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The Sheep Enterprise

How to establish and
maintain the farm flock

By W. G. KAMMLADE



Circular 415

University of Illinois College of Agriculture and
Agricultural Experiment Station

SHEEP RAISING is an important tho often a minor enterprise on a large number of Illinois farms. Included in the general farming scheme, it helps to diversify production and adds another source of income to the farm business. Where considerable acreages of legumes are included in the cropping system, or where relatively large areas of pasture are available, it is an especially suitable enterprise. Thus it is an opportunity still open to many, altho certainly not all, Illinois farmers.

This circular outlines some of the essential practices in profitable sheep raising. The suggestions made are based both on experimental work and on the experience of successful sheep raisers. It is designed to be helpful to the beginner and of interest also to those who may have had considerable experience with the enterprise.

Anyone following practices different from those suggested herein has no need to change so long as those practices bring satisfactory results. Many farmers will find, however, that changes in some of their practices will reduce some of their "bad luck" and add substantially to the returns from their flocks.

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The Sheep Enterprise: How to Establish and Manage the Farm Flock

By W. G. KAMMLADE, Assistant Professor of Sheep Husbandry

SHEEP can be raised successfully in all parts of Illinois. They are as easy to raise as any other livestock once their care is understood and they are given necessary attention. In fact definite knowledge about sheep and their care and an understanding of the marketing of lambs and wool can be made to offset to a large extent the lack of some of the natural conditions that are considered desirable for the raising of sheep.

It is true that sheep at times require a rather different kind of care than demanded by some other farm livestock. They are more dependent for their comfort and well-being on man's thought and attention, yet the labor required to care for them is not great. Because of their dependence, however, it is essential that one have an interest in and a liking for sheep in order to learn to handle them successfully.

Sheep production in the United States is on a domestic basis; that is, lamb and wool produced in this country are consumed in this country and little, if any, sold abroad. Considerable amounts of foreign wool, on the other hand, have been marketed in this country in past years. While there is at the present time little basis for any great expansion of the sheep industry, breeding flocks properly selected and well cared for do have a place on many Illinois farms, since they can be handled with little outlay for equipment and labor and will help to utilize the legumes and pastures now included in the cropping schemes of most Illinois farmers.

ESTABLISHING THE FARM FLOCK

Have Enough Sheep to Make Enterprise Worth While

Even when sheep raising is one of the minor parts of the farm business, the number of breeding ewes should be large enough to justify good husbandry without too great expense per head. The number will, of course, vary according to conditions and the size of the farm, but for an average farm of 160 acres, 40 ewes are about the smallest number likely to return sufficient income to make the keeping of a flock worth while. If conditions do not permit this number, it is doubtful whether sheep raising should be undertaken. This number is equal to six or seven cows in ability to utilize farm feeds and pastures, and hence cannot be considered a large flock.

A flock of about 40 sheep has a number of advantages that a

smaller one does not have. Suitable equipment costs less per head. The labor requirement is not much greater than for a smaller number given the same attention, for sheep require little individual attention except at lambing and shearing times. It is possible to purchase a good ram for a flock of this size, and yet the sire cost per lamb will not be excessive. Enough lambs and wool can be obtained from such a flock to justify careful preparation of these products for marketing. Another advantage in a fair-sized flock is the greater opportunity to select ewe lambs for it.

Many flocks are of course made up of more than 40 ewes. So long as feeds and labor are available, there are no disadvantages in larger numbers. In fact there is much less likelihood of neglect in the management of a large flock than there is when only a few ewes are kept.

Lack of experience may make it advisable, if one is starting a flock, to have less than a full-sized flock, but the more limited the number of sheep handled, the more limited the experience gained. A desire to learn and a willingness to study and to adopt improved methods and practices will partly, altho not entirely, make up for limited experience.

Select Sheep With High Productive Capacity

To have a profitable flock, each sheep in it must be capable of producing regularly large amounts of lamb and wool of the kind desired on our markets. This means that the flock must be carefully selected and culled on the basis of those things which are generally desirable in breeding ewes, namely:

1. *Size.* For farm flock purposes, mature ewes ranging in weight from 125 to 175 pounds when in good flesh are suitable. Under-sized ewes often do not produce so well as those of at least medium size, altho there are individual exceptions.

2. *Form.* Ewes that are moderately short-legged and that have deep, wide, roomy bodies have more capacity for production than those that are shallow and narrow. Very fine-boned, weak-appearing ewes should be rejected.

3. *Age.* Except in the case of purebreds, ewes are generally not kept after they have reached about seven years of age. The years from two till seven are the years of maximum production for most of them. The price one has to pay for ewes declines as their age advances, but this does not indicate that very cheap old ewes are the "best buy." Indeed, thin, "shelly," worn out, "broken-mouthed," old ewes are very seldom worth taking home, because they are not able to make efficient use of feed and seldom raise good lamb and wool crops.

4. *Soundness of Udder.* In purchasing or culling ewes one should examine udder and teats and should not accept or keep any ewes that are abnormal in any way. Lumps in udder or teats that have been

injured by careless shearing usually mean future difficulties and dissatisfaction, and the ewes should be rejected.

5. *Fleece.* Altho lambs account for the greater part of the income from a flock, returns are greatly influenced also by the wool production of the ewes. While there are many things of importance to consider in judging of the quality of wool, if the purchaser or flock owner will examine the fleeces carefully, he will soon learn to distinguish the desirable from the undesirable.

In general, it is advisable to choose ewes with fairly dense or tight fleeces of fair length. Wool which reaches a length of $2\frac{1}{2}$ to 3 inches in a year's time is more valuable per pound than wool of the same fineness that is only half as long. Fleeces of good length and density



FIG. 1.—A FLOCK OF THE BETTER CLASS OF CROSSBRED EWES FROM THE WESTERN RANGE

Altho most farm flocks consist of grade ewes, they should possess many of the qualities of the purebred. Rugged, roomy bodies indicate sturdy constitutions. These ewes have been conditioned for breeding, as suggested on page 14.

are also usually heavier than any other kind. Avoid sheep that have very short wool, those with very loose, frowsy wool, and certainly those with fleeces any other color than white.

The extent to which the fleece covers the body is important, as this influences the amount of wool produced. It is more important, however, that there be a good covering on the under part of the body than on the extremities—face, and legs below knees and hocks.

6. *Health and Constitution.* Regardless of all other considerations in selecting ewes, health and a strong constitution are the final deciding factors. It is useless to try to make a profit from a flock of sheep that is lacking in health or that is not made up of ewes having strong constitutions. Sheep lacking in these features should not be purchased and any in the flock should be culled from it if the flock is already

established. A general lack of health is indicated by dulness, lack of vigor, and poor general condition.

Medium-Wool Mutton Breeds Best for Farm Flocks

Illinois farmers should emphasize lamb production rather than wool production because the returns from lambs account for a much greater proportion of the gross returns from the flock than do those from wool. Hence in choosing a breed, one that is known for the production of desirable market lambs should be selected. The ability of the breed to produce wool also should not be disregarded, since the returns from wool do add significantly to the income from the enterprise.

While there is merit in all breeds, farmers now raising sheep in Illinois usually choose one of the medium-wool mutton breeds, such as the Shropshire, Hampshire, Oxford, Southdown, Dorset, or Cheviot.¹ If ewes of one of the above breeds are chosen, it is usually advisable to use a ram of that breed also, in order to assure more uniform lamb and wool crops.

Rambouillet ewes of the C type (those free from wrinkles or folds in the skin) or Delaine Merino ewes are also very suitable for farm flocks. They are hardy and produce large amounts of fine wool and good types of market lambs if mated with mutton-type rams.

While there are considerable differences between breeds with respect to breeding habits and the kind or quality of lambs and wool produced, individuals within a breed differ almost as much as do the various breeds, and it is important, therefore, to exercise even more care in selecting the individuals of a breed than in choosing the breed.

Native Ewes Have Some Advantages Over Westerns

Ewes purchased for the farm flock will usually be grades rather than purebreds, but they should show fairly well what their breeding is and not be of nondescript type. If ewes of the mutton breeds mentioned above are obtained, they will likely be "natives." Native ewes are those produced outside the range area of the United States.

From time to time ewes from the western range area are purchased in considerable numbers for use on Illinois farms. Range ewes are usually less of the mutton or meat type than natives, most of them being at least half fine-wool breeding. One of the best types of range ewes for the farm flock is a cross of the long-wool breeds (Lincoln and Cotswold, principally) on Rambouillet or other fine-wool ewes.

¹Those interested in detailed information about these or other breeds may secure descriptive material by writing to the various breed associations or by consulting books or bulletins on the subject. Farmers' Bulletin 576, of the U. S. Department of Agriculture, "Breeds of Sheep for the Farm," will be useful.

Such crossbred ewes are more of a meat type but they have longer and coarser wool than the fine-wool ewes. Either type of range ewe may be used to raise market lambs of good quality, especially if the ewes are mated with mutton-type, medium-wool rams.

The western or range ewes are usually not so prolific as native ewes; that is, they do not ordinarily produce so many lambs. On the other hand, they are likely to be more free from internal parasites than native ewes. This is especially true of range ewes from the more

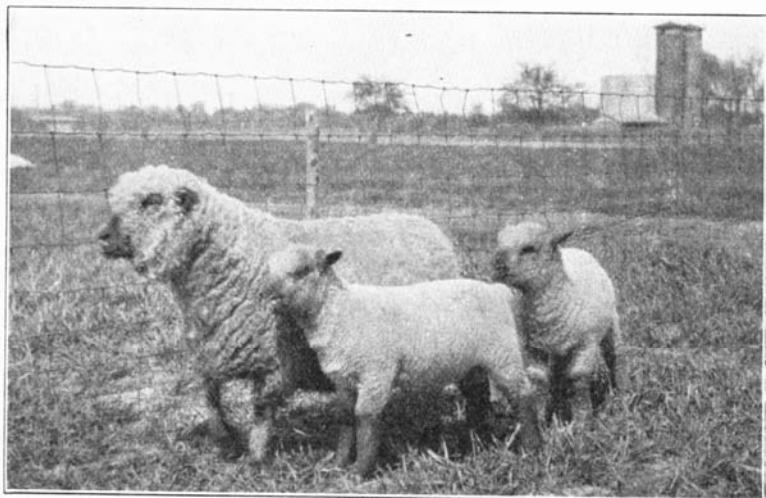


FIG. 2.—A DESIRABLE TYPE OF SHROPSHIRE EWE AND LAMBS

Sheep differ greatly in productive ability. This ewe is not only desirable in type, but her twin lambs and their growthiness give evidence of her prolificacy and good milking qualities.

northern range states. If, however, only healthy native ewes are selected, one is not likely to find any of them heavily infested.

Native ewes may be purchased in the community or at various markets; westerns may be obtained from producers on the range or on the central markets. There is an advantage in buying locally since ewes shipped to market are not usually the best production of a flock. Often, too, a saving is possible by buying locally. But after all, it is not so much the cheapness of the purchase price as the productive qualities of the ewes that should be considered no matter where they are purchased.

A Good Ram Is a Necessary Investment

Good lambs cannot be produced if a poor ram is used in the flock. A good, vigorous ram that may be mated to forty ewes is easily worth

ten times as much as the average ewe in the flock. Thus if the ewes have an average value of only \$3 a head, \$30 is not an excessive price to pay for a ram. Indeed, if the choice is between a \$15 ram and a \$30 ram, and each is expected to sire 100 lambs, the \$30 ram will be cheaper and more profitable in the end if his lambs bring only 20 cents a head more than the lambs sired by the cheaper ram. This does not mean that excessive amounts should be spent for a ram, but it does mean that careful attention should be given to his selection. It is folly to select and cull the ewes and then use an inferior ram.

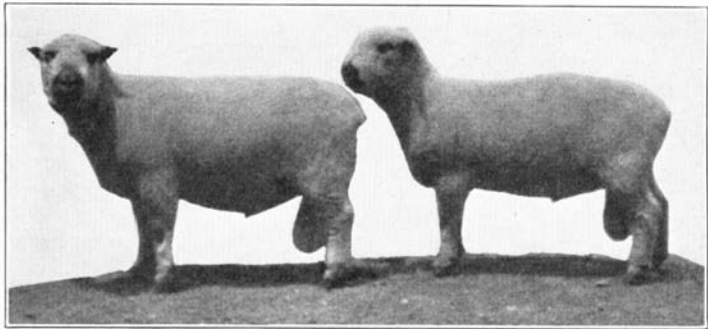


FIG. 3.—THESE TWO RAMS ILLUSTRATE IMPORTANT DIFFERENCES IN QUALITY

Note differences in length of neck, straightness of back, depth and width of body, and development of rear quarters in these two Shropshire rams. Good purebred rams are the basis of improvement in lamb production.

Every sheep raiser in Illinois should use a ram that is a purebred of one of the recognized breeds. The ram need not have all the fancy points which are given a high value in the show ring, but he should be of good size for his breed, have a well-developed body that is moderately low-set, deep and wide, and have a good constitution. Only strong, vigorous rams are capable of breeding a large number of ewes and producing lambs that are likely to be strong at birth and that will grow satisfactorily. Rams having good mutton form are most likely to sire thickly fleshed lambs.

The fleece of the ram is of importance, especially if ewe lambs sired by him are to be kept for breeding. If all the lambs are to be sold, then the fleece of the ram is not so important, as the future wool production of the flock will not be affected. Great variation in the wool crop of lambs produced in the flock is certain to result when the fleeces of the ram and the ewes are markedly different in quality.

In many communities there are breeders from whom suitable rams can be purchased. When rams cannot be obtained locally, a list of

breeders having rams for sale may be secured from the secretaries of the various breed associations.¹

Rams are most often purchased from breeders as yearlings or two-year-olds. It is the general practice to use one ram to each 35 to 50 ewes in the flock. In small flocks the same ram is ordinarily not used more than two years. If some ewe lambs produced in the flock have been added to it, it is usually advisable to obtain another ram after a two-year period in order to avoid inbreeding.

Improve Flock by Careful Culling

No matter how carefully the ewes were selected in starting the flock, improvement can always be made by culling out the poor producers. Ewes vary greatly in prolificacy (the number of lambs they produce) and in lamb-raising and wool-producing qualities. It is on this basis that the flock should be culled.

Culling cannot be done well by simply looking at the individual members of the flock. One wants good-appearing ewes, it is true, but he also wants these good-appearing ewes to be high producers; that is, to raise a large number of pounds of desirable market lambs and wool each year. Hence some record should be kept that will make it possible to tell which are the most productive ewes. A very simple record, showing the number of the ewe, the weight of the fleece, the number of lambs dropped and raised, and the weight of the lambs at weaning time, will suffice. A suggested form is given on page 10.

Of course to keep some such record requires a little attention and work, but it is the only way to have an intelligent basis on which to decide what ewes should be kept, to know what ewe lambs are from productive ewes and how the lambs have grown or gained in weight.

In general, it is a good plan to keep ewe lambs that are from prolific ewes. This does not mean that ewes born as twins will always produce twin lambs, but it does give assurance that the produce of the most prolific ewes is not being discarded. Some ewes will raise twins more easily than others raise single lambs. This means that the ewes raising twin lambs that grow rapidly are not only prolific but are good milkers. As a rule, the growth of a lamb or lambs is a very good indication of the milking ability of the ewe, for milk is the most important single food in the growth of young lambs. Hence, by keeping good sized, twin-born, ewe lambs the prolificacy and lamb-raising abilities of the flock are likely to be improved.

It is a very poor policy to keep ewe lambs that are not good enough to sell, for this is certain to reduce the quality of the flock.

In order to obtain such a record as described above, the ewes and

¹Names and addresses of the breed associations will be furnished on request to Department of Animal Husbandry, University of Illinois, Urbana.

PRODUCTION RECORD OF EWES 1933

Ewe No.	Pounds of wool	Lambing date	Lambs produced			
			Identification No.	Sex	Sale weight	Remarks
1	10	2-10	4	Male	80	.....
			5	Ewe	75	.....
2	10	2-5	1	Ewe	90	.....
3	7	2-20	7	Ewe	70	.....
4	9	2-10	6	Male	95	.....
5	11	2-5	2	Male	80	.....
			3	Ewe	80	.....
6	6.5	2-12	8	Ewe	70	.....
			9	Ewe	50	.....
7	8	2-12	Dead	Male	...	.....
8	9	2-15	10	Male	100	.....

lambs must bear identification marks. Numbered aluminum ear tags will serve this purpose. These are easily put into the ears and are seldom torn out. The lambs, up until they are added to the breeding flock, may be identified by notching the ears soon after they are born. A system of notches to indicate various numbers is shown in Fig. 4.

Owners of commercial farm flocks sometimes consider the matter of identifying their sheep individually as unimportant, but if they are to be able to cull their flocks on the basis of production, they will have to adopt some such system to give them a basis for judgment. Compared with methods used in testing and culling some other kinds of farm stock, the above method is very simple and the farm flock should be worth this attention.

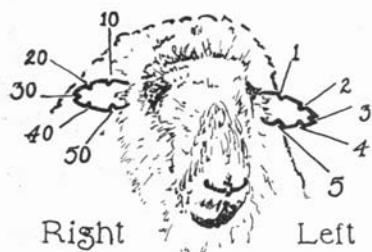


FIG. 4.—A SCHEME FOR IDENTIFYING EWES AND LAMBS

Triangular notches cut into the edges of the ears will identify up to 100 lambs. For numbers above 100 metal tags inserted on the underside of the ear fairly close to the head are preferable to notches.

GENERAL CARE AND SHELTER

A sheep enterprise on a farm represents a considerable investment, and as such it must be carefully established thru the selection and purchase of the animals themselves, and it must be so handled that its greatest productiveness and profitableness will be fully realized. In the management of the flock, costs should be kept as low as possible without interfering with profitable returns. Sheep raising, like other livestock production, affords an opportunity to market feed and labor. Hence the kind of feed and care which the sheep receive should be measured by the relation between costs and returns and not by costs alone.

The best means of protecting the investment in sheep is to provide the shelter, equipment, care and feed that will enable them to maintain their health and to produce in a normal way without high cost.

Shelter and Equipment Need Not Be Expensive

The main requirements of a shelter for all classes of sheep, except young lambs born during the winter months, is that it be dry and well ventilated. In Illinois the matter of warmth needs to be considered for early lambs, but for other sheep the usual winter temperatures are not harmful. The cheapest shelter is a shed open on the south. The objections to such a structure are that it lacks storage space for feed and a warm enough place for early lambs, but aside from these drawbacks it is almost ideal. Such a shed may be built of lumber or of poles and straw. While the latter construction is not so satisfactory as lumber, it does not cost much and it may be made to serve very well.

From 12 to 15 square feet of floor space in the shelter, aside from that occupied by feed racks, is needed for each ewe in order to avoid overcrowding. In fact this is a minimum for ewes and their lambs and more is often advisable. Hence a structure 20 feet wide and 30 feet long is the minimum size for a flock of about 40 breeding ewes.

Feed racks, watering facilities, and lambing pens are other items of equipment which are easily made. Combination grain-and-hay racks or bunks have proved satisfactory in many cases. These are not difficult to make, and if proper care is used in placing the feed in them, practically none of the feed will be wasted by the sheep and their fleeces will be rather free of chaff. Of course other types of grain and hay racks may be used. Some kinds are illustrated. Since feed racks are used mainly for bred or suckling ewes in full fleece, ample space should be provided. At least 18 inches of feeding space should be allowed for each ewe of the larger breeds, but about 15 inches will be sufficient for small ewes.

Sheep should have water available at all times. This should be fresh and clean and of suitable temperature. If sheep are deprived of

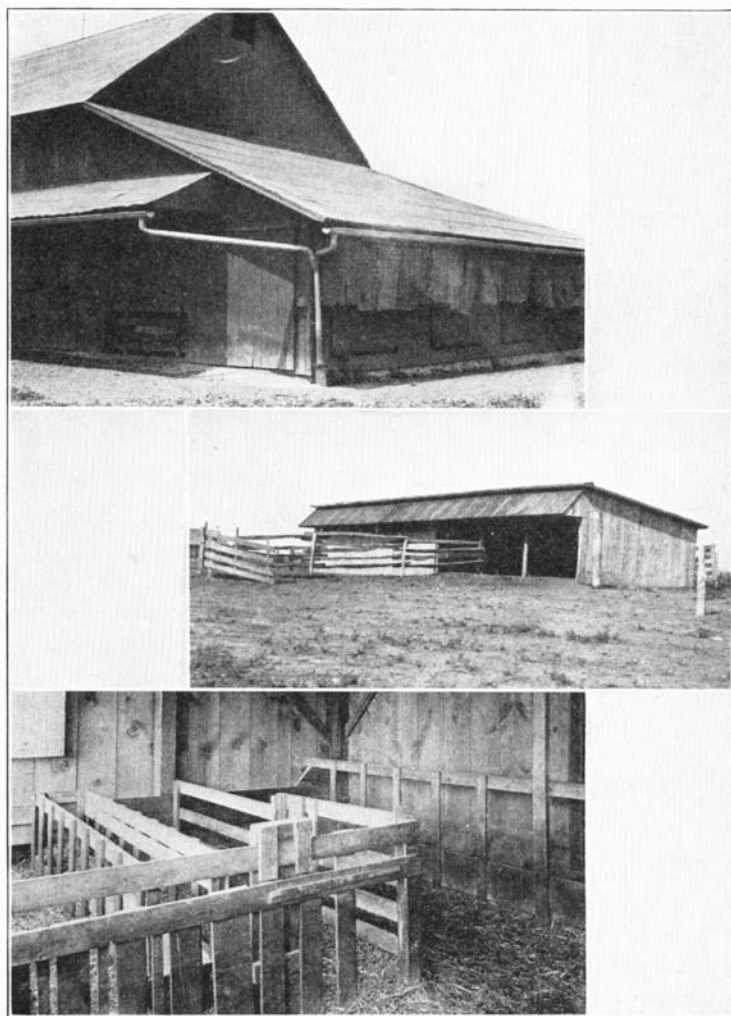


FIG. 5.—SHELTERS FOR THE BREEDING FLOCK

The lean-to at the end of the main barn, upper picture, is used by one Illinois sheep raiser. Burlap strips over the openings at the side darken the interior and lessen annoyance from flies. Wide doors are advisable for a breeding flock. . . . As a shelter for sheep, the shed shown in the middle picture could be improved by cutting several windows on the north side and in the ends. Feed racks may be built along the sides. If located near the place where the feed is stored, there are few objections to structures of this kind. . . . A well-arranged interior is shown in the lower picture. A feed rack for the ewes runs along the side. In one corner a creep is provided in which the lambs may eat apart from their mothers. Grain and hay are fed from the rack inside the creep.

water, they are certain to show the effect of such poor attention to their needs. Any tanks or containers for supplying water which meet the above conditions are satisfactory.

Lambing pens are not indispensable, but they do often aid in saving lambs. Since they are very inexpensive and easily made, one or two lambs saved will pay for all the materials needed. Lambing pens are small pens, about 4 feet square, in which a ewe and her lamb or lambs may be confined for a few days just after the lambs are born. With

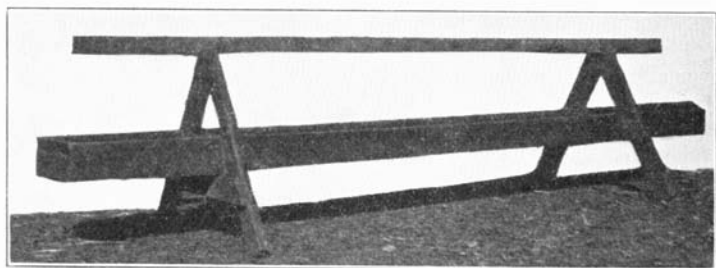


FIG. 6.—AN EASILY CONSTRUCTED GRAIN TROUGH

A trough is a good way in which to feed grain when the grain is not fed with the hay. At least 18 inches of feeding space should be provided for each ewe of the larger breeds; about 15 inches will be enough for small ewes.

such pens it is an easy matter to observe the ewe and lamb and notice whether or not any special attention is needed. Light hurdles made of 1-by-2-inch or 1-by-3-inch pieces are very satisfactory for these temporary pens.

It is often advisable to have a vat or tank in which to dip the flock in order to control ticks and lice (see pages 25-26).

Aside from these items of equipment, the things one needs in caring for sheep are small tools, such as knives, shears, etc. If one wishes to shear his own sheep, a hand or power shearing machine is advisable.

Early Lambing Best Suited to Illinois Conditions

Skilful, careful management is the best assurance of good results in sheep production. No amount of equipment will make up for its lack. In fact, there is often a good deal of virtue in making the best use of less than ideal equipment.

In general, two systems of lamb raising are followed in Illinois. These may be called early and late lamb raising. The choice between these two systems depends upon the preference of the flock owner and the equipment available. The chief difference between them is the date at which the lambs are born and the method of feeding used. Early

lambs are born during January, February, and early March. Late lambs are dropped in April and May, as a rule.

For farmers who are properly equipped early lambs are likely to be preferable to late ones. While there are a number of reasons for this, the main ones are that early lambs bring the higher prices and are less troubled with internal parasites.

Early lambing ewes require better feed than those lambing late, and the lambs must be fed grain before going on pasture. Ewes lambing in April or May require little grain, and the lambs need little, if any, grain if they have an abundance of the best pasture and are kept free of parasites. However, it is a waste of time to raise late lambs and then have to sell them as culls in the fall in competition with range lambs.

Buyers on the market prefer good native lambs to range lambs any time of the year, if the natives are of the right kind and are fat and properly prepared for market.

THE BREEDING SEASON

The natural breeding season of sheep is in the fall of the year, from about the middle of August to the end of December. Ewes of the Dorset breed or grade and crossbred Dorset ewes and some fine-wool ewes will breed earlier than this or at other seasons. However, for most farmers in Illinois it is impractical to start breeding the ewes before the middle of August. The periods of heat last about one day and recur approximately every 16 days. The gestation period (the time from breeding to lambing) averages 147 days.

Have Ewes and Ram in Good Shape for Breeding

Altho the lambing season is frequently called the "shepherd's harvest," the character of the crop depends largely upon proper care and feeding during pregnancy, assuming that the flock is made up of desirable individuals.

It is generally considered advisable to flush the ewes before the beginning of the breeding season. This consists of giving them some grain in addition to pasture or of placing them on more nutritious pasture than they have had during the summer, so that they will be gaining in weight when bred. Experimental work and observations of practical sheepmen indicate that flushing increases the number of lambs dropped and may have other beneficial effects. Natural prolificacy, however, is undoubtedly as important as flushing in determining the number of lambs a ewe will drop.

It is not expensive to flush ewes. It can be done by feeding each ewe one-half to three-quarters pound of grain daily for about a month.

Ewes should be kept in thriving condition at all times, and flushing

just before breeding should not be considered a means of overcoming poor feeding and management at other seasons.

The ram will be most active if in medium flesh during the breeding season. If of medium size, he should receive at least a pound a day of some grain mixture, such as three parts of oats and one part of wheat bran, by weight. If he is very heavily woolled, the wool on his belly should be clipped short before he is turned in with the ewes.

Be Sure All Ewes Are Bred

The breeding season calls for attention to some details. Among the things to do at that time is the removal of tags (large locks of dirty wool) which may have accumulated about the rear quarters of the ewes. Good caretakers, however, remove these tags from time to time as they are accumulating and the task at breeding time is not difficult.

While the feet of sheep may need to be trimmed from time to time to prevent lameness, it is especially important that the feet of the ram be in good shape at the breeding season. The feet of sheep may be trimmed with a knife. A small pruning knife is often recommended. The hoof is much easier to cut if the work is done after the sheep have been on wet pastures or damp ground for a few hours.

Since ewes do not show so plainly as other farm animals when they are in season, effort should be made to learn whether they are being bred. This is especially necessary if only one ram is being used. In a number of cases none of the ewes in a flock dropped lambs because the ram was sterile or did not serve the ewes. The oestrus (heat) period of ewes occurs at about 16-day intervals. A simple way of knowing whether or not ewes that have been bred are returning in heat is to leave the ram with them for a 16-day period, during which time most of the ewes should have been bred. At the end of this 16-day period some thick paste, made of used oil and red ochre, is placed on the ram's brisket between his front legs. This will need to be applied every day or so during the next 16 days. This will leave a red mark on each ewe bred during the second 16-day period. For the next period, lampblack can be used in place of the red ochre, so that those ewes bred during the third 16-day period will have a black mark on the rump. If all the ewes are again bred, without effect, it is doubtful if the ram is a breeder and a new one should be secured. When more than one ram is being used, or if the caretaker is giving the flock very close attention, such as in the case of purebred flocks, the use of the marking material will not often be necessary.

A notation regarding the date the ram was turned with the flock, or the period when most of the ewes were bred, is helpful in preparing for the lambing season.

FEED AND CARE OF EWES DURING PREGNANCY

During the gestation period many farm flocks are so neglected that very poor lambing seasons follow. Throughout this period ewes should gain in weight so that they will be in good condition to nurse their lambs well. This means that the ewes must be given feeds which contain the nutrients needed to maintain their own bodies, to grow a fleece, and to develop the fetus. Not only must the feeds be suitable, but other phases of management should be adapted to the needs of the ewes. When properly handled, bred ewes seldom become too fat.

Pasture Advisable in Fall and Early Winter

After the breeding season there is a period of about eight weeks before it is necessary to put the ewes on winter rations composed largely of harvested feeds. Pasture feeding during this part of the fall and, in some sections of the state during at least a part of the winter, will help to keep feed costs down.

To have good pasture for this period, stock should be removed from these areas during earlier parts of the season. Bluegrass pastures handled in this way and allowed to become about 6 inches high before the sheep are turned into them will furnish palatable feed during a large part of the winter in many areas of the state. Furthermore this method of feeding assures sufficient exercise for the ewes, and exercise is a great aid in maintaining vigor and health.

Of course the ewes should be protected during periods of severe weather. At other times they can be made to gather a portion of their feed.

Legume Hays Good Basis for Winter Ration

A legume hay—alfalfa, clover, soybean or cowpea—may well be made the basis of the ration for pregnant ewes, whenever possible, after the pasture season. Fed at the rate of about 2 pounds a ewe a day, such roughages supply most of the nutrients needed. For the remainder of the ration the ewes may make use of pastures as suggested above and other roughages.

One of the best ways to feed ewes during pregnancy is to use a legume roughage as the entire ration most of the time. However, this generally increases the expense compared with a legume and pasture combination, for a ewe weighing 125 to 150 pounds will eat 3 to 4 pounds of hay daily. Nonleguminous feeds, such as timothy hay, straw, or cornstalks, are not suitable for exclusive use in this way, since they do not contain sufficient quantities of the food materials needed by bred ewes. Protein concentrates and additional minerals are usually required when such roughages are fed, and even then the results may not equal those obtained by feeding legumes.

Silage of good quality is very suitable for bred ewes. It may be

used for at least half the roughage ration provided the other half is a legume roughage. Silage is seldom used alone, but if it is of good quality and carefully fed it may be used as the only roughage provided it is supplemented with about $\frac{1}{4}$ pound of protein concentrate—soybean oil meal, linseed oil meal, or cottonseed meal—and some minerals, such as a mixture of equal parts of salt and steamed bone meal.

Grain Needed Month Before Lambing

The above feeds are generally sufficient and they have been shown to be more economical, results considered, than other methods of feeding. Such feeding is suitable until about a month before the ewes are due to lamb. At that time a small amount of grain— $\frac{1}{2}$ to $\frac{3}{4}$ pound—should be given each ewe daily. For this purpose equal parts, by weight, of whole oats and shelled corn is satisfactory to use with the legume roughages suggested above. This is not the best grain ration that could be used—a mixture of 5 parts oats, 3 parts corn, 1 part wheat bran, and 1 part linseed oil meal is superior to corn and oats. Some grain should be fed to the ewes at this period because it helps them to nourish properly the rapidly developing lambs. The vigor of lambs at the time of birth is so important that no one should try to save feed when its use increases the possibility of having strong lambs and hence raising a large percentage of them. Furthermore this grain, altho not of large amount, does help to assure a good supply of milk for the young lambs, and since milk is the most important single food for growing young lambs, it is very necessary that the ewes be well fed.

Fed as suggested above and given ample water and salt, ewes in all parts of Illinois should, so far as feed is a factor in production, produce good lambs. Apparently the only deficiency which might arise in a few cases would be a lack of iodine.¹ However, any such lack would be shown by goiter or "big neck" in newborn lambs and would be corrected by the use of a very small amount of iodine added to the ration in such cases.

Suggested Rations for Pregnant Ewes

The following rations have given good results when fed to pregnant ewes. The amounts indicated approximate average daily requirements for *ewes weighing 125 to 150 pounds*. They should be increased or reduced according to the size and condition of the ewes. In most cases it will be sufficient if the grain part of the ration is fed only during the month before lambing. These rations, especially those containing grain, should enable the ewes to gain from 15 to 25 pounds during the period of pregnancy. Ewes should gain this much during pregnancy in order to come thru the lambing season in good condition.

¹See Circular 411, "The Feeding of Mineral Supplements to Livestock," page 5 footnote, for directions for the use of iodine.

Ration 1

Oats.....	5 parts	} one month before lambing... <i>Daily</i>	1/2 to 3/4 lb.
Shelled corn.....	3 parts		
Bran.....	1 part		
Linseed oil meal.....	1 part		
Corn silage.....			2 lbs.
Legume hays.....			2 lbs.
Oat straw.....			1 lb.

Ration 2

Oats and shelled corn, one month before lambing.....	1/2 to 3/4 lb.
Legume hays.....	2 to 3 lbs.
Corn silage.....	2 to 3 lbs.

Ration 3

Oats and shelled corn, one month before lambing.....	1/2 to 3/4 lb.
Legume hays.....	2 to 3 lbs.
Oat straw or corn stover.....	1 to 2 lbs.

Ration 4

Oats and corn, equal parts, one month before lambing.....	1/2 to 3/4 lb.
Alfalfa, clover, soybean or mixed hays.....	3 to 4 lbs.

Ration 5

Legume hays.....	1 1/2 to 3 lbs.
Pasture: bluegrass, etc.	

Ration 6

Corn silage.....	3 to 4 lbs.
Alfalfa or clover hay.....	2 to 3 lbs.

Care of Troubles Common to Pregnancy

Late in the pregnancy period many sheep raisers report a trouble known as "pregnancy disease" or "before lambing paralysis." This almost always develops about a week or two before the ewe is due to lamb. It is characterized by sluggishness and weakness followed by inability of the ewe to rise. Treatment of this conditions seems to be of little use, as the great percentage of the affected ewes die. Hence attention should be directed to the prevention of the trouble.

Prevention of "pregnancy disease" seems to lie entirely in correct feeding and management. It is most likely to develop in flocks that are well fed but that take little exercise, or in flocks getting sufficient exercise but receiving a ration that is inadequate or unbalanced. Hence the feed and exercise of ewes during pregnancy should be given careful attention.

Many other troubles with ewes, such as their tendency sometimes to disown their lambs or their failure to give enough milk, are prevented by giving the ewes ample feed. Unless good pastures are available for late-lambing ewes it is necessary to feed them grain for a month or six weeks before lambing.

CARE OF EWES AND LAMBS DURING LAMBING PERIOD

Profitable sheep husbandry depends on maintaining good health in the flock. This requires at times more technical knowledge than most farmers can hope to acquire, so if there is a competent veterinarian within reasonable distance, it is advisable to establish contact with him and be ready to call him during the lambing period if help is needed. If the veterinarian lives some distance away and the ewes are grades, the expense may make it impractical to call him to treat individual cases of noncontagious diseases. Then, too, immediate attention even if unskilled is often of the utmost importance. Hence anyone who is caring for lambing ewes should know how to render first aid in an emergency.

Try to Save All the Lambs

It is useless to flush the ewes and provide them with good feed and care during pregnancy if no attempt is made to save the lambs. Large losses of lambs often occur within about a week after they are dropped. There are many causes of these losses but the one big cause is neglect.

In many flocks of 35 to 70 ewes owners have succeeded in raising an average of $1\frac{1}{2}$ to almost 2 lambs per ewe. This is accomplished by using lambing pens, providing sanitary quarters, and giving personal attention during the lambing period. The things that should be done at lambing time are known to most flock owners, but knowing what to do and still neglecting to do it does not save lambs. The following precautions are absolutely necessary in order to guard against excessive losses:

Have lambs born in clean quarters.

Apply tincture of iodine to the navel soon after birth.

Do not allow the lambs to become chilled.

See that the ewe has milk, that her udder is all right, her teats open, and that the lambs get the milk.

Give the lambs reasonable protection from severe weather.

With such attention little trouble is likely to follow.

Ewes Often Need Help in Delivering Lambs

When the ewe is giving birth to a lamb, do not disturb her so long as everything seems to be going well. If she must have help (which she should have if little or no progress is being made after much laboring), first learn what position the lamb is in. To be delivered alive, it should be presented forefeet first, with the nose lying between the forelegs. This is the normal position for birth altho many lambs are delivered hind legs first.

Before entering the ewe to get the lamb into the proper position, the hand should be disinfected and smeared with vaseline or oil. Use

care not to tear the parts of the ewe (it may be inadvisable for a person with a large hand to attempt the operation). Pull steadily on the lamb slightly downward toward the ewe's udder and use most strength in pulling when the ewe labors. Be sure to keep the head coming with the forefeet until the nose is exposed.

Apply tincture of iodine to the navel cord of the newborn lamb as an aid in preventing infection.

Watch Ewe Closely for Several Days

Soon after the lamb is born, a little milk should be drawn from the ewe in order to make sure that the milk channels are opened so that the lamb can draw the milk. Give the ewe close attention for several days. Note whether she casts the placenta (afterbirth) and whether her feces are normal. If she fails to cast the afterbirth, a veterinarian should be called.

Do not worry if a ewe refuses to eat for the first three to six hours after lambing, but if she continues to refuse feed, make sure that her bowels are in good condition. If she is constipated, give as a drench 4 ounces (one-third pint) of raw linseed oil, or 4 to 5 ounces of epsom salts dissolved in water. For a quick-acting physic, 2 ounces (4 tablespoonfuls) of raw linseed oil with 4 ounces of epsom salts may be used.

As an aid to the appetite, the ewe may be given three times daily a teaspoonful each of tincture of gentian and ginger in half a pint of lukewarm water.

Watch the udder. Milk the ewe if the lamb does not take most of the milk; this will reduce the danger of a caked udder. Do not expose a ewe to cold drafts at this time. Give her all the water she wants, but not large quantities at one time, and see that it is not so cold as to chill her.

Give a lambing ewe good feed, such as clover hay and oats; feed grain sparingly for two or three days after the lamb is born.

Give Suckling Ewes Plenty of Good Feed

After the lambs are three or four days old, their mothers should be given a liberal allowance of nourishing feeds. This is the time when the good milking ewe proves her worth, for such a ewe will often raise twin lambs better than a poor milker will raise a single lamb. For a ewe weighing about 150 pounds a good ration is:

Oats, 5 parts by weight	} 1 to 1¼ pounds daily
Corn, 3 parts by weight	
Wheat bran, 1 part by weight	
Linseed meal, 1 part by weight	

Alfalfa, clover, soybean hay: 2 to 3 pounds daily

Rations 1, 2, 3, and 4 given on page 18 may also be fed to suckling ewes if the amount of grain is increased about ½ pound. Suckling ewes need grain until good pastures are available.

Examine Udder Frequently

If the ewe's udder is swollen, keep it milked out and paint it twice a day with tincture of iodine until the swelling begins to go down, and thereafter paint it once a day until it is evident that further treatment is unnecessary. If pus forms, make an opening for drainage and wash the affected part once a day with a good disinfectant.

Ewes with swollen udders should be removed to comfortable quarters outside the sheep barn, for their trouble may be caused by an infection that will spread thru the flock. Since the milk from swollen udders may be poisonous, the lambs should be taken away from their mothers and fed by hand until the swelling subsides and the milk is again normal.

Sore teats in ewes are most often caused by the formation of pock-like sores, but sometimes by the long sharp teeth of the lamb. As soon as the pock-sores are discovered, they should be opened and washed twice a day with a good disinfectant or treated with tincture of iodine. If the lamb's teeth make the teats very sore, the ewe will refuse to let the lamb nurse, and it will be necessary to feed the lamb and milk the ewe.

Give Weak Lambs Special Care

Little attention need be given the strong lamb whose mother has milk, except perhaps to see that it finds the teat. If its mother has no milk, it is best at first to take a little from a ewe that has more than enough for her lamb. The next best thing to do is to feed cow's whole milk, giving about 2 tablespoonfuls every two or three hours. The milk should have a temperature of about 90° F. All utensils in which milk is placed must be kept thoroly cleaned.

A lamb too weak to stand to nurse should be helped to get a fill of its mother's milk soon after birth. If it is anxious to nurse, back the ewe into a corner and hold the lamb to the teat. Stimulate its desire to nurse by milking into its mouth. If it refuses to nurse, draw some milk from the ewe, and feed the lamb from a bottle until it gains in strength and develops a strong appetite.

One of the best ways to handle a chilled lamb is to place all but its head in warm water. This should be as warm as one's elbow can bear and should be kept at this temperature. When the lamb becomes somewhat lively, take it out of the bath and rub it briskly with a coarse cloth until it is almost dry. Then feed it, wrap all but its nose in a thick blanket or cloth, and put it in a warm place to sleep. Return it to its mother when it has become strong.

Have Each Ewe Raise a Lamb

If a ewe disowns her lamb, try to get her to claim it. Since a ewe recognizes her lamb at first wholly by smell, it may help in getting

her to own her lamb to smear on her nose and on the rump of her lamb some of her milk. Another way is to tie the ewe in the lambing pen, where it is easy to hold her and force her to let the lamb nurse often. Usually she will not need to be kept tied for more than three or four days.

When the disowned lamb is one of a pair of twins, both lambs may be placed in a pen next that occupied by the ewe so that she can see them, and both should always be put with her at the same time. In her anxiety to nurse the lamb she claims, she is likely to let the other one nurse also.

If a ewe loses her lamb and has a good supply of milk, an attempt should be made to have her raise another, an orphan or one not getting enough milk from its mother. If she has just lost her lamb, she may be induced to take another if the skin of the dead lamb is removed immediately and placed on the stranger. The skin should not be left on for more than a few hours. The suggestions given above for getting a ewe to claim her own lamb may also be employed.

Give Prompt Attention to Ailments

Sore eyes may occur in young lambs. As soon as this condition is noticed, the eyes should be washed twice daily with a saturated solution of boric acid and then treated with a 15-percent solution of argyrol applied with a medicine dropper. Some cases of sore eyes are very persistent, and treatment needs to be continued for a considerable time. Turned in eyelids will cause sore eyes. These sometimes correct themselves, but in very severe cases they need to be stitched back or held back with adhesive tape.

Sore mouth in lambs is caused by bacteria. Applying a fairly strong antiseptic, such as tincture of iodine, to these sores after the scabs have been removed is the standard treatment. In severe cases sores will be found inside the mouth. Repeated applications of the treatment are needed.

"Pinning" is a trouble which may affect lambs a few days after birth. The first feces are very sticky and sometimes collect about the tail to such an extent that it is impossible for the lamb to void feces. If this accumulation is not removed, the health of the lamb will be impaired.

Indigestion, diarrhea, and constipation may occur from time to time. The most common treatment is a laxative, usually castor oil—a teaspoonful to a tablespoonful, depending upon the size and age of the lamb. Milk of magnesia may be used. The dose is the same as that indicated for castor oil.

Pneumonia often develops following exposure and chilling. It cannot be successfully treated; the thing to do is to prevent it.

FEEDING THE GROWING LAMBS

While milk is extremely important for growing young lambs, it is not sufficient after the lambs are about two weeks old. For early lambs, provide a creep so they may eat apart from their mothers.

Grains and Hay Needed

An excellent grain ration for lambs is 20 pounds of coarsely ground or cracked corn, 20 pounds of coarsely ground, crushed, or whole oats, 10 pounds of wheat bran, and 10 pounds of linseed oil meal or soybean oil meal. In addition to this grain mixture, they will need some of the best-quality alfalfa or clover hay. They like small amounts of good corn silage too.

If the above grain mixture is not easily secured and prepared, equal amounts of corn and oats can be used with good results. After the lambs are two months old the grain need not be ground.

Feed the lambs liberally on this creep mixture until pasture is available. If the pasture is very good, the lambs may stop eating grain even tho a creep is built in the field. The milk of their mothers and the pasture satisfy them and little, if any, grain is likely to be eaten till after they are weaned or pasture becomes short.

Altho they may eat no grain, lambs that are raised by good milking ewes on very good pasture will make gains at least equal to those fed in creeps before pastures are ready.

Whenever pastures are short, creep feeding is advisable, as the extra feed helps to keep the lambs in good condition to be sold to advantage at weaning time.

Permanent or Temporary Pastures May Be Used

Many Illinois farmers depend entirely upon permanent pastures for their sheep. Bluegrass is, of course, the most commonly used permanent pasture grass, altho other grasses and clovers are frequently important parts of such pastures. In using permanent pastures farmers will need to give some attention to their management and improvement.

From the standpoint of good sheep husbandry some rotation of sheep from one part of a pasture to another is advisable—indeed, this may also be advisable from the standpoint of good pasture management. If, however, a large area of pasture is used for more than one kind of livestock, and it is not grazed too closely, it may not be so necessary to rotate the flock. In spite of the opinions of some, it is possible, and perhaps in some cases advisable, to put both cattle and sheep on the same pasture.

Bluegrass pastures are usually short—if heavily grazed earlier in the season—and dry during July and August, and hence furnish little

feed at that time. Supplementary temporary pastures and forage crops are therefore very helpful in keeping the flock in good condition. A considerable variety of crops may be used for this purpose. Probably one of the most satisfactory arrangements is to use the forages grown in the crop rotation. There may, of course, be some danger of bloat when sheep are grazing on alfalfa or clovers, tho tests at this Station indicate that bloat can be largely avoided. About 100 ewes and their lambs have been pastured on alfalfa for two years and only three head have been lost. No special precautions have been taken except to allow the sheep to get a good fill of grass before going onto the alfalfa, and to have water and salt available at all times. They were then left on continuously, day and night, from the first of May to the middle of October.

Some such combination of permanent and temporary pastures usually proves more satisfactory than permanent pastures alone or temporary pasture and forage crops. To provide a full season's succession of temporary forages requires a number of crops and involves considerable labor and fencing and often the purchase of seed.

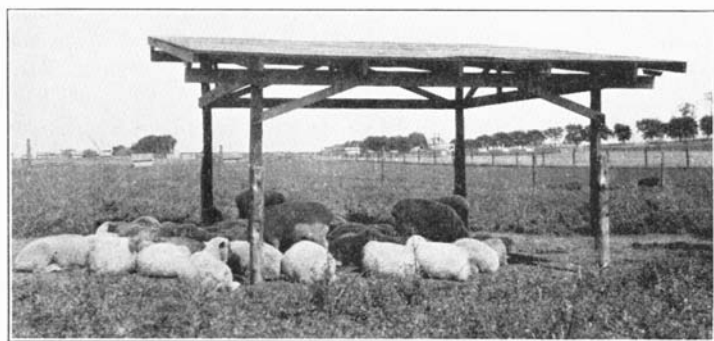


FIG. 7.—SHADE IS IMPORTANT FOR THE COMFORT OF THE FLOCK IN SUMMER

In pastures where there is no natural shade, movable structures such as this are very satisfactory. These sheep are pasturing on alfalfa.

INTERNAL AND EXTERNAL PARASITES

To make a profit from sheep raising, the health of the flock must be maintained. Probably the most frequent cause of ill health in lambs in Illinois during the summer and fall is infestation with parasites.¹

¹For detailed information about common parasites of sheep, see Farmers' Bulletin 1330, "Parasites and Parasitic Diseases of Sheep," issued by the U. S. Department of Agriculture.

The parasites which are to be found inside the body are generally more harmful than those on the skin.

Internal Parasites Controlled by Management

The control of internal parasites, particularly stomach worms and intestinal worms, is largely a matter of management, altho the administration of medicines may also be necessary. The rotation or change of sheep from pasture to pasture is advisable. Just how often this should be done depends upon conditions on the farm. The aim should be to prevent lambs from becoming infested, if possible, and the use of pasture crops grown in the regular crop rotation is a great help in accomplishing this.

If many sheep are pastured on a rather small area year after year, they are very likely to become unthrifty due to infestation with internal parasites. The reason for this is that the eggs of mature or adult parasites, especially of some of those that live in the stomach or intestines, are passed from the sheep with the feces, and after several stages of development are eaten by the lambs or sheep as they graze. If a small number of sheep are pastured on a large area, the danger of infestation seems to be considerably reduced. Few, if any, internal parasites are found in lambs kept in drylot from birth, as they do not have access to any of the materials on which worm eggs or larvae are deposited. This explains why early lambs do not usually become infested any sooner than late lambs when they are turned on pasture at the same time. In most sections of Illinois parasites do not become troublesome in lambs until about summer time.

Sheep that are infested should be treated with suitable vermifuges for the destruction of the parasites before they are turned onto new pasture. It is also important that sheep be treated in the fall of the year, for infested sheep will not thrive during the winter.

Giving medicines to destroy internal parasites involves some danger, hence this should usually be done by a veterinarian or at least according to his directions. The use of various concoctions in the drinking water or salt is very likely to be a waste of money.

Altho internal parasites of sheep are generally much more troublesome on permanent pastures than when a change of pastures is possible, sheep raisers have been able to raise good lambs on permanent pastures by treating the lambs at three- to four-week intervals with some vermifuge, such as copper sulfate (bluestone). Treatment is not expensive, and when given at suitable times and supplemented by systematic change of pastures, will keep infestation down.

Ticks, Lice, and Mites Destroyed by Dips

Ticks and lice are often found on sheep. Ticks are easily seen, and any sheep observed rubbing against fences, feed racks, or other ob-

jects should be examined for them. Lice are very small, and can be detected only by a careful examination. They will generally be found on or close to the skin just back of the shoulders. Often in the spring of the year loss of wool is due to the sheep rubbing themselves because of irritation from lice. Careful, thoro dipping, preferably a week or two after shearing, is the only way to destroy ticks and lice. Two dippings 2 to 3 weeks apart are usually necessary.

Scab mites may infest sheep. While few flocks in Illinois are infested with them, they are a serious pest when they do occur as they are harder to get rid of than ticks and lice. Lime sulfur or nicotine dips are usually necessary in order to free sheep of them. The buildings and fences about paddocks where scabby sheep have been kept

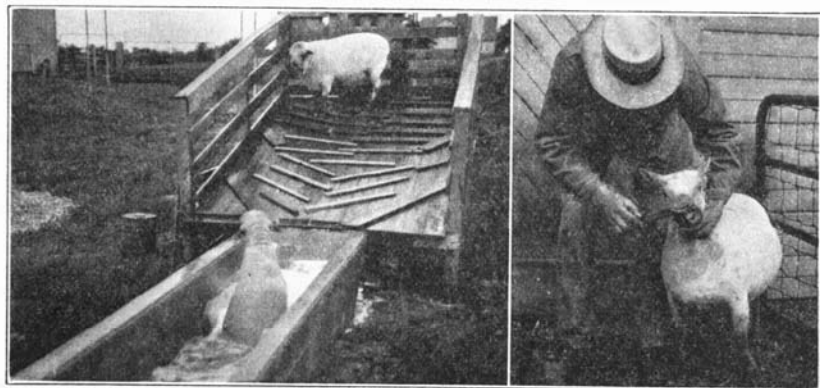


FIG. 8.—DIPPING SHEEP (LEFT) AND APPLYING PINE TAR TO PREVENT GRUB-IN-THE-HEAD (RIGHT)

Dipping is the most practical means of ridding the flock of ticks, lice, and scab mites. It is done most economically soon after shearing. No flock should go into the winter, however, without being dipped if any of these parasites are present. . . . To protect sheep against grub-in-the-head smear tar about their noses several times during the fly season. This prevents nose flies from depositing the larvae that develop into grubs and imbed themselves in the nasal cavities, causing severe irritation.

should be thoroly disinfected, and sheep should be kept away from such premises for several months; otherwise infestation may recur.

If the flock becomes infested with scab, the local veterinarian and the State Veterinarian at Springfield should be notified.

Pine Tar a Preventive for "Grub-in-the-Head"

The removal of grubs that sometimes get into the small cavities which open into the nostrils is a very difficult task. The sheep raiser, however, can do much to prevent trouble of this kind. Harm from

grubs usually occurs in late winter or early spring, but prevention must be applied during the preceding summer. The grubs are the maturing larvae of a fly which lays them on the edge of the sheep's nostrils. The adult fly, somewhat larger than a house fly, usually attacks sheep during the months of June and July. When attacked, a sheep is greatly annoyed and may run frantically and hold its nose close to the ground or against other sheep. The flies are most troublesome during the middle of the day.

To prevent the fly from laying the larva, smear a fly repellent, such as pine tar, on the face of the sheep. Make several applications during the summer. The time required for this treatment is more than worth the trouble saved later.

Maggots Controlled by Keeping Sheep Clean

Blowflies often lay eggs in wool that is dirty or wet with urine. The maggots that develop from these eggs are extremely irritating to the sheep. Lambs or sheep that have been fly-blown stamp with the hind feet and try to bite and rub the irritated parts.

Blowfly maggots are easily seen if the wool is parted. A common treatment consists of clipping the wool, if it is long, and applying some diluted dip or turpentine. An application of pine tar helps to prevent new attacks.

DOCKING AND CASTRATING MARKET LAMBS

Only by marketing lambs of attractive appearance and good quality are the greatest profits possible. Long-tailed ram lambs are not very desirable on the markets, and the only way to avoid a penalty for selling them is to dock all lambs and castrate all male lambs intended for market. Only the best purebred lambs should be left uncastrated. The sheep raiser who fails to dock and castrate his market lambs is neglecting that fundamental principle of better marketing; that is, to produce something the market wants.

There are a number of methods of docking and castrating.¹ Any method which is not unduly painful and does not result in great loss of blood or in infected wounds is suitable. One who performs this operation must be careful and clean and apply a good antiseptic, such as tincture of iodine, to the wounds. These are not operations which may be carelessly performed.

From the standpoint of improving sheep management and of gaining a better reputation for all Illinois lambs on the markets, it is imperative that all lambs be marketed as docked ewe and wether (castrated male) lambs.

¹Farmers' Bulletin 1134, "Docking and Castrating Lambs," issued by the U. S. Department of Agriculture, discusses this subject in some detail.

CARE OF THE FLEECE

The fleece should be kept as clean as possible at all times. Under farm conditions it is impossible to keep all fleeces entirely free of straw and chaff, but it is possible to keep sheep out of fields in which there are many burs, and with care and the use of suitable feed racks but little chaff or straw will get into the main parts of the fleece. Likewise, if the tags are removed from time to time as they accumulate, there will be none to interfere with shearing.

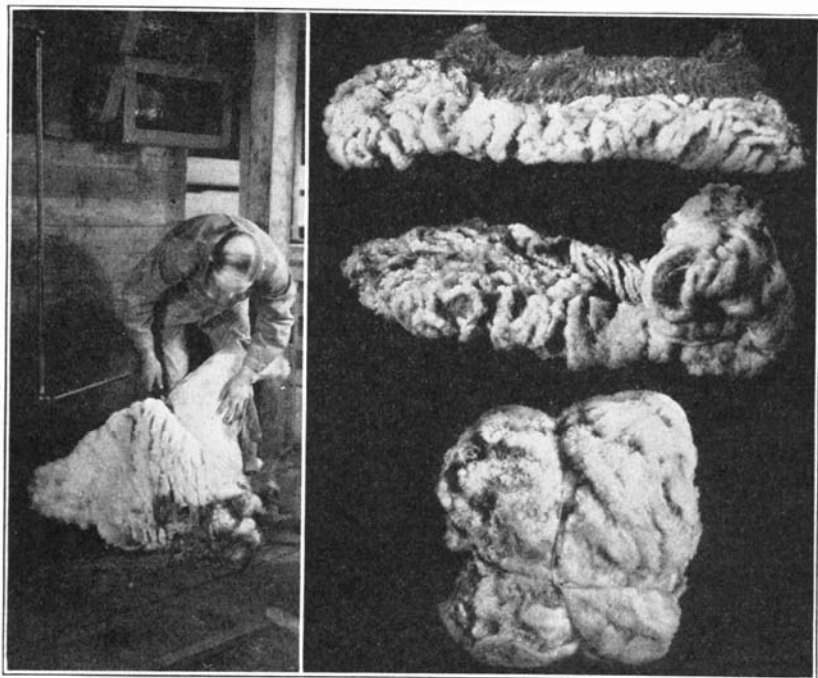


FIG. 9.—CAREFUL SHEARING IS AN IMPORTANT ITEM IN FLOCK MANAGEMENT

Power shears are more satisfactory than hand shears both from the standpoint of results and of ease of operation. A skilful shearer avoids cutting the sheep and keeps the fleece intact. To roll the fleece place the flesh side down on a clean floor and turn in the leg and belly wool. Then roll the fleece beginning at the rump. This leaves the shoulder wool on the outside. Tie the fleece with a smooth paper twine. Note attractiveness of a fleece rolled and tied in this manner.

In Illinois sheep are shorn from about the middle of April to the end of May. Especial care should be taken to avoid damaging the fleece at shearing time. When shearing is carelessly done, the full value of the wool cannot be realized. To do good shearing requires

considerable practice, which is best secured under the direction of a skilful shearer, altho detailed directions which may be obtained from various sources are extremely helpful in learning the fine points of this operation.

Whether sheep are shorn with hand shearers or with a machine, it is important that the fleeces be dry and that the work be done on a clean floor. The fibers should be cut close to the skin and only one cut should be required. If the fibers are cut some distance from the skin and then a second cut is made to remove what was left, these short fibers will be lost from the fleece in manufacturing. Hence "second cuts" reduce the value of the wool.

The aim in shearing should be, not to see in how few minutes a sheep may be shorn, but how good the job will be when it is done. A good shearer will have the fleece together in one piece and not in many small pieces that cannot be tied attractively. The sheep will not be cut and bruised during shearing if the hand piece of the machine is properly held and the sheep is kept in the proper position at all times.

MARKETING THE LAMBS

When lambs weigh from 80 to 90 pounds they are of a weight which meets with strong demand on most markets. If they show good quality and form and are fat, there will be little chance of their selling much below top prices for the day. This statement refers to docked

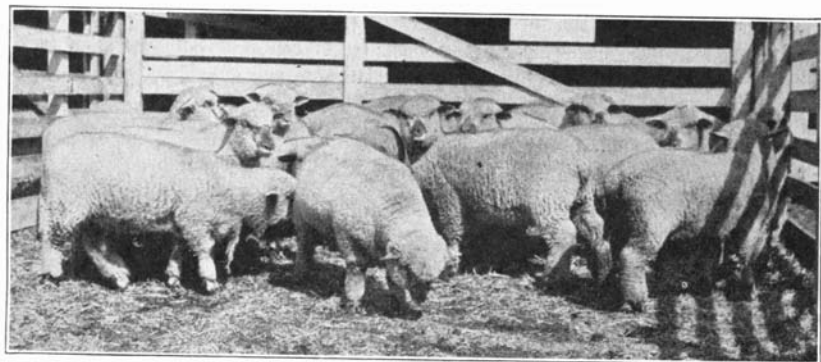


FIG. 10.—DOCKED WETHER AND EWE LAMBS READY FOR MARKET

Fat lambs of good quality weighing 75 to 90 pounds meet with strong demand on our markets.

ewe and wether lambs. Ram lambs are subject to criticism because they may be coarse. Prices for ram lambs are always below those for ewe or wether lambs.

Shipping lambs to market is an important phase in sheep raising. It should be done carefully so that the lambs will be attractive in appearance upon arrival. Tags should be removed. Cars or trucks should be cleaned and bedded lightly so the fleeces will not become soiled.

Overcrowding lambs in either cars or trucks is likely to mean loss from trampling or suffocation. Crippled lambs, the result of crowding or rough or hurried handling at loading, usually sell for only a dollar each. Picking up lambs by the wool may and often does result in a bruised carcass.

Feed Lambs in Usual Way Before Shipping

Lambs ship best if fed in the way to which they are accustomed until it is time to load them. Some producers withhold water for a considerable time before loading, hoping to get a bigger fill after the lambs reach market. Some try to feed extra quantities of salt for the same reason. Such things usually react to the disadvantage of the seller because of the possibility of digestive derangements.

It is far more important to raise good lambs and have them in good condition before selling them than it is to try to overcome the loss in weight while enroute by "tricks" just before shipping.

DISPOSING OF THE WOOL CROP

Wool may be sold thru cooperative organizations, commission houses or dealers. The cost of selling wool cooperatively in Illinois has approximated 5 cents a pound. Growers have benefited by this method because of increased competition for the wool, and because any price rises following the shearing season have increased their returns. During some recent years prices have declined after shearing, and the cooperative agencies have not been able to make as great returns as would be possible under more favorable conditions.

Some Illinois growers ship their wool to commission houses or dealers in St. Louis, Chicago, or other cities. Wool sold in this manner is usually sold on the basis of its class and grade. This is also true of wool handled by the cooperative agencies.

In most communities there are local dealers who buy wool. These men usually buy wool on the basis of its being of fine, medium or coarse grade. On the larger markets the grading system is much more refined and the grading reports received by the growers are more educational.

No matter what method is used in selling the wool, a grower should try to have a good product and it should be offered in such a manner as to overcome the frequent criticism made of Illinois wool and wool from other central states that it is poorly prepared for market. Illinois sheep raisers would benefit if they would—

1. Keep the fleeces free of burs and chaff.
2. Handle the wool carefully at shearing time so the fleece is practically in one piece and is kept clean.
3. Remove the tags from the fleeces and sell them separately.
4. Roll the fleeces with the skin or inside of the fleece on the surface.
5. Tie the fleeces with about 7 feet of special paper wool-tying twine. (Fibers from other twines become entangled in the wool and cannot be removed except by hand during the process of manufacture.)
6. Pack the wool in standard wool sacks which hold about 250 to 300 pounds.
7. Know what kind of wool their sheep produce and sell it on the basis of its market class and grade.

Because wool is not a perishable product, it is often carelessly handled after its removal from the sheep. Its value, however, is influenced by the manner in which it is rolled, tied, and packed. Better preparation of wool is urgently needed if Illinois farmers are to receive full value for this product.¹

Market Classes and Grades of Wool

Boston is the largest wool market in the United States and market prices in all localities in this country are usually figured on the basis of prices in Boston. Prices are quoted for various classes and grades in a number of market papers or may be obtained thru the market news

CLASSES AND GRADES OF MARKET WOOL, AND THEIR PRICES ON THE BOSTON MARKET, OCTOBER 20, 1933

Grades		Type of sheep from which obtained	Price per pound	
American system	Bradford system		Grease	Scoured
(Combing wool)				
Fine.....	64s, 70s, 80s	Fine-wool sheep	<i>cts.</i> 32-34	<i>cts.</i> 82-84
½-blood.....	58s, 60s		34-35	75-77
¾-blood.....	56s	Medium-wool sheep	40-42	75-77
¼-blood.....	48s, 50s		40-41	68-71
Low ¼-blood.....	46s		36-38	62-65
Common and braid	36s, 40s, 44s	Long-wool sheep	30-31	51-53
(Clothing wool)				
Fine.....	64s, 70s, 80s	Fine-wool sheep	27-28	69-72
½-blood.....	58s, 60s		29-30	66-69
¾-blood.....	56s	Medium-wool sheep	35-37	66-69
¼-blood.....	48s, 50s		34-35	59-62

¹Useful information on this subject is contained in Leaflet 92, "Preparing Wool for Market," issued by the U. S. Department of Agriculture.

service of the Bureau of Agricultural Economics, U. S. Department of Agriculture, in Chicago or St. Louis.

Wool produced in Illinois is classed as *combing* or *clothing*, according to its length. In general, wool over $2\frac{1}{2}$ inches in length is referred to as combing. Shorter wools are classed as clothing. In the case of fine wool there is an intermediate class known as *French combing*. Because of its greater length, combing wool is more valuable per pound than clothing wool. Coarse wools are usually long enough to class as combing wools; hence there is no quotation for these grades in the clothing class.

The grade of wool refers to the size or diameter of the fibers, that is, whether the wool is fine or coarse. The grades commonly used are *fine*, *1/2-blood*, *3/8-blood*, *1/4-blood*, *low 1/4-blood*, *common*, and *braid*. For each of these terms there is also a numerical designation known as the Bradford system. Both systems are somewhat arbitrary ways of designating degrees of fineness.

The table on page 31 shows the standard grades and classes of wool and the prices, both on a grease and on a scoured basis, quoted on the Boston market October 20, 1933. *Grease wool* is wool as it comes from the sheep. *Scoured wool* is wool from which the grease or yolk and dirt have been removed by washing. Fine wools shrink or lose much more in the process of scouring than coarse wools; hence the difference in prices for the wools on a grease basis is not so great as the difference on a scoured basis.



FIG. 11.—A FLOCK OF SHEEP CAN BE MADE TO CONTRIBUTE TO THE FARM INCOME BY UTILIZING PASTURES AND WASTE ROUGHAGES