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DAIRY FARM BUSINESS SUMMARY 1972

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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	70	29	22
Cows Per Farm	67	81	89
Machinery Per Farm	$29,854	$37,316	$43,866
Investment Per Farm	$141,789	$195,141	$225,112
Investment Per Cow	$2,116	$2,409	$2,529
Milk Sold Per Cow	12,300 lbs.	13,100 lbs.	13,700 lbs.
Milk Sold Per Man	328,600 lbs.	409,300 lbs.	419,276 lbs.
Milk Price/Cwt.	$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

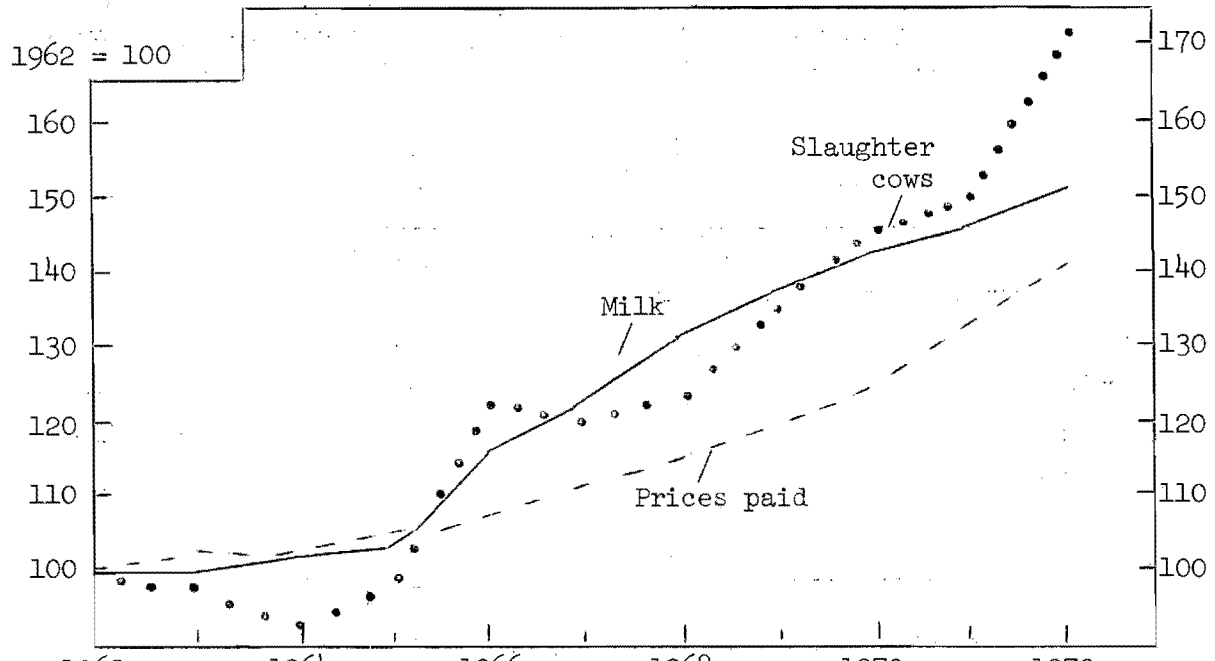
1. **Have you developed a systematic approach to management problems?**
2. **Do you have the facts on your business?**
3. **Are you improving your managerial skills?**

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!

PRICES RECEIVED AND PAID BY NEW YORK DAIRY FARMERS



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

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

Year	Milk (cwt.)	Slaughter cows (cwt.)	Dairy cows (head)	Dairy ration (ton)	Wages per month with house	Prices paid by New York dairymen
1962	$4.14	$14.26	$245	$74	$218	106
1963	4.15	14.01	234	76	222	108
1964	4.21	13.17	237	74	228	108
1965	4.27	13.91	238	76	236	110
1966	4.79	17.35	271	80	248	113
1967	5.07	17.10	303	80	279	118
1968	5.43	17.60	320	74	302	121
1969	5.66	19.30	336	74	325	126
1970	5.89	20.70	353	78	356	132
1971	6.02	21.20	372	83	375	140
1972*	6.25	24.53	407	84	384	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

Item	My Farm		Average 22 Farms	
	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 22 Farms Amount	Average 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	--
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 livestock and crops 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	$_____	$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

Item	Machinery		Land & Buildings	
	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	$_____	$104,743
End Inventory	$_____	$43,866	$_____	$104,438
Sales	_____	239	_____	0
Total (2)	$_____	$44,105	$_____	$104,438
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 offsetting 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

Item	My Farm	Average 22 Farms Amount	Average 22 Farms Percent
Labor			
Hired Labor	$_____	$ 9,836	16
Feed			
Dairy Concentrate	_____	16,101	25
Other Feed	_____	1,693	3
Machinery			
Machine Hire	_____	1,512	2
Machinery Repairs	_____	4,436	7
Auto Expense (farm share)	_____	248	--
Gas & Oil	_____	2,368	4
Livestock			
Livestock Purchased	_____	4,309	7
Breeding Fees	_____	977	2
Veterinary & Medicine	_____	2,061	3
Other Livestock Expense	_____	3,411	5
Crops			
Lime & Fertilizer	_____	4,316	7
Seeds & Plants	_____	1,345	2
Spray, Other Crop Expense	_____	1,184	2
Real Estate			
Land, Building, Fence Repair	_____	1,231	2
Taxes	_____	2,018	3
Insurance	_____	1,404	2
Rent	_____	2,338	4
Other			
Telephone (farm share)	_____	260	--
Electricity (farm share)	_____	1,229	2
Miscellaneous	_____	1,286	2
Total Cash Expenses	$_____	$63,563	100
Machinery Depreciation	_____	5,851	
Real Estate Depreciation	_____	305	
Unpaid Labor	_____	600	
Decrease in Inventory	_____	--	
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	_____	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	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

Crop	My Farm		Average 22 Farms		
	Acres	Yield	Farms Reporting	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	_____	_____	20	104*	11.4 t.
Grain Corn	_____	_____	15	71*	57 bu.
Oats	_____	_____	9	33*	52 bu.
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 Sold Per Cow	Number of Farms	Number of Cows	Feed Bought Per Cow	Labor 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 New York Farms, 1971
Labor Force - Months			
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	391,700
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	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	_____%	21%	24%
Hay Equivalent Per Cow	_____	7.5 t.	8.1 t.
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	4
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

Item	My Farm	Average 16 Farms Amount	Percent
Assets			
Farmland & Buildings	$_____	$90,777	41
Livestock	_____	51,030	23
Machinery	_____	41,302	19
Feed & Supplies	_____	18,897	9
Co-Op Investment	_____	4,451	2
Accounts Receivable	_____	4,957	2
Cash & Checking Accounts	_____	1,737	1
Savings Accounts	_____	946	**
Cash Value Life Insurance	_____	2,012	1
Stocks & Bonds	_____	465	**
Nonfarm Real Estate	_____	2,500	1
Auto (personal share)	_____	577	**
All Other	_____	1,510	1
TOTAL ASSETS	$_____	$221,161	100
Liabilities			
Real Estate Mortgage	$_____	$38,531	37
Liens on Cattle & Equipment	_____	46,734	45
Installment Contracts	_____	4,892	5
Secured Notes	_____	6,633	6
Unsecured Notes	_____	697	1
Store Accounts	_____	714	1
Personal Debt & Other	_____	5,226	5
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	_____	84
Total Milk Sales	$_____	$70,532
Annual Debt Payment Per Cow	$_____	$269
Debt Payment as % Milk Check	_____%	32%
Percent Equity	_____%	53%
Percent Debt on Real Estate	_____%	42%
Debt Per Cow	$_____	$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

Item	My farm	Farms Reporting		Average 319 farms	
		Number	Percent	Amount	Percent
Assets					
Farmland and buildings	$_____	319	100	$ 76,908	45
Livestock	_____	319	100	34,803	20
Machinery	_____	319	100	30,881	18
Feed and supplies	_____	319	100	10,730	6
Co-op investment	_____	236	74	2,363	1
Accounts receivable	_____	197	62	3,412	2
Cash and checking accounts	_____	271	85	1,662	1
Savings accounts	_____	167	52	2,078	1
Cash value life insurance	_____	215	67	2,565	2
Stocks and bonds	_____	112	35	1,957	1
Nonfarm real estate	_____	33	10	1,886	1
Auto (personal share)	_____	216	68	942	1
All other	_____	85	27	1,835	1
TOTAL ASSETS	$_____	319	100	$172,022	100
Liabilities					
Real estate mortgage	$_____	268	84	$29,558	48
Liens on cattle & equipt.	_____	217	68	21,091	34
Installment contracts	_____	115	36	2,796	5
Secured notes	_____	78	24	2,118	3
Unsecured notes	_____	86	27	2,295	4
Store accounts	_____	93	29	1,755	3
Personal debt and other	_____	163	51	1,557	3
TOTAL LIABILITIES	$_____			$61,170	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	_____	(241 farms)	66
Annual debt payment/cow	$_____	(241 farms)	$201
Debt payment as % milk check	_____%	(241 farms)	25%
Percent equity	_____%	(319 farms)	64%
Percent debt on real estate	_____%	(319 farms)	48%
Debt per cow	$_____	(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

Herd size (cows)	Number of Farms	Number of Cows	Total assets	Total liabilities	Net worth	Percent equity	Debt per cow
Under 40	60	33	$ 97,077	$ 29,853	$ 67,224	69	$ 905
40 - 54	91	47	123,109	42,773	80,336	65	910
55 - 69	60	61	164,927	56,315	108,612	66	923
70 - 84	39	75	198,655	75,058	123,597	62	1,001
85 - 99	17	90	206,782	95,111	111,671	54	1,057
100 - 114	22	102	283,305	82,658	200,647	71	810
115 - 129	9	122	322,444	92,515	229,929	71	758
130 - 149	12	139	366,298	144,797	221,501	60	1,042
150 & over	9	184	350,974	168,680	182,294	52	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 MANAGEMENT COOPERATORS
569 New York Dairy Farms,* 1971

Size of Business			Rates of Production			Labor Efficiency	
Man equiv-alent	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
4.4	144	1,903,900	16,100	4.7	22	47	596,700
3.2	100	1,354,300	14,800	3.8	19	38	490,100
2.7	82	1,057,200	14,100	3.5	18	35	448,400
2.4	70	881,300	13,600	3.2	17	32	415,000
2.1	61	764,400	13,100	2.9	15	29	381,700
2.0	54	681,200	12,600	2.8	15	28	353,100
1.8	48	611,100	12,100	2.6	14	26	327,000
1.6	43	545,100	11,600	2.4	12	24	301,900
1.4	38	467,200	10,800	2.2	11	22	261,600
1.2	30	342,900	9,200	1.8	4	18	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 not 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 bought per cow	% Feed is of milk receipts	Machinery cost per cow	Labor and machinery cost per cow	Feed and crop expense per 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

Item	My farm	Farms with: Less than 40 cows	40 to 54 cows	55 to 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	_____	1,119	858	1,070
Total Cash Receipts	$_____	$29,740	$42,680	$53,753
Increase in livestock and feed	_____	1,691	2,483	3,191
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	244	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
Veterinary and medicine	_____	395	641	739
Other livestock expense	_____	1,028	1,460	1,650
Lime and fertilizer	_____	903	1,552	2,160
Seeds and plants	_____	263	478	656
Spray and other crop expense	_____	234	429	546
Land, bldg., fence repair	_____	649	874	1,103
Taxes	_____	1,288	1,840	2,354
Electricity & phone (farm share)	_____	586	760	948
Miscellaneous expenses	_____	460	906	1,081
Total Cash Operating Expenses	$_____	$17,288	$26,453	$33,578
Machinery depreciation	_____	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				
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%	_____	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

Item	Farms with: 70 to 84 cows	85 to 99 cows	100 to 149 cows	150 or more cows
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	137,570	157,447
TOTAL INVESTMENT	$175,950	$210,891	$270,972	$337,720
Receipts				
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	1,407	1,632	2,044	3,114
Taxes and insurance	2,711	3,124	4,595	7,821
Electricity & phone (farm share)	1,186	1,531	1,880	2,627
Miscellaneous expenses	1,282	2,440	2,620	7,135
Total Cash Operating Expenses	$ 43,283	$ 56,886	$ 75,248	$127,876
Machinery depreciation	5,109	5,871	7,126	8,560
Real estate depreciation	440	793	840	1,368
Unpaid family labor	840	600	638	180
TOTAL FARM EXPENSES	$ 49,627	$ 64,150	$ 83,852	$137,984
Financial Summary				
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

Item	My farm	Farms with: Less than 40 cows	40 to 54 cows	55 to 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				
Cows per man	_____	22	26	29
Pounds milk sold per man	_____	276,900	340,000	365,400
Work units per man	_____	244	289	317
Feed Costs				
Feed purchased per cow	$_____	$197	$203	$184
Crop expense per cow	$_____	$42	$52	$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	$13
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	$_____	$220	$192	$175
Labor cost per cwt. milk	$_____	$1.75	$1.47	$1.39
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	$_____	$536	$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

Item	Farms with: 70 to 84 cows	85 to 99 cows	100 to 149 cows	150 or more cows
Number of farms	69	39	80	13
Size of Business				
Number of cows	76	91	117	192
Pounds of milk sold	950,600	1,208,200	1,571,500	2,400,500
Crop acres	203	248	310	505
Man equivalent	2.4	2.9	3.4	5.1
Total work units	817	998	1,270	1,967
Rates of Production				
Milk sold per cow	12,500	13,300	13,400	12,500
Tons hay per acre	2.7	3.1	2.8	2.8
Tons corn silage per acre	16	16	16	15
Bushels oats per acre	60	69	66	69
Labor Efficiency				
Cows per man	32	31	34	38
Pounds milk sold per man	396,100	416,620	462,200	470,700
Work units per man	340	344	374	386
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
Feed cost per cwt. milk	$1.56	$1.41	$1.51	$1.47
Feed & crop exp./cwt. milk	$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				
Total machinery costs	$12,754	$15,674	$20,394	$31,318
Machinery cost per cow	$168	$172	$174	$163
Machinery cost per cwt. milk	$1.34	$1.30	$1.30	$1.30
Labor cost per cow	$170	$168	$167	$159
Labor cost per cwt. milk	$1.36	$1.27	$1.25	$1.27
Capital Efficiency				
Investment per man	$73,313	$72,721	$79,698	$66,220
Investment per cow	$2,315	$2,317	$2,316	$1,759
Investment per cwt. milk sold	$18	$17	$17	$14
Land and building per cow	$1,136	$1,111	$1,176	$820
Machinery investment per cow	$505	$469	$444	$329
Return on investment	8.8%	9.6%	10.5%	11.7%
Other				
Price per cwt. milk sold	$6.24	$6.14	$6.33	$6.37
Acres hay and hay crop silage	123	117	148	244
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	806,950	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	12,700	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%	28%	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

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