

DAIRY FARM BUSINESS SUMMARY

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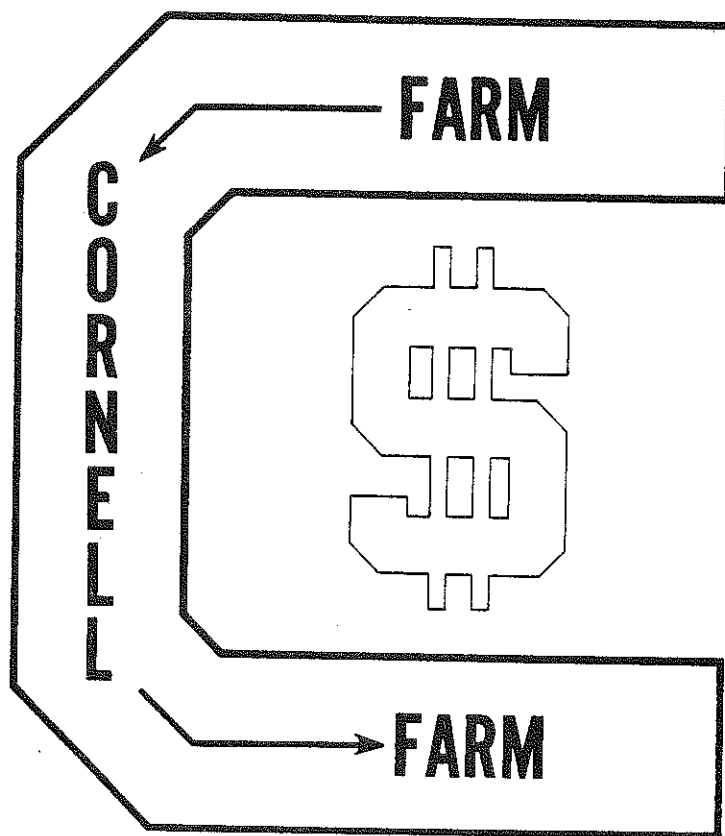
CENTRAL PLAIN REGION 1980

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FOREWORD



CORNELL FARM DECISION NETWORK

Department of Agricultural Economics
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The Farm Business Summary Program is a portion of the total Cornell Farm Decision Network. Four distinct programs comprise the Network and each in their own unique way strive for obtaining accurate data and/or data analysis in order to provide information upon which to base improved decision making. Programs which comprise the Cornell Farm Decision Network are:

- (1) Farm Business Summaries - Analysis of the business and financial activity of dairy, beef, fruit, poultry, and other farms.
- (2) CAMIS - Computerized programs to facilitate the recording, tabulation, and analysis of farm business accounts.
- (3) NEWPLAN Programs - Computerized Decision Aids which include such topics as: Least-Cost Balanced Dairy Rations, Profitable Organization of Dairy Farm Enterprises, Profitable Combinations of Field Crop Enterprises, and Analysis of Major Capital Investments.
- (4) Enterprise Budgets and Economic Data - Collection of data and analysis of enterprise costs and returns.

For further information on how you may take advantage of these programs, contact your local cooperative extension office.

Improvements in 1980 Dairy Farm Business Summary

Although there are no major changes in the format of this year's Dairy Farm Business Summary publication, there are several changes in the accounting procedures. These changes affect comparisons of 1980 data with farm business summaries from prior years.

The following accounting methods were used for the first time this year to more accurately separate the effect of inflation on farm inventories, from increases caused by greater quantity and/or improved quality of inventory items.

1. Machinery and equipment depreciation is last year's regular income tax depreciation plus ten percent of machinery purchases in 1980. An increase in machinery market value above the level that would be expected based on the beginning inventory, purchases, depreciation and sales is machinery appreciation and is included in labor, management and ownership income of the farm business. Machinery appreciation is not included in the calculation of labor and management income but depreciation is included.
2. The change in livestock inventory is now divided into two parts. The change in herd market value attributed to a change in numbers and/or a definite change in herd quality, is the increase (or decrease) in livestock inventory that is included in labor and management income. The change in herd market value, caused by price increases or decreases, is excluded from labor and management income but is included in labor, management and ownership income.

Other new accounting procedures have been introduced to more accurately identify important farm resources and to obtain a better measure of forage production.

1. The number of operators now includes individuals who are integrally involved in the operation and management of the farm business in addition to the primary operator. Many farm spouses are included as part-time operators this year. The number of full-time operators per farm is total months of all operators' labor reported divided by 12.
2. The land available for crop production is called total tillable acres. Nontillable pasture, woodland and wasteland is included in the total land inventory. The reason for changing to tillable acres is to inventory the land resource available for production rather than only that currently in production.
3. Tons of dry matter has been adopted as an improved method of measuring forage harvested. It is more consistent and is more commonly used in dairy cattle nutrition than hay equivalent.

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CENTRAL PLAIN
DAIRY FARM BUSINESS SUMMARY

INTRODUCTION

Dairy farmers in more than forty counties throughout the State submit records for summarization through Cooperative Extension's Farm Business Management Program. Each dairy farmer receives a report for the farm containing all the management information found in this publication. A compilation of the individual farm reports is published in ten regional summaries like this one and in one statewide summary. These publications are used not only by extension personnel and dairy farmers but also by many segments of the dairy industry to monitor the health of the milk production sector.

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 operations. This booklet should also be useful to farmers in the Central Plain region who are not enrolled in the business management project and to agribusiness firms.

The increasing size of the New York dairy farms and the dynamic nature of the economic environment within which they operate make farm incomes increasingly dependent upon the accuracy of management decisions. An assessment of past business performance combined with careful analysis of future economic conditions and goals of the farm business will greatly enhance the operator's profit potential.

With upward pressure on costs continuing into 1981, dairy farmers will need to place emphasis on operating the most efficient business possible. Two areas for continued emphasis are (1) dairy concentrate purchases and the total livestock feeding program, and (2) the crop production program. Dairy concentrate purchases are the largest single cash expense and with large increases in fuel and fertilizer costs, the cropping program warrants careful examination as well. By carefully proceeding through this workbook to determine business strengths and weaknesses and by carefully planning next year's business operations, a dairy farmer will be in a better position to manage the farm through the challenges of the 1980s.

Business records for 22 farms in the Central Plain region are summarized in this publication. The Central Plain region contains four counties: Ontario, Seneca, Wayne and Yates.

This summary was prepared by Wayne A. Knoblauch, Department of Agricultural Economics, New York State College of Agriculture and Life Sciences, Cornell University, in cooperation with Larry Davis, Cooperative Extension Specialist.

SUMMARY OF THE FARM BUSINESS

Business Characteristics

Knowledge of farm business characteristics is fundamental to judging management performance. The combination of resources and management techniques used to put resources to work is an important part of planning a long-run farm organization strategy. 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 22 Central Plain Dairy Farms, 1980

Type of Business	Number	Business Records	Number	Dairy Records	Number
Individual	16	CAMIS	9	D.H.I.C.	16
Partnership	6	Account Book	7	Owner Sampler	2
Corporation	0	Agrifax	1	Other	2
		Farm Bureau	0	None	2
Owner	22	Agway	2		
Renter	0	Other	3		
Barn Type	Number	Milking System	Number		Number
Stanchion	11	Bucket & Carry	0	Herringbone	10
Freestall	10	Dumping Station	3	Other Parlor	0
Other	1	Pipeline	9		
Labor Force	My Farm	Average	Land Use	My Farm	Average
Operator 1.	_____	mo. 11	Total acres owned	_____	363
2.	_____	mo. 3	Total acres rented	_____	174
3.	_____	mo. 1	Total tillable acres	_____	386
Family paid	_____	mo. 3	Tillable acres rented	_____	159
Family unpaid	_____	mo. 2			
Hired	_____	mo. 18	Number of Cows	My Farm	Average
Total	_____	mo. 38			
Age of operator(s) 1.	_____	yrs. 43	Beginning of year	_____	84
2.	_____	yrs. 40	End of year	_____	87
3.	_____	yrs. 52	Average for year	_____	84

Capital Investment-Farm Inventory Value represents the market value of resources committed to the farming operation measured at the beginning and ending of the year. Increases in inventory values occur with expanding herd size, purchasing new machinery and equipment and appreciation of land, buildings and livestock.

CAPITAL INVESTMENT - FARM INVENTORY VALUE 22 Central Plain Dairy Farms, 1980

Item	My Farm		Average	
	1/1/80	1/1/81	1/1/80	1/1/81
Livestock	\$ _____	\$ _____	\$120,926	\$134,568
Feed & supplies	_____	_____	42,311	52,358
Machinery & equipment	_____	_____	91,409	103,880
Land & buildings	_____	_____	277,611	315,260
TOTAL	\$ _____	\$ _____	\$532,257	\$606,066

Machinery and Real Estate Inventory Calculations

Capital outlays for machinery, buildings, land and land improvements usually occur in large uneven amounts, but depreciate gradually over a period of time. Machinery depreciation is a charge for use of the machinery complement in production. Appreciation in the value of the machinery complement results from inflation in the value of used machinery; it is calculated as a residual.

MACHINERY & EQUIPMENT INVENTORY 22 Central Plain Dairy Farms, 1980

Item	My Farm	Average
End of year market value	(1)\$ _____	\$103,880
Beginning market value	\$ _____	\$ 91,409
Plus machinery purchased	+ _____	+ 24,395
Less machinery sold	- _____	- 882
Less depreciation	- _____	- 16,224
Net end investment	(2)\$ _____	\$ 98,698
APPRECIATION (1 minus 2)	\$ _____	\$ 5,182

The end of year market value of real estate can be verified by starting with the beginning of year value, making adjustments for purchases and sales, depreciation of buildings and any appreciation in land. Lost capital is the difference between the cost of new buildings or land improvements and the amount these improvements added to the value of the farm. It is not included in farm expenses, since building depreciation is based on the full cost of new buildings and will account for lost capital over the life of the investments. Building depreciation was taken from the farm depreciation schedule and is included as a farm expense. Real estate appreciation was estimated by each farm operator. It is the increase in value of real estate caused by demand and inflation.

REAL ESTATE INVENTORY CALCULATIONS 22 Central Plain Dairy Farms, 1980

Item	My Farm	Average
Beginning market value	\$ _____	\$277,611
Cost of new real estate	\$ _____	\$ 23,030
Less lost capital	- _____	- 4,070
Value of new added	+ _____	+ 18,960
Less building depreciation	- _____	- 5,839
Less real estate sold	- _____	- 773
Total without appreciation	\$ _____	\$289,959
Appreciation of beginning real estate	+ _____	+ 25,301
End of year market value	\$ _____	\$315,260

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 items are those in which ownership is transferred or services are performed and payment is received during the year. Noncash receipts occur for items in which ownership is maintained and cash is not received, but due to appreciation in value or increases in physical quantities, could be readily transformed into a cash receipt.

FARM RECEIPTS 22 Central Plain Dairy Farms, 1980

Item	My Farm	Ave: Amount	Percent
CASH RECEIPTS			
Milk sales	\$ _____	\$154,626	80
Crop sales	_____	16,967	9
Dairy cattle sold	_____	12,403	6
Calves & other livestock sales	_____	5,381	2
Gas tax refunds	_____	322	<1
Government payments	_____	651	<1
Custom machine work	_____	558	<1
Other	_____	1,968	1
Total cash receipts	\$ _____	\$192,876	100
NONCASH RECEIPTS			
Increase in livestock inventory	_____	\$ 8,312	
Increase in feed & supplies	_____	10,047	
Livestock appreciation	_____	5,330	
Machinery appreciation	_____	5,182	
Real estate appreciation	_____	25,301	
TOTAL FARM RECEIPTS	\$ _____	\$247,048	
TOTAL FARM RECEIPTS EXCLUDING APPRECIATION	\$ _____	\$211,235	

Income Analysis provides a means of examining the income producing capability of the farm business. Weak and strong points can be determined by comparing individual farm results with the averages. The average price per hundredweight of milk sold is calculated by dividing total milk receipts by total hundredweight sold. It will be different from an average of monthly prices received by the dairy farmer. Milk and cattle sales per cow combines production and price components to measure income generation capability per cow. Cash receipts per worker combines two factors: income generated on the total farm and labor efficiency.

INCOME ANALYSIS Central Plain Dairy Farms

Item	My Farm	1980	1979
Average price/cwt. milk sold	\$ _____	\$ 12.75	\$ 11.80
Milk and cattle sales per cow	_____	2,053	1,883
Total cash receipts/worker	_____	60,844	59,858

Expenses

Expenses on many dairy farms approach and some exceed \$500 per day! Classifying expenses into categories will help identify those that may need tighter control.

FARM EXPENSES 22 Central Plain Dairy Farms, 1980

Item	My Farm	Ave: Amount	Percent
<u>Hired Labor</u>	\$ _____	\$ 22,847	14
<u>Feed</u>			
Dairy concentrate	_____	31,465	20
Hay and other	_____	2,911	2
<u>Machinery</u>			
Machine hire	_____	2,115	1
Machinery repairs	_____	10,218	6
Auto expense (farm share)	_____	616	<1
Gas & oil	_____	9,761	6
<u>Livestock</u>			
Replacement livestock	_____	3,636	2
Breeding fees	_____	1,868	1
Veterinary & medicine	_____	2,914	2
Milk marketing	_____	3,947	2
Other livestock expense	_____	6,462	4
<u>Crops</u>			
Fertilizer & lime	_____	12,324	8
Seeds & plants	_____	3,799	2
Spray, other crop expense	_____	4,909	3
<u>Real Estate</u>			
Land, building, fence repair	_____	3,213	2
Taxes	_____	4,462	3
Insurance	_____	2,478	2
Rent	_____	4,142	3
<u>Other</u>			
Telephone (farm share)	_____	553	<1
Electricity (farm share)	_____	2,598	2
Interest paid	_____	18,861	12
Miscellaneous	_____	2,661	2
Total cash expenses	\$ _____	\$158,760	100
Decrease in livestock and/or feed	\$ _____	\$ 0	
Expansion livestock	_____	711	
Machinery depreciation	_____	16,224	
Building depreciation	_____	5,839	
Unpaid family labor @ \$500/month	_____	1,000	
Interest on equity capital @ 9%	_____	34,488	
TOTAL FARM EXPENSES	\$ _____	\$217,022	
TOTAL FARM EXPENSES EXCLUDING INT. ON EQUITY CAPITAL	\$ _____	\$182,534	

Farm Business Profitability

The results of management are reflected in the net return from the business. Agricultural economists have developed a number of ways to measure the returns from a farm business. Four common measures are reported on this page and the next page.

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 concentrate are expected to change significantly.

NET CASH FARM INCOME Central Plain Dairy Farms

Item	My Farm	Average	
		1980	1979
Cash Farm Receipts	\$ _____	\$192,876	\$164,609
Cash Farm Expenses	_____	<u>158,760</u>	<u>126,004</u>
NET CASH FARM INCOME	\$ _____	\$ 34,116	\$ 38,605

Labor and management income is the return to the operator for his or her labor and management input into the business. A nine 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 what the operator could have earned from this capital had it been invested elsewhere, such as in bank certificates of deposit. 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.

LABOR AND MANAGEMENT INCOME Central Plain Dairy Farms

Item	My Farm	Average	
		1980	1979*
Total farm receipts excluding appreciation	\$ _____	\$211,235	\$182,945
Total farm expenses	_____	<u>217,022</u>	<u>174,499</u>
LABOR & MANAGEMENT INCOME	\$ _____	\$ -5,787	\$ 8,446
Full-time operator-manager equivalents	_____	1.3	1.3
LABOR & MGT. INCOME/OPERATOR-MANAGER	\$ _____	\$ -4,521	\$ 6,497

*Adjustments have been made in 1979 data to allow for more accurate comparison.

Labor, management and ownership income per operator reflects the combined return to the farmer for his/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
Central Plain Dairy Farms

Item	My Farm	Average	
		1980	1979*
Total farm receipts	\$ _____	\$247,048	\$212,336
Total farm expenses excluding interest on equity capital	_____	182,534	146,667
LABOR, MANAGEMENT AND OWNERSHIP INCOME PER FARM	\$ _____	\$ 64,514	\$ 65,669
Full-time operator-manager equivalents	_____	1.3	1.3
LABOR, MANAGEMENT AND OWNERSHIP INCOME/OPERATOR-MANAGER	\$ _____	\$ 50,402	\$ 50,515

*Adjustments have been made in 1979 data to allow for more accurate comparison.

Return on equity capital is a common measure for nonfarm businesses. It can be computed with or without appreciation. Both measures are shown below. To compute the rate of return, divide return on equity capital by farm net worth or equity capital.

RETURN ON EQUITY CAPITAL
Central Plain Dairy Farms

Item	My Farm	Average	
		1980	1979*
<u>Including Appreciation</u>			
Labor, mgt. & ownership income/farm	\$ _____	\$ 64,514	\$ 65,669
Less value of operator's labor & mgt.**	_____	<u>20,205</u>	<u>17,911</u>
Return on equity capital	\$ _____	\$ 44,309	\$ 47,758
RATE OF RETURN ON \$ _____ equity	_____ %	11.6%	15.4%
<u>Excluding Appreciation</u>			
Return on equity capital (from above)	\$ _____	\$ 44,309	\$ 47,758
Less real estate appreciation	_____	25,301	17,235
Less machinery appreciation	_____	5,182	4,676
Less livestock appreciation	_____	<u>5,330</u>	<u>7,480</u>
Return on equity capital	\$ _____	\$ 8,496	\$ 18,367
RATE OF RETURN EXCLUDING APPRECIATION	_____ %	2.2%	5.9%

*Adjustments have been made in 1979 data to allow for more accurate comparison.

**Value of operator's labor and management estimated by operators.

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. A farmer may have a good labor and management income, but a high debt payment schedule may seriously restrict management flexibility. Farm Net Worth is Total Farm Assets less Total Farm Liabilities. Family Net Worth is Total Assets less all Liabilities reported.

FARM FAMILY FINANCIAL SITUATION 22 Central Plain Dairy Farms; Jan. 1, 1981

Item	My Farm	Average Per Farm
<u>Assets</u>		
Livestock	\$ _____	\$134,568
Feed and supplies	_____	52,358
Machinery and equipment	_____	103,880
Land and buildings	_____	315,260
Co-op investments	_____	10,047
Accounts receivable	_____	13,669
Cash and checking accounts	_____	4,061
Total Farm Assets	\$ _____	\$633,843
Savings Accounts	\$ _____	\$ 5,550
Cash value life insurance	_____	5,833
Stocks and bonds	_____	7,239
Nonfarm real estate	_____	986
Auto (personal share)	_____	2,300
All other	_____	13,508
Total Nonfarm Assets	\$ _____	\$ 35,416
TOTAL ASSETS	\$ _____	\$669,259
<u>Liabilities</u>		
Real estate	\$ _____	\$147,577
Cattle & equipment	_____	74,135
Installment contract	_____	6,194
Other loans over 10 years	_____	2,294
Other loans 1 to 10 years	_____	6,672
Other loans less than 1 year	_____	2,943
Feed store accounts	_____	2,318
Other accounts	_____	8,514
Total Farm Liabilities	\$ _____	\$250,647
Nonfarm Liabilities	_____	493
TOTAL LIABILITIES	\$ _____	\$251,140
FARM NET WORTH (EQUITY CAPITAL)	\$ _____	\$383,196
FAMILY NET WORTH	\$ _____	\$418,119

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 or personal living expenses, to make payments on debts and to cover cash purchases of capital items that occur during the year.

Payment ability is estimated in the following table. Interest paid and income from off-farm work are added to net cash farm income because planned or budgeted debt payments will include interest as well as principal. Estimate family living expenses for your farm to calculate cash available for debt payment and capital purchases made in cash.

Debt payments planned are the scheduled debt payments as of January. Some farms in the group had scheduled debt payments exceeding 50 percent of the milk receipts. Committing this much cash inflow to debt payments can put a "big squeeze" on cash available for operating the business and family living.

FINANCIAL MEASURES & DEBT COMMITMENT
22 Central Plain Dairy Farms, 1980

Item	My Farm	Average
<u>Payment Ability</u>		
Net cash farm income	\$ _____	\$ 34,116
Plus interest paid	_____	18,861
Plus off-farm income	_____	1,008
CASH AVAILABLE FOR DEBT SERVICE AND LIVING	\$ _____	\$ 53,985
Less family living expenses*	_____	18,851
CASH AVAIL. FOR DEBT PAYMT. & CAP. PURCH.	\$ _____	\$ 35,134
<u>Scheduled Annual Debt Payments</u>		
Real estate mortgage	\$ _____	\$ 17,379
Cattle and equipment liens	_____	18,284
Installment contracts	_____	1,054
Other loans over 10 years	_____	84
Other loans 1 to 10 years	_____	1,293
Other loans and accounts	_____	6,628
TOTAL PAYMENTS PLANNED 1981	\$ _____	\$ 44,722
<u>Measures of Debt Commitment & Equity Position</u>		
Debt payments planned per cow	\$ _____	\$ 514
Debt payments planned as % of milk sales	_____ %	29%
Farm debt per cow	\$ _____	\$ 2,881
Percent equity (total)	_____ %	62%

*Estimated at \$8,700 per family plus 4 percent of cash receipts.

ANALYSIS OF THE FARM BUSINESS

In analyzing a farm business, a manager must consider measures or factors that reflect the performance of specified parts of the farm business. One method of doing this is to look at factors of size, production, labor efficiency, capital efficiency and cost control. These factors are considered on the following pages. Another method, which is not considered in this workbook, is to analyze the farm business by analyzing the individual crop and livestock enterprises and the relationships between these enterprises.

Size of Business

Studies have shown that, in general, larger farms are more profitable than smaller farms. Two basic reasons are that 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 make a profit. Another reason is that profitable farm businesses with good management have the ability and incentive to become larger. Large farms are not necessarily more profitable and size increases are only profitable with good management.

MEASURES OF SIZE OF BUSINESS Central Plain Dairy Farms

Item	My Farm	Average	
		1980	1979
Number of cows	_____	84	76
Number of heifers	_____	69	60
Pounds of milk sold	_____	1,212,800	1,097,700
Worker equivalent	_____	3.2	2.8
Total work units	_____	1,039	918
Total tillable acres	_____	386	304

In the table below, the 610 New York farms for 1979 are sorted by number of cows and the labor income is shown for each size group. In general, the large farms paid better, but, variability of income was significant.

COWS PER FARM AND LABOR AND MANAGEMENT INCOME 610 New York Dairy Farms, 1979

Number of Cows	Number of Farms	Percent of Farms	Labor & Management Income	
			Per Operator	Per Cow
Under 40	89	15	\$11,635	\$380
40 - 54	168	28	14,680	344
55 - 69	123	20	19,435	404
70 - 84	73	12	22,814	387
85 - 99	30	5	18,876	301
100 - 114	34	6	24,429	308
115 - 129	24	4	35,147	460
130 - 149	22	4	23,757	268
150 and over	47	8	52,680	385

Rates of Production

Crop yields and rates of animal production are factors that affect farm incomes. In the table below, we examine the crops grown and yields along with the pounds of milk sold per cow.

CROP YIELDS & MILK SOLD PER COW 22 Central Plain Dairy Farms, 1980

Crop	My Farm		Average of Farms Reporting		
	Acres	Yield	Farms	Acres	Yield
Baled hay			20	57	(combined below)
Hay crop silage			17	96	
Corn silage			20	63	5.1 tons D.M.
Other forage			3	39	2.6 tons D.M.
Grain corn			21	127	92.1 bu.
Oats			12	36	69.7 bu.
Wheat			10	33	36.2 bu.
Other crops			3	101	
Tillable pasture			6	54	
Idle tillable land			15	20	
Dry matter:					
All hay crops			22	126	2.9 tons
All forage crops			22	189	3.5 tons
Milk sold per cow				14,400	

Tons of dry matter of 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 610 New York Dairy Farms, 1979

Pounds of Milk Sold Per Cow	Number of Farms	Number of Cows	Feed Bought Per Cow	Labor & Management Income	
				Per Operator	Per Cow
Under 10,000	22	48	\$286	\$ 1,092	\$ 26
10,000 - 10,999	32	54	357	9,137	217
11,000 - 11,999	45	58	386	12,273	235
12,000 - 12,999	72	68	423	13,673	237
13,000 - 13,999	106	77	459	18,496	302
14,000 - 14,999	128	86	462	27,895	433
15,000 - 15,999	115	80	509	26,527	401
16,000 and over	90	77	548	29,697	488

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 Central Plain Dairy Farms

Item	My Farm	Average	
		1980	1979
Worker equivalent	_____	3.2	2.8
Cows per worker	_____	26	28
Lbs. milk sold per worker	_____	382,500	399,164
Work units per worker	_____	328	334

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 610 New York Dairy Farms, 1979

Pounds of Milk. Sold Per Worker	Number of Farms	Number of Cows	Lbs. Milk Per Cow	Labor & Management Income	
				Per Operator	Per Cow
Under 250,000	68	40	11,600	\$ 4,778	\$137
250,000 - 299,999	85	54	13,200	12,141	293
300,000 - 349,999	94	58	13,800	16,458	335
350,000 - 399,999	102	64	14,500	18,276	361
400,000 - 449,999	83	75	14,600	20,204	331
450,000 - 499,999	54	81	14,900	26,863	481
500,000 - 599,999	81	113	14,800	39,637	446
600,000 and over	43	151	15,300	49,358	403

Capital Efficiency

Capital is a key resource 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 Central Plain Dairy Farms

Item	My Farm	Average	
		1980	1979
Farm capital per worker	\$ _____	\$191,188	\$176,769
Farm capital per cow	\$ _____	\$ 6,966	\$ 6,076
Land & buildings per cow	\$ _____	\$ 3,624	\$ 3,006
Land & buildings/tillable acre owned	\$ _____	\$ 1,266	\$ 1,093
Machinery investment per cow	\$ _____	\$ 1,194	\$ 1,104
Machinery per tillable acre	\$ _____	\$ 269	\$ 258
Capital turnover	_____ yrs.	2.5 yrs.	2.6 yrs.

Land and building investment per tillable 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 tillable 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 610 New York Dairy Farms, 1979

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	13	117	\$3,230	\$102,900	\$45,648
1.5 to 1.99	122	101	4,160	126,835	35,313
2.0 to 2.49	247	74	4,984	149,255	24,415
2.5 to 2.99	135	60	5,832	159,245	14,989
3.0 to 3.49	49	60	6,560	180,556	7,764
3.5 and over	44	54	7,645	179,670	- 4,965

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 are examined in detail. However, it is important to check all cost items both large and small. Expenses should be incurred only when the returns from the expense are expected to be greater than the cost incurred.

Feed Costs

Purchased feed is the largest single expenditure on most dairy farms. Some farms included in this summary used as much as 40 cents from each dollar's worth of milk sold to purchase dairy feed. Two considerations are important in keeping the feed bill down: (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 cheapest source. For example, what is the cheapest source of protein? urea? soybean oil meal? a commercial protein? Help in answering these questions can come from budgeting, from agribusinessmen selling feeds, and from dairy and management extension agents. Extension is supporting two computerized decision aids to assist in answering these questions: a NEWPLAN program of Least-Cost Balanced Dairy Rations, and the NYDHIC forage balancing program.

The size and productivity of the crop program has an important influence on the size 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 Central Plain Dairy Farms

Item	My Farm	Average	
		1980	1979
Dairy concentrate purchased per cow	\$ _____	\$ 375	\$ 382
Dairy concentrate purchased per cwt. of milk sold	\$ _____	\$ 2.59	\$ 2.65
Percent dairy concentrate is of milk receipts	_____ %	20%	22%
Crop expense per cow	\$ _____	\$ 250	\$ 218
Feed & crop expense/cwt. milk	\$ _____	\$ 4.33	\$ 4.16
Forage dry matter harvested/cow (tons)	_____	7.9	9.1
Acres of forage per cow	_____	2.2	4.0
Total tillable acres per cow	_____	4.6	4.1
Fertilizer and lime/tillable acre	\$ _____	\$ 32	\$ 31
Heifers as % of cow numbers	_____ %	82%	79%

Machinery, Labor and Miscellaneous Costs

Labor and machinery operate as a team on a modern farm. The challenge is to obtain an efficient combination that will result in a reasonable cost per unit of output.

MACHINERY & LABOR COSTS
Central Plain Dairy Farms

Item	My Farm	Average	
		1980	1979
<u>Machinery:</u> Depreciation ^{1/}	\$ _____	\$ 16,224	\$ 13,624
Interest ^{2/}	_____	8,788	8,788
Operating expense ^{3/}	_____	22,710	17,148
Total machinery	\$ _____	\$ 47,722	\$ 39,560
Per cow	_____	568	520
Per tillable acre	_____	269	116
<u>Labor:</u> Value of operators ^{4/}	\$ _____	\$ 11,250	\$ 10,140
Unpaid family ^{5/}	_____	1,000	450
Hired	_____	22,847	22,847
Total labor	\$ _____	\$ 35,097	\$ 33,437
Per cow	_____	418	440
Per cwt. milk	_____	2.89	3.04
Labor & machinery costs/cwt. milk	\$ _____	\$ 6.82	\$ 6.65

^{1/} Regular depreciation from last years tax plus 10 percent of new purchases.

^{2/} Nine percent of average machinery investment.

^{3/} Machine hire, repairs, farm share auto expense, and gas and oil.

^{4/} \$750 per month in 1980, \$650 in 1979.

^{5/} \$500 per month in 1980, \$425 in 1979.

MISCELLANEOUS COST CONTROL MEASURES
Central Plain Dairy Farms

Item	My Farm	Average	
		1980	1979
Livestock expense per cow	\$ _____	\$ 181	\$ 169
Real estate expense per cow	\$ _____	\$ 170	\$ 140
Total farm expense per cow	\$ _____	\$2,584	\$2,227

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 & ANALYSIS

Completing the worksheet below can be a valuable tool in planning expansions and for setting goals for improving the farm business. The average is from 22 Central Plain dairy farms in 1980.

Item	Average Per Cow	My Farm, Per Cow	Total	Cows Goal
CASH RECEIPTS				
Milk sales	\$ 1,841	\$ _____	\$ _____	\$ _____
Crop sales	202	_____	_____	_____
Dairy cattle	148	_____	_____	_____
Calves & other livestock	64	_____	_____	_____
Other	41	_____	_____	_____
Total Cash Receipts	\$ 2,296	\$ _____	\$ _____	\$ _____
CASH EXPENSES				
Hired labor	272	\$ _____	\$ _____	\$ _____
Dairy concentrate	375	_____	_____	_____
Hay and other	35	_____	_____	_____
Machine hire	25	_____	_____	_____
Machine repair & auto expense	129	_____	_____	_____
Gas & oil	116	_____	_____	_____
Replacement livestock	43	_____	_____	_____
Breeding fees	22	_____	_____	_____
Vet & medicine	35	_____	_____	_____
Milk marketing (ADA, Dues)	47	_____	_____	_____
Other livestock expense	77	_____	_____	_____
Fertilizer & lime	147	_____	_____	_____
Seeds & plants	45	_____	_____	_____
Spray & other	58	_____	_____	_____
Land, bldg. fence repair	38	_____	_____	_____
Taxes	53	_____	_____	_____
Insurance	30	_____	_____	_____
Rent	49	_____	_____	_____
Telephone (farm share)	7	_____	_____	_____
Electricity (farm share)	31	_____	_____	_____
Miscellaneous	32	_____	_____	_____
Total Cash Expenses ^{1/}	\$ 1,666	\$ _____	\$ _____	\$ _____
Total Cash Receipts	\$ 2,296	_____	_____	_____
Total Cash Expenses ^{1/}	- 1,666	- _____	- _____	- _____
Net Cash Flow	\$ 630	\$ _____	\$ _____	\$ _____
Cash Family Living Expense ^{2/}	- 224	- _____	- _____	- _____
Amount Left for Debt Service, Capital Investment & Retained Earnings	\$ 406	\$ _____	\$ _____	\$ _____
Scheduled Debt Service	- 514	- _____	- _____	- _____
Available for Capital Investment	\$ -108	\$ _____	\$ _____	\$ _____
Planned Expansion Livestock Purch.		_____	_____	_____
Planned Equipment Purchase		_____	_____	_____
Borrowed or Equity Funds Needed		\$ _____	\$ _____	\$ _____

^{1/} Interest paid excluded from cash expenses as it is contained in Scheduled Debt Service.

^{2/} Estimated: \$8,700 per family and four percent of cash receipts.

PROGRESS OF THE FARM BUSINESS

Comparing your business with that of other farmers is one part of a business checkup. It is equally important to compare your current year's business with that of earlier years to show the progress you are making, and to plan ahead, by setting business targets or goals.

Item	1978	1979	1980	1981 Goal
<u>Size of Business</u>				
Number of cows	_____	_____	_____	_____
Number of heifers	_____	_____	_____	_____
Pounds of milk sold	_____	_____	_____	_____
Worker equivalent	_____	_____	_____	_____
Total tillable acres	_____	_____	_____	_____
<u>Rates of Production</u>				
Lbs. milk sold per cow	_____	_____	_____	_____
Tons hay D.M. per acre	_____	_____	_____	_____
Tons corn silage/acre	_____	_____	_____	_____
<u>Labor Efficiency</u>				
Cows per worker	_____	_____	_____	_____
Lbs. milk sold per worker	_____	_____	_____	_____
<u>Cost Control</u>				
Purch. feed as % of milk sold	\$ _____	\$ _____	\$ _____	\$ _____
Feed & crop exp./cwt. milk	\$ _____	\$ _____	\$ _____	\$ _____
Labor & mach. cost/cow	\$ _____	\$ _____	\$ _____	\$ _____
<u>Capital Efficiency</u>				
Farm capital per cow	\$ _____	\$ _____	\$ _____	\$ _____
Capital turnover	\$ _____	\$ _____	\$ _____	\$ _____
<u>Price</u>				
Price per cwt. milk	\$ _____	\$ _____	\$ _____	\$ _____
<u>Financial Summary</u>				
Net cash farm income	\$ _____	\$ _____	\$ _____	\$ _____
Labor & mgt. inc./oper.	\$ _____	\$ _____	\$ _____	\$ _____
Farm net worth	\$ _____	\$ _____	\$ _____	\$ _____
Rate of return on equity	_____ %	_____ %	_____ %	_____ %
Percent equity	_____ %	_____ %	_____ %	_____ %
Farm debt per cow	_____	_____	_____	_____

MEASURE YOUR PERFORMANCE

After you have entered your farm business data on the pages of this workbook, categorize your farm business performance into three groups. List the strong points, those which indicate average performance and those areas which need improvement. Your business factors that exceed the regional average should be listed as strong points, factors that are close to the regional average should be identified as average, and factors that are below average should be listed under need improvement.

The Farm Business Chart on the next page can also be used to identify strengths and weaknesses by comparing your business with a large number of New York dairy farms summarized for the previous year. It is recommended that you use more than one standard for comparison when analyzing the farm business.

STRONG POINTS:

AVERAGE:

NEED IMPROVEMENT:

After identifying opportunities for improvement, consider alternative ways of solving each problem. List each alternative and analyze the consequences in detail. Extension conducts many schools, meetings, and provides many printed materials that should be of assistance. Local agribusinesses often provide helpful information and assistance. Seek out information related to the problem under consideration.

Another way to measure your management performance is to compare your current business factors with those from previous years. Page 17 is provided for this purpose. Answering the following questions may also help evaluate your farm business progress.

- 1) Do livestock numbers, labor force and crop acres make up a well balanced unit of resources?
- 2) Have rates of production shown a steady increase?
- 3) When will milk output per worker reach 600,000 pounds?
- 4) Have increases in costs been limited to the effects of inflation?
- 5) Is growth in net worth keeping up with increased capital investment?
- 6) Is net cash farm income increasing fast enough to meet your needs?
- 7) Have you reached the business goals set for 1980 and have you set new goals for 1981?

MANAGEMENT PERFORMANCE OF STATEWIDE COOPERATORS

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 610 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.

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS 610 New York Dairy Farms, 1979

Size of Business			Rates of Production			Labor Efficiency	
Man	No.	Pounds	Pounds	Tons Hay	Tons Corn	Cows	Pounds
Equiv-	of	Milk	Milk Sold	Crops	Silage	Per	Milk Sold
alent	Cows	Sold	Per Cow	Per Acre	Per Acre	Man	Per Man
5.5	191	2,798,600	17,400	4.6	19	44	651,800
3.6	116	1,686,600	16,000	3.8	17	37	531,700
3.1	87	1,264,000	15,400	3.3	16	33	474,400
2.8	72	1,041,800	14,900	3.0	15	30	429,400
2.4	63	915,100	14,500	2.8	14	28	393,500

2.2	56	799,700	14,000	2.5	13	26	363,400
2.0	50	704,100	13,400	2.3	12	24	331,400
1.8	45	604,700	12,800	2.1	10	23	301,100
1.6	40	513,300	11,800	1.8	8	20	266,200
1.3	32	370,500	9,900	1.4	5	17	202,900

Feed Bought		Machinery	Labor and	Feed and Crop
Per	% of Milk	Cost	Machinery Cost	Expense Per
Cow	Receipts	Per Cow	Per Cow	Cwt. Milk
\$198	13%	\$182	\$426	\$2.68
309	19	242	494	3.31
362	23	270	537	3.62
410	26	296	570	3.85
449	28	320	605	4.12

490	29	344	642	4.37
532	32	369	683	4.60
566	34	403	726	4.85
615	36	454	785	5.17
709	41	569	957	5.78

The cost control factors are ranked from low to high, but the lowest cost is not necessarily the most profitable. Many things affect the level of costs, and these items must be taken into account when analyzing the factors.

FARM BUSINESS SUMMARY BY HERD SIZE
610 New York Dairy Farms, 1979

Item	Farms with:			
	Less than 40 Cows	40 to 54 Cows	55 to 69 Cows	70 to 84 Cows
<u>Capital Investment</u> (end of year)				
Livestock	\$ 50,187	\$ 70,091	\$ 88,963	\$111,369
Feed & supplies	9,101	15,519	21,812	29,839
Machinery & equipment	35,935	49,977	62,625	78,440
Land & buildings	104,827	135,709	160,421	203,220
TOTAL INVESTMENT	\$200,050	\$271,296	\$333,821	\$422,868
<u>Receipts</u>				
Milk sales	\$ 52,145	\$ 75,798	\$104,128	\$131,609
Dairy cattle sold	4,756	7,682	9,105	11,993
Other livestock sales	2,009	2,290	2,419	3,524
Crop sales	312	684	1,038	1,261
Miscellaneous receipts	1,551	1,717	1,538	2,534
Total Cash Receipts	\$ 60,773	\$ 88,171	\$118,228	\$150,921
Increase in livestock	13,255	15,875	21,148	27,034
Increase in feed & supplies	1,283	2,339	3,002	4,796
TOTAL FARM RECEIPTS	\$ 75,311	\$106,385	\$142,378	\$182,751
<u>Expenses</u>				
Hired labor	\$ 1,685	\$ 4,066	\$ 6,343	\$ 10,558
Dairy feed	15,147	21,995	28,255	35,466
Other feed	752	693	836	1,066
Machine hire	368	578	698	752
Machinery repair	2,370	3,585	5,211	6,965
Auto expense (farm share)	332	336	384	365
Gas & oil	2,023	2,603	3,704	4,727
Purchased animals	2,562	3,364	4,332	4,580
Breeding fees	653	1,023	1,290	1,712
Veterinary & medicine	1,011	1,499	1,845	2,144
Milk marketing	1,331	1,857	2,654	4,130
Other livestock expense	1,820	2,967	3,899	4,902
Fertilizer & lime	2,206	3,612	5,028	7,973
Seeds & plants	759	1,160	1,698	2,000
Spray & other crop expense	513	803	1,290	1,772
Land, bldg. fence repair	853	1,604	2,046	2,202
Taxes & insurance	2,623	3,527	4,207	5,611
Electric & phone (farm share)	1,331	1,953	2,293	3,211
Interest paid	4,034	6,447	9,016	11,734
Miscellaneous expenses	1,094	1,931	2,535	2,960
Total Cash Expenses	\$ 43,467	\$ 65,603	\$ 87,564	\$114,830
Machinery depreciation	3,536	4,605	5,431	7,940
Building depreciation	1,388	2,418	3,306	4,052
Unpaid family labor	1,800	1,800	1,800	1,350
Interest on equity @ 9%	12,578	16,149	19,634	25,537
Decrease in feed & supplies	0	0	0	0
TOTAL FARM EXPENSES	\$ 62,769	\$ 90,575	\$117,735	\$153,709
<u>Financial Summary</u>				
Total Farm Receipts	\$ 75,311	\$106,385	\$142,378	\$182,751
Total Farm Expenses	62,769	90,575	117,735	153,709
Labor & Management Income	\$ 12,542	\$ 15,810	\$ 24,643	\$ 29,042
Number of operators	(96) 1.08	(181) 1.07	(156) 1.27	(93) 1.27
LABOR & MGMT. INCOME/OPER.	\$ 11,635	\$ 14,680	\$ 19,435	\$ 22,814

FARM BUSINESS SUMMARY BY HERD SIZE
610 New York Dairy Farms, 1979

Item	Farms with:				
	85 to 99 Cows	100 to 114 Cows	115 to 129 Cows	130 to 149 Cows	150 or More Cows
<u>Capital Investment (end of year)</u>					
Livestock	\$136,167	\$137,361	\$175,692	\$189,163	\$263,356
Feed & supplies	34,434	40,338	46,263	56,794	79,357
Machinery & equipment	85,131	91,369	106,611	121,377	158,209
Land & buildings	238,672	234,728	274,673	342,599	425,345
TOTAL INVESTMENT	\$494,404	\$503,796	\$603,239	\$709,933	\$926,267
<u>Receipts</u>					
Milk sales	\$154,571	\$180,777	\$209,809	\$234,613	\$359,184
Dairy cattle sold	16,866	15,073	17,760	23,315	35,240
Other livestock sales	6,160	3,256	4,207	5,766	8,626
Crop sales	1,137	1,005	2,359	1,878	4,592
Miscellaneous receipts	2,476	4,106	2,805	6,401	5,912
Total Cash Receipts	\$181,210	\$204,217	\$236,940	\$271,973	\$413,554
Increase in livestock	25,461	27,240	43,204	27,591	56,202
Increase in feed & supplies	5,373	5,052	7,627	11,121	14,077
TOTAL FARM RECEIPTS	\$212,044	\$236,509	\$287,771	\$310,685	\$483,833
<u>Expenses</u>					
Hired labor	\$ 11,971	\$ 17,474	\$ 18,740	\$ 27,423	\$ 44,078
Dairy feed	42,224	50,188	55,670	58,640	98,093
Other feed	1,503	1,767	2,875	2,041	1,941
Machine hire	1,432	1,096	1,359	2,213	3,517
Machinery repair	9,058	9,239	10,912	12,484	17,939
Auto expense (farm share)	706	829	574	473	660
Gas & oil	6,263	6,884	7,418	8,388	12,702
Purchased animals	6,332	5,808	5,184	9,439	18,686
Breeding fees	2,301	1,977	2,383	2,827	4,391
Veterinary & medicine	2,914	2,919	4,033	4,648	7,070
Milk marketing	2,956	5,161	4,675	6,919	10,167
Other livestock expense	5,919	6,770	5,822	6,877	12,078
Fertilizer & lime	9,022	10,514	10,624	14,231	18,152
Seeds & plants	2,974	2,845	3,765	4,152	6,082
Spray & other crop expense	2,179	2,588	2,273	3,420	5,585
Land, bldg., fence repair	2,919	3,124	3,208	2,874	5,575
Taxes & insurance	6,163	6,689	7,772	9,503	13,436
Electric & phone (farm share)	3,513	3,868	3,464	4,430	6,256
Interest paid	13,343	15,730	15,335	18,721	29,434
Miscellaneous expenses	4,512	4,853	5,830	7,582	9,802
Total Cash Expenses	\$138,204	\$160,323	\$171,916	\$207,285	\$325,644
Machinery depreciation	12,034	9,451	15,076	13,519	17,676
Building depreciation	5,481	4,422	6,124	10,497	10,695
Unpaid family labor	1,350	1,800	900	450	900
Interest on equity @9%	27,925	28,193	38,118	42,230	55,299
Decrease in feed & supplies	0	0	0	0	0
TOTAL FARM EXPENSES	\$184,994	\$204,189	\$232,134	\$273,981	\$410,214
<u>Financial Summary</u>					
Total Farm Receipts	\$212,044	\$236,509	\$287,771	\$310,685	\$483,833
Total Farm Expenses	184,994	204,189	232,134	273,981	410,214
Labor & Mgmt. Income	\$ 27,050	\$ 32,320	\$ 55,637	\$ 36,704	\$ 73,619
Number of operators	1.4	1.3	1.6	1.5	1.5
LABOR & MGMT. INC./OPER.	\$ 18,876	\$ 24,420	\$ 35,147	\$ 23,757	\$ 50,149

SELECTED BUSINESS FACTORS BY HERD SIZE
610 New York Dairy Farms, 1979

Item	Farms with:			
	Less than 40 Cows	40 to 54 Cows	55 to 69 Cows	70 to 84 Cows
Number of farms	89	168	123	73
<u>Size of Business</u>				
Number of cows	33	46	61	75
Number of heifers	24	32	43	58
Pounds of milk sold	443,600	642,600	879,300	1,103,500
Man equivalent	1.8	2.0	2.3	2.6
Total work units	392	521	677	842
Total crop acres	114	152	190	237
(Crop acres rented)	(27)	(42)	(60)	(77)
<u>Rates of Production</u>				
Milk sold per cow	13,440	13,970	14,420	14,700
Tons hay crops per acre	2.2	2.4	2.6	2.8
Tons corn silage per acre	11.7	12.7	12.6	13.8
Bushels of oats per acre	58	60	62	56
<u>Labor Efficiency</u>				
Cows per man	19	23	26	29
Pounds milk sold per man	253,500	321,300	377,400	427,700
Work units per man	224	261	291	326
<u>Feed Costs</u>				
Feed purchased per cow	\$459	\$478	\$463	\$473
Crop expense per cow	\$105	\$121	\$131	\$157
Feed cost per cwt. milk	\$3.41	\$3.42	\$3.21	\$3.21
Feed & crop exp. per cwt milk	\$4.20	\$4.29	\$4.12	\$4.28
% feed is of milk receipts	29%	29%	27%	27%
Hay equivalent per cow	7.9T	8.4T	8.1T	8.9T
Crop acres per cow	3.5	3.3	3.1	3.2
Fertilizer & lime/crop acre	\$19	\$24	\$26	\$34
<u>Machinery and Labor Costs</u>				
Total machinery costs	\$11,653	\$15,927	\$20,719	\$27,362
Machinery cost per cow	\$353	\$346	\$340	\$365
Machinery cost/cwt. milk	\$2.63	\$2.48	\$2.36	\$2.48
Labor cost per cow	\$362	\$311	\$293	\$289
Labor cost per cwt. milk	\$2.69	\$2.23	\$2.03	\$1.96
<u>Capital Efficiency</u>				
Investment per man	\$114,300	\$135,650	\$143,300	\$163,900
Investment per cow	\$5,700	\$5,650	\$5,220	\$5,400
Investment per cwt. milk	\$45	\$42	\$38	\$38
Land & buildings per cow	\$3,000	\$2,800	\$2,500	\$2,600
Machinery investment/cow	\$1,030	\$1,040	\$980	\$1,000
Capital turnover	2.7	2.6	2.3	2.3
<u>Other</u>				
Price per cwt. milk sold	\$11.75	\$11.80	\$11.84	\$11.93
Acres hay crops	83	101	117	135
Acres corn silage	23	36	46	64
Inventory changes 1979*:				
Number of cows	0	0	0	0
Invt. value per cow**	+ \$438	+ \$377	+ \$388	+ \$439

* Change from 1/1/79 to 1/1/80.

** Livestock inventory includes heifers.

SELECTED BUSINESS FACTORS BY HERD SIZE
610 New York Dairy Farms, 1979

Item	Farms with:				
	85 to 99 Cows	100 to 114 Cows	115 to 129 Cows	130 to 149 Cows	150 or More Cows
Number of farms	30	34	24	22	47
<u>Size of Business</u>					
Number of cows	90	105	121	137	205
Number of heifers	73	74	95	97	136
Pounds of milk sold	1,311,500	1,486,700	1,766,500	1,969,200	2,996,700
Man equivalent	3.1	3.4	3.8	3.8	5.3
Total work units	1,041	1,156	1,347	1,488	2,186
Total crop acres	298	316	357	387	545
(Crop acres rented)	(111)	(122)	(104)	(160)	(186)
<u>Rates of Production</u>					
Milk sold per cow	14,572	14,159	14,599	14,374	14,618
Tons hay crops per acre	3.1	2.8	3.1	3.0	3.3
Tons corn silage/acre	13.2	13.6	13.8	15.2	15.1
Bushels oats/acre	70	64	76	47	69
<u>Labor Efficiency</u>					
Cows per man	29	31	32	36	38
Pounds milk sold/man	425,812	434,708	471,067	514,151	562,233
Work units per man	338	338	359	389	410
<u>Feed Costs</u>					
Feed purchased per cow	\$469	\$478	\$460	\$428	\$479
Crop expense per cow	\$158	\$152	\$138	\$159	\$145
Feed cost per cwt. milk	\$3.22	\$3.38	\$3.15	\$2.98	\$3.27
Feed & crop exp./cwt. milk	\$4.30	\$4.45	\$4.09	\$4.09	\$4.27
% feed is of milk receipts	27%	28%	27%	25%	27%
Hay equivalent per cow	9.0T	8.2T	8.7T	8.3T	8.0T
Crop acres per cow	3.3	3.0	3.0	2.8	2.7
Fert. & lime/crop acre	\$30	\$33	\$30	\$37	\$33
<u>Machinery and Labor Costs</u>					
Total machinery costs	\$36,827	\$34,952	\$44,095	\$47,430	\$65,823
Machinery cost per cow	\$409	\$333	\$364	\$346	\$321
Machinery cost/cwt. milk	\$2.81	\$2.35	\$2.50	\$2.41	\$2.20
Labor cost per cow	\$271	\$276	\$264	\$289	\$273
Labor cost/cwt. milk	\$1.86	\$1.95	\$1.81	\$2.01	\$1.87
<u>Capital Efficiency</u>					
Investment per man	\$160,521	\$147,309	\$160,864	\$185,361	\$173,784
Investment per cow	\$5,260	\$4,539	\$4,536	\$4,965	\$4,432
Investment/cwt. milk	\$38	\$34	\$34	\$36	\$31
Land & buildings/cow	\$2,539	\$2,115	\$2,065	\$2,396	\$2,035
Machinery investment/cow	\$906	\$823	\$802	\$849	\$757
Capital turnover	2.3	2.1	2.1	2.3	1.9
<u>Other</u>					
Price per cwt. milk sold	\$11.79	\$12.16	\$11.80	\$11.91	\$11.99
Acres hay crops	153	167	193	179	237
Acres corn silage	77	88	101	119	170
Inventory changes 1979*:					
Number of cows	+ 4	+ 5	+ 7	+ 6	+ 6
Inv't. value per cow**	+ \$219	+ \$198	+ \$219	+ \$144	+ \$240

* Change from 1/1/79 to 1/1/80.

** Livestock inventory includes heifers.

FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
610 New York Dairy Farms, January 1, 1980

Item	Farms with:			
	Less than 40 Cows	40 to 54 Cows	55 to 69 Cows	70 to 84 Cows
Number of farms	89	168	123	73
<u>Assets</u>				
Livestock	\$ 50,187	\$ 70,092	\$ 88,964	\$111,370
Feed & supplies	9,102	15,519	21,812	29,839
Machinery & equipment	35,936	49,978	62,625	78,440
Land & buildings	104,827	135,709	160,422	203,220
Co-op investment	702	2,080	3,223	5,540
Accounts receivable	3,511	5,323	7,806	10,878
Cash & checking accounts	1,652	1,804	1,975	2,573
Total Farm Assets	\$205,917	\$280,505	\$346,827	\$441,860
Savings accounts	3,420	1,872	4,069	3,690
Cash value life insurance	2,132	2,329	3,363	2,325
Stocks & bonds	2,467	1,227	2,598	1,733
Nonfarm real estate	861	2,639	8,283	4,678
Auto (personal share)	798	1,204	1,454	1,312
All other	4,605	5,213	5,143	3,430
Total Nonfarm Assets	\$ 14,283	\$ 14,484	\$ 24,910	\$ 17,168
TOTAL ASSETS	\$220,200	\$294,989	\$371,737	\$459,028
<u>Liabilities</u>				
Real estate mortgage	\$ 35,766	\$ 56,931	\$ 74,477	\$ 92,788
Liens on cattle & equipment	22,083	32,439	40,873	52,896
Installment contracts	2,016	3,120	2,610	2,300
Other loans over 10 years	1,329	1,943	2,647	1,601
Other loans 1 to 10 years	3,057	3,253	4,206	4,138
Other loans less than 1 year	714	1,167	1,604	1,713
Feed store & other accounts	1,202	2,223	2,260	2,675
Total Farm Liabilities	\$ 66,167	\$101,076	\$128,677	\$158,111
Nonfarm Liabilities	344	980	1,954	1,005
TOTAL LIABILITIES	\$ 66,511	\$102,056	\$130,631	\$159,116
Farm Net Worth (Equity Capital)	\$139,750	\$179,429	\$218,150	\$283,749
FAMILY NET WORTH	\$153,689	\$192,933	\$241,106	\$299,912
<u>Financial Measures</u>				
Percent equity	70%	65%	65%	65%
Farm debt per cow	\$1,890	\$2,060	\$2,010	\$2,000
Available for debt service & living	\$21,334	\$29,000	\$39,700	\$47,820
Scheduled annual debt payment	\$11,210	\$16,900	\$22,900	\$28,300
Scheduled debt payment per cow	\$320	\$345	\$360	\$360
Scheduled debt payment as percent of milk check	21%	22%	22%	22%

FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
610 New York Dairy Farms, January 1, 1980

Item	Farms with:				
	85 to 99 Cows	100 to 114 Cows	115 to 129 Cows	130 to 149 Cows	150 or More Cows
Number of farms	30	34	24	22	47
<u>Assets</u>					
Livestock	\$136,168	\$137,361	\$175,692	189,165	\$263,357
Feed & supplies	34,434	40,339	46,263	56,794	79,357
Machinery & equipment	85,132	91,369	106,612	121,377	158,210
Land & buildings	238,672	234,728	274,673	342,600	425,346
Co-op investment	5,347	6,353	7,832	10,821	17,202
Accounts receivable	11,581	14,193	15,230	21,918	30,163
Cash & checking accounts	2,153	2,578	5,428	4,540	5,686
Total Farm Assets	\$513,487	\$526,921	\$631,730	\$747,215	\$979,321
Savings accounts	2,583	2,137	10,587	4,400	3,886
Cash value life insurance	4,050	6,302	4,506	4,021	2,654
Stocks & bonds	3,134	5,560	1,203	3,371	4,974
Nonfarm real estate	1,266	1,088	3,125	14,921	10,557
Auto (personal share)	1,035	1,034	2,087	2,295	1,419
All other	5,030	4,917	5,180	14,888	3,775
Total Nonfarm Assets	\$ 17,098	\$ 21,038	\$ 26,688	\$ 43,896	\$ 27,265
TOTAL ASSETS	\$530,585	\$547,959	\$658,418	\$791,111	\$1,006,586
<u>Liabilities</u>					
Real estate mortgage	\$104,950	\$115,743	\$113,797	\$157,919	\$192,226
Liens on cattle & equipment	63,797	75,457	71,309	89,107	126,598
Installment contracts	19,913	4,445	3,677	7,523	8,377
Other loans over 10 years	2,498	3,872	3,166	8,424	12,868
Other loans 1 to 10 years	7,091	7,719	5,478	8,061	14,647
Other loans less than 1 year	2,541	3,613	8,185	1,970	6,953
Feed store & other accounts	2,421	2,816	2,584	4,991	3,218
Total Farm Liabilities	\$203,211	\$213,665	\$208,196	\$277,995	\$364,887
Nonfarm Liabilities	326	672	635	2,687	3,662
TOTAL LIABILITIES	\$203,537	\$214,337	\$208,831	\$280,682	\$368,549
Farm Net Worth (Equity Capital)	\$310,276	\$313,256	\$423,534	\$469,220	\$614,434
FAMILY NET WORTH	\$327,048	\$333,622	\$449,587	\$510,429	\$638,037
<u>Financial Measures</u>					
Percent equity	62%	61%	68%	65%	63%
Farm debt per cow	\$ 2,162	\$ 1,925	\$ 1,554	\$ 1,944	\$ 1,738
Available for debt service & living	\$ 56,341	\$ 59,618	\$ 80,352	\$ 83,403	\$117,338
Scheduled annual debt payment	\$ 42,310	\$ 40,026	\$ 42,021	\$ 44,834	\$ 74,244
Scheduled debt payment per cow	\$ 450	\$ 361	\$ 314	\$ 314	\$ 354
Scheduled debt payment as percent of milk check	27%	22%	20%	19%	21%

Financial Analysis Chart
610 New York Dairy Farms, 1979

Liquidity (Repayment)						
Scheduled Debt Payments Per Cow	Available For Debt Service Per Cow	Cash Flow Coverage Ratio ^{a/}	Debt Structure Ratio ^{b/}	Debt Per Dollar Milk Sales	Debt Payments Per Dollar Milk Sales	Debt/ Income Ratio ^{c/}
\$ 30	\$-62	-0.27	0.04	\$0.07	\$0.02	\$0.06
137	169	0.42	0.21	0.38	0.08	0.33
209	259	0.65	0.29	0.63	0.13	0.55
269	320	0.82	0.36	0.86	0.17	0.75
326	370	1.02	0.41	1.10	0.20	0.95
376	414	1.24	0.46	1.31	0.24	1.14
425	468	1.47	0.52	1.57	0.27	1.36
475	541	1.92	0.61	1.79	0.30	1.54
551	628	3.35	0.82	2.10	0.35	1.80
716	793	13.71	1.00	2.85	0.47	2.45

Solvency					Profitability		
Debt Per Cow	Leverage Ratio ^{d/}	Percent Equity	Debt/Asset Ratio		Percentage Rate of Return on:		Return to Management
			Current & Intermediate	Long Term	Equity	Investment	
\$ 112	0.02	0.29	0.00	0.00	-0.04	0.02	\$-20,282
614	0.13	0.41	0.06	0.07	0.06	0.07	- 5,693
1025	0.25	0.48	0.12	0.18	0.10	0.09	151
1382	0.37	0.54	0.18	0.30	0.13	0.11	4,829
1760	0.54	0.59	0.24	0.42	0.15	0.13	8,676
2119	0.71	0.65	0.30	0.51	0.17	0.14	13,684
2466	0.86	0.73	0.35	0.60	0.20	0.16	19,165
2808	1.08	0.80	0.41	0.69	0.23	0.18	25,675
3274	1.46	0.88	0.51	0.78	0.28	0.21	35,322
4248	2.80	0.98	0.73	1.05	0.45	0.27	65,331

Efficiency (Capital)					
Capital Turnover (Years) ^{e/}	Cash Expense Structure ^{f/}	Income Per Dollar Expense	Mach. and R. Estate Per Cow	Total Investment Per Cow	Total Investment Per Man (000)
1.3	0.07	\$0.90	\$1.964	\$3,464	\$ 80
1.5	0.11	1.07	2.472	4,165	99
1.7	0.13	1.16	2.754	4,531	112
1.8	0.15	1.23	3,007	4,835	124
1.9	0.17	1.30	3,247	5,164	135
2.0	0.18	1.37	3,510	5,493	148
2.2	0.20	1.46	3,808	5,787	159
2.4	0.22	1.54	4,141	6,238	174
2.7	0.25	1.67	4,590	6,829	193
3.7	0.30	1.91	6,100	8,414	242

a/ Amount available for debt service per dollar of annual scheduled debt payment.

b/ Percent of debt with current and intermediate term (less than 10 years).

c/ Dollars income per dollar total income.

d/ Dollars of debt per dollar of equity.

e/ Capital investment per dollar of income.

f/ Percent of cash expenses that are fixed. Fixed expenses include taxes, insurance, interest and land, building and fence repair.