

**DAIRY FARM  
BUSINESS SUMMARY**

DELAWARE COUNTY  
1984

Stuart F. Smith

Linda D. Putnam

Department of Agricultural Economics  
New York State College of Agriculture and Life Sciences  
A Statutory College of the State University  
Cornell University, Ithaca, New York 14853

DAIRY FARM BUSINESS SUMMARY

Delaware County

TABLE OF CONTENTS

	<u>Page</u>
Introduction .....	1
Program Objectives .....	1
Changes in Computation .....	1
Summary of The Farm Business .....	2
Business Characteristics .....	2
Inventory Accounting .....	3
Receipts .....	4
Expenses .....	5
Farm Business Profitability .....	6
Farm Family Financial Situation .....	8
Analysis of the Farm Business .....	10
Size of Business .....	10
Rates of Production .....	11
Labor Efficiency .....	12
Capital Efficiency .....	13
Cost Control .....	14
Machinery, Labor and Miscellaneous Costs .....	15
Yearly Cash Flow Planning and Analysis .....	16
Progress of the Farm Business .....	17
Management Performance of Statewide Cooperators .....	18
Measure Your Management Performance .....	26

DAIRY FARM BUSINESS SUMMARY  
Delaware County

INTRODUCTION

This report is part of your Cooperative Extension Farm Business Management Program. Each year dairy farmers throughout New York State submit business records for summarization and analysis. In addition to this publication, each participating farmer receives an individual farm summary and analysis report for his or her business. The information in this publication is compiled by combining and averaging data submitted by the participating farmers from the region described at the bottom of this page.

Program Objectives

Primary objectives of the dairy farm business management program are to (1) assist farmers in developing and maintaining more complete farm business data for use in management decisions and (2) help farmers improve their management skills through appropriate use of farm record data and application of modern decision-making techniques. This report is prepared in workbook form for use in the systematic study of individual farm business performance.

The need for a thorough dairy farm business examination and follow-up plan is greater than ever. The years immediately ahead will bring continued economic pressures on dairy farmers. We must continue to place emphasis on cost control and improvements in operating efficiency to maintain adequate farm incomes. Projecting cash flows, planning for future needs, and recognizing how those needs can be met will be required to survive the current dairy farm financial crisis.

New Developments

This year, several farm management agents and specialists are participating in a Dairy Farm Business Summary Pilot Program. Cooperative Extension Associations with appropriate microcomputers, have the capability to strengthen their dairy farm business analysis activities by calculating and printing the individual farm summary and analysis reports for immediate use by the agent and farmer, at any time. After the individual farm data is entered in the county office using the Micro DFBS computer program, it is sent to the Department of Agricultural Economics at Cornell University for additional review prior to transfer to a mainframe computer program for calculation of regional and state summaries.

Dairy farmers participating in the milk diversion program are included in this report. Since there is a relatively small number from any one region, the data from these farms has not been summarized separately. A separate summary and analysis of milk diversion program farms will be included in the 1984 New York State Dairy Farm Business Summary.

---

This summary was prepared by Stuart F. Smith and Linda D. Putnam, Department of Agricultural Economics, New York State College of Agriculture and Life Sciences, Cornell University, in cooperation with Delaware County Cooperative Extension Agents Carl Crispell and Tom Donnelly.

## SUMMARY OF THE FARM BUSINESS

Business Characteristics

Finding the right combination of resources and management strategies is an important part of farming. The tables below show important farm business characteristics, the number of farms reporting these characteristics, and the average level of resources used in production.

MANAGEMENT SYSTEMS, PRODUCTION TECHNOLOGY AND FARM SIZE  
34 Delaware County Dairy Farms, 1984

Type of Business	Number	Business Records	Number	Dairy Records	Number
Proprietorship	26	CAMIS	1	D.H.I.C.	23
Partnership	8	Account Book	21	Owner Sampler	6
Corporation	0	Agrifax	2	Other	0
		Agway	0	None	5
Owner	28	On-Farm Computer	0		
Renter	6	Other	10		

  

Barn Type	Number	Milking System	Number	Number	
Stanchion	30	Bucket & Carry	0	Herringbone	4
Freestall	4	Dumping Station	4	Other Parlor	0
Other	0	Pipeline	26		

  

Labor Force	My Farm	Average	Land Use	My Farm	Average
Operator 1.	_____	mo. 12	Total acres owned	_____	228
2.	_____	mo. 2	Total acres rented	_____	148
3.	_____	mo. 0.1	Total tillable acres	_____	168
Family paid	_____	mo. 4	Tillable acres rented	_____	91
Family unpaid	_____	mo. 5			
Hired	_____	mo. 4	Number of Cows	_____	
Total	_____	mo. 27	Beginning of	_____	
Age of operator(s) 1.	_____	yrs. 38	year (owned)	_____	61
2.	_____	yrs. 39	End of year (owned)	_____	61
			Avg. for year (all)	_____	61

Capital Investment-Farm Inventory represents the market value of resources committed to the farm business at the beginning and end of the year. Increases in inventory occur with herd expansion, new machinery, and building additions and appreciation of land, buildings and livestock.

CAPITAL INVESTMENT - FARM INVENTORY  
34 Delaware County Dairy Farms, 1984

Item	My Farm		Average	
	1/1/84	1/1/85	1/1/84	1/1/85
Livestock	\$ _____	\$ _____	\$ 77,138	\$ 79,582
Feed & supplies	_____	_____	18,661	21,411
Machinery & equipment	_____	_____	59,770	59,869
Land & buildings	_____	_____	140,760	143,075
TOTAL	\$ _____	\$ _____	\$296,329	\$303,937

Inventory Accounting

The value of the dairy herd is influenced by market prices, herd quality and quantity. Changes in market value caused by inflationary or deflationary price changes, are separated from changes in inventory caused by changes in herd quality and quantity.

CHANGE IN LIVESTOCK INVENTORY  
34 Delaware County Dairy Farms, 1984

Item	My Farm	Average
End of year market value	\$ _____	\$79,582
less end at beginning prices	- _____	<u>-81,449</u>
Change due to price	\$ _____	\$-1,867
End inventory at beginning prices	\$ _____	\$81,449
less beginning of year inventory	- _____	<u>-77,138</u>
Change due to quality & quantity	\$ _____	\$ 4,311

Machinery and real estate inventories, based on current market values, include a depreciation charge and are balanced by the residual called appreciation.

MACHINERY AND EQUIPMENT INVENTORY  
34 Delaware County Dairy Farms, 1984

Item	My Farm	Average
End of year market value	(1)\$ _____	\$59,869
Beginning market value	\$ _____	\$59,770
Plus machinery purchased	+ _____	+ 4,921
Less machinery sold	- _____	- 274
Less depreciation	- _____	<u>- 8,894</u>
Net end investment	(2)\$ _____	<u>\$55,523</u>
APPRECIATION (1 minus 2)	\$ _____	\$ 4,346

The change in real estate value is affected by market forces, building depreciation, and lost capital which is the portion of a new building investment that is not reflected in the value of the farm.

REAL ESTATE INVENTORY CALCULATIONS  
34 Delaware County Dairy Farms, 1984

Item	My Farm	Average
End of year market value	(1)\$ _____	\$143,075
Beginning market value	\$ _____	\$140,760
Cost of new real estate	\$ _____	\$4,613
Less lost capital	- _____	<u>-1,943</u>
Value of new added	+ _____	+ 2,670
Less building depreciation	- _____	- 3,548
Less real estate sold	- _____	- 87
Net end investment	(2)\$ _____	<u>\$139,795</u>
APPRECIATION (1 minus 2)	\$ _____	\$ 3,280

Receipts

Receipts from the business should be large enough to cover all expenses and leave a reasonable return for the operator's labor and management. Cash receipts occur when farm products and livestock are sold or services are performed and payment is received during the year. Noncash receipts do not result from sales, but are due to appreciation in value or increases in physical quantities of inventories that occurred during the year. Most of these items could be readily transformed into cash.

FARM RECEIPTS  
34 Delaware County Dairy Farms, 1984

Item	My Farm	Per Farm	Per Cow
<b>CASH RECEIPTS</b>			
Milk sales	\$ _____	\$117,329	\$1,923
Crop sales	_____	721	12
Dairy cattle sold	_____	7,881	129
Calves & other livestock sales	_____	1,453	24
Gas tax refunds	_____	47	1
Government payments	_____	2,300	38
Custom machine work	_____	44	1
Other	_____	750	12
Total Cash Receipts	\$ _____	\$130,525	\$2,140
<b>NONCASH RECEIPTS</b>			
Increase in livestock inventory <sup>1</sup>	_____	4,311	71
Increase in feed & supplies	_____	2,750	45
<b>TOTAL FARM RECEIPTS EXCLUDING APPRECIATION</b>			
	\$ _____	\$137,586	\$2,256
Livestock appreciation <sup>2</sup>	_____	- 1,867	- 31
Machinery appreciation <sup>3</sup>	_____	4,346	71
Real estate appreciation <sup>3</sup>	_____	3,280	54
<b>TOTAL FARM RECEIPTS</b>	<b>\$ _____</b>	<b>\$143,345</b>	<b>\$2,350</b>

<sup>1</sup>The increase in herd market value attributed to a change in numbers and/or a definite change in herd quality.

<sup>2</sup>The increase in herd market value, caused by inflationary price increase.

<sup>3</sup>Defined on page 3.

Income Analysis provides a means of examining the annual receipt producing capability of the farm business.

INCOME ANALYSIS  
Delaware County Dairy Farms, 1984 & 1983

Item	My Farm	34 Farms 1984	34 Farms 1983
Average price/cwt. milk sold	\$ _____	\$13.60	\$13.74
Milk and cattle sales per cow	_____	\$2,076	\$2,170
Total cash receipts/worker	_____	\$58,011	\$61,536

Expenses

All farm expenses, cash operating and overhead, are summarized below.

FARM EXPENSES  
34 Delaware County Dairy Farms, 1984

Item	My Farm	Per Farm	Per Cow
<u>Hired Labor</u>	\$ _____	\$ 6,143	\$ 101
<u>Feed</u>			
Dairy concentrate	_____	37,228	610
Hay and other	_____	2,350	39
<u>Machinery</u>			
Machine hire, rent and lease	_____	683	11
Machinery repairs	_____	5,559	91
Auto expense (farm share)	_____	321	5
Gas and oil	_____	4,023	66
<u>Livestock</u>			
Replacement livestock	_____	1,573	26
Breeding fees	_____	1,713	28
Veterinary and medicine	_____	1,771	29
Milk marketing	_____	10,183	167
Cattle lease	_____	159	3
Other livestock expense	_____	5,577	91
<u>Crops</u>			
Fertilizer & lime	_____	4,171	68
Seeds and plants	_____	1,119	18
Spray, other crop expense	_____	869	14
<u>Real Estate</u>			
Land, building, fence repair	_____	1,495	25
Taxes	_____	3,030	50
Insurance	_____	1,880	31
Rent and lease	_____	2,048	34
<u>Other</u>			
Telephone (farm share)	_____	388	6
Electricity (farm share)	_____	2,820	46
Interest paid	_____	11,637	191
Miscellaneous	_____	859	14
Total Cash Expenses	\$ _____	\$107,599	\$1,764
Expansion livestock	_____	1,367	22
Machinery depreciation	_____	8,894	146
Building depreciation	_____	3,548	58
Unpaid family labor @ \$500/month	_____	2,250	37
TOTAL FARM EXPENSES EXCLUDING INTEREST ON EQUITY CAPITAL	\$ _____	\$123,658	\$2,027
Interest on equity capital @ 5%	_____	9,810	161
TOTAL FARM EXPENSES	\$ _____	\$133,468	\$2,188

### Farm Business Profitability

The results of management are reflected in the net return from the business. Four common ways to measure the returns from a farm business are calculated.

Net cash farm income reflects the cash available from the year's operation of the business. Family living has first claim on cash income followed by fixed payments on debts. A family may have additional cash available if they have nonfarm income. Cash flow is not a good measure of farm business profits, but it is useful when planning debt repayment programs. Guidelines for annual cash flow planning are presented on page 9. Monthly cash flow planning is also recommended and may be required in order to identify cash flow problems in the year ahead. This is particularly true when major changes in the business are planned or when the price of important factors such as milk or purchased grain are expected to change significantly.

#### NET CASH FARM INCOME Delaware County Dairy Farms, 1984 & 1983

Item	My Farm	34 Farms 1984	34 Farms 1983
Cash Farm Receipts	\$ _____	\$130,525	\$143,380
Cash Farm Expenses	_____	<u>107,599</u>	<u>115,971</u>
NET CASH FARM INCOME	\$ _____	\$ 22,926	\$ 27,409

Labor and management income is the return to the operator for his or her labor and management input into the business. A five percent charge for the use of the operator's equity capital in the business has been included as a farm expense. This interest charge reflects the long term average rate of return that a farmer might expect to earn in investments with comparable risk to farm businesses in an economy with little or no inflation. Labor and management income is the measure used most commonly when comparing farm businesses. Appreciation in livestock, machinery and real estate inventories is included as ownership income, not return to operator labor and management.

#### LABOR AND MANAGEMENT INCOME Delaware County Dairy Farms, 1984 & 1983

Item	My Farm	34 Farms 1984	34 Farms 1983
Total farm receipts excluding appreciation	\$ _____	\$137,586	\$148,417
Total farm expenses	_____	<u>133,468</u>	<u>147,101</u>
LABOR & MANAGEMENT INCOME	\$ _____	\$ 4,118	\$ 1,316
Full-time operator-manager equivalents	_____	1.18	1.29
LABOR & MANAGEMENT INCOME PER OPERATOR-MANAGER	\$ _____	\$ 3,490	\$ 1,020



Labor, management and ownership income per operator reflects the combined return to the farmer for his or her triple role of worker-manager, financier and owner. Again, this is not a measure of the cash flow situation of the farm business. A satisfactory labor, management and ownership income does not eliminate cash flow problems if liabilities are large and repayment is rapid.

LABOR, MANAGEMENT AND OWNERSHIP INCOME  
Delaware County Dairy Farms, 1984 & 1983

Item	My Farm	34 Farms 1984	34 Farms 1983
Total farm receipts	\$ _____	\$143,345	\$142,665
Total farm expenses excluding interest on equity capital	_____	<u>123,658</u>	<u>136,995</u>
LABOR, MANAGEMENT AND OWNERSHIP INCOME PER FARM	\$ _____	\$ 19,687	\$ 5,670
Full-time operator-manager equivalents	_____	1.18	1.29
LABOR, MANAGEMENT AND OWNERSHIP INCOME PER OPERATOR-MANAGER	\$ _____	\$ 16,684	\$ 4,395

Return on equity capital measures the net profit remaining for the farmer's owned or equity capital after earnings have been allocated to the owner-operator's labor and management. The earnings or amount of gross profit allocated to labor and management is the opportunity cost or value of operator's labor and management estimated by the cooperators. Return on equity capital is computed including and excluding appreciation.

RETURN ON EQUITY CAPITAL  
Delaware County Dairy Farms, 1984 & 1983

Item	My Farm	34 Farms 1984	34 Farms 1983
Labor, management & ownership income per farm	\$ _____	\$19,687	\$ 5,670
Less value of operator's labor & management	_____	<u>16,745</u>	<u>17,652</u>
Return on equity capital	\$ _____	\$ 2,942	\$-11,982
RATE OF RETURN INCLUDING APPRECIATION	_____ %	1.5%	-5.9%
RATE OF RETURN EXCLUDING APPRECIATION	_____ %	-1.4%	-3.1%

The rate of return on equity capital is computed as the amount returned divided by farm net worth or equity capital.

Farm Family Financial Situation

The financial situation is an important part of the farm business summary. It has a direct affect on current cash outflow and future capital investment decisions. 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. The present values are also listed as assets, representing the future value the item has to the business.

FARM FAMILY NET WORTH  
34 Delaware County Dairy Farms, January 1, 1985

Item	My Farm	Average
<u>Assets</u>		
Livestock	\$ _____	\$ 79,582
Feed and supplies	_____	21,411
Machinery and equipment	_____	60,381
(includes discounted lease payments)*	(512)	
Land and buildings	_____	144,960
(includes discounted lease payments)*	(1,885)	
Co-op investments	_____	1,032
Accounts receivable	_____	10,979
Cash and checking accounts	_____	2,672
Total Farm Assets	\$ _____	\$321,017
Savings accounts	\$ _____	\$ 2,004
Cash value life insurance	_____	3,061
Stocks and bonds	_____	1,048
Nonfarm real estate	_____	3,059
Auto (personal share)	_____	3,029
All Other	_____	9,509
TOTAL FARM & NONFARM ASSETS	\$ _____	\$342,727
<u>Liabilities</u>		
Long term	\$ _____	\$ 71,748
Intermediate	_____	44,402
Financial lease*	_____	2,397
Short term	_____	1,472
Other farm accounts	_____	4,805
Total Farm Liabilities	\$ _____	\$124,824
Nonfarm Liabilities	_____	2,480
TOTAL LIABILITIES	\$ _____	\$127,304
FARM NET WORTH (EQUITY CAPITAL)	\$ _____	\$196,193
FAMILY NET WORTH	\$ _____	\$215,423

\*Future payments were discounted at an annual rate of 13 percent.

Payment ability is the most important consideration in determining if and how proposed investments should be financed. The farm business must produce sufficient cash income to meet operating expenses, to cover family living expenses and to make payments on debts. Interest paid and income from off-farm work are added to net cash farm income because planned debt payments will include interest as well as principal. Estimate your family living expenses to calculate cash available for debt payments and capital purchases made in cash.

A cash flow coverage ratio of less than one indicates that planned cash outflows exceed cash availability determined from 1984 records.

FARM FAMILY DEBT REPAYMENT  
34 Delaware County Dairy Farms, January 1, 1985

Item	My Farm	Average
<u>Payment Ability</u>		
Net cash farm income	\$ _____	\$22,926
Plus interest paid	_____	11,637
Plus off-farm income	_____	<u>1,605</u>
CASH AVAILABLE FOR DEBT SERVICE AND LIVING	\$ _____	\$36,168
Less family living expenses <sup>1/</sup>	_____	<u>18,083</u>
CASH AVAILABLE FOR DEBT PAYMENTS AND CAPITAL PURCHASES	\$ _____	\$18,085
<u>Scheduled Annual Debt Payments</u>		
Long term	\$ _____	\$ 9,250
Intermediate	_____	13,251
Short term	_____	1,344
Other farm accounts	_____	<u>1,703</u>
TOTAL FARM DEBT PAYMENTS	\$ _____	\$25,548
Nonfarm debt payments	_____	<u>582</u>
TOTAL PAYMENTS PLANNED 1985	\$ _____	\$26,130
CASH FLOW COVERAGE RATIO <sup>2/</sup>	_____	0.69
<u>Commitment and Measures of Debt Equity Position</u>		
Farm debt payments planned per cow	\$ _____	\$406
Farm debt payments as % milk sales	_____ %	22%
Farm debt/asset ratio-long term	_____	0.49
Farm debt/asset ratio-intermediate and short term	_____	0.27
Farm debt per cow	\$ _____	\$1,981
Percent equity (total)	_____ %	63%

<sup>1/</sup>Estimated as \$10,900 per family plus four percent of cash farm receipts.

<sup>2/</sup>Cash available for debt payments and capital purchases divided by total payments planned.

## ANALYSIS OF THE FARM BUSINESS

When analyzing a farm business, a manager must consider measures or factors that reflect the performance of specified parts of the farm business. To do this one must look at factors of size, rates of production, labor efficiency, capital efficiency and cost control. These measures and factors are detailed on the following pages.

Size of Business

Studies have shown that, in general, larger farms are more profitable than smaller farms. Larger businesses make possible more efficient use of overhead inputs such as labor and machinery and there are more units of production on which to earn a profit. Profitable farm businesses with good management have the ability and incentive to become larger. Large farms are not necessarily more profitable however, and size increases are only profitable with good management.

MEASURES OF SIZE OF BUSINESS  
Delaware County Dairy Farms, 1984 & 1983

Item	My Farm	34 Farms 1984	34 Farms 1983
Number of cows	_____	61	65
Number of heifers	_____	49	51
Pounds of milk sold	_____	862,900	962,500
Worker equivalent	_____	2.25	2.33
Total work units	_____	658	695
Total tillable acres	_____	168	164

In the table below, the 510 New York farms for 1983 are sorted by number of cows and the labor and management income is shown for each size group. In general, the large farms paid better, but, variability of income was significant.

FARM SIZE AND FARM INCOME MEASURES  
510 New York Dairy Farms, 1983

Number of Cows	Number of Farms	Worker Equivalent	Net Cash Farm Income	Labor, Management & Owner- ship Income Per Operator
Under 40	51	1.67	\$12,955	\$ 2,541
40 to 54	103	2.08	19,443	6,279
55 to 69	95	2.42	32,659	14,886
70 to 84	79	2.83	33,688	11,517
85 to 99	54	3.08	43,739	19,509
100 to 149	64	3.75	50,521	21,210
150 to 199	38	4.58	62,048	7,458
200 to 249	13	6.00	100,374	43,033
250 & over	13	8.42	180,903	99,327

Rates of Production

Crop yields and rates of animal production are factors that have a significant impact on farm incomes. Here is a description of crops grown and yields along with the pounds of milk sold per cow.

CROP YIELDS & MILK SOLD PER COW  
34 Delaware County Dairy Farms, 1984

Crop	My Farm		Average of Farms Reporting		
	Acres	Yield	Farms	Acres	Yield/Acre
Dry hay	_____	_____	34	(combined below)	
Hay crop silage	_____	_____	22	(combined below)	
Total hay crops	_____	_____	34	122	2.1 tons D.M.
Corn silage	_____	_____	31	37	13.1 tons
Other forage	_____	_____	4	8	2.4 tons D.M.
Total forage crops	_____	_____	34	156	2.6 tons D.M.
Grain corn	_____	_____	2	60	91.7 bushels
Oats	_____	_____	2	16	43.2 bushels
Wheat	_____	_____	0	0	
Other crops	_____	_____	2	13	
Tillable pasture	_____	_____	5	41	
Idle tillable land	_____	_____	2	9	
<hr/>					
Milk sold per cow	_____	_____		14,146 pounds	

Tons of dry matter per acre from all hay and silage is a good measure of the overall rate of forage production.

The importance of strong milk output per cow is shown in the table below.

MILK SOLD PER COW AND LABOR AND MANAGEMENT INCOME  
510 New York Dairy Farms, 1983

Pounds of Milk Sold Per Cow	Number of Farms	Number of Cows	Labor & Mgmt. Income/Oper.	Labor, Mgmt., & Ownership Income/Operator
Under 11,000	26	58	\$-4,275	\$ -903
11,000 to 11,999	35	62	-1,323	370
12,000 to 12,999	44	71	-3,493	5,074
13,000 to 13,999	56	79	-1,391	5,411
14,000 to 14,999	85	87	4,607	13,504
15,000 to 15,999	95	101	2,804	11,607
16,000 to 16,999	80	101	13,797	28,297
17,000 to 17,999	49	96	12,335	31,231
18,000 & over	40	101	18,716	36,819

Labor Efficiency

Labor input is an important factor in farm production. Several measures of accomplishment per worker (labor efficiency) are shown below.

MEASURES OF LABOR EFFICIENCY  
Delaware County Dairy Farms, 1984 & 1983

Item	My Farm	34 Farms 1984	34 Farms 1983
Worker equivalent	_____	2.25	2.33
Cows per worker	_____	27	28
Lbs. milk sold per worker	_____	383,511	413,090
Work units per worker	_____	292	298

Number of cows per worker is calculated by dividing the average number of cows by the worker equivalent which represents the total farm labor force. Pounds of milk sold per worker is an important measure of labor efficiency on the dairy farm. It measures the ability of the labor force to handle a large number of cows without sacrificing milk output per cow.

It is important to look at other measures of labor efficiency, such as work units per worker because all dairy farms do not have the same relationship between cows, heifers, and crops grown.

Labor efficiency depends on a number of things. Among these are the amount of mechanization, the field and building layout, the work methods, and the abilities of the workers. All of these are management items under the control of the operator.

Another factor which may influence the productivity of labor is the wage paid to employees. A productive employee will require a reasonable and competitive wage.

MILK SOLD PER WORKER AND LABOR AND MANAGEMENT INCOME  
510 New York Dairy Farms, 1983

Pounds of Milk Sold Per Worker	Number of Farms	Number of Cows	Pounds of Milk Per Cow	Labor & Mgmt. Income Per Operator	Labor, Mgmt., & Ownership Income Per Operator
Under 250,000	46	44	11,386	\$-2,734	\$ 926
250,000 to 299,999	38	48	13,298	-1,281	4,804
300,000 to 349,999	56	64	14,128	860	5,896
350,000 to 399,999	70	75	14,793	993	9,853
400,000 to 449,000	95	77	15,319	6,463	17,787
450,000 to 499,999	68	89	15,293	3,590	13,037
500,000 to 599,999	81	104	15,710	5,968	19,317
600,000 & over	56	187	16,473	26,312	48,943

### Capital Efficiency

Capital is a key resource in dairy farm businesses and a manager must continually analyze its use in the business. The measures of capital efficiency shown in the following table include owned as well as borrowed capital. It is possible for the business to be undercapitalized, but investing too much capital per productive unit is a more common problem.

#### MEASURES OF CAPITAL EFFICIENCY Delaware County Dairy Farms, 1984 & 1983

Item	My Farm	34 Farms 1984	34 Farms 1983
Farm capital per worker	\$ _____	\$135,083	\$144,962
Farm capital per cow	\$ _____	4,824	5,118
Machinery investment per cow	\$ _____	950	1,025
Machinery per tillable acre	\$ _____	356	412
Land & buildings per cow	\$ _____	2,271	2,462
Land & buildings/tillable acre owned	\$ _____	1,538	1,693
Capital turnover (years)	_____	2.1	2.4

Land and building investment per crop acre owned shows the relationship between investments in land and buildings. The farmer who owns little cropland but builds many farm buildings will have a relatively large land and building investment per crop acre owned. This could be an indication that capital use is out of balance.

Capital turnover is calculated by dividing the total farm capital (total year-end farm inventory) by the total farm receipts for the year. The factor is called capital turnover because it measures the number of years of receipts needed to equal or "turnover" farm capital. A fast rate of turnover is more desirable than a slow rate because it means capital purchases can be paid off at a faster rate. This figure also depends upon the enterprise selection of the business.

#### CAPITAL TURNOVER AND LABOR AND MANAGEMENT INCOME 510 New York Dairy Farms, 1983

Capital Turnover Rate - Years	Number of Farms	Number of Cows	Capital Investment		Labor & Mgmt. Income Per Operator
			Per Cow	Per Worker	
less than 1.5	14	126	\$3,178	\$105,385	\$ 34,525
1.5 to 1.99	92	121	4,493	153,029	15,742
2.0 to 2.49	168	97	5,246	163,826	5,682
2.5 to 2.99	113	74	6,239	170,148	3,794
3.0 to 3.49	66	63	6,364	168,003	-2,369
3.5 & over	57	60	7,601	206,061	-8,415

Cost Control

The control of costs is a big factor in the success of modern commercial dairy operations. Feed, machinery and labor costs are major items and should be examined in detail. It is important to check all cost items both large and small. Expenses should be incurred only when the returns from the investment justify the cost. (1) Be careful that only nutrients required by the cow are being fed. A dairy farmer cannot afford to buy a feed mix that overfeeds energy or protein. (2) Be certain that the required nutrients are being obtained from their least expensive source. For example, is the lowest cost source of protein, urea, soybean meal or a commercial protein? Help in answering these questions can come from budgeting, from agribusiness people selling feeds, and from dairy and management extension agents. Extension is supporting computerized decision aids to assist in answering these questions including the NEWPLAN program, Least-Cost Balanced Dairy Rations, and the dairy ration analyzers.

The size and productivity of the cropping program has an important influence on the amount of the purchased feed bill. Increased production of either roughages or grains should reduce the purchased feed expense unless cow numbers are increased. Also, heifer raising practices affect feed costs. The overall feed situation must be examined and evaluated as a "system".

FEED COSTS AND RELATED MEASURES  
Delaware County Dairy Farms, 1984 & 1983

Item	My Farm	34 Farms 1984	34 Farms 1983
Dairy concentrate purchased per cow	\$ _____	\$610	\$629
Dairy concentrate purchased per cwt. of milk sold	\$ _____	\$4.31	\$4.25
Percent dairy concentrate is of milk receipts	_____ %	32%	31%
Crop expense per cow	\$ _____	\$101	\$107
Feed & crop expense/cwt. milk	\$ _____	\$5.30	\$5.27
Forage dry matter harv./cow (tons)	_____	6.5	6.4
Acres of forage per cow	_____	2.6	2.3
Total tillable acres per cow	_____	2.8	2.5
Fertilizer and lime/tillable acre	\$ _____	\$25	\$29
Heifers as % of cow numbers	_____ %	80%	78%



Machinery, Labor and Miscellaneous Costs

Labor and machinery operate as a team on a dairy farm. The challenge is to obtain an efficient combination of these two inputs that will result in a low cost per unit of output.

MACHINERY AND LABOR COSTS  
Delaware County Dairy Farms, 1984 & 1983

Item	My Farm	34 Farms 1984	34 Farms 1983
<u>Machinery:</u> Depreciation <sup>1</sup>	\$ _____	\$ 8,894	\$ 9,948
Interest <sup>2</sup>	_____	2,991	3,274
Operating expense <sup>3</sup>	_____	10,586	9,535
Total machinery	\$ _____	\$22,471	\$22,757
Per cow	_____	\$368	\$350
<u>Labor:</u> Value of operators <sup>4</sup>	\$ _____	\$10,544	\$11,250
Unpaid family <sup>5</sup>	_____	2,250	2,029
Hired	_____	6,143	6,779
Total labor	\$ _____	\$18,937	\$20,058
Per cow	_____	\$310	\$309
Per cwt. milk	_____	\$2.19	\$2.08
Labor & machinery costs per cow	_____	\$678	\$659
Labor & machinery costs/cwt. milk	\$ _____	\$4.79	\$4.44

<sup>1</sup>Regular depreciation from last year's tax plus 10 percent of new purchases.

<sup>2</sup>Five percent of average machinery investment.

<sup>3</sup>Machine hire, repairs, farm share auto expense, and gas and oil.

<sup>4</sup>\$750 per month.

<sup>5</sup>\$500 per month.

MISCELLANEOUS COST CONTROL MEASURES  
Delaware County Dairy Farms, 1984 & 1983

Item	My Farm	34 Farms 1984	34 Farms 1983
Livestock expense per cow	\$ _____	\$318	\$301
Real estate expense per cow	\$ _____	\$139	\$139
Total farm expense per cow	\$ _____	\$2,188	\$2,263

Livestock expense per cow includes breeding fees, veterinary and medicine, milk marketing, dairy supplies, bedding and DHIC fees. Real estate expenses include repairs, taxes, insurance and rent.

## YEARLY CASH FLOW PLANNING &amp; ANALYSIS

This worksheet is a valuable tool in financial planning, expansions and for setting goals for improving the farm business.

Item	34 Delaware	My Farm, _____		Cows
	County Farms	Per Cow	Total	Goal
	Avg. Per Cow			
Other	52			
Total Cash Receipts	\$2,140	\$ _____	\$ _____	\$ _____
<b>CASH EXPENSES</b>				
Hired labor	\$ 101	\$ _____	\$ _____	\$ _____
Dairy concentrate	610	_____	_____	_____
Hay and other	39	_____	_____	_____
Machine hire	11	_____	_____	_____
Machine repair & auto expense	96	_____	_____	_____
Gas & oil	66	_____	_____	_____
Replacement livestock	26	_____	_____	_____
Breeding fees	28	_____	_____	_____
Vet & medicine	29	_____	_____	_____
Milk marketing (ADA, Dues)	167	_____	_____	_____
Other livestock exp. (incl. \$3 lease)	94	_____	_____	_____
Fertilizer & lime	68	_____	_____	_____
Seeds & plants	18	_____	_____	_____
Spray & other	14	_____	_____	_____
Land, bldg. fence repair	25	_____	_____	_____
Taxes	50	_____	_____	_____
Insurance	31	_____	_____	_____
Rent	34	_____	_____	_____
Telephone & elec. (farm share)	53	_____	_____	_____
Miscellaneous	13	_____	_____	_____
Total Cash Expenses <sup>1</sup>	\$1,573	\$ _____	\$ _____	\$ _____
Total Cash Receipts	\$2,140	_____	_____	_____
Total Cash Expenses <sup>1</sup>	-1,573	- _____	- _____	- _____
Net Cash Flow	\$ 567	\$ _____	\$ _____	\$ _____
Cash Family Living Expense <sup>2</sup>	- 296	- _____	- _____	- _____
Amount Left for Debt Service, Capital Investment & Retained Earnings	\$ 271	\$ _____	\$ _____	\$ _____
Scheduled Farm Debt Service	- 406	- _____	- _____	- _____
Available for Capital Investment	\$ -135	\$ _____	\$ _____	\$ _____
Planned Expansion Livestock Purch.		_____	_____	_____
Planned Equipment Purchase		_____	_____	_____
Borrowed or Equity Funds Needed		\$ _____	\$ _____	\$ _____

<sup>1</sup>Interest paid excluded for it is contained in Scheduled Debt Service.

<sup>2</sup>Estimated: \$10,900 per family and four percent of cash farm receipts.