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MILK-FEVER OF EWES IN NEW ZEALAND

By A. LESLIE,
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Summary Only:

The talk was mainly concerned with the causative influences associated with the onset of milk-fever in ewes and to a lesser extent with milk-fever in cows.

Milk-fever in ewe flocks was first recognised by the speaker in New Zealand in 1934. A 5 per cent. incidence was not uncommon; the worst outbreak was 33 per cent. in a flock of 150 lambed ewes. In Central Taranaki the incidence in cows of the susceptible age was 4 per cent. in a 30,000-cow population in a season conducive to the condition.

The causes of milk-fever in ewes and cows differed in certain outbreaks. For instance, outbreaks were common in ewes several weeks after lambing, during periods of fasting, and road and rail journeys. Since the speaker's discovery in 1930 that improved nutrition for ewes before lambing (not under-feeding) was an effective preventive of sleepy-sickness (pregnancy toxaemia) injudicious steaming up of ewes before lambing had increased the incidence of milk fever.

While several different influences rendered ewes susceptible to milk-fever the speaker postulated that certain "green" diets at certain stages of growth, in particular, were prone to cause milk-fever. He believed such foods contained milk-fever producing substances. Rapidly growing luscious young pasture and second growth of oats, wheat and barley, chou moeller, rape and kale were very commonly a cause of milk-fever in in-lamb and lambed ewes. These same foods, it was pointed out, were common causes of rickets in hoggets, but their association with both milk-fever and rickets was imperfectly understood.

Milk-fever in both ewes and cows was regarded as a "farming disease," and was largely preventable (1) by keeping animals physically fit by good steady feeding, (2) by avoiding "hunger and bust" systems of feeding, (3) by avoiding excess of green crops and pastures known to be prone to precipitate milk-fever, (4) by feeding lambed ewes so as to prevent them losing too much flesh at the expense of milk production, and (5) by avoiding undue fasting of in-lamb or lambed flocks.

High milk production, per se, was not considered a common cause of milk-fever in ewes. Before lambing and calving the diet should be adequate in energy intake but regulated in respect of its protein content and sparing in foods believed to contain milk-fever producing substances. Gross under-feeding before parturition was to be deprecated.

A pregnancy toxaemia-producing diet was not a milk-fever-producing diet but it was possible to suddenly change on to luscious rapidly growing pasture a pregnancy toxaemia-susceptible flock and obtain milk-fever cases. In this circumstance lamb mortality at birth could be high. Bearing-trouble (eversion of the vagina) and milk-fever could occur in the same flock at the same time, but not bearing-trouble and pregnancy toxaemia together. A milk-fever-producing pasture could also be a bloat-producing one.
Discussion on Mr. Leslie's Paper

Mr. L. C. FIELD: Mr. Leslie mentioned that the alteration of farm management altered the incidence of milk-fever very considerably. Could he give us some details?

Mr. LESLIE: In cows and ewes the main preventive measure before parturition was to limit the intake of growing pasture and to feed ample hay. The bodily condition of the animal should be maintained by the provision of energy-producing feeds with a limit on the protein intake. Injudicious steaming-up was to be avoided and immediately after parturition the flock or herd should be gradually introduced to better feed. Keeping cows in bare paddocks before and for a few days after calving and feeding them ample hay lessened substantially the incidence of the disease. Gross under-feeding before parturition was not recommended. In ewes pregnancy toxaemia was precipitated by under-feeding. "Toxic" pastures and crops had to be fed very sparingly.

Mr. BLAIR: Could Mr. Leslie give us a description of the symptoms of milk-fever in ewes?

Mr. LESLIE: In the very early stages the ewe was merely abnormally alert, as a rule. Soon the gait became strikingly stilty, the feet digging into the ground as the animal walked. Next the animal was unable to rise and this was followed by loss of consciousness and death in 8-24 hours. Unconscious animals might bloat and/or vomit. Breathing became slow, shallow and almost imperceptible. When feed was plentiful milk-fever should be suspected; when food was scarce pregnancy toxaemia should be suspected. If there was a doubt the udder should be inflated or a calcium injection given.

Mr. MITCHELL, Senr.: I would like to ask Mr. Leslie whether in his experience he has not found a lot of confusion among farmers between sleepy-sickness and milk-fever as the symptoms are similar in the early stages?

Mr. LESLIE: Yes, that was so. In sleepy-sickness the early symptoms were dullness, listlessness, depression of appetite, slowness in following the flock and impaired vision; affected animals stood in the same place for hours or days. Death occurred in 5 to 7 days. Loss of consciousness was gradual, not sudden, except when a storm precipitated the disease in which case the animal could go down and be unconscious in a day. Sleepy-sickness outbreaks never occurred in the midst of plenty of feed. Forced exercise for ewes in the early stages of the disease caused them to fall behind the flock and become fatigued.

Dr. WALLACE: I would like to ask Mr. Leslie whether in his experience ewes developing milk-fever tend to be ewes carrying twins rather than those carrying singles; consequently whether he believes excessive exercise will precipitate the condition. Also, is it his experience that ewes that develop milk-fever and are treated and make a quite spectacular recovery, at lambing time are associated with stillbirths in lambs? I mention this because we had a small outbreak at Ruakura this year that seemed to be associated with a certain amount of road journeys with or without fasting precipitated milk-fever. I mention this because we had a small outbreak at Ruakura this year that seemed to be associated with a certain amount of road journeys with or without fasting precipitated milk-fever. The only ewes that contracted the condition were ewes carrying twins and all the ewes that contracted milk-fever and were treated and recovered quite quickly produced a dead lamb at lambing.

Mr. LESLIE: I have no figures to indicate that twin-bearing ewes were more susceptible to milk-fever than ewes carrying single lambs. Road journeys with or without fasting precipitated milk-fever. Ewes with twin or single lambs in utero could be equally susceptible following road or rail journeys or when the feed supply was toxic. A high
lamb mortality at birth was a possibility in pregnancy toxemia-susceptible ewes suddenly changed to a milk-fever producing diet. Such ewes were affected with kidney disease and the lambs were poisoned.

Mr. McFARLANE: Mr. Leslie has used the term “metabolic diseases” fairly frequently in his talk and he has indicated that metabolic diseases constitute by far the greatest single work of the veterinarians in this country. It is general experience, of course, that the metabolic diseases tend to merge one into the other. It is very often difficult to say whether one is dealing with milk-fever or something else and the whole position is badly in need of clarification. The conditions grouped under metabolic diseases—milk-fever, grass-staggers, bloat, facial eczema and so on—have been with us a long time. Chemists have found in many cases a yard-stick by which we can, with some degree of accuracy, tell one from the other but the value of “the stick” seems to have been very limited despite the diseases having been with us a long time. We have not progressed a great deal. The underlying functional disturbances responsible are obviously the things we wish to get at. Mr. Leslie mentioned his belief that any green oats fed to sheep could produce milk-fever. The same feed is known to be productive of rickets which also is an indication of the failure of growing lambs to use calcium and phosphorus properly. Rickets is produced on a diet which seems to be adequate in vitamins and proper minerals. The presence of the ketogenic factors is something which is under investigation, but that is only substituting one unknown for another unknown. The two factors act by upsetting the calcium level and it seems to me that several of those problems might fall like ripe fruit if we were to tackle the problem centrally rather than peripherally. I think that many of the fundamentals that are being developed at present are likely to contribute to those problems much more readily than the attack by the field staff.

Mr. CRAWFORD: I think Dr. Wallace might be interested to hear of one outbreak we had last year, associated with green barley. The farmer was very keen that the sheep should be treated by veterinarians. We produced about 100 per cent. of still-births in 12 using straight calcium. We suspected it might be something else and investigated every possible cause. Finally we added magnesium and glucose to the injections. The farmers injected it under the skin and reduced considerably the number of still-births; they did get the occasional still-birth, but most of them succeeded in producing a live lamb.

Mr. PHILLIPS: The speaker has suggested that the incidence of milk-fever is rightly associated with some changes of feed, possibly even too much feed. He also suggested that the pasture in the very young stage might be responsible. Had rotational grazing for cows anything to do with milk-fever?

Mr. LESLIE: There need be no connection between rotational grazing and the prevalence of milk-fever. Much depended upon the quality of the pasture and its ability to produce milk-fever. The more mature the pasture the less the likelihood of it causing milk-fever. Overflushing of cows was to be avoided. Usually late calvers were more susceptible to the trouble than early calvers because of over-flushing.

Mr. CANDY: I would like to add to remarks Mr. Leslie has made insofar as dairy cows are affected: I had an outbreak myself many years ago similar to the one he described of a farmer trying to do the best with the cows and putting them on to good feed before calving. I had just about every other one with milk-fever. I certainly do not feed as injudiciously before calving as I did before. We have practically eliminated it in our area with the use of molasses. We always have molasses available for our cows before calving and immediately after calving and I have not had a case for the last three years.
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