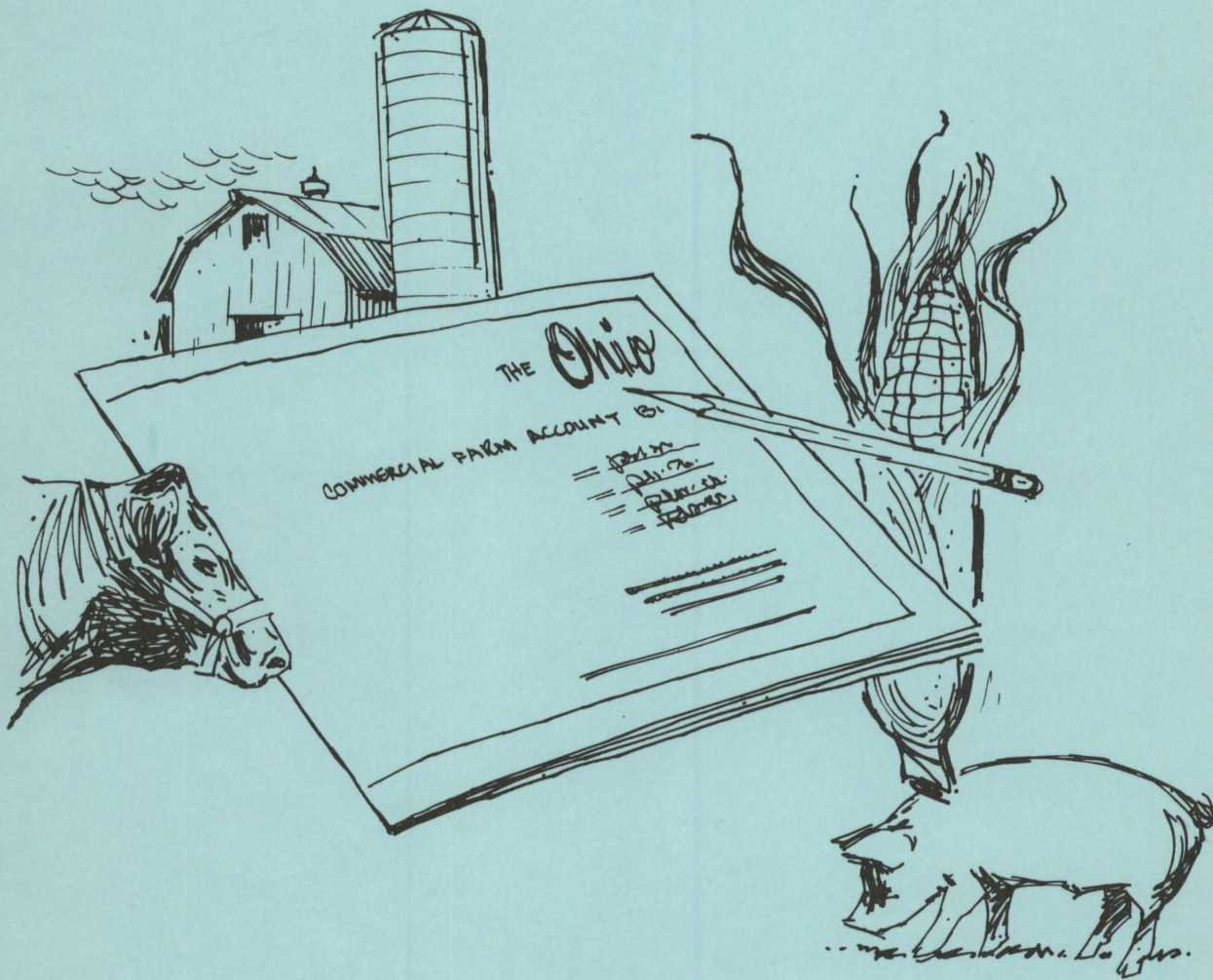


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# 1977 Farm Business Analysis Report

## DAIRY SUMMARY BY HERD SIZE



Department of Agricultural Economics and Rural Sociology  
Cooperative Extension Service  
The Ohio State University  
Columbus, Ohio

# SUMMARIES AVAILABLE FOR 1977

## TOTAL FARM SUMMARIES

Dairy  
Dairy By Herd Size  
Swine  
Beef  
General Crop

## ENTERPRISE SUMMARIES INCLUDED

Dairy  
Milk  
Farrow and Finish  
Finishing Only  
Beef Feeding  
Beef Breeding  
Corn  
Soybeans  
Wheat  
Oats  
Corn Silage  
Alfalfa Hay  
Clover-Mixed Hay

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1977 OHIO FARM BUSINESS ANALYSIS SUMMARY

DAIRY FARMS BY SIZE OF HERD

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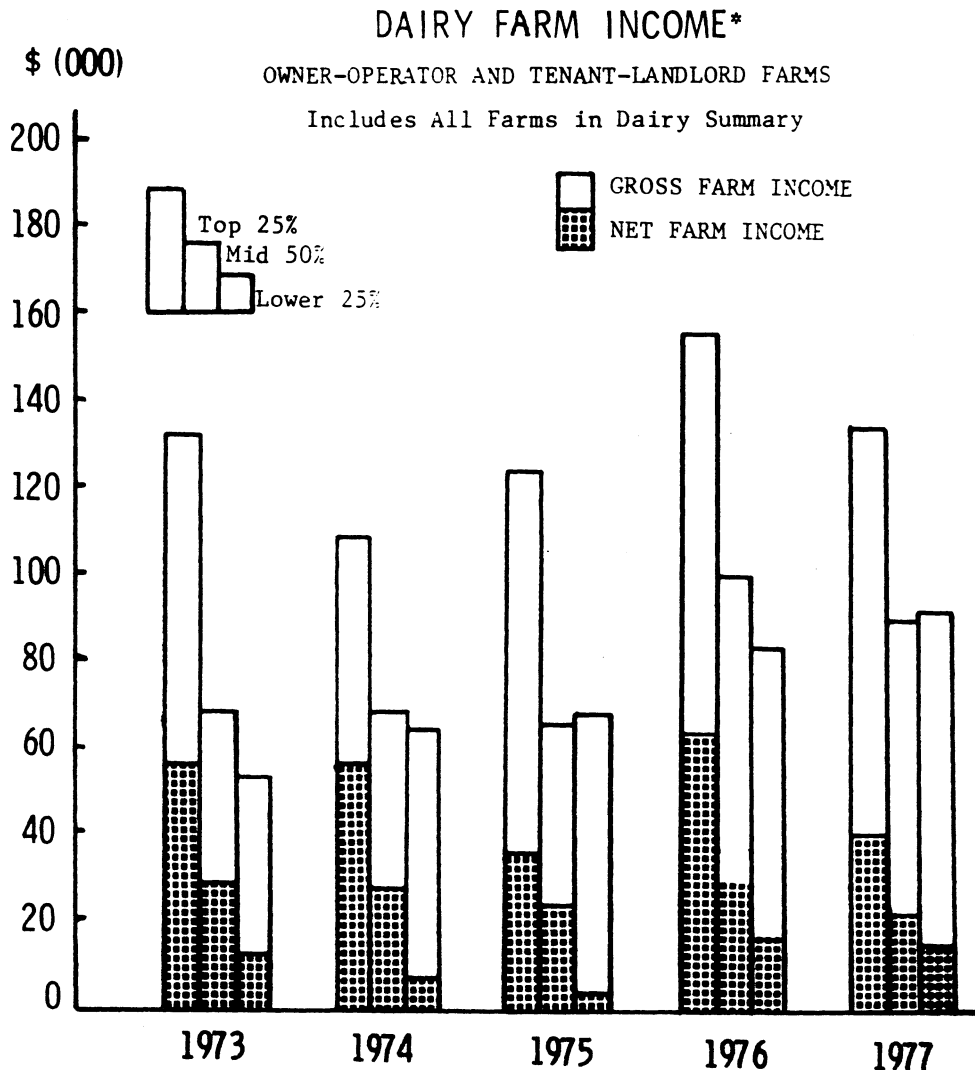
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The purpose of this summary is to aid dairy producers in recognizing areas of their operations which need improvement. These areas can be spotted by comparing one's individual records to the 1977 data in this report. Also, individual dairy producers may compare this year's records with his previous years' records in order to recognize problems which may have developed over time.

This summary uses data from 98 dairy farmers who submitted their 1977 farm enterprise records for analysis. These farms are split into three groups

Figure 1



\* See page 14 for definitions of gross and net farm income.

based upon the number of cows in the herd: less than 40 cows, 40-79 cows, and 80 or more cows. Each of the groups are then ranked in income groups on the basis of return per hour to unpaid labor and management income. The 98 owner-operator tenant-landlord dairy farms included in this summary are the same farms used in the 1977 Ohio Farm Business Analysis Report, Dairy Summary (Extension No. MM-353, ESO No. 487).

FARM INCOME COMPARISONS

A description of the farm income situation for these Ohio dairy farmers from 1973 through 1977 is given in figure 1. All dairy farms which were summarized are included in this graph and are divided into three income groups. Although the same farms were not all included in all five years, this graph

clearly points out the general decrease in 1977 dairy farm income from the levels reached in 1976 for Ohio dairy farmers. Those in the lowest income group in the summary apparently didn't experience as much decline.

Table 1 gives a comparison of selected measures of average farm size and income per farm with those of the four previous years for each herd size group. Gross farm income and total investment are physical measures of size that showed some increases over 1976 levels for the smallest herd size group. The total investment figure for the 80 or more cows per herd size group showed the largest change, increasing by over \$120,000, or 26%, from 1976 levels. The number of men per farm and the average cow herd size showed only slight variations for all three herd size groups from last year's figures.

TABLE 1

SIZE AND INCOME OF FARMS BY HERD SIZE  
OHIO, 1973-1977

Unit	SIZE OF FARM				INCOME PER FARM				
	Gross Income	Total Investment	Number of Men	Number of Cows	Net Cash Income	Net Farm Income	Family Labor and Management Income	Return to Investment	
	\$	\$	M.Y.E.*	Head	\$	\$	\$	\$	%
<u>Less Than 40 Cows</u>									
1973	43,114	119,376	1.50	31.8	11,986	17,078	11,953	7,642	6.4
1974	46,663	125,396	1.48	32.1	15,340	17,237	10,303	6,742	5.4
1975	43,679	145,699	1.54	31.2	14,133	13,542	5,352	3,215	2.2
1976	55,585	181,506	1.58	32.1	15,303	19,526	9,503	11,069	6.1
1977	50,891	169,993	1.59	31.4	17,802	16,262	6,270	5,066	3.0
<u>40-79 Cows</u>									
1973	77,634	184,793	2.15	55.9	19,334	30,794	22,733	20,242	11.0
1974	74,118	187,156	1.99	54.3	20,424	22,923	12,861	12,577	6.7
1975	74,158	193,203	2.04	54.7	21,203	21,072	10,525	10,047	5.2
1976	90,148	235,145	2.13	57.4	23,857	26,350	14,801	16,743	7.1
1977	93,328	269,163	2.14	58.2	26,106	25,002	11,508	15,181	5.6
<u>80 or More Cows</u>									
1973	158,687	338,776	3.45	115.1	25,442	55,266	41,854	45,833	13.5
1974	157,115	331,106	3.55	115.8	35,577	39,075	21,064	24,202	7.3
1975	161,221	392,985	3.65	122.7	37,307	31,567	11,207	18,169	4.6
1976	199,330	460,176	3.69	120.1	51,320	60,105	33,989	48,494	10.5
1977	200,186	580,271	3.62	114.2	50,042	46,124	15,461	35,445	6.1

\* M.Y.E. = Man Year Equivalent. One M.Y.E. is defined as 3000 hours.

TABLE 2

1977 OHIO DAIRY FARM BUSINESS ANALYSIS SUMMARY  
BY HERD SIZE (AVG.)

	Unit	Less Than 40 Cows	40-79 Cows	80 or More Cows	All
<u>INCOME</u>					
Cash Receipts	\$	46,129	84,431	182,183	93,746
Capital Gains and Losses	\$	2,957	4,387	8,181	4,758
Inventory Changes	\$	1,805	4,745	9,847	5,068
Feeder Livestock Purchase	\$	0	-235	-25	-160
Gross Income	\$	50,891	93,328	200,186	103,412
<u>EXPENSES</u>					
Cash Expenses	\$	28,327	58,325	132,141	65,173
Depreciation	\$	6,302	10,236	21,946	11,466
Interest Not Charged	\$	9,992	13,493	30,663	15,689
Unpaid Operator & Family Labor	\$	13,952	16,514	23,535	17,215
Feeder Livestock Purchase	\$	0	-235	-25	-160
Total Farm Expense	\$	58,573	98,333	208,260	109,383
<u>MANAGEMENT INCOME &amp; PROFIT</u>					
Total	\$	-7,682	-5,005	-8,074	-5,971
As a Percent of Gross Income	%	15.1	-5.4	-4.0	-5.8
<u>UNPAID OPERATOR &amp; FAMILY LABOR</u>					
Total	\$	13,952	16,514	23,535	17,215
As a Percent of Gross Income	%	27.4	17.7	11.8	16.6
<u>OVERHEAD COSTS</u>					
Total	\$	21,800	35,836	81,290	40,823
As a Percent of Gross Income	%	42.8	38.4	40.6	39.5
<u>VARIABLE COSTS</u>					
Total	\$	22,821	45,983	103,435	51,345
As a Percent of Gross Income	%	44.9	49.3	51.6	49.7
<u>NET CASH INCOME</u>	\$	17,802	26,106	50,042	28,573
<u>NET FARM INCOME</u>	\$	16,262	25,002	46,124	26,933
<u>INVESTMENT</u>					
Total	\$	169,993	269,163	580,271	302,753
Return to Investment	\$	5,066	15,181	35,445	16,734
Profit Margin (Percent of Gross)	%	10.0	16.3	17.7	16.2
Turnover (Gross Per \$1 Invested)	\$	.30	.35	.35	.34
Return on Investment (Percent)	%	3.0	5.6	6.1	5.5
<u>FAMILY LABOR &amp; MANAGEMENT INCOME</u>					
Total	\$	6,270	11,508	15,461	11,244
Per Hour	\$	1.41	2.45	2.65	2.33
NUMBER OF MEN	M.Y.E.	1.59	2.14	3.62	2.29
NUMBER OF COWS	Hd.	31.4	58.2	114.2	62.7
LABOR EFFICIENCY FACTOR	%	68.8	86.0	102.3	88.1
NUMBER OF FARMS	No.	17	65	16	98

The increases in income that Ohio dairy farmers experienced in 1976 were not repeated in 1977. Farm expenses increased more rapidly than did gross farm income, resulting in decreases of 5-23% in net farm income for all herd size groups. Returns to labor and management decreased from 22-55% from 1976 levels, while returns on investment were reduced by 9-54%. Net cash income (the difference between cash receipts and cash expenses) increased for the two smaller herd size groups, while it decreased only 2% for the largest herd size group, which indicates that 1977 profit declines were related to non-cash expense items.

A broader picture of 1977 income and expenses for Ohio dairy farmers grouped by herd size is given in Table 2, page 3 of this report. Gross income, total expenses, and total investment are all greater with larger herd size as is expected. In addition, larger dairy farms again generated more net farm income in 1977. Net cash income, net farm income, family labor and management income, and family labor and management income per hour were all highest for the largest herd size group. Another figure that increased in 1977 as herd size increased was return to investment, which is a measure of a farmer's returns to capital and management. This figure increased from 3.0 percent for the less than 40 cow herds, to 5.6 percent for the middle herd size, to 6.1 percent for the 80 or more cow herds. The labor efficiency factor in Table 2 also demonstrates that as herd size increases,

the larger farms are able to make more efficient use of labor. Thus, not only did the farms with the larger herds generate more volume, they were also able to realize greater returns at all points in their farm business in 1977.

However, a study of the comparison of farms within each herd size group (pages 8-13) shows that size alone does not guarantee profitability. Smaller herds with good management can still generate a good income, while larger herds with poor management can still be very unprofitable.

MILK PRODUCTION COST

By comparing the cost of producing milk with the price received for that milk, a dairy farmer has a good means of measuring the financial health of his dairy operation. In table 3, the cost of producing a hundredweight of milk is compared to the price received for the upper and lower 25% of dairy farms for the past five years. The upper 25% group was able to make a substantial profit in 1977 of \$1.37 per cwt. as the cost of producing milk fell 10% from 1976 levels, while the price received for the milk decreased only 1%. A 3 percent decline in the price received for milk coupled with a 10 percent increase in the cost of production resulted in a loss of \$2.64 per cwt. for the lower 25% group, which is \$.99 more than the loss experienced by this group in 1976.

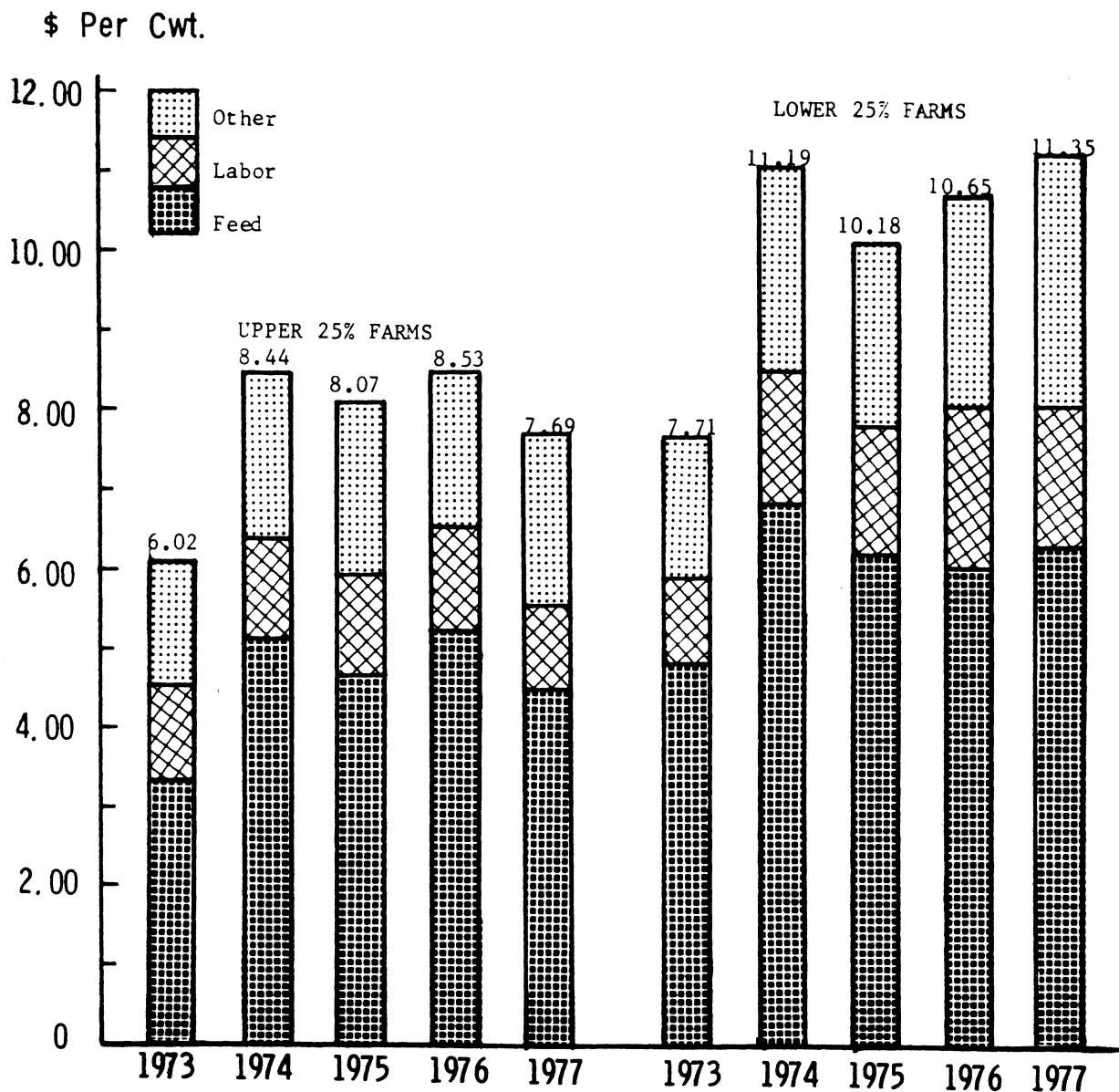
TABLE 3  
COMPARISON OF PRICE RECEIVED WITH TOTAL COST OF  
PRODUCING MILK, OHIO, 1973-1977

	Upper 25% Farms			Lower 25% Farms		
	Price Received	Cost of Production	Profit (Loss)	Price Received	Cost of Production	Profit (Loss)
	\$ Per Cwt	\$ Per Cwt	\$ Per Cwt	\$ Per Cwt	\$ Per Cwt	\$ Per Cwt
1973	6.66	6.02	.64	6.36	7.71	(1.35)
1974	7.86	8.44	(.58)	7.84	11.19	(3.35)
1975	8.01	8.07	(.06)	7.94	10.18	(2.24)
1976	9.14	8.53	.61	9.00	10.65	(1.65)
1977	9.06	7.69	1.37	8.71	11.35	(2.64)

Figure 2

### MILK PRODUCTION COST

Ohio, 1973-1977



A breakdown of the cost of producing a cwt. of milk among feed, labor, and other costs for 1973-1977 is shown graphically in figure 2. The upper 25% farms were able to lower their production costs by 10 percent in 1977, while the lower 25% group suffered a 7 percent increase in the costs of production. The biggest reason for this large difference came in the area of feed costs, with the upper 25% cutting their feed costs by 15% from 1976 levels while the lower

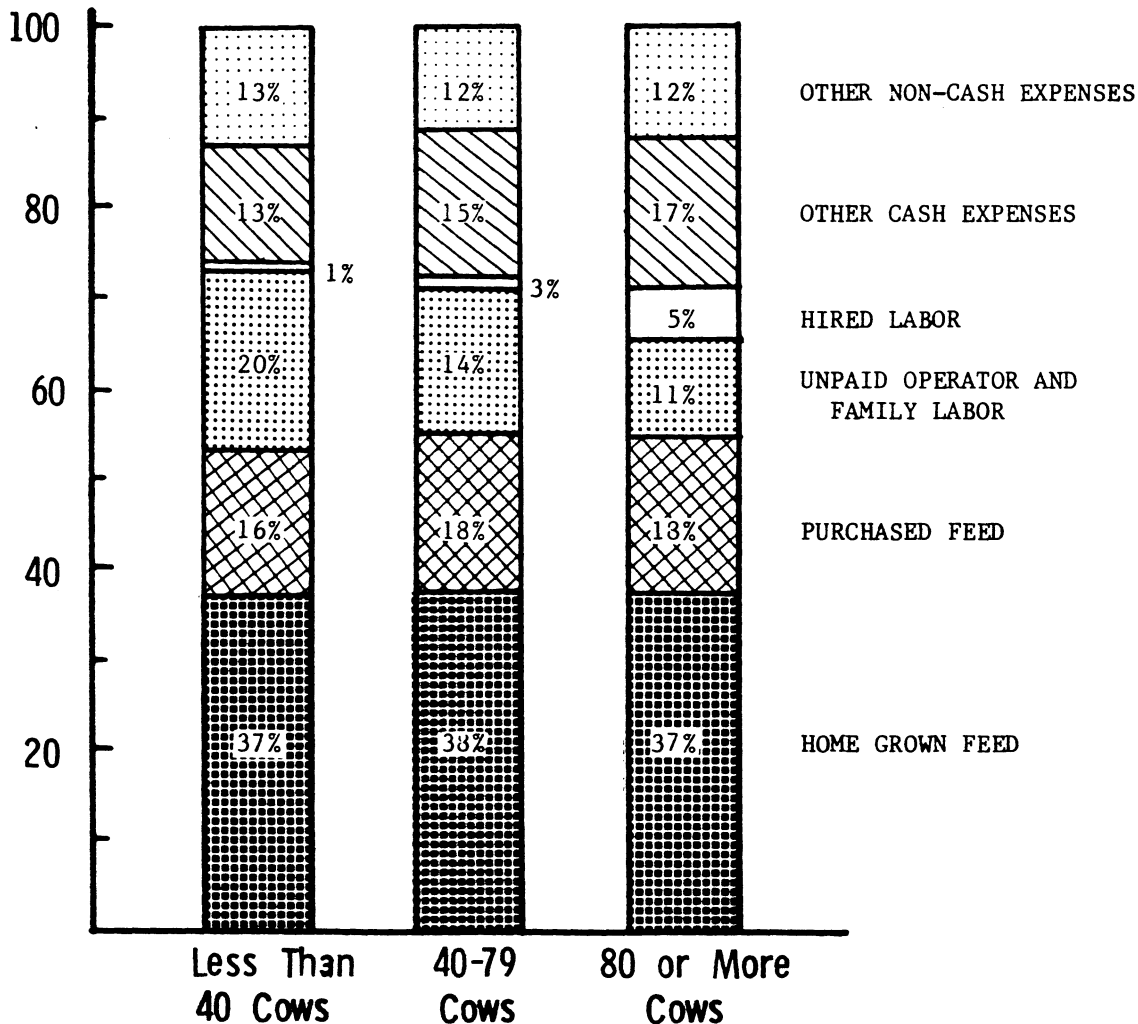
25% group saw their feed bill increase by 7%. Since 50-60% of milk production cost goes to feed costs, any declines or increases in feed, grain, and/or protein costs show up immediately in the total cost of producing milk. The fact that the upper 25% group was able to lower their feed costs while the lower 25% farms had increases in feed is the biggest single factor in the reduction in production costs for the one group and the increase in costs for the other group.

Figure 3

# PERCENT OF MILK PRODUCTION COST BY SIZE OF HERD

OHIO, 1977

Percent of Cost



In figure 3, the distribution of milk production costs illustrates that the various cost ingredients in producing milk differ by herd size. As herd size increased, the portion of unpaid family labor decreased while hired labor increased. Total labor costs were a smaller proportion of all costs for larger herds since the farms with larger herds used less labor to produce

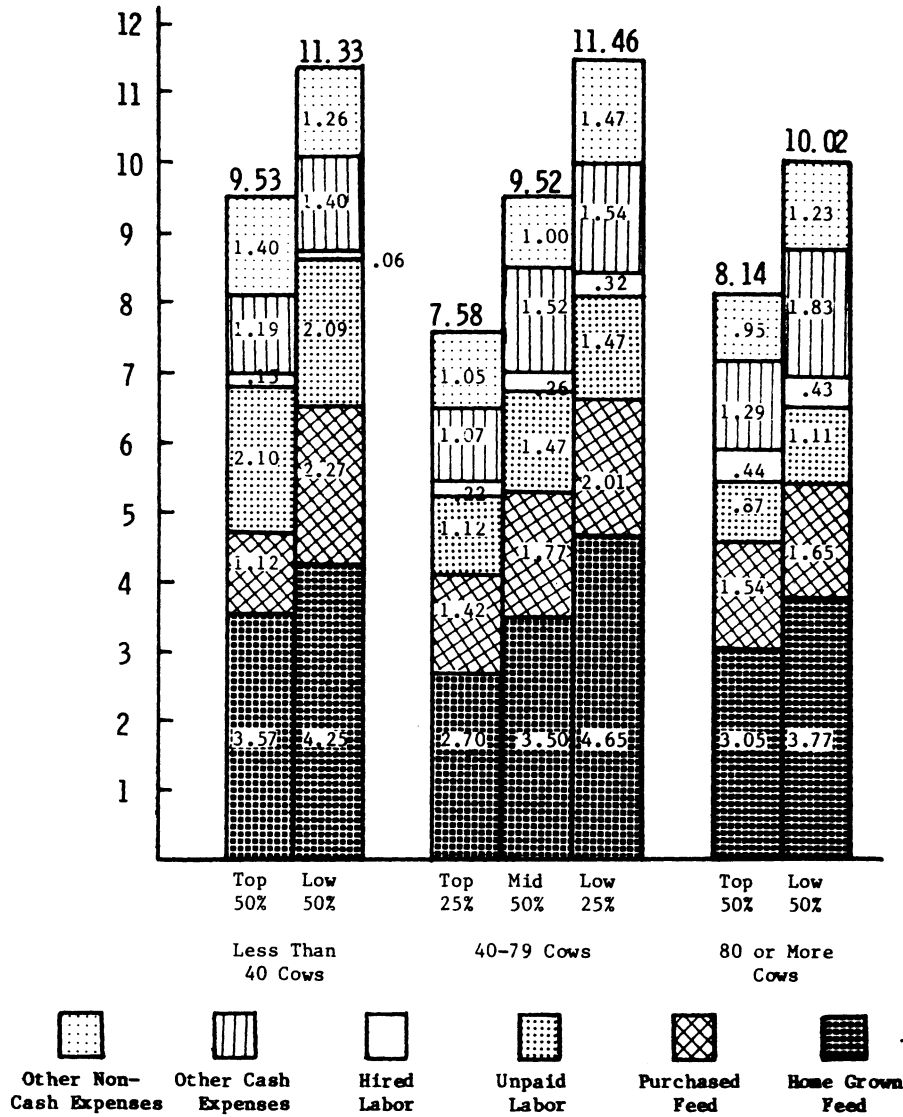
a cwt. of milk. Feed costs were similar for all herd sizes, ranging from 53 to 56 percent. Also, the other cash and non-cash expenses were similar for all herd sizes. Overall, the portion of total milk production costs made up by cash expenses (purchased feed, hired labor, and other cash expenses), which must be covered to stay in business, increased with herd size.



Figure 4

COST OF PRODUCING MILK  
OHIO, 1977

\$ Per Cwt.



Costs of milk production per cwt. for each of the income levels of the three herd sizes are illustrated in figure 4. This graph shows that there are large differences between average expenses of the most efficient and least efficient producers within each herd size. Regardless of herd size, efficiency is the key to keeping milk production costs low.

DIFFERENCES WITHIN HERD SIZES

The main body of tables on pages 8-13 of this summary gives selected income, cost, and efficiency measures for Ohio dairy farms grouped in three herd size categories. The farms in each herd size are placed into income groups by their return per hour to Family Labor and Management Income.

1977 OHIO DAIRY FARM BUSINESS ANALYSIS SUMMARY  
LESS THAN 40 COWS

	Unit	Upper 50%	Average	Lower 50%	My Farm
<u>INCOME</u>					
Cash Receipts	\$	53,098	46,129	39,935	_____
Capital Gains and Losses	\$	4,114	2,957	1,927	_____
Inventory Changes	\$	166	1,805	3,262	_____
Feeder Livestock Purchase	\$	0	0	0	_____
Gross Farm Income	\$	57,378	50,891	45,124	_____
<u>EXPENSES</u>					
Cash Expenses	\$	28,306	28,327	28,345	_____
Depreciation	\$	7,054	6,302	5,634	_____
Interest Not Charged	\$	12,382	9,992	7,868	_____
Unpaid Operator & Family Labor	\$	15,558	13,952	12,524	_____
Feeder Livestock Purchase	\$	0	0	0	_____
Total Farm Expense	\$	63,300	58,573	54,371	_____
<u>MANAGEMENT INCOME &amp; PROFIT</u>					
Total	\$	-5,922	-7,682	-9,247	_____
As a Percent of Gross Inc.	%	-10.3	-15.1	-20.5	_____
<u>UNPAID OPERATOR &amp; FAMILY LABOR</u>					
Total	\$	15,558	13,952	12,524	_____
As a Percent of Gross Inc.	%	27.1	27.4	27.8	_____
<u>OVERHEAD COSTS</u>					
Total	\$	24,137	21,800	19,724	_____
As a Percent of Gross Inc.	%	42.1	42.8	43.7	_____
<u>VARIABLE COSTS</u>					
Total	\$	23,605	22,821	22,123	_____
As a Percent of Gross Inc.	%	41.1	44.9	49.0	_____
<u>NET CASH INCOME</u>	\$	24,792	17,802	11,590	_____
<u>NET FARM INCOME</u>	\$	22,018	16,262	11,145	_____
<u>INVESTMENT</u>					
Total	\$	183,293	169,993	158,171	_____
Return to Investment	\$	7,824	5,066	2,615	_____
Profit Margin (% of Gross)	%	13.6	10.0	5.8	_____
Turnover (Gross Per \$1 Invested)	\$	.31	.30	.29	_____
Return on Investment (%)	%	4.3	3.0	1.7	_____
<u>FAMILY LABOR &amp; MANAGEMENT INCOME</u>					
Total	\$	9,636	6,270	3,277	_____
Per Hour	\$	2.07	1.41	.77	_____
<u>LABOR EFFICIENCY FACTOR</u>	%	66.7	68.8	70.7	_____
<u>NUMBER OF FARMS</u>	No.	8	17	9	_____

1977 OHIO DAIRY FARM BUSINESS ANALYSIS SUMMARY  
LESS THAN 40 COWS

	Unit	Upper 50%	Average	Lower 50%	My Farm
<u>SIZE OF BUSINESS</u>					
Number of Men	M.Y.E.	1.67	1.59	1.53	_____
Number of Cows	Hd.	32.2	31.4	30.7	_____
Pounds of 3.5 Milk Sold	Lb.	451,842	411,419	375,488	_____
Total Harvested Crop Acres	A.	133	135	137	_____
Acres Corn & Corn Silage	A.	46	58	69	_____
Soybean Acres	A.	10	6	2	_____
Alfalfa & Clover-Mixed Hay	A.	40	42	44	_____
Capital Investment	\$	183,293	169,993	158,171	_____
Gross Income	\$	57,378	50,891	45,124	_____
Value of All Crops	\$	26,430	25,741	25,128	_____
Value of Net Livestock Increase	\$	50,341	42,904	36,293	_____
<u>EFFICIENCY FACTORS</u>					
Gross Income Per Man	\$	34,358	32,007	29,493	_____
Total Labor & Management Income					_____
Per Fulltime Operator	\$	7,138	5,056	2,850	_____
All Crop Production Value Per Acre	\$	199	191	183	_____
Machinery Investment Per Tillable					_____
Acre	\$	161	162	162	_____
Machinery Cost Per Tillable Acre	\$	77	68	59	_____
Harvested Crop Acres Per Man	A.	80	85	90	_____
<u>MILK PRODUCTION COSTS PER CWT.</u>					
Purchased Feed	\$	1.12	1.67	2.27	_____
Hired Labor	\$	.15	.10	.06	_____
Paid Interest	\$	.16	.23	.31	_____
Breeding Fees	\$	.13	.12	.12	_____
Other Cash	\$	.90	.94	.97	_____
Total Cash Expenses	\$	2.46	3.06	3.73	_____
Homegrown Feeds	\$	3.57	3.89	4.25	_____
Depreciation	\$	.54	.50	.45	_____
Unpaid Labor	\$	2.10	2.09	2.09	_____
Interest Not Charged	\$	.86	.84	.81	_____
Total Not-Cash Expenses	\$	7.07	7.32	7.60	_____
Total Cost of Milk Sold	\$	9.53	10.38	11.33	_____
<u>DAIRY PERFORMANCE FACTORS</u>					
Value of Milk Sold, Per Cwt.	\$	8.91	8.89	8.87	_____
Pounds of 3.5 Milk Sold Per Cow	Lb.	14,032	13,103	12,231	_____
Dairy Returns Per \$1 Feed Fed	\$	1.90	1.60	1.36	_____
Pounds of Milk Sold Per Man					_____
Total Farm	Lb.	270,564	258,754	245,417	_____
Enterprise Only	Lb.	454,113	425,900	397,342	_____
Number of Cows Per Man					_____
Total Farm	Hd.	19	20	20	_____
Enterprise Only	Hd.	29	30	30	_____
Value of Dairy Increase	\$	4,885	3,626	2,507	_____
Value of Milk Sold	\$	40,256	36,569	33,292	_____
Total Value of Dairy Production	\$	45,141	40,196	35,800	_____
Value of Production Per Cow	\$	1,402	1,280	1,166	_____
Value of Milk Sold Per Cow	\$	1,250	1,165	1,084	_____
Feed Cost for Milk Per Cow	\$	658	728	798	_____
Value of Milk Over Feed Cost/Cow	\$	592	437	286	_____
Unpaid Labor and Mgmt. Inc./Cow	\$	231	85	-50	_____

1977 OHIO DAIRY FARM BUSINESS ANALYSIS SUMMARY  
40-79 COWS

	Unit	Upper 25%	Middle 50%	Lower 25%	My Farm
<u>INCOME</u>					
Cash Receipts	\$	101,375	79,620	77,408	_____
Capital Gains and Losses	\$	4,935	4,594	3,411	_____
Inventory Changes	\$	8,133	4,045	2,805	_____
Feeder Livestock Purchase	\$	-89	-421	0	_____
Gross Income	\$	114,354	87,838	83,624	_____
<u>EXPENSES</u>					
Cash Expenses	\$	63,730	55,384	58,984	_____
Depreciation	\$	13,029	8,853	10,299	_____
Interest Not Charged	\$	12,904	12,775	15,564	_____
Unpaid Operator & Family Labor	\$	16,252	16,597	16,602	_____
Feeder Livestock Purchase	\$	-89	-421	0	_____
Total Farm Expense	\$	105,826	93,188	101,449	_____
<u>MANAGEMENT INCOME &amp; PROFIT</u>					
Total	\$	8,528	-5,350	-17,825	_____
As a Percent of Gross Income	%	7.4	-6.1	-21.3	_____
<u>UNPAID OPERATOR &amp; FAMILY LABOR</u>					
Total	\$	16,252	16,597	16,602	_____
As a Percent of Gross Income	%	14.2	18.9	19.9	_____
<u>OVERHEAD COSTS</u>					
Total	\$	39,971	32,347	38,898	_____
As a Percent of Gross Income	%	35.0	36.8	46.5	_____
<u>VARIABLE COSTS</u>					
Total	\$	49,603	44,244	45,949	_____
As a Percent of Gross Income	%	43.4	50.4	54.9	_____
<u>NET CASH INCOME</u>					
	\$	37,645	24,236	18,424	_____
<u>NET FARM INCOME</u>					
	\$	37,684	24,022	14,341	_____
<u>INVESTMENT</u>					
Total	\$	274,639	249,048	305,175	_____
Return to Investment	\$	29,125	13,327	5,062	_____
Profit Margin (Percent of Gross)%		25.5	15.2	6.1	_____
Turnover (Gross Per \$1 Invested)\$		.42	.35	.27	_____
Return on Investment (Percent)	%	10.6	5.4	1.7	_____
<u>FAMILY LABOR &amp; MANAGEMENT INCOME</u>					
Total	\$	24,780	11,247	-1,223	_____
Per Hour	\$	5.90	2.37	-.13	_____
<u>LABOR EFFICIENCY FACTOR</u>					
	%	98.6	82.5	81.8	_____
<u>NUMBER OF FARMS</u>					
	No.	16	33	16	_____

1977 OHIO DAIRY FARM BUSINESS ANALYSIS SUMMARY  
40-79 COWS

	Unit	Upper 25%	Middle 50%	Lower 25%	My Farm
<u>SIZE OF BUSINESS</u>					
Number of Men	M.Y.E.	1.97	2.15	2.28	_____
Number of Cows	Hd.	59.8	56.3	60.3	_____
Pounds of 3.5 Milk Sold	Lb.	932,977	789,686	793,821	_____
Total Harvested Crop Acres	A.	250	203	212	_____
Acres Corn & Corn Silage	A.	91	79	95	_____
Soybean Acres	A.	22	17	3	_____
Alfalfa & Clover-Mixed Hay	A.	63	48	53	_____
Capital Investment	\$	274,639	249,048	305,175	_____
Gross Income	\$	114,354	87,838	83,624	_____
Value of All Crops	\$	46,888	37,839	46,775	_____
Value of Net Livestock Increase	\$	98,952	80,544	74,075	_____
<u>EFFICIENCY FACTORS</u>					
Gross Income Per Man	\$	58,048	40,855	36,677	_____
Total Labor & Management Income Per Fulltime Operator	\$	20,650	8,456	-880	_____
All Crop Production Value Per Acre	\$	188	186	221	_____
Machinery Investment Per Tillable Acre	\$	173	164	234	_____
Machinery Cost Per Tillable Acre	\$	76	77	92	_____
Harvested Crop Acres Per Man	A.	127	94	93	_____
<u>MILK PRODUCTION COSTS PER CWT.</u>					
Purchased Feed	\$	1.42	1.77	2.01	_____
Hired Labor	\$	.22	.26	.32	_____
Paid Interest	\$	.15	.30	.30	_____
Breeding Fees	\$	.13	.20	.17	_____
Other Cash	\$	.79	1.02	1.07	_____
Total Cash Expenses	\$	2.71	3.55	3.87	_____
Homegrown Feeds	\$	2.70	3.50	4.65	_____
Depreciation	\$	.51	.48	.53	_____
Unpaid Labor	\$	1.12	1.47	1.47	_____
Interest Not Charged	\$	.54	.52	.94	_____
Total Non-Cash Expenses	\$	4.87	5.97	7.59	_____
Total Cost of Milk Sold	\$	7.58	9.52	11.46	_____
<u>DAIRY PERFORMANCE FACTORS</u>					
Value of Milk Sold, Per Cwt.	\$	9.05	9.03	8.71	_____
Pounds of 3.5 Milk Sold Per Cow	Lb.	15,602	14,026	13,165	_____
Dairy Returns Per \$1 Feed Fed	\$	2.20	1.71	1.31	_____
Pounds of 3.5 Milk Sold Per Man					
Total Farm	Lb.	473,592	367,296	348,167	_____
Enterprise Only (Milk Summary)	Lb.	777,481	552,228	502,418	_____
Number of Cows Per Man					
Total Farm	Hd.	30	26	26	_____
Enterprise Only (Dairy Summary)	Hd.	44	36	36	_____
Value of Dairy Increase	\$	10,707	7,779	3,569	_____
Value of Milk Sold	\$	84,389	71,345	69,113	_____
Total Value of Dairy Production	\$	95,096	79,125	72,682	_____
Value of Production Per Cow	\$	1,590	1,405	1,205	_____
Value of Milk Sold Per Cow	\$	1,411	1,267	1,146	_____
Feed Cost for Milk Per Cow	\$	642	739	877	_____
Value of Milk Over Feed Cost Per Cow	\$	769	528	269	_____
Unpaid Labor and Mgmt. Income Per Cow	\$	453	152	-180	_____

1977 OHIO DAIRY FARM BUSINESS ANALYSIS SUMMARY  
80 OR MORE COWS

	<u>Unit</u>	<u>Upper 50%</u>	<u>Average</u>	<u>Lower 50%</u>	<u>My Farm</u>
<u>INCOME</u>					
Cash Receipts	\$	191,456	182,183	172,911	_____
Capital Gains and Losses	\$	8,961	8,181	7,403	_____
Inventory Changes	\$	11,181	9,847	8,512	_____
Feeder Livestock Purchase	\$	0	-25	-51	_____
Gross Farm Income	\$	211,598	200,186	188,775	_____
<u>EXPENSES</u>					
Cash Expenses	\$	130,313	132,141	133,970	_____
Depreciation	\$	21,811	21,946	22,081	_____
Interest Not Charged	\$	25,923	30,663	35,402	_____
Unpaid Operator & Family Labor	\$	22,343	23,535	24,727	_____
Feeder Livestock Purchase	\$	0	-25	-51	_____
Total Farm Expense	\$	200,390	208,260	216,129	_____
<u>MANAGEMENT INCOME &amp; PROFIT</u>					
Total	\$	11,208	-8,074	-27,354	_____
As a Percent of Gross Income	%	5.3	-4.0	-14.5	_____
<u>UNPAID OPERATOR &amp; FAMILY LABOR</u>					
Total	\$	22,343	23,535	24,727	_____
As a Percent of Gross Income	%	10.6	11.8	13.1	_____
<u>OVERHEAD COSTS</u>					
Total	\$	74,316	81,290	88,265	_____
As a Percent of Gross Income	%	35.1	40.6	46.8	_____
<u>VARIABLE COSTS</u>					
Total	\$	103,731	103,435	103,137	_____
As a Percent of Gross Income	%	49.0	51.6	54.6	_____
<u>NET CASH INCOME</u>					
	\$	61,143	50,042	38,941	_____
<u>NET FARM INCOME</u>					
	\$	59,474	46,124	32,775	_____
<u>INVESTMENT</u>					
Total	\$	509,010	580,271	651,533	_____
Return to Investment	\$	49,382	35,445	21,510	_____
Profit Margin (Percent of Gross)	%	23.3	17.7	11.4	_____
Turnover (Gross Per \$1 Invested)	\$	.42	.35	.29	_____
Return on Investment (Percent)	%	9.7	6.1	3.3	_____
<u>FAMILY LABOR &amp; MANAGEMENT INCOME</u>					
Total	\$	33,551	15,461	-2,627	_____
Per Hour	\$	6.28	2.65	-.41	_____
<u>LABOR EFFICIENCY FACTOR</u>					
	%	107.0	102.3	98.0	_____
<u>NUMBER OF FARMS</u>					
	No.	8	16	8	_____

1977 OHIO DAIRY FARM BUSINESS ANALYSIS SUMMARY  
80 OR MORE COWS

	Unit	Upper 50%	Average	Lower 50%	My Farm
<u>SIZE OF BUSINESS</u>					
Number of Men	M. Y. E.	3.45	3.62	3.79	_____
Number of Cows	Hd.	120.1	114.2	108.3	_____
Pounds of 3.5 Milk Sold	Lb.	1,824,175	1,667,314	1,310,454	_____
Total Harvested Crop Acres	A.	457	427	398	_____
Acres Corn & Corn Silage	A.	208	185	164	_____
Soybean Acres	A.	41	25	9	_____
Alfalfa & Clover-Mixed Hay	A.	25	68	50	_____
Capital Investment	\$	509,010	580,271	651,533	_____
Gross Income	\$	211,598	200,186	188,775	_____
Value of All Crops	\$	83,578	92,835	102,093	_____
Value of Net Livestock Increase	\$	194,235	173,014	151,793	_____
<u>EFFICIENCY FACTORS</u>					
Gross Income Per Man	\$	61,333	55,300	49,809	_____
Total Labor & Management Income					_____
Per Fulltime Operator	\$	19,736	8,403	-1,334	_____
All Crop Production Value Per Acre	\$	183	217	257	_____
Machinery Investment Per Tillable					_____
Acre	\$	125	160	200	_____
Machinery Cost Per Tillable Acre	\$	73	83	93	_____
Harvested Crop Acres Per Man	A.	132	118	105	_____
<u>MILK PRODUCTION COSTS PER CWT.</u>					
Purchased Feed	\$	1.54	1.59	1.65	_____
Hired Labor	\$	.44	.44	.43	_____
Paid Interest	\$	.23	.26	.30	_____
Breeding Fees	\$	.14	.13	.13	_____
Other Cash	\$	.92	1.13	1.40	_____
Total Cash Expenses	\$	3.27	3.55	3.91	_____
Homegrown Feeds	\$	3.05	3.36	3.77	_____
Depreciation	\$	.47	.54	.59	_____
Unpaid Labor	\$	.87	.97	1.11	_____
Interest Not Charged	\$	.48	.55	.64	_____
Total Non-Cash Expenses	\$	4.87	5.42	6.11	_____
Total Cost of Milk Sold	\$	8.14	8.97	10.02	_____
<u>DAIRY PERFORMANCE FACTORS</u>					
Value of Milk Sold, Per Cwt.	\$	9.19	8.97	8.72	_____
Pounds of 3.5 Milk Sold Per Cow	Lb.	15,189	14,600	13,947	_____
Dairy Returns Per \$1 Feed Fed	\$	2.00	1.81	1.61	_____
Pounds of 3.5 Milk Sold Per Man					_____
Total Farm	Lb.	528,746	406,584	398,537	_____
Enterprise Only	Lb.	818,016	743,010	665,398	_____
Number of Cows Per Man					_____
Total Farm	Hd.	35	32	29	_____
Enterprise Only	Hd.	47	45	43	_____
Value of Dairy Increase	\$	24,064	19,266	14,469	_____
Value of Milk Sold	\$	167,594	149,645	131,696	_____
Total Value of Dairy Production	\$	191,658	168,912	146,165	_____
Value of Production Per Cow	\$	1,596	1,479	1,350	_____
Value of Milk Sold Per Cow	\$	1,396	1,310	1,216	_____
Feed Cost for Milk Per Cow	\$	697	723	756	_____
Value of Milk Over Feed Cost Per Cow	\$	699	587	460	_____
Unpaid Labor and Mgmt. Income Per Cow	\$	332	160	-29	_____

GLOSSARY OF SELECTED TERMS\*

GROSS FARM INCOME - is the sum of all cash receipts plus increases in inventory and capital gains less decreases in inventory, capital losses, and feeder livestock purchases. Feeder livestock purchases are deducted to reflect on farm production.

INTEREST NOT CHARGED - represents an estimated charge for equity capital. It is determined by taking seven and one half percent of total investment and subtracting the amount of interest paid during the year. This calculation makes a similar charge for the total investment of each farm business.

UNPAID OPERATOR & FAMILY LABOR - is the wage charge for the operator and unpaid family labor using the time worked and rates per hour estimated by the farm operator.

TOTAL FARM EXPENSE - is the sum of all cash and non-cash expense for the farm less the cost of purchased feeder livestock. Non-cash expense includes depreciation, interest not charged and unpaid operator and family labor charge.

MANAGEMENT INCOME & PROFIT - equals Gross Income minus Total Farm Expense. This represents the return to management income and profit after all cash and non-cash expenses are deducted.

UNPAID LABOR & MANAGEMENT INCOME - equals Management Income and Profit plus Unpaid Operator and Family Labor. This represents the return to the operator and his family for their unpaid labor, management and profit.

NET FARM INCOME - equals Unpaid Labor and Management Income plus Interest Not Charged. This represents the return to the operator for equity capital, unpaid labor, management and profit.

RETURN TO INVESTMENT - equals Management Income and Profit plus paid and unpaid interest. Paid and unpaid interest equals seven and one half percent of Total Investment. This represents the return to all capital, owned and borrowed plus management and profit. This return times 100 divided by Total Investment gives Percent Return on Investment.

OVERHEAD COSTS - is the sum of depreciation, building repairs, interest paid, property taxes, cash rent, insurance and interest not charged. These represent costs that are essentially fixed and must be recovered regardless of the level of production.

VARIABLE COSTS - is the sum of all cash expenses other than those included in Overhead Costs. These costs vary with the level of production.

NUMBER OF MAN-YEAR EQUIVALENTS - represents the number of full-time man equivalents used on the farm for the entire year. Family labor is adjusted to a man-equivalent basis. One man-year equivalent is 3,000 hours.

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\*A complete listing of calculations is contained in occasional paper #300, "An Aid to Understanding the Individual Print-out."



VALUE OF ALL CROPS - represents all crop production valued at market price (not necessarily sold) plus government crop payments. Value of pasture is not included.

VALUE OF NET LIVESTOCK INCREASE - is the net value of livestock and livestock products produced during the year. This includes breeding fees, livestock products and livestock sold less value of livestock purchased during the year plus or minus changes in livestock inventory.

RETURN PER \$ FEED FED TO ALL LIVESTOCK ENTERPRISES - equals the Value of Net Livestock Increase divided by the Total Value of Feed Fed to All Livestock. The returns per dollar of feed fed should pay for the feed, labor, overhead on buildings and equipment required by livestock, other production costs, and provide a profit.

MACHINERY COST PER TILLABLE ACRE - is the sum of fuel, oil, grease, repairs and machine hire expenditures plus charges for depreciation and investment, less custom work receipts divided by total tillable acres. Total tillable acres equal total harvested crop acres plus acres of rotation pasture.

PROFIT MARGIN - equals Management Income and Profit plus paid and unpaid interest divided by gross income times 100. This percent shows the dollars of profit and interest received as a percent of each dollar of gross income.

TURNOVER - equals Gross Income divided by Total Investment. This is the same as the Gross Income Per \$1,000 Invested figure, but is given as a decimal figure rather than a return per \$1,000. It gives the dollars of gross income received during the year for each dollar of investment.

RETURN ON INVESTMENT - equals Management Income and Profit plus paid and unpaid interest divided by Total Investment. This is the same as Percent Return on Investment. It gives the dollars of profit and interest received during the year as a percent of each dollar of investment.

LABOR EFFICIENCY FACTOR - the total standard PMWU's for all enterprises are added together and the total is divided by the Number of Man Equivalent Hours Used (as reported on page 1 of the input form 7363). This figure is multiplied by 100 to give a percent. If more units per hour were cared for than the standard, this factor will be larger than 100.

#### SAMPLE POPULATION

The 98 owner-operator and tenant-landlord dairy farm records summarized in this report are part of 495 farm records of all types submitted by Ohio farmers to the Ohio State University for analysis in 1978. Not all farm records were complete and accurate enough to be included in the summaries.

May, 1978

COMPARE YOURSELF TO OHIO'S TOP DAIRYMEN

Enter performance records from your farm to compare with the upper groups of similar sized herds from the 1976 Ohio Farm Business Analysis.

	Unit	My Farm	39 or Less Upper 50%	40-79 Upper 25%	80+ Upper 50%	Projection for next yr.
<u>Am I Fully Employed?</u>						
1. Cows Per Man - Total Farm	Hd.	_____	19	30	35	_____
- Enterprise	Hd.	_____	29	44	47	_____
2. Lbs. 3.5 Milk Sold Per Man - Farm	Lb.	_____	271,000	474,000	529,000	_____
Enterprise	Lb.	_____	454,000	777,000	818,000	_____
3. Harvested Crop Acres Per Man	A.	_____	80	127	132	_____
<u>How Well Do My Cows Perform?</u>						
4. Lbs. 3.5 Milk Per Cow	Lb.	_____	14,000	16,000	15,000	_____
5. Value of Milk Sold Per Cow	\$	_____	1,250	1,411	1,396	_____
6. Dairy Returns Per \$1 Feed Fed	\$	_____	1.90	2.20	2.00	_____
7. Milk Value Over Feed Cost/Cow	\$	_____	592	769	699	_____
8. Value of Milk Sold Per Cwt.	\$	_____	8.91	9.05	9.19	_____
9. Cost of Milk Production Per Cwt.	\$	_____	9.53	7.58	8.14	_____
<u>How Well Do My Crops Perform?</u>						
10. All Crop Production Value Per Acre	\$	_____	199	188	183	_____
11. Machinery Investment Per Tillable Acre	\$	_____	161	173	125	_____
12. Machinery Cost Per Tillable Acre	\$	_____	77	76	73	_____
<u>How Sound Is My Operation Financially?</u>						
13. Gross Income Per Man	\$	_____	34,000	58,000	61,000	_____
14. Overhead Costs As a % of Gross	%	_____	42	35	35	_____
15. Profit Margin	%	_____	14	26	23	_____
16. Turnover	\$/ \$	_____	.31	.42	.42	_____
17. Return on Investment	%	_____	4	11	10	_____