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1967
FARM
BUSINESS
SUMMARY
MONROE, NIAGARA,
GENESEE COUNTIES

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MONROE, NIAGARA, GENESEE COUNTIES
FARM BUSINESS SUMMARY
1967

This report is a summary of the 1967 farm business records of 22 Monroe, Niagara, and Genesee County dairymen. These farmers are cooperators in the Extension Service farm business management program of the three counties. There are approximately 40 counties in New York State in which such projects are operated in cooperation with the College of Agriculture at Cornell.

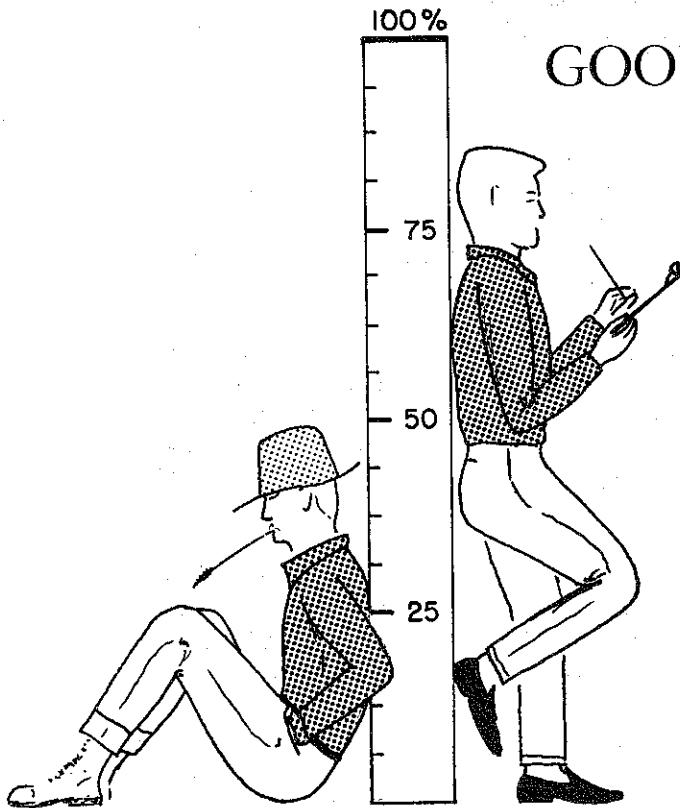
Farmers participating in the farm business management program keep financial and physical records of their farm business. Throughout the year Cooperative Extension Agents assist the farmers in keeping, closing and using their records. At the end of each year, the records are summarized by the Department of Agricultural Economics at Cornell and meetings are held to analyze the records and study the principles of farm business management.

Between 1960 and 1967 the number of dairy farmers in New York State decreased from approximately 40,200 to about 26,300. Projections based on this trend indicate that the number of dairymen in 1975 will be approximately 16,500. One of the major factors that will determine whether a dairyman of today is a dairyman in 1975 is his ability as a manager. 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 primary objective of these business management projects is to help cooperators do a better job of keeping and using records, and thus improve their skill as farm managers. This report has been prepared in workbook form for use in a systematic study of individual farm business operations. The 1966 data from 731 New York dairy farms and the 1967 data from the 22 Monroe, Niagara, and Genesee County dairymen can be used for comparison.

The summary and analysis presented in this booklet should also be useful to farmers in this area who are not enrolled in the business management projects. Others connected with the agriculture of the area, such as teachers of agriculture and farm credit representatives, should also find it useful in teaching farm management and analyzing farm businesses.

This summary was prepared by C. W. Loomis, Department of Agricultural Economics, New York State College of Agriculture, in cooperation with Herbert Johnson of the Monroe County Extension Service, Lucius Dickerson and Richard Pease of the Niagara County Extension Service, and Derwood Burns of the Genesee County Extension Service.



GOOD MANAGEMENT IS BASIC

How do you measure up?

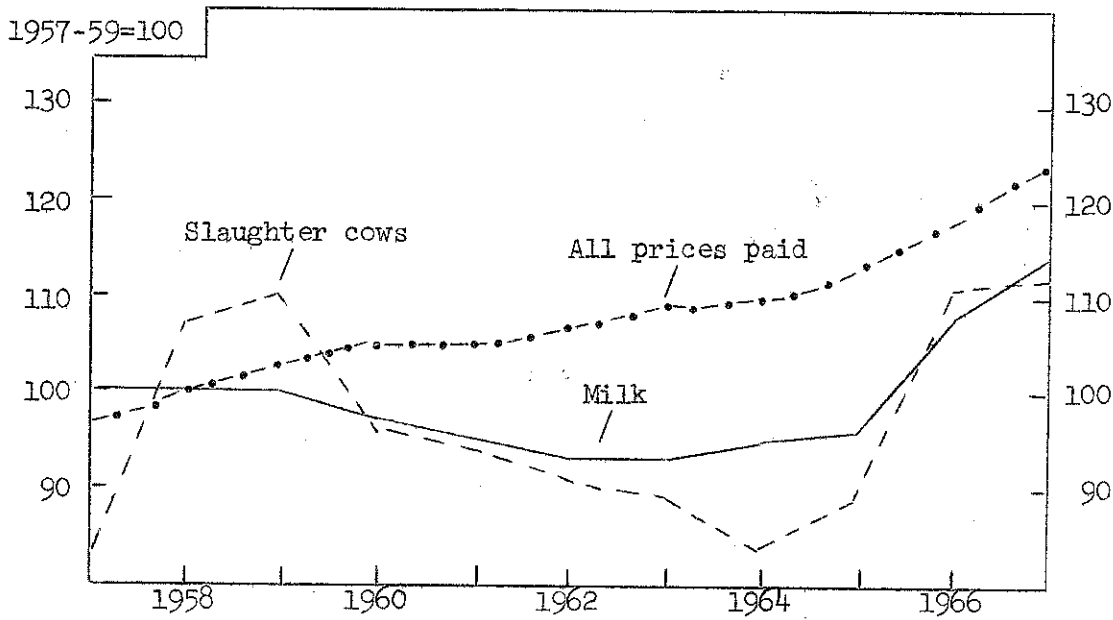
1. Have you developed a systematic approach to management problems?
2. Do you have the facts on your business?
3. Are you improving your managerial skills?

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 1967 averaged \$5.06 per hundredweight. This was 27 cents higher than the average for 1966 and 79 cents more than 1965. Cull dairy cow prices also were relatively good in 1967. The overall index of prices paid by New York dairy farmers rose six percent in 1967.

In recent years, prices of some farm inputs have risen much more than others. From 1960 to 1967, farm wages rose 39 percent, dairy cows rose 9 percent, and feed rose 13 percent, while fertilizer prices remained unchanged. These differences give rise to management questions concerning substitutions.

AVERAGE YEARLY PRICES RECEIVED AND PAID BY N. Y. FARMERS, 1960-67

Year	Milk (cwt.)	Slaughter cows (cwt.)	Dairy cows (head)	Dairy ration (cwt.)	Wages per month with house	Prices paid by New York dairymen
1960	\$4.31	\$15.00	\$278	\$3.55	\$210	105
1961	4.21	14.60	260	3.61	213	105
1962	4.14	14.26	245	3.68	218	107
1963	4.10	14.01	234	3.79	221	109
1964	4.21	13.17	237	3.72	227	110
1965	4.27	13.91	238	3.79	235	113
1966	4.79	17.35	269	4.00	258	118
1967*	5.06	17.52	303	4.00	291	124

* 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, expenses and business income in depth.

MANAGEMENT AND OTHER RESOURCES

We judge the manager of a business on the basis of how much net income he can make the business produce. But the resources a manager has or does not have may severely restrict his ability to produce. A farm manager with small amounts or low quality of land, livestock, equipment, labor, and capital cannot produce well when judged against a manager who has these resources in large amounts and high quality. Therefore, knowledge of what resources are available and how they are combined is fundamental to judging management performance. Below are listed some facts about the physical resources of this group of farms.

FARM ORGANIZATION

Items	My farm 1967	22 Monroe, Niagara, Genesee County farms, 1967			Average of 731 New York farms, 1966
		Average	Range		
			Low	High	
<u>Labor:</u>					
Man equivalent	_____	2.6	1.2	5.4	1.8
Full-time hired men		(10 farms)			
Hired men part of year		(4 farms)			
Family help		(11 farms)			
Partnerships		(7 farms)			
<u>Livestock:</u> (Av. number)					
Cows	_____	72	33	168	47
Heifers	_____	47	7	96	30

CAPITAL INVESTMENT

Capital investment gives an indication of the capital resources available to the business manager. His ability to borrow is another part of his capital resource.

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	My farm 1967	22 Mon., Niag., Gen. County farms, 1967		Average of 731 New York farms, 1966
		Average per farm	Percent of total	
Machinery and equipment	\$ _____	\$32,889	21	\$17,628
Cattle	_____	32,920	21	19,415
Poultry and other livestock	_____	238	--	100
Feed and supplies	_____	12,725	9	6,004
Land and buildings	_____	76,203	49	37,420
Total Investment	\$ _____	\$154,975	100	\$80,567

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	My farm 1967	Average per farm	
		22 Mon., Niag., Gen. County farms, 1967	731 New York farms, 1966
Machinery and equipment per cow	\$ _____	\$ 457	\$ 375
Land and buildings per cow	\$ _____	\$ 1,058	\$ 796
Total investment per cow	\$ _____	\$ 2,152	\$ 1,714
Total investment per man	\$ _____	\$59,606	\$44,759
Capital turnover*	_____ yrs.	2.8 yrs.	2.5 yrs.

* 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 and total receipts for this group of dairy farms.

FARM RECEIPTS

Item	My farm 1967	22 Mon., Niag., Gen. County farms, 1967		Average of 731 New York farms, 1966
		Average per farm	Percent of total	
Milk sales	\$ _____	\$44,705	80	\$27,570
Livestock sold	_____	5,557	10	3,079
Egg sales	_____	15	--	---
Crop sales	_____	3,071	5	372
Miscellaneous*	_____	2,551	5	1,017
TOTAL CASH RECEIPTS	\$ _____	\$55,899	100	\$32,038
Increase in inventory	_____	8,803		7,142
TOTAL FARM RECEIPTS	\$ _____	\$64,702		\$39,180

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

Total cash receipts amounted to \$55,899 per farm. The sale of milk, cull dairy cows and bob calves accounted for 90 out of every 100 dollars of cash receipts in this group of specialized dairy farms.

Increases in inventory resulting from more cows, more machinery and equipment, additions to buildings or a better feed situation are 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 is included in the farm expenses. For this group of farms, the net increase in inventory amounted to \$8,803 per farm.

SELECTED INCOME FACTORS

Factor	My farm 1967	Average per farm	
		22 Mon., Niag., Gen. County farms, 1967	731 New York farms, 1966
Average price per cwt. of milk sold	\$ _____	\$ 5.09	\$ 4.91
Milk sales per cow	\$ _____	\$ 621	\$ 587
Total cash receipts per man	\$ _____	\$21,500	\$17,798

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 are doing.

FARM EXPENSES

Item	My farm 1967	22 Mon., Niag., Gen. County farms, 1967		Average of 731 N. Y. farms, 1966
		Average per farm	Percent of total	
Hired labor	\$ _____	\$ 4,518	13	\$ 1,750
Dairy feed bought	_____	8,060	24	7,316
Other feed bought	_____	372	1	380
Machine hire	_____	407	1	199
Truck, tractor, machinery expense	_____	2,788	8	1,137
Auto expense (farm share)	_____	198	1	186
Gasoline and oil	_____	1,503	5	850
Breeding fees	_____	469	1	298
Veterinary and medicine	_____	566	2	438
Other dairy, livestock expense	_____	3,284	10	1,240
Lime and fertilizer	_____	3,680	11	1,443
Seeds and plants	_____	1,136	3	386
Spray, other crop expense	_____	801	2	302
Building, fence expense	_____	914	3	522
Taxes, insurance	_____	2,192	6	1,207
Electricity, telephone (farm share)	_____	935	3	543
Miscellaneous	_____	1,854	6	511
TOTAL CASH OPERATING EXPENSES	\$ _____	\$33,677	100	\$18,708
New machinery	_____	6,957		4,224
New buildings, improvements	_____	3,040		2,398
Livestock purchased	_____	2,262		1,387
Unpaid family labor	_____	845		392
Decrease in inventory	_____	---		---
TOTAL FARM EXPENSES	\$ _____	\$46,781		\$27,109

FINANCIAL SUMMARY OF THE YEAR'S BUSINESS

The pay-off in management is in net income. There are several ways of measuring net income or profit for any business, including a farm. Large corporate businesses often express profit as net income before taxes, as net income after taxes, or as net income per dollar of sales. One of the best measures of profit for a farm business is labor income.

FARM INCOME AND LABOR INCOME

Item	My farm 1967	Average per farm	
		22 Mon, Niag, Gen. County farms, 1967	731 New York farms, 1966
Average capital investment \$	_____	\$150,574	\$76,996
TOTAL FARM RECEIPTS	\$ _____	\$64,702	\$39,180
TOTAL FARM EXPENSES	_____	<u>46,781</u>	<u>27,109</u>
FARM INCOME	\$ _____	\$17,921	\$12,071
Interest on capital at 5%	_____	<u>7,531</u>	<u>3,850</u>
LABOR INCOME per farm	\$ _____	\$10,390	\$ 8,221
Number of operators on farms	_____	30	799
LABOR INCOMR per operator	\$ _____	\$ 7,619	\$ 7,522

Changes in inventories during the year are included in figuring farm income and labor income. Increases in inventories due to expanding the business are considered as farm receipts and decreases in inventories are included as farm expenses. Interest payments and payments on debts are not included in the farm expenses.

"Farm Income" is the difference between total receipts, including inventory increases, and total expenses, including inventory decreases, but not interest paid. Farm income is really the amount provided by the business to pay for the use of all capital and the labor and management of the operator.

"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 a charge for unpaid family labor and for interest on the capital invested. To make all farms comparable, a five percent interest charge on the average capital investment (average of beginning and end inventories) is deducted to get labor income. Labor income is the measure used most commonly when studying or comparing farm businesses.

Even in a very efficient and profitable dairy farm business, labor income can fluctuate markedly from year to year. Therefore, labor income over at least a three-year period should be studied before definite conclusions are drawn.

FARM CASH OPERATING INCOME AND INCOME AVAILABLE FOR DEBT REPAYMENT

Item	My farm 1967	Average per farm	
		22 Mon., Niag., Gen. County farms, 1967	731 New York farms, 1966
Total cash farm receipts	\$ _____	\$55,899	\$32,038
Total cash operating expenses	_____	33,677	18,708
FARM CASH OPERATING INCOME	\$ _____	\$22,222	\$13,330
Less: Family living expense	_____	6,800*	5,465
Income available for debt repayment and purchase of capital items	\$ _____	\$15,422	\$ 7,865

* Estimated at \$5,000 per operator per year. (Each farm had an average of 1.36 operators).

Farm Cash Operating Income indicates 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. The income available for debt repayment and purchase of capital items is the amount provided by the business for purchase of new machinery, livestock, real estate and interest and debt payments.

Both these measures help provide a picture of the "cash flow" of the farm business. They are not good measures of farm "profit" because changes in inventory are not included.

RETURN ON INVESTMENT

Item	My farm 1967	Average per farm	
		22 Mon., Niag., Gen. County farms, 1967	731 New York farms, 1966
Farm income	\$ _____	\$17,921	\$12,071
Value of operator's labor*	_____	7,344	5,902
Return on Investment	\$ _____	\$10,577	\$ 6,169
Average capital investment	\$ _____	\$150,574	\$76,996
Rate of return on capital	_____ %	7.0%	8.0%

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

Return on Investment is the average return to all capital invested in the farm business after a charge has been made for the value of the operator's labor. In the above calculation the operator's labor has been valued at \$5,400. Each farmer should use the value which, when added to the value of the use of his house and other privileges, equals what he could earn at another job.

PART II
ANALYSIS OF THE FARM BUSINESS

The key to success in farming is the overall management ability of the farm operator. This requires that he understand clearly, and more important, apply the basic principles of farm management in making management decisions.

This section of the report presents guidelines for using these principles to help you analyze the profitability of your farm business. The "averages" presented provide useful standards for comparison whereby the relative strong and weak points and major problem areas of your business can be uncovered. Also presented are figures from the summary and analysis of New York dairy farms in 1966 and tables showing the basic relationship of various management factors to farm profits.

SIZE OF BUSINESS

There are some basic principles of farm management which a farm manager should recognize and use in making business decisions and in studying his business.

In general, large farms pay better than small farms. Larger farms make it possible to use equipment and other resources more efficiently. Further, if each hundredweight of milk is produced at a given profit, the more milk produced, the more profit. However, some 50 cow farms make larger incomes than others with 100 cows. This can happen when costs or other business factors are not in balance with the size of the farm business.

MEASURES OF SIZE OF BUSINESS

Measures	My farm 1967	Average per farm	
		22 Mon., Niag., Gen. County farms, 1967	731 New York farms, 1966
Number of cows	_____	72	47
Pounds of milk sold	_____	78,300	561,000
Man equivalent	_____	2.6	1.8

In the following table, the 731 New York dairy farms have been sorted into various 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 farm profits.

COWS PER FARM AND LABOR INCOME
731 New York Dairy Farms, 1966

Number of cows	Number of farms	Labor income per operator
Less than 25	37	\$ 2,576
25-39	270	5,510
40-54	234	7,795
55-69	102	8,768
70-84	44	11,221
85-99	22	13,113
100 and over	22	14,121

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. Relatively few farmers have reached the point where the cost of an added input into milk or crop production is equal in value to the additional output.

MEASURES OF RATES OF PRODUCTION

Measure	My farm 1967	Average per farm	
		22 Mon., Niag., Gen. County farms, 1967	731 New York farms, 1966
Pounds of milk sold per cow	_____	12,200	11,900
Tons of hay per acre	_____	3.7*	2.5
Tons of corn silage per acre	_____	17*	14

* 10 farms

The relationship of production per cow to labor income on four sizes of farms is shown in the following table for the 731 New York dairy farms in 1966.

MILK SOLD PER COW AND LABOR INCOME BY SIZE OF FARM 731 New York Dairy Farms, 1966

Pounds milk sold per cow	Farms with under 30 cows		Farms with 30-49 cows		Farms with 50-69 cows		Farms with 70 or more cows	
	No. of farms	Labor income	No. of farms	Labor income	No. of farms	Labor income	No. of farms	Labor income
Less than 11,000	45	\$2,740	111	\$4,856	55	\$5,328	20	\$11,283
11,000-12,999	40	4,078	152	6,877	68	9,739	33	13,838
13,000 and over	24	6,073	108	8,830	42	11,360	33	14,299

LABOR EFFICIENCY

Labor efficiency has a strong influence on the profits of any business and is becoming increasingly important on dairy farms. This is in part due to a steady increase in the substitution of machinery for labor and also increased adoption of new technology. Here we will examine several measures of labor efficiency, the most important one to dairy farmers being milk sold per man.

MEASURES OF LABOR EFFICIENCY

Measure	My farm 1967	Average per farm	
		22 Mon., Niag., Gen. County farms, 1967	731 New York farms, 1966
Number of cows per man	_____	28	26
Pounds of milk sold per man	_____	337,800	311,700

The relationship between milk sold per man and labor income is illustrated in the table below. Clearly the effect of labor efficiency on labor income is strong.

MILK SOLD PER MAN AND LABOR INCOME BY HERD SIZE
731 New York Dairy Farms, 1966

Pounds milk sold per man	Farms with under 30 cows		Farms with 30-49 cows		Farms with 50-69 cows		Farms with 70 or more cows	
	No. of farms	Labor income	No. of farms	Labor income	No. of farms	Labor income	No. of farms	Labor income
Less than 250,000	71	\$2,980	108	\$4,780	21	\$4,040	1	\$ *
250,000-349,000	35	5,650	163	6,800	81	7,820	34	12,480
350,000 and over	3	7,600	100	9,130	63	11,460	51	14,100

* Too few farms to report averages

COST ANALYSIS

Keeping costs in line is one of the most important factors affecting farm profits today. This does not mean cutting costs to the point of reducing efficiency, but keeping on the lookout for unnecessary or unwise expenditures. Since feed, machinery and labor account for the lion's share of farm expenses, these cost items should be studied in detail.

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 1967	Average per farm	
		22 Mon., Niag., Gen. County farms, 1967	731 New York farms, 1966
<u>Purchased Feed</u>			
Dairy feed bought	\$ _____	\$ 8,060	\$ 7,316
Feed bought per cow	\$ _____	\$ 112	\$ 156
Feed bought as % of milk receipts _____%		18%	27%
Feed bought per cwt. of milk sold \$ _____		\$.92	\$ 1.30
<u>Roughage Harvested (hay equivalent)*</u>			
Hay (tons)	_____	305 tons	203 tons
Hay crop silage (___ tons ÷ 3)	_____	20 tons	15 tons
Corn silage (___ tons ÷ 3)	_____	<u>140</u> tons	<u>116</u> tons
Total tons hay equivalent	_____	465 tons	334 tons
Tons hay equivalent per cow	_____	8.3 tons	7.1 tons
<u>Other Considerations</u>			
Lime & fertilizer expense/cow	\$ _____	\$ 51	\$ 31
Number of heifers per 10 cows	_____	6.5	6.4

* Average of 10 farms

The above measures of harvested roughage consider only the quantity. Quality is also significant and has a bearing on purchased feed and milk production. Such things as overall quality, date first cutting was completed, percent legumes in the hay, and maturity of silage should be considered in evaluating and adjusting your roughage program.

POWER AND MACHINERY COSTS

Successful farm managers have substituted power and machinery for labor to a large degree. As this process continues, it is vitally important to retain control of the costs associated with owning and operating farm equipment. For this group of farms, power and machinery costs were 28 percent of the total farm expenses.

POWER AND MACHINERY COSTS*

Item	My farm 1967	Average per farm	
		22 Mon., Niga., Gen. County farms, 1967	731 New York farms, 1966
Beginning inventory	\$ _____	\$30,279	\$15,701
New machinery bought	_____	<u>6,957</u>	<u>4,224</u>
Total	\$ _____	\$37,236	\$19,925
End inventory	\$ _____	\$32,889	\$17,628
Machinery sold	_____	351	127
Total	\$ _____	<u>\$33,240</u>	<u>\$17,755</u>
Depreciation	\$ _____	\$ 3,996	\$ 2,175
Interest at 5% av. inventory	_____	1,579	83
Gas and oil	_____	1,503	85
Machinery repairs	_____	2,788	1,135
Bale ties	_____	128	11
Milk hauling	_____	1,853	44
Other machine hire	_____	407	19
Auto expenses (farm share)	_____	198	18
Electricity (farm share)	_____	<u>788</u>	<u>42</u>
TOTAL MACHINERY COSTS	\$ _____	\$13,240	\$ 6,375
Gas tax refunds	\$ _____	\$ 59	\$ 60
Income from machine work	_____	299	103
NET MACHINERY COST	\$ _____	\$12,882	\$ 6,273

Net machinery cost per cow	\$ _____	\$ 179	\$ 135
Net machinery cost per man	\$ _____	\$ 4,955	\$ 3,450
Net machinery cost/cwt. milk sold	\$ _____	\$ 1.47	\$ 1.15

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

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 1967	Average per farm	
		22 Mon., Niag., Gen. County farms, 1967	731 New York farms, 1966
Value of operator's labor*	\$ _____	\$ 7,364	\$ 5,902
Hired labor	_____	4,518	1,750
Unpaid family labor	_____	845	392
TOTAL LABOR COSTS	\$ _____	\$12,727	\$ 8,044
Net power and machinery cost	_____	12,882	6,213
TOTAL LABOR & MACHINERY COST	\$ _____	\$25,609	\$14,257

Total per cow	\$ _____	\$ 356	\$ 303
Total per man	\$ _____	\$ 9,850	\$ 7,920
Total per cwt. milk sold	\$ _____	\$ 2.92	\$ 2.54

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

The following table shows the relationship of combined labor and machinery costs to labor income.

LABOR AND MACHINERY COST PER COW AND LABOR INCOME
731 New York Dairy Farms, 1966

Labor and machinery cost per cow	Number of farms	Number of cows	Cows per man	Pounds of milk sold per cow	per man	Labor income
Less than \$200	73	62	35	10,900	397,800	\$11,220
\$200-\$249	241	49	28	11,600	333,600	8,600
\$250-\$299	241	44	24	12,200	297,200	7,010
\$300-\$349	95	46	22	12,600	276,300	6,530
\$350 and over	81	38	20	12,400	248,700	4,030

Farm Business Chart

The chart on this page is a tool for use in analyzing a farm business. It is essentially a series of measuring sticks combined into one tool.

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS
731 New York Dairy Farms,* 1966

No. of cows	Total work units	Size		Rates of Production		
		Man equivalent	Pounds milk sold	Pounds milk sold per cow	Tons hay per acre	Tons corn silage per acre
96	1,154	3.2	1,191,400	15,000	4.2	22
65	788	2.4	809,700	13,700	3.3	19
55	663	2.2	657,100	13,100	3.0	17
49	587	2.0	583,900	12,700	2.8	16
44	528	1.8	526,000	12,200	2.5	15

40	484	1.6	477,400	11,800	2.4	14
37	444	1.5	430,800	11,100	2.2	12
33	395	1.3	380,900	10,600	2.0	11
30	354	1.2	320,500	9,800	1.8	10
24	286	1.1	230,900	7,900	1.1	7

Cows per man	Labor Efficiency		Cost Control		
	Pounds milk sold per man	Feed bought per cow	% Feed is of milk receipts	Feed and crop expense per cwt. milk	Machinery cost per cow
40	497,000	\$ 62	12%	\$0.97	\$ 73
33	399,700	93	18	1.25	93
30	360,400	113	21	1.39	103
28	334,500	128	23	1.50	112
26	310,400	146	26	1.62	121

24	289,900	163	28	1.72	129
23	267,700	178	30	1.82	142
21	241,800	193	32	1.92	155
19	207,700	213	35	2.08	174
16	156,900	250	40	2.43	224

* These farms are considerably above the average for all farms in the State. For example, the median number of cows for the 731 farms was 42 compared with 34 for all farms in the State.

The Farm Business Chart on page 16 is a tool which can be used in determining the strong and weak points of a farm business. It not only allows comparison with the average but also shows how far above or below average the farm business is 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 96 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 best ten percent, third best ten percent, etc. The figure at the bottom of each column (24 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 by drawing a line through the figure in each column which shows, for that factor, where the particular business which is being analyzed stands. Then a form such as that shown below should be used to aggregate and summarize the strong and weak points of the business. When combined with consideration of the financial situation, goals and objectives, this analysis should provide the manager with much data needed to make intelligent decisions on what changes to consider making in the business.

After analyzing the business and determining what changes should be considered, each possible change should be studied in detail. To do this, a work sheet or budgeting form such as that found on pages 20 and 21 should be used for each alternative.

It is important that all aspects, both physical and financial, be spelled out for each alternative so that the alternatives can be realistically compared.

STRONG POINTS:

Four horizontal lines for writing strong points.

WEAK POINTS:

Four horizontal lines for writing weak points.

FARM BUSINESS SUMMARY BY HERD SIZE
731 New York Dairy Farms, 1966

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	\$	\$ 8,436	\$12,447	\$17,987
Livestock	_____	8,314	12,935	19,176
Feed and supplies	_____	2,683	3,791	5,878
Land and buildings	_____	19,835	24,928	34,606
TOTAL INVESTMENT	\$	\$39,268	\$54,101	\$77,647
<u>Receipts</u>				
Milk sales	\$	\$11,554	\$18,334	\$26,687
Livestock sold	_____	1,661	2,138	2,861
Crop sales	_____	203	230	411
Miscellaneous receipts	_____	782	738	994
Total Cash Receipts	\$	\$14,200	\$21,440	\$30,953
Increase in inventory	_____	1,946	4,433	7,154
TOTAL RECEIPTS	\$	\$16,146	\$25,873	\$38,107
<u>Expenses</u>				
Hired labor	\$	\$ 150	\$ 555	\$ 1,406
Dairy feed	_____	3,117	4,972	7,138
Other feed	_____	244	244	263
Machine hire	_____	152	121	185
Machinery repair	_____	510	715	1,113
Auto expense (farm share)	_____	135	166	202
Gas and oil	_____	507	641	832
Breeding fees	_____	159	210	298
Veterinary and medicine	_____	182	297	439
Other livestock expense	_____	570	808	1,077
Lime and fertilizer	_____	566	922	1,342
Seeds and plants	_____	201	241	381
Spray and other crop expense	_____	118	208	273
Land, bldg., fence repair	_____	242	339	529
Taxes and insurance	_____	643	845	1,111
Elec. and tel. (farm share)	_____	300	400	516
Miscellaneous expenses	_____	220	299	433
Total Cash Operating Exp.	\$	\$ 8,016	\$11,983	\$17,538
New machinery	_____	2,046	3,007	4,268
New real estate	_____	702	1,251	2,367
Purchased livestock	_____	537	953	1,286
Unpaid family labor	_____	354	413	441
TOTAL FARM EXPENSES	\$	\$11,655	\$17,607	\$25,900
<u>Financial Summary</u>				
Total Farm Receipts	\$	\$16,146	\$25,873	\$38,107
Total Farm Expenses	_____	11,655	17,607	25,900
Farm Income	\$	\$ 4,491	\$ 8,266	\$12,207
Interest on av. capital @ 5%	_____	1,915	2,594	3,703
Labor Income per Farm	\$	\$ 2,576	\$ 5,672	\$ 8,504
Number of operators	_____	39	282	252
LABOR INCOME PER OPERATOR	\$	\$ 2,576	\$ 5,510	\$ 7,795

FARM BUSINESS SUMMARY BY HERD SIZE
731 New York Dairy Farms, 1966

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	\$ _____	\$ 22,564	\$ 27,978	\$ 34,789
Livestock	_____	25,258	32,022	46,743
Feed and supplies	_____	7,890	10,020	15,112
Land and buildings	_____	47,119	68,586	93,006
TOTAL INVESTMENT	\$ _____	\$102,831	\$138,606	\$189,650
Receipts				
Milk sales	\$ _____	\$35,663	\$47,727	\$65,687
Livestock sold	_____	3,727	5,657	7,355
Crop sales	_____	428	506	940
Miscellaneous receipts	_____	1,101	1,647	2,277
Total Cash Receipts	\$ _____	\$40,919	\$55,537	\$76,259
Increase in inventory	_____	9,832	14,169	15,640
TOTAL RECEIPTS	\$ _____	\$50,751	\$69,706	\$91,899
Expenses				
Hired labor	\$ _____	\$ 2,957	\$ 5,139	\$ 6,373
Dairy feed	_____	9,011	11,976	18,078
Other feed	_____	350	983	1,448
Machine hire	_____	260	365	491
Machinery repair	_____	1,449	1,977	2,914
Auto expense (farm share)	_____	210	187	212
Gas and oil	_____	1,061	1,242	1,683
Breeding fees	_____	360	533	586
Veterinary and medicine	_____	556	775	946
Other livestock expense	_____	1,590	2,379	3,453
Lime and fertilizer	_____	1,727	2,761	4,063
Seeds and plants	_____	489	698	946
Spray and other crop expense	_____	401	593	699
Land, bldg., fence repair	_____	713	932	1,034
Taxes and insurance	_____	1,560	2,028	2,857
Elec. and tel. (farm share)	_____	690	856	1,142
Miscellaneous expenses	_____	659	948	1,730
Total Cash Operating Exp.	\$ _____	\$24,043	\$34,372	\$48,655
New machinery	_____	5,294	7,327	8,075
New real estate	_____	4,089	5,687	4,225
Purchased livestock	_____	1,905	1,800	3,755
Unpaid family labor	_____	367	260	230
TOTAL FARM EXPENSES	\$ _____	\$35,698	\$49,446	\$64,940
Financial Summary				
Total Farm Receipts	\$ _____	\$50,751	\$69,706	\$91,889
Total Farm Expenses	_____	35,698	49,446	64,940
Farm Income	\$ _____	\$15,053	\$20,260	\$26,959
Interest on av. capital @ 5%	_____	4,896	6,576	9,091
Labor Income per Farm	\$ _____	\$10,157	\$13,684	\$17,868
Number of operators	_____	117	50	59
LABOR INCOME PER OPERATOR	\$ _____	\$ 8,768	\$11,221	\$13,628

WORKSHEET FOR CONSIDERING A CHANGE IN THE BUSINESS

I. BASIC INFORMATION

	<u>Present</u>	<u>Future</u>
Number of cows	_____	_____
Number of youngstock	_____	_____
Acres of hay	_____	_____
Acres of corn silage	_____	_____
Acres of oats	_____	_____
Acres of hay crop silage	_____	_____

II. ROUGHAGE PRODUCTION AND REQUIREMENTS WITH CHANGE

Forage Requirements

Number of cows (after change is made)	_____	
Hay equivalent per cow (tons)	_____	
Hay equivalent required for cows (tons)	_____	_____
Number of heifers (after change is made)	_____	
Hay equivalent per heifer (tons)	_____	
Hay equivalent required for heifers (tons)	_____	_____
Total Hay Equivalent Required (tons)		_____

Forage Production - Planned Cropping Program

<u>Crop</u>	<u>Acres</u>	<u>Yield</u>	<u>Production</u>	<u>Hay Equivalent</u>
Hay	_____	_____	_____	_____ tons
Hay crop silage	_____	_____	_____	_____
Corn silage	_____	_____	_____	_____
_____	_____	_____	_____	_____

Hay equivalent produced (tons) _____

Deficit or Surplus (tons) _____

III. LABOR REQUIREMENT CHANGE

Change in total summer chore labor (hours)	_____
Change in total summer crop labor (hours)	_____
Change in total summer labor (hours)	_____
Plus: Change in total winter labor (hours)	_____
Total Labor Change (hours)	_____

	My business 1967	Future
I. Receipts		
Milk sales, gross	\$ _____	\$ _____
Livestock sales	_____	_____
Crop sales	_____	_____
Miscellaneous receipts	=====	=====
Total Cash Receipts	\$ _____	\$ _____
Increase in inventory	_____	_____
Total Farm Receipts	\$ _____	\$ _____
I. 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 Expenses	\$ _____	\$ _____
New machinery	_____	_____
New real estate	_____	_____
Livestock purchases	_____	_____
Unpaid family labor	_____	_____
Decrease in inventory	=====	=====
Total Farm Expenses	\$ _____	\$ _____
II. 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.

1966 DAIRY FARM BUSINESS SUMMARY DATA
Four Selected States

Selected Factors	New York	Wisconsin	Vermont	Connecticut
Number of farms	731	374	128	28
Crop acres	138	180	NA	104
Man equivalent	1.8	1.8	1.9	2.0
Number of heifers	30	NA	31	40
Number of cows	47	41	48	64
Milk sold/farm	561,000	460,200	591,679	792,936
Lbs. milk sold/man	311,700	260,631	311,410	396,468
Lbs. milk sold/cow	11,900	11,066	12,191	12,253
Milk sales/cow	\$587	\$489	\$629	\$693
Av. price/cwt. milk	\$4.91	\$4.37	\$5.16	\$5.65
Purchased feed/cow	\$156	\$103	\$205	\$230
Taxes/cow	\$16	\$19	\$18	\$21

<u>Capital Investment</u>				
Land & buildings	\$37,400	\$31,500	\$38,200	\$66,400
Machinery & equipment	\$17,600	\$14,700	\$13,700	\$15,100
Livestock	\$19,500	\$14,600	\$17,400	\$27,600
Feed & supplies	\$ 6,000	\$ 7,800	\$ 5,500	\$ 8,300
Investment/man	\$44,760	\$37,430	\$39,500	\$58,770
Investment/cow	\$ 1,710	\$ 1,593	\$ 1,533	\$ 1,818

<u>Financial Summary</u>				
Total farm receipts	\$39,180	\$36,579	\$40,672	\$66,220
Total farm expenses	\$27,109	\$27,504	\$30,517	\$49,115
Farm income	\$12,071	\$ 9,075	\$10,155	\$17,105
Interest at 5%	\$ 3,850	\$ 3,266	\$ 3,752	\$ 5,877
Labor income/farm	\$ 8,221	\$ 5,809	\$ 6,403	\$11,228
Labor income/operator	\$ 7,522	\$ 5,635	\$ 6,126	\$10,077

ARRAY OF FARM BUSINESS FACTORS
22 Monroe, Niagara, Genesee County Dairy Farms, 1967

<u>SIZE OF BUSINESS</u>		<u>LABOR EFFICIENCY</u>		<u>PRODUCTION</u>	<u>COST CONTROL</u>	
Number of cows	Pounds milk sold per farm	Cows per man	Pounds milk sold per man	Pounds milk sold per cow	Percent feed is of milk receipts	Machinery cost per cow
58	1,954,100	43	525,000	14,200	9	119
52	1,913,800	38	503,600	14,100	10	120
32	1,561,600	34	448,300	14,000	12	144
22	1,517,900	31	429,600	13,300	14	144
35	1,203,000	30	369,600	13,100	14	150
78	997,800	29	361,900	13,100	14	157
76	943,200	28	361,200	13,100	14	164
59	845,500	28	357,400	13,000	15	170
57	762,100	28	349,300	12,800	15	182
58	743,200	28	342,900	12,800	16	185
58	717,900	28	338,200	12,600	16	185
57	695,500	28	331,200	12,500	16	190
55	685,800	26	326,300	12,400	16	195
55	664,100	26	323,000	12,300	17	195
52	630,000	26	314,200	12,300	19	201
51	628,400	25	309,700	12,100	19	210
45	607,600	24	306,200	11,800	21	211
43	569,600	24	276,700	11,600	21	232
42	505,000	23	237,300	11,500	22	242
38	433,400	22	218,300	10,300	22	263
34	393,000	15	194,200	9,400	27	275
33	349,800	15	159,000	8,500	31	300

THE DAIRY INDUSTRY IN NEW YORK STATE -- 1960 to 1975

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 and 1966, some information was obtained with a mail questionnaire.

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, estimates can be made for the entire State or the Milkshed.

Item	1960	1967	% change 1960 to 1967	1975
Number of dairy farms	40,180	26,340	-34%	
Number of milk cows	1,178,000	1,013,000	-14	
Cows per farm	29	38	+31	
Pounds of milk per cow	8,150**	9,700**	+19	
Pounds of milk per farm	236,000	369,000	+56	
Man equivalent per farm	1.8	1.8	0	
Cows per man	16	21	+31	
Pounds of milk per man	131,000	205,000	+56	
Farms with bulk tanks	18%	53%	+194	
Farms with free stalls	0%	5%	---	

* 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.

NUMBER OF DAIRY FARMS BY SIZE OF HERD
New York State, 1960 and 1967; Projected to 1975

Cows per farm	1960	1967	1975	Change between 1967 and 1975	
				Number	Percent
20	12,620	4,180	_____	_____	_____
29	11,020	6,280	_____	_____	_____
39	8,040	6,820	_____	_____	_____
49	4,420	3,680	_____	_____	_____
59	1,980	2,460	_____	_____	_____
99	1,720	2,220	_____	_____	_____
and over	<u>380</u>	<u>700</u>	_____	_____	_____
TOTAL	40,180	26,340	_____	_____	_____

DISTRIBUTION OF DAIRY FARMS AND MILK COWS BY SIZE OF HERD
New York State, 1960 and 1967; Projected to 1975

Cows per farm	Percent of farms			Percent of cows		
	1960	1967	1975	1960	1967	1975
20	31	16	_____	14	6	_____
29	28	24	_____	23	15	_____
39	20	26	_____	23	23	_____
49	11	14	_____	16	16	_____
59	5	9	_____	9	13	_____
99	4	8	_____	10	16	_____
and over	<u>1</u>	<u>3</u>	_____	<u>5</u>	<u>11</u>	_____
TOTAL	100	100		100	100	

To properly analyze your farm business, more than one year's records are needed. Three or more years records will help you determine what progress you are making and what is normal for your farm. In the table below fill in the figures for your business for the last three years and study your progress.

Item	My farm		
	1965	1966	1967
<u>SIZE OF BUSINESS</u>			
Lbs. of milk sold	_____	_____	_____
Number of cows	_____	_____	_____
Total crop acres	_____	_____	_____
Total work units	_____	_____	_____
Gross receipts	\$ _____	\$ _____	\$ _____
<u>LABOR EFFICIENCY</u>			
Lbs. milk sold/man	_____	_____	_____
Cows per man	_____	_____	_____
Work units per man	_____	_____	_____
<u>RATES OF PRODUCTION</u>			
Lbs. milk sold/cow	_____	_____	_____
Tons hay/acre	_____	_____	_____
Tons corn silage/acre	_____	_____	_____
<u>FEED COSTS</u>			
% feed is of milk receipts	_____ %	_____ %	_____ %
Tons hay equivalent/cow	_____	_____	_____
Feed bought/cow	\$ _____	\$ _____	\$ _____
<u>LABOR AND MACHINERY COSTS</u>			
Machinery cost/cow	\$ _____	\$ _____	\$ _____
Machinery cost/cwt. milk	\$ _____	\$ _____	\$ _____
Labor and machinery cost/cow	\$ _____	\$ _____	\$ _____
Labor and machinery cost/cwt. milk	\$ _____	\$ _____	\$ _____
<u>CAPITAL INVESTMENT</u>			
Total investment	\$ _____	\$ _____	\$ _____
Total investment/cow	\$ _____	\$ _____	\$ _____
Machinery investment/cow	\$ _____	\$ _____	\$ _____
Investment/cwt. milk sold	\$ _____	\$ _____	\$ _____
<u>PRICE OF MILK</u>			
<u>INCOME</u>			
Labor income	\$ _____	\$ _____	\$ _____
Cash operating income	\$ _____	\$ _____	\$ _____
Return on investment	_____ %	_____ %	_____ %
% expenses are of receipts	_____ %	_____ %	_____ %