

Sheep Nutrition

Feeding problems of a farm flock

D. E. Moore, '45

NUTRITION is of great importance in sheep diseases. This is especially true of the small farm flock. This writer will endeavor to suggest recommended pasture and feeding methods that may be used in producing healthy sheep in a profitable manner. Protein mixtures, hay and silage as roughage, creep feeding, mineral mixtures, and vitamins will be discussed as practicable as possible to include all conditions which face the farmer and in turn the veterinarian.

Pasture for the Ewe

The pregnant ewe requires a well-balanced diet due to the demand placed upon the body. Many sheep men try to have the ewe gain 15 to 25 pounds during the winter. Pasture feeding may be used during the fall. These pastures may be prepared by removing the stock from them about the last of July and turning the ewes back in the pasture the latter part of September. Bluegrass or red-top pastures, about 4-5 inches high, are suitable. The ewes may be kept on these pastures during the winter because it provides exercise for the ewes as well as a cheap form of roughage.

In regions where cereals such as rye, wheat, and winter barley are planted for a spring crop, they may be used as a fall pasture and not markedly affect the yield, provided they are not grazed too closely.

Legume hay is the best form of dry roughage for sheep. Alfalfa, clover, soybeans, and lespedeza or cow peas may be used. Bright second crop alfalfa hay not stored over one year is very high in vita-

min A, and is also a rich source of protein and minerals. From two to three pounds of alfalfa hay should be allowed each ewe per day. Corn silage of the best quality is suitable for ewes. It may be used for one-half the roughage ration being fed in amounts of two to three pounds per day. The farmer must be cautioned against feeding moldy or frozen silage. When an enteritis outbreak is seen in a flock of pregnant ewes, the owner should be questioned as to whether silage is being used and the quantity and quality being fed.

The University of Illinois¹ has found that good quality corn silage may be used as sole roughage. Six to seven pounds of corn silage may be used as an average amount each day per ewe.

Protein Supplement

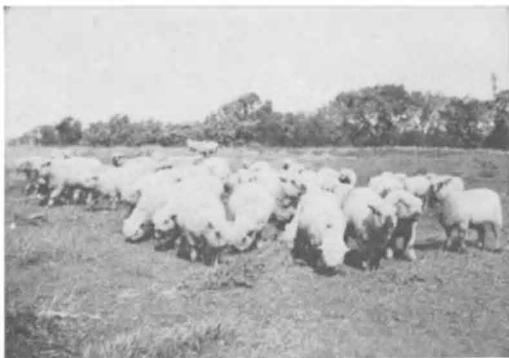
It should be emphasized that a protein supplement must be used to make up deficiencies of protein and calcium in the corn silage. Each ewe should receive one-fourth pound of the protein mixture given below:

Soybean oil meal, cottonseed meal, or linseed meal	80 lbs.
Finely ground limestone	10 lbs.
Salt	10 lbs.

Protein mixture is fed on top of the corn silage.

A month before lambing, one-half to three-fourths pound of a grain mixture should be given to each ewe. Equal parts by weight of shelled corn and oats is a suitable ration; however, better rations

should be encouraged. McDonald² recommends six parts of whole oats, three parts of shelled corn and one part protein concentrate. Kommlade¹ gives a mixture of five parts oats, three parts corn, one part wheat bran and one part linseed oilmeal as a highly superior ration compared to equal parts of corn and oats. Often the veterinarian is called upon to recommend a ration for the ewes. Here again five parts of oats and not more than three parts of corn should be recommended. Many sheepmen believe the feeding of corn is detrimental to a pregnant ewe. Veterinarians should point out the high vitamin A content of yellow corn



A good farm flock.

in addition to the high carbohydrate content.

A week before lambing time the ration should be cut to one-fourth pound per ewe per day. This helps to prevent the lambs from scouring due to an excessive milk secretion from the ewe. Some authors think heavy feeding just before lambing is responsible for milk fever, but ewes with milk fever have shown a marked decrease in calcium. Ewes should be fed wheat bran a few days previous to and following lambing; then the amount of grain should be increased slowly with the development of the lambs. The amount of grain mixture for each ewe should be from one to three pounds per day and continued until the ewes and lambs are turned on pasture.

Early lambs, born before the middle of March, make economical gains when creep feeding is practiced, but it is im-

practical to creep feed lambs after they are put on pasture. A ration which has proven to be satisfactory is:

Coarsely ground or cracked corn	20 lbs.
Coarsely ground, crushed or whole oats	20 lbs.
Wheat bran	10 lbs.
Linseed oilmeal or soybean oilmeal	10 lbs.

Pasture for Ewes and Lambs

In addition to this a good quality of alfalfa or clover hay is needed. Equal parts of cracked corn and crushed oats may be given. Wheat bran may be added until it makes up one-third of the mixture. As a protein supplement, linseed oilmeal may be added at the rate of one pound to ten pounds of grain. The amount of corn may be increased as the lambs grow older.

Midwestern sheepmen have found it profitable to arrange a pasture program where a succulent forage will be available from early spring and throughout the summer for the growing lambs. These pastures should be arranged so the breeding ewes will have access to them. For early spring pastures the winter rye sown the previous fall for the breeding ewes may be used. One and one-half bushels of rye planted in August will be suitable. In the winter wheat regions, the sheep may pasture the winter wheat for about two weeks during the latter part of April; the yield of the grain will not be decreased to any extent. The lambs should be removed before any of the wheat heads are injured.

Use of Bluegrass

During May and June, bluegrass pasture may be used. The bluegrass is very dry and unpalatable in July and early August, but in late August and throughout the fall, the bluegrass may again be used.

During April rape can be sown at the rate of five to seven pounds per acre for summer pasturage. This pasture should be rotated with alfalfa which is excellent sheep pasture during July and August. In recommending alfalfa one should keep

(Continued on page 98)

For example, I like the way one veterinary practice group is handling the subject. They were approached by the dairymen of their community to join in the organization of a breeding association. These two veterinarians discouraged such an organization, stating that they believe that greater service to the dairyman could be rendered if the insemination of cows was handled independently by them as part of the service they offered the livestock industry in their practice area. This suggestion appealed to the interested dairymen and as a result only those individuals who had need for artificial insemination participated. At first, these veterinarians bought the semen of outstanding bulls and imported it for use as needed. The result has been that a worthy, lasting, appreciated addition to regular practice was developed. These veterinarians have found that the demand for artificial insemination has increased under their careful guidance and supervision, until today they find themselves doing enough of this kind of work to warrant the purchase of their own sires to supply semen for the needs of those dairymen wishing to participate in this program. The result has been that dairymen who have had no need for this service did not participate. Other cattle owners have not been over-sold on the idea, there has been no association financial burden, and meritorious veterinary service has been rendered.

It would seem, therefore, that veterinarians should keep an open mind and endorse inseminative work, encouraging the increase of it only to the extent that it can be done under their guidance and direction. As veterinarians become available, then active measures may be taken to further the development of the program.

H. L. F.

The South Dakota Experiment Station suggests for shipping lambs:

1. Shade protection.
2. Don't overfeed before shipping.
3. Avoid over-crowding.
4. Use fine sand for bedding trucks and cars.
5. Feed before watering.

Sheep Nutrition

(Continued from page 96)

in mind the possibility of bloat in some years. The parasite problem is also controlled to some extent by this rotation during the summer. In the latter part of August the sheep may be put on a bluegrass pasture till the middle of October, at which time the ewes and late lambs are rotated with rye pasture. During drouth seasons it may be desirable to plant sudan grass during the latter part of May or early June, 15 to 20 pounds per acre giving a satisfactory crop. A setback by drouth or frozen sudan grass presents the prussic acid poisoning problem, which should be stressed to the farmer.

Minerals

The mineral requirements of sheep vary considerably but in general they are equivalent in proportion to those of cattle. The following simple mineral mixture will provide the adequate elements and prevent deficiencies in most all cases.

Salt	20 lbs.
Ground limestone	40 lbs.
Bonemeal or spent bone black	40 lbs.
Potassium iodide	0.02 lb.
Ferric oxide	1 lb.
Copper sulfate	0.03 lb.

Vitamins

In summarization of vitamins, sheep synthesize biotin, vitamin K, thiamine, riboflavin, vitamin B₆ and nicotinic acid. Ascorbic acid which is ingested by the ruminant is destroyed in the rumen. Fairbank and Krider³ believe it is synthesized in the tissues of the body. The site has not been determined as yet. It is believed that young ruminants can not synthesize the vitamin B complex factor. They must depend on the milk from the ewes. The milk from healthy ewes contains sufficient vitamins if she is on a proper ration.

The winter level of riboflavin may be kept sufficiently high by feeding a ration of good quality hay, acid grass silage and a grain mixture.

In regard to the relationship of vitamin E to reproduction sufficient evidence has

(Continued on page 101)



Fig. 4. Left. The clip is placed on the ear over a light gauze dressing. Right. An extensive dressing of tape is necessary to prevent mutilation and keep the clip in place.

Complete recovery is effected if no further trauma to the ear has occurred. In a few cases where the ear is prematurely freed from the clip, re-application of the clip is necessary to prevent recurrence of

the condition. The owner should be instructed to have the ears cleaned when necessary to prevent further irritation.

¹Brumley, Diseases of Small Domestic Animals.

Sheep Nutrition

(Continued from page 98)

not been presented to show any increase in reproduction of the individual following its use.

Vitamins A and D

In the use of vitamin A and D sheep seem to have a higher vitamin A content than beef cattle. Of all the vitamins, vitamin A is probably the only one that may be deficient in the ration. Since sheep are outdoors most of the time throughout the year, and are exposed to sunlight, they are protected against a vitamin D deficiency. Hay and other roughages fed also supply this vitamin.

If a considerable part of the roughage is early cut, well cured hay or other roughage high in vitamin A there will be no deficiency of this vitamin.

The next issue of "The Veterinary Stu-

dent" will have a discussion of some of the deficiency diseases encountered in sheep.

BIBLIOGRAPHY

1. Kommlade, W. G. 1942. The Sheep Enterprise. Univ. of Ill. Circ. 534.
2. McDonald, C. W. 1940. Quality Lamb Production. Agric. Exp. Sta., Iowa State College. Bul. p. 4 (News Service) pp. 158-161, 619-173.
3. Fairbanks, B. W., and Krider, J. L. 1944. Factors in the Synthesis of Vitamins in the Ruminant. North American Veterinarian, 25:1:22-25; 25:2:97-102.

Brown Swiss cattle were imported to this country from 1869 to 1906. A total of 21 males and 129 females were imported and a Brown Swiss Cattle Breeders Association was established in 1880. The first importation came to Massachusetts in 1869. The next two importations were to Connecticut in 1882 and 1883 with the fourth to New York in 1906.

There are no pathological changes of the internal organs in nitrate poisoning.