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### FARM MANAGEMENT PRINCIPLES FOR SOUTHWESTERN MINNESOTA<sup>1</sup>

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Fig. 1. Farmers on a Farm Management Tour Stopping at a Cost Route Farm  
They are spending a profitable day studying the records kept by cost route co-operators  
and asking questions concerning successful practices with livestock and crops.

<sup>1</sup>A more comprehensive summary of these farm management studies in Cottonwood and Jackson counties will be found in Minn. Agr. Exp. Sta. Bul. 205.

## SUMMARY

1. This bulletin presents information based largely on cost records for the years 1920 to 1923 inclusive on an average of 22 representative farms in Cottonwood and Jackson counties.
2. In this region corn and oats each occupy about forty per cent of the total crop acres. Of the corn, 46.7 per cent is fed to hogs, 29.5 per cent is sold, and 23.8 per cent is fed to livestock other than hogs. Of the oats, 44.4 per cent is sold, 22.2 per cent fed to horses, and 33.4 per cent fed to other livestock.
3. Corn has an average acre requirement of 10.4 man hours, except picking, and 42.5 horse hours. With man labor at 21 cents per hour, picking at 8 cents per bushel, horse labor at 10 cents per hour and two-fifths of the crop going to the landlord for rent, the cost of the tenants' share was 47 cents per bushel in the crib when the yield averaged 41.7 bushels per acre.
4. Each acre of oats required 6.8 hours of man labor, 16.5 of horse labor, 2.3 pounds of twine, and 3 bushels of seed. With a yield of 37 bushels, the cost of the tenant's three-fifths was 29 cents per bushel.
5. Oats fit the system better than other small grains. Farmers who have silos have a good opportunity to raise Minturki winter wheat by drilling it in on clean corn stubble immediately after filling the silo.
6. Farmers living in sections of Minnesota having a surplus of corn will find it more advantageous to use their corn largely for livestock production than farmers farther east and south, because the longer the distance from market, the more worth while it is to save freight by condensing the product.
7. The requirements to produce 100 pounds of gain on hogs was 486 pounds of farm-raised grain, or the equivalent of 8.7 bushels of corn, 5 pounds of wheat mill feed, 3 pounds of tankage, 98 pounds of skimmilk, 3.6 hours of man labor, 0.6 hours of horse labor, and the usual amount of pasture.
8. The common method on the route farms is to keep a herd of dual purpose cattle with receipts about equally divided between dairy products and sales of cattle. About one-fourth of the farms have cattle of specialized dairy breeding.
9. Alfalfa hay has long been known to be one of the very best kinds. In this region the cost of a ton of alfalfa hay was \$5.70 and of clover and timothy hay, \$8.36. The average yield was 2.2 tons of alfalfa and 1.1 of clover and timothy.

10. Sweet clover is by far the most productive pasture crop for the region and promises greatly to improve the opportunities for profitable cattle production.
11. Each work horse in 1920 and 1921 was fed 3262 pounds of corn and oats and 2.7 tons of hay; required 78 hours of man labor and performed 802 hours of labor per year. In 1923 the cost was 10 cents per hour.
12. Farm poultry flocks of 100 to 275 hens have been a profitable side line.

### TYPE OF FARMING

The aim of this bulletin is to present information that will assist farmers in the sections of Minnesota where corn is a surplus crop to plan a better balanced farm business. The material is largely based on cost records obtained by the Minnesota Agricultural Experiment Station in co-operation with the Bureau of Agricultural Economics, United States Department of Agriculture, during 1920, 1921, 1922, and 1923 with an average of 22 farmers per year in Cottonwood and Jackson counties. In this region corn occupies about forty per cent of the crop acres; and small grain, mostly oats, another forty per cent. Of every 1000 bushels of corn on these farms, 467 were fed to hogs, 295 were sold, 120 were fed to cattle, 95 to horses, 22 to poultry, and one to sheep. Of every 1000 bushels of oats, 444 were sold, 222 were fed to horses, 156 to cattle, 136 to hogs, 34 to poultry, and 8 to sheep.

### CORN

Two of the outstanding factors in the success or failure of farmers in this region are the yield of corn per acre and the prices of corn and hogs. The price of hogs is for most farmers a much more important consideration than the price of corn.

#### Cost of Corn

The cost of corn may be summarized by stating that over a period of years, with a yield of 41.7 bushels, a price of 47 cents per bushel in the crib would be necessary to pay the operator 21 cents per hour for work except picking, 8 cents per bushel for picking, 10 cents per hour for horse labor, and \$1.15 per acre for the use of machinery. The following cost figures are the basis of this statement. They are based upon the cost of the tenant's share when the tenant furnishes everything and receives three-fifths of the crop. Figuring costs on the basis of the tenant's share under the common share-

rental system is perhaps the most satisfactory method of computing the charge for land rent even if one owns his land.

Man labor, 10.4 hours at 21 cents <sup>2</sup> .....	\$2.18
Horse labor, 42.5 hours at 10 cents.....	4.25
Seed, 1/8 bushel at \$1.50.....	0.25
Manure (basis of the total corn acreage when only 9 per cent of the acres are manured).....	0.50
Machinery charges .....	1.15
Picking 41.7 bushels at 8 cents.....	3.34
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Cost of tenant's 25 bushels (3/5 of 41.7 bushels)....	\$11.67
Cost of tenant's corn per bushel.....	\$0.47

The yield of 41.7 bushels is the average secured by the co-operating farmers during the years 1920 to 1923 inclusive. However, in this locality these were all excellent corn years except 1922, which was about an average year. It is estimated that a long time average yield would be about 35 bushels per acre, which would cost the tenant 53 cents per bushel. Cost figures may be roughly adapted to any particular year by applying current prices for man and horse labor to the number of man and horse hours required per acre and varying the other charges according to local conditions. Of course there is a wide variation in the cost of corn on different farms. These variations in cost are due largely (1) to differences in yield because of differences in fertility of the soil, and (2) to differences in the way the crop is handled.

### Fertility

Corn responds well to favorable conditions. A part of the variation in yield is due to differences in natural fertility of the soil. However, the extent to which manure has been applied and clover has been grown is a large factor in securing good corn yields. On the farms included in the statistical route only 9 per cent of the corn acreage is manured. No experimental data are available as to the increases in yield secured by applications of manure on the types of soil prevalent in this section, but farmers frequently estimate the increase in corn yield immediately following an application of manure at from 10 to 15 bushels per acre.

<sup>2</sup>The rate of 21 cents per hour is calculated from the actual cost of hired labor. During 1923 the average hired man worked 295 hours per month and received a cash wage of \$37.50 and board valued at \$25, a total of \$62.50. This divided by 295 gives 21 cents per hour.

### Handling the Crop

The usual method of handling the crop is to plow the small grain stubble after harvest with a two-bottom gang plow drawn by four or five horses. Four-horse teams are usually used for disking and dragging. Planting is done with an ordinary two-row check planter. Cultivating is done largely with a one-row two-horse cultivator, altho some farmers are using the two-row cultivator with three or four horses for at least part of the cultivating and find it a good way to save labor. Picking is mostly done by hand from the standing stalks, altho a few mechanical pickers are owned. These are drawn either by tractors or horses and give good satisfaction on larger acreages when fields are fenced so that any shelled corn can be utilized by the hogs. The necessary tillage labor is determined largely by the previous care in keeping the farm from becoming infected with quack grass, cockle burs, and other weeds, by the amount of spring and summer rain, and by the shape of the fields. Fields of regular shape, of 40 and 80 acres, free from obstructions, are more important for corn than for crops that require less labor, as small grain and hay.

### Corn in the Crop System

The most common cropping system is to alternate corn and small grain. This makes it necessary to plow the land only once in two years, as the small grain is usually disked in on the corn ground. Most farmers have depended upon wild grass grown on low lying land for all or part of their hay and pasture requirements. The wild hay is usually supplemented by a few acres of tame hay. This plan of rotation is an excellent one except that if more legume hay and tame pasture could be introduced into the system, the yields of corn would be increased and the livestock would also be better fed.

### OATS

Oats is the leading small grain. During 1921, 1922, and 1923 the statistical route farms averaged 71 acres of corn per farm, including silage and fodder, while the oats acreage was 44 acres and other small grain 9 acres per farm. In recent years over southwestern Minnesota, the plan has tended toward alternating corn and small grain. As one goes north the proportion of small grain increases, while on the counties adjoining the Iowa line the corn acreage is fully as large as the small grain acreage. The route farms in Cottonwood and Jackson counties have a larger proportion of corn than the average of the locality. On some

farms where there is plenty of help in proportion to the acres, a small acreage of corn follows corn, while on some farms where help is scarce the small grain acreage may be nearly twice that of corn.

On the basis of data collected for 1920, 1921, and 1922, from 16 to 21 farms per year, and with the various items of expense priced as indicated, the cost of oats is as follows:

Man labor, 6.8 hours at 21 cents.....	\$1.43
Horse labor, 16.5 hours at 10 cents.....	1.65
Twine, 2.3 pounds at 12 cents.....	0.28
Seed, 3 bushels at 35 cents.....	1.05
Threshing, 37 bushels at 3 cents.....	1.11
Machinery .....	1.00
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Total cost for tenant's share ( $\frac{3}{5}$ of 37 bushels, or 22.2 bushels).....	\$ 6.52
Cost per bushel.....	\$0.29

The planting of more legumes and the use of manure result in increased yields of oats as well as of corn, but the effect is probably less decided on oats than on corn.

Oats occupy more than three-fourths of the small grain acreage, with minor acreages of barley, spring wheat, and winter rye. Oats seem to fit in best with the system.

### SPRING WHEAT AND BARLEY

Probably one of the reasons that oats have so largely displaced spring wheat is that when small grain is disked in on cornstalks the date of seeding is usually later than otherwise, as the cornstalks hold the snow and keep the ground wet. Oats suffer less from delayed seeding than does wheat, so a large corn acreage tends to displace wheat with oats.

Most farmers feel that barley does not do well when disked in on stalk land; and as corn is more profitable on plowed land, little barley is raised.

### RYE

Rye does well on land from which the corn has been removed for silage or when seeded on well compacted early fall plowing. It distributes man and horse labor to good advantage, as the fall seeding lightens the spring load and the harvest comes before the oats. However, there seems to be little prospect of a satis-

factory market except in occasional years when the crop in northern Europe is short. It meets with little favor as a feed crop with farmers who have an abundant supply of corn, altho it is nearly equal to other grain for cattle, hogs, and horses when ground and fed as one-fourth to one-third of the ration.

### WINTER WHEAT

Occasional farmers throughout southern Minnesota are growing the new Minturki winter wheat successfully, and indications are that it should displace most of the rye and a fraction of the oats. It fits in particularly well as a crop to seed immediately after silage corn is removed. On a clean field it may be drilled in without disking, leaving the corn stubble standing to catch the snow.

### HOGS

Closely associated with corn in this region is the hog industry. The only regions in the United States that over a period of years have cheaper corn than southwestern Minnesota are southeastern South Dakota and northeastern Nebraska. This is because the farther one gets from the consuming centers of the east and south and still stays in the surplus corn country, the lower is the price of corn. Likewise the lower is the price of hogs, but the freight on the hogs is less than on the corn that they eat, so the farmers in the western part of the corn belt can make a better profit by converting their corn into hogs or other livestock or livestock products, than can farmers farther east and south. This may be illustrated by comparing the farm prices of hogs and corn in Minnesota with those of a representative state in the eastern part of the corn belt, as Ohio. The following figures taken from reports of the United States Department of Agriculture give such a comparison.

Average Farm Prices of Corn and Hogs, 1921 and 1922

	Minnesota	Ohio
Corn .....	\$0.55	\$0.71
Hogs .....	7.54	8.30

From the Minnesota figures of 55 cents for corn and \$7.54 for hogs during 1921 and 1922, it is calculated that the price of \$7.54 received for 100 pounds of live hog would purchase 13.7 bushels of corn, while in Ohio with corn at 71 cents and hogs at \$8.30 the figure would be 11.7 bushels. Farmers in Minnesota who are feeding largely on corn would have an advantage of the price of 2 bushels of corn on each hundred pounds of pork produced.

Southwest Minnesota is favorably situated for producing hogs, as corn is usually cheaper than in sections farther east or south.

A part of the greatly increased interest in the production of all kinds of livestock during recent years is due to the fact that high freight rates make it more important for producers who are far from eastern and southern markets to condense their products in order to save freight charges.

#### Cost of Hog Production

The following figures show the cost of producing 100 pounds of pork on the co-operating farms on the basis of the average feed requirements, with corn at 56 cents per bushel and with other feed prices as indicated.

Corn, shelled basis, 446 pounds at 1 cent.....	\$4.46
Other grain, 40 pounds at 1 cent.....	0.40
Mill feed, 5 pounds at 1½ cents.....	0.07
Tankage, 3 pounds at 3 cents.....	0.09
Skim milk, 98 pounds at 30 cents per cwt.....	0.29
Pasture .....	0.40
Man labor, 3.6 hours at 21 cents.....	0.76
Horse labor, 0.6 hours at 10 cents.....	0.06
Veterinary care and medicine.....	0.23

Total except shelter and overhead..... \$6.76

Keep approximate feed records on your hogs.  
Such records will show you how your costs compare  
with those of other producers.

With corn at 56 cents per bushel and with a total cost of \$6.76 per hundredweight, it would require 12.1 bushels of corn to equal the cost of 100 pounds of live hog. These figures include the cost of keeping breeding stock, as the net production of pork was calculated by adding together the weight of hogs sold, the weight of hogs on hand at the end of the year, and the weight of hogs butchered for family use, and deducting the weight of those purchased and on hand at the beginning of the year. On most of the farms the expense for



breeding stock was kept at a minimum through the practice of using young sows and fattening them as soon as the pigs were weaned. When corn is the principal feed, a good way of calculating the selling price of hogs is to figure how many bushels of corn may be purchased with the price of 100 pounds of live hog. When 100 pounds of hog will sell for more than the price of 12 bushels of corn, it may be roughly calculated that the excess represents profit for the average producer. For example, if the price of corn were 60 cents and of hogs \$8.40, a hundred pounds of live hog would sell for the price of 14 bushels of corn, and it could be assumed that the profit was represented by the price of two bushels of corn. If corn were worth 60 cents per bushel, the profit would be \$1.20.

In the case of individual farmers, there may be a wide variation from this standard. Cost records show that occasional farmers can sell hogs at \$6 per hundred and get the market price out of 60 cent corn. Those who succeed in doing this use rations that include an adequate amount of skimmilk, tankage, or other protein feed and good clover, alfalfa, or rape pasture. In addition, they give free access to clean drinking water, kept their herds relatively free from disease and intestinal round worms, and have convenient arrangements for feeding and watering. On the other hand, there are occasional individuals who find that there is no profit in feeding 60 cent corn to \$9 hogs. These farmers usually have rations that lack an adequate supply of the protein found in skimmilk and tankage, inadequate pastures, and their hogs are heavily infested with intestinal worms and other parasites and diseases.

This wide variation in cost indicates clearly the importance of learning all that can be learned about the essentials of successful hog raising. Good sources of information are observation of the methods used by successful swine raisers in the locality, Agricultural College bulletins, farm papers, and local extension meetings.

### Adjusting Hog Production to Corn Prices

Taking the country as a whole, about forty per cent of the corn crop is fed to hogs, so the prices of corn and hogs are intimately related. First we have periods when corn is cheap compared to hogs. This in turn stimulates the production of more hogs, which results in a surplus of hogs and a shortage of corn. The ups and downs of the corn-hog cycle are much affected by the weather in the corn belt. If the corn crop is very large when the hog crop is short, corn goes to a very low figure. This was what happened in the winter of 1921-22 when corn in southwestern Minnesota counties sold as low as 22 cents per bushel for a

short time. This caused great interest in hogs, with a large premium for feeder pigs and bred sows. On the other hand, if unfavorable weather causes a short corn crop at the same time that there is a large supply of hogs, corn is very high in price until farmers can get the number of hogs adjusted to the feed supply. While this adjustment is being made, feeder pigs usually bring a large discount compared to hogs weighing 250 to 300 pounds. During the fall of 1923 and the early winter of 1923-24, the hog crop was the largest in history, but the corn crop was also larger than the average and the discount on light hogs was not so severe as it would have been if a short corn crop had occurred at the same time.

The best plan seems to be for the farmer in the western part of the corn belt to plan to feed most of his corn, but so to adjust his livestock that he will not get caught short of feed. In practice this would mean that livestock would be adjusted to an average or slightly less than an average yield of corn. Then if the yield is extra good, the excess may be sold if the price is satisfactory or carried over and sold at a high price during a shortage or used to feed livestock that is bought at a heavy discount. When everybody is anxious to increase the breeding stock, it may be well to sell several bred sows at a good premium and raise a few less pigs for a year.

### CATTLE

Cattle and dairy products combined were of about equal or slightly greater importance than hogs as a source of income but there was no standardized system of handling cattle. In 1920 and 1921 on 7 farms out of 21 the cattle were handled primarily as dairy herds, on the other 14 farms the cattle were largely dual purpose with the income about equally divided between sales of cattle and dairy products. No farmers who were specializing in beef production happened to be included in the statistical route. However, occasional farms in this territory are keeping herds of well-bred beef cows and fattening the offspring as baby beef, and also occasional farmers fatten one or more cars of purchased feeders each year.

Dairy cattle are likely to increase profits when they can be handled without materially increasing the outlay for hired help.

During the last several years, owing to relatively high prices of butterfat, there has been a keen interest in dairying and the dairy output is rapidly increasing. One of the handicaps to dairying in portions of southwest Minnesota is that the market for butterfat is frequently from 5 to 10 cents per pound below that in well developed dairy sections in southeast or central Minnesota where the co-operative creameries get a large volume of business and are on a sweet cream basis. As an illustration, the 1922 report of the State Dairy and Food Commission gives the average price paid by creameries per pound of butterfat in Cottonwood County for that year to have been 37.7 cents, while in Steele County it was 43.9 cents, a difference of more than 6 cents in favor of Steele County.

The place for the strictly dairy type of cattle seems to be on the small or medium sized farms where a number of cows can be milked by the family without increasing the outlay for hired help. Each dairy cow on the average may be expected to require from 150 to 175 hours of labor. During 1922 the return per hour on these seven farms varied from 17 to 45 cents. If there is no better market for these hours, dairy cattle add to the farm income by the amount represented by this return for labor. However, the market for dairy products can not be expected always to be as favorable, compared with that of other kinds of livestock, as in 1923 and early in 1924. At the other extreme are the farms that specialize in some form of beef production. Beef production has the advantage that it requires little labor and equipment and is well adapted to large farms where the problem is to keep the labor expense down to a minimum. If a herd of breeding cows is kept, the profit will depend largely on the extent to which the cows can be kept on feeds that have little market value, such as pasture in summer and cornstalk pasture, oat straw, and cheap hay in the fall and winter and upon the success that the owner has in raising from 85 to 90 per cent as many calves as he has cows.

Beef cattle are likely to increase profits when the problem is to provide a market for large amounts of cheap feed without hiring extra help.

However, the plan most in vogue is that of keeping a herd of dual purpose breeding, a portion of which may be milked and the calves raised in part on skim milk and in part by letting

the calves run with the cows. The practice is varied from time to time according to the relative prices of butterfat and cattle.

### ALFALFA, THE CHEAPEST AND BEST HAY

Whatever the type of cattle produced, two of the chief handicaps in this section of the state have been the lack of high quality legume hay, clover or alfalfa, and of good pasture. However, in recent years it has been found that Grimm alfalfa thrives exceedingly well in this region. Cost records show that alfalfa is both the cheapest hay to produce on a per ton basis and also the most valuable for feed. The following figures show the cost of alfalfa per acre, allowing \$6 per acre for rent, assuming that two cuttings are secured.

Man labor, 11.2 hours at 21 cents.....	\$2.34
Horse labor, 13.2 hours at 10 cents.....	1.32
Machinery .....	1.60
Rent .....	6.00
Seed ( $\frac{1}{4}$ of seed cost charged to each year's crop) ..	1.25
	_____
Total 2.2 tons.....	\$12.51
Cost per ton.....	5.70

In addition to the hay, some farms obtained hog pasture from the alfalfa, so that the actual net cost was somewhat less than the figure given. Corresponding figures for clover and timothy show an average yield of 1.1 tons and a cost of \$8.36 per ton. At present more than half of the farms on the statistical route depend in part on alfalfa for their hay, and the acreage is being rapidly increased.

### Combining Corn and Alfalfa

One objection urged against an increased alfalfa acreage is that the harvesting of the first crop of alfalfa hay and the later cultivations of corn tend to come at the same time. This conflict can be considerably lessened by careful planning. Planting the corn early, using the two-row cultivator for the later cultivations, and using improved haying machinery, are some of the things that make it possible to handle a good acreage of these two highly desirable crops. If necessary, the first cutting of alfalfa may be delayed a few days beyond the time when it would be most desirable to harvest it. A large acreage of alfalfa calls for the general use of the side delivery rake so that hay can be turned easily with-

out knocking off the leaves. This and the customary buckrakes and stacker will enable one to make a good quality of hay with a minimum amount of labor.

Cost records show alfalfa to be the cheapest hay to produce. It is also the best hay for cattle. Have alfalfa hay for your cattle.

### SWEET CLOVER THE BEST PASTURE

The lack of an abundance of good pasture has been perhaps as much of a handicap to profitable cattle production as the lack of a high quality hay. Happily, here and there farmers have discovered that sweet clover, which formerly was feared as a weed because of the luxuriance with which it grew along roadsides and railroads, is one of our most valuable pasture grasses. No experimental data are available as to the quality of pasture that



Fig. 2. Shorthorn Herd in Sweet Clover Pasture.<sup>2</sup>

Seven acres of sweet clover carried 32 head of cattle 88 days, from May 29 to August 25, 1923.

may be secured per acre, but reports from those who have tried it are usually to the effect that one or two mature animals per acre have been provided with an abundance of high quality feed throughout the season. Sweet clover has the further advantage that the first-year seeding in small grain makes an excellent fall

<sup>2</sup> Cut loaned by Northwest Experiment Station.

pasture and apparently stands fall pasturing better than any other clover. It also fits into the rotation plan, and pastures that have been in sweet clover for a year are reported to give a decided increase in corn yields. One of the essentials in the successful growing of sweet clover is an abundance of lime in the soil. Fortunately in most places in central and western Minnesota the soil is abundantly supplied with this necessary element, but any who have occasional strips of sandy soil would do well to have their county agent make acidity tests so that lime may be applied if needed before seeding to alfalfa or sweet clover. Another essential is a firm seedbed. Clean cornstalk land that is disked instead of plowed meets this requirement.

Try sweet clover pasture if you are short of  
summer feed.

### HORSES

The chief source of farm power throughout Minnesota is the workhorse. So far as can be seen, this will continue to be the case for a long time. On the basis of feed and labor required for keeping a horse on the route farms in 1920 and 1921, the following are the costs of keeping a horse per year with prices of feed and labor as indicated:

Grain, mostly corn and oats, 3262 pounds at 1 cent.	\$32.62
Hay, 2.7 tons at \$8.....	21.60
Shoeing and veterinary services.....	0.64
Interest on \$100 horse at 8 per cent.....	8.00
Depreciation (estimated) .....	12.00
Shelter (estimated) .....	10.00
Man labor, 78 hours at 21 cents.....	16.38
Pasture, 67 days at 5 cents.....	3.35
	<hr/>
Total.....	\$104.59
Less estimated manure credit, 6 loads at \$1.....	6.00
	<hr/>
Net cost.....	\$98.59

Each horse worked, on an average, 802 hours, so that the cost per hour would be 12.3 cents. However, in 1920 and 1921 owing to low prices and lack of market, some farmers were keeping more horses than would have been the case if surplus horses could have been sold at any reasonable figure. In 1923 less feed was used and the cost was 10 cents. Planning the farm business so that there will be a uniform distribution of labor throughout the season, is one of the most important factors in keeping horse labor costs at a minimum, as the cost of keeping a horse that works 1000 hours is not much more than that for keeping a horse that works only 700 hours.

### Colts as a Side Line

Southwestern Minnesota has usually had a considerable surplus of horses for the city trade and for eastern farms. However, in recent years not many colts have been raised, and the indications are that those who have the courage to raise colts of good draft conformation will find an active demand for them by the time they are grown. At least enough colts should be raised for the farmer's own needs.

## POULTRY

Poultry is found on practically every farm. In 1920 and 1921 the average number of hens kept was 96 and the average production was 423 dozen of eggs and 446 pounds of poultry per farm. In 1923 the average number of hens per farm had increased to 130.

With poultry the labor is fully as large an item of expense as the feed, and the number kept is usually largely dependent on the number that the farm women find it possible to care for with their other duties. On many farms during the agricultural depression the poultry received special attention and contributed materially to the farm income. In 1923 one farmer had a profit above all expenses of \$368 from 275 hens. They produced  $7\frac{1}{2}$  dozen eggs per hen. The total value of eggs sold and used was \$550, of poultry \$101, and the expenses, including labor, were \$283, leaving a profit of \$368.

### Feed Required for Farm Flocks of 100 to 150 Hens

The feed requirement per 100 hens with the usual number of chickens raised is about 4000 pounds of grain per year and 225 hours of labor. The disadvantage of the commercial poultry plant as compared with the farm in making a profit on poultry is shown

by the fact that when kept in yards flocks of the Leghorn breeds consume about 6500 pounds of grain and meat scrap per year per 100 hens, and flocks of the Plymouth Rock and Rhode Island Red breeds from 8500 to 9000 pounds.

The farm poultry flock is a good side line. See  
that it has suitable feed and care.

On the other hand farm flocks, as stated above, receive on the average only about 4000 pounds of grain and meat scraps per 100 hens plus the usual number of chickens raised. However, on many farms the poultry is expected to depend too largely on picked-up feed. More generous feeding, with more meat scrap and skim milk in the ration would materially increase profits.

Feed