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**1974**  
**Farm Business**  
**Summary**  
**By Type of Farming**  
**for East Central Minnesota**

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1974 FARM BUSINESS SUMMARY BY TYPE OF FARMING FOR EAST CENTRAL MINNESOTA

Truman R. Nodland and Janet B. Otis

TABLE OF CONTENTS

	Page
Introduction . . . . .	1
Capital managed and earnings . . . . .	3
Land use and crop yields . . . . .	10
Returns from livestock enterprises . . . . .	12
Concluding statement . . . . .	17

INTRODUCTION

This report summarizes 1974 farm business records by type of farming for 294 East Central Minnesota farmers. The summaries of records by type of farm were compiled from farm records summarized by the area vocational-technical institute at St. Cloud. The counties included in this study are Anoka, Benton, Isanti, Kanabec, Meeker, Mille Lacs, Morrison, Sherburne, Stearns, Todd, and Wright.

The purpose of this report is to present specific information concerning costs and returns from actual farming operations by type of farming. This information should be of use to farmers and individuals working with farmers in determining the most profitable types of farming and in providing information for farm planning.

Records were obtained from three types of farming for this report (table 1). Farms were classified according to the proportion of cash income received from the various livestock enterprises and from the sale of crops. The following classifications were used in this report:

1. Specialized farms - 80 percent or more of the cash income was from one enterprise or source.
2. Two enterprise farms - 80 percent of the income was from two enterprises with a minimum of 20 percent from the smaller of the two.

Specialized dairy farms are further divided into five categories based on the average number of dairy cows maintained.

Table 1. Number of Farms by Type, 1974

Type	Number
Dairy, under 25 cows	39
Dairy, 25-34 cows	65
Dairy, 35-44 cows	76
Dairy, 45-54 cows	33
Dairy, 55 cows and over	27
Dairy and cash crops	38
Dairy and hogs	<u>16</u>
Total	294

Records included are for only one year. Farm earnings in 1974 were significantly lower than in 1973.<sup>1</sup> Differences in climatic conditions as well as variations in general price levels are two important factors that cause farm income to vary widely from year to year and among types of farms. The decrease in farm earnings in 1974 was due primarily to higher prices paid for most farm supplies and low crop yields.

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1. For a comparison with 1973, see O'Connell, E. J., "1973 Farm Business Management Report," Agri-Industry Education Department, St. Cloud Area Vocational-Technical Institute, St. Cloud, Minnesota and Nodland, Truman and Janet B. Otis, "1973 Farm Business Summary by Type of Farming for East Central Minnesota," University of Minnesota Department of Agricultural and Applied Economics," Report ER 74-8, September 1974.

## CAPITAL MANAGED AND EARNINGS

The average value of capital used per farm for the various types of farming is shown in table 2. These data represent values as reported by farmers in their farm business records and deviate somewhat from current market values for assets with a long useful life, such as real estate. Real estate improvements are valued

Table 2. Summary of Inventories by Type of Farming, 1974

Item	Dairy, under 25 cows	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Dairy, cash crops	Dairy and hogs
1. No. of farms	39	65	76	33	27	38	16
2. Acres in farm	216	210	256	349	354	373	246
Average capital managed January 1, 1974							
3. Dairy cows	\$ 8201	\$12192	\$16361	\$19794	\$28993	\$12236	\$11361
4. Other dairy cattle	4345	7812	9169	13847	19614	8838	7561
5. Beef cattle	375	768	610	436	917	1519	1015
6. Hogs	406	849	856	1379	603	823	5864
7. Other livestock	<u>42</u>	<u>43</u>	<u>6</u>	<u>41</u>	<u>17</u>	<u>227</u>	<u>32</u>
8. Total livestock	\$13369	\$21664	\$27002	\$35497	\$50144	\$23643	\$25833
9. Crops, seed, feed	\$ 5208	\$11794	\$14704	\$18622	\$26169	\$22197	\$13775
10. Auto & truck (farm share)	\$ 833	\$ 1266	\$ 1510	\$ 1437	\$ 3417	\$ 1394	\$ 1468
11. Tractors & crop machinery	5752	10329	13521	16179	22461	16588	12082
12. Livestock equip.	<u>1524</u>	<u>3593</u>	<u>5772</u>	<u>7732</u>	<u>12667</u>	<u>3672</u>	<u>4289</u>
13. Total equip.	\$ 8109	\$15188	\$20803	\$25348	\$38545	\$21654	\$17839
14. Land	\$16916	\$24244	\$24966	\$33510	\$27933	\$38515	\$29944
15. Buildings, fencing*	<u>9331</u>	<u>14676</u>	<u>20902</u>	<u>29131</u>	<u>39466</u>	<u>19073</u>	<u>15987</u>
16. Total capital	\$52933	\$87566	\$108377	\$142108	\$182257	\$125082	\$103378
Average capital managed December 31, 1974							
17. Total capital	\$57266	\$93317	\$121495	\$156040	\$200940	\$134730	\$109233

\* Not including farm dwelling.

at cost and depreciated on the basis of estimated life. These book values tend to be below present market values because of changes in the price level. Also, land is valued at cost and has not been corrected for price inflation or for the increase in real value which has occurred since many of the farms were purchased. Thus, the value of land depends to a certain extent on date of purchase. Capital managed also includes the values of any assets furnished by landlords.

The data in table 3 show total and per acre investment in real estate based on "book values." Average per acre real estate values varied from \$154 per acre on the small dairy farms to \$215 per acre on the dairy and hog farms.

Table 3. Average Investment in Real Estate, by Type of Farming, 1974

Item	Dairy, under 25 cows	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Dairy, cash crops	Dairy and hogs
Land (beginning of year)	\$16916	\$24244	\$24966	\$33510	\$27933	\$38515	<b>\$29944</b>
Farm buildings	9331	14676	20902	29131	39466	19073	15987
Estimated investment in dwelling	7000	7000	7000	7000	7000	7000	7000
Total investment in real estate	33247	45920	52868	69641	74399	64588	52931
Number of acres	216	210	256	349	354	373	246
Average investment per acre	\$154	\$219	\$207	\$200	\$210	\$173	\$215

Capital managed per farm varied widely among types of farming included in this study. Factors contributing to the wide variation in capital managed are number of acres per farm, investment in livestock, and the buildings and equipment associated with each type of farm. Types of farming which can be classified as extensive require large amounts of capital. For example, where cash crops are a major enterprise, large amounts of capital are used. More intensive farms, such as those with dairy cattle, tend to have smaller capital investments, except for

those farms with large numbers of dairy cows.

Earnings are presented on a cash basis in table 4. In order to make all farms comparable, receipts and expenses of landlords are included. "Labor and management earnings" (line 43) is the amount that would be left as a salary to the farm operator if he paid hired man's wages for the labor of other members of the family and six percent interest on all capital managed.

Increases in farm capital are reported as a receipt and decreases in farm capital are reported as an expense in table 4. Increases or decreases are the differences in the average farm capital between January 1, 1974 and December 31, 1974, as shown in table 2. This summarizes in one figure the net effect on the following changes:

1. Products produced but not sold during the year, so they are on the end of year inventory.
2. Products that were produced during the previous year or years (on hand at the beginning of the year) and sold this year.
3. Products bought but not fully used up during the year, such as fertilizer, depreciable assets, etc.
4. Products sold that were previously purchased, such as feeder pigs and feeder cattle.
5. Depreciation on capital items.
6. Casualty losses.

Labor and management earnings varied from \$2731 for small dairy farms with less than 25 cows to a high of \$22142 for large dairy farms with 55 or more dairy cows. It is important to keep in mind that the relative profitableness of various types of farms can and often does vary considerably from year to year. There is also a wide variation in earnings within a particular farm type. Thus, one cannot assume that the type of farm which ranked first in profitability in 1964 will be most profitable in succeeding years, nor that having a particular type of farm is most profitable. These data should be studied in the light of current prices, yields and similar information.

Table 4. Summary of Earnings - Cash Statement, by Type of Farming, 1974

Item	Dairy, under 25 cows	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Dairy, cash crops	Dairy and hogs
<b>RECEIPTS</b>							
1. Dairy cattle	\$ 2455	\$ 4095	\$ 4843	\$ 7467	\$12131	\$ 5783	\$ 3756
2. Dairy products	15090	27395	35462	45885	70439	24999	22015
3. Beef cattle	176	541	398	93	1196	928	1027
4. Hogs	711	1178	1386	1893	1155	1575	13605
5. Other livestock	49	57	19	32	46	110	187
6. Small grain	209	168	570	114	21	4296	555
7. Row crops	247	350	1137	1254	842	11139	1047
8. Other crops	193	93	151	242	417	926	106
9. Other cap. assets	288	225	730	1296	834	584	140
10. Work off farm	58	193	374	380	820	906	1154
11. Misc. farm income	683	491	500	708	1168	933	590
12. Total farm sales	\$20159	\$34786	\$45570	\$59364	\$89069	\$52179	\$44182
13. Incr. in capital	4333	5751	13118	13932	18683	9648	5855
14. Fam. liv. fr. fm.	572	703	813	902	1148	662	1011
15. Total received	\$25064	\$41240	\$59501	\$74198	\$108900	\$62489	\$51048
<b>EXPENSES</b>							
16. Dairy cattle	\$ 1454	\$ 824	\$ 1012	\$ 1324	\$ 4944	\$ 2061	\$ 325
17. Beef cattle	409	246	3	6	8	272	122
18. Hogs	10	91	78	37	4	218	280
19. Other livestock	18	11	111	1	-	2	19
20. Misc. lvstk. exp.	699	1247	1673	2264	3359	1397	1130
21. Feed	3371	4179	5592	8237	13857	3503	8165
22. Fertilizer	677	1426	1823	3189	4731	4122	2431
23. Other crop expense	804	1291	1747	2309	3454	2931	1726
24. Custom work hired	893	1292	1552	1883	2400	1557	1619
25. Gas, oil, grease	925	1274	1490	1905	2290	1822	1554
26. Rep. auto, truck, trac., crop. mach.	1045	1655	1754	2113	3274	2404	2045
27. Rep. real estate	336	799	802	962	1264	736	916
28. Rep. lvstk. equip.	161	342	464	557	932	432	560
29. Wages hired labor	136	462	906	1072	2715	1189	484
30. Electricity exp.	337	503	586	813	1121	491	540
31. Real estate taxes	341	502	601	835	1227	855	593
32. Gen. farm expense	474	647	765	1103	1430	1153	715
33. Total cash exp.	\$12090	\$16791	\$20959	\$28610	\$47010	\$25145	\$23224
34. New pow. & mach.	3137	4207	6819	7938	10635	10369	3365
35. New lvstk. equip.	439	1936	2366	2879	6317	1883	620
36. New buildings	2794	4214	7520	8996	9616	6194	6679
37. Total purchases	\$18460	\$27148	\$37664	\$48423	\$73578	\$43591	\$33888
38. Decr. in capital	-	-	-	-	-	-	-
39. Interest @ 6%	3306	5426	6896	8944	11495	7794	6378
40. Unpd. fam. lab.*	544	541	743	1179	1598	389	468
41. Board, hired labor	23	57	113	65	87	82	68
42. Total expenses	\$22333	\$33172	\$45416	\$58611	\$86758	\$51856	\$40802
43. Labor & mgmt. earnings	\$ 2731	\$ 8068	\$14085	\$15587	\$22142	\$10633	\$10246

\* Includes a charge for partner's labor above one full-time individual.



Approximately 50 percent of each dollar of sales is required to pay cash operating expenses (table 5). Purchased feeds were an important item. Capital expenditures showed more variation. The amount of net cash income above all purchases was 8 to 23 percent. This is the amount available for living expenses, interest on money borrowed, debt retirement, and other savings.

Table 5. Purchases per \$100 of Total Sales, by Type of Farming, 1974\*

Item	Dairy, under 25 cows	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Dairy, cash crops	Dairy and hogs
1. Dairy cattle	\$ 7.21	\$ 2.37	\$ 2.22	\$ 2.23	\$ 5.55	\$ 3.95	\$ .75
2. Beef cattle	2.03	.71	.01	.01	-	.52	.28
3. Other livestock	.14	.29	.41	.06	-	.42	.68
4. Misc. lvstk. exp.	3.47	3.58	3.67	3.81	3.77	2.68	2.56
5. Feed	16.72	12.02	12.27	13.88	15.56	6.71	18.48
6. Fertilizer	3.36	4.10	4.00	5.37	5.31	7.90	5.50
7. Other crop exp.	3.99	3.71	3.83	3.89	3.88	5.62	3.91
8. Custom work hired	4.43	3.71	3.41	3.17	2.69	2.98	3.66
9. Gas, oil, grease	4.59	3.66	3.27	3.21	2.57	3.49	3.52
10. Rep. auto, truck, tractor, crop machinery	5.18	4.76	3.85	3.56	3.68	4.61	4.63
11. Rep. real estate	1.67	2.30	1.76	1.62	1.42	1.41	2.07
12. Rep. lvstk. equip.	.80	.98	1.02	.94	1.05	.83	1.27
13. Wages of hired labor	.67	1.33	1.99	1.81	3.05	2.28	1.10
14. Electricity	1.67	1.45	1.29	1.37	1.26	.94	1.22
15. Real est. taxes	1.69	1.44	1.32	1.41	1.38	1.64	1.34
16. Gen. farm exp.	<u>2.35</u>	<u>1.86</u>	<u>1.68</u>	<u>1.86</u>	<u>1.61</u>	<u>2.21</u>	<u>1.62</u>
17. Total operating expense	\$59.97	\$48.27	\$46.00	\$48.20	\$52.78	\$48.19	\$52.57
18. New power and machinery	15.56	12.09	14.96	13.37	11.94	19.87	7.61
19. New livestock equipment	2.18	5.57	5.19	4.85	7.09	3.61	1.40
20. New buildings	<u>13.86</u>	<u>12.11</u>	<u>16.50</u>	<u>15.15</u>	<u>10.80</u>	<u>11.87</u>	<u>15.12</u>
21. Total purchases	\$91.57	\$78.04	\$82.65	\$81.57	\$82.61	\$83.54	\$76.70

\* Total purchases and sales are shown in Table 4.

Table 6. Summary of Earnings - Enterprise Statement, by Type of Farming, 1974

Item	Dairy, under 25 cows	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Dairy, cash crops	Dairy and hogs
<b>RECEIPTS AND NET INCREASES</b>							
1. Milk cows	\$14144	\$26259	\$34116	\$44324	\$66639	\$23385	\$20808
2. Other dairy cattle	1762	4129	6754	7092	10260	3854	3979
3. Beef breeding herd	-17	8	23	48	-	56	-42
4. Feeder cattle	-7	156	141	-13	349	115	430
5. Hogs	518	765	1026	682	899	1054	12892
6. Other livestock	57	75	14	16	62	-13	180
7. Total produc. livestock	\$16457	\$31392	\$42074	\$52149	\$78209	\$28451	\$38247
8. Feed fed	14201	24418	31463	41450	59711	25715	33882
9. Value added by livestock	\$ 2256	\$ 6974	\$10611	\$10699	\$18498	\$ 2736	\$ 4365
10. Crops, seed, feed	11395	19369	27325	34960	45940	33842	25445
11. Misc. farm income	683	491	500	708	1168	933	590
12. Total value added	\$14334	\$26834	\$38436	\$46367	\$65606	\$37511	\$30400
<b>EXPENSES AND NET DECREASES</b>							
13. Truck & auto (farm share)	\$ 1023	\$ 1298	\$ 1498	\$ 2192	\$ 2726	\$ 1712	\$ 1932
14. Electricity expense	337	503	586	813	1121	491	540
15. Tractors & crop machinery	2790	4695	5940	6938	9293	7230	5005
16. Livestock equipment	519	1371	1770	2008	4310	1395	1132
17. Buildings, fencing	1163	1791	2553	2993	3809	2912	2232
18. Misc. livestock expense	699	1247	1673	2264	3359	1397	1130
19. Labor*	952	1286	2069	2690	4694	1939	497
20. Real estate taxes	341	502	601	835	1227	855	593
21. General farm expense	473	647	765	1103	1430	1153	715
22. Interest @ 6%	3306	5426	6896	8944	11495	7794	6378
23. Total expenses	\$11603	\$18766	\$24351	\$30780	\$43464	\$26878	\$20154
24. Labor & mgmt. earnings	\$ 2731	\$ 8068	\$14085	\$15587	\$22142	\$10633	\$10246

\* Includes wages paid and value of board to hired labor, unpaid family labor, a charge for partners above one full time individual, and the labor part of the payment for custom work hired less income received for work off the farm.

The data in table 6 report earnings on an enterprise basis. On the enterprise basis, the value of livestock and livestock products produced includes the difference between sales and purchases of livestock, sale of products, value of livestock and products used in the home, changes in inventories, and an accounting of transfers between enterprises. The resulting figure represents value of livestock and livestock products added by the enterprise. Costs of operating each service enterprise (auto and trucks, tractors and crop machinery, etc.) are calculated in a similar manner. Credit is given to crops for feed raised on the farm and consumed by livestock. Thus, while earnings statements on an enterprise basis do not show purchases and sales, such a statement more truly shows value produced for the productive enterprises and the expenses for each of the service enterprises.<sup>1</sup>

Crops are a major source of income on all farms, when credit is given to crops for feed raised on the farm and consumed by livestock (table 7). Even on the highly specialized dairy farms, 70 to 80 percent of the income is from crops. The proportion of farm income from livestock, crops, and miscellaneous sources is based on receipts and net increases, as shown in table 6. Return over feed is the amount of income added by livestock and the return to crops represents the value of crops produced during the year.

Table 7. Proportion of Farm Income from Livestock, Crops, and Miscellaneous Sources by Type of Farming, 1974

Item	Dairy, under 25 cows	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Dairy, cash crops	Dairy and hogs
Livestock (return over feed)	15.7	26.0	27.6	23.1	28.2	7.3	14.4
Crops (net in- creases)	79.5	72.2	71.1	75.4	70.0	90.2	83.7
Miscellaneous income	4.8	1.8	1.3	1.5	1.8	2.5	1.9

1. For the method of calculation, see Nodland, Truman R., "Know Your Farm Business," Univ. of Minn. Agricultural Extension Pamphlet 138, Revised 1971.

Rate earned on capital managed is increasingly becoming a factor to consider, particularly when the contribution of capital managed to earnings is greater than the value of the operator's labor. Small dairy farms received a modest return to labor and none on capital. Large dairy farms, on the other hand, yielded a return to capital managed of 13.4 percent and \$8000 return to the farm operator for his labor. (See table 8.). However, if current market prices are applied to real estate in lieu of book values, rate earned on capital would be considerably smaller. Also, crop prices in 1974 were relatively high.

Table 8. Rate Earned on Capital Managed, by Type of Farming, 1974

Item	Dairy, under 25 cows	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Dairy, cash crops	Dairy and hogs
1. Labor earnings	\$ 2731	\$ 8068	\$14085	\$15587	\$22142	\$10633	\$10246
2. Interest on cap. managed	<u>3306</u>	<u>5426</u>	<u>6896</u>	<u>8944</u>	<u>11495</u>	<u>7794</u>	<u>6378</u>
3. Total (1 + 2)	\$ 6037	\$13494	\$20981	\$24531	\$33637	\$18427	\$16624
4. Est. wage for operator	<u>8000</u>	<u>8000</u>	<u>8000</u>	<u>8000</u>	<u>8000</u>	<u>8000</u>	<u>8000</u>
5. Return to capital (3-4)	\$-1963	\$ 5494	\$12981	\$16531	\$25637	\$10427	\$ 8624
6. Ave. capital managed	\$55100	\$90442	\$114936	\$149074	\$191598	\$129906	\$106306
7. Rate earned on capital mgd.	0%	6.1%	11.3%	11.1%	13.4%	8.0%	8.1%

#### LAND USE AND CROP YIELDS

Tables 9 and 10 show the distribution of acres per farm and the average yields for the more important crops. In 1974, seventy percent or more of the income was derived from crop production, as is shown in table 7. This stresses the need for a good livestock manager to be able to manage crop production as well.

Oats, corn for grain and for silage, and alfalfa hay are the predominant crops. The cropping system reflects the need for feed for livestock. Small dairy farms

had only 51 percent tillable land, while the larger dairy farms had 76 percent tillable.

Crop yields were lower than normal in 1973. Crop yields do not appear to be related to size of farm, except for the small dairy farms where average yields were quite low. Average yields of corn for grain ranged from 48 to 54 bushels per acre and average yields of oats ranged from 45 to 56 bushels per acre.

Table 9. Distribution of Acres in Farm, by Type of Farming, 1974

Item	Dairy, under 25 cows	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Dairy, cash crops	Dairy and hogs
1. Oats	20.5	24.5	33.3	35.1	29.4	47.7	34.4
2. Other sm. grains	<u>2.7</u>	<u>1.7</u>	<u>3.6</u>	<u>.9</u>	<u>2.5</u>	<u>14.4</u>	<u>4.3</u>
3. Total sm. grains	23.2	26.2	36.9	36.0	31.9	62.1	38.7
4. Corn grain	17.9	24.8	37.6	47.7	52.9	85.0	48.4
5. Corn silage	22.8	38.7	49.1	62.1	79.7	32.1	9.5
6. Soybeans	.8	1.6	2.0	4.2	3.3	28.6	1.9
7. Other cult. crops	-	-	<u>.3</u>	<u>.5</u>	<u>.9</u>	<u>4.0</u>	<u>2.8</u>
8. Total cult. crops	41.5	65.1	89.0	114.5	136.8	149.7	62.6
9. Alfalfa hay	26.4	33.3	42.3	64.0	62.2	46.3	41.5
10. Other hay	<u>16.1</u>	<u>10.5</u>	<u>10.1</u>	<u>27.4</u>	<u>29.7</u>	<u>6.5</u>	<u>2.2</u>
11. Total till. land in hay	42.5	43.8	52.4	91.4	91.9	52.8	43.7
12. Total till. land in pasture	1.3	1.9	2.4	3.7	6.3	3.8	5.4
13. Land not cropped	<u>1.9</u>	<u>1.0</u>	<u>.2</u>	-	<u>.3</u>	<u>2.3</u>	<u>22.1</u>
14. Total till. land	110.4	138.0	180.9	245.6	267.2	270.7	172.5
15. Non-till. pasture	47.4	19.8	33.8	38.7	17.5	33.7	23.7
16. Other non-till. land	<u>58.0</u>	<u>52.0</u>	<u>41.0</u>	<u>65.0</u>	<u>69.3</u>	<u>69.0</u>	<u>49.4</u>
17. Total acres in farm	215.8	209.8	255.7	349.3	354.0	373.4	245.6
18. Percent land tillable	51.2%	65.8%	70.8%	70.3%	75.5%	72.5%	70.2%

Table 10. Crop Yields per Acre, by Type of Farming, 1974

Item	Dairy, under 25 cows	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Dairy, cash crops	Dairy and hogs
1. Oats grain, bu.	45.0	54.5	56.4	48.9	54.1	51.1	55.4
2. Wheat, bu.	*	*	37.8	*	*	32.6	*
3. Corn grain, bu.	48.8	51.4	54.3	47.7	52.9	48.4	54.2
4. Corn silage, ton	7.2	9.2	9.8	9.4	10.4	9.9	9.5
5. Soybeans, bu.	*	19.9	16.8	17.4	*	14.6	*
6. Alfalfa hay, ton	2.2	3.0	2.8	2.8	3.6	2.9	2.8

\* Less than 5 cases.

#### RETURN FROM LIVESTOCK

Feed costs, returns and some related factors are shown for dairy cattle in tables 11 through 13. Home grown feeds have been charged to livestock at current market prices during the year. Purchased feeds were charged at cost. The number of head represents the average number on hand at the beginning of each month.

As shown in table 11, average return over feed per cow varied from \$194 for small herds to \$332 for large herds on specialized dairy farms. Dairy and cash crop farms showed a low return of \$186 return above feed cost. The two large dairy herd categories had the highest production per cow and the highest price received per 100 pounds of milk sold. They also had relatively high total feed costs per cow.

The return for \$100 of feed fed ranged from \$134 to \$155. Feed is the largest single item of cost for all classes of livestock and, in the case of dairy cattle, makes up about 50 percent of the total cost. Thus, on the average, a return of about \$200 for each \$100 of feed is necessary in order to break even, with average equipment, buildings, and labor. The same kind of analysis can be used with feed cost per 100 pounds of milk produced. The average producer will need to secure a price which is twice the cost of feed per unit of product produced in order to cover all costs, including modest amounts for labor.

Feed costs and returns from other dairy cattle are shown in table 12. These are mostly replacements for the milking herd. The information in table 13 shows feed costs and returns from the entire dairy herd on a per cow basis. The information presented in this table is especially valuable for planning a dairy operation or for expanding an existing herd, since it includes replacement stock. A typical dairy herd averages about 1.3 head of young stock per cow.

Feed costs and returns from hogs are shown in table 14. All farms included maintained a complete (farrowing to market) hog enterprise. Thus, the overhead cost of maintaining breeding stock is included in the reporting of feed and other costs.

Table 11. Factors of Costs and Returns from Dairy Cows, by Type of Farming, 1974

Item	Dairy, under 25 cows	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Dairy, cash crops	Dairy and hogs
Number of cows	20	31	40	50	71	29	30
Pounds of milk per cow	10560	12040	12068	12286	12963	11994	10816
Price received per cwt. of milk	\$7.22	\$7.49	\$7.53	\$7.61	\$7.71	\$7.46	\$7.27
Value produced per cow:							
Dairy product sales	\$743.35	\$889.45	\$895.51	\$923.24	\$986.54	\$880.07	\$774.48
Dairy produce used in home	6.31	5.19	5.08	5.92	5.36	5.60	6.19
Milk to lvstk.	11.58	7.24	7.73	6.00	6.67	7.84	4.75
Net increase in value of cows	<u>-64.48</u>	<u>-49.29</u>	<u>-46.82</u>	<u>-43.32</u>	<u>-65.25</u>	<u>-70.14</u>	<u>-49.00</u>
Total value produced	\$696.76	\$852.59	\$861.50	\$891.84	\$933.32	\$823.37	\$736.42
Feed per cow, pounds:							
Corn	2809	3166	3275	3959	3766	4428	2660
Small grain and complete ration	1505	1615	1748	1155	1207	1003	1635
Protein, salt, mineral	658	621	857	738	833	1049	544
Total concentrates	4972	5402	5880	5852	5806	6480	4839
Total hay	6068	6006	5524	5302	4944	5242	6016
Total silage	10816	14239	13531	15326	16619	13498	11148
Feed cost per cow:							
Concentrates	\$268.03	\$288.97	\$294.05	\$325.41	\$342.46	\$324.01	\$280.34
Roughages	220.59	258.31	252.96	260.24	255.71	257.77	263.81
Pasture	<u>14.48</u>	<u>5.62</u>	<u>6.87</u>	<u>5.15</u>	<u>3.14</u>	<u>8.80</u>	<u>6.19</u>
Total feed cost	\$503.10	\$552.90	\$553.88	\$590.80	\$601.31	\$590.58	\$550.34
Return above feed cost per cow	\$193.66	\$299.69	\$307.62	\$301.04	\$332.01	\$232.79	\$186.08
Return for \$100 of feed	\$138	\$154	\$155	\$151	\$155	\$139	\$134
Feed cost per cwt. milk produced	\$4.76	\$4.59	\$4.59	\$4.81	\$4.64	\$4.92	\$5.09



Table 12. Feed Costs and Returns from Other Dairy Cattle, by Type of Farming, 1974

Item	Dairy, under 25 cows	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Dairy, cash crops	Dairy and hogs
Number of head	24	39	49	70	93	46	36
Net increase in value per head	\$74.03	\$106.93	\$138.97	\$101.75	\$106.54	\$89.00	\$119.97
Feed per head, pounds							
Concentrates	918	799	1125	1014	928	1573	1154
Hay	2118	2063	1915	1753	1832	1685	2362
Silage	3401	6222	6417	6997	6497	6938	3692
Whole milk	144	77	87	56	65	73	60
Total feed cost per head	\$135.63	\$148.16	\$165.12	\$162.74	\$157.04	\$175.81	\$170.87
Return above feed cost per head	\$-61.60	\$-41.23	\$-26.15	\$-60.99	\$-50.50	\$-86.81	\$-50.90
Return for \$100 of feed	\$55	\$72	\$84	\$63	\$68	\$51	\$70

Table 13. Feed Costs and Returns from All Dairy Cattle, on a per Cow Basis, by Type of Farming, 1974

Item	Dairy, under 25 cows	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Dairy, cash crops	Dairy and hogs
Value of produce per cow							
Dairy products	\$761.28	\$901.85	\$908.31	\$935.13	\$998.57	\$893.51	\$785.38
Net increase in value	<u>22.32</u>	<u>84.74</u>	<u>123.76</u>	<u>99.38</u>	<u>78.45</u>	<u>65.43</u>	<u>93.44</u>
Total value prod.	\$783.60	\$986.59	\$1032.07	\$1034.51	\$1077.02	\$958.94	\$878.82
Feed per cow, pounds							
Concentrates	6065	6416	7528	7281	7066	10067	6216
Hay	8551	8602	7874	7774	7414	7794	8820
Silage	14804	22156	21406	25139	25381	24049	15532
Total feed cost per cow	\$662.03	\$740.81	\$756.52	\$819.04	\$813.13	\$857.15	\$753.25
Return above feed cost per cow	\$121.57	\$245.78	\$275.55	\$215.47	\$263.89	\$101.79	\$125.57
Return for \$100 of feed	\$118	\$133	\$136	\$126	\$132	\$111	\$117
Misc. lvstk. expenses per cow	\$31.33	\$32.50	\$36.63	\$41.75	\$36.37	\$44.95	\$30.40
Veterinary expenses per cow	\$12.36	\$14.29	\$13.71	\$14.95	\$14.96	\$14.57	\$12.78

Table 14. Feed Costs and Returns from Hogs, by Type of Farming, 1974

Item	Average of 16 herds
Pounds produced	37781
Per cwt. produced	
Net increase in value	\$34.12
Feed cost	<u>28.89</u>
Return above feed cost	\$ 5.23
Return for \$100 of feed	\$118
Price received per cwt.	\$35.29
Weight per hog sold, pounds	207
Miscellaneous costs per cwt. produced*	\$ .53
Feed per cwt. hogs produced, pounds	
Corn	313
Small grain	68
Commercial feeds**	<u>217</u>
Total concentrates	598
Total number of litters raised	28
Number of pigs born per litter	9.0
Number of pigs weaned per litter	6.4

\* Miscellaneous costs include items such as veterinary expense, purchased bedding, breeding fees, etc.

\*\* This includes protein feed and purchased complete hog feeds which have not been divided between corn, small grains and protein.

## CONCLUDING STATEMENT

A summary of earnings, resources used, size of business, and expenses is presented in table 15. Small dairy farms showed the lowest earnings. They had \$6037 available to pay for the operator's labor and capital managed. Large dairy farms had a return large enough to provide \$8000 for labor performed by the operator and yield 13.4 percent return on the "book value" of capital managed.

Acres per farm varied from 210 for dairy farms with 25-34 cows to 373 for dairy and cash crop farms. All types of farms included in this report had a relatively large amount of non-tillable land. Dairying tends to be located on small farms where there is non-tillable land and where the production of roughage has an advantage over grain crops.

The number of workers per farm varied from 1.3 on the small dairy farms to 2.2 on the large dairy farms. Most of the farms are operated with family labor and a quite limited amount of hired labor. Total work units and work units per worker on the large dairy farms was much larger than that reported by the other groups. Large dairy farms reported 775 work units, 2.2 workers and 352 work units per worker, compared to 233 work units, 1.3 workers and 179 work units per worker on the small dairy farms. The operators of large dairy farms were able to handle a greater work load than the other groups, partly because of some increase in number of workers but also by employing considerably larger amounts of capital in total and per worker. All groups required about 50 percent of total sales to pay operating expenses.

The data in table 16 show a comparison of 1973 and 1974 earnings, resources used, size of business and expenses.

Table 15. Some Characteristics of Various Types of Farms, East Central Minnesota, 1974

Item	Dairy, under 25 cows	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Dairy, cash crops	Dairy and hogs
<b>EARNINGS</b>							
1. Net cash income	\$ 1699	\$ 7638	\$ 7906	\$10941	\$15491	\$ 8588	\$10294
2. Labor & mgmt. earnings	\$ 2731	\$ 8068	\$14085	\$15587	\$22142	\$10633	\$10246
3. Rate earned on investment	0%	6.1%	11.3%	11.1%	13.4%	8.0%	8.1%
<b>LAND</b>							
4. Acres in farm	216	210	256	349	354	373	246
5. Tillable acres	110	138	181	246	267	271	172
6. % till. land in							
Small grain	21%	19%	20%	15%	12%	23%	22%
Cult. crops	38	47	50	47	51	55	37
Hay & pasture	40	33	30	38	37	21	28
Not cropped	1	1	0	0	0	1	13
<b>LABOR</b>							
7. No. of workers	1.3	1.4	1.5	1.8	2.2	1.6	1.3
8. Work units per worker	179	249	299	317	352	252	331
<b>CAPITAL</b>							
9. Total capital managed	\$55100	\$90442	\$114936	\$149074	\$191598	\$129906	\$106306
10. Capital managed per worker	\$42385	\$64601	\$ 76624	\$ 82819	\$ 87090	\$ 81191	\$ 81774
<b>SIZE OF BUSINESS</b>							
11. Total work units	233	349	449	570	775	403	430
12. Net value added							
% by livestock	16	26	28	23	28	7	14
% by crops	79	72	71	75	70	90	84
% by miscellaneous	5	2	1	2	2	3	2
<b>EXPENSES</b>							
13. Total oper. expense	\$12090	\$16791	\$20959	\$28610	\$47010	\$25145	\$23224
14. Purchase of capital items	\$ 6370	\$10357	\$16705	\$19813	\$26568	\$18446	\$10664
15. Power, machinery, equipment & bldg. expense per WU	\$25.03	\$27.67	\$27.50	\$26.22	\$27.43	\$34.09	\$25.21
16. Tractor & machinery expense per crop A.	\$26.03	\$34.75	\$33.31	\$28.68	\$35.66	\$27.32	\$34.52
17. Total operat. expense per \$100 of sales	\$59.97	\$48.27	\$46.00	\$48.20	\$52.78	\$48.19	\$52.57

Table 16. Some Comparisons with 1973, East Central Minnesota

Item		Dairy, under 25 cows	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Dairy, cash crops	Dairy and hogs
<b>EARNINGS</b>								
1. Labor & mgmt. earnings	1973	\$ 9500	\$15690	\$19918	\$25980	\$36481	\$26501	\$30766
	1974	\$ 2731	\$ 8068	\$14085	\$15587	\$22142	\$10633	\$10246
2. Rate earned on invest.	1973	10.3%	16.2%	19.3%	21.0%	23.4%	19.0%	17.7%
	1974	0%	6.1%	11.3%	11.1%	13.4%	8.0%	8.1%
<b>LAND</b>								
3. Acres in farm	1973	209	236	254	306	405	417	304
	1974	216	210	256	349	354	373	246
4. Till. acres	1973	108	149	173	216	297	305	211
	1974	110	138	181	246	267	271	172
<b>LABOR</b>								
5. No. workers	1973	1.3	1.4	1.5	1.7	2.0	1.7	1.4
	1974	1.3	1.4	1.5	1.8	2.2	1.6	1.3
6. Work units per worker	1973	173	249	289	320	380	254	328
	1974	179	249	299	317	352	252	331
<b>CAPITAL</b>								
7. Total mgd.	1973	\$49026	\$76781	\$95553	\$125319	\$163286	\$116498	\$113519
	1974	\$55100	\$90442	\$114936	\$149074	\$191598	\$129906	\$106306
8. Per worker	1973	\$37712	\$54844	\$63702	\$73717	\$81643	\$68528	\$81085
	1974	\$42385	\$64601	\$76624	\$82819	\$87090	\$81191	\$81774
<b>SIZE OF BUSINESS</b>								
9. Work units	1973	225	348	433	544	761	431	459
	1974	233	349	449	570	775	403	430
<b>EXPENSES</b>								
10. Pow., mach, equip. & bldg. exp. per WU	1973	\$21.35	\$23.30	\$23.61	\$23.03	\$23.11	\$26.61	\$26.05
	1974	\$25.03	\$27.67	\$27.50	\$26.22	\$27.43	\$34.09	\$25.21
11. Tractor & mach. expense per crop A.	1973	\$22.10	\$27.43	\$28.79	\$27.46	\$29.49	\$23.14	\$32.05
	1974	\$26.03	\$34.75	\$33.31	\$28.68	\$35.66	\$27.32	\$34.52