

1968 DAIRY FARM BUSINESS SUMMARY

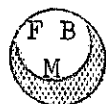
NORTHERN NEW YORK

Clinton County

Jefferson County

Franklin County

St. Lawrence County



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1968
DAIRY FARM BUSINESS SUMMARY
Northern New York

Farm records are a tool that farmers can use in managing their businesses. Farm management extension programs have been built around record projects. Records make a logical starting point for analyzing a particular business and for studying the principles of good farm management.

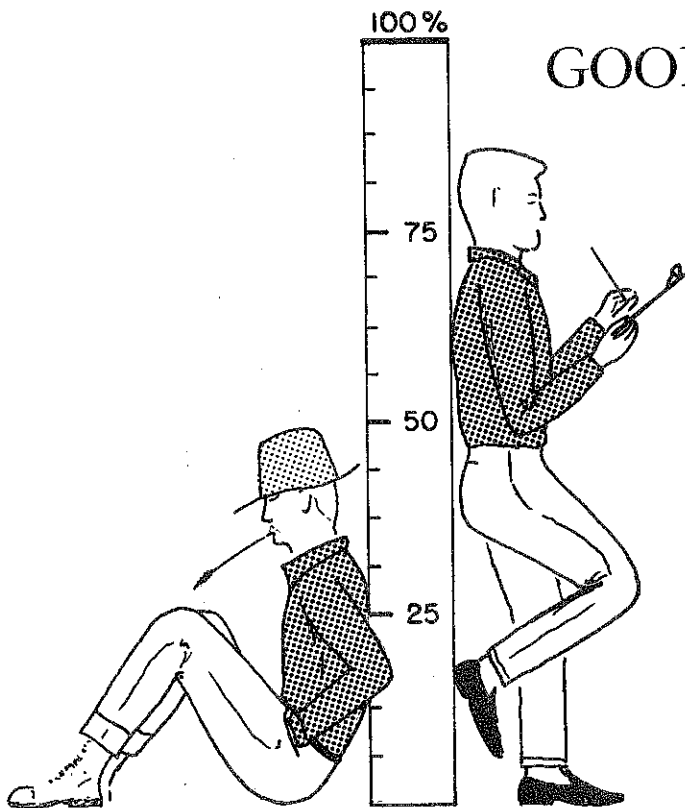
The Cooperative Extension Associations in Clinton, Franklin, Jefferson and St. Lawrence Counties have enrolled dairy farmers in farm business management projects for a number of years. For 1968, eighty-eight farmers in the four counties submitted their records for summary and analysis by the Department of Agricultural Economics. The figures for each farm were checked, put on electronic data cards, and put through a computer for summary and analysis. The group results for this Northern New York area are presented in this workbook.

The number of cooperators for the four counties were: Clinton 22, Franklin 20, Jefferson 23, and St. Lawrence 23.

This report is organized so that you can systematically summarize and analyze your farm business by going page by page through the report. Spaces are available for filling in the figures for your farm or any specific farm that you may want to study.

An individual may use this workbook to study his business or it can be used by a group as a basis for a farm management discussion. In addition to the members of the Farm Business Management Projects, this report should be useful to other dairymen in the county, to teachers of agriculture, other agency representatives, and to agribusinessmen in the area.

This summary was prepared by C. A. Bratton, Department of Agricultural Economics, New York State College of Agriculture, in cooperation with Cooperative Extension Agents, Merle W. Reese, Clinton County; William B. Andrews, Franklin County; William B. Craine, Jr., Jefferson County; and Daniel H. Albro, St. Lawrence County.



GOOD MANAGEMENT IS BASIC

How do you measure up?

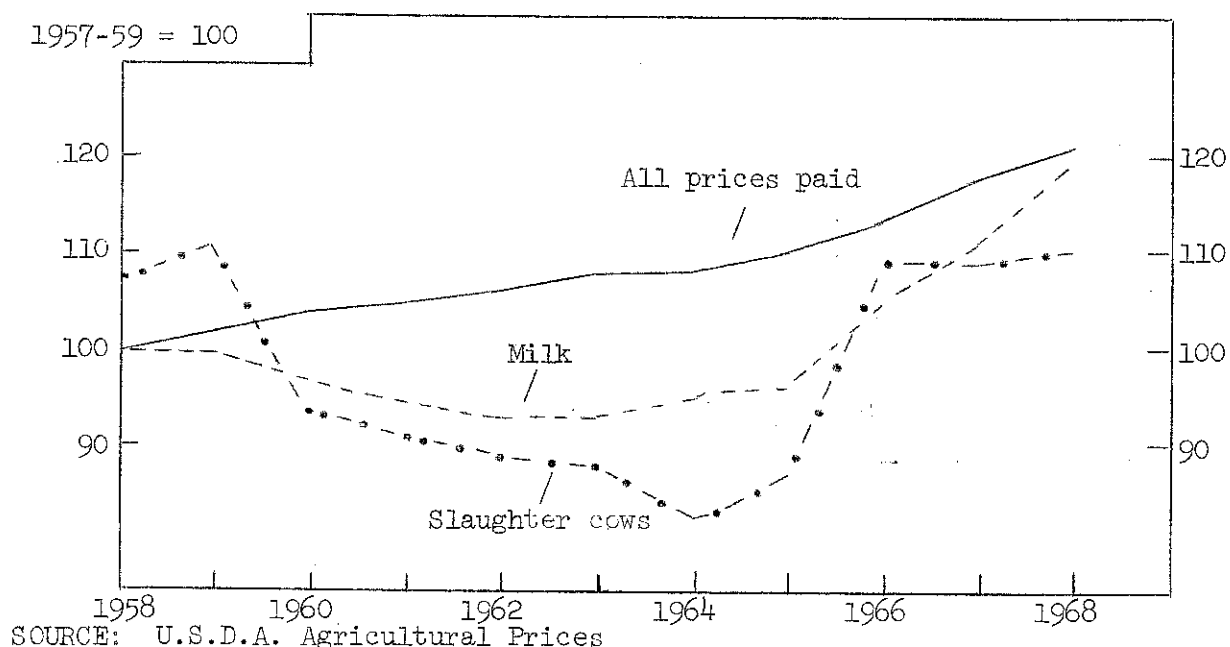
1. Have you developed a systematic approach to management problems?
2. Do you have the facts on your business?
3. Are you improving your managerial skills?

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



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

Part I is designed to help you systematically summarize your business.

Physical Resources

Available resources determine what a farmer can do. Limited resources restrict income. In analyzing a farm business, we first look at the people, the livestock, and the land resources that were used.

LABOR, LIVESTOCK, AND LAND RESOURCES USED
88 Northern New York Farms, 1968

Item	My farm	Average 88 farms	Range	
			Low	High
<u>Labor (months)</u>				
Operator	_____	13.1		
Family paid	_____	1.8		
Family unpaid	_____	2.7		
Hired & other	_____	5.3		
Total	_____	22.9		
Man equivalent	_____	1.9	1.0	4.4
<u>Livestock (number)</u>				
Cows	_____	55	17	131
Heifers	_____	40	11	134
<u>Crops (acres grown)*</u>				
Hay	_____	(87) 89*	18	250
Grass silage	_____	(12) 31*	10	100
Corn silage	_____	(75) 37*	4	113
Oats	_____	(40) 26*	3	110
Total Acres of Crops*	_____	148	45	368

* Average for farms reporting so acres do not add to total.

Number of farms growing is in parenthesis.

The average man equivalent of 1.9 and a high of 4.4 indicates that these were "family farms." The amount of manpower on farms is one of the few factors that has shown no appreciable increase over the years.

Of the 88 farms, 33 reported DHIA production records, 33 had owner-sampler records, and 22 reported no production records.

Capital Investment

Capital is an important resource in a farm business. The end-of-year inventory is used as the measure of capital investment. The amounts reflect the "fair market value" or what things might bring at a well-attended sale.

FARM INVENTORY VALUES, JANUARY 1, 1969 88 Northern New York Farms

Item	My farm	Average 88 farms	
		Amount	Percent
Machinery & equipment	\$ _____	\$24,256	25
Livestock	_____	24,661	26
Feed & supplies	_____	6,866	7
Land & buildings	_____	40,773	42
TOTAL INVESTMENT	\$ _____	\$96,556	100

Total investment on the 88 farms averaged \$97,000, but eleven farms had investments of over \$150,000 while fourteen farms were below \$50,000. The cattle and machinery inventory was greater than the land and buildings.

Below are some measures used in analyzing how efficiently the capital was used:

CAPITAL INVESTMENT ANALYSIS

Item	My farm	Average 88 farms 1968	Average 548 N. Y. farms 1967
Total investment/man	\$ _____	\$50,800	\$48,300
Total investment/cow	\$ _____	\$1,760	\$1,800
Machinery investment/cow	\$ _____	\$441	\$397
Land & buildings/cow	\$ _____	\$741	\$834
Land & buildings/crop acre	\$ _____	\$275	\$308

Real estate values for dairy farms are sometimes related to the number of cows the farm can carry or the acres of cropland. The average land and buildings value per cow was nearly \$750 and the per acre of cropland value was \$275. These are useful guidelines when you consider what a farm might be worth.

Receipts

"You've got to make a gross before you can make a net," is an old business saying. The manager must make sure the farm business maintains enough total receipts to cover the expenses and a reasonable return for the operator.

FARM RECEIPTS
88 Northern New York Farms, 1968

Item	My farm	Average 88 farms	
		Amount	Percent
Milk sales	\$ _____	\$35,378	87
Livestock sales	_____	3,528	9
Egg sales	_____	484	1
Crop sales	_____	324	1
Machinery sales	_____	99	--
Government payments	_____	164	1
Work off farm	_____	150	--
Custom machine work	_____	154	--
Gas tax refunds	_____	103	--
Other	_____	470	1
Total Cash Farm Receipts	\$ _____	\$40,854	100
Increase in Inventory	_____	8,453	
TOTAL FARM RECEIPTS	\$ _____	\$49,307	

Av. price/cwt. milk sold	\$ _____	\$5.40	
Milk sales/cow	\$ _____	\$643	

Increases in inventory are included in the farm receipts since these items could have been sold and turned into cash and still have the same business at the end of the year as at the beginning. The costs of producing or acquiring these items are included in the expenses. Seventy-eight of the farms had increases ranging from \$80 to \$57,000. The increases averaged about \$3,000 for machinery, \$2,000 for cattle, \$3,100 for land and buildings, and \$300 for feed and supplies.

The average price received for milk was \$5.40 with a range from \$4.78 to \$6.77. The New York State average for 1968 was reported as \$5.43.

Expenses

Controlling expenditures is an important job of the manager of any business. The first step in this control is to know what the expenses are and how they compare with others in similar businesses.

FARM EXPENSES
88 Northern New York Farms, 1968

Item	My farm	Average 88 farms	
		Amount	Percent
Hired labor	\$ _____	\$ 2,313	10
Dairy concentrate	_____	9,242	41
Other feed	_____	377	2
Machine hire	_____	174	1
Machinery repairs	_____	1,271	6
Auto expense (farm share)	_____	284	1
Gas and oil	_____	1,023	5
Breeding fees	_____	400	2
Veterinary and medicine	_____	567	2
Other livestock expense	_____	1,158	5
Lime and fertilizer	_____	1,344	6
Seeds and plants	_____	339	1
Bale ties	_____	53	--
Spray, other crop expense	_____	354	2
Land, building, fence repair	_____	800	4
Taxes	_____	961	4
Insurance	_____	693	3
Electricity (farm share)	_____	564	2
Telephone (farm share)	_____	126	--
Rent	_____	226	1
Miscellaneous	_____	388	2
Total Cash Operating Expenses	\$ _____	\$22,657	100
New machinery	_____	6,097	
Real estate	_____	3,376	
Livestock purchases	_____	1,379	
Unpaid labor	_____	801	
Decrease in inventory	_____	--	
TOTAL FARM EXPENSES	\$ _____	\$34,310	

Financial Summary of Year's Business

The income from a farm business can be measured in several ways. Five measures have been calculated in this summary.

Farm income measures the return from the business to all capital and the operator's labor and management. Farm income is the difference between total receipts, including increase in inventory, and total expenses, including decrease in inventory but excluding interest payments.

LABOR INCOME 88 Northern New York Farms, 1968

Item	My farm	Average 88 farms	
		Amount	Percent
Total farm receipts	\$ _____	\$49,307	100
Total farm expenses	_____	34,310	70
FARM INCOME	\$ _____	\$14,997	
Interest on av. capital @ 5%	_____	4,616	9
Labor Income per Farm	\$ _____	\$10,381	21
Number of operators	_____	96	
LABOR INCOME PER OPERATOR	\$ _____	\$ 9,516	

Labor income is the return to the farm operator for his labor and management. This is the measure most commonly used when studying or comparing farm businesses. To get the labor income, a five percent interest charge on all capital is subtracted from the farm income. (Interest paid on debts is not included in the farm expenses.) The interest charge reflects what the operator could earn if this money were invested somewhere else. (An opportunity cost.)

The average labor income per operator for the 88 farms was \$9,516 but the range was from minus \$1,400 to \$32,000. The distribution is shown below:

<u>Labor income</u>	<u>Number farms</u>
Minus	2
0 - \$4,999	16
\$5,000 - \$9,999	33
\$10,000 - \$14,999	22
\$15,000 - \$19,999	8
\$20,000 or more	7

If one wishes to compare the labor income of the farm operator with the earnings of a non-farm worker, the cash value of the house and other privileges provided by the farm business must be added to the labor income.

FARM CASH FLOW
88 Northern New York Farms, 1968

Item	My farm	Average 88 farms
Total cash receipts	\$ _____	\$40,854
Total cash operating expense	_____	<u>22,657</u>
NET FARM CASH FLOW	\$ _____	\$18,197
Family cash living expenses*	_____	<u>5,891</u>
Cash for other uses	\$ _____	\$12,306

* Estimated at \$5,400 per operator per year

Farm cash flow reflects the cash available from the year's operation of the farm business for family living, interest and debt payments, and new capital purchases or investments. A family may have had additional cash available if some member of the family had a non-farm income, or if money were inherited or borrowed.

Rate of return on investment is calculated by deducting a charge for the operator's labor from the "farm income." This is then divided by the average investment for the year to determine the rate of return on investment. In the above calculation, \$5,400 has been used as the value of the operator's labor. No charge has been deducted for "management." This would be included in the return on investment.

RATE OF RETURN ON INVESTMENT
88 Northern New York Farms, 1968

Item	My farm	Average 88 farms
Farm income	\$ _____	\$14,997
Value of operator's labor*	_____	<u>5,891</u>
Return on investment	\$ _____	\$ 9,106
Average capital investment	\$ _____	\$92,330
RATE OF RETURN ON INVESTMENT	_____ %	9.9%

* \$5,400 per operator. Some farms had more than one operator.
Value of operator's labor excludes privileges.

PART II - ANALYSIS OF THE FARM BUSINESS

The manager of a business aims to combine the resources in such a way that they will give a good income. In doing this, he makes use of the known farm business management principles. However, once a business is operating, the manager must keep close watch for leaks in the operation. He can do this by analyzing the operation on the basis of the important business factors. On the pages that follow, you can examine several business factors for your operation.

Size of Business

In general, large farms pay better than small farms. Large farms benefit from "economies of scale" - a basic economic principle. For example, investments in machinery can be used more efficiently on larger operations. The large farm also has more units on which to make a profit, thus making use of the "multiplier effect" discussed in general economics. This multiplier effect, however, operates on losses as well as profits, so large farms poorly managed can lose more.

MEASURES OF SIZE OF BUSINESS
88 Northern New York Farms, 1968

Measure	My farm	Average 88 farms 1968	Average 548 N. Y. farms 1967
Number of cows	_____	55	51
Pounds of milk sold	_____	655,400	616,600
Man equivalent	_____	1.9	1.9
Total work units	_____	673	594

Eighteen of the 88 farms sold more than a million pounds of milk in 1968. Volume of output is one measure of size.

In the table below, the 548 New York farms for 1967 are sorted according to number of cows and the labor income is shown for each size group.

COWS PER FARM AND LABOR INCOME
548 N. Y. Dairy Farms, 1967

Number of cows	Number of farms	Labor income/operator
Less than 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 more	27	\$13,360

Rates of Production

Good production per animal and per acre are important factors affecting farm incomes. However, these high rates of production must be obtained at reasonable costs. Below are some measures of rates of production.

MEASURES OF RATES OF PRODUCTION 88 Northern New York Farms, 1968

Measure	My farm	Average 88 farms 1968	Average 548 N. Y. farms 1967
Lbs. of milk sold/cow	_____	11,900	12,100
Tons of hay/acre	_____	2.7	2.6
Tons of corn silage/acre	_____	15	17
Bushels of oats/acre	_____	57	50

Pounds of milk sold per cow is the measure used most frequently in examining rates of production. Good crop yields are important in keeping costs under control. The range in milk sold per cow was from 6,100 to 16,000 and corn silage from 6 to 24 tons per acre.

The relationship of pounds of milk sold per cow and labor income is shown below. It will be noted that high rates of production paid in all size groups. Also, the large group had a higher percent of the farms with the higher rates of production.

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		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
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

It is of interest to note that at all production levels the larger farms had higher incomes. The above table illustrates the effects of both rates of production and size.

Labor Efficiency

A farmer is marketing his labor and that of those working for him. Since the return is based on the amount of product sold, he must keep alert to the efficiency of labor as measured in output or accomplishments. Labor efficiency is closely correlated with labor income. Below are common measures of labor efficiency.

MEASURES OF LABOR EFFICIENCY
88 Northern New York Farms, 1968

Measure	My farm	Average 88 farms 1968	Average 548 N. Y. farms 1967
Lbs. of milk sold/man	_____	344,900*	324,500
Number of cows/man	_____	29	27
Work units/man	_____	354	313
Crop acres/man	_____	78	66

* Average test 3.6%

Pounds of milk sold per man is the most commonly used measure of labor efficiency on dairy farms. The average for the 88 farms was 345,000 pounds per man. This ranged from 96,000 to 637,000. Some accomplished much more than others.

The relationship of pounds of milk sold per man and labor income for three size groups in 1967 is shown below. A positive relationship is shown for all three herd sizes. The large herds had the largest spread in income between the low output per man and the high output as measured in pounds of milk per man.

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 and over	2	6,499	23	9,090	29	13,513

Cost Control

Farm expenses on dairy farms take about 70 percent of the gross receipts. The total expenses per cow average about \$600. These 88 Northern New York farms in 1968 spent an average of about \$95 per day. These all point toward the importance of good expense or cost control.

Feed Costs

Feed is the number one cost item on most dairy farms. It is for this reason that feed costs are examined first in the cost control section. Numerous factors enter into feed cost control. Some of these are reported in the table below:

ITEMS RELATED TO FEED COSTS
88 Northern New York Farms, 1968

Item	My farm	Average 88 farms 1968	Average 548 N. Y. farms 1967
<u>Feed Expense</u>			
Dairy feed purchased	\$ _____	\$9,242	\$8,440
Feed purchased as % of milk receipts	_____ %	26%	26%
Feed purchased per cwt. of milk sold	\$ _____	\$1.41	\$1.37
Feed purchased per cow	\$ _____	\$168	\$165
Crop expense per cow	\$ _____	\$38	\$45
Total feed & crop expense/cow	\$ _____	\$206	\$210
Total feed & crop expense per cwt. of milk sold	\$ _____	\$1.73	\$1.74
<u>Roughage Harvested</u> (hay equivalent)			
Hay (tons)	_____	240	182
Corn silage (tons ÷ 3)	_____	158	136
Hay crop silage (tons ÷ 2 or 3)*	_____	9	13
Total tons hay equivalent	_____	407	331
Tons hay equivalent per cow	_____	7.4	6.5
<u>Other Considerations</u>			
Acres in crops per cow	_____	2.7	2.5
Lime and fertilizer expense/cow	\$ _____	\$24	\$30
Lime and fertilizer expense per crop acre	\$ _____	\$9	\$12
Number of heifers per ten cows	_____	7.3	6.5

* Depending on moisture content of silage

Power and Machinery Costs

The trend has been to substitute machinery for labor on dairy farms. This increases the importance of analyzing the power and machinery costs. Net power and machinery costs usually accounts for about one-fifth of the total farm expenses. Below are some measures used in analyzing machinery costs.

POWER AND MACHINERY COSTS*
88 Northern New York Farms, 1968

Item	My farm	Average 88 farms 1968	Average 548 N. Y. farms 1967
Beginning inventory	\$ _____	\$21,303	\$17,808
New machinery purchased	_____	6,097	5,128
Total (No. 1)	\$ _____	\$27,400	\$22,936
End inventory	\$ _____	\$24,256	\$20,251
Machinery sold	_____	99	131
Total (No. 2)	\$ _____	\$24,355	\$20,382
Depreciation (Total No. 1 minus Total No. 2)	\$ _____	\$ 3,045	\$ 2,554
Interest @ 5% on av. inventory	_____	1,139	952
Gas and oil	_____	1,023	922
Machinery repairs	_____	1,271	1,310
Bale ties	_____	53	84
Milk hauling	_____	80	424
Machine hire	_____	174	179
Auto expense (farm share)	_____	284	219
Electricity (farm share)	_____	564	510
Total power and machinery cost	\$ _____	\$ 7,633	\$ 7,154
Less:			
Gas tax refund	\$ _____	\$103	\$93
Income from machine work	_____	154	97
		257	190
NET POWER AND MACHINERY COST	\$ _____	\$ 7,376	\$ 6,964
<hr/>			
Net machinery cost:			
per cow	\$ _____	\$134	\$137
per crop acre	\$ _____	\$50	\$56
per cwt. milk sold	\$ _____	\$1.12	\$1.13
per man	\$ _____	\$3,882	\$3,665

* Does not include insurance, housing or value of labor used in operation or repair

Labor and Machinery Costs

The primary justification given for more mechanization is to reduce labor costs. However, if a machine is added without expanding size or reducing the labor force, costs will be increased. "Labor and machinery cost" provides a measure of the efficiency of the operator's machinery and labor combination.

LABOR AND MACHINERY COSTS 88 Northern New York Farms, 1968

Item	My farm	Average 88 farms 1968	Average 548 N. Y. farms 1967
Labor cost:			
Value of operator's labor*	\$ _____	\$ 5,891	\$ 6,011
Hired labor	_____	2,313	2,147
Unpaid family labor	_____	801	825
Total labor cost	\$ _____	\$ 9,005	\$ 8,983
Net power and machinery cost	_____	7,376	6,964
TOTAL LABOR & MACHINERY COST	\$ _____	\$16,381	\$15,947

Labor cost:			
per cow	\$ _____	\$164	\$176
per cwt. milk sold	\$ _____	\$1.37	\$1.46
Labor and machinery cost:			
per cow	\$ _____	\$298	\$313
per cwt. milk sold	\$ _____	\$2.50	\$2.59

* Valued at \$5,400 per operator. Some farms had more than one operator.

Wage rates paid for hired labor is a factor affecting total labor costs. For the 548 farms, the average labor expense per month of hired labor was calculated for the farms hiring three months or more of labor (295 farms). The farms were sorted on the basis of the labor expense per month. In general, the farms paying higher wages sold more pounds of milk per man and had higher labor incomes.

LABOR EXPENSE PER MONTH OF HIRED LABOR AND LABOR INCOME 295 New York Dairy Farms, 1967

Labor expense per month	Number of farms	Months hired	Number of cows	Milk sold per man (lbs.)	Labor income
Less than \$200	42	8	43	286,400	\$ 7,938
\$200 - \$249	52	9	54	324,500	8,160
\$250 - \$299	52	12	62	330,500	8,400
\$300 - \$349	49	12	66	349,000	9,016
\$350 - \$399	46	13	61	333,300	8,431
\$400 & over	54	15	74	382,800	10,721

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 sold per man
105	1,269,200	15,300	4.1	25	43	531,700
70	900,700	14,000	3.3	21	35	428,900
59	739,600	13,300	3.0	20	32	385,600
54	653,300	12,900	2.8	18	29	357,800
48	582,400	12,500	2.5	17	27	334,400

44	530,400	11,900	2.3	16	26	313,400
40	467,600	11,500	2.1	15	24	288,200
36	421,500	11,000	1.9	14	22	260,100
32	361,900	10,200	1.4	12	20	228,400
25	262,600	8,500	.8	9	17	179,500

* These farms are considerably above the average for all farms in New York State. For 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 percent, 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.

<u>Cost Control</u>			
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
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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

Factors 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.

STRONG POINTS:

WEAK 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
<u>Capital Investment (end of year)</u>				
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
<u>Receipts</u>				
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
<u>Expenses</u>				
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
<u>Financial Summary</u>				
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
<u>Capital Investment (end of year)</u>				
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
<u>Receipts</u>				
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
<u>Expenses</u>				
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
<u>Financial Summary</u>				
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
<u>Size of Business</u>				
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
<u>Rates of Production</u>				
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
<u>Labor Efficiency</u>				
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
<u>Feed Costs</u>				
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
<u>Machinery Costs</u>				
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
<u>Capital Efficiency</u>				
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%
<u>Other</u>				
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
<u>Size of Business</u>				
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
<u>Rates of Production</u>				
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
<u>Labor Efficiency</u>				
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
<u>Feed Costs</u>				
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
<u>Machinery Costs</u>				
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
<u>Capital Efficiency</u>				
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%
<u>Other</u>				
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

IV. Estimating changes in receipts and expenses

	<u>Present</u>	<u>Net change (plus or minus)</u>	<u>Future with change</u>
A. <u>Receipts</u>			
Milk sales, gross	\$ _____	\$ _____	\$ _____
Livestock sales	_____	_____	_____
Crop sales	_____	_____	_____
Miscellaneous receipts	_____	_____	_____
Total Cash Receipts	\$ _____	\$ _____	\$ _____
Increase in inventory	_____	_____	_____
Total Farm Receipts	\$ _____	\$ _____	\$ _____
B. <u>Expenses</u>			
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. <u>Financial Summary</u>			
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

<u>Capital Investment</u>				
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

<u>Financial Summary</u>				
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

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.

PROGRESS OF THE FARM BUSINESS

One phase of business analysis is that of comparing your business with that of other farmers. Another kind of analysis is that of comparing your current year's business with that of previous years. This shows the progress you are making. In planning ahead, it is helpful to set business targets or goals, which should be related to the progress you have been making.

The monthly business analysis page of your December electronic report will give you a number of the factors for 1967 and 1968. You will need to refer to earlier records for the 1966 data.

	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u> <u>Target</u>
<u>Size of Business</u>				
Average number of cows				
Value of milk sales	\$ _____	\$ _____	\$ _____	\$ _____
Total milk sold (cwt.)	_____	_____	_____	_____
<u>Rate of Production</u>				
Milk sold per cow (lbs.)	_____	_____	_____	_____
<u>Labor Efficiency</u>				
Cows per man	_____	_____	_____	_____
Cwt. milk sold per man	_____	_____	_____	_____
<u>Prices</u>				
Price per cwt. milk	\$ _____	\$ _____	\$ _____	\$ _____
<u>Cost Control</u>				
Purchased concentrate per cow	\$ _____	\$ _____	\$ _____	\$ _____
% purchased feed is of milk	_____ %	_____ %	_____ %	_____ %
Labor charge per cow	\$ _____	\$ _____	\$ _____	\$ _____
Machine repairs, gas & oil/cow	\$ _____	\$ _____	\$ _____	\$ _____
Total operating expense/cow	\$ _____	\$ _____	\$ _____	\$ _____
<u>Capital Efficiency</u>				
Total inventory value	\$ _____	\$ _____	\$ _____	\$ _____
Total investment/cow	\$ _____	\$ _____	\$ _____	\$ _____
<u>Financial Summary</u>				
Total Farm Receipts	\$ _____	\$ _____	\$ _____	\$ _____
Total Farm Expenses	\$ _____	\$ _____	\$ _____	\$ _____
Labor Income/Operator	\$ _____	\$ _____	\$ _____	\$ _____
Total debt outstanding	\$ _____	\$ _____	\$ _____	\$ _____
Debt per cow	\$ _____	\$ _____	\$ _____	\$ _____
Net Worth	\$ _____	\$ _____	\$ _____	\$ _____

SELECTED DAIRY FARM BUSINESS SUMMARY FACTORS
Four Northern New York Counties, 1968

Item	Clinton	Franklin	Jefferson	St. Lawrence
Number of farms	22	20	23	23
<u>Size of Business</u>				
Number of cows	53	49	56	61
Pounds of milk sold	658,600	530,400	656,500	759,900
Crop acres	138	111	174	165
<u>Rates of Production</u>				
Lbs. milk sold per cow	12,400	10,800	11,700	12,500
Tons hay per acre	2.8	2.6	2.5	2.9
Tons corn silage per acre	16	16	13	16
<u>Labor Efficiency</u>				
Cows per man	27	31	29	31
Pounds milk sold per man	329,300	331,500	345,500	380,000
<u>Cost Control Factors</u>				
Machinery cost per cow	\$123	\$118	\$150	\$140
Feed bought per cow	\$201	\$158	\$150	\$164
% Feed is of milk receipts	29%	27%	24%	24%
<u>Capital Efficiency</u>				
Total investment	\$99,848	\$75,815	\$99,690	\$108,309
Total investment per cow	\$1,884	\$1,547	\$1,780	\$1,776
Machinery investment per cow	\$379	\$388	\$468	\$506
<u>Other</u>				
Price per cwt. milk sold	\$5.49	\$5.35	\$5.31	\$5.46
Lime & fertilizer expense/cow	\$24	\$21	\$23	\$28
Labor income per cow	\$198	\$160	\$186	\$204
<u>Financial Summary</u>				
Total farm receipts	\$52,224	\$38,094	\$48,497	\$56,923
Total farm expenses	\$36,945	\$26,793	\$33,308	\$39,329
Labor income per operator	\$9,238	\$7,452	\$9,602	\$11,440

Financial Situation

Managing finances is an important part of farming today. It is helpful to examine your financial situation when you analyze your business.

Fifteen Jefferson County cooperators submitted information on their assets, liabilities, and net worth. These have been summarized and reported below. These can be used for comparison purposes.

FARM FAMILY FINANCIAL SITUATION
15 Jefferson County Farms, 1968

Item	My farm	Average 15 farms
<u>Farm Assets</u>		
Machinery & equipment	\$ _____	\$22,645
Livestock	_____	23,154
Feed & supplies	_____	6,726
Land & buildings	_____	35,069
Total farm assets	\$ _____	\$87,594
<u>Non-farm assets</u>		
Cash on hand or in bank	\$ _____	\$ 2,351
Stocks and bonds	_____	2,437
Household goods	_____	2,824
Life insurance cash value	_____	2,270
Personal auto	_____	880
Accounts receivable	_____	621
Other	_____	325
Total non-farm assets	\$ _____	11,708
Total Financial Assets	\$ _____	\$99,302
Total debts	\$ _____	32,671
NET WORTH	\$ _____	\$66,631

% equity	_____ %	67%
Total debt payments 1968	\$ _____	\$ 7,403
Number of cows	_____	50
Total debt per cow	\$ _____	\$653
Debt payments per cow	\$ _____	\$148