



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

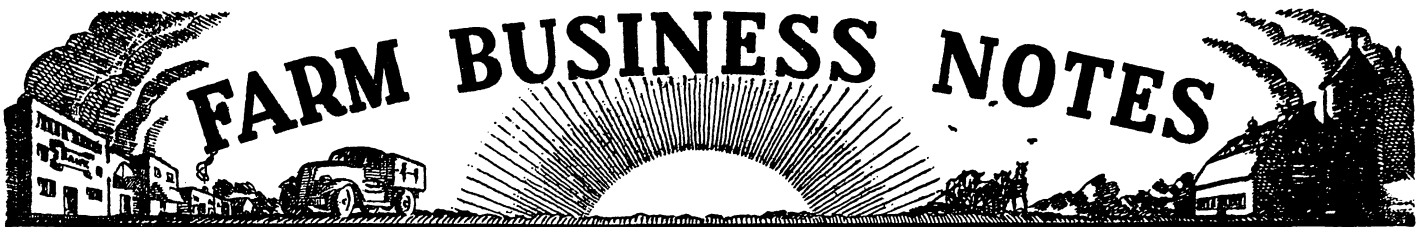
Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*



Prepared by the Divisions of Agricultural Economics and Agricultural Extension
Paul E. Miller, Director Agricultural Extension

NO. 247

UNIVERSITY FARM, ST. PAUL

July 23, 1943

Cash Income and Expenses of Minnesota Farmers

G. A. POND AND T. R. NODLAND

Records kept by members of the farm management services in Minnesota supply interesting information regarding the status and trends of farmers' earnings. Because of the care with which they are supervised and checked, they are highly accurate. However, since the members of these services are above the average of their neighbors in managerial ability and operate larger and more productive farms, their earnings are materially higher than the average of their communities. Nevertheless, these records are highly useful in studying trends in income and expense from year to year and differences in these items between different parts of the state.

Records of cash receipts and cash expenses for the Southeast Farm Management Service for the 15-year period, 1928-1942, inclusive, are presented in table 1 by three-year periods.

These records cover an average of 152 farms per year. There was some change from year to year in the farms included and some shifts in organization on the same farms.

Table 1. Cash Receipts, Cash Expenses, and Net Cash Income on Southeast Farm Management Service Farms, 1928-1942

	1928- 1930	1931- 1933	1934- 1936	1937- 1939	1940- 1942	15-year average
Cash farm receipts						
Dairy products	\$1,566	\$1,106	\$1,408	\$1,426	\$1,754	\$1,451
Cattle	701	367	537	802	1,301	741
Hogs	1,217	679	865	1,126	1,954	1,168
Sheep and wool	46	48	181	193	171	128
Poultry and eggs	413	362	658	780	1,112	666
Crops	427	330	681	638	710	557
A.A.A. payments			265	243	333	168
Miscellaneous	275	267	365	522	476	382
Total cash receipts	\$4,645	\$3,159	\$4,960	\$5,730	\$7,811	\$5,261
Cash farm expense						
Livestock purchases	\$ 312	\$ 180	\$ 398	\$ 509	\$ 827	\$ 445
Feed	396	287	455	568	945	531
Other livestock expense	71	62	79	108	101	84
Crop expense	175	140	181	243	223	192
Power, mach., & equip.	658	442	715	968	1,359	828
Buildings and fences	191	83	223	351	461	262
Hired labor	269	234	316	431	476	345
Taxes, insurance, & misc.	335	352	295	333	333	330
Total cash expenses	\$2,407	\$1,780	\$2,662	\$3,511	\$4,725	\$3,017
Net cash income	\$2,238	\$1,379	\$2,298	\$2,219	\$3,086	\$2,244

University Farm Radio Programs

HOMEMAKERS' HOUR—10:45 a.m.

UNIVERSITY FARM HOUR—12:30 p.m.

THE FRIENDLY ROAD—1:00 p.m.

Station WLB—770 on the dial

They were selected originally as dairy farms and the sale of dairy products and dairy cattle is an important source of income. The average size of these farms was 207 acres and varied from 174 acres in 1928-30 to 227 acres in 1940-42. This increase was in part the result of changes in the farms included in the service and in part due to enlarging the size of farms by rental

or purchase. Although some of these farms were operated by tenants and others were carrying a considerable load of debt these figures are, for the purpose of comparison, presented on a full-owner basis. The receipts from all sales whether made by the landlord or tenant are included in the income of rented farms, and all farm expenses other than rent and interest are included in expenditures even though a portion of them may have been paid by the landlords in the case of rented farms.

The average cash receipts varied from \$3,159 for the period 1931-1933 to \$7,811 for the 1940-1942 period. Important factors affecting income were crop yields and the prices of sale products. The average crop yields for each of the three-year periods for the principal crops are shown in table 2 and the prices for several of the important sale products in table 3.

Table 2. Yield of Principal Crops on Southeast Farm Management Service Farms, 1928-1942

	Unit	1928- 1930	1931- 1933	1934- 1936	1937- 1939	1940- 1942	15-year average
Corn	bu.	45.5	46.0	37.8	51.5	58.4	47.8
Oats	bu.	47.6	43.2	34.9	44.2	46.3	43.2
Barley	bu.	34.6	27.4	22.8	30.6	32.7	29.6
Alfalfa	ton	2.9	2.5	2.1	2.1	2.5	2.4

Table 3. Prices Received by Members of Southeast Farm Management Service, 1928-1942

	Unit	1928- 1930	1931- 1933	1934- 1936	1937- 1939	1940- 1942	15-year average
Butterfat	lb.	\$.48	\$.24	\$.33	\$.33	\$.39	\$.35
Hogs	100 lb.	8.92	3.98	7.33	7.88	9.24	7.45
Wool	lb.	.30	.15	.23	.24	.37	.26
Eggs	doz.	.26	.14	.19	.17	.23	.20
Corn, shelled	bu.	.68	.36	.63	.52	.51	.55
Barley	bu.	.40	.21	.33	.27	.34	.31

The low receipts during the three years 1931 to 1933 were due principally to the low prices received during those years. Higher prices the following period resulted in increased receipts in spite of the lower crop yields of the drouth years 1934 and 1936. During the last three years higher prices and better than average crop yields have resulted in a high level of income. The full effect of wartime prices coupled with high crop yields is reflected in the gross cash receipts of \$10,005 for 1942 and in the net cash income of \$4,425. The net income in 1942 is exactly double the average for the 15-year period.

Variations in expense correspond rather closely with variations in income. Some expenditures such as those for new machinery and for building construction and repair can be postponed in years of low income and made later when income is more ample. Some of the items of expenditures such as the purchase of machinery and equipment, the construction of new buildings, and the purchase of breeding stock represent capital investments rather than current operating expense. No attempt has been made to separate these two classes of expenditure, but a review of the annual inventories on these farms indicates that the capital expenditures have been sufficient to offset depreciation and increase slightly the investment in livestock, machinery, and buildings for the period as a whole.

The net cash income for three of the five three-year periods varied but little from the average of the whole period. Low prices resulted in a low net income during the 1931-1933 period and a combination of good prices and good yields produced a marked increase in net return during the past three years.

The net cash income figure, an average of \$2,244 for the entire 15 years, represents the net income from farm operations which the farmer has available for personal and household expenses, debt servicing, and investment. It should not be confused with operators' labor earnings or other measures of financial returns in the computation of which estimated values of noncash items of receipt and expense are included. The average personal and household expenditures per farm for the period were approximately \$1,100 or about one half the net cash income. The balance would be available for interest payments and for investment. This represents approximately a 5 per cent return on the average farm investment of \$21,600. In addition to the net cash income, the farmer receives farm produce for himself and family. This represents additional income. On the other hand, the farmer and his family not only supply most of the capital, but also most of the labor.

An examination of the records for 1942 as compared with those for 1941 indicates that most farmers made a substantial increase in production to supply war needs. Of the 157 farmers for whom records are available both years, 105 showed a definite increase in production over 1941 as measured in terms of work units. These work units reflect changes in acres of crops and numbers of livestock, and also changes in crop yields and rates of livestock production. The greatest increase occurred on the larger farms. The average size of the farm showing increases of more than 15 per cent was 244 acres and the average size of business was 768 work units. For farms showing increases under 15 per cent, corresponding figures were 232

Table 4. Cash Receipts, Cash Expenses, and Net Cash Incomes of Minnesota Farmers, 1940-1942

	Southeastern*	Southwestern†	Northwestern‡
Acres per farm.....	227	268	394
Cash farm receipts			
Dairy products.....	\$1,754	\$ 735	\$ 843
Cattle.....	1,301	2,851	587
Hogs.....	1,954	2,421	416
Sheep and wool.....	171	734	264
Poultry and eggs.....	1,112	811	443
Crops.....	710	1,677	1,123
A.A.A. payments.....	333	475	242
Miscellaneous.....	476	631	343
Total cash receipts.....	\$7,811	\$10,335	\$4,261
Cash farm expenses			
Livestock purchases.....	\$ 827	\$2,085	\$ 212
Feed.....	945	1,367	235
Other livestock expense.....	101	100	21
Crop expense.....	223	287	188
Power, mach., and equip.....	1,359	1,394	931
Buildings and fences.....	461	494	248
Hired labor.....	476	440	257
Taxes, insurance, and misc.....	333	527	312
Total cash expense.....	\$4,725	\$6,694	\$2,404
Net cash income.....	\$3,086	\$3,641	\$1,857

* S.E. Farm Management Service (See table 1).

† S.W. Farm Management Service and T.V.A. cooperators.

‡ T.V.A. cooperators.

acres and 709 work units, and for farms showing decreases in production, 209 acres and 621 work units. There is not only more elasticity in the larger farm businesses, but in general they have not been as heavily stocked or as intensively operated as the smaller farms and hence offer more opportunity for increased production if labor and machinery are available.

A comparison of cash receipts and expenses of farmers in three different sections of the state is shown in table 4. The figures in this table cover the years 1940-1942, the only years for which records are available for southwestern and northwestern Minnesota. They are presented to show relative differences in the various items of receipt and expense in different parts of the state, rather than to indicate differences in either gross or net income for these areas.

Beef cattle and sheep are more important enterprises in southwestern Minnesota than in southeastern, and dairy cattle and poultry less important. Cash crops are much more important as sources of income in southwestern Minnesota and even more so in the northwest counties. The net cash income per acre is the same for each of the groups of farms in southern Minnesota, but it is much lower in the northwest. The land in the northwestern area is less productive, lower in value, and less intensively farmed. In 1941 and 1942 abnormal rainfall resulted in considerable loss of crops in this section. This was particularly serious from an income standpoint as prices were at a high level in these years.

Farm Leases in Wartime

J. B. McNULTY

A recent survey of the farm leasing situation in Minnesota shows that an increasing number of landlords want to rent on a share lease. They particularly preferred 50-50 livestock share leases. Tenants preferred cash leases.

With share leases, variations in the income due to good and poor crops or high and low prices are shared proportionately by both parties. Some landlords and a few of the tenants included in this study gave this as a reason for not wanting to rent for cash. Quite likely, however, relatively high prices for livestock and livestock products as compared with corn and grain were a very important reason for the strong preference of landlords for the 50-50 livestock share lease. During the five-year period, 1935-1939, for example, 100 pounds of hogs would purchase 14.6 bushels of corn. In May, 1942, 100 pounds of hogs would purchase 19 bushels of corn. But in May, 1943, the corn-hog ratio had declined to 15.4 or close to the five-year average. Unless federal price control measures interfere, the long-time average price relationship of livestock and livestock products to corn and grain in the future is likely to be about the same as in the past. The price advantage of livestock and livestock products over feeds in recent months may, therefore, be regarded as temporary.

Under a 50-50 livestock share lease, the landlord usually owns an undivided one-half interest in the productive livestock. The possibility of a loss on cows, ewes, or other breeding livestock purchased at present high prices should be considered by landlords changing to a 50-50 livestock share lease and by tenants changing from this type of lease to a cash lease. Landlords should also take into account the extra work or higher cost of supervising 50-50 livestock share leases, which makes them unsuited to absentee or other landlords unable to give direct supervision.

Forty per cent of all rented farms in Minnesota were rented for cash in 1930. This was the highest on record. But in the period of low prices for farm products following 1930, cash leases declined and in 1936 were only 30 per cent of all farm leases in use in Minnesota. From 1930 to 1936 many cash tenants were unable to pay their rent. Some were forced to quit farming because they were unable to satisfy the mortgage given on their personal property as security for the rent due.

The recent study showed a marked increase in cash rents from 1940 to 1942. This trend may be expected to continue as long as prices of farm products remain at present relatively high levels. Users of cash leases should keep in mind that cash rents tend to move up and down more slowly than prices of farm products. For this reason, one-year cash leases involve less risk of the tenant not being able to pay his rent than cash leases for a term of from three to five years. The abruptness with which prices of farm products have declined in the past suggests that tenants renting for cash might have difficulty in paying their rent with leases for a one-year period.

Adjustments for declining prices can be made more readily on small farms operated with family labor than on larger farms with a heavy investment in equipment and largely dependent on hired labor. But, in general, tenants who are not debt-free and who do not have enough capital to pay at least the major part of one-year's rent will be more secure with share than with cash leases.

The financial resources of the tenant, the type and size of farm, the equipment in buildings and fences, and the kind of landlord, rather than the price of farm products, should determine the type of farm lease to be used.

Value of Skim Milk for Hogs

TRUMAN R. NODLAND

Skim milk is a very valuable feed for hogs, because of its palatability and the relatively large amounts of high-quality proteins it contains. However, on many farms skim milk is fed beyond the point of its most efficient use and sometimes to a point where it ceases to be profitable.

Data obtained from farm records kept by cooperators in the Southeastern Minnesota Farm Management Service provide a basis for the valuation of skim milk consumed by hogs. A total of 1,419 records for the years 1928 to 1937 are included in this analysis (table 1).

Table 1. Value of Skim Milk for Hogs

Pounds of skim milk consumed per 100 lbs. of hogs produced		No. of farms	Feed other than skim milk		Value of 100 lbs. of skim milk
Range	Average		Pounds	Cost	
0	0	79	529	\$5.77	\$
1- 199	128	227	481	5.06	.55
200- 399	303	403	452	4.68	.36
400- 599	491	340	441	4.58	.24
600- 799	689	183	440	4.45	.19
800- 999	881	93	422	4.52	.14
1,000-1,199	1,087	50	456	4.49	.12
1,200 and over	1,583	44	490	4.77	.06

The amount of concentrates saved by using skim milk in the ration varies with the quantity consumed. The greatest saving occurs when the amount fed to hogs is limited to less than 200 pounds for each 100 pounds gain in weight. The saving in feed becomes smaller with each increase in quantity consumed. Because of its bulkiness, a point is eventually reached in feeding large amounts of skim milk beyond which a hog cannot consume enough milk to secure the necessary nutrients.

A basis for valuing the milk is the value of the feed saved by the use of skim milk in the ration. A ration containing an average of 128 pounds of skim milk for each 100 pounds gain in weight resulted in a saving of 71 cents in the total feed cost. At this rate of feeding, 100 pounds of skim milk was worth 55 cents. Although much larger amounts can be fed when there is a surplus available, the amount consumed in addition to that needed to balance the ration will be worth less as a feed (see data in table 1). Farmers who fed an average of 1,583 pounds of skim milk for each 100 pounds gain in weight of their hogs received only 6 cents for each 100 pounds of skim milk.

The value of 100 pounds of skim milk will fluctuate with the value of the other feeds saved. The feed costs used in table 1 are based on the 1928 to 1937 average farm prices in southeastern Minnesota. These prices are as follows: corn, 54 cents per bushel; oats, 31 cents per bushel; barley, 50 cents per bushel; and tankage, \$2.70 per 100 pounds. At the present time, feed prices are approximately 70 per cent higher than the 1928 to 1937 average. With present prices, 100 pounds of skim milk will be worth approximately 95 cents as a feed when fed at the rate of less than 200 pounds per 100 pounds gain in the weight of the hogs; it will be worth approximately 33 cents when 600 to 800 pounds are fed and it will not be worth over 11 cents per 100 pounds as a feed to hogs when more than 1,200 pounds are fed.

Minnesota Farm Prices For June, 1943

Prepared by R. W. Cox and H. G. HIRSCH

The index number of Minnesota farm prices for June, 1943, is 178. This index expresses the average of the increases in farm product prices in June, 1943, over the average of June, 1935-39, weighted according to their relative importance.

Average Farm Prices Used in Computing the Minnesota Farm Price Index, June, 1943, with Comparisons*

	June 15, 1943	May 15, 1943	June 15, 1942		June 15, 1943	May 15, 1943	June 15, 1942
Wheat	\$ 1.24	\$ 1.23	\$.96	Hogs	\$13.50	\$14.00	\$13.40
Corn .....	.94	.91	.70	Cattle	12.70	12.60	11.00
Oats .....	.60	.55	.40	Calves	13.60	13.90	12.70
Barley .....	.84	.74	.70	Lambs—Sheep ..	12.84	13.27	11.34
Rye .....	.79	.69	.50	Chickens .....	.21	.19	.15
Flax	2.86	3.01	2.33	Eggs .....	.34	.33	.27
Potatoes	1.55	1.55	1.00	Butterfat .....	.51	.53	.40
Hay	7.20	7.50	5.50	Milk	2.60	2.55	2.00
				Wool† .....	.43	.40	.39

* These are the average prices for Minnesota as reported by the United States Department of Agriculture.

† Not included in the price index number.

Barley and rye prices are 14 per cent higher than in the previous month. The relative price changes of the other products range from a 5 per cent decrease of the flax price to a 9 per cent increase of the price of oats. The potato price remains unchanged after a continuous rise from December, 1942, to May, 1943. The price of corn, which also rose steadily during that period, increased by another 3 per cent. The net result of these various decreases and increases was an average decrease of 0.7 per cent over May, 1943, prices. Compared with June, 1942, prices rose by 23 per cent. Crop and livestock product prices rose 33 and 35 per cent, respectively, while livestock prices increased only 7 per cent.

The increases of feed grain prices and decreases of hog and butterfat prices by 4 per cent resulted in a substantial narrowing of the feed ratios for hogs and dairy cattle, as compared with the previous month. The beef-corn and egg-grain ratios changed only slightly during the same period.

Indexes and Ratios for Minnesota Agriculture*

	June 15, 1943	June 15, 1942	June 15, 1941	Average June 1935-39
U.S. farm price index	184.1	146.3	114.3	100
Minnesota farm price index	177.9	145.1	118.9	100
Minn. crop price index	165.0	124.4	94.0	100
Minn. livestock price index	170.9	159.6	114.6	100
Minn. livestock products price index	187.1	138.6	130.0	100
U.S. purchasing power of farm products	138.0	120.5	113.6	100
Minn. purchasing power of farm products	133.4	119.5	118.2	100
Minn. farmers' share of consumers' food dollar	62.4†	56.4	48.9	45.5
U.S. hog-corn ratio	12.8	16.3	13.1	12.0
Minnesota hog-corn ratio	14.4	19.1	16.5	15.2
Minnesota beef-corn ratio	13.5	15.7	15.1	12.8
Minnesota egg-grain ratio	18.1	19.3	18.9	14.6
Minnesota butterfat-farm-grain ratio	28.4	30.7	42.6	30.9

* Explanation of the computation of these data may be had upon request.

† Figure for April, 1943.

Pig Crop Report—June, 1943

A spring pig crop of 74,050,000 head is estimated by the United States Department of Agriculture in its June Pig Crop Report. This number is 22 per cent larger than the spring crop of 1942 and 40 per cent above the previous record crop of 1931. The pig crop is larger this year than last year in all regions. For the north central region (corn belt states) the number of pigs saved this spring is about 20 per cent larger than in 1942. The increase in the west north central states is 25 per cent and in Minnesota 18 per cent.

The number of sows farrowed in the spring season of 1943 is estimated at 12,140,000 head, an increase of 26 per cent over 1942. This number corresponds closely to that shown in the December, 1942, pig crop report as indicated by farmers' reports on breeding intentions for the spring of 1943. The average numbers of pigs saved per litter this spring is 6.10 compared with 6.31 in 1942. The drop was due primarily to unfavorable weather conditions particularly in the east north central states.

The number of sows to farrow in the fall season of 1943 is estimated at \$8,516,000, an increase of 25 per cent over the number farrowed in the fall of 1942.

Breeding intentions may be modified by action which the War Food Administration may take to induce farmers to hold down fall farrowings or by the fact that corn supplies relative to hog numbers may be limited.

The number of hogs over six months old on farms on June 1 is estimated at 36,257,000 head or 26 per cent larger than on June 1, 1942, and represents the largest total of such hogs ever on farms at this date. For the north central states, the estimated number is about 23,000,000 head, an increase of 5,000,000 head over the number in 1942.

UNIVERSITY OF MINNESOTA
Department of Agriculture
Agricultural Extension
University Farm, St. Paul, Minn.

PAUL E. MILLER, Director

PENALTY FOR PRIVATE
USE TO AVOID PAYMENT
OF POSTAGE, \$300

FREE—Cooperative Agricultural Extension
Work, Acts of May 8 and June 30, 1914.

UNIVERSITY FARM, ST. PAUL, MINNESOTA

Cooperative Extension Work in Agriculture and Home Economics, University of Minnesota, Agricultural Extension Division and United States Department of Agriculture Cooperating, Paul E. Miller, Director. Published in furtherance of Agricultural Extension Acts of May 8 and June 30, 1914.