Report No. 7

1962 Annual Report

FARM MANAGEMENT PROGRAM NORTHEASTERN MINNESOTA

Iron Range Resources and Rehabilitation Commission

In Cooperation with

Minnesota Department of Education
Vocational Division

and

University of Minnesota
Institute of Agriculture

and

Area Vocational – Technical School
Duluth, Minnesota

April, 1963

1942 REPORT OF THE VOCATIONAL AGRICULTURAL FARM MANAGEMENT PROGRAM IN NORTHEASTERN MINNESOTA

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Duluth Area Vocational School

INDEX

STATE OF MINNESOTA

DEPARTMENT OF
IRON RANGE RESOURCES AND REHABILITATION

60 State Office Building
Saint Paul 1, Minnesota

FOREWORD

This report is a summary of the seventh straight year of the Farm Management Program study for Northeastern Minnesota sponsored by Iron Range Resources and Rehabilitation in cooperation with the Minnesota Department of Education, Vocational Division, University of Minnesota, Institute of Agriculture, and the Area Vocational-Technical School of Duluth, Minnesota.

We hope that a study of this type will make it possible for people engaged in farming to improve their present programs and increase production and annual income. This study encourages the use of farm land for farm wood lot management for additional income through the sale of forest products.

The value of this service is in the continuous operation of the program over a period of years. This being the seventh straight year of the program makes the present study of great importance. It also emphasizes the need for the continuation of the project in future years. I have recommended additional funds for the continuation of the project for the next fiscal year and would encourage a summary of all previous studies at some future date.

We wish to commend Mr. Leo Keskinen, Area Vocational Agriculture Coordinator, Area Vocational-Technical School, Duluth, who was director and supervisor of this project since its inception in 1956. His interest in this project, which demands extra time and effort on his part, in addition to his regular duties, has made this project possible. We hope the people in the area who will benefit from the studies appreciate his efforts.

The success of the project is possible because of the fine cooperation given to Mr. Keskinen by the participating farmers, by the vocational agriculture instructors, instructors of veterans agriculture, county agents, and county rural development agents.

This report is offered with the best wishes of this department and with the hope that it will be of some help to farmers of the area toward a more efficient, successful, and prosperous agriculture program.

Copies of this report will be available to anyone interested at no charge.

A. M. DeYOANNES, Commissioner

INTRODUCTION

The Duluth Area Vocational Technical School, in cooperation with the University of Minnesota and the Vocational Division of the Minnesota State Department of Education, is charged with the responsibility for operation and maintenance of the Vocational Agriculture Farm Management Program in Northeastern Minnesota. This 1962 report represents the seventh annual report for the area.

The main purposes of the program of farm record analysis are: (1) To provide case study materials that can be used by farmers and farm groups in the study of farm management problems, (2) To aid individual farmers in the study of their farm business through analysis reports, (3) To provide information related to the adaptability and success of various farm enterprises in the area, (4) To provide a basis for determining the possibilities of encouraging or discouraging new agricultural enterprises for the area, (5) To secure information on farm management practices that tend to increase farm income, and (6) To provide a profile of agricultural production and income in the area.

The report and analysis of records were completed under the direction of Leo Keskinen, Area Vo Ag Coordinator at the Duluth Area Vocational Technical School. Clerical assistance was provided by Mrs. Nellie Hopper and Mrs. Ruby Naslund. Financial assistance has been obtained from Iron Range Resources and Rehabilitation Commission.

Directing locally in a supervisory capacity were: Dr. L. V. Rasmussen, Superintendent of Duluth Public Schools and Mr. Harold Hill, Director of the Duluth Area Vocational Technical School.

Cooperating agencies were represented by: Mr. G. R. Cochran, Mr. Robert Van Tries, and Mr. S. K. Wick, of the Vocational Division, State Department of Education, and Dr. Milo J. Peterson and Dr. Paul Marvin of the Agricultural Education Department of the University of Minnesota. Special acknowledgement is made of the excellent professional assistance rendered by Dr. Truman Nodland of the University Agricultural Economics Department.

We are thankful for and indebted to the Iron Range Resources and Rehabilitation for their interest and financial assistance in the farm management program. We wish to express also, our appreciation to Mr. Arthur Vieira, Printing Instructor, Duluth Public Schools, and to his class for their help in the publishing of this report.

This report deals with farmers enrolled in adult programs of schools shown below. Forty-five records were submitted for analysis with averages of forty farms included in this report.

1962 records for analysis were received from:

Clayton Bray, Vo Ag Instr., Northome
Don Erickson, Vo Ag Instr., Staples
Robert Johnson, Vo Ag Instr., Barnum
Wilho Kemp, Vo Ag Instr., Little Fork
Donald Larsen, Vo Ag Instr., Meadowlands
Lennen Naley, Vo Ag Instr., Eagle Bend
Sulo Ojakangas, Vo Ag Instr., Hibbing
Erwin Prachar, Vo Ag Instr., Willow River
Dalton Seeling, Vo Ag Instr., Bemidji
Ed Takala, Vo Ag Instr., Embarrass
Bob Underwood, Vo Ag Instr., Park Rapids
Anthony Grebenc, Vo Ag Instr., Cook

The cooperating centers submitted records from nine counties for analysis with some centers having participating farmers in more than one county. The number of farm records submitted from each county is shown below:

Becker	1	Hubbard	8
Beltrami	4	Koochiching	11
Carlton	1	Pine	1
Cass	2	St. Louis	4
Todd	13		
		TOTAL	45

The records submitted included farm inventories, cash receipts, and expenses. Also included were feed consumed by the various classes of livestock, family living from the farm, household and personal expenses and receipts, and the operators' liabilities and assets other than farm capital.

FARM INVENTORIES

The capital investment per farm varied from $5609 to $70886. The average investment for all farms included in this report and for the one-third high and the one-third low in operators' labor earnings is shown in Table I.

FARM EARNINGS

Operators' earnings are a measure of relative financial success of a farmer as compared with other farmers and represents the returns above all farm expenses and a charge for the use of farm capital and family labor.

There are two methods of computing labor earnings. Table II shows the earnings statement on a cash basis while Table III shows the earnings on an enterprise or accrual basis. The principal difference in the two statements is in the method of handling the net increase or decrease in farm capital. In the cash statement, the net increase or decrease in farm capital is entered as one item. In the enterprise statement the net change in the inventory has been included in each enterprise in order to compute "total returns and net increases," or "total expenses and net decreases" by enterprises.

FORESTRY INCOME

A portion of the farm income in Northeastern Minnesota is obtained from the sale of forestry products. Eleven farms out of those represented in this report indicated some form of forestry income ranging from a low of $140 to a high of $3348 per farm. Forestry income is included as farm income in this report.

NON-FARM INCOME

Numerous Northeastern Minnesota farmers, in addition to their regular farm income are earning additional income in full or part time work not related to farming. Records submitted for this report cannot be considered as completely reliable in respect to non-farm income as this entry can be frequently omitted from the farm account books. However, twenty-five farms in this report showed outside income ranging from a low of $[illegible]1 to a high of $7311 per farm involved. Non-farm income is not included in this report as farm labor earnings.

TABLE I. SUMMARY OF FARM INVENTORIES, 1962

Items	Your farm Jan. 1	Your farm Dec. 31	Average 40 farms Jan. 1	Average 40 farms Dec. 31
Size of farm (acres)			309	
Size of business (work units)			364	
Dairy and dual purpose cows			$ 2678	$ 2722
Other dairy & dual purpose cattle			1576	1795
Beef cattle (incl. feeders)			1516	2032
Hogs			588	547
Sheep (incl. feeders)			87	77
Poultry			8	10
PRODUCTIVE LIVESTOCK (TOTAL)			$ 6453	$ 7183
Horses			13	32
Crop, seed and feed			1991	2407
Power machinery (farm share)			2477	2482
Crop and general machinery			2369	2621
Livestock equipment			672	775
MACHINERY AND EQUIPMENT (TOTAL)			$ 5518	$ 5878
Miscellaneous			-	-
Land			5811	5992
Buildings, fences, etc.			4879	5130
TOTAL FARM CAPITAL			$ 24665	$ 26622

Items	13 most profitable Jan. 1	13 most profitable Dec. 31	13 least profitable Jan. 1	13 least profitable Dec. 31
Size of farm (acres)	287		325	
Size of business (work units)	409		320	
Dairy & dual purpose cows	$ 3447	$ 3647	$ 1784	$ 1764
Other dairy & dual purpose cattle	1918	2170	1236	1409
Beef cattle (incl. feeders	438	606	1830	3323
Hogs	278	369	1014	933
Sheep (incl. feeders)	-	-	157	125
Poultry	6	7	17	21
PRODUCTIVE LIVESTOCK (TOTAL)	$ 6087	$ 6799	$ 6038	$ 7575
Horses	15	30	-	-
Crop, seed and feed	2151	2280	2143	1913
Power machinery (farm share)	2158	2039	2664	2702
Crop and general machinery	2818	2993	2342	2829
Livestock equipment	983	1062	352	607
MACHINERY AND EQUIPMENT (TOTAL)	$ 5959	$ 6094	$ 5358	$ 6138
Miscellaneous	-	-	-	-
Land	4890	5436	6578	6593
Buildings, fences, etc.	4668	5309	5575	5918
TOTAL FARM CAPITAL	$ 23770	$ 26548	$ 25692	$ 28137

TABLE II. SUMMARY OF FARM EARNINGS (CONTINUED), 1962

Items	Your farm	Average of 40 farms	13 most profitable	13 least profitable
FARM RECEIPTS				
Dairy and dual purpose cattle		$ 1173	$ 1526	$ 900
Dairy products		1734	7564	2314
Beef cattle (incl. feeders)		1060	217	1779
Hogs		1313	816	2247
Sheep and wool (incl. feeders)		70	-	148
Horses		7	6	-
Poultry		5	5	9
Eggs		32	32	55
Corn and small grain		101	24	205
Other crops		109	234	92
Forestry products		259	146	300
Mach. & equip. sold & gas tax ref.		145	220	100
Income from work off the farm		261	167	240
Miscellaneous		308	576	217
(1) Total farm sales		$9797	$11554	$ 8605
(2) Increase in farm capital		1957	2778	2445
(3) Family living from the farm		341	437	296
(4) Total farm receipts (1)+(2)+(3)		$12095	$14769	$11346
FARM EXPENSES				
Dairy and dual-purpose cattle bought		138	172	187
Beef cattle bought (incl. feeders)		706	37	2030
Hogs bought		40	60	34
Sheep bought (incl. feeders)		-	-	-
Horses bought		16	31	-
Poultry bought		6	3	12
Misc. livestock expense		285	365	217
Feed bought		1678	1717	1933
Fertilizer		334	395	212
Other crop expenses		308	341	265
Custom work hired		582	744	383
Gas, oil & grease bought (farm share)		606	640	529
Repair of mech. power (farm share)		308	312	249
Repair and upkeep of real estate		98	126	104
Repair & upkeep crop & gen. mach.		195	233	190
Repair & upkeep livestock equip.		64	82	67
Wages of hired labor		300	443	254
Electricity expense (farm share)		225	281	215
Real estate & pers. prop. taxes		408	408	384
General farm expense		161	170	157
(5) total cash operating expense		$ 6461	$ 6560	$ 7402
(6) Cap. purch. mech. power (farm sh)		524	376	579
(7) " " crop & gen. mach.		732	654	1050
(8) " " livestock equip.		223	272	323
(9) " " bldgx. & fencing		805	1530	771
(10) Total farm purch. (5) to (9)		$ 8745	$ 9392	$10125
(11) Decrease in farm capital		-	-	-
(12) Interest on farm capital		1303	1258	1409
(13) Unpaid family labor		352	157	405
(14) Board furnished hired labor		40	32	23
(15) Total farm exp. (10) to (14)		10440	10839	11962
(16) Labor earnings (4) - (15)		$ 1655	$ 3930	$ -615

TABLE III. SUMMARY OF FARM EXPENSES (ENTERPRISE STATEMENT), 1962

	Your farm	Average of 40 farms	13 most profitable farms	13 least profitable farms
RETURNS AND NET INCREASES				
Dairy and dual-purpose cows		$ 4917	$ 7886	$ 2391
Other dairy & dual-purpose cattle		1530	1976	1025
Beef breeding herd		559	356	624
Feeder cattle		259	-	789
Hogs		1274	887	2275
Sheep - farm flock		59	-	19
Chickens		53	47	78
ALL PRODUCTIVE LIVESTOCK		$ 8651	$ 11152	$ 7001
Value of feed fed to livestock		4399	4790	4316
Return over feed from livestock		4252	6362	2685
Crop, seed and feed		3019	3376	2293
Income from labor off the farm		151	121	130
Agricultural conserv. payments		230	304	61
Miscellaneous		162	283	156
(1) Total returns & net increases		$ 7814	$ 10486	$ 5325
EXPENSES AND NET DECREASES				
Horses		7	11	-
Truck		267	232	301
Auto		279	271	292
Tractor		839	936	714
Elec. & gas engine exp.(farm share		149	160	124
Hired power		582	744	363
TOTAL POWER		$ 2109	$ 2354	$ 1794
Crop and general machinery		582	689	649
Livestock equipment		184	275	134
Buildings, fencing & tiling		435	363	515
Misc. productive livestock exp.		285	365	217
Labor		692	634	681
Real estate taxes	/	259	241	255
Personal property taxes		149	167	129
Insurance		76	77	74
General farm		85	93	83
Interest on farm capital		1303	1258	1409
(2) Total expenses & net decreases		$ 6159	$ 6516	$ 5940
(3) LABOR EARNINGS (1) - (2)		$ 1655	$ 3930	$ -615

*

Cash receipts and expenses are adjusted for changes in inventory for each enterprise and for each item of expense in order to show total receipts and net increases, and total expenses and net decreases. The operator's earnings are the same as those on page 5.

FAMILY LIVING FROM THE FARM

The family living from the farm is the estimated value of the farm produce used in the house and shelter furnished the farmer and his family by the farm. It is a part of the income of the farm and a part of the expense of operating the household even though cash transactions are not involved. The omission of the farm produce used in the home results in an incomplete record of both farm income and personal expense.

The value of the family living as shown in Table IV amounts to 2.8 per cent of the total farm receipts on these farms. The values assigned are a conservative market price on the farm. If these products had been purchased the amount paid out would have been considerably higher.

TABLE IV. FAMILY LIVING FROM THE FARM, 1962

Items	Your farm	Average of 38 farms	Your farm	Average of 38 farms
Number of persons in family		4.7		
Adult equivalent-family		3.5		
Whole milk		1206 qts.		$ 86
Skim milk		47 qts.		1
Cream		6 pts.		2
Butter		7 lbs.		4
Beef		559 lbs.		116
Hogs		234 lbs.		34
Lamb and mutton		-		--
Poultry		52 lbs.		16
Eggs		18 doz.		5
Potatoes		1 bu.		1
Vegetables and fruit				50
Farm fuel				43
TOTAL				$ 358

Thirty-eight farmers reported complete records on family living from the farm.

HOUSEHOLD AND PERSONAL EXPENSES

Household and personal accounts are important if the family is to manage its financial affairs wisely. The household and personal expenses and receipts are presented in Table V. These farmers spent an average of $257 per month for family living in addition to the food, fuel and housing furnished by the farm.

TABLE V. HOUSEHOLD AND PERSONAL EXPENSES FOR THOSE FARMS WHICH KEPT COMPLETE ACCOUNTS OF THESE EXPENSES, 1962

Items	Your farm	Average of 22 farms	7 most Profit-able farms	7 least Profit-able farms
Number of persons - family		4.9	5.9	3.9
Number of adult equiv. -family		3.5	4.2	3.0
other*		.1	.2	.1
Food and meals bought		$ 814	$ 840	$ 785
Operating and supplies		162	153	146
Furnishings and equipment		150	183	194
Clothing and clothing materials		259	284	215
Personal care, personal spending		80	41	36
Education, recreation & development		173	222	78
Gifts and special events		83	114	33
Medical care & health insurance		343	426	206
Church, Welfare		259	319	59
Personal share of auto expense		136	195	84
Operator's share upkeep on dwelling		77	39	160
Household share of electric expense		114	132	132
TOTAL CASH LIVING EXPENSE		$ 2550	$ 2947	$ 2126
H.H. and pers. share of new auto		59	-	-
New dwelling		250	500	286
Taxes and other deductions		79	106	39
Life insurance		104	98	62
Other savings and investments		46	89	40
TOTAL HOUSEHOLD & PERS. CASH EXP.		$ 3088	$ 3711	$2553
Total family living from the farm		405	481	387
TOTAL CASH EXP. & REQUISITES		$ 3493	$ 4222	$ 2940
Receipts:				
Return to Capital & family labor		$ 3234	$ 5794	$ 804
Income from investments		53	125	4
Miscellaneous income		569	93	1011

*Hired help or others boarded

NET WORTH

A net worth statement includes a listing of all the assets and liabilities as of a given date. The difference between the farmer's total assets and his liabilities is his net worth. A net worth statement is presented in Table VI. Both the farm and personal assets and liabilities are included.

The difference between the operator's net worth at the beginning and at the end of the year shows the gain in net worth. It represents the financial progress that has been made during the year.

TABLE VI. NET WORTH STATEMENT FOR THOSE FARMERS WHO KEPT A COMPLETE RECORD OF ALL ASSETS AND LIABILITIES, 1962

Items	Your farm Jan. 1	Your farm Dec. 31	35 Owners Jan. 1	35 Owners Dec. 31
Total acres in farm			315	
Owned			258	
Rented			57	
Total farm capital			$25398	$27189
Stocks and bonds			208	228
Life insurance			646	692
Accounts receivable			34	33
Shares in mktg. organizations			131	165
Outside real estate			51	51
Total outside investments			$ 1070	$ 1149
Cash on hand and in bank			590	501
Other H.H. & personal assets			1674	1733
Dwellings			3278	3320
Total non-farm assets			$ 6612	$ 6703
TOTAL ASSETS			$32010	$33892
Federal Land Bank Mortage			1932	1733
Other mortgage on farm operated			1648	1842
Loans on other real estate			-	-
P.C.A. Loans			155	103
Chattel mortgage			2558	3068
Notes payable			904	829
Accounts payable			756	756
TOTAL LIABILITIES			$ 7853	$ 8331
Farmer's net worth			$24157	$25561
Gain in net worth				$ 1404

The return to capital and family labor represents the amount available to the operator for living expenses, payment on indebtedness, and savings.

RANGE IN EARNINGS

Every study of farm earnings shows a wide variation in earnings among farmers in a given year. The average operator's earnings of farmers ranking in the upper third of the range according to earnings was $3930 and of those in the lower third was $-615. This is a range of $4545 between the average earnings of these two groups. Some of the causes for these differences in earnings, such as weather, may be beyond the control of the individual farmer. Other factors are within his control. The more important management factors affecting earnings are as follows: These factors vary from year to year in their relative influence on earnings. 1/

1. Crop yields
2. Choice of crops
3. Return from livestock
4. Amount of livestock
5. Size of business
6. Work units per worker
7. Control over expenses

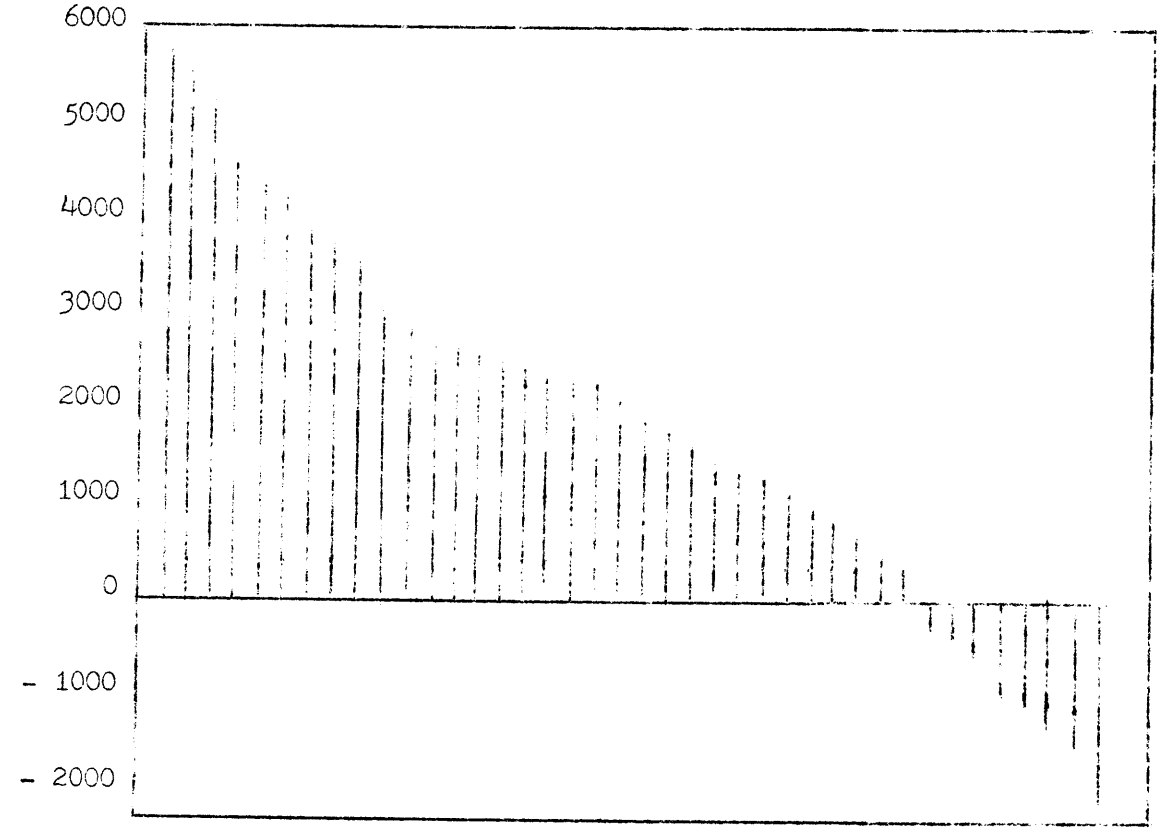

Fig. 1. Range in operator's earnings. Each line represents the earnings of one farmer.

1/ See Pond, G. A. "Why Farm Earnings Vary". Minn. Agri. Experimental Sta., Bul. 386, June, 1945

EXPLANATION OF "WORK 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 livestock at an 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 VII below.

TABLE VII. NUMBER OF WORK UNITS FOR EACH CLASS OF LIVESTOCK AND CROP ACRE

Item	No. of work Units
Dairy and dual purpose cows	10.0 per cow
Other dairy and dual purpose cattle	3.5 per animal unit*
Beef breeding herd	3.5 per animal unit*
Feeder Cattle	.25 per cwt.
Sheep - farm flock	1.5 per animal unit*
Sheep - feeders	.3 per cwt.
Hogs	.2 per cwt.
Turkeys	.5 per cwt.
Hens	20.0 per 100 hens
Canning peas	.5 per acre
Soybeans for grain	.5 per acre
Potatoes	4.0 per acre
Small grain	.5 per acre
Sugar beets	1.5 per acre
Sweet corn	.7 per acre
Corn, husked	.7 per acre
Corn, shredded	1.5 per acre
Corn silage	1.0 per acre
Corn, hogged	.4 per acre
Corn fodder	1.0 per acr
Silage, other than corn	1.0 per acre
Alfalfa hay	.6 per acre
Soybean hay	.8 per acre
Other hay crops	.4 per acre

*Animal unit represents one dairy cow or bull, two other dairy cattle, 1¼ beef cows or bull, 1 feeder steer or heifer, 3 1/3 other beef cattle, 7 sheep, 14 lambs. 2½ hogs, 5 pigs, 50 hens, or 1,100 lbs. of turkeys produced.

TABLE VIII. MEASURES OF FARM ORGANIZATION AND MANAGEMENT EFFICIENCY, 1962

Measures used in chart on page 13	Your farm	Average of 40 farms	13 most profitable farms	13 least profitable farms
Operator's labor earnings	____	$ 1655	$ 3930	$ -615
(1) Crop yields *	____	100	111	84
(2) % till. land in high ret. crops**	____	48.7	51.4	50.6
(3) Ret. per $100 feed to productive livestock ***	____	100	121	84
(4) Prod. livestock units per 100 acres ****	____	23.1	24.3	25.5
(5) Size of business - work units	____	364	409	320
(6) Work units per worker	____	250	264	236
(7) Power, mach., equip., & bldg. expense per work unit	____	$ 9.18	$ 8.59	$10.05
Items related to some of the above measures:				
(3) Index of return for $100 feed from:				
Dairy cattle (see pp 18-19)	____	$ 100	$ 111	$ 88
Beef cattle-breeding herd (see p 20)	____	100	125	81
Hogs (see p 17)	____	100	142	73
Sheep-farm flock (see p 20)	____	100	-	100
Chickens (see page 21)	____	100	106	97
(4) Number of animal units	____	44.2	45.3	45.3
(5) Work units on crops	____	104	97	101
Work units on prod. livestock	____	245	300	206
Other work units	____	15	12	13
(6) Number of family workers	____	1.3	1.3	1.3
Number of hired workers	____	.1	.2	.1
Total number of workers	____	1.4	1.5	1.4
(7) Power expense per work unit $	____	$ 5.81	$ 5.56	$ 5.65
Crop mach. exp. per work unit	____	1.62	1.55	1.91
Livestock equip. exp. per work unit	____	.45	.59	.38
Bldg. & fencing exp. per work unit	____	1.30	.89	1.91

* Given as a percentage of the average.

** Crops are marked in Table IX 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 per cent of till. land in high return crops.

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

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

THERMOMETER CHART

Using your figures from page 12. locate your standing with respect to the various measures of farm organization and management efficiency. The averages for the farms included in this summary are located between the dotted lines across the center of the page.

Labor earnings	Crop yields	High ret. crops	Return from productive livestock	Pr.L.S. units per 100 A.	Work units	Work units per worker	P.M.E.& B. exp. per W. U.
5650	148	89	140	47	645	410	4.38
5150	142	84	135	44	610	390	4.98
4650	136	79	130	41	575	370	5.58
4150	130	74	125	38	540	350	6.18
3650	124	69	120	35	505	330	6.78
3150	118	64	115	32	470	310	7.38
2650	112	59	110	29	435	290	7.98
2150	106	54	105	26	400	270	8.58
1650	100	49	100	23	365	250	9.18
1150	94	44	95	20	330	230	9.78
650	88	39	90	17	295	210	10.38
150	82	34	85	14	260	190	10.98
-350	76	29	80	11	225	170	11.58
-850	70	24	75	8	190	150	12.18
-1350	64	19	70	5	155	130	12.78

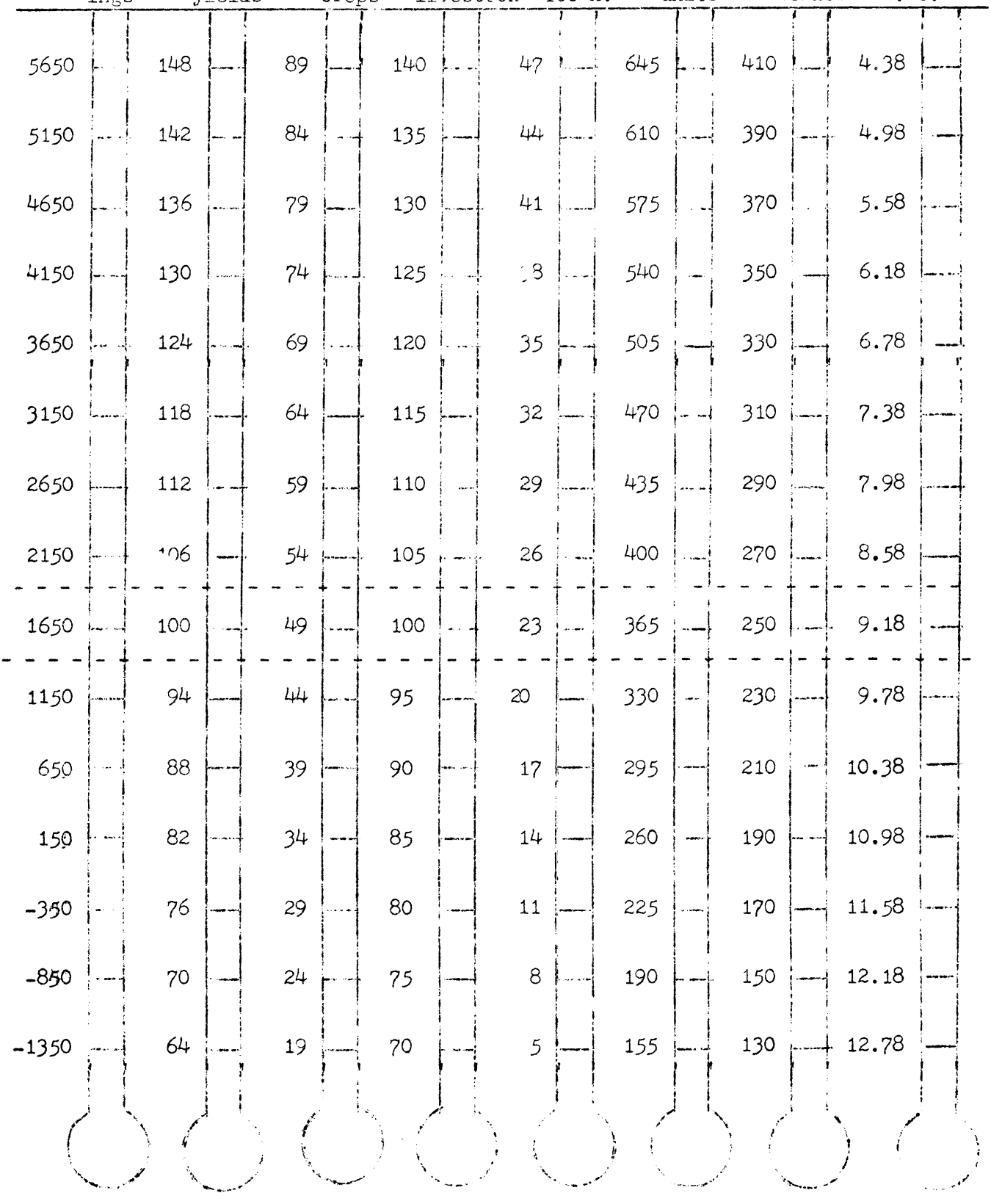

TABLE IX. DISTRIBUTION OF ACRES IN FARM, 1962

ITEMS	Crop * Ratings	Your farm		Average 40 farms
Soybeans	C			-
Flax	C			2.4
Barley	C			1.7
Oats	C			22.6
Oat silage	B			1.4
Wheat	C			1.0
Rye	D			.5
TOTAL SMALL GRAIN				29.6
Garden-Seed Potatoes	A			-
Potatoes	B			-
Corn silage	B			14.5
Corn fodder	D			-
Corn grain	C & D **			11.4
TOTAL CULTIVATED CROPS				25.9
Alfalfa and mixtures	A			37.0
Other legumes and mixtures	B			26.3
Legumes for seed	C			1.3
Timothy for seed	C			.5
Timothy and/or brome hay	D			.8
Other annual hay	D			3.9
Wild hay on till. land	D			.2
Grass silage	B			1.3
TOTAL TILLABLE LAND IN HAY				71.3
Alfalfa & alfalfa mixture pasture	A			.4
Other legume & mixture pasture	B			1.8
Other tillable pasture	D			17.2
TOTAL TILLABLE PASTURE				19.4
Soil bank	C			8.7
Tillable land not cropped	D			6.8
TOTAL TILLABLE LAND				161.7
Wild hay - non-tillable				1.6
Non-tillable pasture				59.1
Timber (not pastured)				62.6
Roads and waste				18.0
Farmstead				5.9
TOTAL ACRES IN FARM				308.9
Per cent of land tillable				54.4
Per cent of land in high return crops				48.7

* The crops are classified as A, B, C, or D crops on the basis of their average net return per acre.

** Corn for grain rated a "C" crop for southern portion of area covered by this report and as a "D" crop for the northern area. % of tillable land in high return crops determined separately for southern and northern area.

TABLE X. CROP YIELDS PER ACRE, 1962

Crop	Number growing	Average of farms growing each crop
Soybeans	-	-
Flax, bu.	3	15.6
Barley and oats, bu.	3	52.0
Oats, bu.	30	37.2
Oat silage, ton	6	6.4
Wheat, bu.	4	15.8
Rye, bu.	1	14.0
Potatoes, bu.	-	-
Corn silage, ton	23	6.8
Corn fodder, ton	-	-
Corn grain, bu.	17	39.2
Legume silage, ton	-	-
Grass silage, ton	4	6.3
Alfalfa hay, ton	31	2.0
Other legumes & mixtures, ton	14	1.6
Legumes for seed, lbs.	2	116.9
Timothy for seed, lbs.	1	100.0
Timothy or brome hay, ton	2	.5
Other annual hay, ton	4	1.0
Wild hay, ton	1	2.5
Oat hay, ton	-	-

POWER AND MACHINERY EXPENSES

Power and machinery expense per crop acre is an indication of the economy with which capital is invested in these items. Expenses are high on the farms with a small acreage. In some cases low expense for labor might be offset by higher equipment costs. The farmer is interested in operating at the lowest cost for power, machinery, and labor combined.

TABLE XI. POWER AND MACHINERY EXPENSES PER CROP ACRE, 1962

Item	Your farm	Avg. of 40 farms	13 most prof.farms	13 least prof.
Crop acres per farm		162	166	143
Tractor & horse exp. per crop acre	$	$ 5.82	$ 6.47	$ 5.70
Crop & gen.mach.exp. per crop acre	$	4.20	4.70	5.26

AMOUNT OF LIVESTOCK

A large proportion of the farmers maintained some dairy cattle with smaller number maintaining hogs and poultry.

TABLE XII. AMOUNT OF LIVESTOCK, 1962

Item	Your farm	Average 40 farms	13 most prof.farms	13 least prof.farms
Number of milk cows		16.4	22.7	10.7
Number of other dairy cattle		20.4	28.3	14.7
Number of beef cattle		12.6	5.2	19.2
Number of sheep		6.8	-	12.4
Number of hens		8.6	4.3	22.0
Litters of pigs raised		10.7	7.2	19.9
Pounds of hogs produced		5985	4137	10060

TOTAL FEED COSTS AND RETURNS FROM YOUR LIVESTOCK ENTERPRISES

The total "return over feed costs" for each class of livestock is shown in Table XIII. This differs from the "return over feed" shown in the enterprise statement in that it is the total for each class of livestock instead of a return "per head", "per unit", or "per 100 lbs". These data indicate the relative importance of different classes of livestock as a source of income and as a market for feed. The total return is the same as the returns and net increases shown on p. 6. The return over feed is not a net return, but rather the amount available from the gross income after paying the feed bill, to cover the outlay for hired labor, power, equipment, taxes, insurance, interest, and veterinary bills and to provide a return for the use of family labor and capital.

TABLE XIII. TOTAL FEED COSTS AND RETURNS FROM YOUR LIVESTOCK ENTERPRISES, 1962

	Dairy or dual purpose cattle			Beef
	Cows	Other	All	Breeding
Total returns				
Total feed cost				
Total return over feed				

	Hogs	Sheep	Chickens	
Total returns				
Total feed cost				
Total return over feed				

Feed is the largest single item of cost for all classes of livestock. However, the proportion of the total cost represented by feed varies between classes of livestock. Feed makes up approximately 45 per cent of the total costs of maintaining dairy cattle and poultry, 50 per cent for sheep, and 75 to 90 per cent for hogs, feeder cattle, and feeder lambs. Consequently, it is necessary to secure a relatively higher return over feed from dairy cattle and poultry than from the other livestock enterprises in order to be able to cover all the costs other than feed.

HOGS

The return over feed cost per cwt. of hogs produced varied from $6.06 for those farmers in the lower one-third in feeding efficiency to a return of $15.73 for those in the highest one-third. Responsible factors affecting return over feed were:

1. Quantity of feed required to produce 100 pounds of pork.
2. Price received.
3. Number of pigs born per litter.
4. Number of pigs weaned per litter.

TABLE XIV. FEED COSTS AND RETURNS FROM HOGS, 1962

Items	Your farm	Avg. of 18 farms	6 farms highest in return above feed	6 farms lowest in return above feed
Feed per cwt. hogs produced, lbs.				
Corn		232	195	191
Small grains		193	223	173
Commercial feeds		67	94	42
TOTAL CONCENTRATES		492	512	406
Skim milk & buttermilk		144	7	424
Alfalfa & silage		57	71	15
Feed cost per cwt. hogs produced:				
Concentrates (incl.alf.& silage)	$	$ 11.45	$ 11.62	$ 9.20
Skim milk & buttermilk		.80	.19	2.20
Pasture		.16	.13	.17
TOTAL FEED COSTS	$	$ 12.41	$ 11.94	$ 11.57
Net increase in value per cwt. hogs produced	$	$ 22.40	$ 27.67	$ 17.63
RETURNS ABOVE FEED COST PER CWT. HOGS PRODUCED	$	$ 9.99	$ 15.73	$ 6.06
RETURNS FOR $100 OF FEED	$	$ 180	$ 232	$ 152
Price received per cwt. hogs sold	$	$ 22.93	$ 26.62	$ 21.37
No. of spring litters raised		14.0	11.0	19.0
No. of fall litters raised		9.9	9.0	10.0
Total no. of litters raised		23.9	20.0	29.0
No. of pigs born per litter		9.3	9.7	9.5
No. of pigs weaned per litter		7.8	7.7	8.1
POUNDS OF HOGS PRODUCED		13300	8268	19455

DAIRY AND DUAL PURPOSE CATTLE

The quantity of feed consumed, value in feeds and returns from dairy cattle are presented in Tables XV, XVI, and XVII. The statements include several herds which were classified as dual purpose cattle. The return over feed cost per cow varied from $15 to $291 among the herds covered by this study. Some of the important factors that affected the return over feed were:

1. Rate of production
2. Price received for butterfat
3. Feeding efficiency
4. Economy of ration
5. Quality of ration

TABLE XV. FACTORS OF COSTS AND RETURNS FROM DAIRY COWS, 1962

Items	Your farm	Average of 32 farms	11 farms highest in B. F. per cow	11 farms lowest in B. F. per cow
Pounds of milk per cow	_____	8267	10436	6003
Pounds of butterfat per cow	_____	310	395	228
Price rec. per lb. B.F. sold (cents)	_____	89.8	92.6	82.9
Feed per cow, lbs.:				
Corn	_____	932	1381	645
Small grain	_____	887	937	931
Commercial feeds	_____	854	1123	349
Legume hay	_____	3660	3271	3460
Other hay	_____	1750	1540	2237
Fodder and stover	_____	--	--	--
Total concentrates, lbs.	_____	2673	3441	1925
Total dry roughage, lbs.	_____	5410	4811	5697
Silage and green chop	_____	8150	7695	7092
Feed cost per cow:				
Concentrates	_____	$ 63.23	$ 82.84	$ 40.84
Roughages	_____	69.94	67.53	65.84
Pasture	_____	6.63	6.65	6.75
TOTAL FEED COST	_____	$139.80	$ 157.02	$ 113.43
Value of produce per cow:				
Butterfat sales	$_____	$267.13	$ 349.59	$ 171.13
Dairy produce used in house	_____	9.47	4.65	16.95
Milk fed to livestock	_____	8.43	6.90	14.12
Net increase in value of cows	_____	- 5.06	- 3.10	- 4.52
TOTAL VALUE PRODUCED	_____	$279.97	$ 358.04	$ 197.68
RETURNS ABOVE FEED COST PER COW	$_____	$140.17	$ 201.02	$ 84.25
RETURNS FOR $100 SPENT FOR FEED	$_____	$ 200	$ 228	$ 174
Feed cost per lb. B. F. (cents)	_____	45.8	40.1	48.8
Number of cows *	_____	20.4	28.0	14.7

* 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 XVI. FEED COSTS AND RETURNS FROM OTHER DAIRY AND DUAL PURPOSE CATTLE, 1962

Items	Your farm	Average of 32 farms	11 farms highest in butterfat per cow	11 farms lowest in butterfat per cow
Feeds per head, lbs.:				
Concentrates		495	338	564
Hay and fodder		2027	1803	1867
Silage		2484	1843	3069
Whole Milk		154	175	124
Skim milk		87	27	225
Feed cost per head:				
Concentrates	$	$ 12.68	$ 10.53	$ 10.72
Roughages		22.56	19.88	23.15
Milk		4.67	5.26	4.46
Pasture		2.76	3.05	2.76
TOTAL FEED COST PER HEAD	$	$ 42.67	$ 38.72	$ 41.09
Net increase in value of other cattle		$ 87.71	$ 69.18	$ 86.30
RETURNS ABOVE FEED COST PER HEAD	$	$ 45.04	$ 30.46	$ 45.21
RETURNS FOR $100 of FEED	$	$ 206	$ 179	$ 210
Number of head of other cattle		25.1	36.2	18.8

TABLE XVII. FEED COSTS AND RETURNS FROM COMBINED DAIRY AND OTHER DAIRY CATTLE

Item	Your farm	Average 32 farms	11 farms highest in butterfat per cow	11 farms lowest in butterfat per cow
Feeds based on a "per cow" unit, lbs.:				
Concentrates		3303	3885	2667
Hay and fodder		7898	6987	8790
Silage		10889	10072	10127
TOTAL FEED COSTS PER COW UNIT	$	$ 186.17	$ 198.48	$ 162.89
Value of produce per cow unit:				
Dairy products	$	$ 276.57	$ 354.16	$ 188.08
Net increase in value	$	$ 95.44	$ 83.93	$ 122.12
TOTAL VALUE PRODUCED	$	$ 372.01	$ 438.09	$ 310.20
RETURNS ABOVE FEED PER COW UNIT	$	$ 185.85	$ 239.61	$ 147.31
RETURNS FOR $100 OF FEED	$	$ 200	$ 221	$ 190
Number of cow units		20.4	28.0	14.7
Animal units of cattle		32.9	46.1	24.1

TABLE XVIII. FEED COSTS AND RETURNS FROM BEEF BREEDING HERD, 1962

Items	Your farm	Average of 6 farms
Feeds per animal unit, lbs.:		
Concentrates		337
Legume hay		3179
Other hay		2214
Silage		3150
Whole milk		--
Feed cost per animal unit:		
Concentrates		$ 6.86
Roughages		52.24
Pasture		12.24
Milk		-
TOTAL FEED COST		$ 71.34
Value of produce per animal unit:		
Dairy products		-
Net increase in value of animals		$ 105.32
TOTAL VALUE PRODUCED		$ 105.32
RETURNS ABOVE FEED COST PER ANIMAL UNIT		$ 33.98
RETURNS FOR $100 OF FEED		$ 147
Number of animal units in the herd		33.7

TABLE XIX. FEED COST AND RETURNS FROM SHEEP, 1962

Items	Your farm	Average of 4 farms
Feeds per ewe, lbs.:		
Concentrates		108
Legume hay		493
Other hay		344
Silage		191
Fodder		-
Feed cost per ewe:		
Concentrates		$ 2.10
Roughages		7.02
Pasture		2.59
TOTAL FEED COSTS		$ 11.71
Value of produce per ewe:		
Wool		$ 5.61
Net increase in value of sheep		$ 5.62
TOTAL VALUE PRODUCED		$ 11.23
RETURNS ABOVE FEED COST PER EWE		$ - .48
RETURNS FOR $100 OF FEED		$ 96
Number of ewes		48.0
Number of lambs		30.1

TABLE XX. FEED COSTS AND RETURNS FROM CHICKENS, 1962

Items	Your farm	Average of 3 farms
Feed per hen, lbs.:		
Grain	_____	88
Commercial feeds	_____	53
TOTAL CONCENTRATES	_____	141
Milk	_____	-
TOTAL FEED COST PER HEN	$_____	$ 4.18
Value of produce per hen:		
Eggs sold and used in house	$_____	$ 4.69
Net increase in value of chickens	$_____	.91
TOTAL VALUE PRODUCED	$_____	$ 5.60
RETURNS ABOVE FEED COST PER HEN	$_____	$ 1.42
RETURNS FOR $100 OF FEED	$_____	$ 134
Price rec'd.per doz. eggs sold (cents)	_____	29.8
Eggs laid per hen	_____	181
Average number of hens during year	_____	114

LABOR EARNINGS CORRELATED WITH EXCELLED FACTORS

The thermometer chart on page shows seven major management factors that influence farm earnings 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 units per worker, and 7. Control over expenses. The combined effect of these management factors as related to farm earnings is shown below. Attention is called to the fact that farmers exceeding the average in most of tne seven management factors are also those reporting the highest labor earnings.

TABLE XXI

No. of factors in which farmers excelled	No. of farms	0 ' 1000 ' 2000 ' 3000 ' 4000 ' 5000 '
0 or 1	7	$ 204
2 Or 3	13	1497
4 or 5	17	1797
6 or 7	3	4924

SUMMARY OF FARM EARNINGS 1958 - 1962

	1958	1959	1960	1961	1962
FARM RECEIPTS					
Dairy and dual-purpose cattle	$ 1370	$ 1322	$ 1077	$ 977	$ 1173
Dairy products	4831	5106	4961	5068	4794
Beef cattle (incl. feeders)	234	65	135	79	1060
Hogs	1118	941	1117	1673	1313
Sheep and wool (incl. feeders)	89	123	120	84	70
Horses	10	8	5	-	7
Poultry	16	12	6	3	5
Eggs	52	42	62	37	32
Corn and small grain	159	240	246	174	181
Other crops	204	121	136	62	109
Forestry Products	286	232	219	180	259
Mach. & equip. sold & gas tax refund	191	156	155	169	145
Income from work off the farm	304	262	246	202	261
Miscellaneous	123	206	166	291	388
(1) Total farm sales	8987	8836	8651	8999	9797
(2) Increase in farm capital	821	682	1560	973	1957
(3) Family living from the farm	385	348	445	425	341
(4) Total farm receipts (1)+(2)+(3)	$10193	$ 9866	$10656	$10397	$12095
FARM EXPENSES					
Dairy & dual-purpose cattle bought	214	283	109	101	138
Beef cattle bought (incl. feeders)	31	101	15	112	708
Hogs bought	64	35	40	45	40
Sheep bought (incl. feeders)	16	8	58	3	-
Horses bought	3	2	1	-	16
Poultry bought	6	10	8	6	6
Misc. livestock expense	186	229	260	241	285
Feed bought	1141	1305	1225	1468	1678
Fertilizer	225	211	267	274	334
Other crop expenses	312	304	216	253	308
Custom work hired	485	526	522	557	582
Gas, oil & grease bought (farm share)	593	548	607	585	606
Repair of mech. power (farm share)	281	292	286	308	308
Repair & upkeep of real estate	84	104	47	126	98
Repair & upkeep of crop & gen. mach.	155	163	195	180	195
Repair & upkeep livestock equip.	62	57	55	72	64
Wages of hired labor	253	265	485	348	300
Electricity expense (farm share)	175	208	197	217	225
Real estate & pers. property taxes	262	280	311	315	408
General farm expense	115	138	152	181	161
(5) Total cash operating expense	4663	5069	5058	5392	6461
(6) Cap. purch. mech. power (farm sh)	340	501	534	664	524
(7) " " crop & gen. mach.	507	494	684	454	732
(8) " " livestock equip.	97	67	134	112	223
(9) " " bldgs. & fencing	602	461	559	714	805
(10) Total farm purch. (5) to (9)	6209	6592	6969	7336	8745
(11) Decrease in farm capital	-	-	-	-	-
(12) Interest on farm capital	1063	1104	1085	1070	1303
(13) Unpaid family labor	458	413	177	282	352
(14) Board furnished hired labor	44	37	78	80	40
(15) Total farm exp. (10) to (14)	7774	8146	8309	8768	10440
(16) Labor earnings (4) - (15)	$2419	$1720	$2347	$1629	$1655