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Summary of Farm Business Records 1968 - 1973

By Type of Farming for Southern Minnesota

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SUMMARY OF FARM BUSINESS RECORDS BY TYPES OF FARMING FOR SOUTHERN MINNESOTA, 1968-1973

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INTRODUCTION

This report summarizes six years of farm business records by types of farming for an average of 910 Southern Minnesota farmers. Farm records were supplied by the area vocational-technical institutes at Mankato, Austin, Winona, Willmar and Jackson, and the Southeastern and Southwestern Minnesota Farm Management Associations. The area included in this report can be roughly defined as the region south of a line drawn from Elbow Lake to Hastings, Minnesota. The purpose of this study is to provide farmers, educators, credit agency personnal and others with data concerning expenses and income of farmers that are more stable than that found in annual averages. By averaging data for a six-year period, some of the more violent fluctuations due to yearly differences in prices of products sold and supplies purchased, weather, etc. are modified.

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

1. Specialized farms - 80 percent or more of the cash income was from one enterprise or source.

2. Two enterprise farms - 80 percent or more of the income was from two enterprises, with a minimum of 20 percent from the smaller of the two.

Specialized dairy farms were further divided into four categories on the average number of dairy cows maintained. Hog finishing operations are reported in combination with cash crops. All other types of farms which include hogs are based upon complete hog programs (farrowing and finishing).

Table 1. Number of Farms by Type of Farming Included in This Report, 1968-1973

Type	1968	1969	1970	1971	1972	1973	Average 6 years
Dairy - 25-34 cows	48	54	50	61	72	64	58
- 35-44 cows	52	34	44	52	54	67	51
- 45-54 cows	27	22	22	21	32	32	26
- 55 cows and over	23	27	32	35	50	54	37
Cash crops	62	61	73	124	198	264	130
Hogs (complete program)	22	39	20	23	49	59	35
Dairy and hogs (complete program)	80	76	55	74	93	93	79
Dairy and cash crops	101	125	137	164	230	238	166
Hogs (finish) and cash crops	25	33	30	36	54	57	39
Hogs (complete program) and feeder cattle	33	29	35	39	44	42	37
Hogs (complete program) and cash crops	97	144	129	185	232	273	177
Feeder cattle and cash crops	53	53	63	96	99	88	75
Total	623	697	690	910	1207	1331	910

Because farmers included in this study are, in general, above the average in managerial ability and operate larger and more productive farms, their returns to labor and management are higher than the average returns that may be reported in census type data. Wide variations in management and practices followed exist among farms. It can be assumed that similar variations occur among all farmers in the area.

Simple arithmetic averages are used throughout the report. Calculations were made for each year and the 1968-1973 results were averaged. It is suggested that farmers copy facts concerning their business into the "your farm" column so comparisons can be made with the most appropriate averages. Comparisons with averages will not tell a farmer what to do but they will yield ideas that he can consider in analyzing and operating his own business.

The report is divided into five sections. The first section deals with capital managed and is followed by a section dealing with earnings. Land use and crop yields are included in the third section. The livestock enterprises are discussed in the fourth section and the final section summarizes some of the characteristics of the various types of farms.

CAPITAL MANAGED

The average value of capital used per farm for the various types of farming is reported in table 2. These data represent values as reported by farmers in their farm business records. The values deviate somewhat from current market values for assets with a long useful life, such as real estate. Real estate improvements are customarily valued at cost and depreciated on the basis of estimated life. Book values upon which this table is based are below present market values because of rising prices. Land is also valued at cost and has not been corrected for the price inflation which has occurred since many of the farms were

Table 2. Farm Capital Managed by Type of Farming, 1968-1973

Item	Your farm	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over
1. Number of cases		58	51	26	37
2. Acres in farm	_____	230	271	312	369
	Average farm capital managed January 1				
3. Dairy cows	$_____	$ 8567	$ 11420	$ 14587	$ 21474
4. Other dairy cattle	_____	5069	6842	8139	10533
5. Beef cattle	_____	118	437	705	754
6. Hogs	_____	224	301	246	375
7. Other livestock	_____	45	61	70	99
8. Total livestock	$_____	$ 14023	$ 19061	$ 23747	$ 33235
9. Crops, seed, feed	$_____	$ 5910	$ 8309	$ 9806	$ 13910
10. Auto & truck (farm share)	$_____	$ 1330	$ 1508	$ 1555	$ 1868
11. Tractors & crop machinery	_____	7345	10378	12330	15961
12. Livestock equipment	_____	2389	3745	4557	7299
13. Total equipment	$_____	$ 11064	$ 15631	$ 18442	$ 25128
14. Land	$_____	$ 22926	$ 29774	$ 37391	$ 44913
15. Buildings, fencing*	_____	13444	20159	26369	40986
16. Total capital managed	$_____	$ 67367	$ 92934	$115755	$158172
	Average farm capital managed December 31				
17. Total capital managed	$_____	$ 73298	$101263	$125286	$172742
	Average farm capital, 1968 and 1973				
18. Average farm capital in 1968	$_____	$ 58718	$ 82938	$100610	$131542
19. Average farm capital in 1973	$_____	$ 85454	$115113	$137933	$217996
20. Increase in capital, 1968-1973	$_____	$ 26736	$ 32175	$ 37323	$ 86454

* Not including farm dwelling.

Table 2. Farm Capital Managed by Type of Farming, 1968-1973

	Cash crops	Hogs (complete program)	Dairy and hogs	Dairy, and cash crops	Hogs (finish), cash crops	Hogs and feeder cattle	Hogs and cash crops	Feeder cattle, cash crops
1.	130	35	79	166	39	37	177	75
2.	524	233	243	358	406	365	369	479
				Average farm capital managed January 1				
3.	$ 42	$ 68	$ 8518	$ 9174	$ 95	$ 80	$ 67	$ 23
4.	78	233	5011	5595	140	111	125	9
5.	1877	935	421	477	2194	40333	2006	32379
6.	695	18594	5387	595	7456	8976	9161	1121
7.	180	143	39	83	150	143	219	159
8.	$ 2872	$ 19973	$ 19376	$ 15924	$ 10035	$ 49643	$ 11578	$ 33691
9.	$ 19488	$ 14355	$ 10424	$ 12948	$ 17768	$ 19173	$ 16726	$ 23298
10.	$ 2346	$ 1700	$ 1636	$ 1740	$ 2138	$ 2159	$ 2076	$ 2253
11.	17364	10866	9589	13820	14639	14268	13488	17696
12.	442	3895	3419	2837	1836	3133	1900	2039
13.	$ 20152	$ 16461	$ 14644	$ 18397	$ 18613	$ 19560	$ 17464	$ 21988
14.	$129337	$ 42384	$ 31616	$ 67473	$ 97131	$ 77156	$ 89845	$114581
15.	17940	20974	21727	21266	20589	24429	19017	24352
16.	$189789	$114147	$ 97787	$136008	$164136	$189961	$154630	$217910
				Average farm capital managed December 31				
17.	$204809	$130355	$108567	$148254	$179227	$215728	$169857	$239121
				Average farm capital, 1968 and 1973				
18.	$159002	$ 93364	$ 83910	$108338	$119952	$153531	$128768	$174738
19.	$221778	$178892	$130746	$181312	$230868	$307256	$210616	$298523
20.	$ 62776	$ 85528	$ 46836	$ 72974	$110916	$153725	$ 81848	$123785

Table 3. Average Investment in Real Estate by Type of Farming, 1968-1973

Item	Your farm	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over
1. Land (beginning of year)	$_____	$ 22926	$ 29774	$ 37391	$ 44913
2. Farm buildings	_____	13444	20159	26369	40986
3. Estimated investment in house	_____	9000	9000	9000	9000
4. Total investment in real estate	$_____	$ 45370	$ 58933	$ 72760	$ 94899
5. Number of acres	_____	230	271	312	369
6. Average investment per acre*	$_____	$197	$217	$233	$257

*Average investment based on 1974 land values would be up by at least $300 per acre.

purchased. Capital managed includes the value of all farm assets owned by the operators and those assets used by operators but owned by landlords.

Capital managed per farm varied widely among the types of farming included in this study. Among the factors contributing to the wide variation are the number of acres per farm, value of land, 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 and cattle feeding are major enterprises, large amounts of capital are used. More intensive farms, such as those with dairy cattle, tend to have smaller investments in farm capital.

There was a large increase in farm capital from 1968 to 1973. Hog and feeder cattle farmers doubled their capital during this period of time and for many other types of farms capital managed was increased from 50 to nearly 100 percent. Part of the increase was due to the acquisition of more land but even more important was the increased costs involved in the purchase of machinery, equipment, feeder livestock, etc. Since 1973 was a year of some of the highest farm prices in history, the value of all livestock and crops on hand was large in 1973 compared to the previous years.

Table 3. Average Investment in Real Estate by Type of Farming, 1968-1973 (continued)

	Cash crops	Hogs (complete program)	Dairy and hogs	Dairy and cash crops	Hogs (finish), cash crops	Hogs and feeder cattle	Hogs and cash crops	Feeder cattle cash crops
1.	$129337	$ 42384	$ 31616	$ 67473	$ 97131	$ 77156	$ 89845	$114581
2.	17940	20974	21727	21266	20589	24429	19017	24352
3.	9000	9000	9000	9000	9000	9000	9000	9000
4.	$156277	$ 72358	$ 62343	$ 97739	$126720	$110585	$117862	$147933
5.	524	233	243	358	406	365	369	479
6.	$298	$310	$257	$273	$312	$303	$319	$309

The data in table 3 show per acre investment in farm buildings and land based on account book values. Average per acre real estate values ranged from $197 on the 25-34 dairy cow farms to $319 per acre on hog-cash crop farms. This compares with estimated sales prices for 1973, as reported by Mandale and Raup,[1] of $247 per acre for West Central Minnesota, $459 per acre for the southwestern area, and $433 for the southeastern area of the state. Prices reported as paid for farm land late in 1973 and early in 1974 were much higher and would have a bearing on the net worth of farm families. Specialized dairy farms had the lowest average investment per acre because of a smaller percentage of tillable land than is true for the other types of farms.

1. Mandale, Maurice and Philip M. Raup, "The Minnesota Real Estate Market in 1973." Economic Report ER 74-1, Department of Agricultural and Applied Economics, University of Minnesota, January 1974.

Table 4. Average Earnings by Type of Farming by Years, 1968-1973

Item	Your farm	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over
1. 1968	$_____	$ 5702	$ 8400	$ 9868	$10742
2. 1969	_____	6554	8196	8824	13154
3. 1970	_____	7095	9625	12492	17081
4. 1971	_____	7105	7840	9586	13273
5. 1972	_____	7940	11741	12625	18000
6. 1973	_____	16693	21972	26206	33475
7. Six-year average	_____	8514	11157	13114	17449

EARNINGS

There is considerable variation in earnings between types of farming. Average labor and management earnings for the six years varied from $8514 for dairy farms with 25-34 cows for their only enterprise to a high of $22,859 for farms with hogs and feeder cattle. It is important to bear in mind that the relative profitableness of various enterprises can and often do vary from year to year. For example, in 1971, farms specializing in a complete hog program produced the lowest return to labor and management and, in 1973, such farms were the highest in return to labor and management (table 4). There is also a wide variation in earnings within a particular farm type. Thus, one cannot assume that the type of farm which ranks first in profitability in one year will be the most profitable in succeeding years, nor that having a particular type of farm is any guarantee that it will be a profitable business. Dairy farms have the least variability in labor earnings from year to year and crops and meat animal production show the greatest variation.

Table 4. Average Earnings by Type of Farming by Years, 1968-1973 (continued)

	Cash crops	Hogs (complete program)	Dairy and hogs	Dairy and cash crops	Hogs (finish), cash crops	Hogs and feeder cattle	Hogs and cash crops	Feeder cattle, cash crops
1.	$ 9081	$ 6920	$ 9014	$ 7973	$ 8621	$11302	$ 8256	$10207
2.	8954	19309	11718	7260	11901	19989	12625	9776
3.	13407	5703	10571	9608	8937	6291	10045	9325
4.	7855	6513	7614	7718	5666	12489	7245	12249
5.	14034	26880	16337	13677	23882	29212	21392	22922
6.	51779	60629	36149	35545	53687	59413	54063	57296
7.	17253	20992	15094	13449	18582	22859	18723	20003

Cash receipts and expenses, changes in farm capital managed, and other items are shown in table 5. In order to make all farms comparable, receipts and expenses of landlords are included. Operator's "labor and management earnings" is the amount that would be left as a salary to the farm operator for his labor and management if he paid wages equivalent to that of a hired man for the labor of other members of the family, including partners, and a charge of six percent interest on farm capital managed was included as a part of the farm expenses.

Large expenditures for feed are reported by hog and beef feeding farms. Interest on capital managed at 6 percent is the largest single item of expense. Since capital purchases, such as machinery, equipment, and buildings, are used for more than one year, only the annual depreciation enters into the calculation of labor and management earnings by showing increases in capital as a receipt and decreases as an expense. Increases or decreases in farm capital are the differences in the average farm capital between January 1 and December 31, as shown in table 2. This summarizes in one figure the net effect of the following changes:

Table 5. Summary of Earnings - Cash Statement, by Type of Farming, 1968-1973

Item	Your farm	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over
RECEIPTS					
1. Dairy cattle sold	$_____	$ 4557	$ 5951	$ 7072	$ 8640
2. Dairy products sold	_____	17373	24595	29436	46978
3. Beef cattle sold	_____	177	545	829	1084
4. Hogs sold	_____	592	648	677	856
5. Other livestock sold	_____	102	107	119	138
6. Crops - corn	_____	497	810	863	785
7. - other	_____	1200	1733	1981	2623
8. Other farm sales	_____	369	311	337	902
9. Work off the farm	_____	319	367	410	431
10. Miscellaneous farm income	_____	583	723	810	1258
11. Total sales	$_____	$25769	$35790	$42534	$63695
12. Increase in capital	_____	5931	8329	9531	14570
13. Family living from the farm	_____	440	518	576	639
14. Total received	$_____	$32140	$44637	$52641	$78904
EXPENSES					
15. Dairy cattle bought	$_____	$ 881	$ 1410	$ 1632	$ 2285
16. Beef cattle bought	_____	11	61	103	103
17. Hogs bought	_____	95	84	110	137
18. Other livestock bought	_____	15	20	15	14
19. Miscellaneous livestock expense	_____	1022	1554	1870	2873
20. Feed bought	_____	2644	3649	4027	7212
21. Fertilizer bought	_____	912	1305	1782	2371
22. Other crop expense	_____	963	1366	1650	2215
23. Custom work hired	_____	1206	1701	1953	2684
24. Gas, oil, grease bought (fm sh)	_____	916	1102	1290	1760
25. Repair power & crop machinery	_____	1183	1510	1793	2513
26. Repair real estate	_____	366	540	632	951
27. Repair livestock equipment	_____	224	354	391	679
28. Wages of hired labor	_____	544	1043	1328	2659
29. Electricity expense	_____	386	507	594	845
30. Real estate taxes	_____	780	1075	1264	1776
31. General farm expense	_____	492	676	742	952
32. Total cash expense	$_____	$12640	$17957	$21176	$32029
33. New power & machinery	_____	3023	3969	4700	7161
34. New livestock equipment	_____	793	1232	1469	2412
35. New real estate	_____	2112	3353	3758	7073
36. Total purchases	$_____	$18568	$26511	$31103	$48675
37. Decrease in farm capital	_____	-	-	-	-
38. Interest @ 6 percent	_____	4220	5826	7231	9927
39. Unpaid family labor	_____	773	1052	1030	2615
40. Board for hired labor	_____	65	91	163	238
41. Total expense	$_____	$23626	$33480	$39527	$61455
42. Labor and management earnings	$_____	$ 8514	$11157	$13114	$17449

* Includes a charge for partners above one full time operator.

Table 5. Summary of Earnings - Cash Statement, by Type of Farming, 1968-1973 (continued)

	Cash crops	Hogs (complete program)	Dairy and hogs	Dairy and cash crops	Hogs (finish), cash crops	Hogs and feeder cattle	Hogs and cash crops	Feeder cattle, cash crops
RECEIPTS								
1.	$ 105	$ 189	$ 4770	$ 5192	$ 128	$ 150	$ 174	$ 30
2.	41	74	18534	18964	129	112	80	18
3.	1928	996	559	567	2709	75214	2396	58902
4.	1776	52063	14880	1553	34315	26933	24340	3488
5.	300	340	96	134	418	303	367	348
6.	21501	1490	1086	6956	12174	2039	9905	10639
7.	21261	4001	2244	8941	15221	5357	13205	16392
8.	2180	540	429	1143	718	463	1430	1893
9.	1947	422	338	721	1069	655	704	1106
10.	1471	763	677	953	985	788	896	1195
11.	$52510	$60878	$43613	$45124	$67866	$112014	$53497	$94011
12.	15020	16208	10780	12246	15091	25767	15227	21211
13.	77	200	545	466	186	501	190	387
14.	$67607	$77286	$54938	$57836	$83143	$138282	$68914	$115609
EXPENSES								
15.	$ 40	$ 35	$ 833	$ 1308	$ 3	$ 178	$ 46	$ 81
16.	1172	645	111	107	1666	48452	1529	36568
17.	435	1787	503	338	13730	1152	1307	1063
18.	99	55	15	21	62	100	152	61
19.	100	1626	1630	1351	437	1321	747	662
20.	1269	18485	7374	3215	9288	19826	8290	6482
21.	4892	2710	1880	2575	3767	3407	3308	4572
22.	5323	2693	1864	2814	4162	3262	3731	4388
23.	1075	1154	1736	1726	1113	1802	1002	1768
24.	1775	1212	1235	1473	1579	1622	1504	1799
25.	2530	1632	1590	1933	1994	2074	1917	2507
26.	395	718	644	520	409	603	508	580
27.	47	582	366	328	275	603	296	243
28.	1228	1134	853	1312	801	1620	891	1277
29.	300	618	521	487	360	424	407	364
30.	2702	1271	1179	1902	2270	1887	1969	2490
31.	784	775	640	663	656	767	702	789
32.	$24166	$37132	$22974	$22073	$42572	$89100	$28306	$65694
33.	7264	4119	4396	5715	6066	6101	5468	7376
34.	93	1715	1126	1025	785	1126	786	614
35.	6488	4888	3882	5529	4157	5885	4979	7270
36.	$38011	$47854	$32378	$34342	$53580	$102212	$39539	$80954
37.	-	-	-	-	-	-	-	-
38.	11838	7335	6191	8528	10301	12171	9735	13711
39.	453	1019	1203	1409	641	953	867	870
40.	52	86	72	108	39	87	50	71
41.	$50354	$56294	$39844	$44387	$64561	$115423	$50191	$95606
42.	$17253	$20992	$15094	$13449	$18582	$ 22859	$18723	$20003

Table 6. Purchases per $100 of Total Sales by Type of Farming, 1968-1973

	Item	Your farm	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over
1.	Dairy cattle bought	$_____	$ 3.42	$ 3.94	$ 3.84	$ 3.59
2.	Beef cattle bought	_____	.04	.17	.24	.16
3.	Hogs bought	_____	.37	.23	.26	.22
4.	Other livestock bought	_____	.06	.05	.03	.02
5.	Miscellaneous livestock expense	_____	3.97	4.34	4.40	4.51
6.	Feed bought	_____	10.26	10.20	9.47	11.32
7.	Fertilizer bought	_____	3.54	3.65	4.19	3.72
8.	Other crop expenses	_____	3.74	3.82	3.88	3.48
9.	Custom work hired	_____	4.68	4.75	4.59	4.21
10.	Gas, oil, grease bought	_____	3.55	3.08	3.03	2.76
11.	Repair power & crop machinery	_____	4.58	4.22	4.22	3.95
12.	Repair real estate	_____	1.42	1.51	1.49	1.49
13.	Repair livestock equipment	_____	.87	.99	.92	1.07
14.	Wages of hired labor	_____	2.11	2.91	3.12	4.17
15.	Electricity expense	_____	1.50	1.42	1.40	1.33
16.	Real estate taxes	_____	3.03	3.00	2.97	2.79
17.	General farm expense	_____	1.91	1.89	1.74	1.49
18.	Total cash operating expense	$_____	$49.05	$50.17	$49.79	$50.28
19.	New power and machinery	_____	11.73	11.09	11.05	11.24
20.	New livestock equipment	_____	3.08	3.44	3.45	3.79
21.	New real estate improvements	_____	8.20	9.37	8.84	11.10
22.	Total purchases	$_____	$72.06	$74.07	$73.13	$76.41

1. Products bought but not fully used up during the year, such as depreciable assets and also supplies bought for use next year.

2. Depreciation on capital assets.

3. Products produced but not sold during the year, so they are on the end of the year inventory.

4. Products that were produced during the previous year or years (on hand at the beginning of the year) and sold this year.

5. Products sold that were previously purchased for later resale, such as feeder cattle and feeder pigs.

6. Casualty losses.

Line 18 in table 6 shows that from 45 to 80 percent of each dollar of sales is required to pay cash operating costs, including the purchase of feeder livestock

Table 6. Purchases per $100 of Total Sales by Type of Farming, 1968-1973 (Continued)

	Cash crops	Hogs (complete program)	Dairy and hogs	Dairy and cash crops	Hogs (finish), cash crops	Hogs and feeder cattle	Hogs and cash crops	Feeder cattle, cash crops
1.	$ .08	$ .06	$ 1.91	$ 2.90	$ -	$ .16	$ .09	$ .09
2.	2.23	1.06	.25	.24	2.45	43.26	2.86	38.90
3.	.83	2.93	1.15	.75	20.23	1.03	2.44	1.13
4.	.19	.09	.03	.05	.09	.09	.28	.06
5.	.19	2.67	3.74	2.99	.64	1.18	1.40	.70
6.	2.42	30.36	16.92	7.12	13.69	17.70	15.50	6.89
7.	9.32	4.45	4.31	5.71	5.55	3.04	6.18	4.86
8.	10.13	4.42	4.27	6.24	6.13	2.91	6.97	4.67
9.	2.05	1.90	3.98	3.82	1.64	1.61	1.88	1.88
10.	2.38	1.99	2.83	3.26	2.33	1.45	2.81	1.91
11.	4.82	2.68	3.65	4.28	2.94	1.85	3.58	2.67
12.	.74	1.18	1.48	1.15	.60	.54	.95	.62
13.	.09	.96	.84	.73	.41	.54	.55	.26
14.	2.34	1.86	1.96	2.91	1.18	1.45	1.67	1.36
15.	.57	1.02	1.19	1.08	.53	.38	.76	.39
16.	5.15	2.09	2.70	4.22	3.34	1.68	3.68	2.65
17.	1.49	1.27	1.47	1.47	.98	.68	1.31	.84
18.	$46.02	$60.99	$52.68	$48.92	$62.73	$79.55	$52.91	$69.88
19.	13.83	6.77	10.08	12.67	8.94	5.45	10.22	7.85
20.	.18	2.82	2.58	2.27	1.15	1.00	1.47	.65
21.	12.36	8.03	8.90	12.25	6.13	5.25	9.31	7.73
22.	$72.39	$78.61	$74.24	$76.11	$78.95	$91.25	$73.91	$86.11

Another 16 to 27 percent of each dollar of sales is required for capital expenditures. The latter includes the purchase of power, machinery, livestock equipment, and real estate improvements. Thus, 72 to 91 percent of each dollar of receipts is required to pay for farm purchases, leaving the balance for family living expenses, interest on money borrowed, debt retirement, and other savings. Farms with feeder livestock (finishing hogs or feeder cattle) spent a large portion of their income on livestock purchases and feed.

The data in table 7 show earnings on an enterprise basis. Instead of emphasizing purchases and sales, the enterprise basis stresses net value produced and net expenses. On the enterprise basis, value of livestock and livestock products includes

Table 7. Summary of Earnings - Enterprise Statement, by Type of Farming, 1968-1973

Item	Your farm	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over
RECEIPTS AND NET INCREASES					
1. Milk cows	$_____	$17668	$24793	$29400	$47030
2. Other dairy cattle	_____	5907	7710	9040	11396
3. Beef breeding herd	_____	40	75	166	47
4. Feeder cattle	_____	56	253	275	567
5. Hogs	_____	516	524	584	707
6. Other livestock	_____	102	107	129	145
7. Total livestock	$_____	$24289	$33462	$39594	$59892
8. Feed fed	_____	11233	15561	18286	27497
9. Value added by livestock	$_____	$13056	$17901	$21308	$32395
10. Crops, seed, feed	_____	10000	13877	16346	22506
11. Miscellaneous farm income	_____	583	723	810	1258
12. Total value added	$_____	$23639	$32501	$38464	$56159
EXPENSES AND NET DECREASES					
13. Truck and auto	$_____	$ 1246	$ 1505	$ 1608	$ 2059
14. Electricity expense	_____	386	507	594	845
15. Tractors and crop machinery	_____	3324	4514	5308	7779
16. Livestock equipment	_____	698	1054	1255	2128
17. Buildings, fencing	_____	1359	2030	2501	4102
18. Miscellaneous livestock expense	_____	1022	1554	1870	2873
19. Labor*	_____	1598	2603	2977	6269
20. Real estate taxes	_____	780	1075	1264	1776
21. General farm expense	_____	492	676	742	952
22. Interest @ 6 percent	_____	4220	5826	7231	9927
23. Total expenses	$_____	$15125	$21344	$25350	$38710
24. Labor and management earnings	$_____	$ 8514	$11157	$13114	$17449

sales, value used in the home, changes in inventories, and accounts for transfers between enterprises. Purchases of livestock are subtracted so the data represent the value of livestock and livestock products added by the enterprise.

In the calculation of the return from crops, credit is given to crops for feed raised on the farm and consumed by livestock. The return to crops, as shown in table 7, becomes the net value of crops produced that year less the cost of

Table 7. Summary of Earnings - Enterprise Statement, by Type of Farming, 1968-1973 (continued)

	Cash crops	Hogs (complete program)	Dairy and hogs	Dairy and cash crops	Hogs (finish), cash crops	Hogs and feeder cattle	Hogs and cash crops	Feeder cattle, cash crops
RECEIPTS AND NET INCREASES								
1.	$ 49	$ 73	$18807	$19186	$ 137	$ 146	$ 90	$ 28
2.	78	158	6063	6280	95	68	103	13
3.	333	78	24	40	247	630	303	715
4.	659	528	303	351	1142	35470	1121	27490
5.	1418	55122	15822	1315	23253	28868	25683	2504
6.	247	306	85	111	362	215	229	263
7.	$ 2784	$56265	$41104	$27283	$25236	$65397	$27529	$31013
8.	1882	29530	20071	13317	16237	39972	15205	20842
9.	$ 902	$26735	$21033	$13966	$ 8999	$25425	$12324	$10171
10.	42300	17755	15578	25021	34343	28342	30674	41444
11.	1471	763	677	953	985	788	896	1195
12.	$44673	$45253	$37288	$39940	$44327	$54555	$43894	$52810
EXPENSES AND NET DECREASES								
13.	$ 1806	$ 1396	$ 1507	$ 1677	$ 1615	$ 1645	$ 1528	$ 1973
14.	300	618	521	487	360	424	407	364
15.	6676	4723	4743	5814	5996	6523	5558	7334
16.	146	1521	1088	909	747	1272	754	696
17.	1927	2629	2135	2126	2099	2769	2017	2498
18.	100	1626	1630	1351	437	1321	747	662
19.	1141	2367	2500	3034	1264	2917	1754	2290
20.	2702	1271	1179	1902	2270	1887	1969	2490
21.	784	775	640	663	656	767	702	789
22.	11838	7335	6191	8528	10301	12171	9735	13711
23.	$27420	$24261	$22134	$26491	$25745	$31696	$25171	$32807
24.	$17253	$20992	$15094	$13449	$18582	$22859	$18723	$20003

seed, fertilizers and other miscellaneous cash expenses for crop production.

Costs of operating each service enterprise (truck and auto, tractors and crop machinery, etc.) are calculated in a similar manner. Expenses and net decreases include depreciation as well as repairs, gas, oil, etc. Thus, while earnings statements on an enterprise basis do not show purchases and sales, such statements more truly reflect value produced for the productive enterprises and the net

Table 8. Rate Earned on Capital Managed, by Type of Farming, 1968-1973

Item	Your farm	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows cows
1. Labor and management earnings	$_____	$ 8514	$11157	$13114	$17449
2. Interest on capital managed	_____	4220	5826	7231	9927
3. Total (1 + 2)	_____	12734	16983	20345	27376
4. Estimated wage for operator	_____	7500	7500	7500	7500
5. Return to capital (3 - 4)	_____	5234	9483	12845	19876
6. Average capital managed	_____	70332	97098	120520	165457
7. Rate earned on capital managed	_____	7.4%	9.8%	10.7%	12.0%

expenses for each of the service enterprises.[1] Under this method of calculating labor and management earnings, the largest item of expense is the six percent interest charge on total capital managed. Tractor and crop machinery expenses rank second.

The data in table 8 show calculation of earnings as the rate earned on capital managed. It is most useful in dealing with larger than average farms. Return to capital is the residual remaining after an estimated charge has been deducted for the operator's labor. An arbitrary charge of $7500 was used on all sizes of farms and for all levels of profitability. A constant charge for the operator's labor is probably unrealistic in that the better operators could command higher wages in alternative opportunities and the lower earnings farm operators might command a wage equal to that paid for hired labor.

A well organized farm should yield a reasonable return to the operator for his labor and management as well as a return to capital. The information in table 8 shows that farmers received a relatively high return on the "book" value of

1. For the method of calculation of income and expenses on an enterprise basis, see Nodland, Truman R., "Know Your Farm Business," University of Minnesota Agricultural Extension Pamphlet 138, Revised 1971.

Table 8. Rate Earned on Capital Managed, by Type of Farming, 1968-1973 (continued)

	Cash crops	Hogs (complete program)	Dairy and hogs	Dairy and cash crops	Hogs (finish), cash crops	Hogs and feeder cattle	Hogs and cash crops	Feeder cattle, cash crops
1.	$17253	$20992	$15094	$13449	$18582	$22859	$18723	$20003
2.	11838	7335	6191	8528	10301	12171	9735	13711
3.	29091	28327	21285	21977	28883	35030	28458	33714
4.	7500	7500	7500	7500	7500	7500	7500	7500
5.	21591	20827	13785	14477	21383	27530	20958	26214
6.	197299	122251	103177	142131	171682	202844	162244	278516
7.	10.9%	17.0%	13.4%	10.2%	12.5%	13.6%	12.9%	11.5%

their capital managed in this six-year period. If the average real estate values used were adjusted upward to near current market values, rate earned on capital would be considerably lower. On the other hand, if annual appreciation in real estate value were included in earnings each year, return to capital would be greater. Also, the relative ranking among farm types would change from that shown in line 7 of table 8. Farms with large acreages--namely cash crop and livestock plus cash crop farms--would show increased rates relative to the smaller farms.

LAND USE AND CROP YIELDS

Farms on which dairy cattle are the only major livestock enterprise have a relatively large proportion of their land in pasture and hay and less in grain crops (including corn) than other types of farming (table 9). Specialized dairy farms have about 70 percent tillable land; all other types of farms have 80 percent tillable land or over. Farms with characteristics of small size and a lower percent of tillable land illustrate the tendency of farms to be organized to enable the operator to maximize the return to the most scarce resource. These farms have dairy cattle, which require larger amounts of labor but return more per

Table 9. Distribution of Acres in Farm, by Type of Farming, 1968-1973

Item	Your farm	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over
1. Canning peas	_____	.1	.1	.8	3.2
2. Wheat	_____	2.1	3.2	1.2	2.0
3. Oats for grain	_____	26.4	24.7	22.9	20.9
4. Other small grains	_____	2.7	4.1	4.1	8.0
5. Total small grains	_____	31.3	32.1	29.0	34.1
6. Corn grain	_____	39.0	48.9	63.5	71.2
7. Soybeans	_____	6.3	8.5	9.5	10.4
8. Sweet corn	_____	-	.5	.4	2.2
9. Corn silage	_____	17.2	25.4	25.3	34.2
10. Other cultivated crops	_____	.1	-	.4	.4
11. Total cultivated crops	_____	62.6	83.3	99.1	118.4
12. Total tillable land in hay	_____	47.3	58.7	64.0	93.4
13. Total tillable land in pasture	_____	5.9	7.2	14.8	7.3
14. Other tillable land*	_____	9.0	11.9	13.7	16.1
15. Total tillable land	_____	156.1	193.2	220.6	269.3
16. Non-tillable pasture	_____	26.1	29.4	30.2	32.0
17. Other non-tillable land	_____	48.2	48.5	60.8	68.0
18. Total acres in farm	_____	230.4	271.1	311.6	369.3
19. Percent land tillable	_____	68%	71%	71%	73%

* Includes acreage in feed grain program.

Table 10. Crop Yields per Acre, by Type of Farming, 1968-1973

Item	Your farm	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over
1. Canning peas, $	_____	-	-	-	88
2. Wheat, bu.	_____	31.4	30.9	37.4	*
3. Oats for grain, bu.	_____	56.4	61.3	61.2	62.1
4. Corn for grain, bu.	_____	84.4	89.7	94.9	100.2
5. Soybeans, bu.	_____	23.6	27.4	25.7	31.7
6. Corn silage, tons	_____	12.5	13.4	15.5	16.0
7. Alfalfa hay, tons	_____	3.4	3.4	3.7	3.8

* Less than five cases per year.

Table 9. Distribution of Acres in Farm, by Type of Farming, 1968-1973 (Continued)

	Cash crops	Hogs (complete program)	Dairy and hogs	Dairy and cash crops	Hogs (finish), cash crops	Hogs and feeder cattle	Hogs and cash crops	Feeder cattle, cash crops
1.	5.2	.1	.2	2.5	2.4	.1	1.8	1.7
2.	11.2	1.0	.6	4.1	2.8	.3	2.5	5.2
3.	14.6	14.5	23.0	23.1	13.0	23.1	14.1	16.1
4.	9.4	.5	2.6	3.9	2.6	5.4	2.0	8.6
5.	40.4	16.1	26.4	33.6	20.8	28.9	20.4	31.6
6.	188.7	115.7	79.2	99.9	164.8	160.4	147.0	179.3
7.	150.0	38.3	16.6	64.6	120.4	42.7	110.5	118.8
8.	11.5	1.0	.7	3.9	2.9	.4	3.8	4.0
9.	.6	.4	13.2	14.5	.7	24.4	1.0	18.3
10.	6.1	.2	.1	.7	.6	.1	1.6	.8
11.	356.9	155.6	109.8	183.6	289.4	228.0	263.9	321.2
12.	7.3	6.9	40.3	43.1	6.0	30.7	6.8	22.2
13.	.6	3.5	6.0	6.4	.6	4.7	1.3	1.7
14.	72.2	18.8	13.5	37.2	49.7	26.9	41.2	54.2
15.	477.4	200.9	196.0	303.9	366.5	319.2	333.6	430.9
16.	9.9	8.5	13.9	18.6	7.0	17.0	6.4	12.4
17.	36.3	23.6	32.7	35.2	32.6	29.1	29.3	35.4
18.	523.6	233.0	242.6	357.7	406.1	365.3	369.3	478.7
19.	91%	86%	81%	85%	90%	87%	90%	90%

Table 10. Crop Yields per Acre, by Type of Farming, 1968-1973 (Continued)

	Cash crops	Hogs, (complete program)	Dairy and hogs	Dairy and cash crops	Hogs (finish), cash crops	Hogs and feeder cattle	Hogs and cash crops	Feeder cattle, cash crops
1.	85	-	*	73	*	-	70	82
2.	30.7	35.0	-	31.3	32.0	-	34.0	36.4
3.	66.9	61.1	51.8	62.9	68.2	65.2	67.2	68.5
4.	105.1	99.1	93.8	98.6	105.3	92.5	102.4	104.7
5.	31.8	31.4	28.0	28.2	32.7	30.3	31.7	32.0
6.	13.0	*	14.9	15.8	*	15.3	12.8	16.3
7.	3.5	3.1	3.5	3.8	3.3	3.8	3.6	4.0

Table 11. Crop Production Expenses by Type of Farming, 1968-1973

Item	Your farm	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over
1. Fertilizers bought per tillable acre	$_____	$ 5.84	$ 6.75	$ 8.08	$ 8.80
2. Other crop expenses per tillable acre	_____	6.17	7.07	7.48	8.22
3. Tractor and machinery expense per crop acre	_____	23.54	25.93	27.63	31.63
4. Tractor and machinery investment per crop acre	_____	52.02	59.61	64.19	64.91

acre than many other kinds of livestock.

On farms without dairy cattle, most of the tillable land was in feed grains, corn, or soybeans. On dairy farms, approximately 30-40 percent of the tillable land was used for growing alfalfa hay or tillable pasture. Except for differences in the amount of land devoted to hay and pasture, there were no major differences in the cropping programs on the different types of farms with livestock enterprises. Special crops, such as canning corn and canning peas, were of minor importance.

Crop yields, as reported in table 10, do not appear to be related to the type of farm, although yields of corn and soybeans on the smallest dairy farm type were relatively low. There was considerable variation, however, in the reported yields of a number of crops. Average corn yields ranged from 84 to 105 bushels per acre and average yields of soybeans ranged from 23 to 33 bushels per acre. As far as roughage producing crops are concerned, about half of the types of farms reported 15 tons or more of corn silage and 3.5 tons of alfalfa hay per acre.

Some of the crop production expenses are shown in table 11. Dairy farmers tend to purchase less fertilizer per tillable acre than farmers in other types of farming, probably because corn is the main crop which is fertilized and dairy

Table 11. Crop Production Expenses by Type of Farming, 1968-1973 (Continued)

	Cash crops	Hogs (complete program)	Dairy and hogs	Dairy and cash crops	Hogs (finish), cash crops	Hogs and feeder cattle	Hogs and cash crops	Feeder cattle, cash crops
1.	$10.25	$13.49	$ 9.59	$ 8.47	$10.28	$10.67	$ 9.92	$10.61
2.	11.15	13.40	9.51	9.26	11.36	10.22	11.18	10.18
3.	16.50	26.44	26.87	22.34	18.96	22.68	19.09	19.56
4.	42.92	60.84	54.33	53.09	46.30	49.61	46.33	47.19

farmers have a relatively small proportion of their tillable land in corn. Also, they have more livestock manure per crop acre than do the large farms. Miscellaneous crop expenses, such as seed, herbicides, pesticides, etc., are less on dairy farms. Highly specialized hog farms with a large proportion of tillable land in corn had large expenditures for fertilizer and miscellaneous crop expenses.

Tractor and machinery expenses and investments per crop acre are comparatively large on the specialized dairy farms and the specialized hog farms. With small acreages these farmers have little opportunity to secure economies of size in their crop operations, and the need for labor for their large livestock enterprise may require considerable mechanization.

LIVESTOCK ENTERPRISES

Feed costs, returns, and some related factors are shown for hogs, dairy cattle, and feeder cattle in tables 12 through 15. Home grown feeds have been charged to livestock at current market prices during the year. Purchased feeds have been charged at cost. The number of head of livestock represents the average number on hand at the beginning of each month for the six-year period.

Table 12. Factors of Costs and Returns from Dairy Cows, by Type of Farming, 1968-1973

Item	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Dairy and hogs	Dairy and cash crops
Number of cows	30	40	50	73	31	33
Pounds of milk per cow	11429	12040	11324	12082	11787	11514
Pounds of butterfat per cow	422	438	417	447	442	417
Percent of butterfat in milk	3.7	3.6	3.7	3.7	3.8	3.6
Value of produce per cow:						
Dairy product sales	$574.29	$618.57	$594.58	$640.31	$599.84	$573.01
Dairy produce used in home	4.44	4.10	4.03	2.92	5.09	4.84
Milk fed to livestock	5.78	6.40	5.65	5.02	4.73	6.14
Net increase in value per cow	-.48	-5.51	-10.34	-7.24	.37	-4.07
Total value produced	$584.03	$623.56	$593.92	$641.01	$610.03	$579.92
Feeds per cow, pounds:						
Corn	3627	3989	4001	4538	4320	4357
Small grain	1235	913	696	795	669	694
Commercial feeds	640	658	642	559	635	616
Total concentrates	5502	5560	5339	5892	5624	5667
Total hay	6453	6524	6404	5871	7066	6670
Total silage	9386	11353	11330	12455	8743	11148
Feed cost per cow:						
Concentrates	$141.51	$153.95	$136.57	$147.77	$147.90	$146.04
Roughages	105.71	112.38	111.16	121.02	103.98	108.48
Pasture	7.55	6.07	5.38	2.98	9.64	7.91
Total feed cost	$254.77	$272.40	$253.11	$271.97	$261.52	$262.43
Return above feed cost per cow	$329.26	$351.16	$340.81	$369.24	$348.51	$317.49
Return for $100 of feed	$229	$229	$235	$236	$233	$221
Feed cost per cwt. of milk produced	$2.23	$2.26	$2.24	$2.25	$2.22	$2.28
Feed cost per pound of butterfat produced	.60	.62	.61	.61	.59	.63
Price received per cwt. of milk	$5.06	$5.24	$5.34	$5.34	$5.16	$5.09
Price received per pound of butterfat	1.37	1.44	1.46	1.45	1.38	1.40

Table 13. Feed Costs and Returns from All Dairy Cattle, by Type of Farming, 1968-1973

Item	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Dairy and hogs	Dairy and cash crops
Value of produce per cow:						
Dairy products	$583.69	$628.00	$603.52	$647.69	$608.78	$583.12
Net increase in value	194.65	188.42	172.23	149.27	196.88	189.26
Total value produced	$778.34	$816.42	$775.75	$796.96	$805.66	$772.38
Total feed cost per cow	$356.15	$374.06	$352.15	$360.23	$361.86	$369.60
Return above feed cost per cow	$422.19	$442.36	$423.60	$436.73	$443.80	$402.78
Return for $100 of feed	$219	$218	$220	$221	$223	$209
Feeds per cow, pounds:						
Concentrates	7086	7042	6854	7194	7243	7554
Hay	9618	9488	9229	9348	10108	9714
Silage	13702	16622	15881	16560	13038	15658
Miscellaneous expenses per cow	$36.36	$40.80	$40.34	$41.77	$39.95	$40.64

Average return over feed cost per cow varied from $317 on dairy-cash crop farms to $369 on the large specialized dairy farms. There does not seem to be any relationship between average size of herd and milk and butterfat production per cow and feed cost per cow. It does appear from the price received per cwt. of milk sold that smaller dairy operations are associated with somewhat lower paying milk markets.

The data in table 13 show the feed costs and returns from the entire herd, including replacement stock. Total value produced per cow averaged about $800. About 45 percent of this amount was needed to pay feed costs.

Specialized hog farmers raised two to three times more litters than the farmers that kept hogs along with one or more other enterprises. There is little evidence that the enterprises on highly specialized farms are more efficient than "several enterprise" farms. Except for the hog finishing-cash crop farms, all swine were from complete (farrowing to market) programs.

Table 14. Feed Costs and Returns from Hogs, by Type of Farming, 1968-1973

	Hogs, (complete program)	Dairy and hogs	Hogs (finish), cash crops	Hogs and feeder cattle	Hogs and cash crops
Pounds produced	210011	60330	115684	109318	102392
Per cwt. produced:					
Net increase in value	$26.25	$26.25	$19.95	$25.83	$25.84
Feed cost	13.81	14.07	12.66	13.63	13.99
Return above feed cost	$12.44	$12.18	$ 7.29	$12.20	$11.85
Return for $100 of feed	$190	$187	$158	$190	$185
Price received per cwt. sold	$25.28	$25.28	$25.04	$24.80	$24.93
Weight per hog sold	223	225	226	235	229
Miscellaneous costs per cwt. produced*	$ .77	$ .55	$ .31	$ .51	$ .69
Feed per cwt. of hogs produced, pounds:					
Corn	332	332	306	280	331
Small grain	18	36	13	35	24
Commercial feeds**	91	75	86	117	90
Total concentrates	441	443	405	432	445
Total number of litters raised	119	37		59	60
Number of pigs born per litter	9.7	9.3		9.5	9.2
Number of pigs weaned per litter	8.0	7.4		7.9	7.5
Number of feeder pigs bought			638		
Total weight of pigs bought, pounds			24654		
Price paid per feeder pig			$21.66		

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

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

Return over feed and return for $100 of feed cost were similar for all groups with complete hog programs. Feed cost and quantity of feed used to produce 100 pounds of hogs is less for purchased feeder pigs since there is no overhead cost of maintaining sows.

Feed costs and returns from feeder cattle for the two types of cattle feeding

Table 15. Feed Costs and Returns from Feeder Cattle, by Type of Farming, 1968-1973

Item	Hogs and feeder cattle	Feeder cattle, cash crops
Pounds of beef produced	115113	86524
Value added per hundredweight of beef produced	$31.37	$31.50
Feed cost per hundredweight of beef produced		
Concentrates	$15.80	$16.85
Roughages	4.99	4.56
Pasture	.33	.34
Total feed cost	$21.12	$21.75
Return above feed cost per hundredweight of beef produced	$10.25	$ 9.75
Return for $100 of feed	$149	$145
Miscellaneous costs per hundredweight of beef produced	$ .56	$ .72
Feeds per hundredweight of beef produced, pounds:		
Corn and small grain	608	666
Commercial feeds	53	51
Total concentrates	661	717
Total hay	194	189
Total silage	7 4	735
Price paid per hundredweight of beef bought	$37.24	$36.05
Price received per hundredweight of feeder cattle sold	$32.15	$31.79
Average number of head for the year	174	126

farms were quite consistent in value added, feed cost, and return over feed per hundredweight gain in weight. The six-year period, 1968-1973, included two years (1971 and 1972) when cattle feeding was unusually profitable and one year (1970) when returns from feeding cattle were small.

On an average, dairy cattle give a higher return for each $100 of feed consumed than is true for beef cattle or hogs. Since labor, buildings, and equipment costs are generally less for beef cattle and hogs than for dairy, a lower return for each $100 of feed consumed is needed in order to cover all costs of production.

SOME CONCLUDING STATEMENTS

The records included in this report are for six calendar years. Examination of the data for each of the six years shows there is considerable variation from one year to another. These variations, in the main, are caused by differences in climatic conditions and general price levels--factors which the farmer cannot control. Furthermore, price levels do not rise or fall in unison. Some prices may rise while others are falling, or some may change faster than others. For these reasons, the relative earnings levels of the various types of farms may change from year to year.

A summary of some of the resources available, size of business, and other factors by type of farming is presented in table 16. Farms which have cash crops or feeder cattle as major enterprises generally use large amounts of capital and involve large acreages. These are more extensive enterprises and are best suited where labor is scarce compared to land and capital. Dairying tends to be located on relatively small farms, where there is non-tillable land and where it is desirable, because of erosion and other factors, to include a considerable amount of hay and pasture in the rotation. Dairying is an intensive enterprise and is adapted to situations where labor is plentiful in comparison to land. Hogs seem to be adapted to a variety of situations.

Farms with dairy alone or in combination with other enterprises had less capital invested per man than did farms with cash crops or feeder animals as major enterprises. The total capital managed per farm was relatively high on large dairy farms, but these were "two-man" operations.

There was not a wide variation in the amount of labor utilized among the types of farms. Six farm types used 1.3 to 1.5 years of man labor; five used 1.6 to 1.7 years, and one (large dairy farms) had 2.3 workers. The total work

units of 766 on the large dairy farms was much larger than that reported by any other group.[1] The large dairy farms, with 2.3 workers, reported 333 work units per worker, compared to 1.4 workers and 200 work units per worker for cash crop farms.

Cash crop farms had relatively few work units in total and per worker. The length of the growing season prevents the accumulation of a large number of work units per worker. This resulted in large expenses for power, machinery, equipment and buildings per work unit or per unit of size of business.

Output per worker, measured in terms of value of production per worker, was greatest on the meat and crop producing farms. These are the types of farms that also utilize a relatively large amount of capital per worker.

Power, machinery, equipment and building expense per work unit are lowest on farms with dairy cattle since dairying is a labor intensive enterprise and thus utilizes rather large amounts of labor relative to capital. In contrast, meat and crop producing farms with low total work units have high power, machinery, equipment and building expense per work unit. The reverse is true for tractor and crop machinery expense per crop acre. Cash crop and feeder cattle operations involve rather large acreages of land and provide opportunities for economies of size in the use of machinery.

There are many possible combinations of crops and livestock from which a farmer can make a choice. The specific combination that he chooses should be dependent on the resources available and be consistent with the personal goals of the farm family.

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1. For a discussion of work units, see Pherson, C. L., and T. R. Nodland, "Work Unit Estimates for Measuring Size of Business," Department of Agricultural Economics, University of Minnesota Report No. R68-4, September 1968, or the various annual farm business summaries.

Table 16. Earnings, Resources Utilized, Size of Business, and Expenses by Type of Farming, 1968-1973

Item	Your farm	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over
Earnings					
1. Net cash income	$_____	$ 7201	$ 9279	$11431	$15020
2. Labor and management earnings	$_____	$ 8514	$11157	$13114	$17449
3. Rate earned on investment	_____	7.4%	9.8%	10.7%	12.0%
Land					
4. Acres per farm	_____	230	271	312	369
5. Acres tillable	_____	156	193	221	269
6. Percent tillable land in corn grain and silage	_____	36.0%	38.5%	40.2%	39.1%
7. Percent tillable land in soybeans	_____	4.0%	4.0%	4.3%	3.9%
Labor					
8. Number of workers	_____	1.4	1.6	1.7	2.3
9. Work units per worker	_____	251	285	322	333
10. Value added per worker	$_____	$16885	$20313	$22626	$24417
Capital					
11. Total capital managed	$_____	$70332	$97098	$120520	$165457
12. Capital managed per worker	$_____	$50237	$60686	$ 70894	$ 71938
Size of business					
13. Total work units	_____	351	456	547	766
14. Total farm sales	$_____	$25769	$35790	$42534	$63695
15. Total value added	$_____	$23639	$32501	$38464	$56159
Crop yields					
16. Corn, bu. per acre	_____	84	90	95	100
17. Soybeans, bu. per acre	_____	24	27	26	32
Source of gross income					
18. Percent from livestock	_____	55.2%	55.1%	55.4%	57.7%
19. Percent from crops	_____	42.3%	42.7%	42.5%	40.1%
20. Percent from miscellaneous	_____	2.5%	2.2%	2.1%	2.2%
Expenses					
21. Power, machinery, equipment & bldg. expense per work unit	$_____	$19.98	$21.07	$20.60	$22.08
22. Tractor and crop machinery expense per crop acre	$_____	$23.54	$25.93	$27.63	$31.63
23. Total operating expense per $100 of sales	$_____	$49.05	$50.17	$49.79	$50.28
24. Total purchases per $100 of sales	$_____	$72.06	$74.07	$73.13	$76.41

Table 16. Earnings, Resources Utilized, Size of Buisness, and Expenses, by Type of Farming, 1968-1973 (Continued)

	Cash crops	Hogs (complete program)	Dairy and hogs	Dairy and cash crops	Hogs (finish), cash crops	Hogs and feeder cattle	Hogs and cash crops	Feeder cattle, cash crops
Earnings								
1.	$14499	$13024	$11235	$10782	$14286	$ 9802	$13958	$13057
2.	$17253	$20992	$15094	$13449	$18582	$22859	$18723	$20003
3.	10.9%	17.0%	13.4%	10.2%	12.5%	13.6%	12.9%	11.5%
Land								
4.	524	233	243	358	406	365	369	479
5.	477	201	196	304	366	319	334	431
6.	39.7%	57.8%	47.1%	37.6%	45.2%	57.9%	44.4%	45.9%
7.	31.4%	19.1%	8.5%	21.3%	32.8%	13.4%	33.1%	27.6%
Labor								
8.	1.4	1.5	1.6	1.7	1.3	1.6	1.4	1.5
9.	200	246	278	265	223	283	220	241
10.	$31909	$30169	$23304	$23494	$34098	$34097	$31354	$35207
Capital								
11.	$197299	$122251	$103177	$142131	$171682	$202844	$162244	$228516
12.	$140928	$ 81501	$ 64486	$ 83606	$132063	$126778	$115889	$152344
Size of business								
13.	280	369	445	450	290	453	308	362
14.	$52510	$60878	$43613	$45124	$67866	$112014	$53497	$94011
15.	$44673	$45253	$37288	$39940	$44327	$ 54555	$43894	$52810
Crop yields								
16.	105	99	94	99	105	93	102	105
17.	32	31	28	28	33	30	32	32
Source of gross income								
18.	2.0%	59.1%	56.4%	35.0%	20.3%	46.6%	28.1%	19.3%
19.	94.7%	39.2%	41.8%	62.6%	77.5%	52.0%	69.9%	78.4%
20.	3.3%	1.7%	1.8%	2.4%	2.2%	1.4%	2.0%	2.3%
Expenses								
21.	$38.77	$29.50	$22.46	$24.47	$37.30	$27.89	$33.32	$35.54
22.	$16.50	$26.44	$26.87	$22.34	$18.96	$22.68	$19.09	$19.56
23.	$46.02	$60.99	$52.68	$48.92	$62.73	$79.54	$52.91	$69.88
24.	$72.39	$78.61	$74.24	$76.11	$78.95	$91.25	$73.91	$86.11