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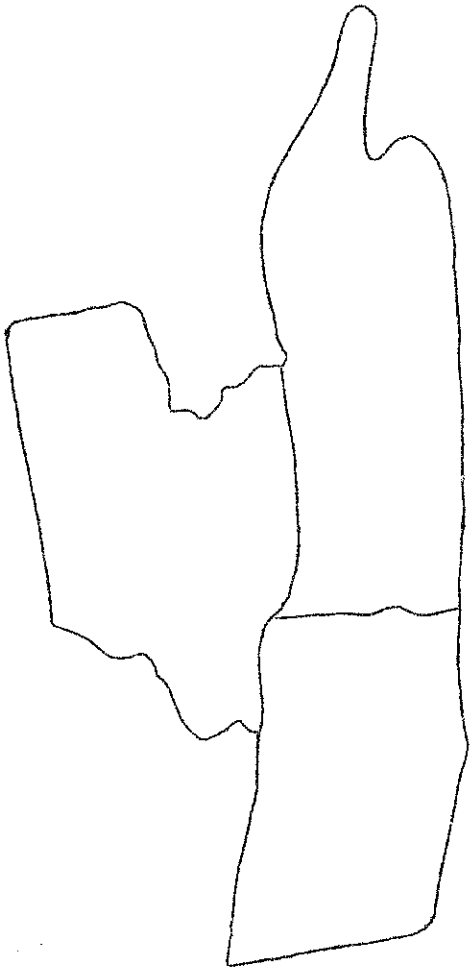
1968 DAIRY FARM BUSINESS SUMMARY

RENSSELAER SARATOGA WASHINGTON COUNTIES



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RENSSELAER, SARATOGA AND WASHINGTON COUNTY FARM BUSINESS SUMMARY - 1968

This report summarizes the records of 58 dairy farmers who in 1968 participated in business management projects sponsored by the Cooperative Extension Service in Rensselaer, Saratoga, and Washington Counties and the Department of Agricultural Economics at Cornell University. The data presented here do not represent the average of all dairymen in these counties but the average of a group of dairymen interested enough in their farm businesses to keep good records and take the time to study and analyze them. These are not to be taken as indicative of the relative profitability of dairy farming in the various counties.

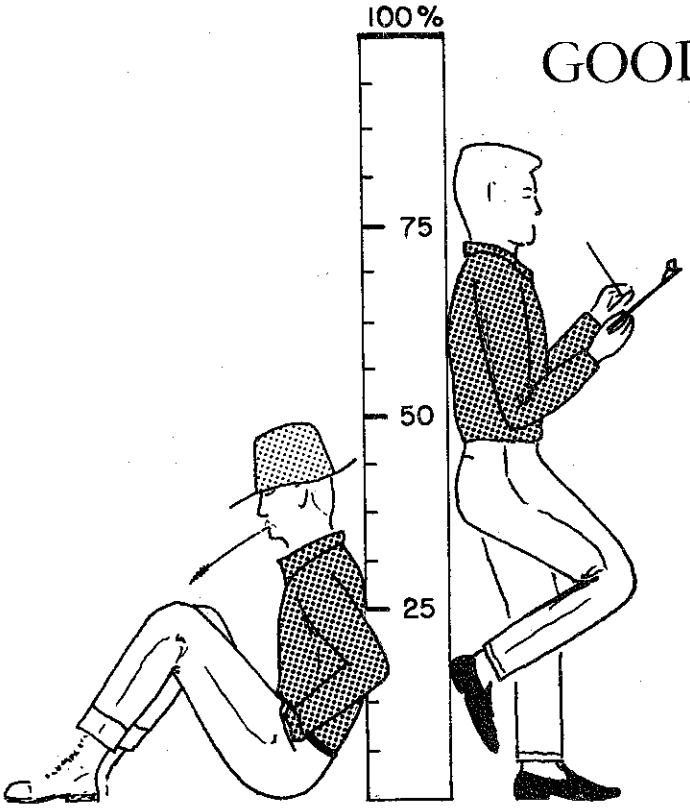
One of the purposes of the business management projects is to teach and encourage farmers to keep better records. A more important purpose is to teach farmers to use the records as a basis for sound management decisions. Each farmer has the opportunity to participate for a period of time. He should learn good record keeping and learn how to analyze his business. This should enable him to use more effectively the economic and management information available from many sources, including the general farm management program offered by the Extension Service.

Farmers in many counties of New York State participate in business management projects similar to those in the Western Plains Region. Some of the data included in this booklet is taken from the 1967 records of 548 New York dairy farmers. This gives farmers the opportunity to compare their business with a larger group of their competitors. The larger number of farmers also makes possible the sorting of farms into groups, thereby allowing comparisions that could not be made from the relatively small number of records in any one county.

Changes in farming are taking place at a rapid pace. Research data indicate that the average number of cows per farm in New York increased from 29 in 1960 to 38 in 1967. This change is due both to the dropping out of smaller farms and to the expansion of many of those remaining. Projections based on the same research indicate that the average number of cows per farm in 1975 will be 55. The number of dairy farms in 1960 was 40,200. By 1967 it had dropped to 26,350; in 1975 it will likely be 16,500. In the future some dairymen will expand, others stay at about the same size and still others will quit farming. It is a challenge to each dairyman to decide upon the best course of action for himself and his family. A study of your business records and budgeting of some possible changes for the future will help you to make this decision.

The information in this report should be useful to farmers in the county who are not enrolled in the business management projects. It should also be helpful to persons who work with farmers, such agricultural teachers and credit representatives.

This summary was prepared by Stuart F. Smith, Department of Agricultural Economics, Cornell University. The following Cooperative Extension Agents supervised the projects within the counties and assisted with the summarization of the records: Donald A. Thompson, Rensselaer; Melvin D. Wrisley and David R. Wood, Saratoga; Leslie G. Nuffer and George C. Trattel, Washington.



GOOD MANAGEMENT IS BASIC

How do you measure up ?

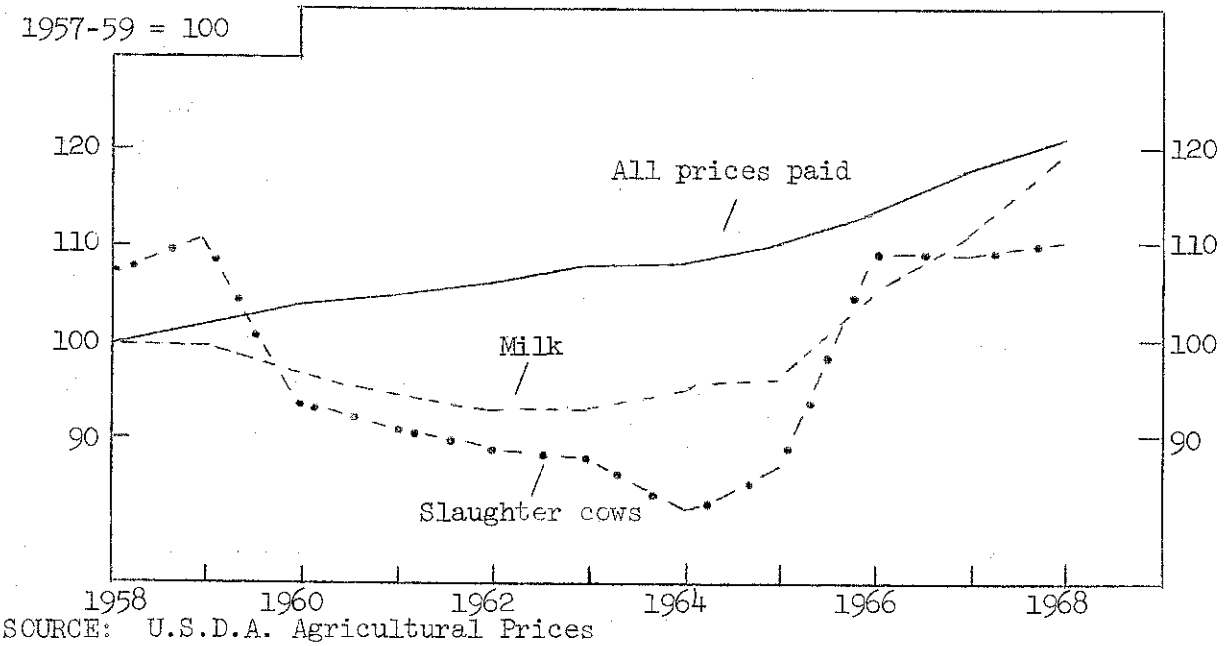
1. Have you developed a systematic approach to management problems?
2. Do you have the facts on your business?
3. Are you improving your managerial skills?

Steps in making a management decision :

1. Locate the trouble spot (problem)
2. What is your objective? (goal)
3. Size up what you have to work with (resources)
4. Look for various ways to solve the problem (alternatives)
5. Consider probable results of each way (consequences)
6. Compare the expected results (evaluate)
7. Select way best suited to your situation (decision)
8. Put the decision into operation (action)

This workbook can help you !

PRICES RECEIVED AND PAID BY N. Y. DAIRY FARMERS



SOURCE: U.S.D.A. Agricultural Prices

Prices are one of the important factors affecting farm incomes. The relationship of prices received and prices paid determines the general level of farm incomes. The blended New York farm price for 3.5% milk in 1968 averaged $5.43 per hundredweight. This was 36 cents higher than the average for 1967 and $1.16 more than 1965. Cull dairy cow prices also were relatively good in 1968. The overall index of prices paid by New York dairy farmers continued to rise in 1968.

In recent years, prices of some farm inputs have risen while others have declined. From 1965 to 1968, farm wages rose 30 percent, dairy cows rose 34 percent, while feed declined 3 percent, and fertilizer prices declined slightly. These differences give rise to management questions concerning substitutions.

AVERAGE YEARLY PRICES RECEIVED AND PAID BY N. Y. FARMERS, 1960-68

Year	Milk (cwt.)	Slaughter cows (cwt.)	Dairy cows (head)	Dairy ration (ton)	Wages per month with house	Prices paid by New York dairymen
1960	$4.31	$15.00	$278	$71	$210	104
1961	4.21	14.60	260	72	213	105
1962	4.14	14.26	245	74	218	106
1963	4.10	14.01	234	76	221	108
1964	4.21	13.17	237	74	227	108
1965	4.27	13.91	238	76	235	110
1966	4.79	17.35	269	80	258	113
1967	5.07	17.33	303	80	291	118
1968*	5.43	17.58	319	74	306	121

* Preliminary

PART I
SUMMARY OF THE FARM BUSINESS

The first part of this booklet is designed to enable you to summarize your business in a systematic, orderly manner. It provides an opportunity to study your physical resources, capital investment, receipts, and expenses. This is the first step to be taken in the study and analysis of your farm business.

PHYSICAL RESOURCES

Knowledge of what resources are employed and how they are combined is fundamental to sound business planning. This includes both the physical and financial resources of the business. Below are listed the physical resources of this group of Rensselaer, Saratoga and Washington County dairy farms.

FARM ORGANIZATION

Item	Average of 548 New York farms, 1967	My farm	58 Ren., Sar., Wash. Co. Farms, Average		Range Low	Range High
Labor:						
Man equivalent	1.9	_____	2.0		1.0	4.2
Full-time hired men			(18 farms)			
Hired men part of year			(33 farms)			
Family help			(27 farms)			
Partnership			(6 farms)			
Livestock: (Av. Number)						
Cows	51	_____	57		26	141
Heifers	33	_____	40		3	100
Crops: (Acres grown)						
Hay	79 (495)**	_____	71	(54)*	0	162
Hay crop silage***	6 (112)*	_____	2	(4)*	0	54
Corn for silage	27 (452)*	_____	49	(56)*	10	200
Corn for grain	9 (205)*	_____	6	(15)*	0	80
Oats for grain	11 (252)*	_____	4	(13)*	0	56
Other crops	6 --	_____	6	--	--	--
Total crop acres	138		138		14	323

* Number of farmers that reported each crop.
** Crop data from 495 of the 548 New York farms.
*** On some farms, hay crop silage was reported as part of the hay crop.

CAPITAL INVESTMENT

Management of the capital resource of a farm business is becoming increasingly important. To measure the complete financial progress of a dairy farm, year to year changes in the capital structure must be considered.

In this report borrowed as well as owned capital is included and the end-of-year farm inventory is used as the measure of capital investment.

FARM INVENTORY VALUES, end of year

Item	Average of 548 New York farms, 1967	My farm	58 Ren., Sar., Wash. Co. farms, 1968 Average per farm	58 Ren., Sar., Wash. Co. farms, 1968 Percent of total
Machinery and equipment	$20,250	$_____	$24,428	23
Cattle	22,160	_____	26,131	24
Poultry	--	_____	1	--
Other Livestock	--	_____	43	--
Feed and supplies	6,840	_____	8,173	8
Land and buildings	42,560	_____	48,498	45
Total Investment	$91,810	$_____	$107,274	100

In many farm businesses, poor capital efficiency is a major cause of low profits. The following measures of capital efficiency will help you evaluate your overall capital management.

INVESTMENT ANALYSIS

Item	Average of 548 New York farms, 1967	My farm	58 Ren., Sar., Wash., Co. farms, 1968
Machinery and equipment per cow	$ 397	$_____	$ 429
Land and buildings per cow	$ 834	$_____	$ 851
Total Investment per cow	$ 1,800	$_____	$ 1,882
Total Investment per man	$48,321	$_____	$53,637
Total Investment per crop acre	$ 665	$_____	$ 777
Real Estate Investment/crop acre	$ 308	$_____	$ 351
Capital turnover*	2.5 years	_____ years	2.3 years

* Calculated by dividing the total year end investment by the total cash receipts for the year.

WHERE THE MONEY CAME FROM

A successful farm business requires a level of gross earnings great enough to pay all costs, both operating and overhead, and leave a margin for the operator's labor. Here we examine the sources of receipts for this group of dairy farms.

FARM RECEIPTS

Item	Average of 548 New York farms, 1967	My farm	58 Ren., Sar., Wash., Co. farms, 1968 Average per farm	58 Ren., Sar., Wash., Co. farms, 1968 Percent of total
Milk sales	$32,347	$_____	$42,332	90
Livestock sold	3,283	_____	3,474	7
Egg sales	--	_____	19	--
Crop sales	133	_____	283	1
Miscellaneous*	1,032	_____	1,047	2
TOTAL CASH RECEIPTS	$36,795	$_____	$47,407	100
Increase in inventory	7,514	_____	7,315	
TOTAL FARM RECEIPTS	$44,309	$_____	$54,722	

* Includes work off farm, conservation payments, refunds, etc.

Increases in inventory resulting from more cows, more machinery and equipment, additions to buildings or a better feed situation are a normal occurrence in most "going" farm businesses and are considered as farm receipts. These items could have been sold and turned into cash receipts, but instead the operator decided to invest this additional capital in his business. The cost of producing or acquiring these items normally is included in the farm expenses

The increase in inventory on these farms was made up of the following: Equipment - $2,669, Livestock - $2,095, Feed and Supplies - $108, Land and Buildings - $2,836.

SELECTED INCOME FACTORS

	Average of 548 New York farms, 1967	My farm	58 Ren., Sar., Was Co. farms, 1968
Average price per cwt. of milk sold	$ 5.25	$_____	$ 5.78
Milk sales per cow	$ 634	$_____	$ 743
Total cash receipts per man	$19,366	$_____	$23,704

WHERE THE MONEY WENT

Some farmers may be able to increase profits by reducing costs. This requires a complete knowledge of what the business expenses are. With the large amount of cash flowing through a farm business today it is important that the farm operator study his expenses closely. Here is an opportunity for you to see how you're doing.

FARM EXPENSES

Item	Average of 548 New York farms, 1967	My farm	58 Ren., Sar., Wash. Co. farms, 1968 Average per farm	58 Ren., Sar., Wash. Co. farms, 1968 Percent of total
Hired labor	$ 2,147	$_____	$ 3,632	13
Dairy feed bought	8,440	_____	10,527	37
Other feed bought (includes hay)	200	_____	284	1
Machine hire	179	_____	250	1
Truck, tractor, machinery expense	1,310	_____	1,577	5.5
Auto expense (farm share)	219	_____	255	1
Gasoline and oil	922	_____	1,003	4
Breeding fees	347	_____	430	1.5
Veterinary and medicine	529	_____	622	2
Other dairy, livestock expense	1,461	_____	2,893	10
Lime & fertilizer	1,511	_____	1,873	7
Seeds and plants	414	_____	432	1.5
Spray, other crop expense	364	_____	433	1.5
Building, fence expense	611	_____	865	3
Taxes, insurance	1,431	_____	1,641	6
Electricity, telephone (farm share)	628	_____	708	2
Miscellaneous	580	_____	812	3
TOTAL CASH OPERATING EXPENSES	$21,293	$_____	$28,490	100
New machinery	5,128	_____	5,812	
New buildings, improvements	2,867	_____	3,364	
Livestock purchased	1,432	_____	1,324	
Unpaid family labor	825	_____	641	
Decrease in inventory	--	_____	--	
TOTAL FARM EXPENSES	$31,545	$_____	$39,631	

FINANCIAL SUMMARY OF THE YEAR'S BUSINESS

There are several ways of measuring the returns from a farm business. These measures have been developed for specific purposes. The measure selected at any one time will depend on the purpose for which it is to be used.

Three measures are used here. The first is "Farm Cash Operating Income". The second, "Labor Income", is a measure of the returns to the operator for his labor and management. The last one is "Return on Investment".

FARM CASH OPERATING INCOME

Item	Average of 548 New York farms, 1967	My farm	58 Ren., Sar., Wash. Co. farms, 1968
Total Cash Receipts	$36,795	$_____	$47,407
Total Cash Operating Expenses	- 21,293	- _____	- 28,490
FARM CASH OPERATING INCOME	$15,502	$_____	$18,917
Less: Family Living Expense*	-6,011	- _____	- 5,959
Amount available for debt payments and purchase of capital items	$ 9,491	$_____	$12,958

* Estimated cash living expenses @ $5,400 per operator. The 548 New York farms averaged 1.1 operators per farm and the 58 Rensselaer, Saratoga and Washington County farms averaged 1.1 operators per farm.

"Farm Cash Operating Income" is the amount of money available from the farm business for family living, debt payments, and purchases of new capital items such as equipment, real estate, and livestock.

The "cash flow" of a farm business is important to the operator and his family in planning for capital purchases, debt payments and living expenses. However, the above measures are not good indicators of the profitability of your farm business. This is because you may increase the amount of cash available during the year by selling off or using up some of your farm property or, more likely, you decrease the amount of cash available by investing more dollars in your business during the year. Labor Income is a much better measure of what the business did for you during the year.

LABOR INCOME

Item	Average of 548 New York farms, 1967	My farm	58 Ren., Sar., Wash. Co. farms, 1968
Average capital investment	$88,050	$____	$103,617
TOTAL FARM RECEIPTS	$44,309	$____	$54,722
TOTAL FARM EXPENSES	- 31,542	- ____	- 39,631
FARM INCOME	$12,764	$____	$15,091
Interest on capital at 5%	- 4,402	- ____	- 5,181
LABOR INCOME per farm	$ 8,362	$____	$ 9,910
Number of operators	610	____	64
LABOR INCOME per operator	$ 7,511	$____	$ 8,981

"Labor Income" is a measure used to determine the return the farm operator receives for his labor and management. It is the amount left after paying all farm expenses, and deducting charges for unpaid family labor and for interest on all of the capital invested in the farm business. Labor Income is the measure most commonly used when studying or comparing farm businesses.

Interest payments and payments on debts are not included in the farm expenses. To make all farms comparable, a five percent interest charge on the average capital investment (average of beginning and end inventories) is deducted in calculating Labor Income.

In addition to Labor Income, the family has "farm privileges" such as the use of a house and farm produced food. These items may amount to $1,000 or more per year.

RETURN ON INVESTMENT

Item	Average of 548 New York farms, 1967	My farm	58 Ren., Sar., Wash. Co. farms, 1968
Farm Income	$12,764	$____	$15,091
Value of Operator's Labor*	- 6,011	- ____	- 5,959
Return on Investment	$ 6,753	$____	$ 9,132
Rate of Return on Capital	7.7%	____%	8.8%

* $5,400 per year. There were 64 operators on the 548 Ren., Sar., and Wash. County dairy farms.

"Return on Investment" is calculated by deducting from the "farm income" a charge for the operator's labor. This return is then divided by the average capital investment for the year to arrive at the rate of return on investment.

PART II
ANALYSIS OF THE FARM BUSINESS

A farmer's success depends on the resources available to him and his abilit to manage the use of these resources. He must understand and apply basic principles of farm management.

Farm management studies indicate that certain business factors are related to labor income. Four important factors are size of business, labor efficiency, rates of production, and cost control. The averages presented here are not intended to represent what is "best". They are to help you see how your farm business compares with those of a group of your competitors.

SIZE OF BUSINESS

In general, large farms pay better than small farms. Larger farms make it possible to use equipment and other items of production more efficiently. However, some 40 cow farms make larger incomes than others with 100 cows. This can happen when other factors are not in balance with size of business.

MEASURES OF SIZE OF BUSINESS

Item	My farm	Average per farm	
		58 Ren., Sar., Wash. farms, 1968	548 New York farms, 1967
Number of cows	_____	57	51
Pounds of milk sold	_____	732,300	616,600
Man equivalent	_____	2.0	1.9
Total work units	_____	665	594

In the following table, the New York dairy farms have been sorted into varic size groups. For each size group the average labor income per operator is shown. Sorting the farms in this manner shows the relationship between size of business and labor income.

COWS PER FARM AND LABOR INCOME
548 New York Dairy Farms, 1967

Number of cows	Number of farms	Labor income per operator
Under 25	22	$ 3,560
25-39	176	5,350
40-54	170	7,380
55-69	104	8,800
70-84	38	11,020
85-99	11	11,790
100 and over	27	13,360

RATES OF PRODUCTION

High rates of production of both animals and crops are very important to the success of a farm business. However, when high crop and animal yields are achieved without regard to costs, net income is reduced. In general, it pays to increase yields up to the point where the last unit of input (such as feed or fertilizer) is just paid for by the increase in output due to this last unit of input.

MEASURES OF RATES OF PRODUCTION

Item	My farm	Average per farm: 58 Ren., Sar., Wash. farms, 1968	Average per farm: 548 New York farms, 1967
Pounds of milk sold per cow	_____	12,800	12,100
Tons of hay per acre	_____	2.6	2.6
Tons of corn silage per acre	_____	14	17
Bushels of oats per acre	_____	51	50
Bushels of corn grain per acre	_____	75	80

The relationship of production per cow to labor income on three sizes of farms is shown in the following table for 548 New York dairy farms in 1967.

MILK SOLD PER COW AND LABOR INCOME
548 New York Dairy Farms, 1967

Pounds milk sold per cow	114 farms with less than 35 cows: Percent of farms	114 farms with less than 35 cows: Labor income	252 farms with 35-54 cows: Percent of farms	252 farms with 35-54 cows: Labor income	182 farms with 55 cows and over: Percent of farms	182 farms with 55 cows and over: Labor income
Less than 10,000	15	$2,588	12	$4,325	10	$ 8,818
10,000-10,999	18	4,311	13	5,399	9	6,636
11,000-11,999	25	5,246	23	6,085	23	9,141
12,000-12,999	20	4,773	18	7,285	20	10,831
13,000-13,999	11	5,347	19	7,838	24	11,418
14,000 & over	11	6,687	15	9,814	14	12,375

LABOR EFFICIENCY

Labor is one of the limiting resources on many dairy farms. Efficient use of labor tends to add to the profitability of a farm business. The productivity of labor can be increased by use of modern equipment and buildings. However, one must be careful not to invest in equipment or buildings that add little to productivity in relation to their cost.

MEASURES OF LABOR EFFICIENCY

Item	My farm	Average per farm	
		58 Ren., Sar., Wash. farms, 1968	548 New York farms, 1967
Number of cows per man	_____	28	27
Pounds of milk sold per man	_____	3,662	324,500
Work units per man	_____	333	313

The relationship between milk sold per man and labor income is illustrat in the table below.

MILK SOLD PER MAN AND LABOR INCOME
548 New York Dairy Farms, 1967

Pounds milk sold per man	114 farms with less than 35 cows		252 farms with 35-54 cows		182 farms with 55 cows and over	
	Percent of farms	Labor income	Percent of farms	Labor income	Percent of farms	Labor income
Under 200,000	24	$3,073	5	$3,521	2	$ 4,334
200,000-299,999	49	4,745	37	5,647	16	7,561
300,000-399,999	25	6,235	35	7,291	53	9,370
400,000 & over	2	6,499	23	9,090	29	13,513

COST CONTROL

Obtaining high production at reasonable cost is one of the keys to a profitable farm business. The exact level of production items to be used to obtain the greatest net return is difficult to determine. The averages presented here may help you find some of the weaknesses in the cost structure on your farm.

FEED COSTS

Feed bought is the largest single expense item on most dairy farms. The success of a dairy farm manager depends to a large degree on his ability to provide a good feeding program for his herd at reasonable cost. Because the feeding program includes both purchased and homegrown feed, and both roughage and concentrates, it is not easy to locate the weak spots in efforts to control feed costs. The items on this page all have a bearing on feed costs, and may be helpful in planning a more efficient feeding program.

SELECTED FACTORS RELATED TO FEED COSTS

Item	My farm	Average per farm: 58 Ren., Sar., Wash. Co. farms, 1968	Average per farm: 548 New York farms, 1967
Purchased Feed			
Dairy feed bought	$_____	$10,527	$ 8,440
Feed bought per cow	$_____	$ 179	$ 165
Feed bought as % of milk receipts	_____%	25%	26%
Feed bought per cwt. of milk sold	$_____	$ 1.44	$ 1.37
Roughage Harvested (hay equivalent)			
Hay (tons)	_____	182 tons	182 tons
Hay crop silage (____ tons ÷ 3)	_____	3 tons	13 tons
Corn silage (____ tons ÷ 3)	_____	221 tons	136 tons
Total tons hay equivalent	_____	406 tons	331 tons
Tons hay equivalent per cow	_____	7.1 tons	6.5 tons
Other Considerations			
Total acres in crops per cow	_____	2.4 acres	2.5 acres
Lime & fertilizer expense/cow	$_____	$ 33	$ 30
Lime & fertilizer expense/crop acre	$_____	$ 14	$ 12
Heifer number as % of cow numbers	_____%	70%	65%

The above measures of harvested roughage consider only the quantity. Quality is also significant and has a bearing on purchased feed and milk production.

FARM POWER AND MACHINERY COSTS

On today's dairy farms, power and machinery costs account for a large part of the total costs. For this group of farms, power and machinery costs were 23 percent of the total farm expenses.

POWER AND MACHINERY COSTS*

Item	My farm	Average per farm 58 Ren., Sar., Wash. Co. farms, 1968	Average per farm 548 New Yo farms, 19
Beginning inventory	$_____	$22,159	$17,808
New machinery bought	_____	5,812	5,128
Total	$_____	$27,971	$22
End inventory	$_____	$24,428	$20,251
Machinery sold	_____	199	131
Total	$_____	$24,627	$2
Depreciation	$_____	$ 3,344	$
Depreciation	$_____	$ 3,344	$
Interest at 5% av. inventory	_____	1,165	
Gas and oil	_____	1,003	
Machinery and repairs	_____	1,577	
Bale ties	_____	64	
Milk hauling	_____	1,208	
Other machine hire	_____	250	
Auto expense (farm share)	_____	255	
Electricity (farm share)	_____	568	
TOTAL MACHINERY COSTS	$_____	$ 9,434	$ 7,
Gas tax refunds	$_____	$ 41	$ 93
Income from machine work	_____	29	97
Total	- _____	- 70	-
NET MACHINERY COST	$_____	$ 9,364	$ 6,
Net machinery cost per cow	$_____	$ 164	$
Net machinery cost per crop acre	$_____	$ 68	$
Net machinery cost per man	$_____	$ 4,682	$ 3,
Net machinery cost/cwt. milk sold	$_____	$ 1.28	$ 1.

* Does not include insurance, housing, or farm labor on repairs

LABOR AND MACHINERY COSTS

Most farm operators justify major machinery purchases as a way to save labor and increase productivity. How well labor and machinery are combined has an important bearing on farm profits.

LABOR AND POWER AND MACHINERY COSTS

Item	My farm	Average per farm: 58 Ren., Sar., Wash. Co. farms, 1968	Average per farm: 548 New York farms, 1967
Value of operator's labor	$_____	$ 5,959	$ 6,011
Hired labor	_____	3,632	2,147
Unpaid family labor	_____	641	825
TOTAL LABOR COSTS	$_____	$10,232	$ 8,983
Net power and machinery cost	_____	9,364	6,964
TOTAL LABOR & MACHINERY COST	$_____	$19,596	$15,947
Total per cow	$_____	$ 344	$ 313
Total per crop acre	$_____	$ 142	$ 116
Total per man	$_____	$ 9,798	$ 8,393
Total per cwt. milk sold	$_____	$ 2.68	$ 2.59

The following table shows the relationship of machinery costs to labor income on the 548 dairy farms in 1967.

MACHINERY COST PER COW AND LABOR INCOME
548 New York Dairy Farms, 1967

Machinery cost per cow	Percent of farms	Labor income
$225 & over	1	$2,430
$200 - $224	7	5,276
$175 - $199	10	5,871
$150 - $174	17	7,370
$125 - $149	24	7,524
$100 - $124	26	8,406
$75 - $99	13	8,690
Less than $75	2	8,672

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS
548 New York Dairy Farms,* 1967

Size of Business		Rates of Production			Labor Efficiency	
No. of cows	Pounds milk sold	Pounds milk sold per cow	Tons hay per acre	Tons corn silage per acre	Cows per man	Pounds milk sol per mar
105	1,269,200	15,300	4.1	25	43	531,70(
70	900,700	14,000	3.3	21	35	428,90(
59	739,600	13,300	3.0	20	32	385,60(
54	653,300	12,900	2.8	18	29	357,80(
48	582,400	12,500	2.5	17	27	334,40(
44	530,400	11,900	2.3	16	26	313,40(
40	467,600	11,500	2.1	15	24	288,20(
36	421,500	11,000	1.9	14	22	260,10(
32	361,900	10,200	1.4	12	20	228,40(
25	262,600	8,500	.8	9	17	179,50(

* These farms are considerably above the average for all farms in New York State. F(example, the average number of cows for the 548 farms was 46 compared with 38 for all farms in the State.

The Farm Business Chart is a tool which can be used in analyzing a business to determine the strong and weak points. The chart shows how far the individual farm is above or below the average of the 548 farms for each factor.

The figure at the top of each column is the average of the top ten percent of the farms for that factor. For example, the figure 105 at the top of the column headed "No. of Cows" is the average number of cows on the ten percent of the farms with the most cows. The other figures in each column are the average for the second ten perce: third ten percent, etc. The figure at the bottom of each column (25 for No. of Cows) is the average for the ten percent of the farms which ranked lowest in that factor.

Each column of the chart is independent of the others. The farms which are in the top ten percent for one factor would not necessarily be the same farms which make up the top ten percent for any other factor.

This chart is used in analyzing a particular dairy business by drawing a line through the figure in each column which shows where the farm being analyzed stands for that factor. This helps identify the strengths and weaknesses. Summarize these and list them at the bottom of page 17.

COST CONTROL FACTORS

The cost control factors are ranked from low to high. For cost control factors, the lowest cost is not necessarily the most profitable. In some cases, the "best" might be somewhere near the average. Many things affect the level of these costs, and these items must be taken into account when analyzing the factors.

Cost Control			
Feed bought per cow	% Feed is of milk receipts	Feed and crop expense per cwt. milk	Machinery cost per cow
$ 75	13%	$1.07	$ 82
110	18	1.32	98
128	21	1.46	109
143	23	1.58	118
157	25	1.68	129
173	27	1.79	141
187	29	1.90	150
204	32	1.99	162
225	34	2.12	180
260	39	2.37	217

actors Affecting Feed Cost:

- tons hay equivalent per cow
- quality of forage
- ratio of cows to heifers
- lbs. milk sold per cow
- quantity of home grown grain
- average price of milk

Factors Related to Machinery Costs:

- amount of machinery
- use made of machinery
- substitution of machinery for labor
- new vs. old machinery
- mechanical skill of operator

STRONG AND WEAK POINTS

After analyzing the business and determining changes to be considered, each possible change should be studied in detail. The work sheet or budgeting form found on pages 22 and 23 can be used for projecting the likely results of each alternative.

TRONG POINTS:

AK POINTS:

FARM BUSINESS SUMMARY BY HERD SIZE
548 New York Dairy Farms, 1967

Item	My farm	Farms with less than 25 cows	25 to 39 cow farms	40 to 54 cow farms
Capital Investment (end of year)				
Machinery and equipment	$_____	$ 7,043	$13,981	$18,627
Livestock	_____	8,141	14,234	19,749
Feed and supplies	_____	2,560	4,178	5,964
Land and buildings	_____	20,075	25,878	36,695
TOTAL INVESTMENT	$_____	$37,819	$58,271	$81,035
Receipts				
Milk sales	$_____	$12,511	$20,464	$28,963
Livestock sold	_____	1,283	2,154	2,932
Crop sales	_____	67	117	155
Miscellaneous receipts	_____	413	756	840
Total Cash Receipts	$_____	$14,274	$23,491	$32,890
Increase in inventory	_____	1,912	4,012	6,004
TOTAL RECEIPTS	$_____	$16,186	$27,503	$38,894
Expenses				
Hired labor	$_____	$ 189	$ 572	$ 1,397
Dairy feed	_____	3,352	5,593	7,558
Other feed	_____	65	159	189
Machine hire	_____	98	115	189
Machinery repair	_____	426	847	1,130
Auto expense (farm share)	_____	165	177	236
Gas and oil	_____	469	691	828
Breeding fees	_____	156	245	312
Veterinary and medicine	_____	243	338	484
Other livestock expense	_____	482	870	1,181
Lime and fertilizer	_____	451	855	1,316
Seeds and plants	_____	134	245	385
Spray and other crop expense	_____	95	227	313
Land, bldg., fence repair	_____	178	428	484
Taxes and insurance	_____	663	931	1,288
Elec. and tel. (farm share)	_____	293	450	558
Miscellaneous expenses	_____	151	345	551
Total Cash Operating Exp.	$_____	$ 7,610	$13,088	$18,399
New machinery	_____	1,908	3,491	4,379
New real estate	_____	210	1,105	2,282
Purchased livestock	_____	380	802	1,207
Unpaid family labor	_____	675	836	888
TOTAL FARM EXPENSES	$_____	$10,783	$19,322	$27,155
Financial Summary				
Total Farm Receipts	$_____	$16,186	$27,503	$38,894
Total Farm Expenses	_____	10,783	19,322	27,155
Farm Income	$_____	$ 5,403	$ 8,181	$11,739
Interest on av. capital @ 5%	_____	1,843	2,813	3,902
Labor Income per Farm	$_____	$ 3,560	$ 5,368	$ 7,837
Number of operators	_____	20	169	194
LABOR INCOME PER OPERATOR	$_____	$ 3,560	$ 5,337	$ 7,191

FARM BUSINESS SUMMARY BY HERD SIZE
548 New York Dairy Farms, 1967

Item	My farm	55 to 69 cow farms	70 to 84 cow farms	Farms with 85 or more cows
Capital Investment (end of year)				
Machinery and equipment	$_____	$ 24,315	$ 28,152	$ 41,815
Livestock	_____	26,994	34,251	48,451
Feed and supplies	_____	7,973	10,922	16,886
Land and buildings	_____	49,347	66,075	108,048
TOTAL INVESTMENT	$_____	$108,629	$139,400	$215,200
Receipts				
Milk sales	$_____	$ 38,862	$ 51,004	$ 71,452
Livestock sold	_____	3,625	4,574	8,334
Crop sales	_____	152	153	60
Miscellaneous receipts	_____	1,369	1,400	2,098
Total Cash Receipts	$_____	$ 44,008	$ 57,131	$ 81,944
Increase in inventory	_____	10,167	11,066	21,171
TOTAL RECEIPTS	$_____	$ 54,175	$ 68,197	$103,115
Expenses				
Hired labor	$_____	$ 2,661	$ 5,422	$ 8,421
Dairy feed	_____	9,971	13,218	18,058
Other feed	_____	251	149	404
Machine hire	_____	231	261	222
Machinery repair	_____	1,464	2,040	3,342
Auto expense (farm share)	_____	210	255	328
Gas and oil	_____	1,033	1,365	1,798
Breeding fees	_____	438	526	619
Veterinary and medicine	_____	618	918	1,063
Other livestock expense	_____	1,809	2,417	3,811
Lime and fertilizer	_____	1,808	2,261	4,110
Seeds and plants	_____	511	532	1,018
Spray and other crop expense	_____	493	575	762
Land, bldg., fence repair	_____	824	893	1,325
Taxes and insurance	_____	1,603	2,251	3,263
Elec. and tel. (farm share)	_____	733	952	1,251
Miscellaneous expenses	_____	624	1,175	1,199
Total Cash Operating Exp.	$_____	$ 25,282	$ 35,210	$ 50,994
New machinery	_____	6,911	6,593	10,827
New real estate	_____	4,054	4,205	9,693
Purchased livestock	_____	1,676	1,947	4,398
Unpaid family labor	_____	847	608	731
TOTAL FARM EXPENSES	$_____	$ 38,770	$ 48,563	$ 76,643
Financial Summary				
Total Farm Receipts	$_____	$ 54,175	$ 68,197	$103,115
Total Farm Expenses	_____	38,770	48,563	76,643
Farm Income	$_____	$ 15,405	$ 19,634	$ 26,472
Interest on av. capital @ 5%	_____	5,177	6,693	10,231
Labor Income per Farm	$_____	$ 10,228	$ 12,941	$ 16,241
Number of operators	_____	123	49	55
LABOR INCOME PER OPERATOR	$_____	$ 8,481	$ 10,300	$ 12,107

SELECTED BUSINESS FACTORS BY HERD SIZE
548 New York Dairy Farms, 1967

Item	My farm	Farms with less than 25 cows	25 to 39 cow farms	40 to 54 cow farms
Number of farms		20	168	178
Size of Business				
Number of cows	_____	21	33	46
Pounds of milk sold	_____	241,700	395,600	558,800
Crop acres	_____	57	92	121
Man equivalent	_____	1.2	1.4	1.7
Total work units	_____	245	401	544
Rates of Production				
Milk sold per cow	_____	11,500	12,000	12,100
Tons hay per acre	_____	2.4	2.3	2.5
Tons corn silage per acre	_____	15	16	14
Bushels of oats per acre	_____	54	45	49
Labor Efficiency				
Cows per man	_____	18	24	27
Pounds milk sold per man	_____	201,400	282,600	328,700
Work units per man	_____	204	286	320
Crop acres per man	_____	48	66	71
Feed Costs				
Feed purchased per cow	$_____	$ 160	$ 169	$ 164
Crop expense per cow	$_____	$ 32	$ 40	$ 44
Feed & crop expense per cow	$_____	$ 192	$ 209	$ 208
Feed cost per cwt. milk	$_____	$ 1.39	$ 1.41	$ 1.35
Feed & crop expense/cwt. milk	$_____	$ 1.67	$ 1.75	$ 1.71
% Feed is of milk receipts	_____%	29%	27%	26%
Hay equivalent per cow	_____	6.3	6.5	6.7
Crop acres per cow	_____	2.7	2.8	2.6
Fertilizer & lime/crop acre	$_____	$ 8	$ 9	$ 11
Machinery Costs				
Total machinery costs	$_____	$ 2,905	$ 4,861	$ 6,133
Machinery cost per cow	$_____	$ 138	$ 147	$ 133
Machinery cost per man	$_____	$ 2,421	$ 3,472	$ 3,608
Machinery cost per cwt. milk	$_____	$ 1.20	$ 1.23	$ 1.10
Machinery cost per crop acre	$_____	$ 51	$ 53	$ 51
Capital Efficiency				
Investment per man	$_____	$31,516	$41,622	$47,668
Investment per cow	$_____	$ 1,801	$ 1,766	$ 1,762
Investment per cwt. milk sold	$_____	$ 16	$ 15	$ 15
Land and buildings per cow	$_____	$ 956	$ 784	$ 798
Machinery investment per cow	$_____	$ 335	$ 424	$ 405
Return on investment	_____%	--	4.7%	7.2%
Other				
Price per cwt. milk sold	$_____	$ 5.18	$ 5.17	$ 5.18
Acres hay and hay crop silage	_____	43	62	73
Acres corn silage	_____	6	14	23

SELECTED BUSINESS FACTORS BY HERD SIZE
548 New York Dairy Farms, 1967

Item	My farm	55 to 69 cow farms	70 to 84 cow farms	Farms with 85 or more cows
Number of farms		102	39	41
Size of Business				
Number of cows	_____	60	77	112
Pounds of milk sold	_____	743,200	949,600	1,323,700
Crop acres	_____	134	197	220
Man equivalent	_____	2.1	2.7	3.4
Total work units	_____	689	903	1,244
Rates of Production				
Milk sold per cow	_____	12,400	12,300	11,800
Tons hay per acre	_____	2.8	2.6	3.0
Tons corn silage per acre	_____	17	16	18
Bushels oats per acre	_____	55	52	49
Labor Efficiency				
Cows per man	_____	29	29	33
Pounds milk sold per man	_____	353,900	351,700	389,300
Work units per man	_____	328	335	366
Crop acres per man	_____	64	73	65
Feed Costs				
Feed purchased per cow	$_____	$ 166	$ 172	$ 161
Crop expense per cow	$_____	$ 47	$ 44	$ 53
Feed & crop expense per cow	$_____	$ 213	$ 216	$ 214
Feed cost per cwt. milk	$_____	$ 1.34	$ 1.39	$ 1.36
Feed & crop expense/cwt. milk	$_____	$ 1.72	$ 1.75	$ 1.81
% Feed is of milk receipts	_____%	26%	26%	25%
Hay equivalent per cow	_____	6.3	7.0	6.1
Crop acres per cow	_____	2.2	2.6	2.9
Fertilizer & lime/crop acre	$_____	$ 13	$ 11	$ 19
Machinery Costs				
Total machinery costs	$_____	$ 8,244	$10,790	$14,377
Machinery costs per cow	$_____	$ 137	$ 140	$ 128
Machinery cost per man	$_____	$ 3,926	$ 3,996	$ 4,229
Machinery cost per cwt. milk	$_____	$ 1.11	$ 1.14	$ 1.09
Machinery cost per crop acre	$_____	$ 62	$ 55	$ 65
Capital Efficiency				
Investment per man	$_____	$51,728	$51,630	$63,294
Investment per cow	$_____	$ 1,810	$ 1,810	$ 1,921
Investment per cwt. milk sold	$_____	$ 15	$ 15	$ 16
Land and buildings per cow	$_____	$ 822	$ 858	$ 965
Machinery investment per cow	$_____	$ 405	$ 366	$ 373
Return on investment	_____%	8.2%	9.2%	8.9%
Other				
Price per cwt. milk sold	$_____	$ 5.23	$ 5.37	$ 5.40
Acres hay and hay crop silage	_____	79	109	125
Acres corn silage	_____	28	47	55

Considering a Change in the Dairy Business

Describe change: _____

List possible alternative changes : (use additional worksheets to analyze these alternatives) _____

I. Basic nature of proposed change

	Present	Change	Future with change
Number of cows	_____	_____	_____
Number of youngstock	_____	_____	_____
Production per cow	_____	_____	_____
Labor force (man equiv.)	_____	_____	_____

II. Estimated forage requirements and production:

No. of cows _____ x _____ tons hay equivalent = _____ tons

No. of youngstock _____ x _____ tons hay equiv./head = _____ tons

total hay equiv. requirement _____ tons

Allocate total hay equivalent requirement to hay and silage production:

Total hay equiv. required _____ = _____ hay tons + _____ tons hay equiv. as silage

Tons hay equiv. as silage _____ x 3 = _____ tons silage

Estimate needed crop acres and changes from present:

Future crop	Proposed Production	Estimated Yield	Acres Needed	Change in acres (list as plus or minus)
Hay	_____	_____	_____	_____
Hay crop silage	_____	_____	_____	_____
Corn silage	_____	_____	_____	_____
Other forage	_____	_____	_____	_____
Grain	_____	_____	_____	_____

III. Additional forward planning steps and pointers

1. List new capital items associated with the change including land, buildings machinery and cattle. Estimate their cost.
2. Estimate changes in receipts and expenses (Part IV) considering all input and production items that are affected by the change under consideration. Adjust present figures if anticipated price changes are used in the budget.
3. When analyzing the effects of the proposed change, fulfillment of non-monetary goals may be considered.
4. More than one alternative change should be considered.

IV. Estimating changes in receipts and expenses

	Present	Net change (plus or minus)	Future with change
A. Receipts			
Milk sales, gross	$	$	$
Livestock sales			
Crop sales			
Miscellaneous receipts			
Total Cash Receipts	$	$	$
Increase in inventory			
Total Farm Receipts	$	$	$
B. Expenses			
Hired labor	$	$	$
Feed bought			
Machine hire			
Machinery repairs			
Auto expense (farm share)			
Gasoline and oil			
Breeding fees			
Veterinary and medicine			
Other livestock expense			
Lime and fertilizer			
Seeds and plants			
Spray, other crop expense			
Land, building, fence expense			
Taxes, insurance			
Electricity, telephone (farm share)			
Miscellaneous			
Total Cash Operating Exp.	$	$	$
New machinery and real estate			
Livestock purchases			
Unpaid family labor			
Decrease in inventory			
Total Farm Expenses	$	$	$
C. Financial Summary			
Capital Investment	$		$
Total Farm Receipts	$		$
Total Farm Expenses			
Farm Income	$		$
Interest on Capital			
LABOR INCOME	$		$

Selected Competitive Dairy Areas

A good manager aims to know how his business stands in relation to his competition both at home and in other dairy areas. The table below presents data from four states. These data were taken from reports on farm business management projects similar to the ones in New York. Some measures have been adjusted so that they are comparable for the four states.

1967 DAIRY FARM BUSINESS SUMMARY DATA

Selected Factors	New York	Southern Michigan	Vermont	Connecticut
Number of farms	548	290	127	25
Crop acres	138	259	NA	NA
Man equivalent	1.9	2.2	2.0	2.1
Number of heifers	33	NA	35	40
Number of cows	51	54	53	66
Lbs. milk sold/ farm	616,600	657,640	608,560	811,460
Lbs. milk sold/ man	324,500	298,930	304,300	386,400
Lbs. milk sold/ cow	12,100	12,180	11,480	12,290
Milk sales/ cow	$635	$670	$635	$736
Av. price/ cwt. milk	$5.25	$5.50	$5.53	$5.99
Purchased feed/ cow	$165	$96	$190	$228
Taxes/ cow	$17	$17	NA	NA
Capital Investment				
Land & buildings	$42,560	$87,000	$46,540	$66,360
Machinery & equipment	$20,250	$23,400	$13,440	$17,760
Livestock	$22,160	$21,400	$20,020	$26,770
Feed & supplies	$ 6,840	$11,000	$ 5,890	$ 8,420
Investment/ man	$48,320	$64,910	$42,940	$56,820
Investment/ cow	$ 1,800	$ 2,640	$ 1,620	$ 1,810
Financial Summary				
Total farm receipts	$44,309	$45,002	$42,810	$51,494
Total farm expenses	$31,545	$31,112	$32,322	$37,712
Farm income	$12,764	$13,890	$10,488	$13,782
Interest at 5%	$ 4,402	$ 7,140	$ 4,294	$ 5,966
Labor income/ farm	$ 8,362	$ 6,750	$ 6,194	$ 7,816
Labor income/ operator	$ 7,511	$ 6,193	$ 5,631	$ 6,513

ARRAY OF BUSINESS FACTORS
58 Rensselaer, Saratoga, Washington County Dairy Farms, 1967

Number of cows	Pounds milk sold per farm	Cows per man	Pounds milk sold per man	Pounds milk sold per cow	Feed bought per cow	Machinery cost per cow
141	2,042,600	50	640,000	16,400	$ 52	$ 79
126	1,688,300	42	564,400	16,100	60	92
118	1,652,600	42	561,500	15,300	76	96
101	1,545,500	41	552,000	15,200	82	122
93	1,403,800	40	544,600	15,100	83	125
87	1,303,800	39	521,500	15,000	97	125
83	1,046,300	39	510,600	14,600	102	135
83	994,500	37	490,100	14,600	104	135
81	988,800	36	466,000	14,500	107	136
81	967,100	36	461,300	14,000	109	137
78	922,600	35	455,200	13,900	116	138
74	920,400	35	452,000	13,700	120	139
74	918,500	35	438,200	13,600	122	140
73	914,400	35	425,800	13,600	122	140
71	896,000	34	422,300	13,600	122	141
70	881,900	33	422,200	13,500	126	143
69	876,400	32	417,500	13,500	130	143
68	844,400	31	412,000	13,400	143	148
62	844,100	31	407,900	13,300	145	150
60	790,200	31	404,200	13,300	156	151
59	763,700	31	393,500	13,100	159	153
58	728,700	30	382,200	13,000	166	155
54	726,700	29	358,800	13,000	168	156
54	717,700	29	353,700	12,900	170	159
49*	623,000*	27*	341,170*	12,700*	187*	164*
46	559,200	25	325,700	12,500	200	172
45	552,600	25	323,600	12,500	204	173
45	549,000	25	320,100	12,400	205	173
44	547,700	24	314,100	12,300	205	176
44	531,900	24	301,500	12,000	209	178
43	530,500	24	296,900	11,900	210	181
43	530,300	24	296,000	11,900	210	183
42	527,700	24	295,500	11,900	222	184
41	517,800	24	295,300	11,700	232	184
41	500,000	24	293,700	11,700	233	187
39	490,100	24	290,800	11,600	236	188
37	465,800	23	271,700	11,400	239	189
37	442,000	23	271,000	11,400	239	190
35	439,800	23	266,900	11,300	242	192
34	427,000	22	261,300	11,300	244	196
34	425,800	22	260,800	11,200	247	198
34	416,100	22	258,200	11,100	249	198
33	413,600	22	256,800	11,000	251	208
33	410,900	21	255,700	11,000	258	214
32	354,400	20	232,900	10,300	259	217
32	343,800	18	221,000	10,200	267	219
31	335,600	17	189,900	9,700	273	221
28	284,800	17	163,900	6,900	279	242
26	278,600	17	156,300	6,800	284	260

* Average of middle 10 farms in each category

THE DAIRY INDUSTRY IN NEW YORK STATE -- 1960 to 1980

In 1960, the Department of Agricultural Economics at Cornell University initiated a research study of the changes in milk production in the New York Milkshed.* A random sample of farms was selected. Sample farms were visited each year from 1960 to 1964 and again in 1967 to gather information on changes that had taken place. In 1965, 1966, and 1968, some information was obtained with a mail questionnaire. A return of over 90 percent was experienced by mail each year.

The sample of farms studied included a 2.5 percent sample of the dairy farms in the New York Milkshed and a 5 percent sample of the Hudson Valley area. Farms delivering to all markets in New York State, and those located in New York State but delivering to New England markets were included. The sample included 1,073 farms in 1960.

From this sample of farms an estimate can be made of the number of producir units, number of milk cows, and number of heifers in New York State for each year from 1960 to 1968.

Item	1960	1968	% change 1960 to 1968	1980
Number of dairy farms	40,180	24,640	- 39	_____
Number of milk cows	1,178,000	976,000	- 17	_____
Cows per farm	29	40	+ 38	_____
Pounds of milk per cow	8,150**	9,800**	+ 20	_____
Pounds of milk per farm	236,000	392,000	+ 66	_____
Man equivalent per farm	1.8	1.8	0	_____
Cows per man	16	22	+ 38	_____
Pounds of milk per man	131,000	218,000	+ 66	_____
Farms with bulk tanks	18%	60%	+233	_____ %
Farms with free stalls	0%	6%	---	_____ %

* Cornell University Agricultural Experiment Station State Project 502, Department of Agricultural Economics, An Economic Analysis of Long-Run Changes in Milk Production in the New York Milkshed.

**New York Dairy Farm Report.

Family Living Expenditures

Family living expenses have first claim on farm income. In any farm business financial planning, it is important that the family living expenses be considered.

The 1967 family living expenditures for 99 Michigan farm families are reported below. These families were cooperators in the Michigan electronic farm accounting program. These data give an indication of the living expenses for some farm families. The total living expenses of individual families varied from $2,766 to $16,429. The high family had education expenses of $4,051.

FARM FAMILY LIVING EXPENDITURES
99 Michigan Farm Families, 1967

Expenditure	My family	Average of 99 families	Percent of total
Food	$_____	$1,626	22
Housing	_____	1,449	19
Transportation	_____	793	10
Personal insurance	_____	778	10
Clothing	_____	628	8
Medical care	_____	557	7
Gifts and contributions	_____	488	7
Personal taxes	_____	362	5
Recreation	_____	255	3
Education	_____	255	3
Personal care	_____	84	1
Miscellaneous	_____	277	5
TOTAL LIVING EXPENSES	$_____	$7,552	100

SOURCE: Michigan State University Agricultural Economics Report No. 106

These 99 families had an average of 5.6 persons per family. The average age of the husband was 42 and the wife 39.

The various living expense items are affected considerably by the number of family members, their ages, health, and interests, and the educational requirements of the children. A family must consider these factors when evaluating their expenditures or in making estimates of the amount of money to include for family living.