

THE WEST CENTRAL SCHOOL AND STATION  
AS A REGIONAL CENTER FOR ANALYSIS OF FARM RECORDS  
IN THE WEST CENTRAL AREA

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## CHAPTER I

### STATEMENT OF THE PROBLEM

During the relatively short time that the Vo-Ag Cooperative Farm Management Service has been in existence, there has arisen the need for Regional Analysis Centers to relieve the burden of the Agricultural Economics Department at University Farm. This department has approximately 350 records each year from their long-standing routes in Southeastern and Southwestern Minnesota. As the number of books to be analyzed increases, it seems only feasible that the analysis be carried on at some other location.

As a result, the West Central School and Station served as the first Regional Center to be established in cooperation with the Department of Agricultural Economics and the Department of Agricultural Education. Forty-seven books were received this year with forty-six receiving a complete analysis. One book was incomplete due to an unusual farming situation and was omitted from the averages.

The schools submitting the 1954 books are as follows:

Alexandria	15	Madison	4
Herman	6	Morris	7
Ivanhoe	4	Redwood Falls	3
Lake Benton	2	Tyler	6

The area assigned to the West Central School and Station, which seems to form the logical boundaries for analysis service, consists of the following counties:

Big Stone	Chippewa	Douglas
Grant	Kandiyohi	Laurel

Lincoln	Lyon	Meeker
Pope	Redwood	Ranville
Stearns	Swift	Todd
Treasure	Yellow Medicine	

It seems logical to assume at the present time that Vocational Agriculture Departments within the designated area may expect to have their records analyzed at West Central School and Station.



## CHAPTER II

## THE PURPOSE OF THIS PAPER

The purposes of this paper are:

- A. To develop suggestions for Agriculture Instructors cooperating in the Farm Management Service.
- B. To relate the problems encountered in this year's analysis.
- C. To include suggestions for closing the Minnesota Farm Account Book.
- D. To suggest procedures based on this year's experience in organizing the analysis center.
- E. To show by example the analysis procedure.
- F. To summarize the value of a Regional Analysis Center for the Vo-Ag Farm Management Service.

## CHAPTER III

## SOME SUGGESTED PROCEDURES

**The role of the Vocational Agriculture Instructor  
in the Cooperative Farm Management Service**

It will not be the primary purpose of this paper to justify or promote the Minnesota Vo-Ag. Cooperative Farm Management Service. This has been ably handled up to the present time by Mr. Lauren Granger, coordinator of the program under the supervision of Doctor Milo Peterson, Head of the Agricultural Education Department at the University of Minnesota. Several papers have been written giving adequate coverage to the value of analysis of farm records in any given community. It is the opinion of the author that good farm records with their subsequent analysis form the core content of a good farm management program.

It will be the purpose of this paper to relate the observations and suggestions by the author in the first year of analysis at the West Central School and Station at Morris, Minnesota. These observations and suggestions will be in two general categories: (1) suggestions to the Vo-Ag instructors and (2) as a possible guide to any individual organizing a similar analysis center.

It goes without saying that the key men in this Farm Management Program are the Vo-Ag instructors. They must assume the responsibility of giving the individual farmer sufficient aid to present a complete book for analysis and they must in most cases carry the analysis report back to the farmer. This report should serve as the basis for the future planning and operation by the particular individual. Has there ever been an educational program.

with as sound an approach to the problems of the individual farmer as this one? A Vo-Ag instructor can now obtain one of the fundamental tools of farm planning - the analysis of local farm records.

The sending in of complete, accurate records should be of primary concern to the instructor for two main reasons. First, the accuracy and validity of the analysis is dependent upon the farm records submitted. In the second place the cost of analysis increases when books are incomplete and it becomes necessary to write, phone or travel for additional information. It was our experience at Morris this year that we did not operate efficiently at times because information was lacking in certain farm records. We at the Regional Center and the Vo-Ag Instructors should strive to keep down all unnecessary costs in the analysis procedure.

Summary of Completeness of the Forty-Seven Record Books  
Submitted for Analysis in 1955  
at the West Central School and Station

The following table lists the degree of completion both as to number and percentage of the 47 record books received at the West Central School this year.

TABLE I

Complete and accurate Inventories	34	72%
Cash Expenses and Cash Receipts	41	87%
Complete Crop Data	44	94%
Crop and Feed Checks Completed	41	87%
Livestock Reports	45	96%
Family Living from the Farm	40	85%
Household and Personal Expenses	20	43%
Net Worth	27	57%

### Complete and Accurate Inventories

The most common error in inventories was the failure to list and value the landlord's real estate.

Another situation that causes a large error in calculation of earnings is the double listing of capital goods purchased during the year by entering them in the beginning as well as the closing inventory. When this happened, it appeared that the farmer had made these entries and the mistake was not discovered until the earning had been calculated.

### Cash Expenses and Cash Receipts

It appeared that the expenses and receipts had been kept quite well in most books. The obvious items lacking in a few cases were the real estate taxes on the landlord's property and the landlord's sale of crops.

### Complete Crop Data

Three of the forty-seven books did not have complete crop data. The items overlooked in all cases were the non-tillable land including the non-tillable pasture, timber, waste and roads and farmstead.

### Crop and Feed Checks

Generally speaking, the crop and feed checks were complete although in a few cases the purchased feed had not been transferred to the crop and feed report. In one case, the corn and oats were not all accounted for.

### Livestock Report

In all but two books the livestock reports, FA12, had been completed. In these two books the necessary information was in the book for the completion of the FA12.

### Family Living from the Farm

In the forty-seven books received in 1955, only forty had completed the family living from the farm. This is an important item as it contributes directly to the labor earnings of the operator. If these accounts are not complete and accurate, the true labor earnings of the operator are not reflected.

### Household and Personal Expenses

Twenty of the forty-seven books had complete household and personal expenses. A farm operator should be educated to realize the importance of the personal accounts as well as the accounts of the farm business. The two may be very closely related and often the success or failure of a farm operation is directly connected to the household and personal expenditures.

### Net Worth

In the first year of analysis there were twenty-seven books that had complete records of assets and liabilities. This is a reasonable average for the first year but here again education is needed. The change in net worth from year to year is a very good picture of the financial progress of an individual. It behooves all of us in the Cooperative Farm Management Service to make this fact known to co-operating farmers.

In the previous section, the author has tried to point out some of the things that occurred during the first year's analysis as far as the account books are concerned. They are not peculiar to this center as the same omissions have been made in books received at the St. Paul office. The foregoing paragraphs are meant in the form of constructive criticism in the hope that the quality of records will improve in the future.

What was the result of these items that needed correcting? Seven letters, three books returned for correction, three phone calls, and one forty mile trip were necessary to correct these situations. This may not seem like very much to consider but the important loss was in time and efficiency. With a relatively small number of books, the crew can work most efficiently if they complete one step of the analysis procedure at a time. This cannot be done when a book must be put aside for one to two weeks while awaiting necessary information for the analysis of the record.

**Suggested Schedule of Visitation to the Farm for the Purpose of Aiding in Entering Basic Information Needed for Analysis**

Unless an instructor is assigned full time on the Farm Management Service, he may find himself pressed for time in giving the most aid to the participating farmers. The following schedule is suggested as a visitation plan that can be used. The most pertinent job for each visit is stressed. It is assumed that the routine work needed on visitation will be carried out in addition.

**January -**

1. Close previous year's records
2. Aid in transfer of inventory to new record book

**May -**

1. Record crop data
  - a. acreages of each crop
  - b. amount of seed used
  - c. special treatments if any

**July -**

1. Middle of year crop and feed check
  - a. measure bins
  - c. check pasturage records

November -

1. Crop yields (corn, soybeans and corn silage)

a. measure cribs, bin or silo

The above schedule will vary from one operator to another, but the main points mentioned under each visit are of great importance in the job of analysis.

If an individual is just beginning he will not have the previous year's records to be closed. More time would be spent in the mechanics of keeping the Minnesota Farm Account Book.

Closing the Farm Account Book  
Prior to Sending it to the Analysis Center

If the analysis is to be completed at a reasonable cost and with the least possible delay, the books should be properly closed prior to being sent to the Analysis Center.

As a reference for closing the books, Hodland's mimeographed report, "Suggestions for Closing Farm Records",\*\* covers the situation in detail. A careful study of these suggestions will show that many things can be done during the year that will facilitate the actual closing on December 31.

Particular attention is called to the three forms referred to in the suggestions. Livestock Report (FA 12), Crop and Feed Check, (FA 11), and (FA 51), Personal Data. These should be completed with the farmer and sent in at the same time as the book.

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\*\*Revised November 1953. Mimeo. Report, Department of Agricultural Economics, University Farm, St. Paul 1, Minnesota.

The Experiences and Suggestions  
as a Result of the First Year's Analysis  
at the West Central School and Station

Personnel, Office Space and Equipment

When an analysis center is organized, it will probably be impossible to hire clerical help that is familiar with the Minnesota Farm Account Book. In general, the clerical workers will have to learn through experience. The Supervisor of the Analysis Center would be fortunate to have his help return from year to year after they have become trained. We found that mature people seemed to have more interest in the analysis work and their chances of returning in succeeding years is greater.

The amount of office space required will depend, of course, on the number of personnel working. Each worker should have a spacious desk or table and a comfortable chair. The room should be rather isolated to receive the least amount of disturbance. The room should also be locked when authorized personnel is not around as these records are confidential and specific information from the records must not fall into the hands of the public without permission from the farmer.

The equipment needed will also depend on the number of personnel. Each clerk will need either an adding machine or comptometer. Comptometers are preferred if you have trained operators because the work can be done more rapidly. In addition, there will be need for an automatic calculating machine capable of handling large reciprocals. The need for another type calculator may arise as the number of books increases.

Order of Procedure in Analyzing Account Books

In our first year of analysis at West Central, we made some



extra work for ourselves by doing things in an improper sequence. An attempt is made in this section to set forth a logical order of the analysis work from the time the books are received until the analysis is completed. In our next year's analysis, we plan to follow the procedure as listed. We feel that this sequence will cause the least amount of backtracking in case errors are found.

1. Checking of books by Supervisor

- a. Check inventories for reasonable weights and values.
- b. Check FA 11 Crop and Feed report for completeness.  
(Be sure purchased feed has been entered and allocated to livestock.)
- c. Check FA 12 Livestock Report.
- d. Check FA 51 Supplementary Information for Completeness.
- e. Check pasture days for livestock.
- f. Check skim milk fed if cream is sold.
- g. If operator is renter, check landlord's sale of crops, otherwise cash rent.
- h. Check farm share of auto expense, telephone, electricity, building repairs, and equipment purchased.
- i. Check for landlord's taxes and insurance if a rental.
- j. Check five year depreciation schedule.
  1. Landlord's real estate if rental.
  2. Equipment purchased during year should be properly entered.
  3. If trades are made, check adjusted values.
2. FA 23 - Crop data can be taken at this time from page 29 of the account book. An experienced person should do this as there are often minor adjustments.
3. Clerks re-add all columns in the record book.
4. Crop and feed check can be calculated and totaled.

- ✓ 5. Livestock numbers added to find the average number of head on hand during the year.
6. FA 20 - Summary of Inventories and FA 21 - Summary of Earnings (Cash Statement). One person may do both these forms at the same time. Include family living from the farm and household and personal expenses if they are present.
7. FA 22 - Farm Earnings (by enterprises). This should be taken by a second person.
8. Cross check the figures on the FA 20 and FA 21 against those on the FA 22. If correct, the forms may be completed to obtain labor earnings.
9. After labor earnings have been calculated, an experienced person should look them over carefully for reasonableness. Many errors can be picked up at this time. The operator's and landlord's share on the left side of the FA 21 can be completed at this time.
10. On the reverse side of the FA 22, enter feed consumed by all livestock. At the same time, enter the feed consumed on the proper FA 24 - Livestock Summary. Complete the FA 24 from the FA 22 and the Livestock Report.
11. Make necessary calculations on the FA 24's.
12. Check FA 24's for reasonableness.
13. Copy the returns over feed on the reverse side of FA 20 - Summary of Inventories.
14. Check the return over feed for correctness on the FA 20 and decide if any should be omitted from the averages.

After these fourteen steps, the forms are completed to the point where "recapping" is necessary. These forms can be grouped

in their respective categories, fanned out and summarized as one straight line. The order of "recapping" is advised in the procedure that follows:

1. Recap individual crop yields and land utilization.
  - a. FA 23 - Crop data can be calculated at this time to find the index or crop yields.
2. Recap FA 24 - Livestock Summaries.
  - a. The index of returns per \$100 feed fed to livestock can now be calculated.
3. Recap FA 20 - Summaries of Inventories.
4. Recap FA 21 - Summary of Earnings (Cash Statement).
5. Recap FA 22 - Farm Earnings (Enterprise Basis).
6. Recap the Amount of Livestock on back of FA 20.
7. Recap the Power and Machinery costs per acre on reverse side of FA 22.
8. Recap Family Living from farm on reverse side of FA 21.
9. Recap the factors of management on the reverse side of FA 20.
10. Recap Household and Personal Expenses and Receipts on back of FA 21.
11. Recap Net Worth on tenure basis from FA 20.
12. Recap Cash Earnings on tenure basis from left side of FA 21.

When the recapping is completed and cross checked, the report may be set up and the necessary copies made. After they are completed, the farmer's own information is copied into a report designated as his own and the thermometer chart should be completed. The report and account books are then ready to return to the farmers.

Time Consumed on Various Phases of the Analysis Procedure

TABLE II  
Time Consumed on Analysis of 47 Books at West Central School

<u>Job</u>	<u>Total Time</u>	<u>Time Per Book</u>	<u>% of Total</u>
Adding Books	110 hrs.	2.3	17
FA 20, FA 21 & FA 22	187	4.0	29
Feed & Crop Checks	45	.9	7
FA 24's	140	3.0	22
Recapping	109	2.3	17
Copy Farmer's Figures in Report	<u>54</u>	<u>1.1</u>	<u>8</u>
TOTALS	645	13.6	100

TABLE III  
Cost of Analysis of 47 Books at West Central School\*

<u>Job</u>	<u>Total Cost</u>	<u>Per Book</u>	<u>% of Total</u>
Adding Books	\$118	\$2.51	17
FA 20, FA 21, & FA 22	209	4.45	29
Feed & Crop Checks	49	1.04	7
FA 24	153	3.26	22
Recapping	118	2.51	17
Copy Farmer's Figures in Report	<u>59</u>	<u>1.26</u>	<u>8</u>
TOTALS	\$705	\$15.03	100

\* Rate of pay for clerk-typists - \$175 per month.

The time consumed as shown in Table II seems to be a reasonable average to expect in this type of analysis work. It must be stated that to do the job within this time allowance there cannot be too many waste motions. The efficiency of the crew improved considerably during the analysis procedure. It must also be pointed out that with forty-seven books, the time of the supervisor per book is greater than it will be with a larger number of books. Therefore, it is not anticipated that the time per book will be lessened any appreciable amount even though the crew is experienced. This is assuming that there will be a larger number of books to be analyzed next year.

The costs per book as shown in Table III are based on the starting clerk-typist rate of \$175 per month. This may be variable from one area to another, but will serve as a guide of the costs of the analysis. This includes only the cost of the salaries of the three clerk-typists of the actual analysis. It does not include the costs in preparation of the report which will be variable depending on the number of copies made.

Completed Forms Illustrating the Analysis in Detail and Comparison  
of this example to the 1955 West Central Analysis Report

For purpose of example only, a sample farm account book is analysed on the following forms. An effort has been made by the author to complete these forms as accurately and completely as possible. It was found in the first year's work at Morris that a sample copy of the various procedures would have been of great assistance. This may also prove of benefit to these instructors who are not familiar with the analysis in detail. Perhaps if they are aware of the integration of the various parts of an individual record, they may be able to impress their cooperators of the value and importance of complete and accurate records.

The first three forms that follow are to be completed by the cooperator and instructor before the book is sent to the analysis center. They are FA 11 - Crop and Feed Check, FA 12 - Livestock Report, and FA 51 - Supplementary Information. The calculations shown on these forms in different colored pencil are done at the center for analysis.

The calculations shown on the FA 12 - Livestock Report, is the result of adding the number of head on hand the first of each month plus the number on hand the end of December and dividing by 13. This may in some cases give a more accurate picture than adding those on hand the first of each month and dividing by 12. If there are wide variations from month to month as may be true in the case of feeder livestock, it may be advisable to add the number on hand the beginning and end of each month and divide by 24.

These forms should be checked for their presence as well as their completeness along with the account book itself.

# CROP AND FEED CHECK

Name: J. L. Doe County: \_\_\_\_\_ Date: From Jan 1 to 1950

Crop or Feed:	Corn		Oats		Alfalfa Hay		Clover Hay		Legume Hay		New Mexico 401	
Unit used	T. Bu. Lbs.	Value	T. Bu. Lbs.	Value	T. Bu. Lbs.	Value	T. Bu. Lbs.	Value	T. Bu. Lbs.	Value	T. Bu. Lbs.	Value
PURCHASES	613	75.44	56	20.80					600	251.60	79.00	441.85
	6	7.00	6	21.00								
Total Bot.	619	82.44	62	41.80					600	251.60	79.00	441.85
Reg. Inv.	1026	1026.00	976	683.00	22	69.345			500.00	113.00		
Raised	1900		1200		108.60		107					
Total Supply	3545		2808		135.60		176		700.00		79.00	
SALES					426	600.25						
Include crops sold by landlord. Mark with "L"												
Total Sales					426	600.25						
Seeded	6		76									
End. Inv.	1675	1675.00	1430	1144.00	38	570.00	73		1700	51.00		
Total	1681		1506		86.60		73		1300			
Available for Feed	186.4		1302		49		103		7700		7900	
FED	Rept.	Adjust.	Rept.	Adjust.	Rept.	Adjust.	Rept.	Adjust.	Rept.	Adjust.	Rept.	Adjust.
Dairy or Dual Purpose Cows	4720		125.48		5700.00		12400.00					
	620		384		28.50		62		500.00			
Other Dairy or Dual Purpose	12800		6400		2000.00		5200					
	330		200		18		41		200.00			
Beef Breeding Herd												
Feeder Cattle												
Hogs	1300		1511.1		1				500.00		7900.00	
	747		474									
Sheep Farm Flock												
Feeder Sheep or Turkeys	840		2048									
	15		64									
Chickens	2912		4256									
	52		133									
Horses			1504		3000							
			47		15							
Total Fed	1864		1302		49		103		7700		7900	





# LIVESTOCK REPORT\*

Name J. L. Mc County \_\_\_\_\_ Year 1950

DAIRY OR DUAL-PURPOSE MILK COWS†  $246 \div 13 = 18.9$  Amos

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<u>18</u> First of month	<u>18</u>	<u>21</u>	<u>21</u>	<u>21</u>	<u>19</u>	<u>19</u>	<u>18</u>	<u>18</u>	<u>17</u>	<u>17</u>	<u>17</u>	<u>19</u>
Purchased												
<u>7</u> <u>25</u> Heifers fresh	<u>4</u>			<u>1</u>							<u>2</u>	
<u>6</u> Sold	<u>1</u>			<u>3</u>			<u>1</u>		<u>1</u>			
Died												
Transferred out												
Butchered												
<u>18</u> <u>25</u> End of month												<u>19</u>

DAIRY OR DUAL-PURPOSE HERD BULL†

First of month												
Purchased												
Transferred in												
Sold												
Died												
Butchered												
End of month												

OTHER DAIRY OR DUAL-PURPOSE CATTLE†  $263 \div 13 = 20.2$  Amos

<u>21</u> First of month	<u>5</u>	<u>1</u>		<u>19</u>	<u>20</u>	<u>19</u>	<u>19</u>	<u>18</u>	<u>17</u>	<u>24</u>	<u>23</u>	<u>23</u>
<u>1</u> Purchased								<u>1</u>				
<u>11</u> <u>18</u> Calves born	<u>4</u>			<u>2</u>					<u>4</u>		<u>7</u>	
<u>1</u> Sold	<u>1</u>				<u>1</u>					<u>4</u>		
<u>1</u> Died											<u>1</u>	
<u>1</u> Butchered											<u>1</u>	
<u>7</u> Heifers fresh	<u>4</u>			<u>1</u>							<u>2</u>	
Transferred to feeders												
<u>23</u> <u>21</u> End of month												<u>23</u>

\* A check for accuracy can be made at the end of the year by using the spaces on the extreme left side of each page. The number on hand January 1 and all purchases and all births and all transfers in should equal all sales and all deaths and all butchering and all transfers out and number on hand December 31.

† Indicate whether the cattle are dairy or dual-purpose—cross out the kind that does not apply.

## FARM FLOCK OF SHEEP\*

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
First of month—Sheep												
Lambs												
Purchased												
Transferred in												
Lambs born												
Sold												
Sheep died												
Lambs died												
Butchered												
Transferred out												
End of month—Sheep												
Lambs												

*Prep 609 ÷ 13 = 46.8 average* **HOGS\*** *206 ÷ 13 = 15.8 average*

First of month—Hogs	12	12	15	15	15	15	15	6	54	11	12	12
Pigs	68	68	-	70	50	69	29	2	26	25	23	20
Purchased										1	1	
Pigs born			71					28				
Sold		51					9	21	42			
Hogs died				1					1			
Pigs died			4					2	1			
Butchered		4									1	
End of month—Hogs												12
Pigs												55

**LAYING HENS†** *1263 ÷ 13 = 97.2 average*

First of month	101	101	101	101	2	3	5	5	21	122	117	117
Purchased												
Pullets began to lay									122			
Sold							42		215			
Died				6					3			
Use in house								5		5		
End of month												117

\* Lambs and pigs become sheep and hogs at the end of the sixth month following the month in which they were born.

† Use space at top of page 4 for chicks.

# SUPPLEMENTARY INFORMATION

F.A. 51 (Voc. Ag.) 1954 Name: John Lee School                     

## MEMBERS OF YOUR FAMILY LIVING AT HOME DURING 1954

(If not at home all year indicate number of months they were at home)

Operator John Age 32 Wife Marion Age 28

Boys Jack Girls 1

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## NUMBER OF MONTHS OTHERS WERE BOARDED (not including hired help)

Men                      Months                      Women                      Months                     

\_\_\_\_\_  
\_\_\_\_\_

## FARM LABOR INFORMATION

No. of operators or partners working together on this farm 1

No. of months each operator or partner worked on this farm in 1954:

1.                      Months 12

2.                     

3.                     

The following can be secured from pages 46 and 47 of the account book.

1. Amount of unpaid family labor on this farm in 1954 (other than that of the operator or partners) 1 months \$ 1.25

2. Days of day labor hired 77 days

3. Months of labor hired on monthly basis 5 months

4. Hired labor boarded by operator 2 months \$ 2.22

5. Hired labor boarded by partners                      months \$                     

## MISCELLANEOUS

In what year did you start farming as a renter or as an owner? 1946

FA 23 - Crop Data

Before the account book is turned over to the clerks for re-adding, we attempted in all cases to enter the information from page 29 of the account book to the FA 23 - Crop Data form. It is probably well for an experienced person to do this so he can observe acreages or yields that may be unreasonable and make the minor adjustments.

The calculations for tillable land, high return crops, and work units on crops are well explained on the FA 23. The example for calculations of crop index is taken from the FA 23 that appears following this page.

<u>Crops</u> <u>Raised</u>	<u>Acreage</u>	<u>Total</u> <u>Production</u>	<u>Average yield for</u> <u>all farms in this report</u>	<u>Average</u> <u>Needed with</u> <u>Ave. Yields</u>
Oats	30	1800 divided by	34.1 equals	53
Corn	40	1900 divided by	47.0 equals	40
Alfalfa	$\frac{50}{120}$	144.3 divided by	2.4 equals	$\frac{60}{153}$

(153 divided by 120)  $\times$  100 = 127.5 Index of Crop Yields  
(unadjusted)

When the index of crop yields (unadjusted) of all cases is added together, the total should approximate the number of cases times one hundred. With our forty-seven cases, the total was 4747.

(4747 divided by 47 = 101)

127.5 divided by 101 = 126 Index of crop yields (adjusted)

After the FA 23's are all calculated the information may be copied on the reverse side of the FA 20 and the crop acreage may be entered on the reverse side of the FA 22.

Year: 75.

Acres in farm			Crop (Kind and variety)	H R C B C C D D	Whole Farm Total yield	A. req. crop index	Total Yield		Seed Used		Yield per A. whole farm
Total	Owned	Rent					Owned	Rented	Owned	Rented	
			Flax	B	bu						
			Barley	C	bu						
			Wheat	C	bu						
30			Oats (inc. oats mixtures)	D	1200 bu	53				76	60
			Rye	D	bu						
30			TOT. SM. GRAIN & PEAS								XXX
			Sug. B. pot. & cr. hy. sd. c	A		XXX					XXX
40			Corn, grain	A	1920 bu	110				6	45
			Soybeans for grain	B	bu						
			Sweet corn	B	t						
			Corn & cane silage	B	t						
			Corn & cane fodder	D	t						
45			TOTAL CULT. CROPS								XXXX
50			Alf. & alf. mix. hay	B	1443 t	20					50
			Oth. leg. & leg. mix	C	t						
			Legumes for seed	D	lb						
			Tim. and/or br. hay	D	t						
			Timothy seed	D	lb						
			Soybean hay	D	t						
			Other annual hay	D	t						
50			TOT. TILL. L. IN HAY			Total of above acres required = E					XXX
30			Alf. & Alf.-brome past.	A							
			Other leg. & mix.	C							
			Sudan & rape past.	C							
			Other till. pasture	D							
30			TOT. TILLABLE PAST.								XXX
			Till. land not cropped	D		153					XXX
150			TOTAL TILL. LAND	G							XXX
			Wild hay (non-till.)	I	t						
			Non-till. pasture	J	(G ÷ N) x 100 = P		Acres	Per A.	W. U.		
			Timber (not past.)	K	no dec.		Small grain	30	.5	150	
41			Roads & waste	L	(T ÷ G) x 100 = Q		Sug. beets		1.5		
6			Farmstead	M	1 dec.		Pot. & tr. cr		4.0		
160			TOTAL LAND IN FARM	N	Total acres in farm above pasture except sug. beets, seed corn, etc. = F 120		Hybr. seed c		2.0		
			% of land tillable	P			Corn (husked)	40	.7	200	
12.3			% till. land in HRC	Q			Corn (hogged)		.4		
							Corn (shred)		1.5		
107.5			Index of crop yields (unad. justd)	R	(E ÷ F) x 100 = R		Soybean grain		.5		
126			Index of crop yields (ad. justd)	S	1 dec.		Sweet corn		.7		
70			Total A crops x 100% =		R ÷ avg. index of all farms =		Corn silage		1.0		
50			" B " x 50% =		S no dec.		Corn fodder		1.0		
			" C " x 25% =				Alfalfa hay	50	.6	300	
30			" D " x 25% =				Soybean hay		.7		
150			Tot. til. land G				O. hay & seed		.4		
							Tot. Crop Acr	120	XXX	300	

FA 20 Summary of Inventories, FA 21 Summary of Farm Earnings  
(Cash Statement) and FA 22 - Farm Earnings (by Enterprise)

These three forms are closely related and are completed at the same time. One serves as a cross check on the other. It is well to have one person complete the FA 20 and FA 21 while another person does the FA 22. If they do not agree, it may point out an error to be corrected.

When these forms are completed, the Supervisor should check them for reasonableness. The return and net increases or returns and net decreases in column 15 of the FA 22 serve as a guide for this. If these totals seem unreasonable, it will be necessary to go back to the account book for verification or change.

At this time, the Supervisor should also make the division between the landlord and operator of the left side of the FA 21 and arrive at the return to capital and family labor. A cross check on this calculation is as follows: The return in labor earnings to the operator plus the return to the landlord plus the interest paid should equal the labor earnings calculated on the whole farm. This is illustrated in the sample FA 21 ( $6165.16$  plus  $2.50 = 6167.66$ ).

Farm #1.

280 cows 200 fill

120 + cows 60 ~~spans~~ <sup>spans</sup>

15 ac 8' 4" by.

No hunted or poultry.

All our mucking with heavy dipper.

# SUMMARY OF INVENTORIES

Year: 1954

Beginning of Year			Item No.	Instructions	End of Year		
Whole farm	Operator's	Landlord's			Landlord's	Operator's	Whole farm
160	150		1	Acres in farm	From F.A. 23		
575			2	Dairy and dual-purpose cows	Book, p. 3		575
1725			3	Other dairy and dual-purpose cattle	Book, p. 6		1725
			4	Beef cattle (including feeders)	Book, p. 8, 10		
1816			5	Hogs	Book, p. 12		1816
			6	Sheep (including feeders)	Book, p. 14		
115			7	Poultry (including turkeys)	Book, p. 16		115
5751			8	TOTAL PRODUCTIVE LIVESTOCK	Sum of 2 to 7		5751
81			9	HORSES	Book, p. 15		81
5271			10	CROPS, SEED, AND FEED	Book, p. 31		5271
95			11	Auto and truck (farm share)	D.S., p. 2-3		95
1500			12	Tractors and motors	D.S., p. 4-5		1500
5100			13	Crop and general machinery	D.S., p. 8-9		5100
116			14	Livestock equipment	D.S., p. 12-13		116
41391			15	TOTAL MACHINERY AND EQUIPMENT	11+12+13+14		41391
			16	MISCELLANEOUS			
11115			17	LAND	D.S., p. 12-13		11115
4656			18	BUILDINGS, FENCING, ETC.	D.S., p. 14-15		4656
5751			19	TOTAL FARM CAPITAL	8+9+10+15+16+17+18		5751
5751			20	Stocks and bonds	Book, p. 49		5751
270			21	Life insurance	Book, p. 49		270
			22	Notes and accounts receivable	Book, p. 49		
			23	Shares in marketing org.	Book, p. 49		
			24	Outside real estate	Book, p. 49		
1800			25	Cash on hand and in bank	Book, p. 49		1800
5000			26	Household goods, clothing	Book, p. 49		5000
211			27	Pers. share of auto and truck	D.S., p. 2-3		211
5400			28	Farm dwelling	D.S., p. 14-15		5400
			29				
15214			30	TOTAL NONFARM ASSETS	Sum of 20-29		15214
42333			31	TOTAL ASSETS	19+30		42333
			32				
			33	F.I.B. or Nat'l Farm Loan Assoc. mortgage	Book, p. 50		
			34	F.H.A. real estate mortgage	Book, p. 50		
			35	Other mortgages on farm operated	Book, p. 50		
			36	Loans on other real estate	Book, p. 50		
			37				
			38	P.C.A. loans	Book, p. 50		
			39	F.H.A. chattel mortgage	Book, p. 50		
			40	Crop loans (sealed grain)	Book, p. 50		
			41	Other chattel mortgages	Book, p. 50		
			42				
			43	Notes	Book, p. 50		
			44	Accounts payable	Book, p. 50		
			45	TOTAL LIABILITIES	Book, p. 50		
			46				
41			47	NET WORTH	31-45		41
xxx	xxx	xxx	48	CHANGE IN NET WORTH			4651
			49				
			50				
			51				
			52				

Lease arrangement and legal description

800 160



John F. Kennedy  
President

2002

2002

## MEASURES OF FARM ORGANIZATION AND MANAGEMENT EFFICIENCY

Animal units (1 decimal)	Work units (1 decimal)	LIVESTOCK ENTERPRISE				Animal units x Index	Return for \$100 feed (F.A. 24)	Index of returns per \$100 of feed
12.9	18.9	Dairy cows						
10.1	25.4	Other dairy cattle			4379.0	21.3		71
		Dual-purpose cows						
		Other dual-purpose cattle						
		Beef-breeding herd						
	x x x	Feeder cattle						
15.4	x x x	Hogs			2218.4	224		146
		Sheep—farm flock						
	x x x	Sheep—feeders						
	x x x	Turkeys						
2.0	2.0	Chickens			30.0	1.5		180
Q	x x x	Total		(i ÷ Q = j)	6987.4	151		x x x
46.4								
Cwt.	x x x							
		Feeder cattle (from F.A. 24j)	Item Q	Total productive livestock animal units				416.4
345.35	2.5	Hogs (from F.A. 24e)	From F.A. 23	Work units on crops (no dec.)				63
		Feeder sheep (from F.A. 24h)	R no dec.	Work units on productive livestock				208
		Turkeys (from F.A. 24g)	From F.A. 22	Return from special enterprises: \$				x x x
x x x	R 21.4	Total livestock work units	From F.A. 22	Work off farm: \$ 355				x x x
	S			Work units from other productive work				30
	T							
	U							
	V		From	Family labor	Mo. of labor	Mo. of labor		No. of workers
	W		F.A. 51	Proprietor Unpaid	12	13	q	1
	X		(1 dec.)	Hired Day	77			
	Y			labor Month	5		r	7
				Total labor			s	
				t, u, v, and w ÷ f = expenses per work unit	Totals from F.A. 22			Exp. per work unit
				Total power exp.	1301.92	t		245
				Crop machine exp.	641.30	u		2
				Livestock equipment exp.	23.45	v		2
				Bldgs. and fencing exp.	20.25	w		24
				Total expenses	1546.92	x		x x x
						y		
150	Z	Acres in farm less timber not pastured, roads, waste, and farmstead (from F.A. 23 N — (K + L + M))		No. factors above average			z	

SUMMARY OF FARM EARNINGS (By Receipts and Expenses)

Year: 1954

Operator's	Landlord's	FARM RECEIPTS	Page	Total Value
		Dairy and dual-purpose cattle sold—Cows 225.35 Other 225.35	3,7	1565 14
		Dairy products sold	5	5471 4.
		Beef cattle sold—Breeding Feeders	9,10	
		Hogs sold	13	5615 21
		Sheep sold (including feeders)	15	
		Horses sold	15	
		Poultry sold (including turkeys)	17	256 16
		Eggs sold	19	454 80
		Crops sold—corn (grain)	36	
		small grain (oats, barley, wheat, flax, rye, etc.)	36	
		other (soybeans, canning crops, hay, silage, potatoes)	36	213 1
		Gas tax refunds Mach., equip., etc., sold	39,40	1.0 75
		Cash rent	47	x x x
		Income from work off the farm	48	20. 1
		Misc. farm income	48	22 86
		(1) Total farm sales		14600 21
		(2) Increase in farm capital	F.A.20	2559 1
		(3) Family living from the farm (from reverse side this form)		830 15
17500 31		(4) TOTAL FARM RECEIPTS (1) + (2) + (3)		17690 37
		FARM EXPENSES		
60.00		Dairy and dual-purpose cattle bought—Cows Other 60.00	3,7	6. 1
		Beef cattle bought—Breeding Feeders	9,10	
115.00		Hogs bought	12	113 1
		Sheep bought (including feeders)	14	
		Horses bought	15	
52.00		Poultry bought (including turkeys)	16	52. 1
37.00		Breeding fees 161.00 Misc. livestock expense 270.72	20,21	371 72
200.12		Feed bought	35	200.12
120.00		Fertilizers	37	120.00
150.00		Other crop expense	37	150.00
100.00		Custom work hired	38	100.00
20.00		Gas, oil, and grease bought (farm share)	41	20.00
100.00		Repair and operation of tractor, truck, auto (farm share)	42	100.00
20.00		Repair and upkeep of real estate	43	20.00
20.00		Repair and upkeep of crop and general machinery	44	20.00
20.00		Repair and upkeep of livestock equipment	45	20.00
20.00		Wages of hired labor	46	20.00
172.52		Electricity expense (farm share)	47	172.52
110.00		Real estate and personal property taxes	47	110.00
		Cash rent	47	x x x
20.00		Tel. exp. (farm share) 42.54 Gen. farm exp. 212.06	47,48	254 60
20.00		Interest paid	50	x x x
6712 85		(5) TOTAL CASH OPERATING EXPENSE		6712 85
1267 12		(6) Capital purchases—mech. power (farm share)	39	1267 12
1432 45		(7) crop and general machinery	39	1432 45
34.00		(8) livestock equipment	39	34.00
105.75		(9) buildings, fencing, etc.	39	105.75
200.00		(10) Total farm purchases (5) + (6) + (7) + (8) + (9)		200.00
		(11) Decrease in farm capital	F.A. 20	
100.00		(12) Interest on farm capital (5% of average of beginning and end of year)	F.A.20	100.00
10.00		(13) Unpaid family labor	F.A. 51	10.00
20.00		(14) Board furnished hired labor	F.A. 51	20.00
11525 15		(15) TOTAL FARM EXPENSES (10) + (11) + (12) + (13) + (14)		11525 15
6165 16		(16) LABOR EARNINGS (4) - (15)		6165 16
7700 11		(17) RETURN TO CAPITAL AND FAMILY LABOR (12) + (13) + (16)		7700 11

## FAMILY LIVING FROM THE FARM

No. of persons	Adult equiv.	Per person	Members of family			Instructions		Quantities
		.4	Child under 7 years of age		Whole milk, qts.	P. 4, col. 2	A	1355
1	.6	.6	Child 7 to 12 years of age		Skim milk, qts.	P. 4, col. 4	B	
		.8	Girls 13 to 18 years of age		Cream, pts.	P. 4, col. 6	C	
		.9	Boys 13 to 18 years of age		Farm-made butter, lbs.	P. 4	D	
1	.8	.8	Women		Beef, lbs.	See below	E	1200
	1.0	1.0	Men		Hogs, lbs.	P. 12, col. 19	F	960
Number of persons in the family					Lamb and mutton, lbs.	See below	G	
Total adult equivalent members in family					Poultry (including turkeys), lbs.	See below	H	223
		.8	Women	Hired help and other boarders	Eggs, doz.	P. 16, col. 27	I	415
		1.0	Men		Potatoes, bus.	P. 28, col. 1	J	10
Total adult equiv. hired help and other boarders							K	

HOUSEHOLD AND PERSONAL EXPENSES				VALUES			
		Food and meals bought	From financial summaries	Whole milk	P. 4, col. 3	L	28
		Operating and supplies		Skim milk	P. 4, col. 5	M	
		Furnishings and equipment		Cream	P. 4, col. 7	N	
		Clothing and materials		Form-made butter	P. 4	O	
		Personal care and spending		Beef	See below	P	200
		Education and recreation		Hogs	P. 12, col. 20	Q	171
		Gifts and special events		Lamb and mutton	See below	R	
		Medical exp., hospital ins.		Poultry	See below	S	118
		Church, welfare		Eggs	P. 16, col. 28	T	12
		Pers. share truck and auto exp.		P. 41, 43	Potatoes	P. 28, col. 2	U
		Oper. share upkeep on dwelling	P. 43, col. 23	Vegetables and fruit	P. 28, col. 4	V	
		Pers. share tel. and elect. exp.	P. 47	Farm fuel	P. 28, col. 6	W	
		Total cash living expenses		Misc. (honey, wool, etc.)		X	
		Pers. share new auto and truck	P. 39, col. 4			Y	
		New dwelling	P. 39, col. 4				
		Taxes and other deductions	Fin. sum.	TOTAL FAM. LIVING FROM FARM		Z	820
		Life insurance	P. 49, col. 6				
		Other savings and investments	P. 49, col. 6				
		TOTAL H.H. AND PERS. CASH EXP.		LIVESTOCK BUTCHERED FOR HOME USE			
				Cattle	No.	Weight	Value
		Total family living from the farm	Item Z	Dairy or dual-purpose cows			
		TOTAL CASH EXPENSE AND PERQUISITES		Other dairy or dual-purpose cattle	1	120	20
				Beef-breeding herd			
				Feeder cattle			
				Total cattle	1		
		RECEIPTS		Sheep			
		Return to capital and fam. labor	F.A. 21	From farm flock			
		Income from outside investments	P. 49, col. 9	Feeder sheep			
		Sale of outside investments	P. 49, col. 9	Total sheep		G	R
		Other personal income	P. 49, col. 9	Poultry			
				Chickens—hens	1	5	1
				others			
				Turkeys			
				Total poultry	1	H	S
				QUANTITY B.F. USED IN HOME			
				Lbs. $\times$ test = lbs. B.F.	Pounds	Test	Lbs. B.F.
				Whole milk ( $A \times 2.15$ = lbs.)		#	
				Cream ( $C \times 1.05$ = lbs.)		#	
				Farm-made butter ( $D \times .8$ = lbs. B.F.)			
				Total lbs. B.F. used in home			

## Year: 50

Livestock products (milk, eggs, wool, etc.)										16 Value of feed fed to livestock										17 Return over feed from livestock									
Sales		Used in home		Fed		Totals		End of yr. inventory		Livestock sales		Livestock butchered		Transfers out		Totals		Beg. of yr. inventory		Livestock purchases		Transfers in		Totals		Apprec. or deprec.		Returns and net increases	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1		2		3		4		5		6		7		8		9		10		11		12		13		14		15	
1		2		3		4		5		6		7		8		9		10		11		12		13		14		15	
Milk cows																													
Other dairy cattle	xx	xx	xx	xx																									
Beef-breeding herd																													
Feeder cattle																													
Hogs	xx	xx	xx	xx																									
Sheep—farm flock																													
Sheep—feeders																													
Turkeys																													
Chickens																													
Total P.L.S.																													
18 Crop, seed, feed, and fuel																													
23 End of year																													
24 Sales																													
25 Used in home																													
26 Total																													
27 Beg. of year																													
28 Purchases																													
29 Total																													
30 Net (25-29)																													
19 Income labor off farm (part col. 8, p. 48)																													
20 Agricultural conservation payment (part col. 13, p. 48)																													
21 Misc. (col. 13, p. 48)																													
22 Total returns and net increases																													
Returns and net decreases (37-41)																													
Horses																													
Trucks (farm share)																													
Autos (farm share)																													
Tractors																													
Gas eng. and elect. exp.																													
Hired power																													
Total power																													
Crop machinery																													
Livestock equipment																													
Buildings, fences																													
43 Breeding fees																													
44 Labor (p. 46):																													
Unpd. fam. lab.:																													
Board hired lab.:																													
45 Real estate taxes (part col. 10, p. 47)																													
46 Personal property taxes (part col. 10, p. 47)																													
47 Insurance (part col. 3, p. 48)																													
48 Tele. (p. 47):																													
Interest on farm capital (at 5%) (From F.A. 20)																													
50 Total expenses and net decreases																													
51 LABOR EARNINGS (22-30)																													

### FEED CONSUMED BY ALL LIVESTOCK

**HOMES**[illegible]

### FA 24 - Livestock Summaries

The amount and value of feeds for the various classes of livestock as entered on the FA 24's must coincide with the FA 11 - Crop and Feed Check. Directions are given on the FA 24 for the balance of the necessary information.

When all the information is on the FA 24, this form is ready to be calculated. It is here that the automatic calculator capable of handling large reciprocals is needed. To divide each individual calculation as called for would be an endless task as well as a chance for errors. After a short time, the operator will find enough short additions and subtractions to determine if his work is correct.

After the FA 24's are calculated and checked for reasonableness, the returns for \$100 feed may be copied to the reverse side of A 20. The animal units, pounds produced and head of livestock should also be copied at this time. At this time, the Supervisor should check the FA 24's against the FA 20's for correctness and determine if any livestock should be omitted from the averages. For example, in a dairy area, herds of under four cows may be omitted. In another area, this may be the average size of the dairy herds. Common sense and judgment will be the guide in making these evaluations in any given area.

If a certain class of livestock is to be omitted from the averages, the number is circled and calculation omitted. The amount of livestock is counted for productive livestock work units and livestock units per 100 acres but is not calculated in the index of livestock returns per \$100 feed.

At this point the FA 24's can be recapped and the average returns for \$100 feed for each class of livestock will be found.

The calculations for the index of returns as shown in the example are shown below. These calculations appear on the reverse side of FA 20.

Animal Livestock Units	Enterprise	Animal Units	Ret. for \$100 feed (FA 24)	Ave. Ret. for \$100 feed (all forms)	Index of Ret. per \$100 feed
18.9 Dairy Cattle		4379.0	213	divided by 141	= 151
10.1 Other Dairy Cattle					
15.4 Hogs		2748.4	224	divided by 153	= 146
<u>2.0 Chickens</u>		<u>360.0</u>	175	divided by 97	= 180
46.4		6987.4			

6987.4 divided by 46.4 = 151 Index of returns per \$100 feed to productive livestock.

In recapping the index of returns for each class of livestock as well as the total index of returns, these totals should approximate 100 times the number of cases. If this is not the case, there may be an error in the calculations.

At the time this calculation is made, the balance of the calculations on this page may also be completed.



LIVESTOCK SUMMARY—DAIRY OR DUAL PURPOSE CATTLE

1948

John Aline

DAIRY OR DUAL PURPOSE COWS													OTHER DAIRY OR DUAL PURPOSE CATTLE													Year: 19 50			
B.F. production	# B.F. used in home	A	B	C	Protein	T.D.N.	Amount	Value	Kind of feed	Amount	Value	Items	Totals	Per Head	B.F. production	# B.F. used in home	A	B	C	Protein	T.D.N.	Amount	Value	Kind of feed	Amount	Value	Items	Totals	Per Head
Per cow	Total	B.F. fed	B.F. sold	B.F. produced												Total	B.F. fed	B.F. sold	B.F. produced										
3.6 x	6.755						2472.3					Concentrates	a	122.7	3.6 x	6.755							2472.3				Concentrates	a	122.7
3.4	Milk test											Hay and fodder	b	1782	3.4	Milk test											Hay and fodder	b	1782
Per lb.	Value											Silage	c	425.9	Per lb.	Value											Silage	c	425.9
												Skim milk	d														Skim milk	d	
												Whole milk	e	180													Whole milk	e	180
8.13	5471.40											Concentrates	f	224.9	8.13	5471.40											Concentrates	f	224.9
Per cow	Total											Roughages	g	35.54	Per cow	Total											Roughages	g	35.54
1837	34720											Milk	h	31.24	1837	34720											Milk	h	31.24
650	12288											Pasture	i	5.05	650	12288											Pasture	i	5.05
346	6547											Total feed cost	j	23.61	346	6547											Total feed cost	j	23.61
2016	57000											Gross returns	k	96.95	2016	57000											Gross returns	k	96.95
												Return above feed cost	l	34													Return above feed cost	l	34
2023	5555											(k+l no dec.)			2023	5555											(k+l no dec.)		
16	57000											Returns for \$100 of feed		132	16	57000											Returns for \$100 of feed		132
6501	124200											NUMBER HEAD OF OTHER CATTLE		20.2	6501	124200											NUMBER HEAD OF OTHER CATTLE		20.2

LIVESTOCK SUMMARY—HOGS AND CHICKENS

John Doe

HOGS										CHICKENS										Year: 19 50	
Per cwt.	Totals	A+B+C=D: F+G+H=I	Protein	T.D.N.	Lbs. feed	Value	Kind of feed	Lbs. feed	Value	Totals	Per hen										
214	53032	A Corn			5302	1212	Corn	3752	86	a	10056										
61	15168	B Small grain								b	2280										
45	11200	C Commercial feeds			A					c	1532										
320	79400	D Total concentrates			15128	341	Small grain	6304	142	d	158										
		E Milk								e	1193										
856	2127	F Concentrates								f	579										
		G Milk								g	291										
21	52	H Pasture								h	862										
877	2129	I Total feed cost			B		Commercial feeds	a		i	369										
1962	4874	J Net increase in value			520	20	Commercial feeds			j	175										
1085	2695	K Return above feed cost			7923	413	Commercial feeds			k	450										
224		L Returns for \$100 feed (I+J no dec.)			800	153	Commercial feeds			l	301										
		M Total value of hogs sold			300	22	Commercial feeds			m	225										
		N Price received per cwt. hogs sold			150	6	Commercial feeds			n	97										
		O No. of pigs			300	10	Commercial feeds			o	1406										
		P Born			50	1	Commercial feeds			p	1821										
		Q Weaned					Commercial feeds			q	12852										
		R Spring								r	225										
		S Fall								s	97										
		T Total								t	1406										
7.8		U Pigs born per litter (1 decimal)								u	1821										
7.3		V Pigs weaned per litter (1 decimal)								v	12852										
		W Copy from F.A. 13								w	225										
		X Copy from F.A. 13								x	97										
		Y Pigs weaned per litter (1 decimal)								y	1406										
		Z Copy from F.A. 13								z	1821										
		AA Copy from F.A. 13								aa	12852										
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## Year: \_\_\_\_\_

LAYING FLOCKS - breed										CHICKS - breed									
Per hen	Totals	A Grain	B Com. feed	C Tot. concent.	D Milk	F Tot. feed cost	Lbs. feed	Value	Kind of feed	Lbs. feed	Value	Totals	chicks	Per 100					
74	240	120	120						Grain			240	100	100					
100	240	120	120						Commer. feeds			240	100	100					
100	240	120	120						Tot. concent.			240	100	100					
100	240	120	120						Milk			240	100	100					
100	240	120	120						Tot. feed cost			240	100	100					
100	240	120	120						Net val. prod.			240	100	100					
100	240	120	120						f - e - g			240	100	100					
100	240	120	120						Ret. over feed			240	100	100					
100	240	120	120						f - e - h			240	100	100					
100	240	120	120						Ret. per \$100 feed			240	100	100					
100	240	120	120						Date chicks were purch.			240	100	100					
100	240	120	120						Amount			240	100	100					
100	240	120	120						Chicks purch. as paid			240	100	100					
100	240	120	120						Pullets			240	100	100					
100	240	120	120						Straight run			240	100	100					
100	240	120	120						Cockerels			240	100	100					
100	240	120	120						Price 100 chicks-pullets			240	100	100					
100	240	120	120						-straight run			240	100	100					
100	240	120	120						-cockerels			240	100	100					
100	240	120	120						NO. CHICKS RAISED			240	100	100					
100	240	120	120						% death loss			240	100	100					
100	240	120	120						Chicks on clean ground			240	100	100					
100	240	120	120						Price rec'd. per lb. sold			240	100	100					
100	240	120	120						Date pullets were housed			240	100	100					
100	240	120	120						No.			240	100	100					
100	240	120	120						Value			240	100	100					
100	240	120	120						Butchered			240	100	100					
100	240	120	120						Transfers out			240	100	100					
100	240	120	120						End of year			240	100	100					
100	240	120	120						Sales			240	100	100					
100	240	120	120						Total			240	100	100					
100	240	120	120						Butter milk			240	100	100					
100	240	120	120						Whey			240	100	100					
100	240	120	120						Skim milk			240	100	100					
100	240	120	120						Total			240	100	100					
100	240	120	120						Net			240	100	100					
100	240	120	120						production			240	100	100					

Recapping the FA 20, FA 21, and FA 22

The final step in the analysis report will be the recapping of the information contained on the margins of either side of these three forms. We found that 15 to 20 forms are enough to recap at one time because the volume of a large group made it difficult for the operator to handle. The same cross checks will be found in the recap figures of these three forms as are found in the individual forms. For instance, five per cent of the average farm capital at beginning and end of year should equal the average net increase or decrease in farm capital. These and other cross checks are circled in red on pages 3, 4, and 5 of the accompanying report of West Central Minnesota.

1954 REPORT  
VOCATIONAL AGRICULTURE  
FARM MANAGEMENT SERVICE  
WEST CENTRAL MINNESOTA

UNIVERSITY OF MINNESOTA  
Institute of Agriculture  
and  
Vocational Division  
MINNESOTA DEPARTMENT OF EDUCATION  
Cooperating

Report No. 222  
Department of Agricultural Economics  
Institute of Agriculture  
St. Paul 1, Minnesota  
May, 1955

# 1954 REPORT OF THE FARM MANAGEMENT SERVICE FOR VOCATIONAL AGRICULTURE IN WEST CENTRAL MINNESOTA

Ralph Smith, T. R. Nodland and G. A. Pond

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## INTRODUCTION

The Departments of Agricultural Economics and Agricultural Education, the West Central School and Station and the Agricultural Extension Service of the University of Minnesota are cooperating with the Vocational Division, Minnesota Department of Education in maintaining a farm management service. The service was initiated during 1952 and is available to farmers who are enrolled in adult or young farmer classes in the public schools.

The purpose of the project as far as the schools are concerned is (1) to give assistance to the instructors in the mechanics of keeping farm records and (2) to aid in the analysis of the farm business through the use of records as a basis for vocational guidance. The enrollment is on a voluntary basis insofar as the number of schools participating and the number of farmers enrolled in the service.

The analysis of the records and the preparation of the reports for West Central Minnesota are handled by Ralph Smith of the West Central School and Station at Morris. The project is under the general direction of T. R. Nodland and G. A. Pond of the University of Minnesota Department of Agricultural Economics. The Department of Agricultural Education was represented by M. J. Peterson and the Agricultural Extension Service by S. B. Cleland and E. Hartmans. The State Department of Education was represented by G. R. Cochran, State Supervisor of Agricultural Education. At the end of the year, Kermit Kleene of the Department of Agricultural Economics aided in closing the records.

Each farmer pays an annual fee which covers a portion of the cost. The Farmers Union Grain Terminal Association contributed \$5.00 per record analyzed. Through a grant of funds from the Hill Family Foundation, Lauren Granger was employed by the Department of Agricultural Education as a co-ordinator for the project. The balance of the costs were defrayed by the University of Minnesota.

This report deals with farmers enrolled in 8 schools in West Central Minnesota. The following tabulation shows by schools the number of 1954 farm records submitted:

Alexandria	15	Madison	3
Herman	6	Morris	7
Ivanhoe	4	Redwood Falls	3
Lake Benton	2	Tyler	6
		Total	<u>46</u>

The records kept included farm inventories, cash receipts and expenses, feed consumed by the various classes of livestock, family living secured from the farm, household and personal expenses and receipts and the operators liabilities and assets other than farm capital. All types of tenure arrangements are represented ranging from full owners to partnerships in which the operator furnishes little or no capital.

#### FARM INVENTORIES

The capital investment per farm varied from \$11,235 to \$84,828. The average investment for all farms included in this report and for the one-third high and the one-third low in operator's labor earnings is shown in Table 1.

Landlords or partners supplied some capital in 27 out of the 46 cases included in this report. The landlord's investment has been included in Table 1 in order to show the total amount used per farm.

#### FARM EARNINGS

Operator's earnings is a measure of the 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. For purposes of comparison, the earnings are presented on a full-owner basis.

There are two methods of computing operator's earnings. Table 2 shows the earnings statement on a cash basis and Table 3 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 the value of 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.

Table 1. Summary of Farm Inventories, 1954\*

Items	Your farm		Average of 46 farms	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Size of farm (acres)	160		275	
Size of business (work units)**	377		359	
Dairy and dual purpose cows	2095	2543	2076	\$ 1986
Other dairy & dual purpose cattle	1735	2038	905	844
Beef cattle (incl. feeders)			1542	1460
Hogs	1816	1017	1172	1078
Sheep (including feeders)			177	168
Poultry (including turkeys)	115	146	205	166
Productive livestock (total)	5761	5744	6077	5702
Horses	181	158	12	6
Crop, seed and feed	3371	4158	4324	4915
Power mach. (farm share)	1351	2372	2918	3080
Crop and general machinery	2120	3136	3618	3972
Livestock equipment	916	785	542	587
Machinery & equipment (total)	4391	6293	7078	7639
Miscellaneous			-	-
Land	4310	4310	15284	15284
Buildings, fences, etc.	9156	7266	6278	6282
Total farm capital	25670	29929	39053	39828
			+ 775	
Items	15 most profitable farms		15 least profitable	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Size of farm (acres)	389		219	
Size of business (work units)**	413		306	
Dairy and dual purpose cows	\$ 1720	\$ 1812	\$ 1620	\$ 1353
Other dairy & dual purpose cattle	1007	926	576	663
Beef cattle (incl. feeders)	2219	2552	1824	1596
Hogs	1466	1297	1063	1091
Sheep (including feeders)	309	324	97	31
Poultry (including turkeys)	205	182	190	148
Productive livestock (total)	6926	7093	5370	4882
Horses	-	-	26	18
Crop, seed, and feed	6706	8372	3537	3263
Power Mach. (farm share)	3814	3999	2683	2604
Crop & general machinery	4732	5355	3069	3362
Livestock equipment	572	697	605	617
Machinery & equipment (total)	9118	10051	6357	6583
Miscellaneous	-	-	-	-
Land	19595	19595	13020	13020
Buildings, fences, etc.	8010	8510	4956	4708
Total farm capital	50355	53621	33266	32474
	+ 3266		- 792	

\* For the purpose of comparison, all the data shown in this report with the exception of tables 6 and 7 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 11 for an explanation of "work units".



Table 2. Summary of Farm Earnings (Cash Statement), 1954

Items	Your farm	Average of 46 farms	15 most profitable farms	15 least profitable farms
<b>FARM RECEIPTS</b>				
Dairy and dual-purpose cattle	<u>1565</u>	811	810	568
Dairy products	<u>5471</u>	2081	1710	1344
Beef cattle (including feeders)		2145	3658	2043
Hogs	<u>5615</u>	3390	4670	2792
Sheep and wool (including feeders)		187	396	75
Horses		12	-	19
Poultry	<u>256</u>	149	277	68
Eggs	<u>451</u>	776	923	691
Corn		610	870	632
Small grain		1597	2782	1237
Other crops	<u>893</u>	597	906	452
Mach. & equip. sold & gas tax refund	<u>120</u>	234	393	133
Income from work off the farm	<u>200</u>	485	538	489
Miscellaneous	<u>29</u>	204	297	185
(1) Total farm sales	<u>14600</u>	13278	18230	10728
(2) Increase in farm capital	<u>2259</u>	<u>775</u> P3	<u>3266</u> P3	-
(3) Family living from the farm	<u>831</u>	294	292	278
(4) Total farm receipts (1)+(2)+(3)	<u>17690</u>	14347	21788	11006
<b>FARM EXPENSES</b>				
Dairy and dual-purpose cattle bought	<u>60</u>	118	120	81
Beef cattle bought (incl. feeders)		781	1694	630
Hogs bought	<u>113</u>	233	174	287
Sheep bought (incl. feeders)		66	183	16
Horses bought		4	-	13
Poultry bought	<u>3</u>	118	147	79
Misc. Livestock expense	<u>372</u>	<u>219</u>	<u>239</u>	<u>205</u>
Feed bought	<u>6091</u>	1790	2802	1487
Fertilizers	<u>380</u>	361	536	430
Other crop expenses	<u>183</u>	438	501	498
Custom work hired	<u>548</u>	428	465	395
Gas, oil & grease bought(farm share)	<u>467</u>	801	992	726
Rep. of mechanical power(farm share)	<u>126</u>	301	340	302
Repair and upkeep of real estate	<u>287</u>	175	173	192
Rep. & upkeep of crop & gen. mach.	<u>270</u>	268	372	218
Rep. & upkeep of livestock equip.	<u>98</u>	98	171	59
Wages of hired labor	<u>799</u>	542	814	322
Electricity expense (farm share)	<u>129</u>	142	157	119
Real estate & pers. prop. taxes	<u>426</u>	<u>502</u>	<u>632</u>	<u>422</u>
General farm expense	<u>255</u>	<u>182</u>	<u>212</u>	<u>152</u>
(5) Total cash operating expense	<u>6710</u>	7567	10724	6634
(6) Cap. purchases-mech. pow.(f.share)	<u>1267</u>	697	776	452
(7) " " -crop & gen. mach.	<u>1492</u>	1069	1556	854
(8) " " -livestock equip.	<u>34</u>	136	218	98
(9) " " -bldgs. & fencing	<u>166</u>	465	1114	84
(10) Total farm purchases (5) to (9)	<u>9669</u>	9934	14388	8122
(11) Decrease in farm capital		-	-	792
(12) Interest on farm capital	<u>1440</u>	<u>1972</u>	<u>2599</u>	<u>1614</u>
(13) Unpaid family labor	<u>125</u>	225	314	203
(14) Board furnished hired labor	<u>288</u>	88	87	90
(15) Total farm expenses (10) to (14)	<u>11522</u>	12219	17388	10851
(16) Labor earnings (4) - (15)	<u>6168</u>	<u>2128</u>	<u>4400</u>	<u>155</u>

Table 3. Summary of Farm Earnings (Enterprise Statement) 1954\*

Items	Your farm	Average of 46 farms	15 most profitable farms	15 least profitable farms
<b>RETURNS AND NET INCREASES</b>				
Dairy and dual-purpose cows	<u>6255</u>	\$ 2095	\$ 1739	\$ 1348
Other dairy & dual-purpose cattle	<u>1958</u>	816	977	626
Beef breeding herd	<u>      </u>	180	111	390
Feeder cattle	<u>      </u>	1110	2156	850
Hogs	<u>4874</u>	3126	4100	2592
Sheep-farm flock	<u>      </u>	111	228	- 8
Capons	<u>      </u>	59	177	-
Chickens	<u>262</u>	756	902	674
All productive livestock	<u>13949</u>	8253	10690	6472
Value of feed fed to livestock	<u>6372</u>	5664	6990	4936
Return over feed from livestock	<u>7577</u>	2589	3700	1536
Crops, seed, and feed	<u>5455</u>	6360	9271	4381
Income from labor off the farm	<u>40</u>	218	223	218
Agricultural conservation payments	<u>29</u>	94	117	113
Miscellaneous	<u>      </u>	110	180	72
(1) Total returns & net increases	<u>13101</u>	9371	13491	6320
<b>EXPENSES AND NET DECREASES</b>				
Horses	<u>82</u>	\$ 1	\$ -	\$ 10
Truck	<u>      </u>	234	324	233
Auto (farm share)	<u>316</u>	384	405	369
Tractor	<u>377</u>	796	899	746
Elec. & gas engine exp. (f. share)	<u>179</u>	148	162	127
Hired power	<u>343</u>	178	187	161
Total power	<u>1302</u>	1741	1977	1646
Crop and general machinery	<u>641</u>	862	1110	680
Livestock equipment	<u>263</u>	183	239	149
Buildings, fencing, and tiling	<u>243</u>	592	720	524
Misc. productive livestock exp.	<u>372</u>	219	239	206
Labor	<u>1391</u>	990	1363	742
Real estate taxes	<u>297</u>	396	504	332
Personal property tax	<u>124</u>	106	128	90
Insurance	<u>152</u>	98	109	87
General farm	<u>103</u>	84	103	65
Interest on farm capital	<u>1440</u>	1972	2599	1644
(2) Total expenses & net decreases	<u>6933</u>	7243	9091	6165
(3) Operator's earnings (1)-(2)	<u>6168</u>	2128	4400	1555

\* 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 4.

# 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 expenses 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 4 amounts to 2.3 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 4. Family Living from the Farm, 1954

Items	Your farm	Average 40* farms	Your farm	Average 40* farms
Adult equiv. - family	<u>2.4</u>	3.2		
- others	<u>.7</u>	.3		
Whole milk	<u>1388</u>	857 qts.	<u>83</u>	\$ 67
Skim milk	<u>      </u>	86 qts.	<u>      </u>	2
Cream	<u>      </u>	68 pts.	<u>      </u>	14
Beef	<u>1200</u>	504 lbs.	<u>300</u>	96
Hogs	<u>920</u>	363 lbs.	<u>171</u>	72
Lamb and mutton	<u>      </u>	-	<u>      </u>	-
Poultry	<u>283</u>	67 lbs.	<u>48</u>	17
Eggs	<u>415</u>	111 doz.	<u>129</u>	35
Potatoes	<u>10</u>	2 bu.	<u>10</u>	2
Vegetables & fruit	<u>      </u>		<u>90</u>	20
Farm fuel	<u>      </u>		<u>      </u>	10
Total			<u>831</u>	335

\* 40 farmers reported complete records on family living from the farm.

## HOUSEHOLD AND PERSONAL EXPENSES AND RECEIPTS

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 5. These farmers spent an average of \$188 per month for family living in addition to the food, fuel and housing furnished by the farm.

Table 5. Household and Personal Expenses for  
Those Farms Which Kept Complete Accounts of These Expenses, 1954

Items	Your farm	Average of 20 farms	6 most profitable farms	6 least profitable farms
Number of persons - family	<u>3</u>	4.3	3.7	4.8
Number of adult equiv. - family	<u>2.4</u>	3.0	2.8	3.2
other*	<u>.7</u>	.3	.4	.3
Food and meals bought	<u>501</u>	\$ 683	\$ 706	\$ 695
Operating and supplies	<u>275</u>	205	278	122
Furnishings and equipment	<u>23</u>	169	250	173
Clothing and clothing materials	<u>200</u>	281	317	261
Personal care, personal spending	<u>62</u>	90	55	95
Education, recreation and development	<u>63</u>	152	351	31
Gifts and special events	<u>67</u>	112	185	71
Medical care and health insurance	<u>466</u>	258	258	363
Church, welfare	<u>162</u>	110	75	77
Personal share of auto expense	<u>50</u>	89	103	70
Operator's share of upkeep on dwelling		36	106	7
Household share of electric expense	<u>45</u>	69	75	66
Total cash living expense		2254	2759	2031
H.H. & pers. share of new auto	<u>317</u>	83	-	164
New dwelling		82	270	-
Taxes and other deductions	<u>451</u>	46	62	39
Life insurance	<u>2445</u>	168	210	57
Other savings and investments		296	58	8
Total household and personal cash expense	<u>5129</u>	2929	3359	2299
Total family living from the farm	<u>831</u>	\$ 312	\$ 278	\$ 324
Total cash expenses and perquisites	<u>5960</u>	3241	3637	2623
Receipts:				
Return to capital and family labor	<u>7730</u>	\$2769	\$5034	\$1017
Miscellaneous income	<u></u>	264	209	243
Income from investments	<u></u>	182	267	92

\* 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 for owners, part owners and renters is presented in Table 6. 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 6. Net Worth Statement for Those Farmers Who Kept a Complete Record of All Assets and Liabilities, 1954 (Operator's Share)

Items	Your farm		12 owners	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Total acres in farm	160		265	
Owned	160		265	
Rented			-	
Total farm capital	29270	29929	\$39470	\$39970
Stocks and bonds	8250	8250	453	481
Life insurance	875	2800	441	363
Accounts receivable			19	14
Outside real estate			41	-
Other outside investments	564	564	260	283
Total outside investments	9689	11614	1214	1141
Dwelling	2600	2400	3285	3144
Cash on hand and in bank	1000	297	451	337
Other household & personal assets	2024	2538	2090	2068
Total cash, household & personal assets	15313	16449	7040	6690
TOTAL ASSETS	42893	46578	46510	46660
Federal Land Bank Mortgage			2795	2752
Other mortgage on land operated			6000	5541
Mortgages on other real estate			-	208
Production Credit Association			305	-
Crop loans			333	158
Other chattel mortgages			775	1337
Notes payable			1265	483
Accounts payable	500		255	594
TOTAL LIABILITIES	500	-	11728	11073
Farmer's net worth	42493	46578	34782	35587
Gain in net worth		+ 4095		+ 805

Items	8 part owners*		7 renters**	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Total acres in farm	216		246	
Owned	121		-	
Rented	95		246	
Total farm capital	\$24417	\$25877	\$14253	\$14347
Stocks and bonds	478	459	789	1084
Life insurance	1469	1599	298	351
Accounts receivable	87	100	-	11
Other outside investments	112	149	156	498
Total outside investments	2146	2307	1243	1944
Dwelling	3102	3149	-	-
Cash on hand and in bank	1019	262	1538	1702
Other household and personal assets	1644	1632	1833	2237
Total cash, household and pers. assets	7911	7350	4614	5883
TOTAL ASSETS	32328	33227	18867	20230
Federal Land Bank Mortgage	998	966	-	-
Other mortgages on land operated	4908	4641	-	-
Mortgages on other real estate	-	-	-	-
Production Credit Association	-	-	-	-
Crop loans	407	429	136	-
Other chattel mortgages	820	600	1740	2041
Notes payable	2141	2179	1293	1365
Accounts payable	63	441	475	429
TOTAL LIABILITIES	9337	9256	3644	3835
Farmer's net worth	22991	23971	15223	16395
Gain in net worth		+ 980		+ 1172

\* 3 rented for cash and crop share and 5 crop share.

\*\* 1 rented for cash, 4 cash and crop share and 2 crop share.

Table 7. Summary of Farm Earnings by Tenure, 1954 (Operator's Share)

Items	Your farm	12 owners	8 part owners	7 renters
<b>FARM RECEIPTS</b>				
Dairy and dual-purpose cows	<u>1565</u>	\$ 1117	\$ 539	\$ 732
Dairy products	<u>5471</u>	3384	1493	1403
Beef cattle (including feeders)		1562	2338	683
Hogs	<u>5615</u>	2507	3503	3924
Sheep and wool (including feeders)		174	336	24
Poultry (including turkeys)	<u>256</u>	204	144	104
Eggs	<u>451</u>	933	717	1144
Horses		17	-	3
Corn		485	359	480
Small grain		1784	1020	960
Other crops	<u>893</u>	438	372	390
Mach. and equip. sold & gas tax refund	<u>120</u>	151	122	359
Income from work off the farm	<u>200</u>	261	593	398
Miscellaneous	<u>29</u>	205	154	123
(1) Total farm sales	<u>14600</u>	13222	11690	10727
(2) Increase in farm capital	<u>285</u>	500	1460	94
(3) Family living from the farm	<u>831</u>	229	407	315
(4) Total farm receipts (1)+(2)+(3)	<u>17690</u>	13951	13557	11136
<b>FARM EXPENSES</b>				
Dairy and dual purpose cows bought	<u>60</u>	\$ 162	\$ 92	\$ 136
Beef cattle bought (incl. feeders)		534	1288	163
Hogs bought	<u>113</u>	114	171	364
Sheep bought (including feeders)		-	373	1
Horses bought		16	-	-
Poultry bought (including turkeys)	<u>52</u>	142	107	185
Miscellaneous livestock expenses	<u>372</u>	236	228	259
Feed bought	<u>2091</u>	1356	2009	1631
Fertilizers bought	<u>384</u>	261	197	240
Other crop expense	<u>183</u>	362	334	255
Custom work hired	<u>548</u>	310	486	560
Gas, oil & grease bought (farm share)	<u>467</u>	795	667	708
Rep. of mech. power (farm share)	<u>126</u>	298	243	301
Repair & upkeep of real estate	<u>287</u>	203	83	143
Rep. & upkeep of crop & gen. mach.	<u>270</u>	299	209	204
Rep. & upkeep of livestock equip.	<u>98</u>	111	70	97
Wages of hired labor	<u>797</u>	754	387	374
Electricity expense (farm share)	<u>177</u>	154	126	118
Real estate & pers. prop. tax	<u>486</u>	536	251	94
Cash rent		-	328	356
General farm expense	<u>255</u>	244	149	119
Interest paid	<u>2</u>	299	318	140
(5) Total cash operating expense	<u>6713</u>	7186	8116	6448
(6) Capital purchases-mech. pow.(f.share)	<u>1267</u>	928	327	580
(7) Capital purchases-crop & gen. mach.	<u>1492</u>	848	752	1010
(8) Capital purchases-livestock equip.	<u>34</u>	133	149	171
(9) Capital purchases-bldg. & fencing	<u>166</u>	818	328	25
(10) Total farm purchases (5) to (9)	<u>4672</u>	9913	9672	8234
(11) Decrease in farm capital		-	-	-
(12) Interest on farm capital	<u>1470</u>	1687	939	575
(13) Unpaid family labor	<u>125</u>	255	285	112
(14) Board furnished hired labor	<u>287</u>	74	62	112
(15) Total farm expenses (10) to (14)	<u>11525</u>	11929	10958	9033
(16) Labor earnings (4) - (15)	<u>6165</u>	2022	2599	2103
(17) Return to capital & family labor	<u>7780</u>	3964	3823	2790
(16)+(12)+(13)				

## RETURNS TO CAPITAL AND FAMILY LABOR

The return to capital and family labor represents the amount available to the operator for living expenses, payment on indebtedness, and savings. The landlord's expenses and receipts are not included.

The average return to capital and family labor for 12 owners, 8 part owners, and 7 renters is shown in Table 7. The statement includes only the operator's share of the earnings of the partnership. The earnings as shown in Table 7 are on an actual basis as compared to the full-owner basis in Tables 2 and 3.

## RANGE IN EARNINGS

Every study of farm earnings shows a wide variation in earnings among farmers in a given year (figure 1). The average operator's earnings of those farmers ranking in the upper 33 per cent of the range according to earnings was \$4400 and of those in the lower 33 per cent was \$155. This is a range of \$4245 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

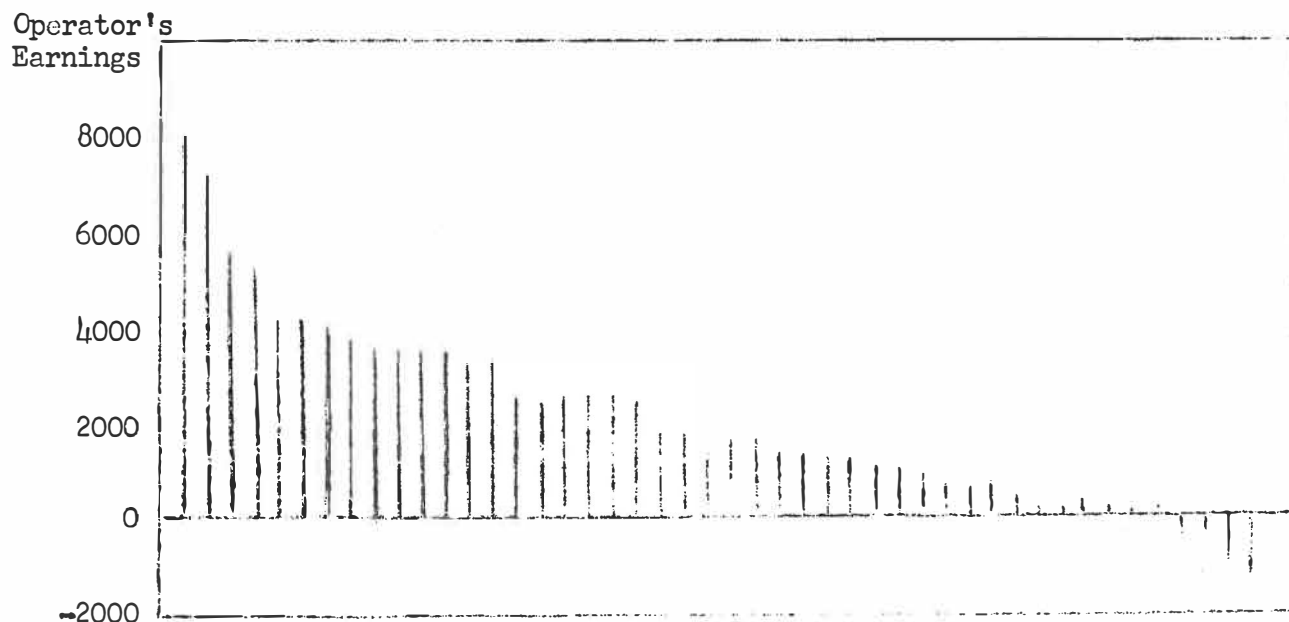


Fig 1. Range in operator's earnings.  
Each line represents the earning of one farmer.

- 1/ See Pond, G. A. "Why Farm Earnings Vary". Minn. Agri. Expt. Sta. Bul. 386, June, 1945  
Nodland, T. R. and Pond, G. A. "Some Factors Affecting the Earnings of Farmers in Southwestern Minnesota". Univ. of Minn., Dept. of Ag. Econ., Report No. 219, November, 1954.

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 8.

Table 8. Number of Work Units for Each Class of Livestock and Each Acre of Crop

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

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



Table 9. Measures of Farm Organization and Management Efficiency, 1954

Measures used in chart on page 13	Your farm	Average of 46 farms	15 most profitable farms	15 least profitable farms
Operator's earnings	<u>\$6163</u>	\$2128	\$4400	\$ 155
(1) Crop yields*	<u>126</u>	100	100	98
(2) Per cent tillable land in high ret. crops**	<u>65.3</u>	47.5	50	47
(3) Ret. for \$100 feed to prod. livestock***	<u>151</u>	100	110	97
(4) Prod. livestock units per 100 acres****	<u>31.1</u>	19.7	17.0	21.7
(5) Size of business - work units	<u>377</u>	359	413	306
(6) Work units per worker	<u>209</u>	239	229	235
(7) Pow., mach., equip., & bldg. exp. per work unit	<u>\$ 8.09</u>	\$ 9.69	\$10.19	\$ 9.91
Items related to some of the above measures:				
(3) Index of return for \$100 feed from:				
Dairy cattle (see pages 18 & 19)	<u>151</u>	100	97	94
Beef cattle-breeding herd (see p. 20)	<u>      </u>	100	-	-
Beef cattle-feeders (see page 20)	<u>      </u>	100	111	80
Hogs (see page 17)	<u>146</u>	100	117	89
Sheep - farm flock (see page 21)	<u>      </u>	100	-	-
Capons	<u>      </u>	100	-	-
Chickens (see page 22)	<u>180</u>	100	106	98
(4) Number of animal units	<u>46.4</u>	43.6	54.0	39.2
(5) Work units on crops	<u>63</u>	116	159	92
Work units on productive livestock	<u>294</u>	223	237	192
Other work units	<u>20</u>	20	17	22
(6) Number of family workers	<u>1.1</u>	1.2	1.3	1.1
Number of hired workers	<u>.7</u>	.3	.5	.2
Total number of workers	<u>1.8</u>	1.5	1.8	1.3
(7) Power expense per work unit	<u>3.45</u>	5.09	5.17	5.40
Crop machinery expense per work unit	<u>1.70</u>	2.41	2.69	2.25
Livestock equip. expense per work unit	<u>.70</u>	.49	.55	.48
Blgs. & fencing exp. per work unit	<u>0.24</u>	1.70	1.78	1.78

\* 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 per cent 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 were 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 46 farms included in this summary are located between the dotted lines across the center of this page.

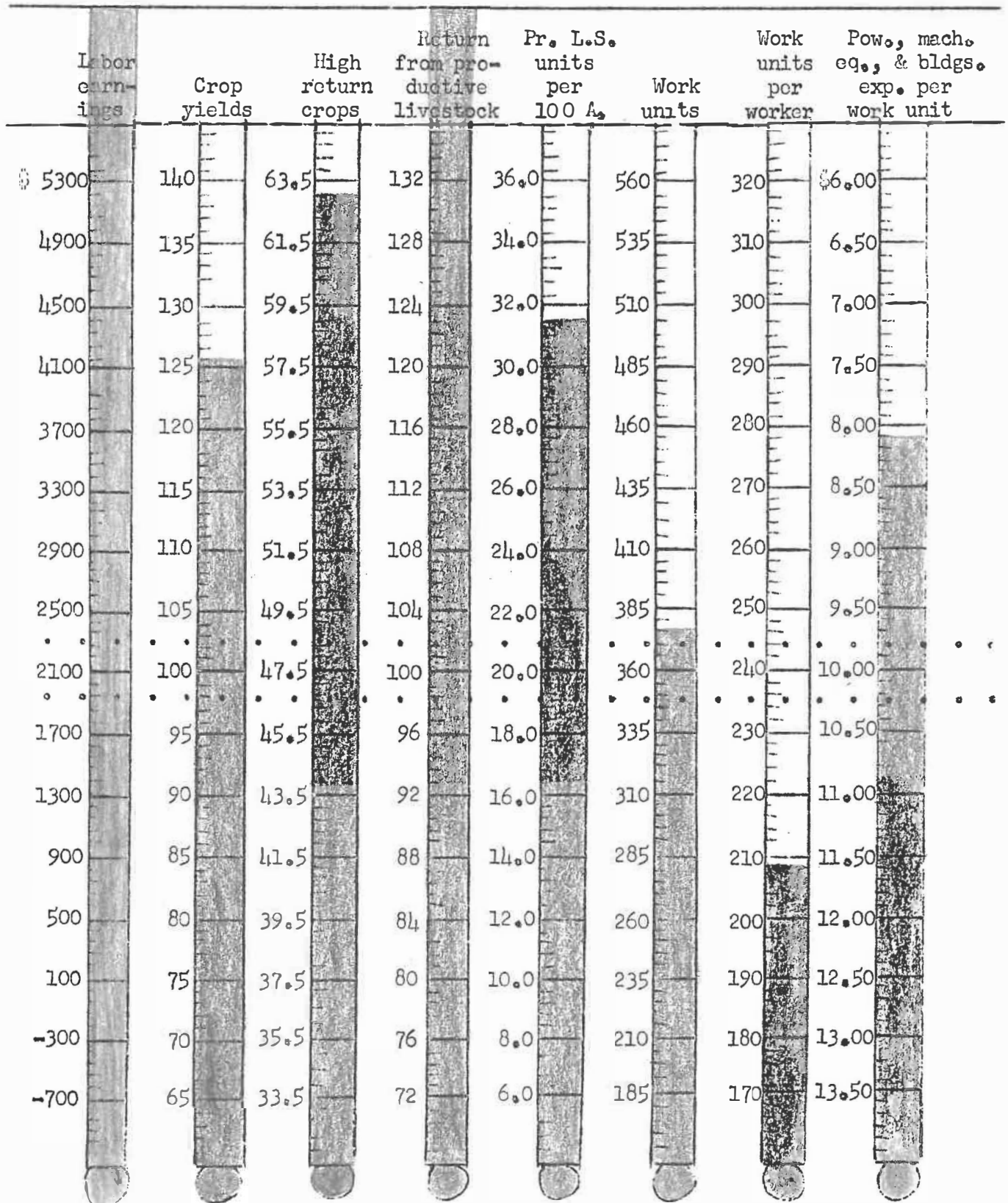


Table 10. Distribution of Acres in Farm, 1954

	Crop ratings*	Your farm	Average of 46 farms
Flax	B	—	25.1
Barley	C	—	20.4
Wheat	C	—	4.1
Oats & oat mixtures	D	30	40.9
Rye, millet	D	—	1.2
Total small grain and peas		30	91.7
Seed corn, potatoes, truck crops	A	—	.4
Corn grain	A	40	47.6
Soybeans for grain	B	—	11.9
Corn or sorghum silage	B	—	8.0
Total cultivated crops		40	67.9
Alfalfa hay	B	50	30.7
Other legumes & mixtures	C	—	2.5
Legumes for seed	D	—	.7
Timothy & brome hay & seed	D	—	.9
Total tillable land in hay		50	34.8
Alfalfa pasture	A	30	6.4
Other legumes & mixtures	C	—	3.0
Sudan and/or rape	C	—	.1
Other tillable pasture	D	—	1.5
Total tillable land in pasture		—	11.0
Tillable land not cropped	D	—	5.3
Total tillable land		150	210.7
Wild hay		—	4.9
Non-tillable pasture		—	25.6
Timber (not pastured)		—	7.6
Roads and waste		4	17.2
Farmstead		6	8.5
Total acres in farm		160	274.5
Per cent land tillable		94	76.7
Per cent tillable land in high return crops		63.3	47.6

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

Table 11. Crop Yields Per Acre, 1954

Crop	Your farm	Average of farms growing each crop
Flax, bu.	_____	9.6
Barley, bu.	_____	29.5
Wheat, bu.	_____	17.6
Oats, bu.	_____	34.1
Corn grain, bu.	_____	47.0
Soybeans, bu.	_____	19.8
Corn silage, tons	_____	8.2
Alfalfa hay, tons	_____	2.4
Other legumes & mixtures, tons	_____	1.6
Legumes for seed, lbs.	_____	70.0
Timothy or brome hay, tons	_____	1.4
Wild hay, tons	_____	1.3

#### 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. The crop acres per farm ranged from 58.5 to 499 with an average of 199 (Table 12). The expenses are high on the farms with a small acreage. In some cases, low expenses for labor might be offset by high power and equipment costs. The farmer is interested in operating at the lowest cost for power, machinery and labor combined.

Table 12. Power and Machinery Expenses Per Crop Acre, 1954

Items	Your farm	Average of 46 farms	15 most profitable farms	15 least profitable farms
Crop acres per farm	150	199	278	158
Tractor and horse exp. per crop acre	2.69	\$4.46	\$3.44	\$4.99
Crop & gen. mach. exp. per crop acre	9.28	4.56	3.97	4.62

#### AMOUNT OF LIVESTOCK

A large proportion of the farmers maintained some dairy cattle and hogs (Table 13). Seventy-six per cent of the farmers kept poultry.

Table 13. Amount of Livestock, 1954

	Your farm	Average of 46 farms	15 most profitable farms	15 least profitable farms
Number of milk cows	18.9	10.9	9.1	8.9
Number of other dairy cattle	20.2	12.2	10.2	11.7
Number of beef cattle (incl. feeders)	_____	10.7	17.9	11.5
Number of sheep*	_____	9.4	18.3	2.7
Number of hens	97	191	222	175
Litters of pigs raised	15	9	11.2	9
Pounds of hogs produced	345.35	16255	22822	14162

\* Two lambs under six months of age considered as one head.

# TOTAL FEED COSTS AND RETURNS FROM YOUR LIVESTOCK ENTERPRISES

The total "return over feed costs" for each class of livestock is shown in Table 14. 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 pounds". 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 page 5. The value of milk consumed by calves is included in the total returns from dairy or dual purpose cows and in the total feed cost for other dairy or other dual purpose cattle. The value of milk consumed by calves is not included in either the total returns or the feed cost of "all dairy" or "all dual purpose" cattle. 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 14. Total Feed Costs and Returns From Your Livestock Enterprises, 1954

	Dairy or dual purpose cattle			Beef breeding herd
	Cows	Other	All	
Total returns	6254	1958	8093	
Total feed cost	2420	1487	3805	
Total return over feed	3834	471	4088	
	Feeder cattle	Hogs	Farm flock of sheep	Chickens
Total returns		4874		862
Total feed cost		2179		493
Total return over feed		2695		369

Feed is the largest single item of cost for all classes of livestock. However, the proportion of the total cost represented by feed varies considerably between classes of livestock. Feed makes up approximately 45 per cent of the total costs of maintaining dairy cattle and poultry, 50 per cent in the case of a farm flock of 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 100 pounds of hogs produced varied from \$9.50 for those farmers ranking in the upper one-third in feeding efficiency to a return of \$2.62 for those in the lowest one-third. Some of the important factors that affected return over feed were:

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

Table 15. Feed Costs and Returns from Hogs, 1954

Items	Your farm	Average of 39 farms	12 farms highest in returns above feed	12 farms lowest in returns above feed
Feed per cwt. hogs produced, lbs.:				
Corn	<u>214</u>	343	260	428
Small grain	<u>61</u>	122	75	148
Commercial feeds	<u>45</u>	46	38	42
Total concentrates	<u>320</u>	511	373	618
Skim milk and buttermilk		110	51	188
Feed cost per cwt. hogs produced:				
Concentrates	<u>\$ 8.56</u>	\$12.90	\$ 9.98	\$16.06
Skim milk and buttermilk		.54	.24	.89
Pasture	<u>.21</u>	.10	.05	.17
TOTAL FEED COSTS	<u>\$8.77</u>	13.54	10.27	17.12
Net increase in val. per cwt. hogs prod.	<u>19.62</u>	\$19.72	\$19.77	\$19.74
RETURNS ABOVE FEED COST PER CWT. HOGS PRODUCED	<u>\$10.85</u>	\$ 6.18	\$ 9.50	\$ 2.62
RETURNS FOR \$100 OF FEED	<u>\$ 224</u>	\$153	\$196	\$113
Price received per cwt. hogs sold	<u>\$18.31</u>	\$21.44	\$21.66	\$21.23
No. of spring litters raised	<u>9</u>	8.8	10.6	7.7
No. of fall litters raised	<u>4</u>	5.6	6.8	4.8
Total no. of litters raised	<u>13</u>	14.4	17.4	12.5
No. of pigs born per litter	<u>7.8</u>	8.6	9.6	7.7
No. of pigs weaned per litter	<u>7.3</u>	7.0	8.1	6.0
Pounds of hogs produced	<u>54835</u>	19135	27078	14733

#### DAIRY AND DUAL PURPOSE CATTLE

The quantity of feed consumed, value of feeds and returns from dairy cattle are presented in Tables 16, 17, and 18. The statements include one herd which was classified as dual purpose cattle.

The return over feed cost per cow varied from \$-78.21 to \$145.32 among the 39 herds covered by this study. Some of the important factors that affected the return over feed were:

1. Rate of production (pounds butterfat per cow)
2. Price received for butterfat
3. Feeding efficiency
4. Quality of ration
5. Economy of ration (Feed cost per pound butterfat)

Table 16. Factors of Cost and Returns from Dairy Cows, 1954

Items	Your farm	Average of 37 farms	12 farms highest in butterfat per cow	12 farms lowest in butterfat per cow
Pounds of butterfat per cow	<u>568</u>	256	306	196
Price rec. per lb. B.F. sold (cents)	<u>31.3</u>	74.0	76.7	70.2
Feeds per cow, lbs:				
Corn	<u>1837</u>	933	1184	567
Small grain	<u>650</u>	707	915	535
Commercial feeds	<u>346</u>	126	134	11.7
Legume hay	<u>5016</u>	5261	4858	4735
Other hay	<u>      </u>	288	153	454
Fodder and stover	<u>      </u>	12	37	-
Total concentrates	<u>2833</u>	1766	2233	1219
Total dry roughage	<u>3076</u>	5561	5048	5189
Silage	<u>6561</u>	6221	5956	5842
Feed cost per cow:				
Concentrates	<u>69.95</u>	\$46.94	\$64.91	\$29.99
Roughages	<u>51.80</u>	68.12	67.00	65.18
Pasture	<u>6.30</u>	12.55	12.49	12.65
TOTAL FEED COSTS	<u>128.05</u>	127.61	144.40	107.82
Value of produce per cow:				
B. F. sales	<u>289.49</u>	\$176.97	\$221.44	\$125.92
Dairy produce used in house	<u>4.41</u>	9.07	10.74	8.46
Milk to livestock	<u>5.40</u>	16.08	16.16	12.62
Net increases in value of cows	<u>31.63</u>	-21.34	-13.38	-22.86
TOTAL VALUE PRODUCED	<u>330.93</u>	180.78	234.96	124.14
RETURNS ABOVE FEED COST PER COW	<u>202.88</u>	53.17	90.56	16.32
RETURNS FOR \$100 OF FEED	<u>258</u>	\$144	\$168	\$120
Feed cost per lb. B.F. (cents)	<u>34.8</u>	49.8	47.1	55.0
Number of cows*	<u>18.9</u>	13.3	12.5	12.3

\* 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 17. Feed costs and Returns from Other Dairy and Dual Purpose Cattle, 1954

Items	Your farm	Average of 37 farms	12 farms highest in butterfat per cow	12 farms lowest in butterfat per cow
Feeds per head, lbs.:				
Concentrates	<u>1227</u>	534	738	350
Hay and fodder	<u>1783</u>	2488	1858	2815
Silage	<u>4059</u>	2057	2142	2060
Skim milk		602	719	549
Whole milk	<u>180</u>	116	136	43
Feed cost per head:				
Concentrates	<u>\$35.54</u>	\$11.65	\$15.18	\$ 8.76
Roughages	<u>31.24</u>	25.94	22.62	28.04
Milk	<u>5.05</u>	7.14	8.13	3.81
Pasture	<u>1.78</u>	5.00	5.44	5.03
TOTAL FEED COSTS PER HEAD	<u>93.61</u>	49.73	51.37	45.64
Net inc. in value of other cattle	<u>96.95</u>	61.78	63.72	56.88
RETURNS ABOVE FEED COST PER HEAD	<u>23.34</u>	12.05	12.35	11.24
RETURNS FOR \$100 OF FEED	<u>\$132</u>	\$120	\$117	\$127
Number of head of other cattle	<u>20.2</u>	15.5	14.2	15.7

Table 18. Feed Costs and Returns from All Dairy and Dual Purpose Cattle, 1954

Items	Your farm	Average of 37 farms	12 farms highest in butterfat per cow	12 farms lowest in butterfat per cow
Feeds per animal unit, lbs.:				
Concentrates	<u>2702</u>	1612	2196	987
Hay and fodder	<u>3207</u>	5465	5008	5277
Silage	<u>7123</u>	5499	5654	5036
TOTAL FEED COSTS PER ANIMAL UNIT	<u>\$131.20</u>	\$112.84	\$122.75	\$96.76
Value of produce per animal unit:				
Dairy products	<u>191.54</u>	\$122.70	\$156.07	\$85.96
Net increase in val. of dairy cattle	<u>87.52</u>	33.62	35.24	29.79
TOTAL VALUE PRODUCED	<u>279.06</u>	156.32	191.31	115.75
RETURNS ABOVE FEED PER ANIMAL UNIT	<u>\$147.86</u>	43.48	68.56	18.99
RETURNS PER \$100 OF FEED	<u>\$215</u>	\$141	\$157	\$126
Animal units of cattle	<u>29.0</u>	21.0	19.7	20.1



Table 19. Feed Costs and Returns from Beef Cattle, 1954

Items	Your farm	Average of all farms
Beef breeding herd: No. of farms:		6
Feeds per animal unit, lbs.:		
Concentrates		206
Legume		4811
Other hay		-
Fodder and stover		-
Silage		5559
Feed cost per animal unit:		
Concentrates	\$	4.90
Roughages		57.73
Pasture		10.51
TOTAL FEED COSTS		73.14
Value of produce per animal unit:		
Dairy products	\$	-
Net increase in value of animals		77.12
TOTAL VALUE PRODUCED		77.12
RETURNS ABOVE FEED COST PER ANIMAL UNITS	\$	3.98
RETURNS FOR \$100 OF FEED	\$	\$101
Number of cows and herd bulls		12.3
Number of animal units in the herd		12.0
Lbs. beef produced		6484
Feeding Cattle: No. of farms		15
Feeds per cwt. beef produced, lbs.:		
Corn		509
Small grain		48
Commercial feeds		39
Legume hay		223
Other hay		77
Total concentrates		596
Total hay and fodder		300
Silage		510
Feed cost per cwt. beef produced:		
Concentrates	\$	14.07
Roughages		3.92
Pasture		1.00
TOTAL FEED COSTS		18.99
Net increase in value of feeders		27.90
RETURNS ABOVE FEED COST PER CWT. BEEF PROD.		8.91
RETURNS FOR \$100 OF FEED	\$	\$156
Price paid per cwt. beef bot	\$	\$16.63
Price recd. for feeder cattle sold		19.62
Number of animal units		18.3
Pounds of beef produced		11759

Table 20. Feed Costs and Returns from a Farm Flock of Sheep, 1954

Items	Your farm	Average of 5 farms
Feeds per head,* lbs.		
Concentrates	_____	103
Legume hay	_____	477
Other hay	_____	32
Silage	_____	93
Feed cost per head:		
Concentrates	\$ _____	\$2.38
Roughages	_____	4.47
Pasture	_____	2.01
TOTAL FEED COSTS	\$ _____	8.86
Value of produce per head:		
Wool	\$ _____	\$ 3.47
Net increase in value of sheep	_____	8.09
TOTAL VALUE PRODUCED	\$ _____	11.56
RETURNS ABOVE FEED COST PER HEAD	\$ _____	\$2.70
RETURNS FOR \$100 OF FEED	\$ _____	138
Price per cwt. of lambs sold	\$ _____	18.99
Price per lb. wool sold (cts.)	_____	46.3
Pounds of wool per sheep sheared	_____	9.6
Number of ewes kept for lambing	_____	50
Per cent lamb crop**	_____	97
Per cent death loss**	_____	9.2
Pounds of sheep produced	_____	3892
No. of head of sheep*	_____	78.2

\* Two lambs under six months of age considered as one head.

\*\* Lambs which die during month of birth are not included.

# CHICKENS

Nineteen out of the 32 farmers raising chickens failed to receive a return large enough to cover the cost of feed. The average return over feed from the 32 flocks included in this report was -26 cents per hen (Table 21).

Some of the important factors that affected the return over feed were:

1. Quantity of feed required per hen
2. Price received per dozen eggs sold
3. Eggs laid per hen
4. Per cent of hens that are pullets
5. Percentage death loss of hens

Table 21. Feed Costs and Returns from Chickens, 1954\*

Items	Your farm	Average of 32 farms	10 farms highest in return above feed	10 farms lowest in return above feed
Feed per hen, lbs.:				
Grain	<u>104</u>	92	75	89
Commercial feeds	<u>54</u>	46	33	56
Total concentrates	<u>158</u>	138	108	145
Skim milk and buttermilk		5	6	8
TOTAL FEED COST PER HEN	<u>\$5.08</u>	\$4.20	\$3.23	\$4.50
Value of produce per hen:				
Eggs sold and used in house	<u>\$5.97</u>	\$4.26	\$4.26	\$3.78
Net increase in value of chickens	<u>2.91</u>	-.32	-.23	-.57
TOTAL VALUE PRODUCED	<u>\$8.89</u>	3.94	4.03	3.21
RETURNS ABOVE FEED COST PER HEN	<u>\$3.81</u>	-.26	-.80	-\$1.29
RETURNS FOR \$100 OF FEED	<u>\$175</u>	\$97	\$126	\$70
Price rec'd per doz. eggs sold (cts.)	<u>32.1</u>	29.8	29.4	29.3
Eggs laid per hen	<u>225</u>	174	176	156
Ave. no. hens on farm during year	<u>97</u>	267	226	242
Per cent of hens that are pullets	<u>100</u>	85	72	93
Per cent death loss of hens	<u>4</u>	13	11	13
Number of chicks started:				
Pullets		309	224	296
Straight run	<u>300</u>	-	-	-
Cockerels		28	-	-
Lbs. chickens produced	<u>4520</u>	1001	719	822

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