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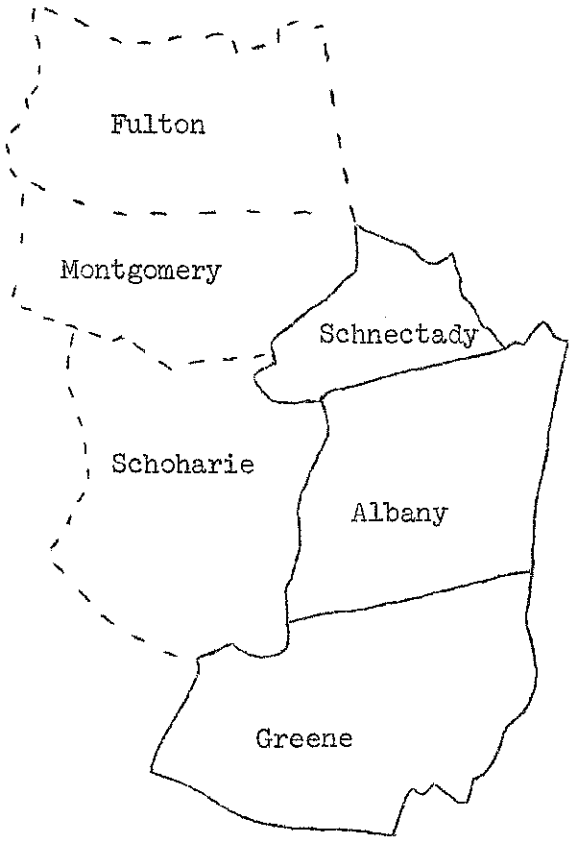
CAPITAL DISTRICT REGION

1968 DAIRY FARM BUSINESS SUMMARY



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CAPITAL DISTRICT REGION FARM BUSINESS SUMMARY - 1968

This report summarizes the records of 36 Capital District dairy farmers who in 1968 participated in business management projects sponsored by the Cooperative Extension Service in Albany, Greene, Schenectady, Montgomery, Schoharie and Fulton 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. Montgomery, Schoharie and Fulton County records have been included to provide a larger number of farms in the summary.

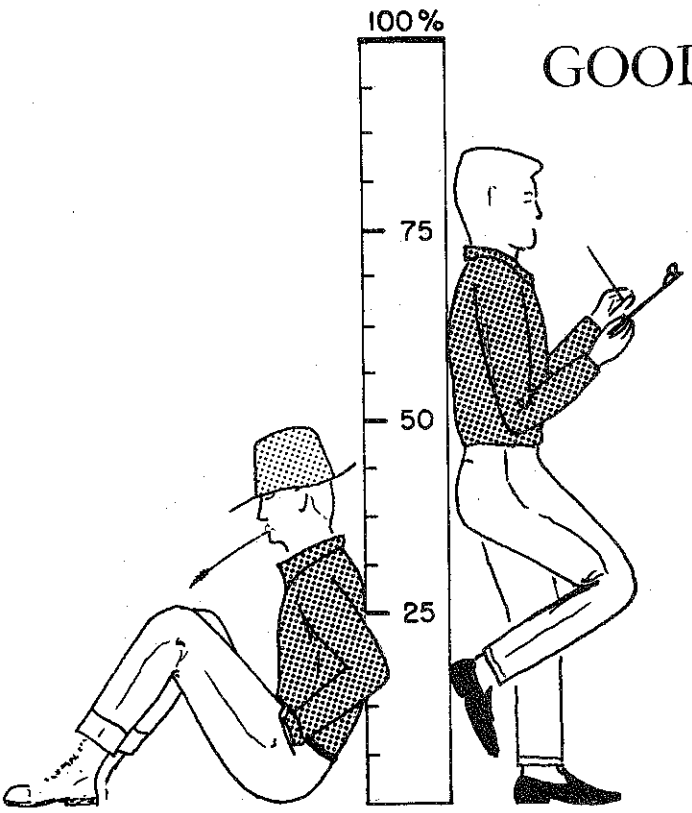
One of the purposes of the business management projects is to teach and encourage farmers to keep better records. A more important purpose is to teach farmers to use the records as a basis for sound management decisions. Each farmer has the opportunity to participate for a period of time. He should learn 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 Capital District 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 comparisons 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: Leonard M. Palmer, Albany; William E. Schumacher, Greene; Walter Durniak, Schenectady; and John S. Adams, Fulton, Montgomery and Schoharie.



GOOD MANAGEMENT IS BASI(

How do you measure up ?

1. Have you developed a systematic approach to management problems?

2. Do you have the facts on your business?

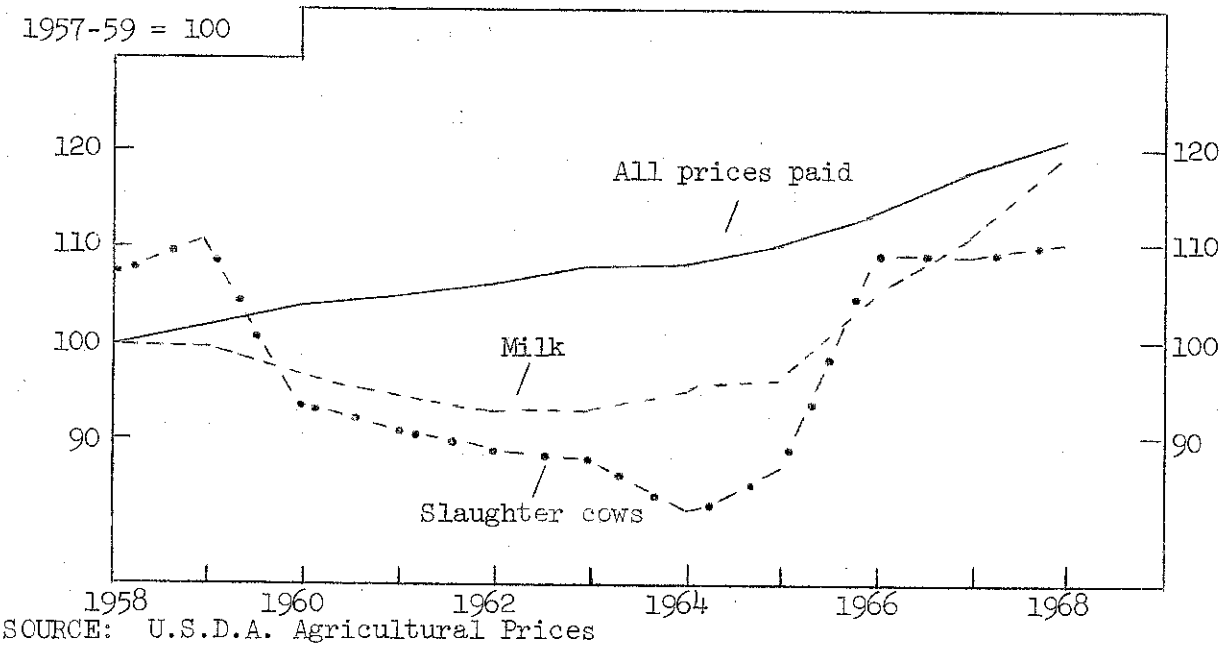
3. Are you improving your managerial skills?

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 Capital District Region dairy farms.

FARM ORGANIZATION

Item	Average of 548 New York farms, 1967	My farm	36 Capital District farms, 1968 Average	Range Low	Range High
Labor:					
Man equivalent	1.9	_____	1.8	1.0	4.1
Full-time hired men			(4 farms)		
Hired men part of year			(17 farms)		
Family help			(30 farms)		
Partnership			(5 farms)		
Livestock: (Av. Number)					
Cows	51	_____	44	19	100
Heifers	33	_____	32	10	91
Crops: (Acres grown)					
Hay	79 (495)**	_____	71 (34)*	0	200
Hay crop silage***	6 (112)*	_____	1 (5)*	0	25
Corn for silage	27 (452)*	_____	28 (33)*	0	100
Corn for grain	9 (205)*	_____	4 (8)*	0	35
Oats for grain	11 (252)*	_____	5 (13)*	0	24
Wheat	N.A.	_____	1 (6)*	0	15
Other crops	6 --	_____	5 --	--	--
Total crop acres	138	_____	115	41	230

* 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	36 Capital District farms, 1968 Average per farm	36 Capital District farms, 1968 Percent of total
Machinery and equipment	$20,250	$_____	$21,688	24
Cattle	22,160	_____	21,473	24
Poultry	--	_____	16	--
Other livestock	--	_____	58	--
Feed and supplies	6,840	_____	5,929	7
Land and buildings	42,560	_____	40,818	45
Total Investment	$91,810	$_____	$89,982	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	Average of 36 Capital District farms, 1968
Machinery and equipment per cow	$ 397	$_____	$ 493
Land and buildings per cow	$ 834	$_____	$ 928
Total Investment per cow	$ 1,800	$_____	$ 2,045
Total Investment per man	$48,321	$_____	$ 4,999
Total Investment per crop acre	$ 665	$_____	$ 782
Real Estate Investment/crop acre	$ 308	$_____	$ 355
Capital turnover*	2.5 years	_____ years	2.4 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	36 Capital District farms, 1968 Average per farm	36 Capital District farms, 1968 Percent of total
Milk sales	$32,347	$_____	$31,355	84
Livestock sold	3,283	_____	3,039	8
Egg sales	--	_____	19	--
Crop sales	133	_____	2,080	6
Miscellaneous*	1,032	_____	942	2
TOTAL CASH RECEIPTS	$36,795	$_____	$37,435	100
Increase in inventory	7,514	_____	4,250	
TOTAL FARM RECEIPTS	$44,309	$_____	$41,685	

* 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 - $1,849, Livestock - $961, Land and Buildings - $1,718. The Feed and Supply inventory decreased an average of $338. The net increase in inventory of $4,250 also includes some increase in other livestock.

SELECTED INCOME FACTORS

	Average of 548 New York farms, 1967	My farm	36 Capital Distr farms, 1968
Average price per cwt. of milk sold	$ 5.25	$_____	$ 5.55
Milk sales per cow	$ 634	$_____	$ 713
Total cash receipts per man	$19,366	$_____	$20,797

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	36 Capital District farms, 1968	
			Average per farm	Percent of total
Hired Labor	$ 2,147	$_____	$ 1,717	8
Dairy feed bought	8,440	_____	8,276	40
Other feed bought (includes hay)	200	_____	77	--
Machine hire	179	_____	292	1
Truck, tractor, machinery expense	1,310	_____	1,269	6
Auto expense (farm share)	219	_____	290	1
Gasoline and oil	922	_____	861	4
Breeding fees	347	_____	345	2
Veterinary and medicine	529	_____	692	3
Other dairy, livestock expense	1,461	_____	1,258	6
Lime & fertilizer	1,511	_____	1,320	7
Seeds and plants	414	_____	411	2
Spray, other crop expense	364	_____	895	5
Building, fence expense	611	_____	626	3
Taxes, insurance	1,431	_____	1,242	6
Electricity, telephone (farm share)	628	_____	618	3
Miscellaneous	580	_____	607	3
TOTAL CASH OPERATING EXPENSES	$21,293	$_____	$20,797	100
New machinery	5,128	_____	4,636	
New buildings, improvements	2,867	_____	1,892	
Livestock purchased	1,432	_____	954	
Unpaid family labor	825	_____	1,067	
Decrease in inventory	--	_____	--	
TOTAL FARM EXPENSES	$31,545	$_____	$29,346	

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	Average of 36 Capital District farms, 1968
Total Cash Receipts	$36,795	$_____	$37,435
Total Cash Operating Expenses	- 21,293	- _____	- 20,797
FARM CASH OPERATING INCOME	$15,502	$_____	$16,638
Less: Family Living Expense*	- 6,011	- _____	- 6,149
Amount available for debt payments and purchase of capital items	$ 9,491	$_____	$10,489

* Estimated cash living expenses @ $5,400 per operator. The 548 New York farms averaged 1.1 operators per farm and the 36 Capital District farms averaged 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 dolla in your business during the year. Labor Income is a much better measure of wh the business did for you during the year.

LABOR INCOME

Item	Average of 548 New York farms, 1967	My farm	Average of 36 Capital District farms, 1968
Average capital investment	$88,050	$_____	$87,657
TOTAL FARM RECEIPTS	$44,309	$_____	$41,685
TOTAL FARM EXPENSES	- 31,542	- _____	- 29,346
FARM INCOME	$12,764	$_____	$12,339
Interest on capital at 5%	- 4,402	- _____	- 4,393
LABOR INCOME per farm	$ 8,362	$_____	$ 7,946
Number of operators	610	_____	41
LABOR INCOME per operator	$ 7,511	$_____	$ 6,977

"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	Average of 36 Capital District farms, 1968
Farm Income	$12,764	$_____	$12,339
Value of Operator's Labor*	- 6,011	- _____	- 6,149
Return on Investment	$ 6,753	$_____	$ 6,190
Rate of Return on Capital	7.7%	_____%	7.1%

* $5,400 per year. There were 41 operators on the 36 Capital District 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 abili 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	
		36 Capital District farms, 1968	548 New York farms, 1967
Number of cows	_____	44	51
Pounds of milk sold	_____	565,300	616,600
Man equivalent	_____	1.8	1.9
Total work units	_____	525	594

In the following table, the New York dairy farms have been sorted into va size groups. For each size group the average labor income per operator is sho Sorting the farms in this manner shows the relationship between size of busine 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	
		36 Capital District farms, 1968	548 New York farms, 1967
Pounds of milk sold per cow	_____	12,800	12,100
Tons of hay per acre	_____	2.5	2.6
Tons of corn silage per acre	_____	12	17
Bushels of oats per acre	_____	50	50
Bushels of corn grain per acre	_____	66	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		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

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: 36 Capital District farms, 1968	Average per farm: 548 New York farms, 1967
Number of cows per man	_____	44	27
Pounds of milk sold per man	_____	314,100	324,500
Work units per man	_____	296	313

The relationship between milk sold per man and labor income is illustrate 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: 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
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: 36 C. District farms, 1968	Average per farm: 548 New York farms, 1967
Purchased Feed			
Dairy feed bought	$_____	$ 8,276	$ 8,440
Feed bought per cow	$_____	$ 187	$ 165
Feed bought as % of milk receipts	_____%	26%	26%
Feed bought per cwt. of milk sold	$_____	$ 1.46	$ 1.37
Roughage Harvested (hay equivalent)			
Hay (tons)	_____	176 tons	182 tons
Hay crop silage (____ tons ÷ 3)	_____	3 tons	13 tons
Corn silage (____ tons ÷ 3)	_____	112 tons	136 tons
Total tons hay equivalent	_____	291 tons	331 tons
Tons hay equivalent per cow	_____	6.6 tons	6.5 tons
Other Considerations			
Total acres in crops per cow	_____	2.6 acres	2.5 acres
Lime & fertilizer expense/cow	$_____	$ 30	$ 30
Lime & fertilizer expense/crop acre	$_____	$ 11.48	$ 12
Heifer number as % of cow numbers	_____%	73%	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: 36 C. District farms, 1968	Average per farm: 548 New York farms, 1967
Beginning inventory	$_____	$19,839	$17,808
New machinery bought	_____	4,636	5,128
Total	$_____	$24,475	$22,93
End inventory	$_____	$21,688	$20,251
Machinery sold	_____	90	131
Total	$_____	$21,778	$20,38
Depreciation	$_____	$ 2,697	$ 2,55
Depreciation	$_____	$ 2,697	$ 2,55
Interest at 5% av. inventory	_____	1,038	95
Gas and oil	_____	861	92
Machinery and repairs	_____	1,269	1,3
Bale ties	_____	87	
Milk hauling	_____	224	4
Other machine hire	_____	292	1
Auto expense (farm share)	_____	290	2
Electricity (farm share)	_____	473	5
TOTAL MACHINERY COSTS	$_____	$ 7,231	$ 7,1
Gas tax refunds	$_____	$ 77	$ 93
Income from machine work	_____	14	97
Total	- _____	- 91	- 1
NET MACHINERY COST	$_____	$ 7,140	$ 6,9
Net machinery cost per cow	$_____	$ 162	$ 1
Net machinery cost per crop acre	$_____	$ 62	$
Net machinery cost per man	$_____	$ 3,967	$ 3,6
Net machinery cost/cwt. milk sold	$_____	$ 1.26	$ 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: 36 C. District farms, 1968	Average per farm: 548 New York farms, 1967
Value of operator's labor	$_____	$ 6,149	$ 6,011
Hired labor	_____	1,717	2,147
Unpaid family labor	_____	1,067	825
TOTAL LABOR COSTS	$_____	$ 8,933	$ 8,983
Net power and machinery cost	_____	7,140	6,964
TOTAL LABOR & MACHINERY COST	$_____	$16,073	$15,947
Total per cow	$_____	$ 365	$ 313
Total per crop acre	$_____	$ 140	$ 116
Total per man	$_____	$ 8,929	$ 8,393
Total per cwt. milk sold	$_____	$ 2.84	$ 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 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, e lowest cost is not necessarily the most profitable. In some cases, the "best" ght be somewhere near the average. Many things affect the level of these costs, d 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

ctors 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 ossible change should be studied in detail. The work sheet or budgeting form ound on pages 22 and 23 can be used for projecting the likely results of each lternative.

TRONG POINTS:

EAK 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	$ 8,1	$11,739
Interest on av. capital @ 5%	_____	1,843	2,81	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

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.

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