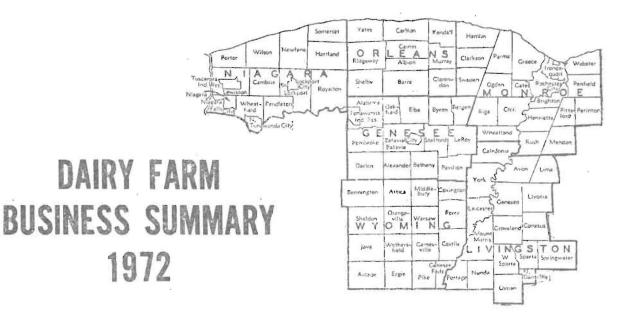
WESTERN PLAINS REGION



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WESTERN PLAINS REGION DAIRY FARM BUSINESS SUMMARY 1972

This publication presents a summary of the 1972 farm business records of 22 Livingston, Wyoming and Monroe County dairy farms. These records were submitted by dairymen participating in Cooperative Extension's Farm Business Management Program. There are approximately 40 counties in New York State in which such projects are conducted in cooperation with the College of Agriculture and Life Sciences at Cornell.

The primary objectives of the business management program are to (1) assist farmers in developing and maintaining more complete farm business data for use in management decisions and (2) to help farmers improve their management skills through appropriate use of farm record data and application of modern decision making techniques. The rapidly increasing size of New York dairy farms and the dynamic nature of the environment within which they operate make farm incomes increasingly dependent upon the accuracy of management decisions. Some of the changes that are taking place are indicated below.

Western Plains Region	1968	1970	1972
Number of Farms Cows Per Farm Machinery Per Farm Investment Per Farm Investment Per Cow Milk Sold Per Cow Milk Sold Per Man Milk Price/Cwt.	70	29	22
	67	81	89
	\$29,854	\$37,316	\$43,866
	\$141,789	\$195,141	\$225,112
	\$2,116	\$2,409	\$2,529
	12,300 lbs.	13,100 lbs.	13,700 lbs.
	328,600 lbs.	409,300 lbs.	419,276 lbs.
	\$5.43	\$5.96	\$6.32
United States Average			
Machinery Prices (1968=100)	100	111	125
Wage Rates (1968=100)	100	118	129
Fertilizer Price (1968=100)	100	100	106
Farm Real Estate (1968=100)	100	109	122

This report has been prepared in workbook form to assist individual farmers in analyzing their businesses. A systematic examination of the farm business is necessary to determine its strengths and weaknesses. In order to stay competitive and attain a satisfactory income, a manager must continuously be searching for weak points of the business that can be corrected and strong points of the business that can be capitalized upon.

Analysis of individual businesses can be made by using the 1971 data from 569 New York dairy farms and the 1972 data from 22 Western Plains Region farms for comparison. The New York State and regional data do not represent an average for all dairy farms. Participation in the Business Management Program is voluntary and no attempt is made to select a random sample of farms. However, these data do represent the experiences of a group of commerical dairymen who are interested in making improved management decisions, and thus provide a useful basis for comparison.

This summary was prepared by Eddy L. LaDue, Department of Agricultural Economics, New York State College of Agriculture and Life Sciences, in cooperation with David L. Thorp, Livingston County Cooperative Extension, William D. Goewey, Wyoming County Cooperative Extension and Curtis L. Crooks, Western Plains Region Cooperative Extension Dairy and Field Crops Team.



GOOD MANAGEMENT IS BASIC

HOW DO YOU MEASURE UP

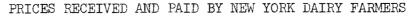


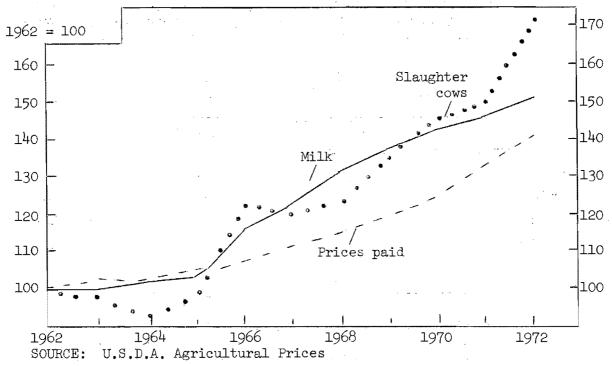
- 1. Have you developed a systematic approach to management problems?
- 2. Do you have the facts on your business?
- 3. Are you improving your managerial skills?

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 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!





The relationship of prices received and prices paid determines the general level of farm incomes. The 1972 indices for milk and cull cow prices were 151 and 172, while the index of prices paid by New York dairymen was 140. This indicates a favorable price relationship for the year 1972.

The blended New York farm price for 3.5 percent milk in 1972 was \$6.25, up 23 cents from 1971. Changes in the cost of different input items has varied. From 1962 to 1972, wages rose 76 percent, machinery prices went up 54 percent, dairy cow prices 66 percent, feed 14 percent, and fertilizer 3 percent.

AVERAGE YEARLY PRICES RECEIVED AND PAID BY N.Y. FARMERS, 1962-72

					4.1	· · · · · · · · · · · · · · · · · · ·
Year	Milk (cwt.)	Slaughter cows (cwt.)	Dairy cows (head)	Dairy ration (ton)	Wages per month with house	Prices paid by New York dairymen
1962 1963 1964 1965 1966 1967 1968 1969 1970 1971	\$4.14 4.15 4.21 4.27 4.79 5.07 5.43 5.66 5.89 6.02 6.25	\$14.26 14.01 13.17 13.91 17.35 17.10 17.60 19.30 20.70 21.20 24.53	\$245 234 237 238 271 303 320 336 353 372 407	\$74 76 74 76 80 80 74 74 78 83 84	\$218 222 228 236 248 279 302 325 356 375 384	106 108 108 110 113 118 121 126 132 140 148

^{*} Preliminary

SUMMARY OF THE FARM BUSINESS

Knowledge of what farm resources are available and how they are combined is fundamental in judging management performance. The resources used indicate one set of restrictions within which the farm business was operated.

LABOR, LIVESTOCK & LAND USED 22 Western Plains Farms, 1972

Item	My Farm	Average 22 Farms	Range
Man Equivalent		2.9	1.0 - 7.1
Age of Operator		40	26 - 62
Number of Cows		89	24 - 227
Number of Heifers		62	0 - 168
Acres of Crops		298	35 - 565

The average age of the operators on these farms was 40 years (on farms with more than one operator only the first listed (oldest) was included). Five of the seventeen farms listed more than one operator. On three of these farms, the second operator was an average of three years younger than the first listed operator. On the other two the second operator averaged 31 years younger. This indicates an average operator age considerably below the average reported by the census. Business management projects tend to attract younger farmers who are in the process of changing and developing their businesses.

FARM INVENTORY VALUES, JANUARY 1, 1973 22 Western Plains Farms

My Farm			Average 22 Farms		
Item	Amount	Per Cow	Amount	Per Cow	
Livestock	\$	\$	\$ 56,794	\$ 638	
Feed & Supplies			20,014	225	
Machinery & Equipment			43,866	493	
Land & Buildings			104,438	1,173	
TOTAL INVENTORY	\$	\$	\$225,112	\$2,529	

Average end of year investment per man was \$85,791. This compares with an investment per man of \$18,975 for General Electric, \$23,588 for General Motors, \$34,841 for U. S. Steel, \$36,070 for IBM and \$142,065 for Standard Oil. Only oil companies and mining corporations, with \$113,576 and \$83,885 invested per employee, have investments per man as high or higher than this group of farmers.

During the year, feed and supplies inventory declined by \$1,419, reflecting the relatively poor 1972 crop year. All other inventory items increased; land and buildings by \$3,014; machinery and equipment by \$5,525 and livestock by \$4,075.

Receipts

A successful business requires a level of gross income great enough to cover all operating and overhead costs, and leave a margin for the operator's capital, labor and management. The table below lists the sources and amounts of receipts for this group of dairy farms.

FARM RECEIPTS
22 Western Plains Farms, 1972

Item	My Farm	Average Amount	22 Farms Percent
Milk Sales	\$	\$76,850	81
Crop Sales		2,298	3
Livestock Sales		10,903	12
Gas Tax Refund		267	
Government Payments		1,741	2
Work Off Farm		395	
Custom Machine Work		391	m
Other	,	_1,578	2
Total Cash Receipts	\$	\$94,423	100
Increase in Livestock & Supplies		2,656	
TOTAL FARM RECEIPTS	\$	\$97,079	

In a normal year most going farm businesses are expanding and therefore have an increase in inventory due to more <u>livestock</u> and <u>crcps</u> raised. These increases are included in the farm receipts since the costs of producing or acquiring these assets are in the expenses. Nineteen-seventy-two was not a normal crop year. The average feed and supply inventory declined by \$1,419 while the livestock inventory increased by \$4,075.

The average price received for milk sold from the 22 farms in 1972 was \$6.32 per hundredweight. The New York-New Jersey average blend price for 1972 was reported as \$6.25.

INCOME ANALYSIS
Western Plains Farms, 1971 & 1972

Item	My Farm	Average 22 Farms, 1972	Average 30 Farms, 1971
Ave. Price/Cwt. Milk Sold	\$	\$6.32	\$6.13
Milk Sales Per Cow	ф	\$863	\$790
Total Cash Receipts/Man	\$	\$32,560	\$30,788

Depreciation Calculation

Two important expense items which must be calculated from expense and inventory data, instead of just summing a group of expense items, are machinery depreciation and real estate (buildings) depreciation. Expenditures for both machinery and buildings involve purchase of items which have a large capital cost and are used over a number of years. Because each item is used over a number of years, its capital cost is an expense which must be spread over the life of the investment. Depreciation is the amount of the capital cost which is allocated to this year's use of the investment.

It is important to note that the depreciation calculated here does not necessarily correspond with the amount of depreciation taken for tax purposes. The amount of tax depreciation taken will depend upon the tax situation of the farm operator(s) and the particular tax laws that apply to the machines and buildings purchased. The objective is to minimize taxes in the long run. The objective in the depreciation calculations made here is to accurately determine that portion of the machines and buildings owned by the farm business that have been "used up" this year.

MACHINERY & LAND & BUILDING DEPRECIATION 22 Western Plains Farms, 1972

	Mad	Machinery		Land & Buildings	
Item	My Farm	Ave. 22 Farms	My Farm	Ave. 22 Farms	
Beginning Inventory	\$	\$38,341	\$	\$101,424	
Purchases		11,615		3,319	
Total (1)	\$·	\$49,956	\$	<u>\$104,743</u>	
End Inventory	\$	\$43,866	\$	\$104,438	
Sales	· · ·	239		0	
Total (2)	\$	\$44,105	\$	<u>\$104,438</u>	
DEPRECIATION (1 minus 2)	\$	\$ 5,851	\$	\$ 305	
Percent Depreciation		% 11.7%		% 0.3%	

The average machinery depreciation of \$5,851 is 11.7 percent of the beginning inventory plus purchases. In view of the fact that the beginning inventory items are partially depreciated, this indicates an average expected life of approximately eight and one-half years.

The small real estate depreciation calculated (\$305) appears to imply very little write-off for buildings. In reality this represents two partially off-setting factors; building depreciation and land appreciation (inflation). Actual building depreciation will depend upon the age, type and construction cost of the buildings, and could range from near zero to 10 percent of the construction cost. The appreciation or inflation in land value will depend upon the amount and quality of the land, general level of farm incomes, degree of pressure for other uses, and other factors, and has recently ranged from zero to 10 percent. The real estate (land and buildings) depreciation calculated above represents the actual depreciation in the value of buildings minus the increase in the value of land.

Expenses

With the high level of cash flow through a farm business today, it is important that the manager study expenses closely. A breakdown of expenditures into individual expense items allows isolation of cost areas that appear out of line.

FARM EXPENSES
22 Western Plains Farms, 1972

		Average	Average 22 Farms		
Item	My Farm	Amount	Percent		
Labor					
Hired Labor	\$	\$ 9,836	16		
Feed	-		•		
Dairy Concentrate Other Feed	-	16,101	25 3		
		1,693	3		
Machinery			•		
Machine Hire	Projection or any accompanies to the second	1,512 4,436	2 7		
Machinery Repairs Auto Expense (farm share)	Water transfer of the second s	248			
Gas & Oil		2,368	14		
Livestock			-		
Livestock Purchased		4,309	7		
Breeding Fees	2000 Company	977	2		
Veterinary & Medicine	Plan sumin summers	2,061 3,411	2 3 5		
Other Livestock Expense Crops		3,411	,		
		1, 276	7		
Lime & Fertilizer Seeds & Plants	American specialists from the first section of the	4,316 1,345	7 2		
Spray, Other Crop Expense	**************************************	1,184	2		
Real Estate					
Land, Building, Fence Repair		1,231	2		
Taxes		2,018	3 2		
Insurance		1,404	2 4		
Rent		2,338	4		
Other		262			
Telephone (farm share) Electricity (farm share)		260 1,229	2		
Miscellaneous		1,286	2		
Total Cash Expenses	\$	\$63,563	100		
Machinery Depreciation	τ	5,851			
Real Estate Depreciation		305			
Unpaid Labor		600			
Decrease in Inventory		the sax			
TOTAL FARM EXPENSES	\$	\$70,319			

Financial Summary of Year's Business

The net returns for any business can be measured in several different ways. Each measure calculates the net return to a selected resource or group of resources such as labor or capital. Some of the common farm business measures are given below.

FARM & LABOR INCOME
Western Plains Farms, 1971 & 1972

Item	My Farm	Average 22 Farms, 1972	Average 30 Farms, 1971
Total Farm Receipts	\$	\$97,079	\$85,495
Total Farm Expenses		70,319	57,431
FARM INCOME	\$	\$26,760	\$28,064
Interest on Average Capital @ 7%		15,366	14,127
Labor Income Per Farm	\$	\$11,394	\$13,937
Number of Operators		1.22	1.40
LABOR INCOME Per Operator	\$	\$ 9,339	\$ 9,955

Farm income measures the return from the business to all capital and the operator's labor and management.

Labor income is the return to the farm operator for his labor and management. It is the measure most commonly used when comparing farm businesses. A seven percent interest charge on all capital is subtracted from the farm income to get labor income. The average labor income per operator for the 22 farms was \$9,339, down slightly from 1971. Three farmers had negative labor incomes and three had incomes over \$20,000.

A more accurate way to calculate labor income is to separate interest paid on borrowed capital from interest charged on owned or equity capital. Interest paid on borrowed capital is included as a cash farm expense which it really is, and interest on equity capital is charged at an assumed opportunity cost such as seven percent. Sixteen of the 22 farms submitted interest paid and complete net worth statements. Equity capital was calculated as the average total investment minus total liabilities. This assumes that average total debt was equal to the amount outstanding at the end of the year. If this is not approximately correct, a true average equity capital can be calculated by subtracting the average debt level from average total capital.

	My Farm	Average 16 Farms
Farm Income (as calculated above)	\$	\$23,307
Interest Paid		6,698
Adjusted Farm Income	\$	\$16,609
Interest on Equity Capital @ 7%		6,639
Labor Income Per Farm	\$	\$ 9,970
Labor Income Per Operator	\$	\$ 7,976

Net 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 purchases or investments. A family may have had additional cash available if they had a nonfarm income.

FARM CASH FLOW 22 Western Plains Farms, 1972

Item	My Farm	Average 22 Farms
Total Cash Receipts	\$	\$94,423
Total Cash Operating Expense		63,563
NET FARM CASH FLOW	\$	\$30,860

Return on investment is a common measure for nonfarm businesses. It is calculated by deducting a charge for the operator's labor and management from the farm income. This is then divided by the average investment for the year to determine the rate of return on investment.

RETURN ON INVESTMENT 22 Western Plains Farms, 1972

Item	My Farm	Average 22 Farms
Farm Income	\$	\$26,760
Value of Operator's Labor & Management*		11,882
RETURN ON INVESTMENT	\$	\$14,878
Average Capital Investment	\$	\$219,515
RATE OF RETURN ON INVESTMENT	%	6.8%

^{*}Eighteen farm businesses submitted estimates for 23 operators. Average per operator was \$9,739.

Returns per cow can be calculated by dividing the farm business measures by the number of cows. Comparisons also can be made with the 1971 figures.

	My Farm	Average 22 Farms, 1972	Average 30 Farms, 1971
Net Farm Cash Flow Per Cow	\$	\$347	\$345
Farm Income Per Cow	\$	\$301	\$330
Labor Income Per Cow	\$	\$128	\$164

ANALYSIS OF THE FARM BUSINESS

Research has shown that certain basic factors affect farm incomes. In analyzing a farm business, we examine it in terms of these basic factors. This will be done on the pages that follow.

Size of Business

Studies have shown that in general larger farms pay better. Two basic reasons for this are (1) larger businesses make possible more efficient use of overhead inputs such as labor and machinery and (2) there are more units of production (milk) on which to make a profit. However, if a large farm is poorly operated, the losses also will be larger.

MEASURES OF SIZE OF BUSINESS 22 Western Plains Farms, 1972

Measure	My Farm	Average 22 Farms 1972	Average 569 New York Farms 1971
Number of Cows		89	67
Pounds of Milk Sold		1,215,900	861,700
Man Equivalent	· · ·	· · · · · 2.9	2.2
Total Work Units		1,027	729
Total Acres of Crops	erom in the sales	298	185

The 30 Western Plains farms summarized last year (1971) averaged 85 cows per farm and 2.6 man equivalent. Number of cows per farm is a very important measure of size for specialized dairy farms. In the table below, the 569 New York farms for 1971 are sorted by number of cows and the labor income is shown for each size group. In general, the large farms paid better.

COWS PER FARM & LABOR INCOME 569 New York Dairy Farms, 1971

Number of Cows	Number of Farms	Percent of Farms	Labor Income Per Operator
Less than 40	102	18	\$ 5,330
40 - 54	166	29	6,340
55 - 69	100	18	7,440
70 - 84	69	12	7,880
85 - 99	39	7	9,520
100 - 114	41	7	12,180
115 - 129	17	3	14,000
130 - 149	22	$\widecheck{4}$	12,600
150 & over	13	2	15,360

Rates of Production

Crop yields and rates of animal production have an important influence on farm incomes. Although maximum possible yields and production levels are not necessarily the most profitable rates at which to produce, low yields and/or production levels definitely do limit incomes.

CROP YIELDS & MILK SOLD PER COW 22 Western Plains Farms, 1972

	My F	arm	Avera	ge 22 Farms	
Crop	Acres	Yield	Farms Reportin	g Acres	Yield
Dry Hay			20	101*	2.9 t.
Hay Crop Silage			3	135*	5.2 t.
Green Chop			1	50 *	15.5 t.
Corn Silage	No. 10. 10. 10. 10. 10. 10. 10. 10. 10. 10		20	104*	11.4 t.
Grain Corn	W		15	71*	57 bu.
Oats	· ·	W-17	9	33*	52 bu.
			ter mak was new plac very dur that have that had dad mak had that dad sper		
Hay Equivalent:					
All Hay Crops			22	113	2.7 t.
All Hay & Silage			22	207	3.2 t.
Milk Sold Per Cow				13	,662 lbs.

^{*}Average of farms reporting.

The number of farms reporting hay crop silage and green chop is not an accurate assessment of the cropping system on these farms. Some farmers harvesting hay crop silage or green chop convert it to hay equivalent and combine it with dry hay. Tons of hay equivalent of all hay and silage is a measure of the overall rate of roughage production for all the acres used for roughage crops. Corn silage produces more feed per acre than does hay (3.6 to 2.9), even in a poor corn year such as 1972. Nineteen-seventy-two corn silage, corn grain and oats yields on these farms were 15 to 30 percent below the yields achieved by a similar group of Western Plains farms in 1971.

MILK SOLD PER COW & LABOR INCOME 569 New York Dairy Farms, 1971

Pounds of Milk	Number	Number	Feed Bought	Labor
Sold Per Cow	of Farms	of Cows	Per Cow	Income
Under 10,000	45	59	\$126	\$ 2,330
10,000 - 10,999	57	66	155	5,310
11,000 - 11,999	82	62	186	6,900
12,000 - 12,999	117	72	193	7,820
13,000 - 13,999	111	68	210	10,060
14,000 - 14,999	91	67	224	9,150
15,000 & over	66	68	232	11,840

Labor Efficiency

Increasing wage rates and reduced net return per pound of milk produced makes labor efficiency an important factor in farm production. The labor force and several measures of accomplishment per man or labor efficiency are shown below.

LABOR FORCE & LABOR EFFICIENCY 22 Western Plains Farms, 1972

Item	My Farm	Average 22 Farms	Average 569 York Farms,	
Labor Force - M	onths			
Operator		14.7	14.0	
Family Paid		2.0	2.6	
Family Unpaid		2.0	2.3	
Hired		12.7	7.6	
Other		2.8	3	
Total		34.2	26.8	
Cows Per Man		31	30	
Lbs. Milk Sold	Per Man	419,276	391 ,7 00	·.·
Crop Acres Per	Man	103	84	
Work Units Per	Man	354	331	

Cows per man and pounds of milk sold per man are likely the most important labor efficiency measures for specialized dairy farms. These 22 farms fall above last year's State summary average for all four of the labor efficiency measures indicated above.

As shown in the table below, farms with higher levels of labor efficiency generally have higher incomes. Labor efficiency may be the most important single management controlled factor influencing farm incomes.

MILK SOLD PER MAN & LABOR INCOME 569 New York Dairy Farms, 1971

Pounds of Milk Sold Per Man	Number of Farms	Number of Cows	Pounds Milk Per Cow	Labor Income Per Operator
Under 250,000	69	44	10,900	\$ 2,280
250,000 - 299,999	68	51	12,100	4,280
300,000 - 349,999	111	56	13,000	6,090
350,000 - 399,999	93	66	12,900	9,040
400,000 - 449,999	93 88	78	13,300	8,890
450,000 - 499,999	66	74	13,500	10,820
500,000 & over	74	102	13,600	15,660

Cost Control

The control of costs is a big factor in the success of modern commerical dairy operations. Feed, machinery and labor costs are major items and are examined in detail. However, it is important to check all cost items both large and small.

Feed Costs

Feed is the largest single cash operating expense item on dairy farms. For the 22 Western Plains farms, purchased feed accounted for 25 percent of the cash expenses. In general, all feed costs account for about half the cost of producing milk. This includes the expenses of growing crops.

Since the feeding program includes both purchased and homegrown feed, both roughage and concentrates, it is not easy to locate 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.

ITEMS RELATED TO FEED COSTS 22 Western Plains Farms, 1972

Item	My Farm	Average 22 Farms, 1972	Average 569 New York Farms, 1971
Feed Bought Per Cow	\$	\$181	\$194
Crop Expense Per Cow	\$	\$77	\$56
Feed Bought Per Cwt. Milk	\$	\$1.32	\$1.51
Feed & Crop Expense Per Cwt. Milk	\$	\$1.89	\$1.95
Percent Feed Is of Milk Sales	<u></u>	21%	24%
Hay Equivalent Per Cow		7.5 t.	8.1t.
Crop Acres Per Cow		3.3	2.8
Lime & Fertilizer Per Crop Acre	\$	\$14	\$13
Heifers Per Ten Cows		7.0	6.6

The crop program has an important influence on purchased feed costs. Increasing the amount of roughage and/or grain grown on the farm will reduce the quantity of feed to be purchased. However, this will reduce the total cost of feeding the animals only if the cost of growing feed on the farm is less than the cost of purchased feed. Also, the number of heifers being raised on the farm will affect the total feed cost per cow or hundredweight of milk sold. The overall feed situation must be examined and evaluated as a "system".

Machinery, Labor & Miscellaneous 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. It is also necessary to look at labor costs and combined labor and machinery costs to be sure that machinery is actually substituting for labor and not merely increasing total costs.

MACHINERY & LABOR COSTS
22 Western Plains Farms, 1972

Item	My Farm	Ave. 22 Farms	Percent
Machinery Costs:			
Depreciation (from page 6)	\$	\$ 5,851	34
Interest @ 7% on Average Inventory		2,877	16
Machine Hire		1,512	9
Machinery Repairs	,	4,436	26
Auto Expense (farm share)		248	1
Gas & Oil		2,368	14
Total Machinery Costs	\$	\$17,292	100
Labor Costs:	*		
Value of Operator's Labor*	\$	\$ 7,350	41
Hired Labor	•	9,836	55
Unpaid Family Labor		600	14
Total Labor Costs	\$	\$17,786	100
Total Labor & Machinery Costs	\$	\$35,078	
Machinery Cost Per Cow	\$	\$ 194	
Machinery Cost Per Cwt. Milk		1.42	•
Labor Cost Per Cow		200	
Labor Cost Per Cwt. Milk		1.46	* **
Machinery & Labor Cost:			
Per Cow		394	
Per Cwt. Milk Sold		2.88	.,

^{*}Valued at \$6,000 per operator, excludes value of operator's management.

FARM FAMILY FINANCIAL SITUATION 16 Western Plains Farms, January 1, 1973

		Average	16 Farms
Item	My Farm	Amount	Percent
Assets			
Farmland & Buildings Livestock Machinery Feed & Supplies	\$	\$90,777 51,030 41,302 18,897	41 23 19 9
Co-Op Investment Accounts Receivable Cash & Checking Accounts		4,451 4,957 1,737	2 2 1
Savings Accounts Cash Value Life Insurance Stocks & Bonds		946 2,012 465	** 1 **
Nonfarm Real Estate Auto (personal share) All Other	/	2,500 577 1,510	1 ** 1
TOTAL ASSETS	\$	\$221,161	100
Liabilities			
Real Estate Mortgage Liens on Cattle & Equipment Installment Contracts	\$	\$38,531 46,734 4,892	37 45 5
Secured Notes Unsecured Notes Store Accounts Personal Debt & Other		6,633 697 714 <u>5,226</u>	6 1 1 <u>5</u>
TOTAL LIABILITIES	\$	\$103,427	100
NET WORTH	\$	\$117,734	

^{**}Less than .5 percent.

DEBT COMMITMENTS & FINANCIAL MEASURES 16 Western Plains Farms, 1972

Item	My Farm	Average 16 Farms
Total Debt Payments	\$	\$22,582
Financial Measures:		
Number of Cows Total Milk Sales Annual Debt Payment Per Cow Debt Payment as % Milk Check	\$ \$	84 \$70,532 \$269 32%
Percent Equity Percent Debt on Real Estate Debt Per Cow		53% 42% \$1,231

The financial situation is an important part of the analysis of a farm business. This indicates the condition of the operation as it relates to present financing and future expansion possibilities. In the 569 records for 1971, a total of 319 included a financial situation statement. These were summarized and the results are reported below.

FARM FAMILY FINANCIAL SITUATION
319 New York Dairy Farms, January 1, 1972

		Farms F	Reporting	Average 3	
Item	My farm	Number	Percent	Amount	Percent
Assets					
Farmland and buildings Livestock Machinery Feed and supplies	\$	319 319 319 319	100 100 100 100	\$ 76,908 34,803 30,881 10,730	45 20 18 6
Co-op investment Accounts receivable Cash and checking accounts		236 197 271	7 ¹ 4 62 85	2,363 3,412 1,662	1 2 1
Savings accounts Cash value life insurance Stocks and bonds Nonfarm real estate		167 215 112 33	52 67 35 10	2,078 2,565 1,957 1,886	1 2 1 1
Auto (personal share) All other		216 85	68 27	942 1,835	1
TOTAL ASSETS	\$	319	100	\$172,022	100
Liabilities Real estate mortgage Liens on cattle & equipt. Installment contracts Secured notes Unsecured notes Store accounts Personal debt and other	\$	268 217 115 78 86 93 163	84 68 36 24 27 29 51	\$29,558 21,091 2,796 2,118 2,295 1,755 1,557	48 34 5 3 4 3
TOTAL LIABILITIES	\$			<u>\$61,170</u>	100
NET WORTH	\$			\$110,852	

The farm inventory accounted for 89 percent of the total family assets reported. Accounts receivable, the cash value of life insurance, and co-op investments were the largest nonfarm items. Real estate mortgages were the largest liability and accounted for 48 percent of all debts. The percent of farms reporting gives an indication of the frequency of each item. For example, 52 percent of the families reported savings accounts and 84 percent reported real estate mortgages.

DEBT COMMITMENTS AND FINANCIAL MEASURES 319 New York Dairy Farms, 1971

	My farm	Average of farms reporting
Total debt payments	\$	(241 farms) \$13,254
Financial measures: Number of cows Annual debt payment/cow Debt payment as % milk check	\$%	(241 farms) 66 (241 farms) \$201 (241 farms) 25%
Percent equity Percent debt on real estate Debt per cow		(319 farms) 64% (319 farms) 48% (319 farms) \$927

Of the 319 farms, 241 reported their total debt payments for the year 1971. The debt payment for interest and principle averaged \$13,254. These commitments averaged nearly \$1,100 per month, \$201 per cow per year, and 25% of the milk receipts.

Debts on the 319 farms reporting amounted to 36 percent of the total assets. This gives an average equity of 64 percent. The average debt per cow was \$927. There was a wide range in these factors among the farms reporting.

Table 25. FINANCIAL SITUATION BY SIZE OF HERD 319 New York Dairy Farms, 1971

(cows) For Under 40		Cows	assets	liabilities	worth	equity	per cow
Under 40	(0						T
40 - 54 55 - 69 70 - 84 85 - 99 100 - 114 115 - 129 130 - 149 150 & over	60 91 60 39 17 22 9	33 47 61 75 90 102 122 139 184	\$ 97,077 123,109 164,927 198,655 206,782 283,305 322,444 366,298 350,974	\$ 29,853 42,773 56,315 75,058 95,111 82,658 92,515 144,797 168,680	\$ 67,224 80,336 108,612 123,597 111,671 200,647 229,929 221,501 182,294	69 65 66 62 54 71 71 60	\$ 905 910 923 1,001 1,057 810 758 1,042 917

Farm Business Chart

The chart on the next two pages is a tool for use in analyzing a dairy farm business. It is essentially a series of measuring sticks combined into one tool.

FARM	BUSINESS	CHART :	FOR	FARM	MANAGEME	CNT	COOPERATORS
	569	New Yo	rk I	Dairy	Farms,*	197	71

Size	of Bu	siness	Ra	tes of Produ	uction	Labor	Efficiency
Man	No.	Pounds	Pounds	Tons hay	Tons	Cows	Pounds
equiv-	of	milk	milk sold	per acre	corn silage	\mathtt{per}	milk sold
alent	cows	sold	per cow		per acre	man	per man
4.4 3.2 2.7 2.4 2.1	144 100 82 70 61	1,903,900 1,354,300 1,057,200 881,300 764,400	16,100 14,800 14,100 13,600 13,100	4.7 3.8 3.5 3.2 2.9	22 19 18 17 15	47 38 35 32 29	596,700 490,100 448,400 415,000 381,700
2.0 1.8 1.6 1.4	54 48 43 38 30	681,200 611,100 545,100 467,200 342,900	12,600 12,100 11,600 10,800 9,200	2.8 2.6 2.4 2.2 1.8	15 14 12 11 4	28 26 24 22 18	353,100 327,000 301,900 261,600 204,800

^{*} These farms are considerably above the average for all farms in New York State. For example, the median number of cows for the 569 farms was 57 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 midpoint of the 569 farms for each factor.

The figure at the top of each column is the average of the top 10 percent of the farms for that factor. For example, the figure 4.4 at the top of the column headed "man equivalent" is the average man equivalent on the 10 percent of the farms with the most men. The other figures in each column are the average for the second 10 percent, third 10 percent, etc. The figure at the bottom of each column (1.2 for man equivalent) is the average for the 10 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 10 percent for one factor would <u>not</u> necessarily be the same farms which make up the top 10 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 the next page.

Farm Business Chart contd.

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.

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS
569 New York Dairy Farms, 1971
Cost Control

Feed	% Feed is	Machinery	Labor and	Feed and crop
bought	of milk	cost	machinery	expense per
per cow	receipts	per cow	cost per cow	cwt. milk
\$ 81	11%	\$ 96	\$243	\$1.18
125	17	122	278	1.47
147	20	136	305	1.62
168	22	150	326	1.75
189	24	165	344	1.87
205	26	177	360	1.99
223	28	190	380	2.09
239	30	205	402	2.23
265	32	224	443	2.41
317	38	284	538	2.81

Based on the analyzed results shown on the business chart, list below the strong and weak points of the business. Then identify the major problems.

STRONG POINTS:	WEAK POINTS:
MAJOR PROBLEMS:	

After identifying problems, consider alternative ways of solving each problem. Each alternative should be studied in detail. A budgeting form can be used for projecting the likely results of each alternative.

FARM BUSINESS SUMMARY BY HERD SIZE 569 New York Dairy Farms, 1971

		Farms with:			
Item	My farm	Less than	40 to	55 to	
		40 cows	54 cows	69 cows	
Capital Investment (end of year)					
Livestock	\$	\$17,673	\$ 25,750	\$ 32,598	
Feed and supplies	,	4,771	6,454	9,259	
Machinery and equipment		17,679	24,459	30,418	
Land and buildings		38,366	52,520	71,684	
TOTAL INVESTMENT	\$	\$78,489	\$109,183	\$143,959	
Receipts					
Milk sales	\$	\$25,554	\$37,369	\$47,254	
Livestock sales		2 , 865	4,134	5,099	
Crop sales		202	319	330	
Miscellaneous receipts		<u> </u>	<u>858</u>	1,070	
Total Cash Receipts	\$	\$29,740	\$42,680	\$53 ,7 53	
Increase in livestock and feed		<u> 1,691</u>	2,483	<u> </u>	
TOTAL FARM RECEIPTS	\$	\$31,431	\$45,163	\$56,944	
Expenses					
Hired labor	\$	\$ 893	\$ 2,193	\$ 3,665	
Dairy feed		6,517	9,542	11,209	
Other feed		400	544	294	
Machine hire		375	578	621	
Machinery repair		1,085	1,637	2,248	
Auto expense (farm share)		177	226	221	
Gas and oil		823	990	1,432	
Purchased animals		910	1,636	2,131	
Breeding fees		302	467	520 5 20	
Veterinary and medicine		395	641	739	
Other livestock expense Lime and fertilizer		1,028	1,460	1,650	
		903	1,552	2,160	
Seeds and plants		263	478	656	
Spray and other crop expense		234	429	546	
Land, bldg., fence repair Taxes		649	874	1,103	
Electricity & phone (farm share)		1,288 586	1,840	2,354	
Miscellaneous expenses		460	760 906	948 1,081	
Total Cash Operating Expenses	¢	\$17,288	\$26,453	\$33,578	
Machinery depreciation	Ψ	2,370	3,328	3,877	
Real estate depreciation		161	194	425	
Unpaid family labor		870	870	750	
TOTAL FARM EXPENSES	\$	\$20,689	\$30,845	\$38,630	
Financial Summary	Ψ	φευ, συς	φ30,047	φου, υου	
Total Farm Receipts	\$	\$31,431	\$45,163	\$56,944	
Total Farm Expenses	\$	20,689	30,845	38,630	
Farm Income	\$	\$10,742	\$14,318	\$18,314	
Interest on av. capital at 7%	r	5,362	7,339	9,689	
Labor Income Per Farm	\$	\$ 5,380	\$ 6,979	\$ 8,625	
Number of operators	•	1.01	1.10	1.16	
LABOR INCOME PER OPERATOR	\$	\$ 5,327	\$ 6,345	\$ 7,435	

FARM BUSINESS SUMMARY BY HERD SIZE 569 New York Dairy Farms, 1971

	Farms with:						
Item	70 to	85 to	100 to	150 or			
	84 cows	99 cows	149 cows	more cows			
C							
Capital Investment (end of year) Livestock	\$ 39,654	\$ 51,912	\$ 60,412	\$ 85,396			
Feed and supplies	11,566	15,248	21,070	31,749			
Machinery and equipment	38,357	42,656	51,920	63,128			
Land and buildings	86,373	101,075		157,447			
-			137,570				
TOTAL INVESTMENT	\$175,950	\$210,891	\$270,972	\$337,720			
Receipts	A 50 005	d 51, 356	d 00 1.1.6	4350 000			
Milk sales	\$ 59,295	\$ 74,156	\$ 99,446	\$152,800			
Livestock sales	5,470	7,754	10,092	15,786			
Crop sales	546	513	600	720			
Miscellaneous receipts	1,181	1,510	1,819	3,925			
Total Cash Receipts	\$ 66,492	\$ 83,933	\$111,957	\$173,231			
Increase in livestock and feed	4,691	6,454	7,047	10,923			
TOTAL FARM RECEIPTS	\$ 71,183	\$ 90,387	\$119,004	\$184,154			
Expenses							
Hired labor	\$ 5,502	\$ 7,828	\$ 11,737	\$ 22,007			
Dairy feed	14,868	17,056	23,684	35,221			
Other feed	637	758	676	1,103			
Machine hire	741	1,150	1,773	5,942			
Machinery repair	2,537	3 , 653	5,283	8,681			
Auto expense (farm share)	227	234	219	416			
Gas and oil	1,587	1,973	2,522	3,578			
Purchased animals	3,178	4,472	3,943	12,193			
Breeding fees	661	855	1,100	1,130			
Veterinary and medicine	934	1,378	1,694	2,097			
Other livestock expense	2,116	3,251	3,619	3,946			
Lime and fertilizer	2,439	3,698	5,098	7,499			
Seeds and plants	634	1,034	1,346	2,064			
Spray and other crop expense	591	819	1,415	1,302			
Land, bldg., fence repair Taxes and insurance	1,407	1,632	2,044	3,114			
	2,711	3,124	4,595	7,821			
Electricity & phone (farm share) Miscellaneous expenses	1,186 1,282	1,531	1,880	2,627			
Total Cash Operating Expenses	\$ 43,25	2,440 \$ 56,886	2,620	7,135			
Machinery depreciation	1 2		\$ 75,248 7,126	\$127,876			
Real estate depreciation	5,109 440	5,871 793	840	8,560			
Unpaid family labor	840	600	638	1,368 180			
TOTAL FARM EXPENSES	\$ 49,627	\$ 64,150	\$ 83,852	\$137,984			
Financial Summary	, ,,,	,, /-	T	T-01970			
Total Farm Receipts	\$ 71,183	\$ 90,387	\$119,004	\$184,154			
Total Farm Expenses	49,627	64,150	83,852	137,984			
Farm Income	\$ 21,556	\$ 26,237	\$ 35,152	\$ 46,170			
Interest on av. capital at 7%	11,860	14,052	18,433	22,671			
Labor Income Per Farm	\$ 9,696	\$ 12,185	\$ 16,719	\$ 23,499			
Number of operators	1.23	1.28	1.38	1.53			
LABOR INCOME PER OPERATOR	\$ 7 , 883	\$ 9,520	\$ 12,115	\$ 15,359			

SELECTED BUSINESS FACTORS BY HERD SIZE 569 New York Dairy Farms, 1971

-		Farms with:			
Item	My farm	Less than	40 to	55 to	
		40 cows	54 cows	69 cows	
Number of farms		102	166	100	
Size of Business					
Number of cows		33	47	61	
Pounds of milk sold		415,400	612,000	767,400	
Crop acres		97	139	170	
Man equivalent		1,5	1.8	2.1	
Total work units	***************************************	360	520	666	
Rates of Production		,		,	
Milk sold per cow	·····	12,600	13,000	12,600	
Tons hay per acre	······································	2.6	2.6	' 2.8	
Tons corn silage per acre		14	16	16	
Bushels of oats per acre	(59	58	60	
Labor Efficiency		00	06	00	
Cows per man		22 276 , 900	26 340,000	29	
Pounds milk sold per man Work units per man		244 244	289	365,400 317	
-	A	2.44	209	211	
Feed Costs	ф	\$197	4003	ቀ ካ ይኒ	
Feed purchased per cow Crop expense per cow	φ	\$42	\$203 \$52	\$184 \$55	
Feed and crop expense per cow	\$	\$239	\$255	\$239	
Feed cost per cwt. milk	\$	\$1.57	\$1.56	\$1.46	
Feed and crop exp./cwt. milk	\$	\$1.91	\$1.96	\$1.90	
% Feed is of milk receipts	%	26%	26%	24%	
Hay equivalent per cow		8.0	8.0	8.1	
Crop acres per cow		2.9	3.0	2.8	
Fertilizer and lime/crop acre	\$	\$9	\$11	\$1 3	
Machinery and Labor Costs					
Total machinery costs	\$	\$6,028	\$8,389	\$10,415	
Machinery cost per cow	\$	\$183	\$178	\$171	
Machinery cost per cwt. milk	\$	\$1.45	\$1.37	\$1.36	
Labor cost per cow Labor cost per cwt. milk	φ	\$220 \$1.75	\$192 \$1.47	\$175 \$1.39	
-	Ψ	Ψ1.17	φ±•41	φ1.39	
Capital Efficiency Investment per man	¢	\$52,326	\$60,657	\$68,552	
Investment per cow	\$	\$2,378	\$2,323	\$2,360	
Investment per cwt. milk sold	\$	\$19	\$18	\$19	
Land and buildings per cow	\$	\$1,163	\$1,117	\$1,175	
Machinery investment per cow	\$	\$5 36	\$520	\$499	
Return on investment	%	6.9%	8.0%	8.7%	
Other					
Price per cwt. milk sold	\$	\$6.15	\$6.11	\$6.16	
Acres hay and hay crop silage		68	84	97	
Acres corn silage		19	33	45	

SELECTED BUSINESS FACTORS BY HERD SIZE 569 New York Dairy Farms, 1971

Number of farms Size of Business Number of cows	70 to cows	85 to 99 cows 39		150 or more cows
Number of farms Size of Business Number of cows				more cows
Size of Business Number of cows	69	39	^	
Number of cows			80	13
	_			
70	76	91	117	. 192
	,600	1,208,200		
Crop acres	203	248	310	
Man equivalent	2.4	2.9	3.4	5.1
Total work units	817	998	1,270	1,967
Rates of Production	. =00	30.000	70 100	30 500
	2,500	13,300		
Tons hay per acre	2.7	3.1	2.8	2.8
Tons corn silage per acre Bushels oats per acre	16 60	1 6 69	16 66	15 69
	00	09	00	09
Labor Efficiency	20	วา	34	38
Cows per man Pounds milk sold per man 396	32 5,100	31 416,620		
Work units per man	340	344	374	386
-	J40	3-1-1	J1+	500
Feed Costs Feed purchased per cow	\$196	\$187	\$202	\$183
Crop expense per cow	\$48	\$61	\$67	\$57
Feed & crop expense per cow	\$244	\$248	\$269	\$240
	si.56	\$1.41	\$1.51	\$1.47
	1.95	\$1.87	\$2.01	\$1.92
% Feed is of milk receipts	25%	23%	24%	23%
Hay equivalent per cow	8.1	8.3	8.3	8.0
Crop acres per cow	2.7	2.7	2.6	2.6
Fertilizer & lime/crop acre	\$12	\$15	\$16	\$15
Machinery and Labor Costs	1	1 (-1	1 1	1
	754	\$15,674		
Machinery cost per cow	\$168	\$1 7 2	\$174	\$163
Machinery cost per cwt. milk Labor cost per cow	\$1.34 \$170	\$1.30 \$168	\$1.30 \$167	\$1.30 \$159
	31.36	\$1.27	\$1.25	\$1.27
	 -	Ψ - •	Ψ - • <i>C J</i>	Ψ -• - τ
Capital Efficiency Investment per man \$73	3,313	\$72,721	\$79,698	\$66,220
	,315	\$2,317	\$2,316	\$1,759
Investment per cwt. milk sold	\$18	\$17	\$17	\$14
·-	.,136	\$1,111	\$1,176	\$820
Machinery investment per cow	\$505	\$469	\$444	\$329
Return on investment	8.8%	9.6%	10.5%	11.7%
<u>Other</u>				
	6.24	\$6.14	\$6.33	\$6.37
Acres hay and hay crop silage	123	117	148	5111
Acres corn silage	57	76	104	171

Selected Competitive Dairy Areas

Dairy business summary data from four states are presented below. These were taken from reports on farm business management projects similar to the ones in New York. An examination of these data will show how New York's dairy operations compare with those in competing areas.

1971 DAIRY FARM BUSINESS SUMMARY DATA

Item	New York	Vermont	Pennsylvania	Connecticut
Number of farms	569	133	583	23
Size of Business				
Number of cows	67	63	54	92
Number of heifers	44	46	37	59
Total crop acres	185	183	163	178
Pounds of milk sold	861,700		649,600	1,250,100
Man equivalent	2,2	2.2	2.1	2.6
Rates of Production				
Milk sold per cow	12,900	12,900	12,100	13,600
Tons hay per acre	2.7	2.2	3.3	3.0
Tons corn silage per acre	16	16	16	16
Labor Efficiency				
Cows per man	30	28	26	35
Pounds milk sold per man	391,700	357,900	309,300	474,600
Cost Control Factors				
Feed bought per cow	\$194	\$230	\$190	\$285
% Feed is of milk receipts	24%		25%	33%
Fertilizer & lime per cow	\$36	\$35	\$50	\$57
Taxes per cow	\$23	\$26	\$16	\$27
Veterinary per cow	\$13	\$13	\$13	\$17
Capital Efficiency				
Average capital investment	\$147,378	\$128,056	\$132,200	\$181,226
Total investment per cow	\$2,290	\$2,045	\$2,448	\$1,979
Machinery investment/cow	\$480	\$344	\$415	\$269
Prices				
Price/cwt. 3.5% milk sold	\$6.21	\$6.35	\$6.32	\$6.38
Financial Summary				
Total farm receipts	\$64,682	\$64,264	\$52,802	\$100,901
Total farm expenses*	\$44,857	\$51,002	\$41,748	\$81,151
-	, ,			
Labor income per operator	\$8,127	\$8,096	\$6,205	\$13,350

SOURCE: Vermont and Connecticut NEC68 - 1971 Elfac Dairy Farm Business Analysis F.M. 49 - 1971 Pennsylvania Dairy Farm Business Analysis * New York does not include interest paid, other three states do.

Family Living Expenditures

For business financial planning, the family living expenses must be considered along with the farm expenses. Some families keep a record of the living expenditures. Below is a summary of the living expenditures for families in Minnesota who recorded their living expenses as part of their farm business management project.

FAMILY LIVING EXPENDITURES
107 Minnesota Farm Families, 1971

		Average of 107 families			
Item	My family	Amount	Percent		
Number in family		4.7			
Food and meals bought Medical and hospital insurance Clothing and clothing materials Church and welfare Furnishings and equipment Operating and supplies Upkeep on dwelling Personal share of auto expense Gifts and special events Education Recreation Personal care and spending Electricity & telephone (home share)	\$	\$1,555 875 635 536 502 478 107 384 317 363 292 224 174	24 14 10 8 8 7 2 6 5 6 5 3 2		
TOTAL LIVING EXPENSES	\$	\$6,442	100		
Taxes Life insurance Dwelling improvements Home share of new autos Other savings and investments		1,368 923 33 328 563			
TOTAL FAMILY EXPENDITURES	\$	\$9,657			
Sources of Family Income Farm return to family Income from outside investments Other personal income	\$	\$13,065 625 1,180			

SOURCE: Minnesota Econ. Info. Reports R72-2 and R72-3

Food accounted for 24 percent of the living expenses. The average living expenses for 107 Minnesota families in 1971 was \$6,442. Total family expenditures were \$9,657 with taxes amounting to \$1,368 or 14 percent.

Many factors affect the expenditures of an individual family. The number in the family, ages of children, health problems, and special interests are examples. When comparing a family with the averages, these factors should be taken into consideration.

PROGRESS OF THE FARM BUSINESS

Comparing your business with that of other farmers is one part of a business checkup. A second part is to compare your current year's business with that of earlier years to show the progress you are making. In planning ahead, it helps to set business targets or goals. These should be in line with the progress you have been making.

Item	1970	1971	1972	1973 target
Size of Business Number of cows				
Number of heifers				
Pounds of milk sold				
Acres of crops				
Rates of Production Lbs. milk sold per cow		•	-	
Tons corn silage/acre				*
Labor Efficiency Lbs. milk sold per man				
Cost Contrel Feed bought per cow	\$	\$	\$	\$
Machinery cost/cow	\$	\$	_ \$	\$
Labor cost per cow	\$	\$	\$	\$
Capital Efficiency				
Total end inventory	\$. \$	_ \$	_ \$
End inventory/cow	\$	\$	\$	_ \$
Debt Situation Total debt outstanding	\$	\$	\$	\$
Debt per cow	\$	\$	\$	\$
Net Worth	\$	\$	\$	\$
Price Price per cwt. milk	\$	\$	\$	\$
Financial Summary Total Farm Receipts	\$	\$	\$	\$
Total Farm Expenses	\$	\$	\$	\$
Labor Income/Operator	\$	\$	\$	\$

Are you satisfied with your progress?