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1970 Farm Business Summary

By Type of Farming for Southern Minnesota

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1970 MINNESOTA FARM BUSINESS SUMMARIES
BY TYPES OF FARMING FOR SOUTHERN MINNESOTA

Truman R. Nodland, Edgar A. Persons and Janet B. Otis*

Introduction

This report summarizes the 1970 farm business records by types of farming for 800 southern Minnesota farmers. Farm records were supplied by the area vocational-technical schools 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. This publication will be useful to farmers, teachers, extension workers, researchers, and others who desire specific information about costs and returns from farming operations by types of farms.

Records were obtained from 11 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 smallest of the two.
3. Three enterprise farms - 80 percent or more of the income came from three enterprises, with a minimum of 20 percent from the smallest.

* Agricultural and Applied Economics, Agricultural Education, and Agricultural and Applied Economics, respectively.

The authors are indebted to Dorothy T. Spreck for making many of the calculations included in the tables appearing in this report.

Specialized dairy farms are further divided into four categories based on the average number of dairy cows maintained. Fattening hog 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 Included in This Report, 1970

Type	Number
Cash crops	73
Dairy - 25-34 cows	50
- 35-44 cows	44
- 45-54 cows	22
- 55 cows and over	32
Hogs (complete program)	20
Dairy and hogs (complete program)	55
Dairy and cash crops	137
Hogs (finish) and cash crops	30
Hogs (complete program) and feeder cattle	35
Hogs (complete program) and cash crops	129
Feeder cattle and cash crops	63
Dairy, hogs (complete program), and cash crops	33
Hogs (complete program), feeder cattle, and cash crops	<u>77</u>
Total	800

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 do exist between farms. It can be assumed that similar variations occur among all farmers in the area.

Capital Managed and Earnings

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. In periods of rising prices, book values upon which this table is based tend to be below present market values. Land is also valued at cost and has not been corrected for the price inflation which occurred after many of the farms were 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 between 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.

Cash receipts and expenses, changes in farm capital managed, and other items are shown in table 3. In order to make all farms comparable, receipts and expenses of landlords are included. "Labor 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, and a charge of six percent interest on farm capital managed was included as part of the farm expenses. There is considerable variation in earnings between types of farming. Labor earnings varied from \$5703 for farms with a complete hog program for their only enterprise to a high of \$17081 for dairy farms with over 55 cows. It is important to bear in mind that the relative profitability of various enterprises will vary from year to year. For example, in 1969, farms specializing in hogs and feeder cattle produced the greatest return

Table 2. Farm Capital Managed by Type of Farming, 1970

Item	Cash crops	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Hogs (complete program)
1. Number of cases	73	50	44	22	33	20
2. Acres in farm	565	245	293	306	401	228
Average farm capital managed as of January 1, 1970						
3. Dairy cows	\$ 44	\$ 7894	\$10527	\$13263	\$19885	\$ 204
4. Other dairy cattle	44	4656	6635	8055	9362	-
5. Beef cattle	1601	109	767	1498	1346	978
6. Hogs	802	437	632	259	994	23306
7. Other livestock	<u>518</u>	<u>95</u>	<u>42</u>	<u>24</u>	<u>86</u>	<u>122</u>
8. Total livestock	\$ 3009	\$13191	\$18603	\$23099	\$31673	\$24610
9. Crops, seed, feed	\$20916	\$ 6004	\$ 8304	\$ 9803	\$13934	\$15142
10. Auto & truck (fm.sh.)	\$ 2451	\$ 1522	\$ 1660	\$ 1567	\$ 1633	\$ 1633
11. Tractors & crop mach.	18895	7633	10471	11839	17136	13093
12. Livestock equipment	<u>420</u>	<u>2393</u>	<u>3924</u>	<u>4771</u>	<u>6658</u>	<u>4965</u>
13.						
13. Total equipment	\$21766	\$11548	\$16055	\$18177	\$25427	\$19691
14. Land	\$121260	\$18687	\$30782	\$37136	\$40521	\$36153
15. Buildings, fencing*	<u>19741</u>	<u>12985</u>	<u>21514</u>	<u>22898</u>	<u>43888</u>	<u>20224</u>
16. Total capital	\$186692	\$62415	\$95258	\$111113	\$155443	\$115820
Average farm capital managed as of December 31, 1970						
17. Total capital	\$200420	\$65226	\$102080	\$117299	\$167341	\$118796

* Not including farm dwelling.

to labor and management. 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 1970 will be the most profitable in succeeding years, nor that having a particular type of farm assures one of high earnings even in years when that particular type of farm is most profitable. These data should be studied in the light of current prices, yields, and similar information.

Table 2. Farm Capital Managed by Type of Farming, 1970 (continued)

	Dairy and hogs	Dairy and cash crops	Hogs (finish), cash crops	Hogs and feeder cattle	Hogs and cash crops	Feeder cattle, cash crops	Dairy, hogs, cash crops	Hogs, feeder cattle, cash crops
1.	55	137	30	35	129	63	33	77
2.	240	368	425	360	397	474	327	479
Average farm capital managed as of January 1, 1970								
3.	\$ 7966	\$ 9103	\$ -	\$ 69	\$ 37	\$ 3	\$ 6595	\$ 3
4.	4516	5604	135	27	88	3	4623	-
5.	307	715	2098	42047	2108	32214	157	23587
6.	6638	1023	10882	10141	12500	1441	4571	8629
7.	<u>23</u>	<u>94</u>	<u>66</u>	<u>309</u>	<u>279</u>	<u>126</u>	<u>16</u>	<u>171</u>
8.	\$19450	\$16539	\$13181	\$52593	\$15012	\$33787	\$15962	\$32390
9.	\$10683	\$13158	\$16996	\$17674	\$16639	\$22032	\$12854	\$22561
10.	\$ 1753	\$ 1953	\$ 2006	\$ 2494	\$ 2309	\$ 2362	\$ 1338	\$ 2339
11.	10013	15110	14736	13823	15133	17685	12264	17165
12.	<u>4004</u>	<u>2938</u>	<u>2687</u>	<u>2988</u>	<u>2330</u>	<u>2374</u>	<u>2787</u>	<u>2303</u>
13.	\$15770	\$20001	\$19429	\$19305	\$19772	\$22421	\$16389	\$21807
14.	\$28604	\$64647	\$91731	\$74026	\$89811	\$114671	\$61506	\$104519
15.	<u>23665</u>	<u>23762</u>	<u>22903</u>	<u>22689</u>	<u>21331</u>	<u>25389</u>	<u>22615</u>	<u>27513</u>
16.	\$98172	\$138107	\$164240	\$186287	\$162565	\$218300	\$129326	\$208790
Average farm capital managed as of December 31, 1970								
17.	\$102891	\$144686	\$167994	\$185380	\$169934	\$222878	\$137151	\$214528

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 earnings by showing increases in capital as a receipt and decreases as an expense. Increases or decreases are the differences in the average farm capital between January 1, 1970 and December 31, 1970, as shown in table 2. This summarizes in one figure the net effect of the following changes:

Table 3. Summary of Earnings - Cash Statement, by Type of Farming, 1970

Item	Cash crops	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Hogs (complete program)
RECEIPTS						
1. Dairy cattle	\$ 94	\$ 4158	\$ 6311	\$ 5885	\$ 8097	\$ 59
2. Dairy products	14	16626	24522	29770	46889	253
3. Beef cattle	2254	166	839	1591	1658	1105
4. Hogs	1738	1017	1246	397	1950	50443
5. Other livestock	668	131	62	35	136	316
6. Crops - corn	21172	531	888	927	861	1079
7. - other	20796	1194	1633	1601	3019	3476
8. Other cap. assets sold	636	203	239	245	571	254
9. Work off the farm	2197	257	396	390	691	304
10. Misc. farm income	<u>1511</u>	<u>551</u>	<u>755</u>	<u>863</u>	<u>1323</u>	<u>1399</u>
11. Total sales	\$51080	\$24834	\$36891	\$41704	\$65195	\$58688
12. Increase in capital	13728	2811	6822	6186	11898	2976
13. Fam. living from farm	<u>85</u>	<u>458</u>	<u>438</u>	<u>581</u>	<u>684</u>	<u>184</u>
14. Total received	\$64893	\$28103	\$44151	\$48471	\$77777	\$61848
EXPENSES						
15. Dairy cattle bought	\$ -	\$ 728	\$ 1368	\$ 634	\$ 3118	\$ -
16. Beef cattle bought	1746	18	329	27	573	676
17. Hogs bought	727	153	215	6	203	842
18. Other livestock bought	148	11	5	11	18	88
19. Misc. lvstk. expense	110	996	1610	1871	2757	1565
20. Feed bought	1509	2428	3688	3363	7249	16648
21. Fertilizer bought	5016	726	1175	1522	2215	2949
22. Other crop expense	4601	822	1445	1316	2044	2831
23. Custom work hired	1292	1145	1821	1830	2758	1288
24. Gas, oil, grease bot	1863	861	1074	1260	1764	1291
25. Rep. pow. & crop mach.	2742	1131	1424	1935	2609	1673
26. Repair real estate	387	340	625	643	1086	1005
27. Repair lvstk. equip.	55	242	400	410	730	598
28. Wages of hired labor	1624	655	1104	1562	2494	1613
29. Electricity expense	436	374	482	564	857	668
30. Real estate taxes	2841	799	1164	1523	1877	1297
31. Gen. farm expense	<u>838</u>	<u>446</u>	<u>681</u>	<u>713</u>	<u>893</u>	<u>874</u>
32. Total cash expense	\$25935	\$11875	\$18610	\$19190	\$33245	\$35906
33. New power & mach.	6343	2483	3909	4869	6941	3546
34. New lvstk. equip.	128	461	658	1229	2217	2422
35. New real estate	<u>6958</u>	<u>1535</u>	<u>4400</u>	<u>2446</u>	<u>6100</u>	<u>6444</u>
36. Total purchases	\$39364	\$16354	\$27577	\$27734	\$48503	\$48318
37. Decrease in farm cap.	-	-	-	-	-	-
38. Interest at 6%	11613	3829	5920	6852	9683	7038
39. Unpaid family labor	408	764	922	1297	2146	629
40. Board for hired labor	<u>101</u>	<u>61</u>	<u>107</u>	<u>96</u>	<u>364</u>	<u>160</u>
41. Total expense	\$51486	\$21008	\$34526	\$35979	\$60696	\$56145
42. Labor earnings	\$13407	\$ 7095	\$ 9625	\$12492	\$17081	\$ 5703

Table 3. Summary of Earnings - Cash Statement, by Type of Farming, 1970 (continued)

	Dairy and hogs	Dairy and cash crops	Hogs (finish), cash crops	Hogs and feeder cattle	Hogs and cash crops	Feeder cattle, cash crops	Dairy, hogs, cash crops	Hogs, feeder cattle, cash crops
1.	\$ 4645	\$ 5023	\$ -	\$ 14	\$ 116	\$ 12	\$ 4192	\$ -
2.	19097	19795	16	108	42	-	14959	-
3.	527	617	1712	69856	2661	56981	306	42391
4.	15180	2400	35856	24067	26635	3982	10857	19775
5.	56	140	548	761	376	175	50	269
6.	1383	6515	13381	1699	10455	11118	4985	8226
7.	1768	8085	13293	3956	12663	13845	6853	13978
8.	346	794	344	343	835	749	347	552
9.	407	637	601	597	637	836	676	861
10.	682	1072	906	696	979	1024	772	1005
11.	\$44091	\$45078	\$66657	\$102097	\$55399	\$88722	\$43997	\$87057
12.	4719	6579	3754	-	7369	4578	7825	5738
13.	455	473	107	470	206	360	520	412
14.	\$49265	\$52130	\$70518	\$102567	\$62974	\$93660	\$52342	\$93207
EXPENSES								
15.	\$ 687	\$ 846	\$ -	\$ -	\$ 6	\$ 472	\$ 402	\$ -
16.	49	31	1044	36996	1544	31113	84	22136
17.	348	552	13778	1381	1711	1017	686	1297
18.	11	24	150	333	135	27	5	42
19.	1730	1422	466	1015	830	666	1364	991
20.	7385	3320	8510	17691	9208	5732	5012	11689
21.	2139	2525	4217	3033	3112	4112	2142	3720
22.	1908	2682	4144	2771	3675	4113	3286	4036
23.	1853	1733	1073	1946	1089	1995	1802	1506
24.	1258	1450	1614	1550	1555	1690	1298	1877
25.	1639	1891	2029	2048	1936	2361	1631	2587
26.	649	593	536	624	596	506	630	773
27.	376	355	276	477	381	223	361	488
28.	921	1480	583	1540	1098	1273	685	1424
29.	533	510	403	395	458	367	498	421
30.	1144	2008	2338	1969	2128	2455	1762	2724
31.	637	660	654	852	734	799	640	717
32.	\$23267	\$22082	\$41815	\$74621	\$30196	\$58921	\$22288	\$56428
33.	4071	5672	4913	6238	5333	6277	4957	6518
34.	685	1088	403	839	713	513	1047	705
35.	3149	3549	3794	1702	5698	4475	3413	2798
36.	\$31172	\$32391	\$50925	\$83400	\$41940	\$70186	\$31705	\$66449
37.	-	-	-	907	-	-	-	-
38.	6032	8484	9967	11150	9975	13235	7994	12699
39.	1432	1509	635	727	946	828	1905	1164
40.	58	138	54	92	68	86	81	115
41.	\$38694	\$42522	\$61581	\$96276	\$52929	\$84335	\$41685	\$80427
42.	\$10571	\$ 9608	\$ 8937	\$ 6291	\$10045	\$ 9325	\$10657	\$12780

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.

Table 4. Purchases per \$100 of Total Sales, by Type of Farming, 1970*

Item	Cash crops	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Hogs (complete program)
1. Dairy cattle bought	\$ -	\$ 2.93	\$ 3.71	\$ 1.52	\$ 4.78	\$ -
2. Beef cattle bought	3.42	.07	.89	.06	.88	1.15
3. Hogs bought	1.42	.62	.58	.01	.31	1.43
4. Other livestock bought	.29	.04	.01	.03	.03	.15
5. Misc. lvstk. expense	.22	4.01	4.36	4.49	4.23	2.67
6. Feed bought	2.95	9.78	10.00	8.06	11.12	28.38
7. Fertilizer bought	9.82	2.92	3.18	3.65	3.40	5.02
8. Other crop expenses	9.01	3.31	3.92	3.16	3.13	4.82
9. Custom work hired	2.53	4.61	4.94	4.39	4.23	2.19
10. Gas, oil, grease bought	3.65	3.47	2.92	3.02	2.71	2.20
11. Rep. power & crop mach.	5.37	4.55	3.86	4.64	4.00	2.85
12. Repair real estate	.76	1.37	1.69	1.54	1.67	1.71
13. Repair lvstk. equip.	.10	.97	1.08	.98	1.12	1.02
14. Wages of hired labor	3.18	2.64	2.99	3.75	3.82	2.75
15. Electricity expense	.85	1.51	1.31	1.35	1.31	1.14
16. Real estate taxes	5.56	3.22	3.16	3.65	2.88	2.21
17. General farm expense	<u>1.64</u>	<u>1.80</u>	<u>1.85</u>	<u>1.71</u>	<u>1.37</u>	<u>1.49</u>
18. Total cash operating expenses	\$50.77	\$47.82	\$50.45	\$46.01	\$50.99	\$61.18
19. New power & machinery	12.42	10.00	10.60	11.67	10.65	6.04
20. New lvstk equipment	.25	1.86	1.78	2.95	3.40	4.13
21. New real est. improv.	<u>13.62</u>	<u>6.18</u>	<u>11.92</u>	<u>5.87</u>	<u>9.36</u>	<u>10.98</u>
22. Total purchases	\$77.06	\$65.86	\$74.75	\$66.50	\$74.40	\$82.33

* Total purchases and sales are shown in table 3.

Approximately 45 to 75 percent of each dollar of sales is required to pay cash operating costs (table 4). Another 10 to 25 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, 65 to 85 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 portion spent for feed was generally lower on farms where cash crops were an important source of income.

Table 4. Purchases per \$100 of Total Sales, by Type of Farming, 1970 (continued)

	Dairy and hogs	Dairy and cash crops	Hogs (finish), cash crops	Hogs and feeder cattle	Hogs and cash crops	Feeder cattle, cash crops	Dairy, hogs, cash crops	Hogs, feeder cattle, cash crops
1.	\$ 1.56	\$ 1.88	\$ -	\$ -	\$.01	\$.53	\$.91	\$ -
2.	.11	.07	1.57	36.24	2.79	35.08	.19	25.43
3.	.79	1.23	20.67	1.35	3.09	1.15	1.56	1.49
4.	.02	.05	.23	.33	.24	.03	.01	.05
5.	3.92	3.15	.70	.99	1.50	.75	3.10	1.14
6.	16.76	7.37	12.77	17.33	16.62	6.46	11.39	13.43
7.	4.85	5.60	6.33	2.97	5.62	4.63	4.87	4.27
8.	4.33	5.96	6.22	2.71	6.63	4.64	7.47	4.64
9.	4.20	3.84	1.61	1.91	1.97	2.25	4.10	1.73
10.	2.85	3.22	2.42	1.52	2.81	1.90	2.95	2.16
11.	3.72	4.19	3.04	2.00	3.49	2.66	3.71	2.97
12.	1.47	1.32	.80	.61	1.08	.57	1.43	.89
13.	.85	.79	.41	.47	.69	.25	.82	.56
14.	2.10	3.28	.87	1.51	1.98	1.43	1.56	1.63
15.	1.21	1.13	.60	.39	.83	.41	1.13	.48
16.	2.59	4.45	3.51	1.93	3.84	2.77	4.00	3.13
17.	<u>1.44</u>	<u>1.46</u>	<u>.98</u>	<u>.83</u>	<u>1.32</u>	<u>.90</u>	<u>1.45</u>	<u>.82</u>
18.	\$52.77	\$48.99	\$62.73	\$73.09	\$54.51	\$66.41	\$50.65	\$64.82
19.	9.24	12.58	7.37	6.11	9.63	7.08	11.27	7.49
20.	1.55	2.41	.60	.82	1.29	.58	2.38	.81
21.	<u>7.14</u>	<u>7.87</u>	<u>5.70</u>	<u>1.67</u>	<u>10.28</u>	<u>5.04</u>	<u>7.76</u>	<u>3.21</u>
22.	\$70.70	\$71.85	\$76.40	\$81.69	\$75.71	\$79.11	\$72.06	\$76.33

The data in table 5 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 produced includes sales, value used in the home, changes in inventories, and accounts for transfers between enterprises. Purchases of livestock are subtracted so the data represents

Table 5. Summary of Earnings - Enterprise Statement, by Type of Farming, 1970

Item	Cash crops	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Hogs (complete program)
RECEIPTS AND NET INCREASES						
1. Milk cows	\$ 42	\$16782	\$24790	\$29642	\$46439	\$ 246
2. Other dairy cattle	57	5303	7517	8228	10070	-
3. Beef breeding herd	260	7	15	573	6	-
4. Feeder cattle	748	88	277	440	1071	636
5. Hogs	1154	796	838	293	1321	41561
6. Other livestock	336	129	58	34	142	265
7. Total livestock	\$ 2597	\$23105	\$33495	\$39210	\$59049	\$42708
8. Feed fed	2375	10480	14753	17431	25986	28813
9. Return over feed	\$ 222	\$12625	\$18742	\$21779	\$33063	\$13895
10. Crops, seed, feed	39937	8405	12051	15311	20854	15858
11. Income labor off farm	889	192	207	173	256	149
12. Misc. farm income	1511	551	755	863	1323	1399
13. Total receipts	\$42559	\$21773	\$31755	\$38126	\$55496	\$31301
EXPENSES AND NET DECREASES						
14. Truck and auto	\$ 1901	\$ 1186	\$ 1533	\$ 1566	\$ 2030	\$ 1282
15. Electricity expense	435	374	482	564	857	668
16. Tractors & machinery	6701	3225	4523	5422	7939	5256
17. Livestock equipment	152	646	1087	1281	2402	1561
18. Buildings, fencing	2039	1303	2358	2265	4001	3254
19. Misc. lvstk. expense	110	996	1610	1871	2757	1564
20. Labor*	2522	1874	2772	3577	5976	2803
21. Real estate taxes	2841	799	1164	1523	1877	1297
22. General farm expense	838	446	681	713	893	875
23. Interest at 6%	11613	3829	5920	6852	9683	7038
24. Total expenses	\$29152	\$14678	\$22130	\$25634	\$38415	\$25598
25. Labor earnings	\$13407	\$ 7095	\$ 9625	\$12492	\$17081	\$ 5703

* Includes wages paid and value of board to hired labor, unpaid family labor, and a part of the payment for custom work hired.

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 5, becomes the net value of crops produced that year less the cost of seed, fertilizers and other miscellaneous cash expenses for crop production.

Table 5. Summary of Earnings - Enterprise Statement, by Type of Farming, 1970 (cont'd)

	Dairy and hogs	Dairy and cash crops	Hogs (finish), cash crops	Hogs and feeder cattle	Hogs and cash crops	Feeder cattle, cash crops	Dairy, hogs, cash crops	Hogs, feeder cattle, cash crops
RECEIPTS AND NET INCREASES								
1.	\$19136	\$19854	\$ -	\$ 128	\$ 57	\$ 2	\$15230	\$ 4
2.	5348	5874	76	56	46	7	4840	-
3.	42	75	317	510	146	360	21	51
4.	223	365	926	28081	1178	21510	195	17892
5.	13239	1691	18146	19234	21907	2260	9747	16084
6.	49	126	494	434	228	140	57	222
7.	\$38037	\$27985	\$19959	\$48443	\$23562	\$24279	\$30090	\$34253
8.	19949	13820	16737	36596	16740	20411	15105	25338
9.	\$18088	\$14165	\$ 3222	\$11847	\$ 6822	\$ 3868	\$14985	\$ 8915
10.	14388	21894	30703	23503	29205	36855	19746	36397
11.	179	264	346	281	280	362	337	327
12.	682	1072	906	696	979	1024	772	1005
13.	\$33337	\$37395	\$35177	\$36327	\$37286	\$42109	\$35840	\$46644
EXPENSES AND NET DECREASES								
14.	\$ 1444	\$ 1733	\$ 1552	\$ 1713	\$ 1583	\$ 2036	\$ 1438	\$ 1855
15.	533	510	403	395	458	367	498	421
16.	4944	5885	6293	6481	5776	6896	5187	7156
17.	1115	1009	646	1113	932	644	936	1024
18.	2148	2355	2295	2348	2366	2826	2103	3068
19.	1730	1422	466	1015	830	666	1364	991
20.	3039	3721	1626	3000	2459	2860	3261	3209
21.	1144	2008	2338	1969	2128	2455	1762	2724
22.	637	660	654	852	734	799	640	717
23.	6032	8484	9967	11150	9975	13235	7994	12699
24.	\$22766	\$27787	\$26240	\$30036	\$27241	\$32784	\$25183	\$33864
25.	\$10571	\$ 9608	\$ 8937	\$ 6291	\$10045	\$ 9325	\$10657	\$12780

Costs of operating each service enterprise (truck and auto, tractors and crop machinery, etc.) are calculated in a similar manner. Expenses and net decreases includes depreciation as well as repairs, gas, oil, etc. Thus, while earnings statements on an enterprise basis do not show purchases and sales, such a statement more truly reflects value produced for the productive enterprises and the net expenses for each of the service enterprises.¹

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 6). In nine of the fourteen types of farms shown in table 5, crops contribute more to income than the return over feed from livestock. The proportion of farm income from livestock, crops and miscellaneous sources is based on receipts and net increases, as shown in table 6.

Table 6. Proportion of Farm Income from Livestock, Crops, and Miscellaneous Sources, by Type of Farming, 1970

Source of income	Cash crops	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Hogs (complete program)	Dairy and hogs
Livestock	.5	58.0	59.0	57.1	59.6	44.4	54.3
Crops	93.9	38.6	38.0	40.2	37.6	50.7	43.2
Miscellaneous	5.6	3.4	3.0	2.7	2.8	4.9	2.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source of income	Dairy and cash crops	Hogs (finish), cash crops	Hogs and feeder cattle	Hogs and cash crops	Feeder cattle, cash crops	Dairy, hogs, cash crops	Hogs, feeder cattle, cash crops
Livestock	38.0	9.2	32.6	18.3	9.2	41.8	19.1
Crops	58.5	87.3	64.7	78.3	87.5	55.1	78.0
Miscellaneous	3.5	3.5	2.7	3.4	3.3	3.1	2.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

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.

Return over feed is the amount of income added by livestock after feed costs are deducted. The return to crops represents the value of crops produced during the year after costs of seed, fertilizer and similar costs have been deducted. Miscellaneous income is from work off the farm, conservation payments, and other similar items of income. Relative prices of crops and livestock have an important effect on the proportion of income contributed by the cropping and livestock program. In 1969, for example, only seven of the types of farms illustrated added more to income from crops than from livestock.

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 7). Specialized dairy farms have about 70 percent tillable land; all other types of farms have over 80 percent tillable land. 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 acre than many other kinds of livestock.

On farms without dairy cattle, most of the tillable land was in feed grains, corn, soybeans, or the feed grain program. On dairy farms, approximately 35-40 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 of the different types of farms with livestock enterprises. Special crops, such as canning corn and canning peas, were raised on all types of farms except some dairy farms and complete hog farms. Cash crop farms reported more acres of these crops than other farm types.

Table 7. Distribution of Acres in Farm, by Type of Farming, 1970

Item	Cash crops	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy 55 cows & over	Hogs (complete program)
1. Canning peas	5.8	.3	-	-	5.7	-
2. Wheat	10.6	2.4	2.6	1.4	2.2	1.3
3. Oats for silage	.2	.6	2.1	3.0	6.3	-
4. Oats for grain	27.4	32.3	24.2	21.3	22.5	13.1
5. Barley	7.7	.5	2.3	.8	-	.3
6. Flax	10.4	2.6	.7	-	.8	-
7. Other small grain	.5	-	.1	.4	.7	-
8. Total small grain	62.6	38.7	32.0	26.9	38.2	14.7
9. Corn grain	192.7	30.2	44.9	65.7	73.7	109.7
10. Soybeans	143.6	5.9	11.4	8.1	9.7	46.9
11. Sweet corn	12.0	-	-	-	3.0	-
12. Corn silage	.2	20.9	29.0	23.9	33.0	.6
13. Other cultivated crops	-	-	-	-	-	-
14. Total cultivated crops	348.5	57.0	85.3	97.7	119.4	157.2
15. Alfalfa hay	11.4	46.4	56.8	61.8	97.8	5.8
16. Other hay & seed crop	.1	1.8	8.2	.7	9.1	-
17. Total till. hay land	11.5	48.2	65.0	62.5	106.9	5.8
18. Total tillable pasture	1.0	7.1	9.6	25.0	6.8	4.3
19. Feed grain program	87.7	9.6	11.2	13.5	17.0	23.2
20. Till. land not cropped	1.0	.1	.6	.2	1.1	-
21. Total tillable land	512.3	160.7	203.7	225.8	289.4	205.2
22. Wild hay	.7	4.3	4.8	.7	-	1.1
23. Non-tillable pasture	12.0	34.4	32.9	37.5	28.8	4.9
24. Timber not pastured	4.8	25.6	26.5	22.1	54.7	1.3
25. Waste and roads	22.2	14.4	17.8	12.0	18.8	8.1
26. Farmstead	13.1	6.1	6.9	7.5	9.0	7.4
27. Total acres in farm	565.1	245.5	292.6	305.6	400.7	228.0
28. Percent land tillable	91	66	70	74	72	90

Crop yields, as reported in table 8, do not appear to be related to the type of farm, although yields on the smallest dairy farm type were generally lower in all crops. For example, yields of alfalfa hay are not significantly different among the types of farms, even though some types are highly dependent upon the crop as a source

Table 7. Distribution of Acres in Farm, by Type of Farming, 1970 (continued)

	Dairy and hogs	Dairy and cash crops	Hogs (finish), cash crops	Hogs and feeder cattle	Hogs and cash crops	Feeder cattle, cash crops	Dairy, hogs, cash crops	Hogs, feeder cattle cash crops
1.	-	2.7	2.0	-	2.3	2.4	.5	.7
2.	.4	3.8	2.7	-	2.5	2.8	1.7	2.0
3.	2.8	.9	-	4.5	-	1.7	.6	1.9
4.	22.8	26.9	18.0	26.1	16.8	20.7	34.3	20.4
5.	.5	1.9	.7	1.1	.2	.6	-	-
6.	.2	1.6	4.8	.8	1.6	7.2	.4	1.4
7.	-	.6	1.2	-	-	.1	-	.1
8.	26.7	38.4	29.4	32.5	23.4	35.5	37.5	26.5
9.	82.8	100.2	190.7	163.7	157.0	184.6	99.9	183.0
10.	14.7	58.2	102.2	37.3	113.8	112.6	57.5	132.0
11.	.5	4.7	4.1	1.1	3.9	4.4	.7	1.4
12.	12.1	14.2	.7	25.3	.7	17.4	10.1	13.6
13.	-	.6	-	-	1.1	-	-	1.5
14.	110.1	177.9	297.7	227.4	276.5	319.0	168.2	331.5
15.	40.9	44.0	5.9	27.0	7.4	18.8	36.4	20.7
16.	1.1	1.8	.6	2.3	.2	.3	.4	.2
17.	42.0	45.8	6.5	29.3	7.6	19.1	36.8	20.9
18.	6.7	7.9	.6	5.6	1.6	1.0	7.5	1.5
19.	10.3	41.8	43.9	19.9	48.9	52.7	31.7	53.4
20.	.5	1.4	4.1	-	-	1.0	.8	.7
21.	196.3	313.2	382.2	314.7	358.0	428.1	282.5	434.5
22.	1.0	1.5	1.5	1.6	2.0	1.7	1.0	3.3
23.	13.5	23.9	10.1	22.8	6.4	11.7	16.4	7.5
24.	11.3	6.0	1.2	1.0	2.3	2.4	2.9	1.0
25.	9.6	13.5	20.2	10.0	16.6	16.8	11.9	19.4
26.	8.3	9.8	9.4	10.4	11.3	13.4	11.5	13.2
27.	240.0	367.9	424.6	360.5	396.6	474.1	326.2	478.9
28.	82	85	90	87	90	90	87	91

of feed. There was considerable variation, however, in the reported yields of a number of crops. Corn varied from 109 bushels per acre on the feeder cattle and cash crop farms to a low of 82.4 bushels on the hogs and feeder cattle farms. Feed grain payments per acre were similar among farm types.

Table 8. Crop Yields per Acre, by Type of Farming, 1970

Item	Cash crops	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy 55 cows & over	Hogs (complete program)
1. Canning peas, \$	92	-	-	-	97	-
2. Wheat, bu.	28.2	19.3	25.0	27.6	*	*
3. Oats for silage, tons	*	*	3.5	*	6.5	-
4. Oats for grain, bu.	65.8	51.4	60.0	59.7	56.7	61.3
5. Barley, bu.	*	*	*	*	-	*
6. Flax, bu.	14.3	*	*	-	*	-
7. Corn grain, bu.	105.1	90.2	92.0	92.7	104.2	102.2
8. Soybeans, bu.	33.2	23.1	27.6	26.4	30.1	33.2
9. Corn silage, tons	*	10.0	11.8	16.0	15.0	*
10. Alfalfa hay, tons	3.2	3.1	3.3	3.9	3.6	2.9
11. Feed grain program, \$	56	48	55	57	59	58

* Less than 5 cases.

Livestock Enterprises

Feed costs, returns, and some related factors are shown for dairy cattle, hogs, and feeder cattle in tables 9 to 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 of livestock represents the average number on hand at the beginning of each month.

The return above feed cost per dairy cow varied from \$325 on the dairy and cash crop farms and small dairy farms to \$475 on the dairy specialty farms with 35-44 cows. Variations in milk production and feed cost are relatively small.

Specialized hog farms raised two to three times more litters than the farms that kept hogs along with one or more other enterprises. There is little evidence that

Table 8. Crop Yields per Acre, by Type of Farming, 1970 (continued)

	Dairy and hogs	Dairy and cash crops	Hogs (finish), cash crops	Hogs and feeder cattle	Hogs and cash crops	Feeder cattle, cash crops	Dairy hogs, cash crops	Hogs, feeder cattle cash crops
1.	-	78	*	-	67	79	*	*
2.	*	28.7	36.1	-	32.6	30.8	*	32.2
3.	5.9	7.0	-	5.2	-	5.3	*	4.9
4.	55.5	56.7	70.5	59.7	66.6	62.0	56.5	64.0
5.	*	59.0	*	*	*	*	-	-
6.	*	15.6	*	*	*	14.7	*	*
7.	97.4	105.9	108.1	87.4	103.7	109.2	96.6	101.9
8.	31.1	29.3	33.3	32.6	33.5	34.4	28.5	33.1
9.	15.2	15.4	*	14.5	15.2	17.0	15.7	15.2
10.	3.5	3.9	3.4	3.8	3.6	3.9	3.6	3.8
11.	61	57	63	56	49	61	61	61

the enterprises on highly specialized farms are more efficient than "several enterprise" farms. Except for the finishing hog-cash crop farms, all swine were from complete (farrowing to market) programs.

While cattle feeders received about the same prices for fed cattle in 1970 as they did in 1969, their return over feed cost was only about half that received in 1969. Prices paid for feeders were slightly higher but feed costs were about the same.

As 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.

Table 9. Factors of Costs and Returns from Dairy Cows, by Type of Farming, 1970

Item	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Dairy, and hogs	Dairy, and cash crops	Dairy, hogs, cash crops
Number of cows	30	40	50	76	32	35	26
Pounds of milk per cow	11593	12543	11987	12179	12084	11884	11871
Pounds of BF per cow	417	455	433	446	449	426	429
Percent of BF in milk	3.6	3.6	3.6	3.7	3.7	3.6	3.6
Value of produce per cow							
Dairy product sales	\$552.44	\$619.98	\$598.18	\$615.96	\$598.44	\$570.74	\$560.31
Dairy produce used							
in home	4.04	3.54	3.96	2.82	4.44	4.12	6.41
Milk fed to livestock	5.11	5.41	5.01	4.45	3.83	4.96	4.68
Net increase in value							
of cows	-4.08	-2.28	-11.50	-12.65	-6.43	-6.69	-1.12
Total value produced	\$557.51	\$626.65	\$595.65	\$610.58	\$600.28	\$573.13	\$570.28
Feeds per cow, lbs.							
Corn	3144	4141	4300	4367	4171	4445	4308
Small grain	1307	919	451	417	594	692	562
Commercial feeds	680	692	519	524	706	623	514
Total concentrates	5131	5752	5270	5308	5471	5760	5384
Total hay	6554	6519	5742	7000	6590	6674	7068
Silage	9553	11820	10166	12035	8332	9513	7577
Feed cost per cow							
Concentrates	\$122.86	\$142.05	\$125.90	\$129.06	\$138.84	\$136.51	\$130.63
Roughages	99.32	101.68	93.72	111.93	95.39	99.86	97.25
Pasture	10.04	7.69	12.03	5.50	12.85	11.48	8.22
Total feed cost	\$232.22	\$251.42	\$231.65	\$246.49	\$247.08	\$247.85	\$236.10
Return above feed cost							
per cow	\$325.29	\$375.23	\$364.00	\$364.09	\$353.20	\$325.28	\$334.18
Return for \$100 of feed	\$240	\$252	\$257	\$248	\$243	\$231	\$242
Feed cost per cwt. milk							
produced	\$2.00	\$2.00	\$1.94	\$2.03	\$2.05	\$2.09	\$2.04
Feed cost per pound of							
butterfat	.56	.55	.54	.55	.55	.58	.57
Price received per cwt.							
of milk	\$4.85	\$5.03	\$5.07	\$5.13	\$5.04	\$4.89	\$4.82
Price received per							
pound of butterfat	1.35	1.38	1.41	1.40	1.35	1.36	1.33

Table 10. Feed Costs and Returns from Other Dairy Cattle, by Type of Farming, 1970

Item	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Dairy and hogs	Dairy and cash crops	Dairy, hogs, cash crops
Net increase in value per head	\$129.49	\$137.72	\$131.00	\$132.08	\$142.14	\$130.24	\$143.03
Total feed cost per head	69.89	74.55	81.94	73.80	77.75	82.56	72.41
Return above feed cost per head	59.60	63.17	49.06	58.28	64.39	47.68	70.62
Return for \$100 of feed	\$185	\$188	\$160	\$184	\$183	\$158	\$198
Feed per head, lbs.							
Concentrates	1107	1244	1469	1175	1219	1450	1265
Hay	2294	2177	2294	2267	2695	2579	2489
Silage	3078	3858	4025	3117	3507	3876	2322
Whole milk	107	95	84	102	84	117	81
Number of head	41	54	63	76	38	46	34

Table 11. Feed Costs and Returns from All Dairy Cattle, by Type of Farming, 1970

Item	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Dairy and hogs	Dairy and cash crops	Dairy, hogs, cash crops
Value of produce per cow							
Dairy products	\$560.64	\$628.06	\$605.56	622.95	\$605.36	\$578.99	\$570.31
Net incr. in value	<u>172.31</u>	<u>187.84</u>	<u>153.65</u>	<u>123.75</u>	<u>164.35</u>	<u>164.27</u>	<u>196.84</u>
Total value prod.	\$732.95	\$815.90	\$759.21	\$746.70	\$769.71	\$743.26	\$767.15
Total feed cost per cow	\$323.19	\$350.55	\$329.83	\$319.67	\$337.51	\$349.26	\$334.29
Return above feed cost per cow	\$409.76	\$465.35	\$429.38	\$427.03	\$432.20	\$394.00	\$432.86
Return for \$100 of feed	\$227	\$233	\$230	\$234	\$228	\$213	\$229
Feed per cow, lbs.							
Concentrates	6644	7510	7123	6514	7060	7685	7198
Hay	9662	9478	8629	9334	9836	10007	10272
Silage	13588	16552	15059	15223	12303	14305	10977
Misc. expenses per cow	\$41.14	\$41.20	\$38.24	\$38.67	\$39.00	\$40.81	\$38.83

Table 12. Feed Costs and Returns from Hogs, by Type of Farming, 1970

Item	Hogs, complete program	Dairy and hogs	Hogs (finish), cash crops	Hogs and feeder cattle	Hogs and cash crops	Dairy, hogs, cash crops	Hogs, feeder cattle, cash crops
Pounds produced	220987	6953	131495	107334	124233	50608	90650
Per cwt. produced:							
Net increase in value	\$18.63	\$18.75	\$14.72	\$17.89	\$17.57	\$19.16	\$17.53
Feed cost	<u>12.60</u>	<u>12.66</u>	<u>11.70</u>	<u>12.65</u>	<u>12.64</u>	<u>12.52</u>	<u>12.41</u>
Return above feed cost	\$ 6.03	\$ 6.09	\$ 3.02	\$ 5.24	\$ 4.93	\$ 6.64	\$ 5.12
Returns for \$100 of feed	\$149	\$148	\$126	\$141	\$139	\$153	\$141
Price received per cwt.	\$22.47	\$22.11	\$22.64	\$21.99	\$22.20	\$22.52	\$21.67
Weight per hog sold	232	237	230	241	230	227	241
Miscellaneous costs per cwt. produced*	\$.65	\$.50	\$.31	\$.40	\$.64	\$.62	\$.56
Feed per cwt. hogs produced, lbs.							
Corn	332	322	318	255	323	304	294
Small grain	14	27	12	34	21	39	25
Commercial feeds**	<u>79</u>	<u>74</u>	<u>70</u>	<u>139</u>	<u>90</u>	<u>101</u>	<u>198</u>
Total concentrates	425	423	400	428	434	444	517
Total number of litters raised	121	40		58	70	33	54
Number of pigs born per litter	9.9	9.3		9.1	9.3	8.9	8.8
Number of pigs weaned per littler	8.2	7.6		7.4	7.5	7.0	7.0
Number of feeder pigs bought	12		709				
Total weight of pigs bought, lbs.	413		24815				
Price paid per feeder pig	\$17.90		\$20.14				

* 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.

Table 13. Feed Costs and Returns from Feeder Cattle, by Type of Farming, 1970

Item	Hogs and feeder cattle	Feeder cattle, cash crops	Hogs, feeder cattle, cash crops
Pounds of beef produced	120610	89628	73757
Net increase in value of feeders	\$23.54	\$24.71	\$25.05
Feed cost per cwt. of beef produced			
Concentrates	\$14.21	\$16.91	\$15.84
Roughages	4.22	3.94	4.21
Pasture	.40	.74	.09
Total feed cost	<u>\$18.83</u>	<u>\$21.59</u>	<u>\$20.14</u>
Returns above feed cost per cwt. beef produced	\$ 4.71	\$ 3.12	\$ 4.91
Returns for \$100 of feed	\$125	\$114	\$124
Miscellaneous costs per cwt. beef produced	\$.40	\$.64	\$.61
Feeds per cwt. beef produced, pounds			
Corn and small grain	591	698	622
Commercial feeds	46	51	60
Total concentrates	637	749	682
Total hay	182	188	213
Silage	674	602	561
Price paid per cwt. for beef bought	\$33.76	\$31.46	\$33.12
Price received for feeder cattle sold	28.51	28.56	28.28
Average number of head for the year	177	101	115

Factors Affecting Choice of Type of Farming

The records included in this report are for only one calendar year. Examination of the 1969 report¹ reveals considerable variation between the two reporting years. 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 14. 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 as 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 seems to be adapted to a variety of situations.

A measure of return on capital managed is also reported in table 14. The rate of earnings varies from 4.9 percent on specialized hog farms to 12.2 percent on the largest dairy farms. This measure assumes a charge of \$7000 for the operator's labor.

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. However, the total capital managed per farm was relatively high on large dairy farms.

1. Nodland, Truman R. and Edgar Persons, "1969 Farm Business Summary by Type of Farming for Southern Minnesota," Department of Agricultural and Applied Economics Report No. R70-6, August 1970.

There was not a wide variation in the amount of labor utilized among the types of farms. Only one farm type used 1.3 - 1.4 years of man labor; nine used 1.5 - 1.7 years, and four had 1.8 - 2.2 workers. Large dairy farms used the most labor with 2.2 workers reported. Their total work units with 797 was much larger than that reported by any other group.¹ When viewed on a per man basis, farms with 1.5 - 1.7 workers had 189-364 work units per worker; with 1.8 - 2.2 workers, 199-362 work units were reported. The large dairy farms with 2.2 workers reported 362 work units per worker. If one could assume that farmers were all fully employed, the increased work units per worker may be an illustration of economies of size in the efficient use of labor.

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. Labor is utilized in the off season by employment off the farm. Cash crop farms reported over \$2190 income from work off the farm.

The type of farming which a farmer selects is the result of factors such as the number of acres of tillable land and non-tillable land, topography, soils, climate, markets, availability of labor and capital, relative prices of agricultural products, and personal preference. Most farmers face some limitations in adopting a particular farming type since each farm needs to be organized so as to make the best possible use of the particular bundle of resources available on that farm. In general, in order to maximize income, farmers should attempt to maximize the returns from their most scarce resources. If the supply of labor is short, enterprises should be selected that best fit that amount of labor. Others may have limitations in respect to land or capital, which in turn affect the selection of enterprises. What to produce and how much to produce depends

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 14. Earnings, Resources Utilized, Size of Business, and Expenses, by Type of Farming, 1970

Item	Cash crops	Dairy, 25-34 cows	Dairy, 35-44 cows	Dairy, 45-54 cows	Dairy, 55 cows & over	Hogs (complete program)
Earnings						
1. Net cash income	\$11716	\$ 8480	\$ 9314	\$13970	\$16692	\$10370
2. Labor earnings	13407	7095	9625	12492	17081	5703
3. Interest on capital	11613	3829	5920	6852	9683	7038
4. Total (2+3)	25020	10924	15545	19344	26764	12741
5. Estimated value of operator's labor	7000	7000	7000	7000	7000	7000
6. Return to capital	18020	3924	8545	12344	19764	5741
7. Rate earned on investment	9.3	6.1	8.7	10.8	12.2	4.9
Resources used						
8. Acres per farm	565	246	293	306	401	228
9. Acres tillable	512	161	204	226	289	205
10. Capital managed	\$193556	\$63820	\$98669	\$114206	\$161392	\$117308
11. Number of workers	1.5	1.5	1.7	1.7	2.2	1.9
12. Capital managed per worker	\$129037	\$42547	\$58041	\$67180	\$73360	\$61741
13. Work units per worker	189	237	275	324	362	199
Size of business						
14. Total farm sales	\$51080	\$24834	\$36891	\$41704	\$65195	\$58688
15. Total work units	284	356	467	550	797	379
Expenses						
16. Total operating expense	\$25935	\$11875	\$18610	\$19190	\$33245	\$35906
17. Purchase of capital items	13429	4479	8967	8544	15258	12412
18. Total farm purchases	\$39364	\$16354	\$27577	\$27734	\$48503	\$48318
19. Power, machinery, equipment, building expense per WU	\$39.54	\$18.92	\$21.38	\$20.18	\$21.62	\$31.72
20. Tractor & machinery expense per crop acre	\$15.84	\$21.79	\$24.19	\$28.84	\$30.07	\$29.36

on many physical, economic, and personal factors. Some of these personal factors take precedence over the maximizing of income.

There are many possible combinations of crops and livestock from which a farmer

Table 14. Earnings, Resources Utilized, Size of Business, and Expenses, by Type of Farming, 1970 (continued)

	Dairy and hogs	Dairy and cash crops	Hogs (finish), cash crops	Hogs and feeder cattle	Hogs and cash crops	Feeder cattle, cash crops	Dairy, hogs, cash crops	Hogs, feeder cattle, cash crops
Earnings								
1.	\$12919	\$12687	\$15732	\$18697	\$13459	\$18536	\$12292	\$20608
2.	10571	9608	8937	6291	10045	9325	10657	12780
3.	6032	8484	9967	11150	9975	13235	7994	12699
4.	16603	18092	18904	17441	20020	22560	18651	25479
5.	7000	7000	7000	7000	7000	7000	7000	7000
6.	9603	11092	11904	10441	13020	15560	11651	18479
7.	9.6	7.8	7.2	5.6	7.8	7.1	8.7	8.7
Resources used								
8.	240	368	425	360	397	474	326	479
9.	196	313	382	315	358	428	282	434
10.	\$100532	\$141396	\$166117	\$185834	\$166250	\$220589	\$133238	\$211659
11.	2.0	1.8	1.3	1.6	1.5	1.5	1.6	1.6
12.	\$50266	\$78553	\$127782	\$116146	\$110833	\$147059	\$83274	\$132287
13.	230	258	226	291	227	231	269	264
Size of business								
14.	\$44091	\$45078	\$66657	\$102097	\$55399	\$88722	\$43997	\$87057
15.	461	464	294	465	341	347	430	422
Expenses								
16.	\$23267	\$22082	\$41815	\$74621	\$30196	\$58921	\$22288	\$56428
17.	<u>7905</u>	<u>10309</u>	<u>9110</u>	<u>8779</u>	<u>11744</u>	<u>11265</u>	<u>9417</u>	<u>10021</u>
18.	\$31172	\$32391	\$50925	\$83400	\$41940	\$70186	\$31705	\$66449
19.	\$22.09	\$24.77	\$38.06	\$25.91	\$32.60	\$36.80	\$37.78	\$32.04
20.	\$27.47	\$22.29	\$18.78	\$22.27	\$18.63	\$18.39	\$21.26	\$18.72

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 operator and his family.