UNIVERSITY OF MINNESOTA
Department of Agriculture
and
UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics
Cooperating

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A Preliminary Report of Data Secured in 1929, 1930, and 1931 on the FARM ACCOUNTING ROUTE in ROCK & NOBLES COUNTIES - MINNESOTA

By

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Mimeographed Report No.54
Division of Agricultural Economics
University Farm
St. Paul, Minnesota
May 1932

INDEX

INTRODUCTION

Method of Study

The Divisions of Agricultural Economics and of Animal Husbandry of the Minnesota Agricultural Experiment Station cooperated with the Bureau of Agricultural Economics of the United States Department of Agriculture in a three-year accounting study of twenty-four farms in Rock and Nobles Counties in Southwestern Minnesota. This study was started March 1, 1929 and was continued through 1931. The farms were selected in cooperation with the county agricultural agents in the respective counties,- Mr. C. G. Gaylord in Rock County and Mr. C. J. Gilbert in Nobles County. Farms on which some type of beef production was a major enterprise were chosen. The farmers cooperating in this work kept complete records of cash receipts and cash expenditures, a daily record of the labor used on each crop and each class of livestock, a record of the farm produce used in the house and other detailed information regarding their business. These records were checked at least twice a month by the route man and supplemented with inventories, livestock feed records, reports of crop yields and practices and other significant facts about the farm operations. The livestock inventories were taken by a committee of three, consisting of Professor Peters, in charge of the Animal Husbandry Division at University Farm, the county agent and the farmer. Professor Peters also assisted in outlining and conducting the study. The data collected were sent to the central office at University Farm, St. Paul, where a detailed set of records for each farm was kept. From these records, the costs presented in this report have been computed. This preliminary report presents the average costs and returns in 1929, 1930, and 1931 for the different classes of livestock kept and the crops grown on these farms, and also a partial analysis of the data secured.

Description of Area

Rock and Nobles Counties are located in the southwestern corner of Minnesota. The soil in Rock County and the western edge of Nobles County is a wind-blown loess. This is one of the most fertile soil types in the state. The balance of Nobles County is covered with a glacial till, the prevailing soil type of the southern and central part of the state. This, too, is a productive type well supplied with lime.

Both counties are level to gently rolling with practically all of the land tillable. There are some sections, especially in southern Nobles County, that need drainage to insure regular cropping. In Rock County, there are limited areas of rock outcrop and also limited areas where the surface soil is shallow and underlain by a gravelly subsoil. These latter soils are inclined to be droughty in a dry season. The annual rainfall averages between 26 and 28 inches and the average growing season is from 130 to 140 days. According to the 1930 census, the average size of farms in Rock County was 220 and in Nobles County 208 acres. Farms between 100 and 174 acres in size are the most common in these counties, with those between 260 and 499 acres the second in number. In 1930 the average value of farm land per acre, including buildings, was $103 in Nobles County and $107 in Rock County. Only eight counties in the state reported a higher value per acre and seven of these are located close to Minneapolis and St. Paul. The average value of all farm land in the state was $69 per acre. According to the 1930 census, 67% of all farm land in Nobles County and 70% of the land in Rock County was operated by tenants. Both cash and share leases are employed. Beef cattle and hogs are the principal classes of livestock raised. Corn, oats, and barley are the principal grain crops. They are raised primarily for feed altho there is a considerable surplus available for sale on many farms. The landlord's share of the crop is usually sold off the farm. Alfalfa and wild hay are the principal roughages grown.

Description of the Farms Studied

The average size of the farms studied in 1931 was 346 acres, in 1929 323, and in 1930, 360 acres. This is approximately 62%, 51% and 68% larger respectively than the average size of the farms in these two counties as reported in the 1930 census.

Corn, oats, barley, flax, alfalfa hay, and wild hay were the principal crops grown on the farms studied. Most of the feed raised on these farms, with the exception of the landlord's share of the crop, was fed on the farm. Only two of the farms studied in 1931 were owned entirely by the operator. Eleven farms were partly owned and partly rented by the operator. Only 34% of the land operated was owned by the operator. Both share and cash rental leases were employed. More facts about the organization of the farms are presented on page 17.

Crop Rotation and Cropping Practices

With the high percentage of tenancy, the two year rotation of corn and small grain has persisted. Either landlords have not seen any benefit to be derived from a rotation which tends to conserve soil fertility, or satisfactory lease arrangements permitting the adoption of a more diversified cropping program have not been worked out. Approximately 45% of the crop acreage on these farms was in corn, 36% in oats and barley, 5% in wild hay, and 6% in flax, a total of 92%. This leaves a possible maximum of 8% in legume crops. The proportion of the acreage in legume crops was actually much less than this. These proportions

agree closely with the figures for all farms in these counties as given in the 1930 census. According to the census, 43% of the crop land in these two counties was in corn, 40% in small grain, and 5% in wild hay.

On all of the farms studied in 1931, cattle, hogs, and chickens were kept and on five, small flocks of sheep also. In 1931 an average of approximately 18,200 pounds of cattle and 34,500 pounds of hogs per farm was produced. Eighteen cows and a flock of 214 chickens were kept. On two of the five farms having sheep, feeder lambs were bought. In 1931, 40% of the cash receipts was from cattle sold, 4% from dairy products, 32% from hogs, 2% from sheep and 4% from poultry, a total of 82% from livestock and livestock products. Fourteen per cent of the receipts was from crops, chiefly corn, oats, and flax. The corresponding percentages in 1930 were, respectively, 40, 5, 30, 3, and 3, a total of 81% from livestock and livestock products; in 1929 the percentages were, respectively, 35, 7, 32, 3, and 4, a total of 81. The receipts from crops were 13% of the total in 1930 and 15% in 1929.

Weather

The weather in 1929 was very favorable to crop production and yields were above average. The 1930 crops were seeded under very favorable conditions but the unusually hot and dry summer that followed resulted in a considerable reduction in yields of harvested crops and a shortage of pasture. Oats and flax escaped with relatively less damage than corn and barley. The drouth was even more pronounced in 1931, and as a result pastures were very poor and crop yields were generally the lowest for ten years. The disadvantage of poor summer pastures in 1930 was partly offset by the unusually good fall pasture and mild open winter which followed. The effect of the weather on crop yields is indicated in Table 1.

Table 1

Crop Yields in Rock and Nobles Counties

	Average	Route Average		
	1922-31*	1929	1930	1931
Corn, bu.	30.3	38.0	31.9	23.8
Oats, bu.	35.8	50.7	53.7	32.1
Barley, bu.	29.8	33.0	29.0	21.9
Flax, bu.	10.6	11.2	13.0	6.0
Wild hay, ton	.9	1.1	1.2	.6
Alfalfa, ton	1.8	2.0	1.6	1.1
Corn silage, ton	6.0	7.3	5.1	6.2
Corn fodder, ton	2.2	3.3	1.9	1.6

*Calculated from reports of the State Department of Agriculture, except in the case of alfalfa, corn silage, and corn fodder, for which the State Department gives no data. Average yields for these crops estimated from their relation to the other crops.

From the standpoint of the livestock enterprises, the hot dry weather in the summers of 1930 and 1931 was very favorable to the control of diseases, especially diseases of swine and poultry. The mild open winter of 1930-31 resulted in a lower feed consumption and a better condition of the livestock. The decreased yields of crops also resulted in a decrease in the amount of livestock fed.

Price Conditions

Generally speaking, price conditions were very favorable for livestock production in 1929, less favorable in 1930 and very unfavorable in 1931. The average price received for livestock and livestock products sold by these farmers is presented in Table 2.

Table 2

Average Price Received for Livestock and Livestock Products
Rock and Nobles Counties

	1929	1930	1931
All cattle, per cwt.	$11.50	$8.70	$5.79
Hogs, per cwt.	9.53	7.81	4.42
Sheep, per cwt.	11.91	7.42	5.30
All chickens, per lb.	.19	.14	.14
Butterfat, per lb.	.43	.35	.25
Eggs, per doz.	.28	.20	.16
Wool, per lb.	.28	.16	.10

The severe decline in prices extending over the three-year period has resulted in decreasing cash incomes from the same physical amount of production.

Prices for the crops commonly grown in these counties became increasingly unfavorable during the three-year period. The December 1 crop prices are presented in Table 3.

Table 3

December 1 Farm Price of Crops - Rock and Nobles Counties

Crop	County Average 1922-31*	Route Farms 1929	1930	1931
Corn, bu.	$.58	$.56	$.48	$.41
Oats, bu.	.32	.36	.24	.22
Barley, bu.	.50	.49	.38	.38
Flax, bu.	2.05	2.83	1.48	1.23

*Compiled from publications of the State Department of Agriculture.

METHODS OF COMPUTING AND PRESENTING DATA

Financial Statement

Most of the farms studied were either partly or entirely rented, with the rental contracts varying from farm to farm. In order to have the data for these farms comparable, all the farms have been adjusted to a straight ownership basis. The inventories include all of the farm property regardless of ownership and the receipts and expenses include the share of the landlord as well as that of the tenant. For purposes of these statements, the 1930 value of the bare land was placed at 86% of its value in 1929 and for 1930 its value was placed at 66% of the 1929 value. The decrease in the value of land is not included in the inventory decrease in the financial statement. The only effect on the earnings as

calculated here is in the decreased interest charge. The value of the house the operator lives in was excluded from the value of the farm buildings and all repairs and expenses on the house were omitted from the farm expenses. These expenses on the house are listed in the household account.

Board for hired labor was charged at $28 per month in 1929, $25 per month in 1930, and $20 in 1931. Unpaid family labor was estimated at 25 cents per hour in 1929, 20 cents in 1930, and 15 cents in 1931. All cash rent and interest actually paid have been omitted and interest at 5% charged on the average total investment.

Livestock

The comparative costs and returns for each of the different classes of livestock produced are presented in this preliminary report. Insofar as possible, local prices were used in determining the costs and returns. Marketable feeds were charged at local prices and non-marketable feeds on a comparative-feeding-value basis. Man labor was figured at 30 cents per hour in 1929 and 1930 and 20 cents in 1931. Horse work was charged to the individual farm at the rate determined for that farm. The shelter charge was based on the annual cost of the buildings housing livestock, prorated on the basis of space occupied. The equipment charge is based on the annual cost of the particular class of equipment used by that class of livestock. Miscellaneous cash costs include veterinary fees, medicine, salt, minerals, etc. The manure credit is based on a value of 75 cents per ton in the barnyard. Only the amount of the manure actually spread on the fields was credited to the livestock.

In studying the tables and in considering the income from livestock, one should keep in mind that these are comparative figures and represent charges which are not all actual cash expenses. All man labor and horse work, interest on the investment, and the use of the buildings and equipment, as well as the feed have been charged to the enterprise. Therefore, a minus return means that the particular class of livestock has failed to pay the prices charged for the different factors. There may be no other more profitable alternative use for the buildings, much of the labor, or for the non-marketable feeds. A return above the price of marketable feeds and cash expenses may justify continued production although these figures fail to show a net return.

All tables have been computed on the basis of one hundred pounds gain in weight, or of one animal, or on some similar basis. All corn has been reduced to a shelled corn basis. The returns have been expressed in several ways. The gain or return over all costs is the amount left after deducting all the charges listed in the table. The return over feed cost is what is left after deducting feed from the total income; or in other words, it is what is left to pay for the labor, shelter, equipment, interest, and miscellaneous cash costs. The return per hour represents what the enterprise returned for each hour of man labor used in it, after allowance had been made for all charges except labor. The return per 56 pounds of grain represents what was left to pay for each 56 pounds of farm grain fed after making allowance for all other feed and all of the other charges. The unit of 56 pounds of grain was used because that corresponds to the weight of one bushel of corn.

Feeder Cattle. This class of cattle includes all cattle being fattened for market and covers only the feeding period. The return per 56 pounds of farm grain is obtained by deducting from the selling price all charges except that for farm grains fed. The result is then divided by the number of pounds of farm grains fed and multiplied by 56. Due to the impossibility of determining the pork credit for the feed picked up behind cattle, this item was omitted

from all calculations. This fact should be kept in mind when studying the statements both for cattle and for hogs.

Breeding Herd. The breeding herd includes the bull as well as all of the cows. Insofar as was possible, decreases in inventory values due to changes in the price level have been eliminated for the cows which were listed on both the opening and closing inventory. The cost per calf was obtained by dividing the total cost of the herd by the number of calves raised. The calves raised per cow was obtained by dividing the number of calves raised by the average number of cows in the herd for the year. An average of more than one calf per cow may be obtained either by raising twin calves or by raising calves from cows which remain in the herd less than a full year.

As presented in this statement, the cost per calf is only the share of the cost of maintaining the breeding herd chargeable to the calf. It does not include any supplementary grain or pasture the calf may have received. On the farms with beef herds, the calves were allowed to run with the cows for six or seven months and they received all the milk the cows gave. On the farms with dual-purpose herds, the calves were weaned from wholemilk within two or three weeks after birth and from skimmilk at from one to two months of age. For this reason, the contribution of the beef cows was larger than that of the dual purpose cows. However, the relative contribution could not be definitely determined because the amount of whole milk the calves received while nursing could not be determined.

Generally speaking, only the cows that were being milked received any grain. As no division was made on the individual farms between the cows being milked and those not being milked, the feeds reported fed to the beef herds includes some grain. The cows in the dual purpose herds quite generally received grain.

All Cattle. Three more or less distinct types of beef production were found on the farms studied and averages are presented for each type. Group A is composed of the farms on which dairy and beef production were combined. Group B is composed of the farms on which more cattle were fattened than were raised in one year. The additional number was obtained either by purchase or by accumulation from past years. Group C is composed of the farms on which breeding herds were maintained for raising calves. They are primarily baby beef producers. The "value of animal product" was obtained by deducting the value of the purchases and opening inventory from the value of the sales, products used in the house, and the closing inventory. The low value of animal product (in some cases a minus) is largely due to the decline in the price of cattle. The average value per hundred pounds of cattle on these farms March 1, 1931 was $7.09 and on March 1, 1932 it was $4.79, a drop of $2.30. In 1931, the average inventory weight was approximately twice the weight produced which means that each 100 pounds of cattle produced was charged with a loss in inventory value of $4.60. The data for the individual farms varied from these averages. No attempt was made to eliminate the decrease in inventory values due to the price decline, as was done with the breeding herd, because of variations in kind and quality of stock on hand at the end of the year as compared with the beginning.

Hogs. It is a common practice on these farms to have hogs following the cattle. However, due to the methods of handling the cattle and the practice of supplementary feeding, it was impracticable to obtain any estimate of the feed salvaged in this way. The amounts and the costs of feed presented are in addition to any salvaged behind cattle. The number of pigs raised per litter was calculated by dividing the number of pigs raised to market weight by the number of farrowings. The return per 56 pounds of grain was calculated in the same manner as for feeder cattle.

Sheep. The value of the product in sheep was calculated in the same manner as for all cattle, namely, by deducting the value of the purchases and beginning inventory from the value of the sheep and lambs sold, butchered, and on the ending inventory. The number of lambs per ewe was obtained by dividing the number of lambs raised by the number of ewes in the flock. The per cent of death loss of lambs is for lambs up to six months of age. After six months of age, they were considered as sheep. The large decline in lamb and wool prices resulted in losses.

Poultry. In the data presented, the number of ducks, geese, and turkeys are reported on a "chicken-equivalent" basis. One duck was considered equal to one hen, one goose equal to two hens, and one turkey equal to three hens. Two birds under six months of age were considered equal to one mature bird.

Work Horses. The farms were divided into two groups for the presentation of work horse costs. One group comprises the farms on which tractors were used for drawbar work and the other group comprises the farms on which tractors were not used for drawbar work.

Tractor. Tractor costs are presented for both two-plow and three-plow tractors. In these statements, gasoline is charged at a price which did not include the three cent state tax, even though some farmers did not claim the tax refund.

Auto. Auto costs are presented for 1930 and 1931. These costs do not include a charge for shelter.

Crops. Comparative costs and returns for the eight principal crops grown on the farms studied are presented in this report. The physical quantities of man labor and horse and tractor work used per acre for each of the crops are also presented. The man labor rate of 30 cents per hour in 1929 and 1930, and of 25 cents in 1931 is based on wages paid to hired men. It includes an allowance for board. Horse work was charged at 12 cents per hour in 1929, 10½ cents in 1930, and 8½ cents in 1931. Two-plow tractors were charged at 75 cents per hour in 1929 and 1930, and 65 cents in 1931; three-plow tractors were charged at $1.00 per hour in 1929 and 1930 and 85 cents in 1931. The seed charge for hay is based on the cost of seeding divided by the expected life of the stand. Manure was charged at 75 cents per ton plus the cost of hauling and spreading. Fifty per cent of this was charged against the crop to which the manure was applied and the balance was prorated to the other crops in the rotation on an acre basis. Machinery was charged at a flat rate which includes an allowance for interest, depreciation, repairs, and other costs. The land charge was based upon the prevailing cash rental rates paid by the cooperators. The local market price on December 1 was used in computing the returns from the various crops. All costs, except those for flax, are figured at the farm. Marketing charges for flax, when it was hauled direct to market at threshing time, have been included. The costs do not include any labor for hauling hay from the stack nor fodder from the shock since hauling practices and size of loads vary so much. The credits include stubble or stalk pasture, and corn picked up behind the binder.

The returns have been computed on the basis of the return per acre and return per hour of man labor used in producing the crop. The net return is the gain or loss left after subtracting from the value of the crop the items of cost that are presented. The return per man hour is the amount left to pay for the labor used after all charges except labor have been met. The returns are not calculated for the hay crops, corn fodder, and silage as these crops are fed on the farm.

As with livestock, the costs presented are relative rather than absolute costs and include other than "out-of-pocket" cash expenses. Uniform cash rental rates are used for each crop, since the varied rental systems on the different farms, including cash rented, share rented and owned land, would tend to obscure these comparisons. Uniform machinery, labor and horse and tractor work rates have also been used. All crops have been credited at uniform prices, except as they vary in quality. Some farmers undoubtedly received different prices and also had labor and machinery costs differing from those used. The reader, in interpreting these figures, must make such adjustments in the returns as are necessary to fit the varying conditions.

FARM EARNINGS

As a result of the drastic decline in the prices of farm products, farm earnings declined rapidly. Cash receipts fell from $9339 in 1929 to $8088 in 1930 and $5328 in 1931, a decrease, respectively, of 13 and 34 per cent. Cash expenses declined from $5134 in 1929 to $4833 in 1930, and $3306 in 1931, a decrease, respectively, of 6 and 31 per cent. Two very definite steps were taken to adjust the farm business to the low income. The first of these was a reduction in machinery and equipment expense of over 70 per cent, effected largely through the elimination of purchases of new implements. The second was a reduction in buildings and fence expense of over 60 per cent, also effected largely through the postponement of the erection of new buildings or fences and other than the absolutely necessary repairs. Other expenses, except taxes, were also reduced, but to a lesser degree. The amount of taxes paid increased. Altho expenses were reduced, they were not reduced in proportion to the reduction in receipts.

The severe decline in prices also reduced the earnings on these farms through the reduction in inventory values. This reduction amounted to an average of $1844 in 1930 and $2810 in 1931. Part of this was due to a smaller amount of feeds and livestock on hand but the major portion was due to the decline in prices.

SECURING MAXIMUM RETURNS

Two things are necessary in order to secure maximum returns from a farm. These are (1) the selection of the most profitable enterprises, and (2) the adoption of profitable practices in the handling of the enterprises chosen.

Selection of Profitable Enterprises

No two farms or farmers are exactly alike. Farms vary in soil type, fertility, and drainage, in the amount of pasture available, in the amount and kind of crops grown, in the amount of shelter available for livestock, in the water supply, and in the adequacy of the fencing. Further, farmers vary in their likes and dislikes and in their ability to handle the different kinds of livestock and crops. For these reasons, the best selection of the particular kinds and combinations of kinds of crop and livestock enterprises will vary with the individual farm and farm operator. However, the results of this three-year study will give information useful in the organizing and operating of any individual farm.

Selection of Livestock. In general, these records indicate that the hog enterprise was consistently the most profitable major livestock enterprise; that the baby-beef type of production was the most profitable type of beef production; that the combination of milk and beef production found on these farms was consistently the least profitable type of beef production; and that poultry properly handled are a profitable part of the farm business. Altho the fatten-

ing of purchased cattle was the most profitable type of beef production in 1931 and the second in profitableness in 1929 and 1930, the skill in buying and selling which it requires and its highly speculative nature are such as not to recommend this type of beef production for general adoption on any very large scale. However, farmers who are particularly capable in buying and selling and who are good feeders may find the feeding of purchased cattle very profitable.

Selection of Crops. In selecting the crops and in planning the cropping program, it is well to consider whether the crops are to be for feed or for sale, or for both. If the crops are to be fed, the selection should be based on the amount and quality of digestible nutrients produced per acre. The records secured in this study furnish the basis for such a selection. The production per acre and the relative cost per hundred pounds of digestible nutrients for Rock and Nobles Counties, based on ten year average yields and average route costs are presented in Table 4.

Table 4

Production per Acre and Relative Cost per 100 Pounds of Digestible Nutrients - Rock and Nobles Counties

Crop	Average yield 1922-31 bu.	Total digestible nutrients lbs.	Protein % of total nutrients	Cost per 100 lbs. of total nutrients
Grains				
Corn	30.3	1386	8.7	$1.18
Barley	29.8	1135	11.4	1.19
Oats	35.8	806	13.8	1.73
Roughages	tons			
Alfalfa	1.8	1836	20.8	.78
Corn fodder	2.2*	1924	7.7	.94
Wild hay	.9	868	6.2	.94
Silage	6.0	2021	7.2	1.16

*Nutrients are calculated on the basis of 2.0 tons yield since there is considerable shrink and waste under the usual methods of feeding fodder.

The above data shows that the lowest cost feed grain crop is corn. It produces more nutrients per acre and at a lower cost than either oats or barley. Barley is next to corn in cost but produces less feed per acre. Oats produces decidedly less nutrients per acre than the other two crops and has the further disadvantage of a much higher cost.

Alfalfa, on the basis of the above data, is the cheapest source of roughage. Alfalfa has an additional advantage in that it is high in protein, the element most likely to be lacking in the ration and most expensive to buy. Its cheapness and its high protein content make alfalfa the most desirable roughage. Although corn fodder produces slightly more feed per acre than alfalfa, it has the disadvantage of a higher cost and a decidedly lower protein content. Wild hay has the disadvantages of both a low yield of feed nutrients and a higher unit cost. However, wild hay is usually grown on land not suitable for other crops and hence the cutting of wild hay is a matter of securing some feed from what would otherwise be waste land. Silage has two disadvantages, namely, high cost and low protein content. The fact that silage is used as extensively as it is indicates that feeders have felt that it has a value greater than that indicated by its nutrient content. It offers a method of saving the entire corn crop.

The profitableness of raising cash crops depends to a large extent upon the prices received. At this time it is impossible to predict, with any assurance, what the prices of the crops will be in the future. It is possible, however, to indicate the relative profitableness of these crops in the past years. The comparative returns from the various grain crops computed upon the basis of ten year average Rock and Nobles Counties yields and prices and three year average costs adjusted to the ten year average yields are presented in Table 5.

Table 5

Comparative Returns per Acre of Crops
Rock and Nobles Counties

	Corn	Oats	Barley	Flax
Cost per acre	$16.39	$13.92	$13.46	$16.12
Yield, average 1922-31	30.3	35.8	29.8	10.6
Cost per bushel	$.54	$.39	$.45	$1.52
Dec.1 price, average 1922-31	.58	.32	.50	2.05
Net return per acre	1.18	-2.46*	1.44	5.62

*A minus (-) indicates a loss.

As an average of the past ten years, barley and flax have been the most profitable cash crops, with corn next. Oats was the least profitable. One would expect corn to continue to be one of the high profit crops and oats to be one of the lowest profit crops.

Adopting Good Practices

The second thing necessary for obtaining high returns is the adoption of profitable practices. A study of the records indicate the following results of different practices.

Livestock Practices

Cattle:

1. Breeding stock of good beef conformation and type required no more feed than low grade breeding stock but at sale time the calves from the well bred stock commanded an appreciable premium over the calves from the low grade stock.

2. There was a wide variation between farms in the amount of grain and hay fed to breeding stock. The data would indicate that feed in excess of enough to keep the breeding stock in fair flesh, but not fat, brought little or no return.

3. The farmers who fed oilmeal to fattening cattle secured more economical gains than those not feeding oilmeal. A comparison of the feed expenditures is presented in Table 6.

Table 6

Relation between Amount of Oilmeal Fed and Feed Consumption per 100 Pounds Gain in Weight for Feeder Cattle,* 1930,1931

Amount of oilmeal fed per 100 lbs. gain in weight	No.of farm years	Oil-meal lbs.	Grain lbs.	Dry roughage lbs.	Pasture days
10 lbs. or less	14	3	986	370	10
Over 10 lbs.	13	27	824	266	2

*Only farms producing over 5000 pounds gain in weight included in this comparison.

At 1931 prices, the difference in total feed cost per one hundred pounds gain in weight is $1.34 in favor of those feeding oilmeal.

Hogs: 1. Where complete swine sanitation was properly carried out, unit costs were materially reduced. The data for one farm illustrates what is possible in some cases (Table 7). Sanitation, to be successful, must be carries out completely.

Table 7

Expenditures per 100 Pounds Gain in Weight for Hogs, Farm A

	Man hrs.	Grain lbs.	Skim-milk lbs.	Pas-ture days	Feed cost*	Pigs raised per litter
1929, without sanitation	2½	646	50	-	$6.48	3.8
1930, complete sanitation	1½	485	131	28	5.14	6.7

*At average prices for 1930.

2. Hogs raised under a one-litter a year system used less feed and labor per one hundred pounds gain in weight than hogs raised under a system involving both spring and fall farrowing. (See Table 8.)

Table 8

Feed and Labor Used per 100 Pounds Gain in Weight for Hogs Raised under One-Litter and Two-Litter per Year Systems 1929, 1930, 1931

System	No.of farm years	Total concen-trates lbs.	Skim-milk lbs.	Pasture days	Man hours
One-litter per year	42	457	46	26	2¼
Two-litter per year	23	490	59	25	2

3. When the pigs were pushed along, thereby securing more rapid gains, less feed was used for a hundred pounds gain in weight than where gains were slower (Table 9).

Table 9

Rate of Gain in Weight and Feed and Labor Used per 100 Pounds Gain in Weight for Hogs - 1929, 1930, 1931

Gain in weight per mature* hog day	Farm record years	Average gain lbs.	Total concentrates lbs.	Skim-milk lbs.	Pasture days	Man hours
Less than .9 lb.	23	.84	505	52	34	2½
.9 to 1.20 lbs.	21	1.11	460	55	23	2
1.21 lbs.& over	21	1.32	438	45	20	1¾

*Two pigs under 6 months equal to 1 mature hog.

4. Less feed and labor per pound of gain was used when from 5 to 6.9 pigs were raised per litter than when less than 5 were raised (Table 10).

Table 10

Pigs Raised per Litter and Feed Consumption per 100 Pounds Gain in Weight for Hogs 1929, 1930, 1931

Pigs raised per litter	No.of farm years*	Pigs per litter	Total grain lbs.	Skim-milk lbs.	Pasture days	Man hours
3 to 4.9	23	4.2	492	70	27	2½
5 to 6.9	27	6.0	456	39	27	2

*Farms on which feeder pigs were bought were excluded from this comparison.

Sheep:

1. The largest returns from sheep were received from small flocks which obtained a large part of their feed from the yards, road, and other places where this feed would not have otherwise been utilized.

2. Flocks that were culled regularly and the ewes sold before they became aged gave the greatest returns. High death loss due to old age resulted in large losses on some farms.

Poultry:

1. A high death rate due to disease, largely as a result of lack of sanitation, was an important cause of low returns.

2. The raising of chickens added to the profit from the poultry enterprise. The farmers raising a large number of chickens relative to the number of laying hens had larger net returns from the poultry enterprise than those raising relatively fewer chickens.

3. High egg production per hen was an important cause of high returns from the poultry enterprise. Good breeding, careful culling, and heavy feeding of mash and skimmilk are necessary for high egg production.

Crop Practices

One of the most important factors affecting the returns from any crop is the yield. Costs are also important but do not vary as much as yields and hence have less influence on returns. The relationship between yield and cost and return per acre is indicated by the data for oats presented in Table 11.

Table 11

Relation between Yield and Cost and Return per Acre of Oats, 1931

Yield	No. of farms	Average yield	Total cost	Cost per bu.	Net return
Under 26 bu.	6	21¾	$12.18	$.56	-$7.39
26 and under 36	9	32	11.82	.37	-4.78
36 and under 46	4	38¾	13.12	.34	-4.59
46 and over	3	48¾	13.75	.28	-3.02

As the yield per acre increased, the cost per bushel decreased and the loss per acre decreased. Of course, yield per acre can not be increased indefinitely without eventually involving an expense which is greater than the value of the increase in yield. However, few, if any of the farmsstudied have reached this point.

Practices Influencing Yields. Since yield per acre has such an important bearing on cost and returns, further study was made in order to determine some of the important factors affecting yields. The factors studied are selection of variety of seed, time of seeding, and rate of seeding.

In studying the effect of variety on yield, it was found that Gopher oats outyielded the other varieties by a considerable margin. The lowest yields were secured from common seed of unknown variety. The common seed generally represented oats that had been grown on the farm so long that the variety had been forgotten, or that had been purchased as seed without any knowledge of the variety it represented. Velvet barley gave the highest yields of barley over the three year period. Here again common seed gave lower yields. There were so many varieties of flax and corn grown that it was impossible to get enough fields of any two varieties to make comparisons. There were ten different varieties of corn grown on these farms and almost as many varieties of flax as there were farms growing flax. It would seem plausible that the yields of corn and flax, as well as of oats and barley, could be materially increased by the seeding of the variety best adapted to this area.

The records on these farms demonstrate that one is not always able to judge the relative yielding ability of two varieties merely by their appearance in the field. Just one illustration to emphasize this point. A field of Green Russian oats and a field of Gopher oats were grown side by side on the same farm. The green Russian field had more and much larger shocks and looked as though it would yield much more than the field of Gopher oats. However, when the two fields were threshed, the Gopher oats yielded 13 bushels more to the acre than the Green Russian. The point of this is that in comparing any two varieties of any crop, it is absolutely necessary to measure the area and carefully weigh the yield. The difference in yield between varieties is enough to justify considerable attention to securing good seed on high yielding varieties.

Time of seeding is also important in securing good yields. The records obtained on these farms indicate that the farmers who practiced early seeding were the ones who received the higher yields. Space will not permit the presentation of tables for all crops. It is not possible to set any definite seeding dates because seasons vary from year to year. In any season, generally speaking, the early seeding and high yields have gone together.

The records indicate a wide range in the amount of seed planted per acre. The variations, the average for the three years, and the amount which the records would indicate as desirable are presented in Table 12. If the seed is good clean seed, there is nothing to be gained by planting more than the maximum indicated as desirable.

Table 12.

Amount of Seed Planted per Acre
Rock and Nobles Counties, 1929-31

	Husked corn, lbs.	Oats bu.	Barley bu.	Flax lbs.
Least seed	4.6	2.1	1.5	21
Most seed	17.4	7.0	4.1	75
Average	8.0	3.7	2.2	41
Desirable	7 - 9	3 - 3.5	2 - 2.2	36 - 44

The records indicate that the farms with the most legumes and livestock are the ones with highest yields. Alfalfa, clover, and sweet clover deserve a larger place in the cropping plan of these farms than they have been occupying.

LABOR AND WORK STANDARDS FOR CROPS

Labor is one of the largest items of cost in raising crops, and hence any saving in labor will be reflected in lower costs. There are two ways of reducing labor costs, namely, by eliminating unnecessary crop operations and by performing the necessary operations more efficiently. The crop operations are fairly well standardized and therefore saving must generally come through increased efficiency in the individual operations.

The range in the hours of man labor and horse and tractor work used per acre for each of the common crop operations, the average for three years, and a standard for each operation are presented in Table 13. The standards represent approximately the accomplishment of the farmers who were 25 per cent above the average in the scale of efficiency as measured by low labor expenditures. They assume average soil, weather conditions, and yields. With higher yields, more time may be required for harvesting and with lower yields, less

time. These standards are suggested as a basis which the individual farmer may use in determining the effectiveness with which he is utilizing his labor and power.

Table 13

Hours of Man Labor and Horse and Tractor Work Used per Acre for Crop Operations Rock and Nobles Counties, 1929-1931

		Range 1929-31		Average		Standard	
		Man	Horse	Man	Horse	Man	Horse
Seedbed preparation:							
Plowing:-	4 horses	1.9 to 4.1	7.5 to 16.4	2.8	11.2	2.1	8.4
	5 horses	1.8 to 3.2	8.8 to 15.7	2.3	11.5	2.0	10.0
	6 horses	1.3 to 5.5	7.9 to 31.6	2.3	13.3	1.7	10.2
	2-plow tractor	1.2 to 2.1	*	1.7	*	1.6	*
	3-plow tractor	.8 to 1.9	*	1.2	*	1.0	*
Disking:	4 horses	.3 to .8	1.2 to 3.3	.5	2.0	.4	1.6
	5 horses	.3 to .6	1.3 to 2.8	.5	2.2	.4	2.0
Harrowing:	4 horses	.1 to .5	.6 to 2.1	.2	1.0	.2	.8
	6 horses	.2 to .3	.8 to 1.6	.2	1.1	.2	1.2
Seeding & harvesting grain:							
	Drilling	.3 to .8	1.2 to 3.0	.5	2.0	.5	2.0
	Broadcasting	.2 to .6	.2 to 1.6	.3	.7	.2	.4
Oats:	Cutting	.5 to 1.2	2.0 to 4.8	.7	2.7	.6	2.4
	Shocking	.4 to 2.2	-	1.1	-	.8	-
	Threshing	1.2 to 5.7	2.5 to 11.3	2.8	5.3	2.5	4.5
Barley:	Cutting	.4 to 1.4	1.6 to 5.2	.8	3.0	.6	2.4
	Shocking	.6 to 2.3	-	1.2	-	.9	-
	Threshing	1.0 to 6.3	1.8 to 11.6	2.9	5.4	2.4	4.7
Flax:	Cutting	.3 to 1.6	1.2 to 6.2	.9	3.6	.7	2.8
	Shocking	.4 to 2.0	-	1.1	-	.8	-
	Threshing	1.3 to 5.0	2.6 to 8.4	3.2	5.6	2.9	4.6
Planting & harvesting corn:							
Planting		.5 to 1.0	.9 to 2.0	.7	1.4	.6	1.2
Cultivating (2-row)		.6 to 1.2	2.4 to 3.9	.8	3.1	.8	3.2
Cutting		.9 to 3.7	2.8 to 11.0	1.8	5.3	1.5	4.5
Shocking		1.2 to 9.4	-	3.5	-	2.5	-
Filling silo		3.9 to 14.9	4.9 to 23.6	8.1	11.9	7.8	12.7
Husking - hand		2.8 to 9.2	5.1 to 17.4	6.1	11.1	4.7	9.4
	machine	2.5 to 7.4	6.0 to 20.8	4.2	12.9	3.7	11.4
Hay harvesting:							
Alfalfa (1st cutting)							
Cutting		.5 to 2.3	1.1 to 4.6	1.2	2.3	1.0	2.0
Raking		.3 to 1.8	.6 to 3.6	.7	1.4	.5	1.0
Hauling to barn		.9 to 8.0	1.2 to 16.2	3.4	5.0	2.3	3.1
Stacking		.5 to 5.4	1.0 to 6.2	2.6	3.1	1.8	2.1
Alfalfa (2nd cutting)							
Cutting		.5 to 2.5	.9 to 5.0	1.1	2.1	.9	1.8
Raking		.1 to 2.9	.2 to 5.5	.7	1.3	.4	.8
Hauling to barn		.3 to 9.3	.3 to 13.7	2.4	3.2	1.4	2.0
Stacking		.4 to 4.4	.5 to 7.5	2.1	2.5	1.5	2.1
Wild hay (1 cutting)							
Cutting		.7 to 2.7	1.4 to 5.4	1.3	2.6	1.0	2.0
Raking		.2 to 1.2	.5 to 2.4	.7	1.3	.9	1.8
Hauling to barn		.8 to 6.7	1.2 to 11.1	3.0	4.4	2.0	2.8
Stacking		1.2 to 5.0	1.8 to 11.8	2.8	4.2	2.3	2.8

*Tractor hours the same as man hours.

A summary of the standard labor and power expenditures by operations for each of the eight common crops is presented in Table 14. The operations are those generally performed and the hours are based on the standards for the size of implements and power units most often used. The expenditures for other combinations of operations and sizes of power units may be computed from the data presented in Table 13.

Table 14

Standards for Field Operations Performed with Horse Power in Rock and Nobles Counties

Corn Crops

Operation	Husked Corn			Fodder Corn			Silage Corn		
	Times over	Hrs. per Acre		Times over	Hrs. per Acre		Times over	Hrs. per Acre	
		Man	Horse		Man	Horse		Man	Horse
Plowing	1	1.7	10.2	1	1.7	10.2	1	1.7	10.2
Disking	1	.4	1.6	1	.4	1.6	1	.4	1.6
Harrowing	1	.2	.8	1	.2	.8	1	.2	.8
Planting	1	.6	1.2	1	.6	1.2	1	.6	1.2
Harrowing	1	.2	.8	1	.2	.8	1	.2	.8
Cultivating	4	3.2	12.8	4	3.2	12.8	4	3.2	12.8
Cutting	-	-	-	1	1.5	4.5	1	1.5	4.5
Shocking	-	-	-	1	2.5	-	-	-	-
Filling silo	-	-	-	-	-	-	1	7.8	12.7
Hand husking	1	4.7	9.4	-	-	-	-	-	-
Total		11.0	36.8		10.3	31.9		15.6	44.6

Small Grains and Flax

Operation	Oats			Barley			Flax		
	Times over	Hrs. per Acre		Times over	Hrs. per Acre		Times over	Hrs. per Acre	
		Man	Horse		Man	Horse		Man	Horse
Disking	2	.8	3.2	2	.8	3.2	2	.8	3.2
Seeding - broadcast	1	.2	.4	1	.2	.4	(1)	(.2)	(.4)
drill	(1)	(.5)	(2.0)	(1)	(.5)	(2.0)	1	.5	2.0
Harrowing	1	.2	.8	1	.2	.8	2	.4	1.6
Cutting	1	.6	2.4	1	.6	2.4	1	.7	2.8
Shocking	1	.8	-	1	1.0	-	1	.8	-
Threshing*	1	2.5	4.5	1	2.4	4.7	1	2.9	4.6
Total		5.1	11.3		5.2	11.5		6.1	14.2
Total**		(5.4)	(13.3)		(5.7)	(13.5)		(5.8)	(12.6)

Hay Crops

Operation	Alfalfa (1st Cutting) Hours per Acre		Alfalfa (2nd Cutting) Hours per Acre		Wild Hay Hours per Acre	
	Man	Horse	Man	Horse	Man	Horse
Mowing	1.0	2.0	.9	1.8	1.0	2.0
Raking	.5	1.0	.4	.8	.9	1.8
Putting in barn	2.3	3.1	1.4	2.0	2.0	2.8
Stacking	1.8	2.1	1.5	2.1	2.3	2.8
Total (barn)	3.8	6.1	2.7	4.6	3.9	6.6
Total (stack)	3.3	5.1	2.8	4.7	4.2	6.6

*Threshing hours for oats and barley include the hours hauling grain to the bin. The threshing hours on flax do not include hours for hauling to the bin or to market because most of the flax was trucked direct from the machine to market.

**Total if alternative method of seeding is used.

FACTS ABOUT THE ORGANIZATION OF THE FARMS

	Per Farm				
	1929	1930	1931		
	Average	Average	Average	High	Low
Acres in corn	105.7	116.3	122.1	195.7	38.5
Acres in oats	56.5	61.3	59.3	120.1	21.5
Acres in barley	20.3	21.9	21.5	89.2	-
Acres in flax	9.5	15.2	18.0	59.4	-
Acres in other grains & grain mixtures	11.3	14.3	4.5	91.8	-
Acres in alfalfa	11.6	12.2	11.7	39.3	-
Acres in tame hay	4.1	7.6	6.9	40.4	-
Acres in wild hay	14.2	14.6	12.8	53.3	-
Acres in miscellaneous hay	6.2	1.0	1.2	10.1	-
Acres in miscellaneous crops	1.8	4.4	2.8	18.7	-
Total crop acres	241.2	268.8	260.8	423.8	95.1
Acres in pasture	63.8	69.7	62.7	161.4	13.1
Acres in farmstead, roads, waste, etc.	17.8	21.5	20.9	66.9	8.3
Total acres per farm	322.8	360.0	344.4	652.0	155.6
Number of cows	19	19	18	36	4
Number of pounds cattle produced	18683	22416	18179	89520	2955
Number of pounds pork produced	28414	31288	36165	86750	9210
Number of sheep	31	24	23	181	-
Number of chickens	255	261	214	419	99
Number of laying hens	132	139	125	276	36
Total hours man labor	8456	7747	7218	12585	4569
Total hours livestock labor	3866	3348	3291	6868	1990
Total hours crop labor	3138	2946	2754	5674	1180
Total hours miscellaneous labor	1452	1463	1173	2359	236
Total hours hired labor	2656	2807	2870	7590	-
Total hours unpaid family labor	1492	2166	1498	4743	180
Total hours proprietor labor	2882	3128	2806	4176	1338
Hours per man per work day	9.8	9.4	8.9	12.1	6.0
Hours per man per Sunday	3.3	3.0	2.9	7.4	1.5
Tractor farms:					
Number of farms using tractors	10	12	11		
Total crop acres	276	287	285	424	180
Number work horses per farm	9.7	10.0	9.6	19.4	5.4
Average hours worked per horse	885	815	753	945	513
Number of crop acres per horse	28.9	28.7	31.2	40.8	21.8
Non-tractor farms:					
Number of farms using horses only	11	11	11		
Total crop acres	222	249	237	376	95
Number of work horses per farm	8.5	8.9	8.5	11.8	4.0
Average hours worked per horse	945	917	825	1102	538
Number of crop acres worked per horse	28.2	28.2	28.0	41.2	15.8

FINANCIAL STATEMENT

	1929	1930	1931		
	All farms	All farms	All farms	Five highest	Five lowest
RECEIPTS					
Cattle	$3278	$3250	$2127	$164	$2302
Hogs	3017	2444	1714	933	3261
Sheep and wool	252	243	101	220	-
Poultry and eggs	350	239	195	165	268
Dairy products	623	377	229	186	356
Horses	46	47	36	-	127
Corn	492	409	215	298	177
Oats	335	230	94	33	193
Barley	199	72	113	132	20
Flax	375	287	258	424	139
Hay	27	16	14	15	1
Other crops	31	185	29	25	74
Outside	92	132	130	166	153
Miscellaneous	222	157	73	41	53
(1) Total Cash Farm Receipts	9339	8088	5328	2802	7124
(2) Farm Produce Used in House	432	391	295	256	341
(3) Increase in Farm Inventory	132	-	-	-	-
(4) TOTAL RECEIPTS	9903	8479	5623	3058	7465
EXPENSES					
Hired labor	468	567	392	142	673
Cattle bought	1052	959	727	74	1026
Hogs bought	314	266	122	36	211
Sheep bought	350	20	14	39	-
Poultry bought	48	50	22	22	29
Horses bought	73	32	24	36	-
Other livestock expense	121	103	85	47	133
Feed bought	777	1078	821	215	1286
Crop expense (twine, threshing, etc.)	288	327	200	131	248
Real estate	320	227	77	89	93
Machinery	588	494	133	95	172
Auto (farm expense share)	97	62	66	12	71
Gas, kerosene, oil, etc. (farm share)	158	145	123	105	187
Taxes	400	423	427	321	560
Insurance	33	26	35	17	55
Miscellaneous	47	54	38	19	75
(5) Total Cash Farm Expense	5134	4833	3306	1400	4819
(6) Decrease in Farm Inventory	-	1844	2810	1194	4122
(7) Board of Hired Labor	206	210	135	65	157
(8) TOTAL FARM EXPENSES (sum of 5, 6 and 7)	5340	6887	6251	2659	9098
(9) Returns to Capital & Family Labor (4-8)	4563	1592	-628	399	-1633
(10) Interest on Farm Inven. @ 5%	2374	2023	1570	1031	2105
(11) Family Labor Earnings (9-10)	2189	-431	-2198	-632	-3738
(12) Est. Value of Unpaid Family Labor	588	432	226	283	166
(13) OPERATOR'S LABOR EARNINGS (11-12)	1601	-863	-2424	-915	-3904

AVERAGE FARM INVENTORIES

	1929	1930	1931		
	All farms	All farms	All farms	Five highest	Five lowest
Land	$32182.95	$26587.00	$19786.00	$12953.16	$26548.63
Buildings	3620.66	3482.69	3718.42	2745.80	4178.55
Work horses	918.01	853.58	836.64	599.70	1192.00
Other horses	94.77	97.39	94.50	44.50	183.50
Cattle	4177.35	3562.19	2343.58	1168.34	3078.35
Hogs	1503.79	1310.03	814.44	616.34	1519.09
Sheep	277.50	264.13	118.02	213.30	-
Poultry	204.28	175.15	131.14	112.22	205.77
Machinery	1811.21	1943.55	1911.09	1783.57	2570.50
Auto (farm share)	155.82	85.38	72.88	66.17	142.28
Feeds	2543.52	2091.41	1570.74	1175.95	2481.97
Total	47489.86	40452.50	31397.45	21479.05	42100.64

1889

FARM PRODUCE USED IN THE HOUSE

	1929	1930	1931		
	All farms	All farms	All farms	Five highest	Five lowest
Cream	$47.10	$30.78	$26.59	$23.50	$16.54
Farm churned butter	29.57	20.43	20.49	33.10	13.71
Whole milk	34.96	33.07	23.23	24.68	30.33
Skimmilk	.83	.39	.96	.90	.07
Hogs	107.68	73.14	43.48	27.19	46.98
Cattle	21.71	29.88	14.82	9.05	17.50
Sheep	.47	.63	.66	-	-
Poultry	25.75	28.66	24.46	15.68	31.61
Eggs	45.65	36.87	28.97	24.30	33.12
Potatoes	25.20	28.08	16.21	14.07	18.39
Fruits, vegetables	31.23	31.23	12.82	7.20	17.40
Value of fuel saved	61.70*	61.70	78.55	76.60	97.00
Total	431.85	374.86	291.24	256.27	322.65
Size of Family (man equivalent)	4.41	4.80	4.67	4.18	4.33

*Same as for 1930. Not summarized for 1929.

Cost and Return for Feeder Cattle
(Per 100 pounds gain in weight)

	Average			Range for each item - 1931
	2 year	1930	1931	
Number of farms		22	19	
Pounds produced	11890	11608	12172	680 to 80405
Man labor, hours	3½	3¼	3¾	1¼ to 7
Horse work, hours	1½	1½	1¾	0 to 6½
Costs:				
Feed	$10.47	$12.80	$8.14	$4.25 to $10.66
Man labor and horse work	1.00	1.12	.89	.41 to 1.75
Shelter	.41	.25	.57	0 to 3.14
Equipment	.19	.15	.23	0 to 1.77
Interest @ 5%	.82	1.13	.50	.04 to 1.14
Miscellaneous cash	.06	.07	.04	0 to .20
Total cost	12.95	15.52	10.37	6.10 to 16.71
Manure credit	.50	.64	.35	0 to 1.41
Net cost	12.45	14.88	10.02	5.27 to 16.31
Average selling price, per cwt.	7.66	8.82	6.50	4.05 to 8.45
Return per 56 lbs. grain	.24	.32	.16	0 to .37
Feeds:				
Corn, lb.	858	889	828	467 to 1430
Small grain, lb.	159	186	132	0 to 474
Protein feeds, lb.	10	12	9	0 to 43
Hay and fodder, lb.	311	373	249	66 to 541
Silage, lb.	128	91	166	0 to 1324
Pasture, days	6	5	6	0 to 34

Cost per Head for Breeding Herd

	Beef Herds				Beef and Dairy Herds			
	Average			Range for each item - 1931	Average			Range for each item - 1931
	2 year	1930	1931		2 year	1930	1931	
Number of farms		9	9		1	15	14	
Man labor, hours	41	39½	42¾	21 to 60¾	116¼	113	119½	62 to 178½
Horse work, hours	5	4	6	¾ to 9	6½	6¼	7	1½ to 12¼
Costs:								
Feed	$23.88	$22.35	$25.41	$9.96 to $34.70	$33.76	$34.64	$32.89	$16.37 to $50.37
Man labor and horse work	10.66	12.21	9.10	4.40 to 12.74	29.50	34.52	24.48	13.33 to 38.74
Shelter	2.29	1.52	3.06	1.16 to 6.34	5.50	4.64	6.36	1.30 to 12.29
Equipment	.49	.59	.39	.09 to .75	1.28	1.41	1.14	.46 to 2.57
Interest @ 5%	3.75	4.30	3.20	2.48 to 3.86	3.19	3.57	2.81	2.15 to 4.17
Miscellaneous cash	.30	.34	.27	.01 to .84	.75	.79	.72	0 to 3.87
Depreciation	5.75	7.00	4.49	0 to 8.59	7.74	8.89	6.58	0 to 25.97
Total cost	47.12	48.31	45.92	34.63 to 62.67	81.72	88.46	74.98	44.97 to 112.07
Credits:								
Cream sold	5.12	6.79	3.44	0 to 6.89	27.56	32.28	22.85	3.65 to 35.10
Dairy products used	2.62	2.64	2.60	.86 to 4.74	7.41	7.77	7.05	1.20 to 32.53
Skimmilk fed	1.16	1.14	1.19	.05 to 2.59	4.52	5.28	3.76	1.03 to 6.73
Manure	1.81	2.10	1.52	.49 to 2.69	2.92	3.05	2.79	.58 to 10.81
Total credit	10.71	12.67	8.75	4.62 to 14.26	42.41	48.38	36.45	17.46 to 51.83
Net cost	36.41	35.64	37.17	25.21 to 53.78	39.31	40.08	38.53	17.28 to 76.22
Cost per calf	45.80	45.83	45.89	34.66 to 58.46	51.48	59.66	43.29	14.90 to 124.95
Calves raised per cow	.82	.80	.84	.65 to .99	.85	.74	.95	.64 to 1.23
Feeds:								
Corn, lb.	140	118	161	0 to 434	456	442	459	143 to 851
Small grain, lb.	284	268	299	0 to 912	932	964	900	38 to 2481
Hay and fodder, lb.	2078	2017	2138	309 to 3950	2836	2656	3017	805 to 4892
Silage, lb.	2320	1212	3407	0 to 11039	1020	715	1324	0 to 9829
Pasture, days	235	240	230	168 to 248	242	247	237	214 to 269

Cost and Return for All Cattle
(Per 100 pounds gain in weight)

	All Farms				Group A*			
	3 year	1929	1930	1931	3 year	1929	1930	1931
Number of farms		22	24	23		11	9	11
Pounds produced	19759	18683	22416	18179	11438	14359	12803	7152
Man labor, hours	15¼	14½	14	17¼	21¼	19½	18½	26½
Horse work, hours	1¾	1½	1½	2	2	2	1½	2¼
Costs:								
Feed	$10.58	$11.58	$9.67	$10.49	$11.41	$12.28	$10.01	$11.93
Man labor and horse work	4.07	4.67	3.90	3.64	5.78	6.08	5.79	5.46
Shelter	.99	.90	.80	1.27	1.25	.96	1.00	1.80
Equipment	.17	.14	.16	.20	.19	.16	.15	.26
Interest @ 5%	.99	1.20	.93	.85	1.03	1.23	.93	.94
Miscellaneous cash	.16	.12	.15	.20	.16	.12	.10	.25
Total cost	16.96	18.61	15.61	16.65	19.81	20.83	17.98	20.63
Credits:								
Manure	.76	.88	.69	.70	.95	1.12	.85	.89
Dairy products	4.30	5.26	3.87	3.77	7.17	7.94	6.95	6.62
Total credit	5.06	6.14	4.56	4.47	8.12	9.06	7.80	7.51
Net cost	11.90	12.47	11.05	12.18	11.69	11.77	10.18	13.12
Value of animal product**	4.99	11.15	4.37	-.54	3.24	9.11	3.35	-2.73
Return over all costs***	-6.91	-1.32	-6.68	-12.72	-8.45	-2.66	-6.83	-15.85
Average selling price, per cwt.	8.66	11.50	8.70	5.79	7.55	10.95	7.18	4.51
Feeds:								
Corn, lb.	369	332	375	401	334	318	355	329
Small grain, lb.	202	175	206	226	235	200	211	293
Commercial feed, lb.	6	7	6	6	2	2	2	1
Hay and fodder, lb.	519	438	466	652	665	513	587	894
Silage, lb.	262	234	137	414	190	203	141	225
Pasture, days	61	44	64	76	79	52	86	99

*Group A - Farmers combining dairying and beef production.
**Value of animal product is the net value of animals produced after allowing for differences in inventory values.
***A minus (-) indicates a failure to cover the expenses charged.

Costs and Returns for All Cattle (cont.)
(Per 100 pounds gain in weight)

	Group B*				Group C*			
	3 year	1929	1930	1931	3 year	1929	1930	1931
Number of farms		6	8	5		6	5	6
Pounds produced	33048	28045	29262	41838	20047	17423	23437	19282
Man labor, hours	10¾	13½	11	8	9¾	12	7	10¼
Horse work, hours	1¾	1¾	1½	1¾	1¼	1¼	1	1¾
Costs:								
Feed	$10.64	$12.36	$10.50	$9.07	$8.82	$9.52	$8.11	$8.82
Man labor and horse work	3.16	4.28	3.43	1.76	2.50	3.15	2.19	2.18
Shelter	.67	.75	.74	.51	.79	.71	.67	.98
Equipment	.16	.13	.18	.16	.14	.13	.16	.12
Interest @ 5%	.88	1.17	.92	.56	.93	1.04	.89	.86
Miscellaneous cash	.14	.13	.19	.11	.09	.07	.10	.11
Total cost	15.65	18.82	15.96	12.17	13.27	14.62	12.12	13.07
Credits:								
Manure	.68	.89	.62	.52	.62	.78	.55	.54
Dairy products	3.05	4.88	2.89	1.39	1.59	2.47	1.21	1.08
Total credit	3.73	5.77	3.51	1.91	2.21	3.25	1.76	1.62
Net cost	11.92	13.05	12.45	10.26	11.06	11.37	10.36	11.45
Value of animal product**	5.35	12.89	3.84	2.31	6.56	11.76	6.44	1.47
Return over all costs***	-5.57	-.16	-8.61	-7.95	-4.50	.39	-3.92	-9.98
Average selling price, per cwt.	9.00	11.65	9.28	6.08	9.74	11.91	9.86	7.44
Feeds:								
Corn, lb.	456	408	423	537	353	287	344	428
Small grain, lb.	199	174	255	169	158	147	166	160
Commercial feed, lb.	15	14	11	19	6	8	5	5
Hay and fodder, lb.	406	423	388	407	402	379	382	444
Silage, lb.	338	377	173	463	187	0	0	560
Pasture, days	43	32	54	44	82	52	47	57

*Group B - Farmers feeding more cattle than are raised on their farms; Group C - Farmers specializing on baby-beef production.

**Value of animal products is the net value of animals produced after allowing for differences in inventory values.

***A minus (-) indicates a failure to cover the expenses charged.

Cost and Return per 100 Pounds Pork Produced

	Average				Range for each item - 1931		
	3 year	1929	1930	1931			
Number of farms		22	24	23			
Pounds produced	31414	28414	31288	34541	9210	to	86750
Man labor, hours	2 1/4	2 3/4	2	2	3/4	to	3 3/4
Horse work, hours	1/2	1/2	1/2	1/4	0	to	1/2
Costs:							
Feed	$5.20	$7.14	$5.18	$3.27	$1.38	to	$4.42
Man labor and horse work	.62	.84	.62	.40	.19	to	.79
Shelter	.22	.24	.21	.20	.03	to	.62
Equipment	.08	.09	.08	.06	0	to	.20
Interest @ 5%	.21	.32	.20	.11	.04	to	.18
Miscellaneous cash	.21	.27	.20	.15	0	to	.61
Total cost	6.52	8.90	6.49	4.19	1.87	to	5.15
Manure credit	.08	.09	.07	.09	0	to	.62
Net cost	6.44	8.81	6.42	4.10	1.84	to	5.05
Average selling price, per cwt.	7.25	9.53	7.81	4.42	3.48	to	5.49
Return per 56 lbs. farm grain fed	.67	.74	.71	.40	.22	to	.66
Average weight of hogs sold	270	274	275	260	216	to	342
Pigs raised per litter	5.4	4.9	5.5	5.7	3.4	to	7.5
Feeds:							
Corn, lb.	374	445	339	339	99	to	522
Small grain, lb.	116	106	142	101	21	to	208
Commercial feed, lb.	4	6	4	3	0	to	11
Tankage, lb.	6	5	6	6	0	to	19
Skimmilk, lb.	50	41	52	57	0	to	188
Pasture, days	27	23	31	26	8	to	46

Cost and Return per Sheep

	Average				Range for each item - 1931
	3 year	1929	1930	1931	
Number of farms		7	7	5	
Number of sheep (2 lambs equal to one sheep)	90	106	80	84	- to 181
Man labor, hours	1 3/4	2	1 1/2	2 1/4	1 1/2 to 4
Horse work, hours	3/4	1/2	1/2	1	1/4 to 1 1/2
Costs:					
Feed	$2.81	$3.49	$2.43	$2.50	$2.15 to $3.36
Man labor and horse work	.55	.66	.45	.54	.40 to .84
Shelter	.26	.21	.14	.42	.02 to 1.63
Equipment	.11	.26	.02	.07	0 to .25
Interest @ 5%	.43	.50	.48	.31	.27 to .35
Miscellaneous cash	.19	.16	.20	.20	.03 to .54
Total expense	4.35	5.28	3.72	4.04	3.05 to 5.49
Credits:					
Manure	.13	.03	.18	.16	0 to .46
Breeding fees	.01	.03	.01	0	0 to 0
Total credit	.14	.06	.19	.16	0 to 1.47
Net expense	4.21	5.22	3.53	3.88	2.98 to 5.03
Value produced:					
Sheep	1.27	3.22	.56	.04	-1.60 to .81
Wool	1.05	1.34	.96	.85	.60 to 1.38
Total product	2.32	4.56	1.52	.89	-.22 to 1.49
Return over all costs*	-1.89	-.66	-2.01	-2.99	-3.61 to -2.04
Return over feed cost*	-.49	1.07	-.91	-1.61	-2.56 to 2.32
Average selling price of sheep, per cwt.	8.21	11.91	7.42	5.30	4.29 to 6.44
Average selling price of wool, per lb.	.18	.28	.16	.10	.09 to .11
Lambs raised per ewe	1.0	1.0	.9	1.0	1.0 to 1.1
Per cent death loss, lambs	13.1	12.0	17.0	10.4	5.6 to 21.3
Per cent death loss, sheep	12.0	16.0	11.0	9.0	0 to 18.0
Feeds:					
Grain, lb.	76	120	58	50	0 to 83
Hay and fodder, lb.	140	113	101	205	14 to 457
Silage, lb.	38	29	35	51	0 to 252
Pasture, days	242	251	227	247	226 to 266

*A minus (-) indicates failure to cover the costs charged.

Cost and Return per 100 Chickens

	Average				Range for each item - 1931	
	3 year	1929	1930	1931		
Number of farms		22	23	22		
Number of chickens	242	250	261	214	39	to 419
Per cent laying hens	59	57	57	62	36	to 89
Man labor, hours	136¾	166¼	125	119¼	49	to 227
Horse work, hours	3¼	4¾	1¼	3½	0	to 43½
Costs:						
Feed	$44.80	$59.67	$45.27	$29.45	$7.72	to $65.19
Man labor and horse work	37.42	50.46	37.66	24.15	9.98	to 47.72
Shelter	16.34	16.92	14.78	17.31	0	to 82.91
Equipment	6.12	6.39	6.27	5.70	0	to 15.58
Interest @ 5%	3.56	4.15	3.51	3.02	1.73	to 4.24
Miscellaneous cash	5.28	4.61	7.42	3.82	0	to 10.67
Total cost	113.52	142.20	114.91	83.45	29.99	to 145.49
Manure credit	3.35	3.96	2.40	3.69	0	to 14.53
Net cost	110.17	138.24	112.51	79.76	28.85	to 140.04
Value of product:						
Poultry*	29.03	46.40	21.19	19.49	-106.45	to 125.15
Eggs	73.65	94.75	68.90	57.30	.26.05	to 108.35
Total product**	102.68	141.15	90.09	76.79	-36.16	to 159.55
Return over all costs**	-7.49	2.91	-22.42	-2.97	-176.20	to 80.41
Return per man hour	.22	.31	.12	.18	0	to 1.23
Average selling price of eggs, per doz.	.21	.28	.20	.16	.13	to .22
Eggs laid per hen	75	74	76	76	44	to 130
Feeds:						
Grain, lb.	3179	3700	3060	2777	954	to 4819
Commercial feed, lb.	389	402	395	370	0	to 1315
Skimmilk, lb.	904	479	1027	1207	0	to 3639

*Value of poultry is net value of the poultry produced after allowing for differences in inventory values.

**A minus (-) indicates failure to cover all expenses charged.

Cost of Horse Work per Horse

	Average				Range for each item - 1931		
	3 year	1929	1930	1931			
Farms Using Tractors for Drawbar Work							
Number of farms		10	12	11			
Man labor, hours	49¼	57¾	48	41¾	23	to	60
Costs:							
Feed	$44.94	$59.55	$41.03	$34.24	$20.74	to	$46.91
Man labor	13.36	17.32	14.40	8.35	4.59	to	12.01
Shelter	5.93	5.48	6.00	6.31	1.60	to	10.36
Equipment	4.35	5.25	3.73	4.07	2.08	to	9.32
Interest @ 5%	4.62	4.82	4.73	4.31	2.69	to	6.18
Miscellaneous cash	.43	.49	.47	.34	0	to	1.84
Depreciation	8.87	8.67	8.18	9.76	2.51	to	19.00
Total cost	82.50	101.58	78.54	67.38	54.55	to	88.80
Credits:							
Manure	3.60	4.41	3.75	2.63	1.29	to	5.02
Miscellaneous	.50	.22	1.12	.18	0	to	2.06
Total credit	4.10	4.63	4.87	2.81	1.29	to	5.02
Net cost	78.40	96.95	73.67	64.57	51.33	to	86.23
Hours worked	817½	884½	814¾	753¼	513¼	to	944¾
Cost per hour, cents	9.6	11.0	9.1	8.6	6.2	to	12.3
Crop acres per horse	29.6	28.9	28.7	31.2	21.8	to	40.8
Feeds:							
Grain, lb.	2993	3382	3115	2483	622	to	4695
Hay, lb.	2994	3229	2642	3111	1999	to	4832
Pasture, days	158	139	162	172	129	to	220
Farms not Using Tractors for Drawbar Work							
Number of farms		11	11	11			
Man labor, hours	49¼	47	53½	47½	33	to	68½
Costs:							
Feed	$51.96	$67.61	$49.47	$38.81	$27.18	to	$49.29
Man labor	14.30	17.38	16.02	9.49	6.63	to	13.70
Shelter	7.83	7.95	6.75	8.78	3.07	to	19.22
Equipment	4.75	6.73	3.75	3.77	1.84	to	7.66
Interest @ 5%	5.02	5.50	4.92	4.64	3.14	to	5.71
Miscellaneous cash	.56	.67	.38	.64	.05	to	4.07
Depreciation	9.44	11.67	7.97	8.68	2.53	to	25.77
Total cost	93.86	117.51	89.26	74.81	53.64	to	101.56
Credits:							
Manure	4.98	5.05	4.64	5.24	.84	to	12.39
Miscellaneous	.77	1.52	.48	.31	0	to	2.22
Total credit	5.75	6.57	5.12	5.55	.84	to	12.39
Net cost	88.11	110.94	84.14	69.26	51.64	to	100.72
Hours worked	895½	945	916½	825	537¾	to	1101½
Cost per hour, cents	9.8	11.7	9.2	8.4	6.3	to	10.5
Crop acres per horse	28.1	28.2	28.2	28.0	15.8	to	41.2
Feeds:							
Grain, lb.	3737	3582	3766	3862	2417	to	5702
Hay, lb.	3611	4094	3504	3235	2316	to	4315
Pasture, days	139	125	148	144	25	to	179

Cost of Tractor Work

	Average			Range for each item - 1931
	2 year	1930	1931	
Two-Plow Tractors				
Number of farms		6	5	
Costs:				
Man labor	$4.94	$6.88	$3.01	$1.20 to $8.00
Auto use	.28	.48	.07	0 to .37
Fuel and oil	99.11	115.61	82.61	55.50 to 109.73
Miscellaneous cash	5.26	4.68	5.84	0 to 14.60
Interest @ 5%	23.83	20.23	27.43	15.88 to 36.25
Depreciation	91.34	81.67	101.00	150.00 to 50.00
Total cost	224.76	229.55	219.96	153.07 to 292.48
Hours worked:				
Drawbar	306¼	309½	303	129¾ to 426½
Belt	57¼	53½	60¾	40¾ to 90¼
Total hours	363½	363	363¾	190 to 472¼
Cost per hour	$.62	$.63	$.60	$.39 to $.85
Fuel per 10 hours, gal.	17.0	18.0	16.0	14.0 to 20.0
Oil per 10 hours, gal.	.8	.9	.8	.4 to 1.0
Fuel and oil:				
Gasoline, gal.	547	530	564	480 to 761
Kerosene, gal.	34	45	22	0 to 70
Distillate, gal.	37	75	0	0 to 0
Oil, gal.	30¾	34	27½	14 to 45
Three-Plow Tractors				
Number of farms		8	6	
Costs:				
Man labor	$12.98	$19.50	$6.47	$2.10 to $13.40
Auto use	3.65	5.64	1.65	0 to 4.16
Fuel and oil	166.16	173.48	158.84	77.38 to 242.80
Miscellaneous cash	16.46	16.38	16.55	0 to 27.75
Interest @ 5%	30.83	31.58	30.08	11.25 to 43.00
Depreciation	126.15	125.63	126.67	50.00 to 200.00
Total cost	356.23	372.21	340.26	248.83 to 480.00
Hours worked:				
Drawbar	205½	218½	192¾	36½ to 403¼
Belt	256	253¼	258¾	14¾ to 417½
Total hours	461½	471¾	451½	185½ to 748¾
Cost per hour	$.77	$.79	$.75	$.48 to $1.38
Fuel per 10 hours, gal.	25.0	22.0	29.0	24.0 to 39.0
Oil per 10 hours, gal.	1.4	1.6	1.1	.6 to 2.8
Fuel and oil:				
Gasoline, gal.	520	396	645	33 to 1622
Kerosene, gal.	339	324	354	0 to 789
Distillate, gal.	312	322	302	0 to 886
Oil, gal.	62¾	75	50½	16 to 80¼

Cost of Auto Operation

	Average			Range for each item - 1931
	2 year	1930	1931	
Number of farms		22	21	
Miles driven	6667	6812	6522	817 to 14465
Gasoline, gal.	482	490	474	106 to 1101
Oil, gal.	16	15	16	4 to 45
Costs:				
Man labor	$5.03	$5.06	$5.00	$0 to $24.69
Gasoline	81.66	88.74	74.57	16.25 to 158.09
Oil	12.05	13.03	11.07	3.14 to 25.29
Miscellaneous cash	73.43	83.64	63.22	13.00 to 159.61
Interest @ 5%	20.74	23.07	18.41	2.50 to 41.25
Depreciation	131.05	142.34	119.76	0 to 275.00
Total cost	323.96	355.88	292.03	91.89 to 652.59
Cost per mile, cents	4.9	5.2	4.5	3.0 to 11.2
Miles per gal. of gasoline	13.7	13.9	13.4	6.9 to 17.5

Cost per acre of Producing Husked Corn

	Average				Range for each item in 1931
	Three years	1929	1930	1931	
Number of farms	24	24	24	23	
Acres per farm	90	96	97	78	38 to 162
All work up to harvest:					
Man hours	7.7	8.0	7.7	7.4	4.8 to 11.8
Horse hours	25.8	28.0	25.0	24.5	9.7 to 37.4
Tractor hours	.6	.4	.8	.7	- to 2.1
Harvesting:					
Man hours	5.0	5.7	5.0	4.5	2.3 to 6.8
Horse hours	11.0	12.9	10.2	9.8	2.0 to 15.0
Tractor hours	.1	.1	.1	.1	- to 1.0
Costs:					
Man, horse and tractor	$8.06	$9.45	$8.27	$6.46	$4.79 to $8.86
Seed	.40	.42	.42	.37	.27 to .52
Manure	.38	1.75	1.90	1.40	.55 to 2.92
Mechanical picker	1.68	.37	.47	.30	- to .70
Other machinery	.95	.95	.95	.95	.95 to .95
Land	6.00	6.00	6.00	6.00	6.00 to 6.00
Total	17.47	18.94	18.01	15.48	13.66 to 19.18
Credit (pasture & insurance)	1.02	1.00	1.00	1.06	1.00 to 1.46
Net cost	16.45	17.94	17.01	14.42	11.42 to 18.18
Yield, bu.	31.2	38.0	31.9	23.8	16.5 to 37.9
Cost per bu.	$.53	$.47	$.54	$.61	$.43 to $.99
December 1 price	.48	.56	.48	.41	.41 to .41
Crop value at December 1 price	14.98	21.28	15.31	9.76	6.76 to 15.54
Net return	-1.47	3.34	-1.70	-4.66	-10.64 to .71
Return per man hour	.17	.54	.17	none	none to .31

Cost per acre of Producing Oats

Number of farms	22	22	22	23	
Acres per farm	62	65	63	57	21 to 120
All work up to harvest:					
Man hours	1.6	1.7	1.6	1.4	.7 to 2.0
Horse hours	6.1	6.7	6.3	5.2	.6 to 7.9
Tractor hours	.1	.1	.1	.1	- to .4
Harvesting:					
Man hours	4.6	5.1	5.1	3.7	2.8 to 6.7
Horse hours	7.8	8.6	8.6	6.3	3.4 to 11.3
Tractor hours	.1	.1	.1	.1	- to .4
Costs:					
Man, horse and tractor	$3.43	$4.12	$3.79	$2.37	$1.89 to $3.87
Seed	1.36	1.58	1.21	1.31	1.03 to 2.11
Twine	.34	.34	.40	.27	.19 to .39
Threshing	.99	1.21	1.11	.64	.39 to .98
Manure	.85	.89	.76	.91	- to 3.22
Machinery	.95	.95	.95	.95	.95 to .95
Land	6.00	6.00	6.00	6.00	6.00 to 6.00
Total	13.92	15.09	14.22	12.45	11.10 to 16.78
Yield, bu.	45.4	50.7	53.5	32.1	17.8 to 51.0
Cost per bu.	$.31	$.29	$.27	$.39	$.24 to $.71
December 1 price	.27	.36	.24	.22	.22 to .22
Crop value at December 1 price	12.26	18.25	12.84	7.06	3.91 to 11.22
Net return	-1.66	3.16	-1.38	-5.39	-9.20 to -1.04
Return per man hour	none	.74	.10	none	none to .02

Cost per Acre of Producing Barley

	Average				Range for each item in 1931
	Three years	1929	1930	1931	
Number of farms		16	15	15	
Acres per farm	31	30	31	32	15 to 89
All work up to harvest:					
Man hours	1.6	1.7	1.7	1.5	.7 to 2.3
Horse hours	5.8	6.4	6.2	4.9	1.8 to 7.5
Tractor hours	.2	.1	.2	.2	- to 1.7
Harvesting:					
Man hours	4.8	5.4	4.9	4.2	2.5 to 5.5
Horse hours	8.1	9.0	8.4	7.0	4.5 to 9.6
Tractor hours	-	-	-	.1	- to .5
Costs:					
Man, horse and tractor	$3.42	$4.04	$3.53	$2.65	$1.74 to $4.08
Seed	1.19	1.47	1.06	1.04	.67 to 1.34
Twine	.32	.34	.34	.29	.18 to .37
Threshing	.81	1.03	.80	.60	.24 to .97
Manure	.77	.94	.73	.65	.27 to 1.27
Machinery	.95	.95	.95	.96	.95 to 1.07
Land	6.00	6.00	6.00	6.00	6.00 to 6.00
Total	13.46	14.77	13.41	12.19	10.42 to 13.58
Yield, bu.	28.0	33.0	29.0	21.9	8.2 to 35.8
Cost per bu.	$.48	$.45	$.46	$.56	$.36 to $1.39
December 1 price	.42	.49	.38	.38	.38 to .38
Crop value at December 1 price	11.76	16.17	11.02	8.32	3.14 to 13.59
Net return	-1.70	1.40	-2.39	-3.87	-8.36 to .65
Return per man hour	.02	.50	none	none	none to .35

Cost per Acre of Producing Flax

Number of farms		8	13	14	
Acres per farm	29	28	30	28	14 to 59
All work up to harvest:					
Man hours	2.7	2.8	2.7	2.6	1.3 to 10.1
Horse hours	11.1	12.8	10.0	10.4	3.6 to 46.8
Tractor hours	.3	.1	.6	.2	- to 1.7
Harvesting:					
Man hours	5.1	5.4	5.3	4.7	2.7 to 6.1
Horse hours	8.9	10.2	8.7	7.8	3.9 to 10.6
Tractor hours	.1	-	-	.2	- to .7
Costs:					
Man, horse and tractor	$4.57	$5.16	$4.85	$3.71	$2.23 to $8.69
Seed	2.18	2.21	2.57	1.75	1.19 to 2.85
Twine	.22	.22	.26	.17	- to .38
Threshing	1.33	1.64	1.65	.71	.21 to 1.40
Manure	.87	.77	.72	1.11	.30 to 4.79
Machinery	.97	.99	.94	.98	.93 to 1.26
Land	6.00	6.00	6.00	6.00	6.00 to 6.00
Total	16.14	16.99	16.99	14.43	11.69 to 19.55
Yield, bu.	10.1	11.2	13.0	6.0	1.6 to 8.5
Cost per bu.	$1.60	$1.50	$1.31	$2.40	$1.57 to 12.50
December 1 price	1.85	2.83	1.48	1.23	1.23 to 1.23
Crop value at December 1 price	18.68	31.76	19.24	7.38	1.97 to 10.46
Net return	2.54	14.71	2.25	-7.05	-17.58 to -2.79
Return per man hour	.61	2.09	.58	none	none to none

Cost per Acre of Producing Alfalfa Hay

	Average				Range for each item
	Three years	1929	1930	1931	1931
Number of farms		17	17	17	
Acres per farm	14	13	14	15	2 to 39
Man hours	9.3	11.5	9.5	6.8	3.1 to 12.1
Horse hours	14.9	17.5	15.7	11.5	5.1 to 23.7
Costs:					
Man and horse	$4.26	$5.55	$4.55	$2.68	$1.21 to $5.03
Seed	1.00	1.00	1.00	1.00	1.00 to 1.00
Manure	1.14	1.52	1.01	.89	.06 to 2.48
Machinery	1.46	1.62	1.53	1.24	.85 to 1.75
Land	6.00	6.00	6.00	6.00	6.00 to 6.00
Total	13.68	15.69	14.09	11.81	9.61 to 14.09
Yield, tons	1.6	2.0	1.6	1.1	0.6 to 2.4
Cost per ton	$8.66	$7.85	$8.80	$10.74	$5.87 to 18.77

Cost per Acre of Producing Wild Hay

Number of farms		15	12	14	
Acres per farm	23	22	27	20	3 to 44
Man hours	4.8	5.4	5.2	3.9	2.3 to 5.4
Horse hours	8.2	9.2	8.8	6.6	4.2 to 10.6
Costs:					
Man and horse	$2.28	$2.79	$2.49	$1.55	$.93 to $2.26
Machinery	.86	.89	.85	.85	.85 to .95
Land	5.00	5.00	5.00	5.00	5.00 to 5.00
Total	8.14	8.68	8.34	7.40	6.78 to 8.11
Yield, tons	1.0	1.1	1.2	.6	.2 to 1.1
Cost per ton	$8.14	$7.89	$6.95	$12.33	$7.10 to 35.05

Cost per Acre of Producing Corn Fodder

	Average				Range for each item 1931
	Three years	1929	1930	1931	
Number of farms		12	18	18	
Acres per farm	12	8	13	16	3 to 46
All work up to harvest:					
Man hours	7.7	8.0	7.7	7.5	3.3 to 12.2
Horse hours	25.9	28.0	24.4	25.2	6.3 to 37.3
Tractor hours	.7	.4	.9	.7	- to 2.9
Harvesting:					
Man hours	5.6	6.5	5.6	4.6	2.8 to 7.4
Horse hours	5.8	5.2	6.5	5.8	3.5 to 10.9
Costs:					
Man, horse and tractor	$7.46	$8.36	$7.88	$6.13	$3.63 to 9.08
Seed	.74	1.01	.63	.57	.29 to 2.31
Twine	.49	.63	.50	.34	.17 to .55
Manure	1.81	1.58	1.69	2.17	.20 to 8.77
Machine	1.65	1.65	1.65	1.65	1.65 to 1.65
Land	6.00	6.00	6.00	6.00	6.00 to 6.00
Total cost	18.15	19.23	18.35	16.86	13.04 to 23.01
Credit*	.05	-	.09	.05	- to .86
Net cost	18.10	19.23	18.26	16.81	13.04 to 23.01
Yield, tons	2.3	3.3	1.9	1.6	.9 to 3.2
Cost per ton	$7.87	$5.83	$10.52	$10.50	$5.00 to 20.40

Cost per Acre of Producing Corn Silage

Number of farms		8	6	7	
Acres per farm	21	16	21	25	9 to 53
All work up to harvest:					
Man hours	8.0	7.9	8.5	7.7	4.0 to 10.5
Horse hours	27.6	27.8	28.3	26.7	11.5 to 36.2
Tractor hours	.6	.5	.8	.6	- to 1.9
Harvesting:					
Man hours	7.4	13.1	9.0	10.1	7.5 to 13.1
Horse hours	18.0	21.8	15.5	16.7	11.6 to 21.6
Tractor hours	.1	.2	-	.2	- to 1.2
Costs:					
Man, horse and tractor	$10.69	$12.82	$10.49	$8.75	$6.84 to $9.91
Seed	.61	.69	.60	.55	.34 to .77
Twine	.41	.51	.40	.33	- to .57
Manure	2.01	2.15	1.72	2.15	.40 to 3.76
Silo filling	2.31	2.52	1.95	2.46	1.88 to 3.47
Machinery	1.55	1.56	1.53	1.55	.95 to 1.65
Land	6.00	6.00	6.00	6.00	6.00 to 6.00
Total	23.58	26.25	22.69	21.79	19.19 to 23.72
Credit*	.23	.14	.54	-	- -
Net cost	23.35	26.11	22.15	21.79	19.19 to 23.72
Yield, tons	6.2	7.3	5.1	6.2	4.5 to 8.4
Cost per ton	$3.77	$3.58	$4.34	$3.51	$2.46 to $5.16

*Credit for corn picked up after binder.