

## CHAPTER 8 Making the Most From Your Livestock

**A**LL OF THE IMPORTANT LIVESTOCK enterprises common to the Midwest are included in the list of nine discussed here. While many livestock farmers have three different livestock enterprises on their farms, the number may vary from one to five. The operator, however, must be highly skilled and versatile to do an efficient job with four or five important livestock enterprises.

The general problems of fitting livestock to the farm were discussed in Chapter 7. In this chapter, the more common management problems encountered in handling the various kinds of livestock are discussed. Little is said about the many additional problems peculiar to the specialized producer. Such operations fit only a very limited number of farms if the farmer is trying to maximize the use of his resources.

### **The Dairy Enterprise**

Milk is the main product of the dairy herd. But the income from surplus cattle and calves or cull animals should not be overlooked.

Milk contains a large amount of protein, about one-fourth of of all the solids in milk. A cow producing 10,000 pounds of 3:5 per cent milk a year needs about 700 pounds of digestible protein to supply the protein in the milk and to maintain her body.

So a dairy cow must be fed a good deal of protein if she is to produce well. Protein in the milk comes only from protein in the feed—the ration must contain the amount needed. Of course, feeding plenty of protein does not guarantee high milk production. But it makes it possible. There are other elements in milk as well. A ration made up of grain and good quality roughage, plus salt and mineral, will usually supply plenty of the other needs if the protein requirement is met.

Good pasture and high protein hay are basic to a satisfactory, low cost milk cow ration. It is possible to make a good ration from other feeds, but it usually is much more expensive. Silage makes an excellent feed and gives a high yield per acre. More concentrates are necessary if too little or too low quality pasture and roughage are used.

Dairy cows require a lot of labor. For this reason, one of the keys for success is to have cows with good milk-producing ability, but not necessarily extremely high producers. A production level of 250 to 350 pounds of butterfat per cow or 6,000 to 10,000 pounds of milk, depending on the breed, is acceptable. To do better than this, the extra time, feed, capital, and the like must add more to profits if used for a higher rate of production per cow than if used for more milk cows or for other farm enterprises.

### **Cows Should Not be Under or Over Fed**

The question of how much grain ration should be fed is one that requires a good deal of study. Much depends on the individual cow's ability to produce milk, the price of dairy products compared to grain and other feeds, and other uses that might be made of the feed if not used for milk cows. From the profit standpoint, the problem is to use the feed where it returns the greatest profit, not simply to give it to milk cows because it increases milk production. A good dairy-feeding bulletin should be studied especially as to the kind of grain mixtures to use. The following tables suggest how to size up the rate at which grain should be fed.

In this feeding test, good dairy cows of equal milk-producing ability were fed varying amounts of grain. In all cases, the cows had access to all the good quality roughage they cared to eat. The results are shown in Table 39.

TABLE 39  
HOW A GOOD MILK COW RESPONDS TO MORE GRAIN IN THE RATION \*

Roughage Ration	Grain Ration Fed †		Milk Produced ‡	
	Extra Grain	Total Grain	Extra Milk	Total Milk
	(lbs.) none	(lbs.) none	(lbs.) .....	(lbs.) 6,440
	1st 450	450	580	7,020
	2nd 450	900	500	7,520
	3rd 450	1,350	430	7,950
Corn Silage and Hay.....	4th 450	1,800	370	8,320
	5th 450	2,250	320	8,640
	6th 450	2,700	280	8,920
	7th 450	3,150	240	9,160
	8th 450	3,600	210	9,370
	9th 450	4,050	180	9,550
	10th 450	4,500	160	9,710

\* Derived from USDA Technical Bulletin 815.

† Grain that makes a balanced ration.

‡ Pounds of four per cent milk.

This table shows how milk production increases as more grain is fed. Note how similar the pattern of change is to the results secured from top dressing wheat with fertilizer which was discussed in Chapter 6. In fact, a general truth is demonstrated here: That as more units are applied, the output from each additional unit becomes less and less after a certain point is passed. This principle has a wide application in farming. The pattern of results reported here will show up more than once as other kinds of livestock are discussed.

Obviously, in feeding dairy cows, a particular rule should not be applied too strictly. In the test above, the milk cows used were good producers. When fed 4,500 pounds of grain ration, each cow produced 9,700 pounds of 4 per cent milk, or close to 400 pounds of butterfat, per year. Not all milk cows are of this capacity.

The other shortcoming of the figures is that they do not tell a dairy farmer the most profitable level at which to feed cows of this sort. That is the answer the farmer wants. Suppose prices are now applied to these data. As the cows were fed more of the grain ration, they ate less hay and pasture. If a farmer has hay and pasture to spare but not so much grain, how should he count the value of the hay and pasture that is saved by feeding more grain? Some farmers might not count it any saving

at all. Others would. In the example below, milk, grain mixture, and hay (pasture is included as hay) are all charged at the prices indicated and credit is given for any hay saved by feeding more grain. But no allowance is made for other costs such as labor and shelter, nor any credit given for calves born, manure produced, and similar items. These other items are not greatly affected by the rate of feeding.

Table 40 shows results using one price for milk and three levels of feed prices.

Now the farmer has a guide to help him in deciding how much grain to feed to his cows. With milk at \$3.00 per cwt. and grain ration at \$3.00, he would feed no more than 1,800 pounds of grain per cow during the year (assuming the cows had all the good silage, legume hay, and pasture they wanted).

A good deal of the gain comes in the saving of hay. He would feed even less if he didn't value the hay and pasture saved at current hay prices. The 1,880 pounds of extra milk produced by feeding 1,800 pounds of grain would bring in \$56.40, but the grain would be worth \$54.00. It would hardly be worth \$54.00 investment to get only \$2.40 more in net income.

If feed were cheaper compared to milk or milk higher compared to grain, the farmer could go much further in grain feed-

TABLE 40

INCOME ADVANTAGE OR DISADVANTAGE FROM FEEDING MORE GRAIN TO A MILK COW\*

	Situation I	Situation II	Situation III
Price of 4% milk, cwt.....	\$ 3.00	\$ 3.00	\$ 3.00
Price of grain mixture, cwt.†.....	3.00	2.25	1.50
Price of hay, ton.....	24.00	18.00	12.00
1st 450	\$ 7.38 gain	\$ 9.90 gain	\$12.40 gain
2nd 450	5.10 gain	7.57 gain	10.05 gain
3rd 450	3.00 gain	5.47 gain	7.95 gain
4th 450	1.32 gain	3.77 gain	6.21 gain
5th 450	.06 loss	2.35 gain	4.77 gain
6th 450	1.26 loss	1.17 gain	3.57 gain
7th 450	2.34 loss	.05 gain	2.43 gain
8th 450	3.12 loss	.75 loss	1.59 gain
9th 450	3.90 loss	1.57 loss	.75 gain
10th 450	4.50 loss	2.17 loss	.15 gain

\* Based on the cows previously described.

† Grain mixture that makes a balanced ration.

‡ The gain in dollars is figured as follows: Figure the value of the extra milk, subtract the cost of the extra grain, add the value of the hay saved by feeding more grain.

ing his cows provided they had the ability to produce more milk.

The purpose of the above example is to supply the dairy farmer with the principles that should guide him in deciding on the most profitable rate of feeding grain to his cows. Farm conditions are varied, individual cows are of many different levels of milk producing capacity, and prices change from time to time, so about all that can be done here is to explain the principles involved. Based on these principles each dairy farmer will have to find the best answer he can for his own situation.

### **Use Well-Bred Bulls**

Good bulls are needed to improve the herd. However, they are expensive and often hard to find. Artificial breeding associations are organized in many places and if well-managed, are likely to have better bulls than an ordinary dairy farmer can afford. Most farmers will welcome not having to keep a bull because herd bulls require a lot of extra labor to say nothing of the capital, barn room, and risk involved.

Raising heifers costs money, and therefore needs to be closely watched. Heifers should be well-grown but they can easily "eat their heads off" in feed costs if a great deal of grain is fed. Many an other wise good dairy farmer lets his young stock eat up some of the profit from the milk cows. He should find ways to raise heifers by methods that keep these costs in hand. Good pasture, legume hay, and silage should make up most of the heifer's ration.

Disease is one of the biggest hazards in the dairy business. While milk cows are subject to many diseases, abortion and mastitis (garget) are common ones. Another common problem is calf scours. It pays to learn how to keep these diseases under control.

Since labor makes up nearly one-fourth of dairy herd costs, efficient use of labor has an important influence on profits. Two points are especially worthy of attention. The first is to have the barn layout arranged so that the handling of milk, grain, hay, silage, and manure is reduced to a minimum. Many men have found that changing the layout and re-organizing their way of doing chores, like using a feed cart instead of carrying grain by the scoopful to each cow, has saved 20 to 50 per cent of the time formerly spent for chores. The second labor saver is what

is called the "quick" method of milking. The use of the pen-type barn has much to recommend it. The local county agent will probably have information on these things.

### **Dual-Purpose Cattle**

As the name suggests, these are herds where the farmer is interested both in milk and beef. Such cattle fit the man who neither wants to be a full-fledged dairy farmer nor a beef raiser. Usually he keeps a small herd, more than a dozen cows being unusual. Milk must be produced largely from grass and roughage. Dual-purpose cows are not "milky" enough, on the average, to warrant feeding a great deal of grain. Individual cows may be very good milk producers. The point discussed, under dairy cows, about feeding the right amount of protein and grain, holds for the milk that they produce. And it is equally important to have good quality hay and pasture.

The advantage of a dual-purpose herd is that the farmer can shift back and forth between beef and milk. When dairy products sell for a good price compared to beef, he can milk all the cows and hand feed the calves, using skim milk and grain after he gets them well started. Or, if beef is higher, he can put two calves on one cow and milk only half of the herd. Also, he has a wide range of choice in the sale weight of the calves. If grass and hay are plentiful, but not grain, they can be grown mostly on roughage with only a little grain. Or they can be grain fed just as a cattle feeder would do except they are usually sold by the time they weigh 750 to 800 pounds.

Because of the lack of uniformity in breeding, it is difficult to maintain a particular balance between "beefiness" and "milkiness" in the cows themselves. Thus the herd may lean one way or the other at different times, with rather wide differences between cows in the same herd. Dual-purpose herds have a place in the Corn Belt and General Farming Area, but do not fit so well in the strictly dairy or beef areas.

Another type of dual-purpose enterprise is to use dairy-type cows and a beef-type bull. Holsteins on the cow side have an advantage over most other breeds since they are large, growthy animals. That is what is needed in a dual-purpose herd. Usually, a short, compactly built Angus bull is used to give the calves a uniform color and more of the beef type.

This plan works well where artificial insemination for dairy cows is available. The best milk cows in the herd can be bred to a dairy bull to get heifers for replacement. The other cows can be bred to the beef bull. Bull calves of the dairy breed are raised and fed out along with the other calves. In using this system, the calves should be kept growing rapidly. They are grain fattened as much as seems most profitable, and as grain is available. The young cattle are sold as medium to good quality fat beeves at around 700 to 900 pounds in weight. It seldom pays to feed them longer because their dairy breeding is more in evidence as they grow older.

### **Beef Raising—A Roughage-Using Enterprise**

Use of high quality breeding stock is of first importance in beef-raising herds. It costs little more to raise a high grade rather than a low grade calf and the selling price is considerably higher. In starting a beef herd, it may be cheaper in the long run to buy some good quality cows or heifers than to start with ordinary cows and breed them up by using high quality bulls. This does not necessarily mean the purchase of purebreds. Some men prefer to buy older cows with calves at side or cows soon to calve that have come to the markets from the range country. Others prefer to buy good quality heifers and breed them. Unless done at the wrong time in the cattle cycle either method will not be too expensive. The latter method takes a little longer. Many good native cows and heifers are available as well as those from the range. Care must be taken to avoid culls, non-producers, or diseased animals.

Raising beef cattle does not fit the small farm. It is an extensive enterprise, that is, it requires many acres of land to produce a given amount of income. This was seen in Table 34. The land required to produce \$1,000 gross income from beef cows is more than with other livestock. Where the calves are not fattened on grain, even more land is needed.

Some men keep beef cows on a small scale. This may work well as a supplementary enterprise on cash crop farms; but if beef raising is an important part of the business, small operations are certain to result in a low income. In the Corn Belt, a herd of twenty cows is about the minimum where beef cows are one of several enterprises. Where much corn is raised, the farmer

TABLE 41  
BEEF COW HERD—CORN BELT  
(Amount of Feed and Feed Cost per Cow—Breeding Herd)

	Southern Iowa Bluegrass Area		USDA Corn Belt Studies
	Low Cost Farms	High Cost Farms	
Feed per cow per year			
Corn.....	6.9 bu.	3.0 bu.	2.4 bu.
Silage.....	0.2 T.	1.8 T.	0.36 T.
Hay.....	0.4 T.	0.6 T.	0.96 T.
Straw and stover.....	0.4 T.	0.2 T.	0.30 T.
Weight per calf at weaning time	412 lbs.	380 lbs.	not given
Feed and pasture cost per cow*			
1939 prices.....	\$10.68	\$17.55	not given
1921-30 prices.....	\$18.44	\$29.35	not given

*Prices:	Corn (Bu.)	Silage (Ton)	Hay (Ton)	Bluegrass Pasture (Acre)
1939.....	\$ .39	\$3.00	\$ 6.50	\$2.00
1921-30.....	\$ .67	\$4.00	\$10.00	\$3.60

usually finds that it pays to feed out the calves as fat baby beeves. In the range area where beef raising is the major farm enterprise, 75 cows is a small herd and 100 or more would be better.

It is most important to keep down the feed costs on the cow herd. This can best be done by having a long pasture season of good grass, and feeding cheaper roughages during the winter. Beef cows cannot pay for much grain and leave a good margin of profit. The grain and the better roughage should go to cattle that are to be marketed in the near future. The larger the percentage of the total feed that goes into marketable cattle, other things being equal, the better the chances for profit.

Since the sale of calves is the main income from the enterprise, a high percentage of calf crop is very important. A calf crop at weaning time of 85 per cent is considered satisfactory one year with another. This means that diseases, especially contagious abortion, must be watched for carefully. Most men prefer to have the calves come in the spring. Pastures are usually good at this time of year so the calf gets a good start. Most cows will furnish plenty of milk under these conditions and the calf should grow rapidly. The normally dry pasture period during the sum-



mer months may need to be supplemented with special pasture or extra feed that does not cost too much. The calf's growth should not be slowed down if it can be avoided without too much expense. With well bred cattle and good pastures, spring calves should come in at weaning time during the fall weighing some 450 pounds or more under good conditions.

In the range country and on some Corn Belt farms, steers are wintered-over rather than fed out. Either they are sold in the spring or after another pasture season. Feeder cattle prices are usually higher in the spring than in the fall. If the farmer has surplus feed over that needed by the breeding herd, he may prefer to wait until spring to sell. If he has surplus pasture or if pasture can be rented cheaply, he may run the steers over to the yearling stage.

Some points about wintering steers are shown in Table 42. This feeding test reports the results of several methods of wintering steer calves weighing about 400 pounds in the late fall. Winter gains were measured as well as the summer gains of the same steers during the following pasture season.

These results are another example of the same kind of truth that was discussed in the case of feeding more grain to milk cows; that is, as more and more units of feed are added, less and less additional results are secured.

This can best be shown by rearranging the figures in the table. If this is done the results are as shown in Table 43.

The results can now be better understood. It is evident that prairie hay alone is not a satisfactory winter ration for calves.

TABLE 42  
METHODS OF WINTER FEEDING BEEF CALVES AND EFFECTS ON WINTER AND SUMMER GAINS\*

Group	Winter Ration	Gain Per Head		
		Winter	Summer	Total
		(lbs.)	(lbs.) †	(lbs.)
1.....	Prairie hay alone	21	263	284
2.....	Prairie hay + $\frac{1}{2}$ lb. cotton cake daily.	125	231	356
3.....	Prairie hay + $\frac{3}{4}$ lb. cotton cake daily	166	210	376
4.....	Prairie hay + 1 lb. cotton cake daily	177	207	384
5.....	Prairie hay + $1\frac{1}{2}$ lb. cotton cake daily	185	190	375

\* Results condensed and somewhat simplified from Nebraska Bulletin 357.

† Gains when on pasture.

TABLE 43  
EFFECT OF FEEDING MORE PROTEIN ON BEEF CALF GAINS\*

Group	Protein Fed per Head		Gain per Head Winter and Summer Combined		Extra Gain From Each 10 lbs. Additional Protein
	Total Protein	Additional Protein	Total Gain	Additional Gain	
	(lbs.)	(lbs.)	(lbs.)	(lbs.)	(lbs.)
1.....	none	none	284	.....	.....
2.....	85	85	356	72	8.4
3.....	130	45	376	20	4.4
4.....	170	40	384	8	2.0
5.....	250	80	375	-9	.....

\* The calves reported in Table 42.

It is much too low in protein. Calves of a 400-pound size need to grow rapidly. Protein is necessary in their ration to put muscle on them. When they do not get enough protein, they simply do not grow very much. But notice how well these poorly fed calves did when they were turned out on fresh, green pasture that contained plenty of protein. They almost made up in the summer for what they got behind in the winter. But not quite.

When one-half pound of protein per calf per day was fed in the winter, they grew right along. But since they had more of their growth by spring, they didn't gain quite so fast during the summer. Nature has a sort of typical rate of growth that she sets as the standard. Under ordinary conditions, this rate is seldom exceeded. The growth rate on the better fed calves is an indication of this.

Here, then, is a case of an increasing rate of return when the first addition of protein is added to a poor ration. But as more and more protein is fed, the additional gain is small in amount. The third eighty pounds of protein fed per head in the winter gave no additional gain for the full period. It simply replaced part of the hay.

Usually, the price of one pound of live weight feeder calf of good quality will buy four to six pounds of cottonseed cake. This gives the farmer a guide for deciding on how much cotton cake he can afford to feed. If he planned to sell the calves in the spring, he could afford to feed a good deal more than if he expected to keep the calves and put them on his own pasture.

By feeding them better, the calves not only would be somewhat heavier, but they also would be fleshier. Feeder cattle buyers would likely bid more for them.

Note that the feeder buyer who gets the different lots of calves in the spring would likely be wrong about the better fed calves being worth more if the two lots were of the same breeding. The rancher would have the benefit of cheaper winter gains in the case of the well fed lot while the man buying them would have bought steers that would make slower gains for him. Cattle that are not so well wintered will be less attractive in appearance but are ready to gain rapidly if well fed in the spring. But it takes a cattle man with a sharp eye to tell the difference between good quality cattle that have been poorly wintered and cattle of poorer breeding that have been well wintered. By the same token, a stockman can winter poorer grade but well-colored cattle extra well and pass them off in the spring for being of much better quality than they really are. The importance of "the eye of the master" is proverbial among beef cattle men and for a good reason.

### Other Winter Rations

Many feeds other than prairie hay can be used as a winter ration for calves or yearlings. Sorghum silage is a favorite in the Plains Area and corn silage in the Corn Belt Area. Either feed gives good results when some protein and mineral is fed with it. Oat straw and protein, or oat straw and alfalfa, can be used but do not give as good results. However, in some places, such feeds may be very cheap to use. Sorghum or corn fodder may be used but are considered inferior to the silage form, especially for lighter weight cattle. In Kansas, when wheat pastures are good, only a limited amount of harvested feed is needed if the winter is an open one.

### Feeding Protein Cake on Summer Grass

Another time when the use of protein cake may pay extra well is in the late summer. By then the grass has hardened, is lower in protein content, and grazing may be less abundant. A pound or so of protein cake per head fed daily to cattle that will be marketed in the fall may pay unusually well. One feeding

test from Kansas gives information on this (Table 44). Being only one year's results, it is not very conclusive and the figures should be taken only as a general guide.

One pair of the lots of cattle was considerably lighter in weight than the other due to ration differences during the previous winter. The cattle were of about the same general breeding.

TABLE 44  
FEEDING COTTON CAKE TO YEARLING STEERS ON BLUESTEM PASTURE;  
90 DAYS, LATE SUMMER \*

	Lighter Yearlings		Heavier Yearlings	
	Lot 1	Lot 2	Lot 3	Lot 4
Number of days.....	90	90	90	90
Weight in, lbs.....	568	586	624	624
Weight out, lbs.....	726	645	770	677
Gain per head, lbs.....	158	59	146	53
Cotton cake fed, lbs.....	135	none	135	none
Extra gain per 10 lbs. of cotton cake, lbs.....	7.3	.....	6.9	.....

\* Reported by the Kansas Exp. Station in the *Kansas Stockman*, June 1948.

Obviously, feeding cotton cake was highly profitable under these conditions. Information is available for only the one rate of feeding. Experience elsewhere indicates that feeding protein cake is often a profitable practice.

It must be recognized that beef cattle raising is using a rough-age-consuming kind of machine. Beef cow herds are not efficient in converting high quality crops into net income. This means that costs must be watched closely as margins are usually narrow. Thus the cost of silos and equipment per head must be kept low. Cow herds cannot pay a great deal for overhead costs and have much profit left. Beef herds convert lower quality feeds into a valuable product and one that is in strong demand by consumers. But a knowledge of their limitations is essential if they are to be a money-making enterprise for the farmer.

### Cattle Feeding

Cattle feeding and corn raising go together. Cattle feeding also has a place where grain sorghums are raised and in some barley-producing areas. It is a popular enterprise for the farmer who wants to handle a large volume of business and is willing

to accept the risks that go with it. Some systems of feeding use mostly pasture and roughage. Others are very largely a grain feeding proposition.

It is well for the cattle feeder to know the nature of the product that he is producing. Practically all of the physical product he produces is a certain increase in weight of the fattening animal. An additional economic product is the improvement in the value of the beef carcass from the consumer's point of view because fattening the animal makes the meat more palatable. Other physical production includes an increase in hide, bone, and various other such cattle products.

Part of the increase in carcass weight is commonly described as lean cuts, part as carcass fat. In reality, a good deal of fat is distributed throughout the lean cuts. Table 45 shows the increase in the two common carcass products as a result of fattening calves, yearlings, and two-year-olds to a choice grade.

Note that the increase in the amount of lean is rather uniform throughout the feeding period. This indicates that a certain amount of protein is needed in the ration all through the feeding period since lean meat requires protein in its production. A certain amount of additional protein is needed to carry on the body functions as well.

The amount of fat added increases sharply with each additional gain in weight. This is the reason that more and more fattening feeds are required as the feeding process goes along. In the case of the two-year-old, the amount of direct fat added

TABLE 45  
INCREASE IN WEIGHT OF THE BEEF CARCASS DURING FATTENING \*†

	Lean Cuts—lbs.			Carcass Fat—lbs.		
	Calf	Yearling	Two	Calf	Yearling	Two
In carcass of feeder steer ‡...	144	218	281	23	52	74
Added in:						
1st 200 lbs. gain per head	58	55	50	34	55	79
2nd 200 lbs. gain per head	60	60	51	55	85	121
3rd 200 lbs. gain per head	60	.....	.....	83	.....	.....
Total at end of period.....	322	333	382	195	192	274

\* Fat and lean cuts that can readily be separated with a knife.

† USDA Technical Bulletin No. 900.

‡ Liveweight: calf, 400 lbs.; yearling 640 lbs.; two year old, 835 lbs.

during the second part of the feeding period was well over twice the weight of lean cuts added. This also explains why a carcass quickly becomes "wasty" if the fattening process goes too far.

#### Requirements for Success in Feeding

The ability to use the following four points effectively seems to determine whether a cattle feeder is likely to be successful.

1. Knowledge of when to buy and when to sell. In other words, ability to estimate fairly well the price outlook over the time covered by the feeding period.
2. Knowing how to fit the available feed and the right kind of cattle together. This is the ability to determine the proper kind of cattle to buy to fit the feed supply.
3. Being a good buyer and seller of the grade of cattle being fed. This is a different point than the use of price outlook. It means that the farmer must have the kind of knowledge that tells him what a particular lot of feeders or fat cattle are really worth on the market at the time he is buying and selling. He must be able to tell when the cattle are "well bought and well sold."
4. Ability to secure efficient gains from the kinds of feed being used. This requires a knowledge of feeds and rations that produce good results both in gain put on the cattle and in keeping the cost of gain in line.

#### Two Sources of Cattle-Feeding Profit

Making money from feeding purchased cattle is different from the profit problem common to most other livestock enterprises. The profit comes from two parts of the operation. Success in buying and feeding western lambs or feeder pigs includes the same kind of problem. One part of the profit comes from using the cattle to process feed and get a higher than market price for the feed used. Separate from this is the income the farmer will get if he is able to sell the cattle for a higher price per pound than was originally paid for them, thus getting a price gain on the original weight of the animal. The following assumed figures illustrate these points for three weights of cattle.

Not many cattle feeders, in their accounts, take the trouble to separate the two sources of profit. But any experienced feeder

TABLE 46  
THE TWO SOURCES OF PROFIT IN CATTLE FEEDING

	Calf	Yearling	Two-Year-Old
Weight of feeder steer, pounds.....	400	700	900
Sale weight, pounds.....	900	1,100	1,200
Cost per cwt. (at farm).....	\$11.00	\$10.50	\$ 10.00
Sale price (at farm).....	12.00	12.00	12.00
Cost of original weight, purchase price.....	44.00	73.50	90.00
Sale of original weight, sale price.....	48.00	84.00	108.00
Dollar gain on original weight of steer.....	\$ 4.00	\$10.50	\$ 18.00
Feedlot gain in weight, pounds.....	500	400	300
Feed cost per 100 lbs. gain in weight.....	\$ 9.00	\$10.50	\$ 12.00
Sale of feedlot gain in weight, at sale price.....	\$60.00	\$48.00	\$ 36.00
Cost of feedlot gain at feed cost rate.....	45.00	42.00	36.00
Dollar gain from feeding.....	15.00	6.00	none
Dollar gain on original weight.....	4.00	10.50	18.00
Total per steer.....	\$19.00	\$16.50	\$ 18.00

is aware that getting a margin on the original weight, especially with heavier cattle, is important to profit. The above illustration brings out this point clearly. With calves, most of the profit is made from the feeding process. This means that economy of gain is important when feeding calves. With heavy cattle, the opposite is the case. Here, much or all of the profit depends on getting a substantial margin between the buying price and the selling price of the cattle.

Because of these differences, feeding heavy cattle is a more risky enterprise than feeding calves. It is possible to make a large profit on bigger cattle if a wide margin is received. It is also easy to incur large losses. Yearling cattle, as shown in Table 46, fall between the other two. A drop of \$2.00 in the selling price below that used in the example above would leave a \$1.00 gain on the calf, \$5.50 loss on the yearling, and a \$6.00 loss on the two-year-old.

This illustrates the importance of making a careful estimate of the price outlook before starting on a cattle-feeding program. While future prices cannot be judged with great accuracy, success in anticipating the outlook is a big factor in the cattle feeder's

success. If he cannot do this reasonably well, he may be wiser to stay out of the cattle-feeding business on other than a small scale. He should follow closely the price outlook reports of his state agricultural college and the Bureau of Agricultural Economics.

### Fit the Cattle to the Feed Supply

Part of the cattle feeder's decision should be based on the kinds of feed he has or can readily buy, and what they are worth. This helps in deciding on the kind of cattle to buy. His own skill as a buyer and seller of the different grades and his experi-














































Kind of Feeder	Weight		Feed per Head				Months on Farm
	of Feeder (lbs.)	Added by Feeding (lbs.)	Corn (bu.)	Protein (lbs.)	Hay (lbs.)	Pasture (days)	
Mostly drylot 2-year-olds Good-choice							6
	880	320	49	170	1100	28	
Common-medium							5
	860	260	33	140	1100	20	
Yearlings							7
Good-choice short-fed							10
	670	370	50	200	1200	30	
Good-choice long-fed							10
	600	490	64	240	1400	42	
Common-medium							6½
	660	300	37	150	1300	40	
Calves							11
Good-choice steers							11
	440	560	63	260	1400	36	
Good-choice heifers							9
	420	390	44	200	1200	16	

FIG. 46—Seven drylot cattle feeding programs. The careful cattle feeder plans a program that fits his feed supply and feeding skills as well as the price outlook. Note the wide variation in feed, capital, and time needed by the seven feeding programs above. Successful feeders can be found that use each of these programs or a combination of them.



ence in feeding them as well as the outlook for the various grades would also be taken into account. General rules-of-thumb run as follows:

1. The better the quality of feed, the better the grade of cattle that should be fed.
2. Good to choice grades are usually sold during the last half of the year and are started on feed accordingly. A heavier feeder steer may be finished in three to six months while a calf requires nine or more.
3. Cattle of medium or common grade should be sold during the first half of the year. More of the gain should be made on roughage. They seldom pay for a long grain-feeding period.
4. The cost of putting on the gain increases with the age and weight of the cattle. For grain feeding to a good finish, a fair rule is to count on using ten to eleven bushels of corn per 100 pounds of gain for a calf, twelve to fourteen for a yearling, and thirteen to fifteen for a heavy steer. Roughage is in addition.
5. Calves make cheaper gains, but they also require more care and better shelter than older cattle. The death loss is higher. Farm records on a large number of cattle show an average of 2.5 per cent death loss with calves, compared to a 1.5 per cent loss of yearlings and two-year-olds.
6. Most feeder cattle should be bought in the fall, especially calves and light yearlings. The supply is largest at this time, the selection is best, and the price is seasonally lowest under steady business conditions. Feeder cattle prices for the same grade are usually higher in the spring. Medium grade and common cattle are often bought in the late summer or early fall.

Table 47 shows the proportion of grain to roughage used with these various systems.

Figures 46 and 47 picture the amount of various kinds of feed needed by different weights and grades of cattle. Not all kinds are included. The kinds shown include the majority of cattle-feeding methods most commonly used.

TABLE 47  
FITTING THE CATTLE PROGRAM TO THE FEED SUPPLY\*

Kind of Program	Acres for 10 Head		Hay and Pasture Used for Each 10 Acres of Corn	
	Corn	Hay & Pasture	Corn	Hay & Pasture
Strong on corn (mostly drylot)				
Good-choice long-fed yearlings . . . . .	10.7	6.7	10	6.3
Good-choice steer calves . . . . .	10.5	5.3	10	6.0
Good-choice short-fed yearlings . . . . .	8.3	5.3	10	6.4
Good-choice 2-year-olds . . . . .	8.2	4.9	10	6.0
Good-choice heifer calves . . . . .	7.3	4.2	10	5.8
Intermediate on corn				
Common-medium yearlings . . . . .	6.2	6.4	10	10.3
Common-medium 2-year-olds . . . . .	5.5	4.3	10	7.8
More hay and pasture				
Good-choice steer calves . . . . .	8.7	14.5	10	16.7
Good-choice yearling steers . . . . .	8.3	11.4	10	13.7
Medium-good steer calves . . . . .	6.8	9.5	10	14.0
Medium-good yearling steers . . . . .	5.3	9.8	10	18.5

\* This table is based on Figures 46 and 47. Yields used are 60 bu. of corn per acre 2, tons of hay and high yielding pasture. Most drylot cattle are run on pasture for a short time before being fed. This pasture is included.

### A Deferred Feeding Program

One cattle feeding program that is growing in popularity is not pictured here. Farmers who have more grass may use what has come to be called a deferred feeding program. Good quality calves or lighter yearlings, often the latter, are ordinarily purchased in the fall. They are wintered well, largely on roughage, on a type of ration that keeps them growing. In the spring, they are put on good pasture. By summer, they are put on grain feed either on the pasture or in the dry lot depending on conditions. Ordinarily, they are marketed anytime from October to December, depending on feed costs and market conditions. This plan permits the marketing of a good deal of grass and roughage, but with enough grain finish at the end so the steer will sell in the higher price brackets. Heifers cannot well be used for this long a program. Its disadvantage is the larger market risk that goes with a program that requires a year or more to bring the steer to market finish.





















Kind of Feeder	Weight		Feed per Head				
	of Feeder (lbs.)	Added by Feeding (lbs.)	Corn (bu.)	Protein (lbs.)	Hay (lbs.)	Pasture (days)	Months on Farm
Pasture fed Yearlings							9
Good-choice	650	430	50	190	1300	105	
Medium-grade							6½
	600	300	32	100	1600	75	
Calves - Steers							11
Good-choice	450	550	52	190	1800	130	
Medium-grade							9
	420	430	41	150	1200	85	

FIG. 47—Four programs for feeding cattle on pasture. Feeding cattle on pasture is growing in popularity. Such cattle are usually raised or bought in the fall, wintered well, and fed out for the summer or fall market. Several kinds of cattle can be used for a pasture feeding program though most men prefer the better grades.

### Where To Buy

Feeder cattle may be bought at many places. Besides the many natives that are fed, well over 2 million head annually are brought into the Corn Belt Area from the range states. Figure 48 shows the month-to-month sale of feeder cattle shipped in from the range and how they are marketed. A large number go through the central markets, especially the Missouri river markets of Kansas City, Omaha, and Sioux City. So. St. Paul, Chicago, Denver, and Ft. Worth are other important feeder cattle markets.

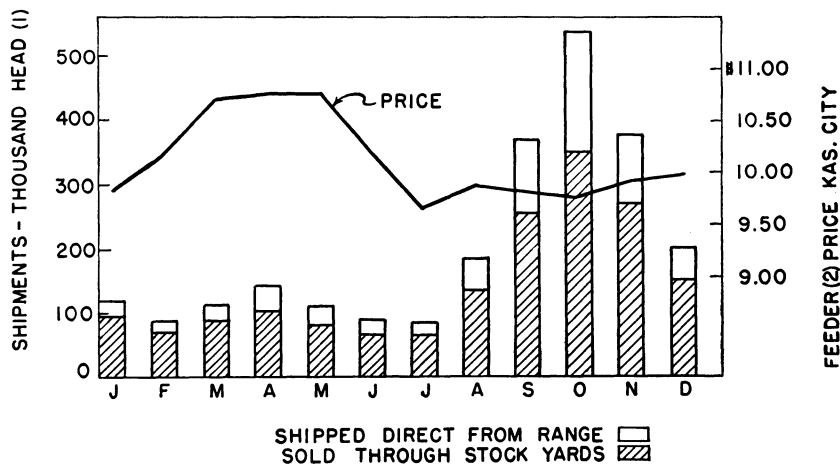
In recent years, other sale methods have been on the increase. A considerable number of cattle and calves go through auction markets either in the range country or in Corn Belt towns. Some are bought and re-sold by cattle dealers. The better auction barns and dealers sell by the pound rather than by the head. Even then, the buyer needs to use caution as many salesmen are experts at putting on a big "fill" before the cattle are weighed. Dealers may serve a useful purpose in getting cattle together and sorting them into uniform lots.

Some cattle feeders prefer to deal directly with the range producer. This requires a rather high degree of skill on the part of the buyer. He will be buying the cattle under unfamiliar

conditions. The inexperienced buyer will do well to hire the services of a reliable and experienced cattle man at least until he learns the business. Many successful cattle feeders believe that it is good business always to hire the services of a skilled buyer. Cattle raisers have similar problems in marketing their feeder cattle.

### How To Feed

There are any number of good feeding methods. Most cattle men prefer to start with plenty of roughage and only a little corn, and gradually get the cattle on feed. Heavy cattle bought



(1) 1941-43 AVERAGE

(2) 1938-44 AVERAGE

FIG. 48—The month-to-month number of feeder cattle sold and seasonal change in feeder prices. The supply of feeder cattle is largest during the fall months as cattle are sold from the range. The price is usually lowest then and a wider selection is available. The demand for cattle to put on pasture usually raises the price of stockers and feeders in the spring months.

for a short turn are an exception. They should go on feed quickly. A common method is to let the cattle clean up pastures and stalk fields before starting them on winter feed. With good grass, protein feeds are not necessary, but extra protein will be needed for cattle in stalk fields and on dry lot feed. Plenty of water, salt, and lime, or simple mineral, should be handy so the cattle can get all they need. Hogs should follow grain-fed cattle, if possible, to salvage waste feeds. This is often an important part of the profit.

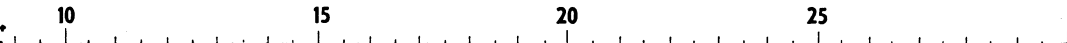
# Price of Corn Cents Per Bu.



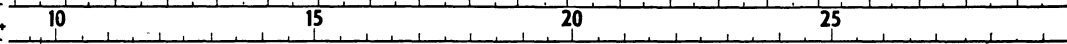
## Selling Price\* 450 lb. Calves\*\*



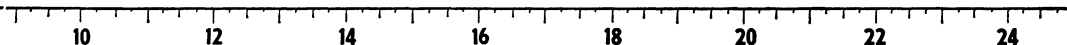
## 650 lb. Yearlings\*\*



## 800 lb. 2-Yr.-Olds\*\*



## Cost of Feeders At the Farm Dollars Per Cwt.



\* Needed to pay feed, interest and death risk

(Copyright I.S.C. Research Foundation)

\*\* Weight and kind of feeder steer put in the feedlot. The weights shown are those at place of purchase. The calves were fed to gain about 550 pounds, the yearlings 400 pounds and the 2-year-olds 350 pounds. The selling

weight is the weight of the feeder plus the amount of gain and is the weight to which the selling price applies. Selling price is that of the steer when marketed.

FIG. 49—Use this chart to figure selling price needed for choice steers. Lay a ruler across the chart for the kind of cattle you plan to feed. Place the edge on the cost of feeders laid down on the farm and the price of corn. The point where the ruler crosses the proper center line shows the selling price needed with average feeding results. The cost of all feeds has been included.

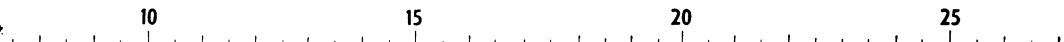
**Price of Corn  
Cents Per Bu.**



**Selling Price\*  
400 lb. Calves\*\***



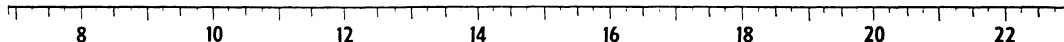
**600 lb. Yearlings\*\***



**800 lb. 2-Yr: Olds\*\***



**Cost of Feeders  
At the Farm  
Dollars Per Cwt.**



\*Needed to pay feed, interest and death risk

(Copyright I.S.C. Research Foundation)

\*\* Weight and kind of feeder steer put in the feedlot. The weights shown are those at place of purchase. The calves were fed to gain about 470 pounds, the yearlings 300 pounds and the 2-year-olds 250 pounds. The selling

weight is the weight of the feeder plus the amount of gain and is the weight to which the selling price applies. Selling price is that of the steer when marketed.

FIG. 50—Use this chart to figure selling price needed for medium steers. Lay a ruler across the chart for the kind of cattle you plan to feed. Place the edge on the cost of feeders laid down on the farm and the price of corn. The point where the ruler crosses the proper center line shows the selling price needed with average feeding results. The cost of all feeds has been included.

Silage is an excellent feed. It makes more pounds of beef from an acre than does the grain alone, but will not put as high a degree of finish on the cattle. With better grade cattle most farmers feed corn in addition to silage, especially toward the latter part of the feeding period. However, common to medium grade yearlings and two-year-olds can be fed out largely on silage. A pound or two of protein feed per head daily should be added depending on the size of the cattle and the amount and kind of hay in the ration. With alfalfa, only a little protein will be needed. Some men do not like alfalfa because of difficulties with bloat. Straight protein feeds, soybean meal, linseed or cottonseed are commonly used. There seems to be no advantage in using protein mixtures for cattle. The choice should largely be based on price although linseed meal gives a somewhat better "bloom" to long-fed cattle.

Feed requirements per pound of gain increase as the animal becomes heavier and fatter. With calves, the increase in feed requirements needed comes slowly at first. With heavier feeders, the increase comes more rapidly. The table below shows the additional feed needed for calves, yearlings, and two-year-olds as they increase in weight.

Both feed costs and margins affect the necessary selling price for cattle to make a profit. These are shown in Figures 49 and 50. The necessary selling price to pay for feed, interest on the money invested in the feeder steer, and allowance for normal death loss is shown. These necessary selling prices are based on the

TABLE 48  
FEED NEEDED TO PUT 100 POUNDS OF GAIN ON STEERS AT VARIOUS WEIGHTS\*

Kind of Feeder	Feed Units Needed for						
	1st 100 lbs. Gain	2nd 100 lbs. Gain	3rd 100 lbs. Gain	4th 100 lbs. Gain	5th 100 lbs. Gain	6th 100 lbs. Gain	7th 100 lbs. Gain
400-lb. calf.....	8.7	9.7	10.9	12.4	15.6	17.4	21.9
640-lb. yearling.....	10.5	12.3	14.3	17.5	22.4	.....	.....
840-lb. 2-year-old.....	10.7	13.1	16.8	23.4	(16.3)†	.....	.....

\* A feed unit as here used is the amount of digestible nutrients equal to that in a bushel of shelled corn (44.8 T.D.N's). This data is based on research with good-choice drylot fed steers. From USDA Technical Bulletin 900.

† Needed for the next 50 lbs. gain.

kind of cattle and feeding efficiency shown in Figures 46 and 47. They can be used as a rough rule-of-thumb measure for necessary selling prices at various costs of feeders and feeds.

County agents will usually have bulletins on the details of feeding methods which we do not have space to consider here. The advice of successful cattle feeders can also be a big help to the beginner and he should seek their counsel. In any cattle feeding area, the county agent can point out a number of successful men.

The business-like cattle feeder pays much attention to the other parts of his business as well. This will be especially true of his hogs. Generally, the more successful cattle feeders produce hogs and beef in the proportion of fifty to sixty pounds of hogs to forty to fifty pounds of beef. The best plan is to raise all or most of the hogs. It is the very exceptional man that can buy both feeder cattle and feeder pigs and make a profit one year with another.

### **Hogs—The Corn Belt's "Mortgage Lifter"**

A good hog raiser centers his time and attention on the things that make the hog business pay good dividends. As pointed out before, the hog enterprise does not require a great deal of labor per \$1.00 of sales. But certain key jobs must be well done and at the right time if the enterprise is to return more than a nominal profit. Some points that many hog raisers consider important are:

1. To have a hog system that fits in with the rest of the farm plan. There are several critical times in the hog raiser's program when he must be "on the job." His hog plan and overall farm plan should fit together so that his work does not pile up at these critical times. The most important jobs cannot be delegated to the hired help.
2. Strong, healthy pigs are the kind that make a good profit. Keeping the hogs healthy comes from the use of a good sanitation system in raising them, good breeding stock, proper rations, and use of disease-prevention practices.
3. Large litters are essential for success. The farmer needs to have good breeding stock and use practices that result in large, strong litters.



4. A farmer can't make much money by raising only two or three litters once or twice a year. A man that is a good hog raiser and lives where hog raising is a major enterprise should be able to handle from ten to fifty litters at one time, and do a good job.
5. The market price for hogs is quite changeable from month to month. The farmer should plan to have hogs for sale during some of the months when prices are above average.

### About the Plan

The skilled hog raiser commonly uses one of three general plans.

► *Plan One* is a system using both spring and fall pigs. It calls for farrowing spring litters during the late winter or early spring. A second group of litters is farrowed in the late summer or early fall. Whether the two sets of litters should be of the same size or one group larger than the other depends on what fits the whole farm plan best.

The man who uses this plan must have good, though not expensive equipment for his early spring pigs. The farrowing houses should be tight and protected from drafts. Most men use electric pig brooders at this time of year. The farmer must be the kind of man who is "on the job" to see that houses are kept dry, litters are well fed, not too many litters kept together, both sows and litters are given a balanced ration, and clean sod or other arrangements are provided so the pigs will not develop anemia.

Before the pigs are farrowed, houses and pens must be free from worm eggs and disease organisms that may have been left there by older hogs that occupied the quarters earlier. Scrubbing the houses with scalding lye water is standard treatment. Some men prefer to clean them well and use some kind of flame thrower as a disinfectant. Sows should be free of mange before farrowing time or this will be troublesome.

With this plan, the farmer should make sure that he has enough feed on hand or in sight to finish the pigs for early market—any time from August to October, depending on conditions. It takes quite a bit of capital to provide, until market time, enough feed for a good sized bunch of early pigs. There is

little merit in going to the trouble of starting with early pigs if they do not reach market weight until well into November or December.

Early farrowed pigs should go out on clean ground as soon as the weather is fit. Legume pasture is best.

With this system, fall pigs are usually farrowed in August, or early September. New oats or wheat will be available for feed by this time, but some old corn may be needed depending on the season. Fall pigs are usually farrowed either in the field or in a clean, central house and moved to a clean pasture in a few days.

► *Plan Two* is one-litter system for the larger operator having a program calling for from 25 to 100 litters or more. Gilts farrow in late May and early June, between corn planting and hay making. At this time of year the weather is warm enough so that keeping the pigs from chilling is usually no problem. The pigs are generally farrowed in the field. Some farmers on rolling land let the sow find her own place and have a supply of small, hinged shelters that they place over each sow after she has farrowed. Others prefer to use one, two, or three pen movable houses, and see that the sows farrow in them. If a group of sows farrow within a few days of each other, quite a large number of sows and pigs can be kept in the same group with no serious difficulties. But groups of pigs that vary more than a week or so in age should be kept separate until the pigs are weaned. Some men prefer to keep them separate until market time.

This system makes use of a maximum of pasture and a minimum of labor and equipment. A well-planned water and self-feeding system for use in the field is needed for this system, as is true of most clean ground systems.

With this plan, the sows usually go to market during the higher priced August period. The pigs are carried along more slowly so they can use the new corn crop and perhaps run behind feeder cattle for a while. They ordinarily go to market at rather heavy weights on the February or early March market. Profit with this system comes as a result of lower costs, larger volume, and a better chance of keeping the hogs healthy.

One variation of this system is to wait until late July or early August to have the pigs farrow. This works especially well on farms that have timber pasture and make use of the shade

during the hot summer days. But a rotation in the use of the timber pasture must be practiced, or diseases will accumulate if the pigs are farrowed in the same ground every year.

► *Plan Three* is really a combination of plans one and two. Pigs are farrowed in early spring from a set of gilts or old sows, in early summer from gilts, and the third set of pigs are farrowed in the fall. Usually the fall farrowing is from gilts that are kept over to farrow their second litter in the spring.

This plan is used only by the larger operator, the man who farrows forty litters or more per year. Otherwise he would find the labor requirement per hog marketed to increase considerably if he breaks his hog raising up into several small groups of litters at different times of the year.

The advantages of this system are:

1. Having hogs on the market several different times during the year.
2. More efficient use of equipment.
3. Greater ease in keeping disease under control by not concentrating his hog raising so much at any one time.

It has at least one disadvantage. Three times during the year the farmer must go through the specialized work which is necessary if pigs are to be given a good start. But if the farmer is quite interested in raising hogs, he is likely to become highly skilled at this work.

Still other hog-raising plans are possible. A common plan is to farrow spring pigs in April and raise them in the old lots. They may or may not be followed by other litters in the fall. Such spring pigs usually reach the market during the lower price period of the winter from late November until January. With such a plan, the efficiency is not very high. Some profit may be made but likely not a great deal.

### Hogs Respond to Good Practices

Hogs are very efficient converters of feed into meat and fat, where good practices are used. They can be a very inefficient animal under poor circumstances. The list of practices which follows was taken from observing those commonly used by several Iowa Master Swine Producers. Many of these farmers raise several

hundred hogs annually with a high degree of efficiency. They are not only good hog men, but good general farmers as well.

Some of the hog-raising practices reported by these Master Swine Producers are:

1. The hog enterprise should be a first interest of the farm operator and not be neglected because of other demands on his time.
2. Crossbred pigs ordinarily have more vigor than straight bred pigs. Crossbred sows are proving to be satisfactory.
3. Where the two-litter system is used, there is a big advantage in having the gilts farrow their first litter in the fall, the second in the spring. This system makes possible the better timing of the farrowing period. Yearling sows have less trouble with "flu" during the winter than gilts.
4. Select gilts from large litters where the sow was a good mother.
5. Have gilts in good condition at breeding time. Flush with extra feed two weeks before breeding.
6. Pen breeding seems to be of no advantage.
7. A good winter ration for sows: ground corn and chopped alfalfa hay, equal parts by weight; self fed; and a simple mineral mixture. Oats may be added to this. Sows should have plenty of exercise, especially during the winter.
8. Early spring pigs should be farrowed in a central location, sheltered by windbreaks. Use an electric pig brooder in cold weather. Temporary wooden lanes from the central house to clean, rotation pasture is satisfactory as well as putting the pigs in the field.
9. A flame thrower or boiling lye water may be used to kill worm eggs and disease germs after the farrowing house has been thoroughly cleaned out.
10. Do not feed heavily for two days after farrowing. Start with bulky feeds such as oats, bran, or chopped alfalfa. Give plenty of water. Get the sow on full feed in ten days.
11. Creep-feed young pigs using rolled, hulled, or ground oats with the light oats fanned out.

12. If little pigs are kept on concrete, feed chunks of sod dug from a fence row. Lay up a supply in the fall. Clean floors every day. Pigs started on a floor require a more carefully planned ration than when farrowed in the field.
13. Castrate at four weeks, vaccinate at six weeks, wean at eight weeks.
14. If enteritis is present, use of crystal violet vaccine may be better than the regular double treatment for cholera prevention.
15. Prepare spring and summer hog pasture locations with equipment, fencing, etc., during spare time the previous fall.
16. Alfalfa makes excellent pasture, but many prefer red clover if it fits better in the regular crop rotation.
17. An adequate water supply is very important. Use of shallow wells, sand points, tile drain outlets, ponds, or similar sources save much labor over hauling water if the pigs are kept in the field.
18. If ear corn is fed on the ground, change feeding locations frequently.
19. Make plenty of use of temporary straw shades during hot weather.
20. A concrete feeding floor is almost essential during the spring mud season.
21. Clean ground pasture, balanced rations—including proteins and minerals—use of self feeders, and plenty of clean water are prime requisites to a good hog program.

#### What Is the Best Sale Weight?

The best weight at which to sell depends on decisions of several kinds. One is the hog-raising plan in use. The man with the two litter system may want to get the older pigs moved along so he will have more room, time, and feed for the smaller pigs. The one-litter man may figure that much of the extra work and risk in raising hogs is in getting the pig past weaning time. After that, little risk is involved, and he can market several more bushels of corn through each hog by putting more weight on before he sells them.

The time of year makes a big difference. The price discount for heavy hogs is quite a bit at some times of the year, but not at others. The seasonal price trends during the two or three months period during which the hogs might be sold is most likely the biggest factor of all in determining the best sale weight.

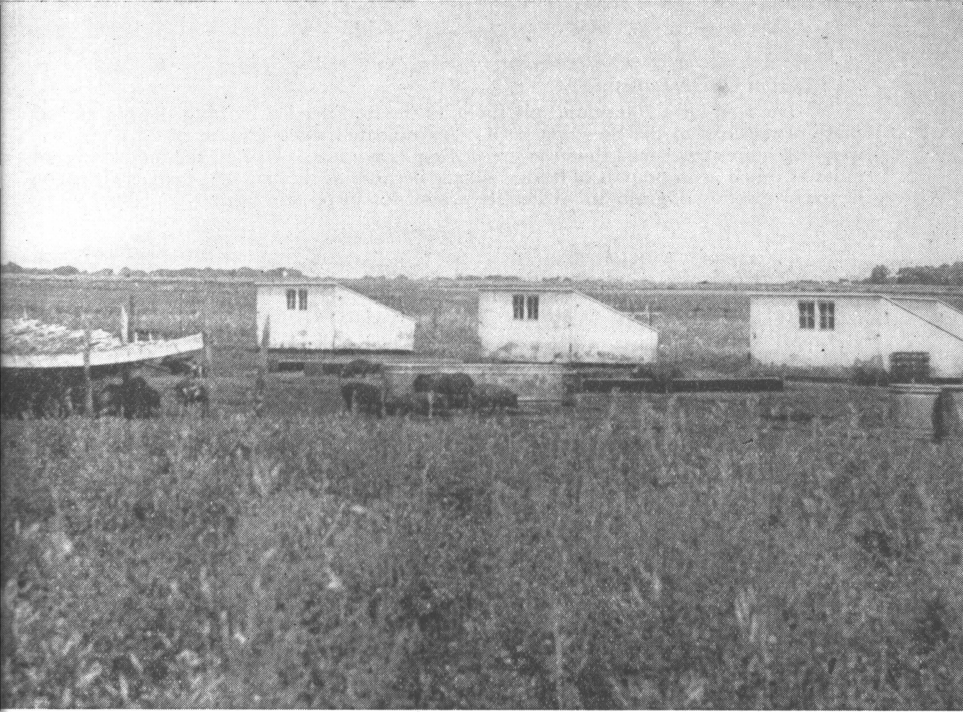


FIG. 51—Clean ground pasture, balanced rations, plenty of water and shade for hot weather, and labor saving equipment are the keys to a good hog program.

The hog farmer needs three sets of facts at this point. One is the usual seasonal hog price trends. Second is the cost of taking hogs to heavier weights. Third is any special price outlook considerations for the particular year or part of a year when the problem is up for a decision.

Table 49 supplies the basic facts needed about the additional feed required to take hogs to heavier weights. Current feed

TABLE 49  
FEED REQUIRED TO BRING HOGS TO HEAVIER WEIGHTS\*

Weight Added to hog	Total Weight of hog	Feed for 25 lbs. Additional gain on hog	Total Feed per hog †
(Pounds)	(Pounds)	(Pounds)	(Pounds)
.....	200	.....	814
25	225	112	926
25	250	118	1,044
25	275	124	1,168
25	300	132	1,300

\* From USDA Bulletin 894.

† The feed for a 200 pound pig includes the feed needed by both the pig and its share of the feed to the breeding herd. As indicated, each additional 25 pounds of weight requires more feed than the preceeding 25 pounds. In cost, the increase is not quite as much as in pounds of feed. This is because as the hog gets heavier, it eats a larger proportion of grain and a smaller proportion of protein feed.

prices applied to the amount of feed shown in the table can be used to estimate costs at the time the question is being considered. The farmer must remember that these are average feed requirement figures; his own hogs may either do better or not so well. Also he must take into account the risk of "flu" or other disease hazards while putting more weight on the hogs.

A hog feeding bulletin from the state agricultural college will be useful in deciding on low cost rations. Hogs can use "home grown" feeds for the most part. Additional protein is usually needed as well as a simple mineral mixture. But guard against the use of expensive feeds whether protein mixtures or minerals. A lot of potential profit will soon disappear if such feeds are used in quantity. Home-grown grains, legume pasture, protein, and plenty of good quality home-grown, ground alfalfa during the winter should make up the bulk of an economical ration.

Table 50 furnishes the hog man with information that combines seasonal price trends with the usual weight discounts or premiums. Average prices are used. This table can easily be changed to fit the price of hogs in any particular year. Suppose hogs are around \$17.00 in September. The figures in the table should then be doubled and the table used as before. If hogs were around \$13.00, all the figures would be increased by about 50 per cent.

This table tells approximately the best time to market hogs one year with another. The man that farrows his pigs in February would not sell them in August since the price usually rises between August and September, (\$7.84 to \$8.56). By waiting, he might have more weight to sell, besides getting a higher price. However, he would not be wise to wait another month since prices usually drop in the next thirty days, (\$8.56 to \$7.72). Such a drop would likely more than cancel any profits from feeding to heavier weights.

The man with May pigs, on the other hand, is likely to carry them to heavier weights. He not only has more weight to sell, but a 300-pound hog would frequently sell for more per pound the following February than a 200-pound one would in December. The man with September pigs usually has a much wider range of choice as to selling them.

As this book is being written, a possibility exists that a government program will be used to support hog prices. If this should be the case, the operations of the price support plan may greatly modify the seasonal price trends formerly expected.

TABLE 50  
CHOOSING THE BEST WEIGHT AND TIME TO SELL HOGS\*

Month of Farrow	Marketing Results			Month of Farrow	Marketing Results		
	Time	Weight	Price		Time	Weight	Price
February..	{Aug.	150	\$7.84	June.....	{Dec.	150	\$6.58
	{Sept.	200	8.56		{Jan.	200	7.20
	{Oct.	250	7.72		{Feb.	250	7.38
	{Nov.	300	7.03		{Mar.	300	7.34
March....	{Sept.	150	7.76	August....	{Feb.	150	7.10
	{Oct.	200	7.62		{Mar.	200	7.63
	{Nov.	250	7.09		{Apr.	250	7.39
	{Dec.	300	6.77		{May	300	7.23
April.....	{Oct.	150	7.01	September.	{Mar.	150	7.17
	{Nov.	200	7.03		{April	200	7.45
	{Dec.	250	6.89		{May	250	7.40
	{Jan.	300	6.86		{June	300	7.39
May.....	{Nov.	150	6.61	October....	{Apr.	150	7.07
	{Dec.	200	6.93		{May	200	7.43
	{Jan.	250	7.04		{June	250	7.61
	{Feb.	300	7.20		{July	300	7.61

\* The prices given are average monthly prices for good to choice butcher hogs of weight shown. USDA Technical Bulletin 894.



It is impossible to say what the effects of such a price support program are likely to be at this time.

But the main problems of making a profit from raising hogs would remain the same even then. The efficient hog producer would likely end up with good profits most of the time. The inefficient man, just as is the case now, would have little to show for his work, capital, and risk over the value of the feed he was using for the hogs. It isn't hard to learn to be an efficient hog raiser. Those who apply themselves well enough to learn usually get big dividends for their efforts.

### **Raising Sheep**

As the Midwest livestock maps show, sheep raising is not uniformly distributed over the North Central states. One reason is that sheep raising is not well adapted to all areas. Another is that successful sheep raising requires certain kinds of specialized knowledge that many farmers do not have. In other words, the "pool of common knowledge" about successful sheep raising methods in most communities is a smaller "pool" than is the case for most other kinds of livestock.

Men who like sheep and are willing to learn how to do a good job with them are likely to be successful. Otherwise they probably are better off not to try sheep raising.

The small flock finds a place on many farms because it does not seriously interfere with other enterprises. It brings in additional income, and sheep are useful in keeping odd corners about the farm cleaned up and the grass used to advantage. They have little place on very small farms unless the land is mostly pasture. While sheep will eat weeds better than other livestock, this does not mean that weeds alone make a satisfactory ration. Sheep respond to good feed the same as any livestock. The bigger flocks are kept on larger farms with a high percentage of pastureland.

Good quality breeding stock should be used. They can either be natives or ewes brought from the western range. A well-bred mutton type ram should be used in either case. Where early lambs can be handled, breeding the ewes to lamb in February or in early March will make it possible to market choice fat lambs before the heat of summer. The ewes need some legume hay in winter, but can also make use of a part-ration of good quality but cheaper roughage such as corn stover or silage. Little

if any grain need be fed during the winter, but some may be needed around lambing time. Salt and simple mineral should be kept available.

The farmer who raises lambs for early market must have his plans well made in advance. The lambs must come on schedule. Early pasture is a big help. Many men sow a field of rye rather early in the fall just for this purpose. If the rye is on good soil, it will make early feed, especially if on a southern slope. Some extra fertilizer on the rye may pay well. Here is another place where top dressing the rye with nitrogen may pay good dividends in the spring. Winter wheat can be used instead of rye, but it does not grow as rapidly as rye. Where grain is available, many farmers creep feed their lambs. But extra costs must be balanced against extra gains.

TABLE 51  
FEED REQUIRED PER YEAR BY FARM SHEEP FLOCKS  
(*The Breeding Flock-Midwest Farms*)\*

	Southern Iowa Medium Wool	Western Ohio Medium Wool	Eastern Ohio Fine Wool	Minnesota Medium Wool
Feed per head				
Grain and supplement...	145 lbs.	80 lbs.	96 lbs.	67 lbs.
Hay.....	204 lbs.	114 lbs.	129 lbs.	244 lbs.
Corn stover.....	85 lbs.	182 lbs.	.....	.....
Silage.....	.....	.....	434 lbs.	126 lbs.
Death loss, sheep.....	14%	not given	not given	11%
Per cent lamb crop. ....	98%	not given	104%	97%

\* Data from farm records compiled by respective Experiment Stations.

Table 51 shows feed requirements for native sheep flocks based on farm records from various states.

Sheep are subject to several diseases—stomach worms are a usual hazard. Rotating the sheep between pastures and the use of a phenothiazine-salt mixture will help prevent worms, but a more specific worm treatment may be needed. Some death loss must be expected, mostly among the ewes. A large lamb crop is a big factor in having a profitable flock. An average of one lamb per ewe from westerns and up to one and one-half from natives is a reasonable accomplishment.

Raising sheep in large numbers in the range country of the west is something of a special problem. The farm management department of the state agricultural college may well be consulted as to profit possibilities. The animal husbandry department should be consulted about feeding methods and day-to-day management problems.

### Lamb Feeding

Much the same kind of ability is needed for success in feeding western lambs as is needed by farmers in feeding heavy cattle. The weight of the feeder lamb purchased is usually larger than the gain in weight that is added by feeding. Feeder lambs commonly weigh 60 to 70 pounds when bought and are sold around 95 to 105 pounds in weight. Buying such a high proportion of the weight finally sold makes this a high risk enterprise. Another risk comes from the fact that fat lambs cannot be held long for a better market after they are fat enough to sell. Often, too, the death loss is high. A 2 to 4 per cent loss is considered normal, but losses up to 10 per cent and more have

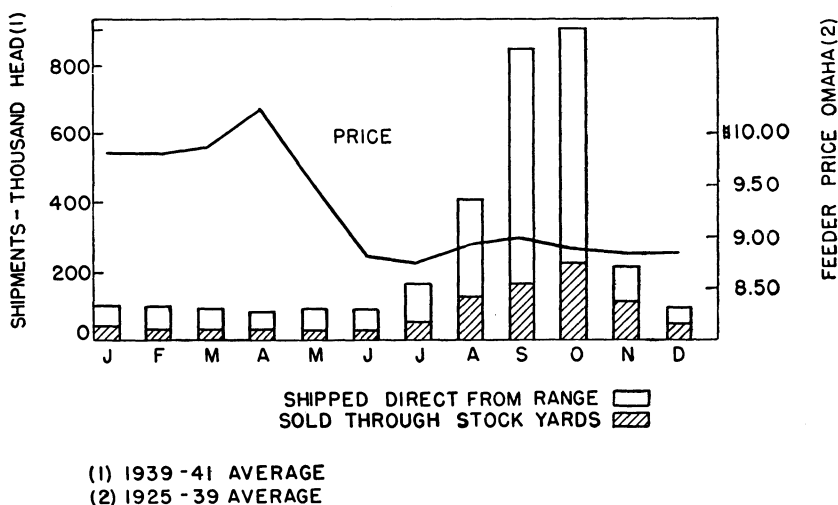


FIG. 52—The month-to-month number of feeder lambs sold and seasonal change in feeder prices. Lamb feeders buy most of their lambs during the fall months but some are available from the southern Plains and California at other times. After July, there is little seasonal change in price in average years. More lambs move direct from the range than go through terminal stock yards.

occurred in many cases where the farmer lacked the special knowledge and skill needed.

Lambs use somewhat more roughage in proportion to grain than many kinds of fattening cattle. Success in fattening lambs on pasture or in the corn field is more difficult than in the dry lot. Lambs are sensitive to off-grade feeds. Using them is almost certain to result in a high death loss.

Lamb feeding gives a rapid turnover of capital since 90 to 120 days is a normal feeding period. Many finishers feed out two lots during the winter, one early in the winter and a second lot later. Around 450 pounds of grain and 550 of hay is a good average per 100 pounds of gain. Considerable skill is needed to get rapid gains. The poor manager may find that a 100 day feeding period leaves the lambs only a little heavier than at the beginning. However, skilled feeders often find lamb feeding a highly profitable enterprise. As in cattle feeding, good judgment of the price outlook is vital to success.

Since special knowledge and skill is needed, most men do not care to learn the business unless they carry it on as a fairly large scale enterprise. Three hundred head is considered a rather small operation. Many handle 500 to 1,000 head a year, and a good many operate on a much larger scale. In other words, feeding western lambs is not often thought of as a smaller scale, side line-type of enterprise.

#### Guides to Success

One of the most successful Midwest lamb feeders offers the following suggestions. A large scale operator, this farmer has fed hundreds of thousands of lambs and has made large profits out of his lamb feeding operations. These are his suggestions:

1. To be a successful lamb feeder, one must have an honest liking for the business and have a personal desire to care for and understand the habits of lambs and sheep.
2. Learn the many ideas that lie back of the statement, "The eye of the master fatteneth his stock."
3. Plan the lamb feeding program for at least one or two years in advance. It is most important to see that both the lamb

- feeding plan and the general farming plan fit together so they will work in harmony and not be in conflict.
- 4. Study the long-time and short-time production cycles of sheep and lambs and learn how they are related to other species of livestock, and to consumer demand for lamb and mutton.
- 5. Make adequate financial arrangements that go beyond the length of the feeding period that is planned. This will give the farmer flexibility in choosing the best time to complete his feeding program.
- 6. Be well informed on the important points about lamb feeding. Make plans carefully and then have confidence in those plans and decisions.
- 7. Do not spend profit before it is made.

#### Lamb-Feeding Methods

Many different feeding methods have been successfully used. The Kansas Experiment Station reports the results of several years of physical feed balance studies. They believe that the following points are important in successful lamb feeding:

The proportion of 45 per cent grain to 55 per cent roughage by weight consistently gave the best results. Lambs finished well, death loss, and digestive disturbances were low, gains were good, and the finished carcasses graded out well. The proportion of 35 per cent grain to 65 per cent roughage resulted in a lower grain requirement, and very little death loss. But gains were considerably slower, lambs did not finish well nor bring as high a selling price as when they got more grain. The proportion of 65 per cent grain to 35 per cent roughage gave well-finished carcasses. But death loss was higher and many more lambs went off feed. Considerably more grain was required for 100 pound gain. Daily gains were not as high as in the first case, probably because of the difficulty of keeping the lambs on full feed.

The rations described above are those used after the lambs were on feed. Some time is always needed to get the lambs up to a full grain ration.

Many feeders grind the grain and hay together so the proportions can be controlled. Another advantage is that greedy

lambs do not overeat and get off feed so frequently. The slower eating lambs have a better chance to get their share of the feed.

Other rations and methods are being developed to help reduce the death loss. A recent bulletin on lamb feeding should be studied to keep up to date on the progress being made in research work.

Nearly all feeder lambs are purchased in the fall at the close of the range season. Figure 52 shows the time when western feeder sheep and lambs come to market and how they are sold, and the seasonal price pattern for feeder lambs in the past.

### **Chickens—A Common Farm Enterprise**

Nearly every farm family keeps chickens. The size of flocks varies widely from farm to farm depending on the interest of the family in chickens, how well the farm is equipped, and chicken and egg prices. Here is one description of the several kinds of Midwest flocks.

First are the "table use" flocks. These are kept to furnish eggs and chickens for family use. The 1945 Census reported that nearly one-fourth of Midwest farms kept flocks of fifty or less. If these small flocks are well fed, the hens will lay as many eggs as in larger flocks. But not if table scraps and the like make up much of the ration. Such feed is not uniform enough in nutrients to keep a flock of hens laying at a high rate. But the use of low cost feed may be more important.

Second are the "pin money" flocks, somewhat larger but handled mostly by the wife and children. Nearly one farm in three had flocks of 50 to 100 hens, not counting additional chickens for sale may be more important than the sale of eggs. Rented farms, furnish eggs and poultry for the family and provide the wife with some ready cash of her own. The raising of chickens for sale may be more important than the sale of eggs on many of these farms if the landlord does not provide a fair-sized and reasonably well-built hen house. These flocks often return a good profit for the resources used.

A third type are the "grocery bill" flocks running from 100 to 250 hens. About 30 per cent of Midwest flocks are in this group. Chickens are now a larger farm enterprise, though still not a major one in the farm business. More equipment and care are needed for flocks of this size, which means that the farmer as well as the wife must take an interest in the enterprise if it

is to be efficient. This is the size of flock reported in Chapter 7. It is a common size of family farm enterprise where it is counted on by the man of the family as well as by the wife to contribute a share of the farm income.

Finally, there are the "commercial enterprise" flocks where poultry are an important enterprise on the farm. On many farms, these bring in a substantial part of the farm income, even though the farm would not be considered a poultry farm. Many Midwest farms have flocks of 250 to 400 hens, but only one per cent are larger operators with flocks of 400 hens and up.

As indicated above, farm families with small flocks may give a good deal of attention to meat production. Large scale poultrymen usually center their attention more on egg production. The meat side of the enterprise cannot be dismissed lightly in the latter case. Failure to be efficient in meat production can greatly reduce the profits.

In this discussion, the raising of broilers is omitted. At the present time, broiler raising is not a common poultry enterprise in the Midwest. Where raised, broilers are frequently a large-scale, highly specialized business.

### Start With Good Chicks

Good breeding stock back of the baby chicks is important. One would be wise to check closely on the reputation of the hatchery as to the quality of the flocks from which the hatching eggs are secured. Many hatcheries merit a high rating, but there are wide differences in the quality of chicks that are offered for sale.

### What About Breeds?

The main decision will be to choose between a light or a heavier breed. There is no one best answer for all farmers.

Those who have warm hen houses and plan to give a good deal of attention to the hen flock often favor light breeds. White Leghorns are the most popular. With light breeds, eggs usually furnish the main income, bringing in 75 to 80 per cent of the total poultry income. It is important to secure chicks from breeding stock with high egg production records.

Many farmers who have poorer housing conditions, especially those on rented farms, prefer the heavier breeds. Those who keep smaller flocks usually do. Of the heavier breeds, no one is out-

standing. One breed may be more popular than others in a particular community, and higher quality breeding stock may be available. If so, this breed would be the one to use. In any case, strong chicks that are well bred and free from disease should be obtained.

Many so-called hybrid chickens are sold. Most of these are secured from crossing two breeds and are not real hybrids. Apparently, there is little special merit in cross-breeding chickens. They may or may not have desirable qualities.

True hybrid chicks, produced from inbred breeding stock, are being sold in some areas. Where backed by a careful breeding program, they often have superior qualities. Whether they are likely to be more profitable than ordinary chickens should be considered before they are purchased. Usually the baby chicks cost considerably more than those of regular breeds.

Table 52 gives information on feed requirements, death loss, and labor requirements in raising chickens. Note that the death loss is usually higher with the light breeds. Apparently, in breeding for high egg production, vitality has been sacrificed to some degree.

TABLE 52  
REQUIREMENTS FOR RAISING CHICKENS\*

	Smaller Flocks		Larger Flocks	
	Iowa Straight Run Heavy	Iowa Straight Run Light	Iowa Straight Run Light	New York Sexed Pullets Light
Location . . . . .				
Sex . . . . .				
Breed . . . . .				
Number started . . . . .	450	400	1,500	1,200
Death loss . . . . .	10%	18%	18%	12%
Feed per bird raised				
Grain lbs. . . . .				10.7
Mash lbs. . . . .				19.7
Misc. feeds lbs. . . . .				0.3
Total feed, lbs. . . . .	28.1	21.9	20.2	30.7†
Labor per 100 birds raised, hours . . . . .	42	48	25	62

\* From farm flock records in these states.

† With sexed chicks, practically all of those raised are kept until ready to put in the laying house. With straight run chicks about half are sold earlier as market chickens. Those sold earlier require less feed and labor per bird. The cockerels of heavier breeds are usually carried to heavier weights than is true with the light breeds.



### Proper Feeding Essential to Success

Except when they are small, chickens will live on nearly any kind of grain or scrap feed. But proper feeding is necessary to secure a rapid growth of young stock and high rate of lay from the hens. For this reason, a knowledge of feeds and good feeding methods is essential to success. Many farmers feed commercial mashers both to growing chickens and hens.

Where farm grown grains are plentiful, a common recommendation is to use an 18 per cent protein starter and grower for the first twelve to sixteen weeks. Then gradually change to a higher protein mash (26 per cent is a common one) with home-grown feeds for the later stages of growth and for egg laying. Some use a very high protein mash and more of their own grain, others the reverse. Feeding recommendations for hens should be accurately followed in any case.

Chickens need good housing to do well. This is true both of the brooder house and the laying house. For winter laying the house needs to be dry, reasonably warm, and ventilated—but free from drafts. The straw loft type of laying house is standard in the Midwest and is a considerable help in keeping the house warm and dry and yet permitting good ventilation. In colder climates, many flock owners insulate the walls and sometimes the ceilings of their laying house. An even winter temperature inside the house is a big help in maintaining a uniform rate of egg production.

### Keep Them Healthy

Chickens are subject to many diseases. One mark of good management is to have a system that will keep the flock healthy. It is much more a matter of keeping the birds healthy than it is of doctoring them after they become sick. Good flock health is started by securing healthy baby chicks from a reputable hatchery. Next see that the brooder house is thoroughly cleaned and disinfected before the baby chicks are put in. Disinfectants will help but plenty of boiling water and "elbow grease" are important.

The next step is to raise the chicks on clean ground and keep them entirely separate from the old flock. Only then is there a real chance to keep the pullets free from disease. The final step is to sell off all the old hens early in the fall, thoroughly

TABLE 53  
REQUIREMENTS OF HENS IN FLOCKS WITH GOOD MANAGEMENT\*

	Leghorn (Iowa)	Leghorn (Ohio)	Heavies (Ohio)	Leghorn (New York)	Heavies (New York)
Size of flock . . . . .	250	500	180	1,400	800
Death loss for year . . . . .	23%	no data	no data	26%	21%
Eggs per hen . . . . .	170	160	130	168	167
Feed per hen, lbs.					
Grain . . . . .		47	56	46	50
Mash . . . . .		40	37	45	55
Shell and grit . . . . .		3	2	4	3
Total† . . . . .	98	90	95	95	108
Feed per doz. eggs, lbs. . . . .	7.0	6.8	8.8	6.9	7.9
Labor, hrs. per hen . . . . .	1.6	no data	no data	2.2	2.4

\* From farm flocks record in respective states.

† Average per hen for the year. About 125 pullets were put in the house in the fall to obtain an average of 100 hens for the year.

clean and disinfect the laying house, and give the pullets a clean start. With these condition and proper housing, most diseases can be avoided. Leukosis or fowl paralysis is not so easily handled and a competent veterinarian who knows poultry diseases should be consulted.

Table 53 gives details about hens of light and heavy breeds. Heavy breeds require somewhat more feed. But the hens themselves bring more when they are sold.

#### Have Pullets Mature Early

Getting a good income from the flock depends not only on having a healthy flock, but also on having the pullets mature early enough in the fall so a considerable share of the eggs will be laid during the fall months. This means that the pullets should be ready to lay not later than October first. Earlier than this is somewhat better. If pullets mature too early, however, other troubles may be encountered. The importance of winter eggs is easily seen in that 20 dozens of eggs sold in November are usually worth as much as 30 dozen sold in April. The feed required in either month will be about the same, so there is

usually more profit from the eggs produced during the fall and winter.

### More Feed Is Needed As Meat Birds Get Heavier

The sale of chickens for meat may be an important part of the poultry business. In most flocks, meat production consists



FIG. 53—On the family farm, the poultry enterprise makes use of the skill and work of family members who usually do not help with the heavier jobs. Here mother and daughter look after the family flock on a South Dakota farm. Photo USDA Extension Service.

TABLE 54  
FEED REQUIREMENTS OF MARKET POULTRY PER BIRD\*

Class of Bird	Age	Live Weight Added	Total Live Weight	Addi- tional Feed Needed	Total Feed Fed	Feed per Pound of	
						Added Gain	Total Gain
	(wks.)	(lbs.)	(lbs.)	(lbs.)	(lbs.)	(lbs.)	(lbs.)
Broiler.....	8	.....	1.47	.....	3.80	.....	2.58
Broiler.....	12	.91	2.38	3.66	7.46	4.00	3.13
Fryer.....	16	1.24	3.54	5.57	13.03	4.80	3.68
Light roaster.....	20	1.24	4.78	7.54	20.57	6.10	4.30
Heavy roaster.....	24	1.26	6.04	9.08	29.65	7.20	4.91
Capon.....	28	.82	6.86	9.04	38.69	11.00	5.64

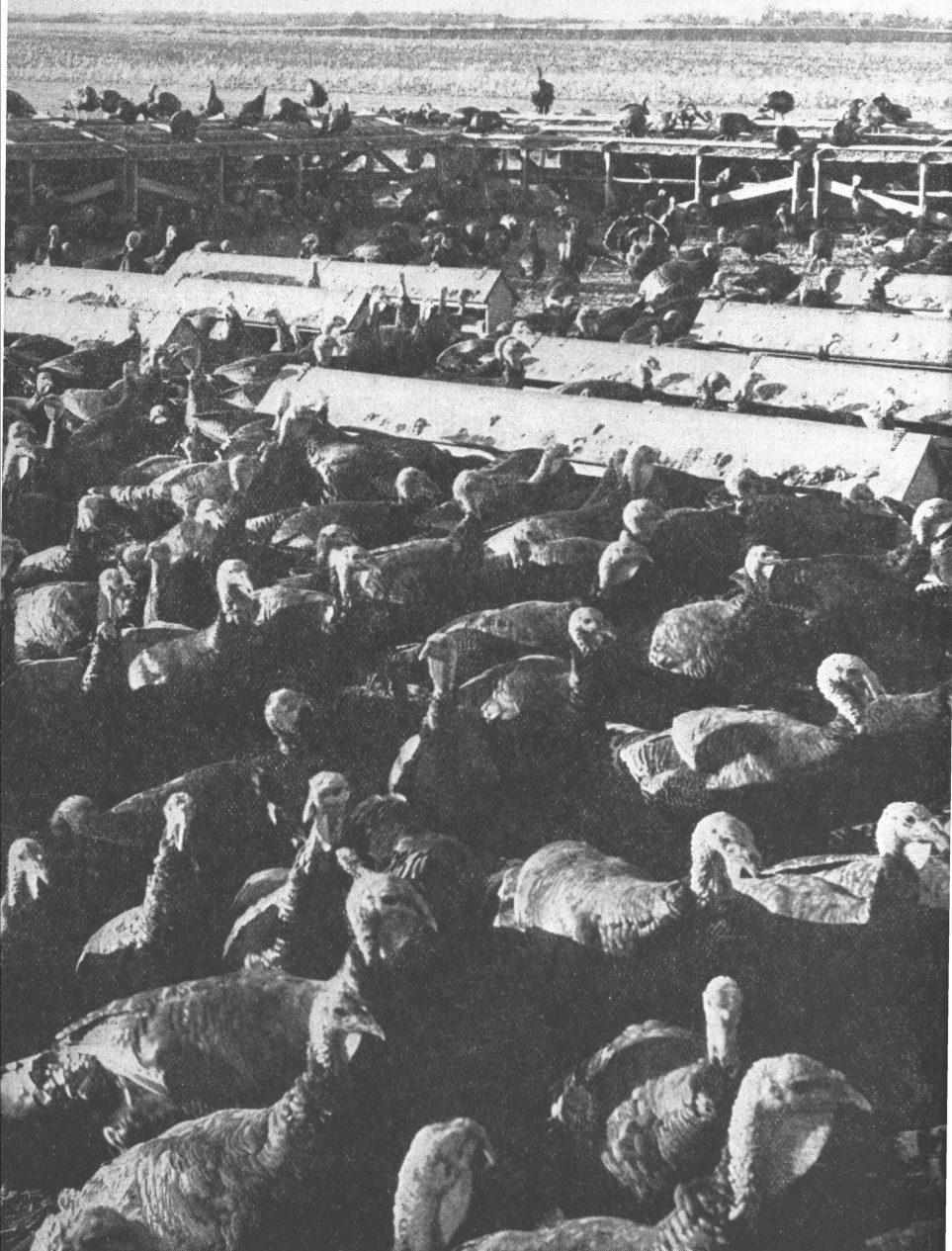
\* Wisconsin Exp. Station.

of selling the cockerels and cull hens. Some who lack room for a fair-sized laying flock or for other reasons, raise a good many chickens to sell. It is a business that has a rapid turnover of capital. While it requires a good deal of labor, it is the kind of labor that the wife and children can do for the most part. The problem of keeping feed costs down and choosing the best time and weight at which to sell are much the same as similar problems met in the hog raising business.

As with hogs, more feed is needed for a pound of gain as chickens become heavier. However, the rate of increase in feed requirements is considerably more than with hogs.

Table 54 shows the increased feed requirements as the chickens become older.

This table will serve as a guide as to the time to sell chickens grown for meat. Of course, the price outlook will also have to be taken into account. Usually, the price of chickens goes down in the fall as more of them come on the market. On the other hand, this will have to be balanced against the fact that the costs of the baby chick and that for brooding are the same regardless of the sale weight and price of the bird. Also, the death loss is usually highest when the chickens are small. Since death risk is small after chickens reach the fryer stage, many people take heavy breeds to the roaster stage before selling them. But higher feed costs should be balanced against selling price.



It is easy to see why capons must bring a very high price to bring in a greater profit than a fryer or roaster. The question of the other possible uses for the feed that would be fed in making the chickens heavier will be a part of the problem.

### Raising Turkeys

Turkeys are another kind of poultry grown mostly for meat. Formerly most turkeys were grown in small numbers per farm. But in recent years they have become one of the most highly specialized kinds of farm production in the Midwest. Most growers figure that 1,000 to 1,500 turkeys are a minimum number for economical use of labor and equipment and a good many prefer larger numbers.

Turkeys are between hogs and cattle in efficiency of converting feed into gain on the animal. Minnesota farm records reported by the farm management department show that about 560 pounds of feed (330 pounds of grain and 230 pounds of protein feed) were required to produce 100 pounds of live weight where turkeys were raised for meat alone.

Six factors seem to be especially important to the success of the turkey grower:

1. Having a turkey-raising plan that fits in with the rest of the farm plan so that the whole farm operation goes along smoothly and effectively.
2. Having the necessary knowledge and skill to bring the turkeys to sale weight without having too many culls and with efficient use of feed.
3. Keeping disease losses and losses from other causes low.
4. Being able to appraise the price outlook for turkeys far enough in advance to avoid unfavorable seasonal markets. The feed outlook must be analyzed before the season starts. This ordinarily means making plans at least a year in advance. But plans must be kept flexible as they may need to be modified during the growing season.

FIG. 54—Turkeys are a specialized enterprise requiring lots of knowledge and skill. Few farmers care to go into turkey raising unless it is a common enterprise in the community. Here we see a typical turkey flock on a family farm in north central Iowa. Note the feeders and range shelters.

5. Being adequately financed so advantage can be taken of quantity discounts on feed purchases rather than being at the mercy of a dealer or feed company who may be financing feed and "services" at a rather high price. It is also important for the farmer to be able to decide when and how the enterprise should be completed rather than have the decision made by the firm financing the enterprise.
6. Having an efficient size of enterprise so that equipment, labor, and similar costs can be kept in hand.

Turkeys are considered a rather high risk enterprise. They require a good deal of investment in equipment and in poults. Probably more than half of the feed bill is in purchased feeds, the starter and growing mash being rather expensive. Disease is an important factor, and considerable skill is needed to keep losses down. Finally, marketing cannot be readily extended over a long period of time unless more than one brood of turkeys is being raised.

On many specific problems your local county extension office can furnish information or bulletins.