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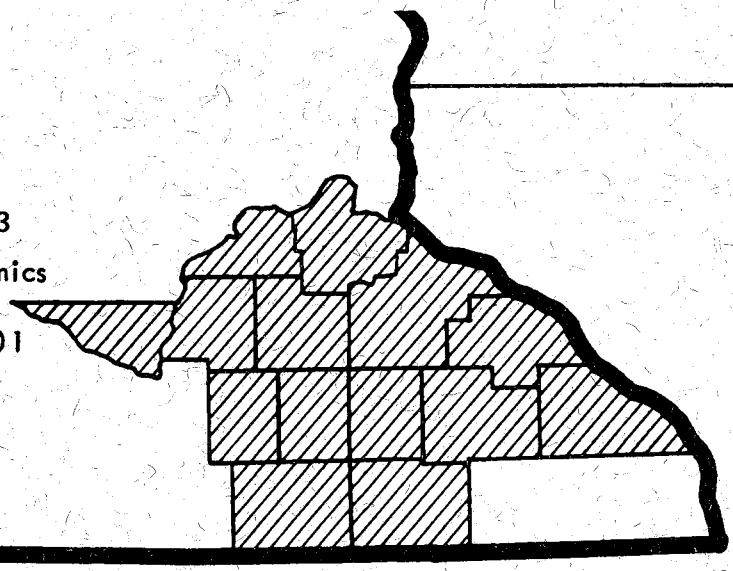
1970 annual report

Southeastern Minnesota Farm Management Association

COOPERATING AGENCIES:

University of Minnesota, Institute of Agriculture
United States Department of Agriculture, Agricultural Research Service
County Extension Services of the 14 Southeastern Counties
Southeastern Minnesota Farm Management Association



Economic Information Report R 71-3

Department of Agricultural Economics
Institute of Agriculture
St. Paul, Minnesota 55101

May 1971

1970 ANNUAL REPORT OF THE SOUTHEASTERN MINNESOTA FARM MANAGEMENT ASSOCIATION

Prepared by T. R. Nodland and Janet B. Otis*

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INTRODUCTION

The Department of Agricultural and Applied Economics and the Agricultural Extension Service of the University of Minnesota, the Agricultural Research Service of the United States Department of Agriculture, and the county extension services of several southeastern Minnesota counties are cooperating with the Southeastern Minnesota Farm Management Association in maintaining a farm management service. The Southeast Minnesota Farm Management Service was organized in 1927 and began operations on January 1, 1928. The Southeastern Minnesota Farm Management Association was organized in 1939 by the farmers and now represents the farmers in determining policies and maintaining the field organization and membership. Each farmer pays an annual fee which covers a part of the cost. The balance of the cost is defrayed by the University of Minnesota and the United States Department of Agriculture.

900/5/71

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* The authors are indebted to Barbara Miller, Dorothy Spreck and Eileen Miley for their assistance in the preparation of this report.

The analysis of the records and the preparation of the report are handled by the Department of Agricultural and Applied Economics under the direction of T. R. Nodland. Extension work in connection with the supervision of the project is handled by Ed Becker. Harvey Bjerke was the field agent for this project. At the end of the year, Kenneth Thomas, of the Agricultural Extension Service, and Mervin Freeman, Area Farm Management Agent at Rochester, Minnesota, aided in closing the records.

The following tabulation shows by counties the number of records submitted, the officers of the Association, and the county agricultural extension agents who cooperated in 1970.

County	No. of records	Association Officers	Count Agricultural Extension Agent
Dakota	10	John Harkness, Director	Clarence O. Quie
Dodge	11	Lowell Wright, Director	David H. Hanson
Freeborn	12	Jacob Kuiters, President	Eldon H. Senske
Goodhue	23	Dale Hayward, Director	Richard C. Walter
Le Sueur	8	Donald Gibbs, Director	Robert Leary
Mower	4	R. L. Zimmerman, Director	Harlan L. Johnsrud
Nicollet	7	Jerry Kuehn, Director	F. E. Wetherill
Olmsted	12	Franklin Till, Director	Don Untiedt
Rice	7	John Holmes, Director	Warren Liebenstein
Scott	9	Arnie Schoenbauer, Secretary-Treas.	David Hart
		Lester Ruehling	
Steele	12	Glen Schuelke, Vice-President	J. R. Gute
Wabasha	10	Kenneth Steffen, Director	Matthias Metz
Waseca	2	Edwin Ewert, Director	Roger Wilkowske
Winona	8	Norman Luehmann, Director	Harry B. Burcalow
Total	135		

The data for 113 farms are shown in the tables on succeeding pages. Twenty-two farms were omitted from all averages in the tables because the records were not sufficiently complete for a full summarization or the records were not returned for summarization following completion of income tax schedules.

Because the farmers included in this study are, in general, above the average in managerial ability and operate larger and more productive farms, they have returns materially higher than the average for this section of the state. There were, however, wide variations in the methods and practices followed by these men. It is reasonable to assume that similar variations occur among all farmers in the area. To the extent that this is true, this report would be of value to all farmers and to others interested in agriculture in that it illustrates how farm records may be used as a basis for making an analysis of a farm business and for improving the management of a farm.

Table 1. Summary of Farm Inventories, 1970*

Item	Average of 113 farms	
	Jan. 1	Dec. 31
Size of farm (acres)	307	
Size of business (work units)**	431	
Dairy cows	$ 5749	$ 6222
Other dairy cattle	3759	4155
Beef cattle (incl. feeders)	2197	1840
Hogs	3940	2863
Sheep (incl. feeders)	71	62
Poultry (incl. turkeys)	47	53
Productive livestock total	$15763	$15195
Horses	$ 7	$ 6
Crop, seed and feed	$12590	$14741
Auto and truck (farm share)	$ 1942	$ 2075
Tractors and crop machinery	12249	13087
Livestock equipment	3286	3589
Machinery and equipment total	$17477	$18751
Land	$36985	$36985
Buildings, fences, etc.	$22995	$23953
Total farm capital managed	$105817	$109631

Item	23 most profitable		23 least profitable	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Size of farm (acres)	418		271	
Size of business (work units)	545		326	
Dairy cows	$ 6406	$ 6881	$ 3514	$ 3547
Other dairy cattle	4541	5099	1740	1671
Beef cattle (incl. feeders)	975	852	3243	3390
Hogs	6189	5051	4576	2732
Sheep (incl. feeders)	15	16	47	40
Poultry (incl. turkeys)	71	82	67	52
Productive livestock total	$18197	$17981	$13187	$11432
Horses	$ 2	$ 2	$ -	$ -
Crop, seed and feed	$18415	$23406	$11550	$12161
Auto and truck (farm share)	$ 2365	$ 3053	$ 1675	$ 1539
Tractors and crop machinery	16301	17120	12262	12692
Livestock equipment	3634	3304	2444	2543
Machinery and equipment total	$22300	$23477	$16381	$16774
Land	$55267	$55267	$35762	$35762
Buildings, fences, etc.	$28725	$28227	$19786	$20274
Total farm capital managed	$142906	$148360	$96666	$96403

* For the purpose of comparison, all the data shown in this report, with the exception of tables 4 and 5, are presented on a full-owner basis. The assets, expenses and receipts of the landlord were included in the records from rented farms.

** See page 15 for an explanation of "work units."

Table 2. Summary of Farm Earnings (Cash Statement), 1970

Item	Average of 113 farms	23 most profitable farms	23 least profitable farms
FARM RECEIPTS			
Dairy cattle sold	$ 3676	$ 4487	$ 1723
Dairy products sold	16686	20776	7540
Beef cattle (incl. feeders) sold	3030	1597	5322
Hogs sold	9069	14930	9800
Sheep and wool sold	82	40	48
Horses sold	-	-	-
Poultry (incl. turkeys) sold	19	19	7
Eggs sold	225	338	241
Corn sold	4844	8830	4691
Soybeans sold	2762	5048	2157
Small grain sold	421	869	372
Other crops sold	2208	4694	1243
Machinery & equipment sold & gas tax refund	458	496	540
Income from work off the farm	773	1098	857
Miscellaneous farm income	1061	1588	537
Total farm sales	$45314	$64810	$35078
Increase in farm capital	3814	5454	-
Family living from the farm	373	335	274
Total farm receipts	$49501	$70599	$35352
FARM EXPENSES			
Dairy cattle bought	521	130	415
Beef cattle bought (incl. feeders)	908	484	2910
Hogs bought	616	278	1063
Sheep bought	7	4	5
Horses bought	-	-	-
Poultry bought (incl. turkeys)	73	129	40
Miscellaneous livestock expense	1347	1573	700
Feed bought	5001	6067	4118
Fertilizers bought	2250	3154	2347
Other crop expenses	2593	4583	2268
Custom work hired	1744	2107	1356
Gas, oil and grease bought (farm share)	1330	1583	1101
Repair of truck and auto (farm share)	528	675	401
Repair and upkeep of farm real estate	573	729	440
Repair and upkeep of tractor & crop machinery	1356	1501	1169
Repair and upkeep of livestock equipment	345	356	221
Wages of hired labor	1730	3066	1119
Electricity expense (farm share)	523	642	444
Real estate taxes	1921	2715	1613
Telephone and general farm expense	769	972	651
Total cash operating expenses	$24135	$30748	$22381
Trucks and autos bought (farm share)	660	1425	274
Crop and power machinery bought	3905	4962	3157
Livestock equipment bought	986	392	580
New real estate and improvements	2948	2124	2237
Total farm purchases	$32634	$39651	$28629
Decrease in farm capital	-	-	263
Interest on farm capital @ 6%	6463	8738	5792
Unpaid family labor	1171	1103	975
Board furnished hired labor	55	75	65
Total farm expenses	$40323	$49567	$35724
Labor earnings	$ 9178	$21032	$ -372

Table 3. Summary of Farm Earnings (Enterprise Statement), 1970*

Item	Average of 113 farms	23 most profitable farms	23 least profitable farms
RETURNS AND NET INCREASES			
Dairy cows	$16835	$21181	$ 7351
Other dairy cattle	4424	5735	1624
Beef breeding herd	224	-	-
Feeder cattle	1421	707	2637
Hogs	7420	13558	6940
Sheep - farm flock	65	37	35
Sheep - feeders	-	-	-
Chickens	195	248	217
All productive livestock	$30584	$41466	$18804
Value of feed fed to livestock	15896	18793	12956
Return over feed from livestock	$14688	$22673	$ 5848
Crop, seed and feed	18321	29236	13259
Income from labor off the farm	399	576	385
Miscellaneous farm income	1061	1588	537
Total returns and net increases	$34469	$54073	$20029
EXPENSES AND NET DECREASES			
Horses	1	-	-
Truck	$ 608	$ 884	$ 421
Auto (farm share)	698	711	608
Electricity (farm share)	523	642	444
Hired power	1169	1428	911
Tractors and crop machinery	4773	6062	4007
Livestock equipment	992	1041	699
Buildings, fencing, and tiling	2497	3352	1952
Miscellaneous productive livestock expense	1347	1573	700
Labor	3530	4923	2603
Real estate taxes	1921	2715	1613
General farm expense and telephone	769	972	651
Interest on farm capital @ 6%	6463	8738	5792
Total expenses and net decreases	$25291	$33041	$20401
Labor earnings	$ 9178	$21032	$ -372

* Earnings statements, as shown in table 2, stress purchases and sales; inventory adjustments are entered as one item--either an increase or a decrease in farm capital. Likewise, family living from the farm is entered as a single item of income. On the enterprise basis, the 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 value of livestock and livestock products added by the enterprise.

Costs of operating each service enterprise (auto and trucks, tractors and crop machinery, etc.) are calculated in a similar manner. Credit is given to crops for feed raised on the farm and consumed by livestock. Thus, while earnings statements on the enterprise basis do not show purchases and sales, such a statement more truly shows the value produced for the productive enterprises and net expenses for each of the service enterprises.

Table 4. Net Worth Statement for Those Farmers Who Kept a Complete Record of All Assets and Liabilities, 1970 (Operator's Share)

Item	23 Owners	
	Jan. 1	Dec. 31
Total acres in farm	241	
Acres owned	241	
Acres rented		
Total farm capital	$76906	$76963
Stocks and bonds	11149	12760
Life insurance cash value	3387	3730
Notes and accounts receivable	3514	2012
Shares in cooperative organizations	1536	1798
Outside real estate	1385	2065
Cash on hand and in bank	4822	6758
Household furnishings and clothing	3557	3729
Personal share of auto and truck	898	798
Farm dwelling	6250	6646
Total non-farm assets	$36498	$40296
Total assets	$113404	$117259
Mortgages on farm operated	18060	17724
Mortgages on other real estate	-	-
Chattel mortgages	11518	10986
Notes payable	3580	3493
Accounts payable	2948	2910
Total liabilities	$36106	$35113
Farmer's net worth	$77298	$82146
Change in net worth		$ 4848

Item	26 Part-owners		5 Renters	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Total acres in farm	356		276	
Acres owned	237		-	
Acres rented	119		276	
Total farm capital	$ 96875	$102989	$38744	$36934
Stocks and bonds	7965	7589	4178	3518
Life insurance cash value	4739	4751	2625	2982
Notes and accounts receivable	1072	828	-	-
Shares in cooperative organizations	2008	2131	1518	1784
Outside real estate	881	1737	2400	4437
Cash on hand and in bank	5441	4883	1967	1804
Household furnishings and clothing	3322	3682	3124	3310
Personal share of auto and truck	685	928	652	864
Farm dwelling	6796	8122	-	67
Total non-farm assets	$ 32909	$ 34651	$16464	$18765
Total assets	$129784	$137640	$55208	$55699
Mortgages on farm operated	27814	29122	-	-
Mortgages on other real estate	-	-	1400	1400
Chattel mortgages	8046	9168	16394	17909
Notes payable	6455	6221	2175	491
Accounts payable	1517	2108	523	439
Total liabilities	$ 43832	$ 46619	$20492	$20239
Farmer's net worth	$ 85952	$ 91021	$34716	$35460
Change in net worth		$ 5069		$ 744

Table 5. Summary of Farm Earnings by Tenure, 1970 (Operator's Share)

Item	54 Owners	37 Part-owners	9 Renters
FARM RECEIPTS			
Dairy cattle sold	$ 3235	$ 4241	$ 2127
Dairy products sold	16082	17525	8454
Beef cattle sold (incl. feeders)	2376	4726	2926
Hogs sold	7879	8535	7383
Sheep and wool sold	137	48	-
Horses sold	-	-	-
Poultry sold (incl. turkeys)	5	19	44
Eggs sold	120	425	167
Corn sold	3135	6439	5151
Soybeans sold	1609	3908	1798
Small grain sold	221	377	578
Other crops sold	1836	2427	1685
Machinery & equipment sold & gas tax refund	355	630	424
Income from work off the farm	476	751	2183
Miscellaneous farm income	858	1081	1222
(1) Total farm sales	$38324	$51132	$34142
(2) Increase in farm capital	2930	5202	1594
(3) Family living from the farm	320	455	312
(4) Total farm receipts (1)+(2)+(3)	$41574	$56789	$36048
FARM EXPENSES			
Dairy cattle bought	490	189	286
Beef cattle bought (incl. feeders)	650	1599	928
Hogs bought	377	799	1220
Sheep bought (incl. feeders)	13	2	-
Horses bought	-	-	-
Poultry bought (incl. turkeys)	31	131	88
Miscellaneous livestock expense	1093	1469	841
Feed bought	4307	5501	3800
Fertilizers bought	1722	2870	2192
Other crop expenses	1918	2853	1992
Custom work hired	1545	2186	1249
Gas, oil and grease bought (farm share)	1179	1437	1211
Repair and upkeep of power and crop machinery	1598	2076	1822
Repair and upkeep of real estate	604	541	159
Repair and upkeep of livestock equipment	350	330	188
Wages of hired labor	1296	2317	825
Electricity expense (farm share)	447	555	357
Real estate taxes	1501	1629	39
Cash rent	71	2511	3817
General farm expense & telephone	658	803	598
Interest paid	1959	2805	1532
Total cash operating expense	$21809	$32603	$23144
Trucks and autos bought (farm share)	450	884	870
Crop and power machinery bought	3063	4218	2656
Livestock equipment bought	786	457	3924
Farm purchase and real estate improvements	3408	3412	147
(5) Total farm purchases	$29516	$41574	$30741
(6) Decrease in farm capital	-	-	-
(7) Interest on operator's farm capital	2949	3383	959
(8) Unpaid family labor	405	430	389
(9) Board furnished hired labor	30	72	17
(10) Total farm expenses (5)+(6)+(7)+(8)+(9)	$32900	$45459	$32106
(11) Labor earnings (4)-(10)	8674	11330	3942
(12) Return to capital & family labor (7)+(8)+(11)	12028	15143	5290

Table 6. Household and Personal Expenses for Those Farms Which Kept Complete Accounts of these Expenses, 1970

Item	Average of 48 farms	10 high in return to cap. and fam. labor	10 low in return to cap. and fam. labor
Number of persons - family	4.6	4.5	4.2
Number of adult equivalent - family	4.0	4.0	3.7
- other*	.1	.1	.1
EXPENSES			
Food and meals bought	$ 1621	$ 1772	$ 1562
Operating and supplies	490	394	574
Furnishings and equipment	537	525	512
Clothing and clothing materials	679	717	622
Personal care and spending	277	447	409
Education	373	647	112
Recreation	215	306	236
Gifts and special events	336	411	320
Medical and hospital expenses	893	931	837
Church and welfare	518	732	249
Personal share of auto expense	350	501	228
Upkeep on dwelling	102	69	103
Personal share of tel. & elec. expense	194	223	171
Total cash living expense	$ 6585	$ 7675	$ 5935
Personal share of new auto	284	774	18
New dwelling	535	714	1130
Taxes	1286	2900	494
Life insurance	928	1606	757
Other savings and investments	1854	1935	259
Total household and pers. cash expense	$11472	$15604	$ 8593
Family living from the farm	343	364	193
Total cash expenses and perquisites	$11815	$15968	$ 8786
RECEIPTS			
Return to capital and family labor	$14453	$29079	$ 1434
Income from outside investments	729	1260	281
Other personal income	651	563	1006

* Hired help or others boarded.

Table 7. Family Living from the Farm, 1970

Item	Average of 113 farms	Average of 113 farms
Number of adult equivalents - family	4.0	
- other*	.1	
Whole milk	1041 qts.	$ 100
Cream	16 pts.	6
Cattle	838 lbs.	206
Hogs	209 lbs.	44
Sheep	4 lbs.	-
Poultry	33 lbs.	10
Eggs	24 doz.	7
Total		$ 373

* Hired help or others boarded.

CUMULATIVE EFFECT OF EXCELLING IN A NUMBER OF MANAGEMENT FACTORS

Studies of earnings of farmers in this area show that there are seven major management factors causing variations in earnings among farmers within a given year. These seven factors are (1) crop yields, (2) choice of crops, (3) returns from livestock, (4) amount of livestock, (5) size of business, (6) work accomplishments per worker, and (7) control over expenses. The combined or cumulative influence of these seven management factors on earnings is shown in Table 8. The farmer's earnings are determined to a considerable extent by his accomplishments in these seven factors.

Table 8. Relation of Labor Earnings to the Number of Factors in Which the Farmer Excels

Number of factors in which farmer excels	No. of farms	Your farm	The length of the shaded lines is in proportion to the average operator's labor earnings	Average labor earnings
0 or 1	14	____	XXXXXX	$ 2910
2	22	____	XXXXXXXXXXXX	6711
3	24	____	XXXXXXXXXXXXXXX	7753
4	33	____	XXXXXXXXXXXXXXXXXXXX	10587
5	14	____	XXXXXXXXXXXXXXXXXXXXXXXXXXXXX	14895
6 or 7	6	____	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	17452

The array in table 8 indicates that it will be worth while for each cooperator to study carefully his ranking on pages 10 and 11, and learn his standing in respect to each of the above factors and the elements of strength and weakness in his farm business.

Table 9. Measures of Farm Organization and Management Efficiency, 1970

Measures used in chart on page 11	Average of 113 farms	23 most profitable farms	23 least profitable farms
Labor earnings	$ 9178	$21032	$ -372
Crop yields*	100	108	85
Percent tillable land in high return crops**	63.6	63.2	69.1
Return for $100 feed to prod. livestock***	100	117	86
Productive livestock units per 100 acres****	34.3	37.3	33.9
Size of business - work units	431	545	326
Work units per worker	254	287	217
All power, machinery, equipment, building expense per work unit	$27.86	$27.77	$28.61
Items related to some of the above measures:			
Index of return for $100 feed from:			
Dairy cattle (see pages 16 and 17)	100	94	91
Beef cattle - breeding herd (see page 19)	100	-	-
Beef cattle - feeders (see page 20)	100	-	-
Hogs (see page 18)	100	128	81
Sheep - farm flock (see page 21)	100	-	-
Chickens (see page 22)	100	123	96
Number of animal units	84.8	104.4	76.2
Work units on crops	125	165	116
Work units on productive livestock	290	357	194
Other work units	16	23	16
Number of family workers	1.3	1.2	1.2
Number of hired workers	.4	.7	.3
Total number of workers	1.7	1.9	1.5
Power & crop machinery expense/work unit	$19.63	$19.75	$20.25
Livestock equipment expense per work unit	2.23	1.81	2.19
Building & fencing expense per work unit	6.00	6.21	6.17
Number of crop acres	225	299	209
Tractor & crop machinery expense/crop acre	$21.45	$20.70	$20.11
Rate earned on capital managed*****	8.0%	15.6%	-1.6%

* Given as a percentage of the average.

** Crops are marked in table 10 as A, B, C, and D. All of acres in A crops, one-half of acres in B crops, and one-fourth of acres in C crops are used in calculating percent of tillable land in high return crops.

*** An index weighted by the animal units of livestock.

**** Acres in timber not pastured, roads, waste and farmstead are not included.

***** $7000 is deducted for operator's labor.

Using your figures from page 10, locate your standing with respect to the various measures of farm organization and management efficiency. The average for the 113 farms included in this summary are located between the dotted lines across the center of this page.

Labor earnings	Crop yields	High return crops	Return from prod. livestock	Pr. L.S. units per 100 A.	Work units	Work units per worker	Pow.,mach. eq.&bldg. exp. per work unit
$21200	132	88.0	140	66.0	750	415	$8.00
19700	128	85.0	135	62.0	710	395	10.50
18200	124	82.0	130	58.0	670	375	13.00
16700	120	79.0	125	54.0	630	355	15.50
15200	116	76.0	120	50.0	590	335	18.00
13700	112	73.0	115	46.0	550	315	20.50
12200	108	70.0	110	42.0	510	295	23.00
10700	104	67.0	105	38.0	470	275	25.50
9200	100	64.0	100	34.0	430	255	28.00
7700	96	61.0	95	30.0	390	235	30.50
6200	92	58.0	90	26.0	350	215	33.00
4700	88	55.0	85	22.0	310	195	35.50
3200	84	52.0	80	18.0	270	175	38.00
1700	80	49.0	75	14.0	230	155	40.50
200	76	46.0	70	10.0	190	135	43.00
-1300	72	43.0	65	6.0	150	115	45.50
-2800	68	40.0	60	2.0	110	95	48.00

Table 10. Distribution of Acres in Farm, 1970

Item	Crop ratings*	Number growing this crop	Average of 113 farms	Ave. per farm raising each crop
Canning peas	B	8	1.8	25.2
Wheat	C	24	2.4	11.6
Oats for silage	C	12	2.6	24.3
Oats for grain	D	82	19.7	27.2
Barley	D	6	1.3	23.8
Other small grain	D or C		.2	9.4
Total small grains and peas		101	28.0	31.3
Corn grain	A	113	98.2	98.2
Soybeans for grain	B	61	38.5	71.4
Sweet corn	B	11	5.2	53.6
Corn silage	B	67	10.4	17.5
Total cultivated crops		113	152.3	152.3
Alfalfa hay	B	98	43.2	49.8
Other legume hay	C	1	.1	13.6
Other tame hay	D	-	-	-
Annual hay	D	4	.4	10.0
Total tillable land in hay		99	43.7	49.9
Alfalfa pasture	B	46	9.2	22.6
Other tillable pasture	D	17	2.2	14.4
Total tillable land in pasture		54	11.4	23.8
Feed grain program (diverted acres)	B	56	22.0	44.4
Tillable land not cropped	D	6	.8	15.9
Total tillable land		113	258.2	258.2
Wild hay		13	1.2	10.8
Non-tillable pasture		62	17.7	32.2
Timber not pastured		46	8.5	20.9
Roads and waste			13.3	
Farmstead			8.0	
Total acres in farm			306.9	
Percent land tillable			84.7	
Percent tillable land in high return crops			63.6	

*A, B, C, and D refer to ranking used in calculating percent of tillable land in high return crops.

Table 11. Crop Yields per Acre, 1970

Item	Average of farms growing each crop
Canning peas, dollars	$87.46
Wheat, bu.	31.0
Oats for silage, tons	5.6
Oats for grain, bu.	55.6
Barley, bu.	48.4
Corn grain, bu.	96.7
Soybeans, bu.	29.5
Sweet corn, tons	5.8
Corn silage, tons	14.7
Alfalfa hay, tons	3.6
Other legume hay, tons	3.7
Annual hay,tons	2.6
Feed grain program, dollars	$62.39

Table 12. Average Price of Feeds, 1970

Item	Value	Item	Value
Ear corn, per bu.	$1.15	Alfalfa hay, per ton	$20.00
Oats, per bu.	.60	Timothy hay, per ton	11.60
Barley, per bu.	.85	Wild hay, per ton	10.00
Wheat, per bu.	1.60	Corn silage, per ton	7.25
Soybean meal, per cwt.	5.00	Pasture, per month per cow	4.00

Table 13. Return Above Listed Costs per Acre of Crops, 1970

Item	Corn grain	Corn silage	Soy-beans
Number of farmers reporting	97	58	54
Yield per acre	96.7 bu.	14.7 tons	29.5 bu.
Price per unit	$1.25	$7.25	$2.75
Total return	$120.88	$106.58	$ 81.12
Fertilizer	$ 15.53	$ 14.71	$ 1.26
Seeds, herbicides, etc.	13.69	12.48	8.52
Total listed costs	$ 29.22	$ 27.19	$ 9.78
Return above listed costs	$ 91.66	$ 79.39	$ 71.34

Item	Alfalfa hay	Oats	Wheat
Number of farmers reporting	84	70	20
Yield per acre	3.6 tons	55.6 bu.	31.0 bu.
Price per unit	$20.00	$ .60	$ 1.65
Total return	$72.00	$33.36	$51.15
Fertilizer	$ 3.80	$ 1.57	$ 3.00
Seeds, herbicides, etc.	6.72	3.28	4.80
Total listed costs	$10.52	$ 4.85	$ 7.80
Return above listed costs	$61.48	$28.51	$43.35

EXPLANATION OF "WORK UNITS" AND "ANIMAL UNITS"

The total "work units" for any one farm is a measure of the size of that farm business. A work unit, as used in this report, is the average accomplishment of a farm worker, in a ten hour day, working on crops and productive livstock at average efficiency, or ten hours of work off the farm for pay. The number of work units for each class of livestock and each acre of crop are presented in table 14.

Table 14. Number of Work Units for Each Class of Livestock and Each Acre of Crop

Item	Number of work units	Item	Number of work units
Dairy cows	7.0 per cow	Small grain	.3 per acre
Other dairy cattle	1.2 per head	Sugar beets	1.8 per acre
Beef breeding herd	1.5 per cow	Sweet corn	.7 per acre
Feeder cattle	.12 per 100 lbs.	Corn husked	.6 per acre
Sheep, farm flock	.6 per ewe	Corn silage	.8 per acre
Sheep, feeders	.3 per 100 lbs.	Potatoes	4.0 per acre
Hogs	.12 per 100 lbs.	Alfalfa hay	.6 per acre
Turkeys	.1 per 100 lbs.	Soybean hay	.6 per acre
Hens	5.0 per 100 hens	Other hay crops	.4 per acre
Canning peas	.3 per acre	Labor off the farm	1.0 per $25
Soybeans for grain	.5 per acre		

An animal unit represents one dairy cow or bull, two other dairy cattle, $1\frac{1}{4}$ beef cows or bull, 1 feeder steer or heifer, 3 1/3 other beef cattle, 7 sheep, 14 lambs, $2\frac{1}{2}$ hogs, 5 pigs, 50 hens or 1,100 pounds of turkeys produced.

Table 15. Factors of Costs and Returns from Dairy Cows, 1970

Item	Average of 75 farms	15 farms highest in butterfat per cow	15 farms lowest in butterfat per cow
Pounds of milk per cow	12287	14617	9347
Percent butterfat in milk	3.8	3.8	3.8
Pounds of butterfat per cow	457	546	348
Price received per pound of BF sold	$1.36	$1.39	$1.30
Price received per cwt. milk sold	5.09	5.22	4.91
Value of produce per cow:			
Dairy product sales	$611.88	$742.63	$443.39
Dairy produce used in home	4.19	4.85	3.69
Milk fed to livestock	4.77	6.80	6.39
Net increase in value of cows	-.66	6.90	-9.43
TOTAL VALUE PRODUCED	$620.18	$761.18	$444.04
Feed cost per cow:			
Concentrates	$142.24	$160.18	$115.10
Roughages	95.05	103.09	73.75
Pasture	9.24	10.72	14.58
TOTAL FEED COST	$246.53	$273.99	$203.43
RETURN ABOVE FEED COST PER COW	$373.65	$487.19	$240.61
RETURNS FOR $100 OF FEED	$257	$286	$226
Feeds per cow, lbs.:			
Corn	4533	4922	3686
Small grain	635	800	542
Commercial feeds	598	712	503
Total concentrates	5766	6434	4731
Total hay	6854	7347	5345
Silage	7370	8189	5657
Feed cost per pound of butterfat	$ .54	$ .50	$ .58
Feed cost per cwt. of milk	2.01	1.87	2.18
Number of cows	40.3	41.1	34.0

* All dairy cows which have at some time in the past freshened are included in the dairy herd and affect the average number of cows used in computing this table. There is some variation in the number of months of dry period per cow; however, this variation is small for the majority of farms.

Table 16. Feed Costs and Returns from Other Dairy Cattle, 1970

Item	Average of 75 farms	15 farms highest in butterfat per cow	15 farms lowest in butterfat per cow
NET INCREASE IN VALUE OF OTHER DAIRY CATTLE	$127.64	$150.65	$ 96.87
TOTAL FEED COST PER HEAD	$ 75.21	$ 84.41	$ 56.49
RETURNS ABOVE FEED COST PER HEAD	$ 52.43	$ 66.24	$ 40.38
RETURNS FOR $100 OF FEED	$187	$183	$225
Feed per head, lbs.:			
Concentrates	1266	1291	857
Hay	2544	2699	1912
Silage	2259	2835	1628
Whole milk	108	208	104
Number of head of other dairy cattle	51.7	52.0	38.2

Table 17. Feed Costs and Returns from All Dairy Cattle, 1970

Item	Average of 75 farms	15 farms highest in butterfat per cow	15 farms lowest in butterfat per cow
Value of produce per cow:			
Dairy products	$616.07	$747.48	$447.08
Net increase in value of dairy cattle	167.46	196.34	110.46
TOTAL VALUE PRODUCED	$783.53	$943.82	$557.54
TOTAL FEED COSTS PER COW	$340.94	$373.18	$268.65
RETURNS ABOVE FEED COST PER COW	$442.59	$570.64	$288.89
RETURNS FOR $100 OF FEED	$235	$260	$217
Feed per cow, lbs.:			
Concentrates	7541	8109	5846
Hay	10166	10795	7738
Silage	10188	11544	7637
Miscellaneous costs per cow	$37.36	$47.31	$26.43

Table 18. Feed Costs and Returns from Hogs, 1970

Item	Average of 52 farms	40 farms with breeding stock: Average of 40 farms	13 farms highest in returns above feed	13 farms lowest in returns above feed	11 farms with purchased feeder pigs
Pounds of hogs produced	87497	101811	128973	76736	39786
Net increase in value per cwt. produced	$17.23	$18.26	$20.76	$15.83	$13.80
Feed cost per cwt. produced	12.06	12.32	11.24	13.47	11.18
Return above feed cost per cwt. produced	$ 5.17	$ 5.94	$ 9.52	$ 2.36	$ 2.62
RETURNS FOR $100 OF FEED	$147	$152	$188	$118	$131
Price received per cwt. sold	$21.93	$21.79	$22.95	$21.02	$22.39
Weight per hog sold	240	243	241	247	229
Miscellaneous costs per cwt. produced	$ .42	$ .49	$ .48	$ .54	$ .15
Feed per cwt. hogs produced, lbs.:					
Corn	333	336	314	360	323
Small grain	22	24	22	24	18
Commercial feeds	67	71	67	76	55
Total concentrates	422	431	403	460	396
Total number of litters raised	48.7	62.2	73.6	51.0	3.4
Number of pigs born per litter	9.0	9.1	9.1	9.0	7.1
Number of pigs weaned per litter	7.3	7.4	7.7	7.2	5.6
Number of feeder pigs purchased	55	9	-	9	209
Total weight of feeders purchased	1908	326	-	369	7181
Price paid per feeder pig	$19.53	$17.95	-	$18.00	$19.79

Table 19. Feed Costs and Returns from Beef Breeding Herd, 1970

Item	Average of 6 farms
TOTAL VALUE PRODUCED PER COW	$179.02
Feed cost per cow:	
Concentrates	$ 21.55
Roughages	46.05
Pasture	36.94
TOTAL FEED COST	$104.54
RETURNS ABOVE FEED COST PER COW	$ 74.48
RETURNS FOR $100 OF FEED	$179
Feed per cow, lbs.:	
Concentrates	638
Hay	3964
Silage	1768
Pounds of beef produced	10812
Number of cows	25.1
Number of other beef cattle	21.7

Table 20. Feed Costs and Returns from Feeder Cattle, 1970

Item	Average of 20 farms
Pounds of beef produced	32683
NET INCREASE IN VALUE OF FEEDERS PER CWT. OF BEEF PRODUCED	$25.86
Feed cost per cwt. beef produced:	
Concentrates	$16.97
Roughages	4.62
Pasture	.49
TOTAL FEED COST	$22.08
RETURNS ABOVE FEED COST PER CWT. BEEF PRODUCED	$ 3.78
RETURNS FOR $100 OF FEED	$122
Miscellaneous costs per cwt. of beef produced	$.57
Feed per cwt. beef produced, lbs.:	
Corn	676
Small grain	33
Commercial feeds	41
Total concentrates	750
Total hay	297
Silage	458
Price paid per cwt. of beef bought	$32.73
Price received per cwt. of feeder cattle sold	27.44
Number of animal units	51.1

Table 21. Feed Costs and Returns from a Farm Flock of Sheep, 1970*

Item	Average of 5 farms
Value of produce per ewe:	
Wool	$ 4.79
Net increase in value of sheep	30.15
TOTAL VALUE PRODUCED	$34.94
Feed cost per ewe:	
Concentrates	$ 9.26
Roughages	10.69
Pasture	3.70
TOTAL FEED COSTS	$23.65
RETURNS ABOVE FEED COST PER EWE	$11.29
RETURNS FOR $100 OF FEED	$151
Feeds per ewe, lbs.:	
Concentrates	371
Hay	1069
Silage	-
Price received per cwt. of lambs sold	$28.75
Price received per pound of wool sold	$ .45
Pounds of wool per sheep sheared	8.2
Percent lamb crop**	124
Percent death loss**	7.9
Pounds of sheep produced	3569
Number of ewes	36.8

* Includes feeds and returns from lambs.
** Lambs which die during month of birth are not included.

Table 22. Feed Costs and Returns from Chickens, 1970*

Item	Average of 9 farms
Value of produce per hen:	
Eggs sold and used in house	$4.49
Net increase in value of chickens	-.93
TOTAL VALUE PRODUCED	$3.56
TOTAL FEED COST PER HEN	$2.97
RETURNS ABOVE FEED COST PER HEN	$ .59
RETURNS FOR $100 OF FEED	$124
Miscellaneous costs per hen	$.10
Feed per hen, lbs.:	
Grain	75
Commercial feeds	23
Total concentrates	98
Price received per dozen eggs sold	$ .29
Eggs laid per hen	187
Feed costs per dozen eggs produced	$ .19
Average number of hens on farm during year	592
Percent death loss of hens	13.0
Number of chicks bought	250
Number of hens bought	469

* Includes feeds and returns from laying flock and rearing flock.

Table 23. Summary by Years

Item	Average 1940-44	Average 1945-49	Average 1950-54	Average 1955-59	Average 1960-64	1965	1966	1967	1968	1969	1970
Number of farms	177	169	162	165	158	149	147	130	132	111	113
Acres in farm	227	223	226	235	256	269	273	280	294	304	307
Crop acres in farm	148	148	155	162	178	188	192	207	214	218	225
Farm inventory	$25912	$31402	$42663	$49342	$60988	$68438	$74331	$82474	$92339	$102858	$107724
FARM EXPENSES											
Cattle bought	$ 441	$ 485	$ 902	$1148	$1450	$ 852	$1158	$1088	$1403	$1442	$1429
Hogs bought	154	194	202	258	386	383	377	526	701	535	616
Sheep bought	64	64	35	143	88	4	5	18	3	7	7
Poultry bought	142	176	154	124	154	102	186	189	17	54	73
Horses bought	32	14	6	6	2	2	1	1	-	3	-
Miscellaneous livestock expense	124	228	359	530	731	807	855	943	1016	1114	1347
Commercial fertilizers bought	-	-	-	877	1085	1469	1787	2388	2179	2066	2250
Miscellaneous crop expense	301*	701*	1010*	651	926	1382	1665	1764	2070	2511	2593
Feed bought	1273	1954	2241	2747	3735	3957	4812	4266	4125	4236	5001
Custom work hired	165	401	552	745	857	962	1083	1354	1429	1649	1744
Pow.,mach. & equip. (new & upkp)	1253	2687	3609	4261	4764	5761	7279	6513	7660	8451	9633
Buildings (new)	331	778	983	982	1229	1475	1256	2989	2035	1896	2948
Buildings (upkeep)	188	323	368	320	344	378	428	424	464	483	573
Hired labor	585	849	857	878	922	997	1079	1075	1172	1290	1730
Taxes	271	392	633	861	1301	1513	1611	1740	1368	1713	1921
General farm expense	84	150	239	316	409	472	506	525	586	686	769
Total farm purchases	$ 5408	$ 9396	$12150	$14847	$18383	$20516	$24088	$26803	$26228	$28136	$32634
Decrease in farm capital	-	-	-	-	-	-	-	-	-	-	-
Board to hired labor	158	174	166	134	101	84	71	56	56	52	55
Interest on farm capital	1296	1570	2133	2467	3049	3422	3717	4536	5079	5657	6463
Unpaid family labor	326	511	496	540	629	836	836	799	812	790	1171
Total farm expense	$ 7188	$11651	$14945	$17988	$22162	$24858	$28712	$32194	$32175	$34635	$40323

* Includes fertilizer.

Table 23. Summary by Years (continued)

Item	Average 1940-44	Average 1945-49	Average 1950-54	Average 1955-59	Average 1960-64	1965	1966	1967	1968	1969	1970
FARM RECEIPTS											
Cattle	$1335	$2022	$2981	$3532	$4749	$4669	$4894	$5403	$5522	$6482	$6706
Dairy products	2138	4080	4702	6032	8105	9582	10455	11847	12492	13777	16686
Hogs	2517	3598	4253	4653	5961	6360	8568	7658	8166	9114	9069
Sheep and wool	186	232	171	272	222	89	98	98	108	81	82
Poultry	629	672	354	212	88	135	181	61	17	18	19
Eggs	751	1319	1297	1075	1015	901	1316	828	353	260	225
Horses	34	20	14	8	4	1	5	1	-	-	-
Corn	121	335	766	1926	1594	1649	1926	2681	2492	3587	4844
Soybeans*	-	-	-	-	-	-	1660	2309	2069	2406	2762
Small grain	278	659	495	481	624	446	371	608	494	541	421
Other crops*	455	819	853	1334	2181	3421	2272	1483	2592	3144	2208
Income from labor off the farm	141	178	182	269	239	343	362	411	542	503	399
Miscellaneous farm income	536	528	684	729	882	1005	1027	1463	1760	1748	1893
Total farm sales	$ 9121	$14462	$16752	$20523	$25664	$28601	$33135	$34851	$36607	$41661	$45314
Increase in farm capital	921	1411	1905	941	601	3604	5006	2501	3582	2885	3814
Family living from the farm	566	715	620	304	307	293	321	318	302	373	373
Total farm receipts	$10608	$16588	$19277	$21768	$26572	$32498	$38462	$37670	$40491	$44919	$49501
Total farm expenses	7188	11651	14945	17988	22162	24858	28712	32194	32175	34635	40323
Labor earnings	$ 3420	$ 4937	$ 4332	$ 3780	$ 4410	$ 7640	$ 9750	$ 5476	$ 8316	$10284	$ 9178
MISCELLANEOUS ITEMS											
Yield per acre:											
Corn (bu.)	55.7	47.6	59.8	73.1	72.4	72.1	91.0	83.8	88.7	98.3	96.7
Barley (bu.)	24.8	30.8	29.1	41.4	44.9	54.9	44.1	58.3	52.7	47.1	48.4
Oats (bu.)	44.2	48.2	32.8	58.3	58.3	69.7	61.7	59.7	62.7	58.4	55.6
Alfalfa (tons)	2.4	2.3	2.7	2.9	3.0	2.7	3.4	3.3	3.3	3.4	3.6
Soybeans (bu.)	13.4	16.4	19.6	24.8	23.6	20.5	26.4	23.1	26.8	25.1	29.5
% till.land in high ret.crops	43.3	50.9	62.8	62.7	60.1	58.6	58.9	61.6	61.2	62.2	63.6
An. units of lvstk. per 100 A.	24.5	22.8	28.9	33.7	36.4	33.3	38.5	34.3	32.7	32.5	34.3
Number of work units	670	601	535	486	548	561	577	457	466	466	431
Work units per worker	305	300	284	274	318	330	361	286	274	274	254
Expense per work unit	$2.35	$4.69	$8.18	$10.81	$11.61	$12.94	$13.76	$18.77	$20.81	$23.67	$27.86
Number of milk cows	17.6	17.0	17.7	19.8	22.2	24.0	23.4	24.5	23.9	25.0	26.7

* "Other crops" include soybeans 1935 through 1965.

Table 23. Summary by Years (concluded)

Item	Average 1940-44	Average 1945-49	Average 1950-54	Average 1955-59	Average 1960-64	1965	1966	1967	1968	1969	1970
MISCELLANEOUS ITEMS (cont.)											
Number of litters of pigs	14.4	11.7	13.5	17.3	19.4	17.2	20.5	20.3	21.4	18.9	22.0
Pounds of hogs produced	21586	18505	17579	28272	36619	30933	36834	36108	41717	37002	36039
Pounds of feeder cattle prod.	1534	813	2118	3529	5573	3955	4469	3899	4430	4789	5784
Number of head of ewes	10	7	7	5	4	4	4	4	3	2	2
Number of hens	222	235	219	209	197	191	218	168	72	43	47
Pounds of BF per dairy cow	252	278	308	342	375	415	401	416	426	425	457
Pigs weaned per litter	6.2	6.5	6.7	6.9	7.1	7.5	7.3	7.1	7.4	7.2	7.3
Number of eggs laid per hen	145	177	194	203	205	186	198	215	218	187	187
PRICE RECEIVED PER:											
Cwt. of milk	*	*	*	*	$3.48	$3.58	$4.17	$4.39	$4.59	$4.84	$5.09
Pound of BF as cream	$ .47	$ .80	$ .75	$ .66	-	-	-	-	-	-	-
Cwt. of hogs sold	10.93	19.36	19.54	15.99	15.55	20.32	23.06	19.03	18.84	23.20	21.93
Cwt. of feeder cattle sold	11.55	20.56	26.22	21.19	22.61	21.67	22.78	23.60	24.51	27.53	27.44
Pound of wool sold	.39	.43	.58	.50	.62	.58	.68	.48	.59	.49	.45
Dozen of eggs sold	.27	.39	.37	.31	.28	.26	.33	.24	.25	.34	.29
RETURN ABOVE FEED COST PER:											
Dairy cow	$81.83	$161.27	$156.86	$162.86	$183.05	$199.71	$230.01	$275.08	$304.72	$324.18	$373.65
Cwt. of hogs produced	3.93	6.09	6.47	4.62	4.57	12.13	7.85	5.70	6.21	12.39	5.17
Ewe	6.97	11.16	9.47	6.18	5.40	8.85	8.64	4.12	8.17	7.84	11.29
Hen	1.82	2.11	1.60	1.39	1.27	.39	1.34	.23	.83	1.41	.59
Cwt. of feeder cattle prod.	2.98	6.40	7.37	4.76	1.78	7.06	1.03	1.61	4.45	11.25	3.78
FEED COST PER:											
Dairy cow	$63.13	$123.22	$142.59	$147.05	$169.62	$200.19	$216.61	$212.34	$221.87	$227.94	$246.53
Cwt. of hogs produced	7.52	13.23	12.95	10.65	10.65	11.39	12.69	11.70	11.54	12.19	12.06
Ewe	7.92	8.07	10.73	11.17	13.46	16.00	15.56	18.81	23.29	23.90	23.69
Hen	2.38	4.39	4.76	3.78	3.28	3.31	3.71	3.37	3.05	3.11	2.97
Cwt. of feeder cattle prod.	11.80	23.08	19.46	18.83	19.10	20.44	23.15	21.10	21.17	22.16	22.08
PRICE OF FEED:											
Corn (per bu.)	$ .71	$ 1.29	$ 1.31	$ 1.11	$ .99	$ 1.13	$ 1.19	$ 1.12	$ 1.02	$ 1.05	$ 1.15
Barley (per bu.)	.59	1.31	1.16	.92	.91	.98	1.02	1.04	.96	.85	.85
Oats (per bu.)	.46	.75	.74	.59	.61	.63	.66	.64	.62	.56	.60
Oilmeal (per cwt.)	2.30	3.84	4.19	3.73	4.36	4.60	5.25	5.00	5.10	5.00	5.00
Alfalfa (per ton)	9.90	18.40	18.30	18.20	19.40	23.00	21.00	20.00	20.00	20.00	20.00

* Information not available.

Footnote for pages 23, 24, 25.

The charges for unpaid family labor and board for hired labor were changed from year to year. The rates for the period 1940 to 1970 are as follows:

Year	Unpaid family labor	Charge for 2nd operator	Board for hired labor	Year	Unpaid family labor	Charge for 2nd operator	Board for hired labor
1940	$ 45	$ 45	$ 18	1956-60	$135	$135	$ 38
1941	50	50	20	1961-64	150	200	40
1942	60	60	25	1965	160	275	45
1943	75	75	25	1966	160	300	45
1944	85	85	25	1967	160	300	45
1945	90	90	25	1968	160	300	45
1946	100	100	30	1969	160	300	45
1947-55	125	125	36	1970	250	500	60

Several changes were made in the 1940 records. The value of the house, which had previously been omitted from the farm business, was included and a rental charge equal to 10 percent of the average value of the house was included with the farm perquisites. The standards used in the calculation of work units were changed in accordance with the new information made available. This latter change also affected the work units per worker and the factor of expense per work unit. The acres in protected woodlots, roads, waste, and farmstead were omitted from the acreage used in the calculation of amount of livestock per 100 acres. Several new livestock statements were added. Statements for beef breeding cattle, feeder cattle, and feeder sheep were also included.

The crop ratings used in calculating the percentage of the tillable land in high return crops were changed considerably in 1944 and 1957 and the animal unit equivalents were changed in 1951.

The standards used in the calculation of work units were changed in 1953, 1967, and 1970.

In calculating labor earnings, interest on farm capital was charged at the rate of 5 percent until 1967, 5.5 percent for 1968 and 1969, and 6 percent in 1970.

These adjustments should be considered in comparing 1970 with previous years.