	13.49	57,524	32,163	16,779	12,477
2,168	9.22	13.93	51,908	29,625	12,551	9,268
2,075	9.44	14.32	45,040	26,072	8,294	6,544
2,016	10.16	15.03	35,648	20,544	5,663	4,359
1,968	10.96	16.09	26,102	13,664	-3,715	-3,493
1,798	11.89	17.13	18,387	610	-15,345	-11,684
1,384	13.58	20.29	-5,701	-21,765	-38,033	-33,341

**FARM BUSINESS CHART FOR LARGE FREESTALL DAIRY FARMS**  
 86 Freestall Barn Dairy Farms with More Than 120 Cows, New York, 1987

Size of Business			Rates of Production			Labor Efficiency	
Worker Equiv- alent (DFBS pg. 10)	No. of Cows (10)	Pounds Milk Sold (10)	Pounds Milk Sold Per Cow (9)	Tons Hay Crop DM/Acre (8)	Tons Corn Silage Per Acre (8)	Cows Per Worker (10)	Pounds Milk Sold Per Worker (10)
11.5	475	9,122,233	20,926	5.0	23	59	978,334
7.5	303	5,443,620	19,082	4.0	20	48	831,859
6.4	253	4,155,570	17,701	3.7	19	45	741,638
5.8	217	3,557,779	17,409	3.5	18	41	682,912
5.2	198	3,195,642	16,973	3.2	18	39	641,707
4.8	176	2,895,944	16,268	3.0	17	37	611,788
4.4	158	2,599,715	15,691	3.9	16	35	572,578
4.0	144	2,349,436	15,355	2.6	15	32	530,718
3.6	132	2,078,626	14,712	2.3	14	30	486,868
3.2	123	1,778,664	12,906	1.7	11	26	421,041

**Cost Control**

Grain Bought Per Cow (9)	% Feed is of Milk Receipts (9)	Machinery Costs Per Cow (10)	Labor & Machinery Costs Per Cow (10)	Feed & Crop Expenses Per Cow (9)	Feed & Crop Expenses Per Cwt. Milk (9)
\$211	21%	\$269	\$ 547	\$415	\$2.67
354	26	312	675	529	3.31
434	27	345	704	592	3.63
466	30	378	743	651	3.87
494	33	405	787	692	4.17
531	34	433	834	722	4.36
571	35	464	883	775	4.59
638	37	490	940	813	4.82
691	39	541	1,018	858	5.10
766	43	690	1,177	932	5.69

**Value and Cost of Production**

**Profitability**

Milk Receipts Per Cow (9)	Oper. Cost Milk Per Cwt. (9)	Total Cost Production Per Cwt. (9)	Net Farm Income		Labor & Mgmt. Income	
			With Apprec. (3)	Without Apprec. (3)	Per Farm (3)	Per Oper. (3)
\$2,650	\$ 6.33	\$10.56	\$371,960	\$269,426	\$207,317	\$167,283
2,442	7.76	11.72	211,706	146,148	95,881	69,329
2,349	8.66	12.22	166,309	105,100	63,094	44,853
2,280	9.18	12.53	127,460	77,994	42,020	31,897
2,205	9.44	13.14	99,991	66,929	33,156	22,003
2,146	9.75	13.66	89,278	54,629	22,169	17,498
2,032	10.11	13.97	82,461	41,867	16,389	9,426
1,968	10.54	14.35	64,958	30,225	5,583	3,831
1,891	11.03	14.90	48,918	19,518	-7,955	-7,224
1,709	12.11	16.25	17,051	-5,150	-44,860	-35,341

FARM BUSINESS SUMMARY BY HERD SIZE  
426 New York Dairy Farms, 1987

Item	Farm Size:	Less than 40 Cows	40 to 54 Cows	55 to 69 Cows	70 to 84 Cows	85 to 99 Cows
Number of farms		32	69	74	71	41
<u>ACCRUAL EXPENSES</u>						
Hired labor		\$ 2,757	\$ 5,999	\$ 11,494	\$ 15,070	\$ 18,684
Dairy grain & concentrate		17,025	22,287	29,046	37,345	42,482
Dairy roughage		933	1,098	954	1,427	624
Other livestock feed		444	358	696	686	1,063
Machine hire/rent/lease		1,163	817	1,632	1,720	2,416
Machine repairs/parts		3,091	5,150	6,947	8,775	11,089
Auto expense (farm share)		302	556	740	655	686
Fuel, oil & grease		1,653	2,204	3,539	3,995	5,046
Replacement livestock		2,470	988	1,930	1,753	1,858
Breeding		1,081	1,535	2,029	2,576	2,647
Veterinary & medicine		1,280	1,663	2,759	3,420	3,466
Milk marketing		4,718	6,109	7,384	9,569	9,458
Cattle lease/rent		14	46	37	175	109
Other livestock expense		2,503	4,154	5,310	6,835	7,604
Fertilizer & lime		2,070	3,431	4,903	6,178	8,386
Seeds & plants		728	1,218	2,053	2,522	2,898
Spray & other crop expense		521	942	1,801	1,939	2,738
Land/building/fence repair		803	1,075	1,988	2,025	2,752
Taxes & insurance		3,729	4,746	7,161	7,526	9,326
Telephone & electricity		2,724	3,329	4,399	5,311	5,812
Interest paid		5,878	9,279	9,839	12,703	15,433
Misc. (including rent)		2,030	2,846	4,403	5,395	6,403
Total Operating Expenses		\$57,917	\$ 79,830	\$111,044	\$137,600	\$160,980
Expansion livestock		154	750	1,145	1,101	196
Machinery depreciation		4,540	6,811	9,935	13,227	13,545
Building depreciation		2,612	3,154	5,331	5,305	6,692
Total Accrual Expenses		\$65,223	\$ 90,545	\$127,455	\$157,233	\$181,413
<u>ACCRUAL RECEIPTS</u>						
Milk sales		\$65,663	\$ 93,254	\$125,036	\$157,419	\$185,624
Dairy cattle		6,599	7,778	8,596	13,744	15,933
Dairy calves		1,217	1,651	2,086	2,608	2,914
Other livestock		605	131	317	338	153
Crops		900	713	3,183	2,440	4,441
Misc. receipts		1,380	2,564	5,336	6,708	7,118
Total Accrual Receipts		\$76,363	\$106,091	\$144,554	\$183,257	\$216,186
<u>PROFITABILITY ANALYSIS</u>						
Net farm income (w/o apprec.)		\$11,140	\$15,546	\$17,099	\$26,024	\$34,773
Net farm income (w/apprec.)		\$21,927	\$30,098	\$31,811	\$44,375	\$55,411
Labor & mgmt. income		\$1,277	\$5,093	\$1,771	\$8,413	\$16,249
Number of operators		1.04	1.15	1.30	1.28	1.25
Labor & mgmt. inc./oper.		\$1,228	\$4,429	\$1,362	\$6,573	\$12,999
Rates of return on:						
Equity capital w/o apprec.		-4.6%	-3.2%	-2.8%	0.4%	2.5%
Equity capital w/apprec.		1.8%	5.3%	2.4%	6.3%	8.8%
All capital w/o apprec.		-0.8%	1.3%	0.5%	2.9%	4.6%
All capital w/apprec.		3.7%	6.2%	4.1%	6.8%	8.5%



FARM BUSINESS SUMMARY BY HERD SIZE  
426 New York Dairy Farms, 1987

Item	Farm Size:	100 to 149 Cows	150 to 199 Cows	200 to 299 Cows	300 or More Cows
Number of farms		70	31	27	11
<u>ACCRUAL EXPENSES</u>					
Hired labor		\$ 25,102	\$ 47,877	\$ 75,549	\$ 179,681
Dairy grain & concentrate		56,974	86,662	133,931	257,093
Dairy roughage		801	1,387	6,292	21,695
Other livestock feed		616	2,337	1,925	1,356
Machine hire/rent/lease		2,516	3,678	6,636	9,670
Machine repairs/parts		15,054	24,145	31,332	43,448
Auto expense (farm share)		668	610	656	2,512
Fuel, oil & grease		6,981	12,430	14,265	20,939
Replacement livestock		1,519	4,468	6,034	1,248
Breeding		3,546	5,002	7,259	12,662
Veterinary & medicine		4,968	7,667	12,604	26,205
Milk marketing		14,281	21,327	28,600	52,360
Cattle lease/rent		14	814	0	557
Other livestock expense		9,821	13,907	21,022	37,220
Fertilizer & lime		10,411	14,729	20,450	29,461
Seeds & plants		4,520	6,186	8,655	15,239
Spray & other crop expense		4,299	5,252	7,839	18,550
Land/building/fence repair		3,890	5,188	6,828	25,692
Taxes & insurance		10,856	15,566	19,405	28,402
Telephone & electricity		7,238	10,360	13,821	20,876
Interest paid		18,586	29,497	42,206	77,461
Misc. (including rent)		8,560	12,652	20,694	34,966
Total Operating Expenses		\$211,221	\$331,741	\$486,003	\$ 917,293
Expansion livestock		2,114	2,976	3,044	16,232
Machinery depreciation		19,857	28,073	31,247	58,995
Building depreciation		9,604	13,753	21,805	37,605
Total Accrual Expenses		\$242,796	\$376,543	\$542,099	\$1,030,125
<u>ACCRUAL RECEIPTS</u>					
Milk sales		\$246,068	\$361,325	\$521,194	\$1,045,845
Dairy cattle		20,536	34,740	48,174	94,637
Dairy calves		3,653	5,566	8,117	15,121
Other livestock		266	435	4,624	166
Crops		4,088	5,451	16,749	43,415
Misc. receipts		9,593	21,616	24,655	39,740
Total Accrual Receipts		\$284,207	\$429,132	\$623,513	\$1,238,923
<u>PROFITABILITY ANALYSIS</u>					
Net farm income (w/o apprec.)		\$41,411	\$52,589	\$81,414	\$208,798
Net farm income (w/apprec.)		\$64,485	\$107,614	\$119,890	\$280,560
Labor & mgmt. income		\$15,647	\$19,218	\$43,070	\$142,561
Number of operators		1.49	1.57	1.54	1.43
Labor & mgmt. inc./oper.		\$10,501	\$12,241	\$27,968	\$99,693
Rate of return on:					
Equity capital w/o apprec.		1.7%	2.8%	6.2%	12.7%
Equity capital w/apprec.		6.5%	11.4%	11.3%	18.2%
All capital w/o apprec.		3.8%	4.7%	7.0%	10.7%
All capital w/apprec.		7.0%	10.2%	10.1%	13.9%

FARM FAMILY FINANCIAL SITUATION BY HERD SIZE  
426 New York Dairy Farms, 1987

Item	Farms with: <u>Less than 40 Cows</u>		<u>40 to 54 Cows</u>		<u>55 to 69 Cows</u>	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31	Jan. 1	Dec. 31
<b>ASSETS</b>						
Farm cash/chkg./sav. \$	2,988	\$ 3,087	\$ 1,764	\$ 2,431	\$ 4,560	\$ 4,362
Accounts receivable	5,451	5,782	7,596	7,669	10,917	11,287
Prepaid expenses	0	0	6	6	14	14
Feed & supplies	11,161	12,245	17,453	18,024	24,803	26,963
Livestock*	39,311	42,463	52,858	59,009	74,084	78,802
Machinery & equipment*	37,645	38,853	52,278	55,305	75,451	78,455
FLB & PCA stock	683	751	1,612	1,731	2,532	2,525
Other stock & cert.	1,225	1,381	1,707	1,888	2,681	2,701
Land & buildings*	<u>137,681</u>	<u>141,005</u>	<u>153,697</u>	<u>158,724</u>	<u>197,233</u>	<u>205,744</u>
Total Farm Assets	\$236,145	\$245,567	\$288,971	\$304,788	\$392,275	\$410,853
Pers. cash/chkg./sav. \$	8,935	\$ 1,907	\$ 3,309	\$ 3,032	\$ 6,011	\$ 6,580
Cash value of life ins.	1,418	1,567	2,451	3,119	4,122	4,609
Nonfarm real estate	24,316	32,211	4,601	7,939	23,463	31,488
Auto (personal share)	1,195	1,032	3,163	3,329	2,479	3,090
Stocks & bonds	637	2,831	2,380	2,405	2,959	3,146
Household furnishings	7,684	7,737	8,744	8,750	6,923	7,345
All other	<u>34</u>	<u>5,327</u>	<u>2,955</u>	<u>3,082</u>	<u>1,872</u>	<u>888</u>
Tot. Nonfarm Assets**	\$ 44,219	\$ 52,611	\$ 27,603	\$ 31,656	\$ 47,830	\$ 57,145
Total Farm & Nonfarm Assets	\$280,364	\$298,178	\$316,574	\$336,444	\$440,105	\$467,998
<b>LIABILITIES</b>						
Accounts payable	\$ 1,797	\$ 1,539	\$ 4,395	\$ 4,184	\$ 3,355	\$ 3,693
Operating debt	1,071	687	1,023	1,014	1,080	819
Short term	213	543	1,079	1,030	2,387	1,837
Advanced gov't. rec.	0	0	0	53	52	200
Intermediate***	22,548	22,764	42,818	43,905	42,814	43,353
Long term*	<u>48,256</u>	<u>43,842</u>	<u>77,121</u>	<u>75,139</u>	<u>69,963</u>	<u>72,453</u>
Total Farm Liab.	\$ 73,885	\$ 69,374	\$126,435	\$125,325	\$119,651	\$122,354
Tot. Nonfarm Liab.**	<u>342</u>	<u>86</u>	<u>1,539</u>	<u>2,235</u>	<u>3,078</u>	<u>2,809</u>
Total Farm & Nonfarm Liabilities	\$ 74,227	\$ 69,460	\$127,974	\$127,560	\$122,729	\$125,163
Farm Net Worth (Equity Capital)	\$162,261	\$176,193	\$162,536	\$179,463	\$272,624	\$288,499
Farm & Nonfarm Net Worth	\$206,137	\$228,718	\$188,600	\$208,884	\$317,376	\$342,835
<b>FINANCIAL MEASURES</b>						
	<u>Less than 40 Cows</u>		<u>40 to 54 Cows</u>		<u>55 to 69 Cows</u>	
Percent equity	72%		59%		70%	
Debt/asset ratio-long term	0.31		0.47		0.35	
Debt/asset ratio-inter. & current	0.24		0.34		0.24	
Change in net worth with apprec.	\$13,932		\$16,927		\$15,875	
Total farm debt per cow	\$1,982		\$2,558		\$1,912	
Debt payments made per cow	\$653		\$619		\$502	
Debt payments as % of milk sales	33%		30%		24%	
Amount avail. for debt service	\$19,356		\$25,901		\$31,362	
Cash flow coverage ratio for 1987	1.31		1.30		1.29	

\*Includes discounted lease payments.

\*\*Average of farms reporting nonfarm assets and liabilities for 1987.

\*\*\*Includes FLB/PCA stock and discounted lease payments for cattle and machinery.

FARM FAMILY FINANCIAL SITUATION BY HERD SIZE  
426 New York Dairy Farms, 1987

Item	Farms with:		85 to 99 Cows	
	70 to 84 Cows		Jan. 1	Dec. 31
	Jan. 1	Dec. 31		
<b>ASSETS</b>				
Farm cash/chkg./savings	\$ 3,853	\$ 4,783	\$ 5,165	\$ 6,842
Accounts receivable	13,616	14,094	15,956	16,322
Prepaid expenses	0	0	42	42
Feed & supplies	32,595	33,144	39,290	43,702
Livestock*	91,006	98,832	104,319	114,263
Machinery & equipment*	92,636	96,188	102,537	109,990
FLB & PCA stock	3,794	3,942	3,517	3,630
Other stock & cert.	4,770	5,317	4,175	3,941
Land & buildings*	<u>226,609</u>	<u>231,725</u>	<u>228,748</u>	<u>238,936</u>
Total Farm Assets	\$468,878	\$488,025	\$503,750	\$537,668
Pers. cash/chkg./savings	\$ 14,048	\$ 15,373	\$ 18,808	\$ 15,424
Cash value of life ins.	2,610	2,878	2,534	4,301
Nonfarm real estate	10,708	11,670	17,682	27,750
Auto (personal share)	2,746	3,707	1,864	2,545
Stocks & bonds	1,798	2,060	5,034	5,225
Household furnishings	6,085	6,508	7,455	7,682
All other	<u>1,778</u>	<u>1,819</u>	<u>6,685</u>	<u>5,568</u>
Total Nonfarm Assets**	\$ 39,773	\$ 44,014	\$ 60,062	\$ 68,495
Total Farm & Nonfarm Assets	\$508,651	\$532,039	\$563,812	\$606,163
<b>LIABILITIES</b>				
Accounts payable	\$ 5,626	\$ 6,299	\$ 4,327	\$ 4,632
Operating debt	1,414	1,044	3,546	2,551
Short term	1,997	2,357	2,341	1,896
Advanced gov't. rec.	0	131	0	0
Intermediate***	57,651	58,466	86,091	83,656
Long term*	<u>100,481</u>	<u>95,358</u>	<u>96,662</u>	<u>94,019</u>
Total Farm Liab.	\$167,170	\$163,655	\$192,968	\$186,754
Total Nonfarm Liab.**	<u>2,231</u>	<u>2,193</u>	<u>0</u>	<u>0</u>
Total Farm & Nonfarm Liabilities	\$169,401	\$165,848	\$192,968	\$186,754
Farm Net Worth (Equity Capital)	\$301,709	\$324,369	\$310,782	\$350,913
Farm & Nonfarm Net Worth	\$339,250	\$366,191	\$370,844	\$419,409
<b>FINANCIAL MEASURES</b>				
	70 to 84 Cows		85 to 99 Cows	
Percent equity	66%		65%	
Debt/asset ratio-long term	0.41		0.39	
Debt/asset ratio-inter. & current	0.27		0.31	
Change in net worth with apprec.	\$22,661		\$40,132	
Total farm debt per cow	\$2,072		\$2,008	
Debt payments made per cow	\$573		\$596	
Debt payments as % of milk sales	28%		28%	
Amount avail. for debt service	\$38,245		\$51,041	
Cash flow coverage ratio for 1987	1.28		1.41	

\*Includes discounted lease payments.

\*\*Average of farms reporting nonfarm assets and liabilities for 1987.

\*\*\*Includes FLB/PCA stock and discounted lease payments for cattle and machinery.

FARM FAMILY FINANCIAL SITUATION BY HERD SIZE  
426 New York Dairy Farms, 1987

	Farms with:		100 to 149 Cows		150 to 199 Cows	
Item	Jan. 1	Dec. 31	Jan. 1	Dec. 31	Jan. 1	Dec. 31
<b>ASSETS</b>						
Farm cash/chkg./savings	\$ 8,425	\$ 11,325	\$ 4,975	\$ 8,211		
Accounts receivable	20,959	21,796	32,791	34,990		
Prepaid expenses	49	49	27	46		
Feed & supplies	52,784	56,272	78,542	78,949		
Livestock*	142,344	154,411	201,180	220,938		
Machinery & equipment*	132,545	139,451	167,023	177,120		
FLB & PCA stock	6,788	6,712	10,338	10,276		
Other stock & cert.	6,087	6,881	14,209	15,368		
Land & buildings*	<u>326,668</u>	<u>334,553</u>	<u>464,613</u>	<u>490,415</u>		
Total Farm Assets	\$696,649	\$731,449	\$ 973,698	\$1,036,313		
Pers. cash/chkg./savings	\$ 4,243	\$ 5,803	\$ 5,855	\$ 5,683		
Cash value of life ins.	4,205	5,000	8,453	8,611		
Nonfarm real estate	45,880	59,987	49,118	67,059		
Auto (personal share)	1,985	1,942	2,518	2,359		
Stocks & bonds	3,932	3,502	13,108	15,000		
Household furnishings	6,500	6,571	10,588	10,912		
All other	<u>3,629</u>	<u>3,138</u>	<u>8,266</u>	<u>21,494</u>		
Total Nonfarm Assets**	\$ 70,374	\$ 85,943	\$ 97,905	\$ 131,117		
Total Farm & Nonfarm Assets	\$767,023	\$817,392	\$1,071,603	\$1,167,430		
<b>LIABILITIES</b>						
Accounts payable	\$ 4,154	\$ 3,625	\$ 5,559	\$ 6,350		
Operating debt	1,875	3,241	5,535	5,074		
Short term	2,719	3,074	5,515	4,782		
Advanced gov't. rec.	0	0	0	558		
Intermediate***	92,101	88,843	138,604	143,167		
Long term*	<u>130,697</u>	<u>130,718</u>	<u>213,633</u>	<u>200,919</u>		
Total Farm Liab.	\$231,546	\$229,501	\$ 368,847	\$ 360,850		
Total Nonfarm Liab.**	<u>2,230</u>	<u>1,967</u>	<u>1,707</u>	<u>1,843</u>		
Total Farm & Nonfarm Liabilities	\$233,776	\$231,468	\$ 370,554	\$ 362,693		
Farm Net Worth (Equity Capital)	\$465,103	\$501,948	\$ 604,850	\$ 675,463		
Farm & Nonfarm Net Worth	\$533,247	\$585,924	\$ 701,049	\$ 804,737		
<b>FINANCIAL MEASURES</b>						
	100 to 149 Cows		150 to 199 Cows			
Percent equity	69%		65%			
Debt/asset ratio-long term	0.39		0.41			
Debt/asset ratio-inter. & current	0.25		0.29			
Change in net worth with apprec.	\$36,845		\$70,613			
Total farm debt per cow	\$1,897		\$2,027			
Debt payments made per cow	\$512		\$530			
Debt payments as % of milk sales	24%		25%			
Amount avail. for debt service	\$62,095		\$90,571			
Cash flow coverage ratio for 1987	1.26		1.35			

\*Includes discounted lease payments.

\*\*Average of farms reporting nonfarm assets and liabilities for 1987.

\*\*\*Includes FLB/PCA stock and discounted lease payments for cattle and machinery.

FARM FAMILY FINANCIAL SITUATION BY HERD SIZE  
426 New York Dairy Farms, 1987

Item	Farms with:		More than 300 Cows	
	200 to 299 Cows		More than 300 Cows	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
<b>ASSETS</b>				
Farm cash/chkg./savings	\$ 5,533	\$ 6,331	\$ 5,013	\$ 11,348
Accounts receivable	46,864	48,027	86,323	83,269
Prepaid expenses	0	0	2,156	3,570
Feed & supplies	98,091	112,705	225,951	275,171
Livestock*	284,010	302,384	461,034	511,184
Machinery & equipment*	191,392	200,085	321,564	334,952
FLB & PCA stock	14,980	15,096	15,414	15,132
Other stock & cert.	30,591	31,973	60,604	66,876
Land & buildings*	554,758	572,889	992,505	1,077,050
Total Farm Assets	\$1,226,219	\$1,289,490	\$2,170,564	\$2,378,552
Pers. cash/chkg./savings	\$ 5,556	\$ 5,662	\$ 1,981	\$ 2,020
Cash value of life ins.	5,206	5,806	1,450	1,814
Nonfarm real estate	9,188	22,063	13,250	32,000
Auto (personal share)	3,969	3,563	500	3,669
Stocks & bonds	7,664	9,351	17,498	20,591
Household furnishings	8,000	9,000	4,500	8,250
All other	18,165	15,798	13,363	17,399
Total Nonfarm Assets**	\$ 57,748	\$ 71,243	\$ 52,541	\$ 85,743
Total Farm & Nonfarm Assets	\$1,283,967	\$1,360,733	\$2,223,105	\$2,464,295
<b>LIABILITIES</b>				
Accounts payable	\$ 17,018	\$ 15,638	\$ 25,541	\$ 11,155
Operating debt	7,171	9,605	59,452	78,052
Short term	16,151	15,277	36,860	15,320
Advanced gov't. rec.	0	258	0	0
Intermediate***	220,564	226,605	351,692	374,108
Long term*	247,034	233,601	490,540	492,358
Total Farm Liab.	\$ 507,938	\$ 500,985	\$ 964,085	\$ 970,992
Total Nonfarm Liab.**	7,402	5,466	0	0
Total Farm & Nonfarm Liabilities	\$ 515,340	\$ 506,451	\$ 964,085	\$ 970,992
Farm Net Worth (Equity Capital)	\$ 718,281	\$ 788,505	\$1,206,479	\$1,407,560
Farm & Nonfarm Net Worth	\$ 768,627	\$ 854,282	\$1,259,020	\$1,493,303
<b>FINANCIAL MEASURES</b>				
	200 to 299 Cows		More than 300 Cows	
Percent equity	61%		59%	
Debt/asset ratio-long term	0.41		0.46	
Debt/asset ratio-inter. & current	0.37		0.37	
Change in net worth with apprec.	\$70,224		\$201,081	
Total farm debt per cow	\$2,053		\$2,167	
Debt payments made per cow	\$531		\$644	
Debt payments as % of milk sales	24%		27%	
Amount avail. for debt service	\$129,196		\$273,984	
Cash flow coverage ratio for 1987	1.31		1.51	

\*Includes discounted lease payments.

\*\*Average of farms reporting nonfarm assets and liabilities for 1987.

\*\*\*Includes FLB/PCA stock and discounted lease payments for cattle and machinery.

SELECTED BUSINESS FACTORS BY HERD SIZE  
426 New York Dairy Farms, 1987

Item	Farms with:	Less than 40 Cows	40 to 54 Cows	55 to 69 Cows	70 to 84 Cows	85 to 99 Cows
Number of farms		32	69	74	71	41
<u>Cropping Program Analysis</u>						
Total Tillable acres		108	156	224	256	316
Tillable acres rented*		22	51	71	81	105
Hay crop acres*		71	96	126	136	173
Corn silage acres*		15	27	35	47	56
Hay crop, tons DM/acre		2.1	2.3	2.6	2.6	2.4
Corn silage, tons/acre		12.7	14.5	14.4	15.1	15.4
Oats, bushels/acre		35.5	49.4	60.5	56.7	50.0
Forage DM per cow, tons		6.3	7.7	8.1	8.0	7.8
Tillable acres/cow		3.2	3.3	3.6	3.4	3.5
Fert. & lime exp./til. acre		\$19.21	\$21.94	\$21.92	\$24.11	\$26.57
Total machinery costs		\$12,615	\$18,201	\$26,607	\$33,050	\$38,073
Machinery cost/tillable acre		\$117	\$116	\$119	\$129	\$121
<u>Dairy Analysis</u>						
Number of cows		33	47	62	77	90
Number of heifers		22	36	49	63	73
Milk sold, lbs.		509,393	727,966	976,763	1,223,662	1,456,641
Milk sold/cow, lbs.		15,234	15,380	15,816	15,982	16,098
Operating cost of prod. milk/cwt.		\$9.30	\$9.31	\$9.49	\$9.22	\$8.97
Total cost of prod. milk/cwt.		\$16.08	\$14.74	\$15.05	\$14.04	\$13.30
Price/cwt. milk sold		\$12.89	\$12.81	\$12.80	\$12.86	\$12.74
Purchased dairy feed/cow		\$537	\$494	\$486	\$506	\$476
Purchased dairy feed/cwt. milk		\$3.53	\$3.21	\$3.07	\$3.17	\$2.96
Purchased grain & conc. as % of milk receipts		26%	24%	23%	24%	23%
Purchased feed & crop expense/cwt. milk		\$4.18	\$3.98	\$3.97	\$4.04	\$3.92
<u>Capital Efficiency</u>						
Farm capital/worker		\$155,705	\$154,213	\$163,199	\$170,205	\$173,452
Farm capital/cow		7,203	6,272	6,502	6,249	5,754
Farm capital/til. acre owned		2,801	2,801	2,625	2,718	2,468
Real estate/cow		4,167	3,300	3,263	2,993	2,584
Machinery investment/cow		1,144	1,136	1,246	1,233	1,174
Capital turnover, years		2.76	2.46	2.52	2.37	2.20
<u>Labor Efficiency</u>						
Worker equivalent		1.55	1.93	2.46	2.81	3.00
Operator/manager equivalent		1.04	1.15	1.30	1.28	1.25
Milk sold/worker, lbs.		329,305	378,140	396,964	435,307	485,218
Cows/worker		22	25	25	27	30
Work units/worker		222	258	273	290	323
Labor cost/cow		\$462	\$431	\$436	\$404	\$378
Labor cost/tillable acre		\$143	\$131	\$120	\$121	\$108

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

SELECTED BUSINESS FACTORS BY HERD SIZE  
426 New York Dairy Farms, 1987

Item	Farms with:	100 to 149 Cows	150 to 199 Cows	200 to 299 Cows	300 or More Cows
Number of farms		70	31	27	11
<u>Cropping Program Analysis</u>					
Total tillable acres		360	524	612	924
Tillable acres rented*		127	240	218	291
Hay crop acres*		190	229	235	302
Corn silage acres*		76	122	187	339
Hay crop, tons DM/acre		2.8	3.0	3.0	3.5
Corn silage, tons/acre		17.2	15.8	17.4	17.6
Oats, bushels/acre		63.6	55.3	52.8	0.0
Forage DM per cow, tons		8.2	7.9	7.7	7.1
Tillable acres/cow		3.0	3.1	2.5	2.1
Fert. & lime exp./til. acre		\$28.94	\$28.09	\$33.44	\$31.89
Total machinery costs		\$51,831	\$77,405	\$93,784	\$151,843
Machinery cost/tillable acre		\$144	\$148	\$153	\$164
<u>Dairy Analysis</u>					
Number of cows		119	171	241	436
Number of heifers		96	136	183	329
Milk sold, lbs.		1,894,774	2,773,091	4,023,474	8,195,157
Milk sold/cow, lbs.		15,915	16,217	16,710	18,808
Operating cost of prod. milk/cwt.		\$9.25	\$9.62	\$9.61	\$9.04
Total cost of prod. milk/cwt.		\$13.83	\$13.55	\$12.74	\$11.53
Price/cwt. milk sold		\$12.99	\$13.03	\$12.95	\$12.76
Purchased dairy feed/cow		\$485	\$515	\$582	\$640
Purchased dairy feed/cwt. milk		\$3.05	\$3.18	\$3.49	\$3.40
Purchased grain & conc. as % of milk receipts		23%	24%	26%	25%
Purchased feed & crop expense/cwt. milk		\$4.06	\$4.12	\$4.40	\$4.17
<u>Capital Efficiency</u>					
Farm capital/worker		\$201,546	\$212,060	\$197,933	\$234,931
Farm capital/cow		5,998	5,877	5,224	5,220
Farm capital/til. acre owned		3,065	3,539	3,193	3,593
Real estate/cow		2,777	2,792	2,342	2,375
Machinery investment/cow		1,142	1,006	813	753
Capital turnover, years		2.32	2.08	1.90	1.74
<u>Labor Efficiency</u>					
Worker equivalent		3.54	4.74	6.35	9.68
Operator/manager equivalent		1.49	1.57	1.54	1.43
Milk sold/worker, lbs.		534,815	585,133	633,126	846,448
Cows/worker		34	36	38	45
Work units/worker		352	375	384	443
Labor cost/cow		\$360	\$388	\$386	\$450
Labor cost/tillable acre		\$119	\$126	\$152	\$212

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

## 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 the 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 proper direction.

1. Goals should be specific.
2. Goals should be realistic and achievable.
3. The achievement of the goal should be verifiable.
4. You should designate a time when each goal will be achieved.

Goal setting on a dairy farm does not have to be a complex process. In many cases it provides 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 long and short range goals when looking at the future of your farm business.

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

- a. Begin with a general philosophy statement which incorporates both business and family goals.
- b. Identify 4-6 long range goals.
- c. Identify specific short range goals for a given time period (i.e., one year).

### Worksheet for Setting Goals

#### I. General Philosophy and Objectives

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## Worksheet for Setting Goals (continued)

## II. Long Range Goals (require two or more years to achieve)

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## III. Short Range Goals (possible to achieve in one or two years).

What	How	When

NOTE: Once long and short range goals have been identified, it is helpful to rank them in order of priority.

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Other Agricultural Economics Extension Papers

No. 89-2	List of Available Agricultural Economics Publications and Computer Programs	B. Stanton D. Walker
No. 89-3	Regional Differences in the Dairy Industry and Their Use in Evaluating Dairy Surpluses	A. Novakovic M. Keniston
No. 89-4	Agricultural District Legislation in New York, As Amended Through 1988	K. Gardner
No. 89-5	Microcomputers and Small Local Governments in New York: Five Case Studies Executive Summary	D. Wilcox
No. 89-6	Regional Factors Affecting the Impact of Biotechnology in U.S. Crop Production	J. Love L. Tauer
No. 89-7	National Dairy Markets and Policy and Some Implications for New York	A. Novakovic
No. 89-8	Dairy Farm Business Summary, Northern New York, 1988	S. Smith L. Putnam
No. 89-9	Dairy Farm Business Summary, Western Plain Region, 1988	S. Smith L. Putnam
No. 89-10	Dairy Farm Business Summary, Northern Hudson Region, 1988	S. Smith L. Putnam
No. 89-11	Dairy Farm Business Summary, Eastern Plateau Region, 1988	R. Milligan L. Putnam C. Crispell J. Mierek G. LeClar
No. 89-12	Dairy Farm Business Summary, Oneida-Mohawk Region, 1988	E. LaDue G. Andrew B. Aldrich
No. 89-13	Dairy Farm Business Summary, Central New York and Central Plain Regions, 1988	W. Knoblauch L. Putnam