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Dr. Thorp Speaks

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Dr. Thorp Speaks

A discussion of feedlot diseases of lambs as presented before the Iowa State Chapter of the Jr. A. V. M. A.

Reported by Harvey H. Hoyt, '42

Dr. THORP introduced his topic by emphasizing that in order to be of service to any branch of the livestock industry one must study that particular industry and become aware of the problems that it faces. Lamb feeding is done on a large scale in Colorado where Dr. Thorp has had wide experience studying the diseases of sheep. One-third of the lambs marketed in this country are fattened in the Colorado feedlots. Many of these lambs are shipped in from the ranges.

The diseases of sheep may be divided for convenience as follows:
1. Diseases of the ewe and ram.
2. Diseases of the lambs up to feedlot age.
3. Diseases of feedlot lambs.

The diseases of feedlot lambs of importance and those considered in this discussion are pneumonia, contagious ecthyma, coccidiosis, enterotoxemia and urinary calculi.

Pneumonia

Pneumonia is not one of the most important of these diseases, but its incidence and the predisposing factors warrant consideration. A factor well worth our attention is the environment from which a large percentage of feedlot lambs come. On the ranges the atmosphere and grasses are nearly always dry. The animals are shipped from these conditions to the feedlot, spending from 36 to 72 hours enroute. The conditions of transportation expose the lambs to the weather, often adverse, irregularity in eating and in drinking, and a change of diet. It is an ideal opportunity to pick up infective agents.

The pneumonia usually found is a broncho-pneumonia with which the Pasteurellae are associated.

Biologics were at one time highly recommended for this condition, but the disease has now been found to be self-limiting. Therefore these agents were not as effective as it was at one time believed. Recent work has found that placing the animals in dry sanitary quarters is effective for treatment and prevention.

Contagious Ecthyma

Contagious ecthyma, commonly known as sore mouth, is a virus disease characterized by lesions of the gums, lips, nostrils and eyelids. The lesions on the lips are the most characteristic and are first noted as small papules, especially in suckling lambs. The eye lesions are more of the character of an acute inflammation. The lesions on the lips coalesce as the condition progresses. Secondary infection by Actinomyces necrophorus produces necrosis and extensive ulcers. These lesions often extend to the commissures of the lips, but they are more
severe on the muzzle. From these locations infection may extend to the lungs producing areas of necrosis and terminate in a necrotic pneumonia. Extension of the digestive tract has also been noted with necrotic foci present in the abomasum, omentum and intestines.

Even though a large percentage of those lambs affected recover, the loss in weight creates an economic problem too great to permit overlooking the importance of contagious ecthyma.

A prophylactic treatment in the form of a vaccine for contagious ecthyma was perfected in Texas. It was found to produce immunity for 28½ months. In Colorado this treatment proved effective if a potent vaccine was administered to lambs as they were unloaded. In lambs showing the lesions this treatment alleviated the condition and the lesions began to disappear in five to seven days.

The technique for vaccination involves the scarification of an area low in the wool-free region on the medial side of the posterior limb and the application of the vaccine with a small brush.

Coccidiosis

Coccidiosis is a condition in which invasion of the intestinal epithelium by coccidia is severe enough to produce symptoms of an enteritis. Coccidia were found in nearly all fecal samples of both range and feedlot sheep at all times of the year. An interesting observation was made relative to the period elapsing between the time the lambs left the range and the appearance of symptoms of coccidiosis. The greatest number of outbreaks occurred from 14 to 23 days after the lambs had been shipped, with the highest number occurring between 18 to 22 days. Factors accounting for this striking relationship of the occurrence of coccidiosis to the time elapsing between the range and feedlot are: mixing of infected and non-infected lambs for shipment; transporting in crowded, poorly-bedded vehicles; passage through freight yards and the change in diet. These factors all permit an accumulative effect of the infection allowing it to reach a clinical magnitude.

The control of coccidiosis in feedlots requires the removal of clinical cases and the practice of sanitary measures which are practical under the conditions such as the providing of ample bedding and keeping the quarters dry. Drinking troughs should not be allowed to run over or the sheep will drink from the litter. It is also advisable to allow the lambs to run on open pasture for the first two or three weeks of feeding. If the use of medicinal agents seems necessary in order to get cooperative handling of the animals on the part of the caretaker, mineral oil should be dispensed.

Enterotoxemia

Enterotoxemia may well be termed over-eating and is caused by excess consumption of highly concentrated feeds. It is characterized by greenish scours and cerebral symptoms; the latter are exhibited by twisting the head and neck backwards.

Allowing lambs to run in cornfields has been the source of much discussion. No trouble results from this practice the first few weeks because the corn stands well, so that the lambs do not reach the ears. There is also an excess of other feeds such as grasses and weeds. Trouble results later in the season when storms and ripening cause the corn to go down and other feeds become scarce. The lambs also learn in time to reach the ears. When they start feeding on the ears they get too much grain in their diet and toxemia results.

More trouble is being experienced in over-feeding of lambs now than in the past because the feeding period has been shortened to about 90-120 days in contrast to the long feeding periods of past years.

Necropsy reveals petechial hemorrhages under the intestinal peritoneum and mucosa, on the diaphragm, epicardium and endocardium; hydropericardium; edema of the lungs; and congestion of the abomasum and Peyer's patches.

To avoid this condition one must thoroughly understand feeding practices and...
watch the condition of the flock. Feeding racks should be provided which will not permit all of the lambs to feed at the same time. They should be crowded at the racks at feeding time and a few left without access to feed. The lambs should also be sorted into pens in respect to their size to prevent larger lambs from crowding the smaller away from the feed. Conditions such as contagious ecthyma in a flock of lambs may also permit excess eating by the healthy if the disease is not considered in measuring the feed.

Filtrates made from the intestinal contents of intoxicated sheep when injected into experimental animals reproduced the symptoms of toxemia shown by affected lambs. Guinea pigs, rabbits and lambs were used in this work. The relationship of these toxins to those of *Clostridium welchii* were also interesting. The antitoxins of *Clostridium welchii* types A and C toxins did not neutralize these filtrates, but the antitoxins of type B only neutralized the filtrates part of the time. The antitoxin of type D always neutralized the toxin in the filtrate made from the intestinal contents of affected lambs.

**Urinary Calculi**

Urinary calculi are quite common in feedlot lambs. The mortality rate from this cause in Colorado is from four to five percent.

There is much indication that a nutritional factor is involved in the cause of this condition. Calculi occur in the urinary tract of lambs that are not fed alfalfa hay and yellow corn. Such feeds as straw and cane seem to produce this condition. When grains are diluted with bran in the feeding practices the incidence of uroliths increases. This can no doubt be explained by the high concentration of minerals in bran. Failure to provide an ample supply of drinking water is also a factor.

Calculi are usually found in the bladder and penis. They occur in varying numbers and are often sand-like. They result in stoppage of the urinary flow from the bladder causing dilatation of the bladder and infiltration of adjacent tissues with urine.

The outstanding symptoms of the presence of urinary calculi are incontinence of urine and edema of the ventral abdominal wall.

The feeding of alfalfa hay seems to prevent this condition.

Dr. Thorp stated the following conclusions about feed lot diseases of lambs:

1. Fattening lambs is a very important industry and warrants a study of its problems by the veterinary profession.
2. Some of the most important diseases of feedlot lambs are:
   a. Pneumonia
   b. Contagious ecthyma (sore mouth)
   c. Coccidiosis
   d. Enterotoxemia
   e. Urinary calculi
3. Predisposing factors are very important in diseases of lambs, especially those caused by vital agents.
4. Sanitary quarters are essential in the control of diseases in the feedlot.
5. Careful control of the diet is necessary to maintain health in the flock.
6. To be of the greatest possible service to the sheep industry thorough knowledge of the extent, aims and problems of this growing branch of livestock production cannot be over-emphasized.

The basic principles of intravenous medication should never be forgotten. Most medicines given intravenously should be well diluted, given slowly, and warmed to body temperature. The injection of cold solutions may produce fatal shock. Even the injection of cold sera subcutaneously may produce shock, especially in pigs.

The baby born in the United States in 1900 could look forward to a life of about 49 years. The one born in 1940 can, barring the misfortune of war, expect to live about 63 years (66 if a girl; 62 if a boy).