



SHEEP SHEET

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Enterotoxemia affects all sheep of all ages (*from one week to several years of age*). Two peaks of incidence are recognized. The first corresponds largely to the grazing period when single lambs nurse ewes with an abundant milk supply while grazing on improved pastures or being fed high quality hays and/or concentrates (grains). The second peak corresponds with the finishing period at which time the lamb is usually 5 months to 12-14 months of age.

Enterotoxemia is one of the most common causes of death in feeding lambs. In "explosive" outbreaks losses may range from 10 to 40%. In unvaccinated feeder lambs one can expect a minimum of 1% of the lambs to die from this disease with an average death loss of between 2-2½ %.

The disease is caused by a germ (bacteria) known as ***Clostridium perfringens Type D***. It is normally present in the lower bowel of most sheep. Under circumstances brought about by heavy volume and high quality feeding, it grows rapidly, enters the small bowel, and produces a powerful poison (toxin) which is absorbed through the intestinal wall, causing death in a few hours. In many instances deaths occur so quickly that owners do not observe sick animals.

The organism responsible for Enterotoxemia may be present in the intestine of normal sheep and not do any harm until certain digestive disturbances occur. When normal conditions within the digestive tract are altered it may provide the casual organisms with a favorable environment within which to grow and produce their poison.

The most important predisposing factor is a sluggishness of intestinal peristalsis (movement of ingested food products) or a bowel stasis

Enterotoxemia.....The Deadly Tummy-ache

(a.k.a. *pulpy kidney and/or overeating disease*.)

Sheepdex H-9

created by digestive disturbances due to diet, lack of exercise, or occasionally to run-down conditions associated with poor nutrition.

Predisposing factors:

To summarize the important predisposing factors seen under feeding conditions I could list the following:

- Sudden change of feed.
- Too high an energy diet (excessive carbohydrates - starches and sugars).
- Irregular feeding.
- Increasing the amount of concentrate too rapidly.
- Heavy parasite burden.
- Devitalization of the intestinal tract due to the presence of large amounts of undigested or partially digested food in the gut increases toxin absorption.
- A lack of natural or acquired immunity.

Deaths from enterotoxemia usually occur suddenly, even though some animals may be observed sick for several hours or even for a day or longer before they die. Lambs frequently exhibit nervous symptoms, the head being drawn backwards, and the animal showing convulsive movements and frothing at the mouth. Sometimes the animal becomes comatose; death taking place quietly. Diarrhea may be present shortly before death.



While the symptoms described are suggestive of Enterotoxemia, they also may be seen in other diseases of feeder lambs characterized by sudden death, such as acute acidosis or grain founder, polioencephalomalacia, listeriosis, acute pasteurellosis, tetanus and blackleg. It is therefore important that the cause of such deaths be promptly and correctly diagnosed.

If a necropsy or post-mortem is done immediately or shortly after death, few changes may be observed, particularly if the lamb died suddenly. The changes most frequently observed are congestion and fluid of the lungs, an increase in fluid in the heart sac (pericardial sac) with clots of gelatinous material (fibrin). Small hemorrhages and blood splashes will be seen under the clear membrane which lines the outer and inner muscle walls of the heart. The carcass decomposes rapidly and is distended with gas. Urine from a lamb that died from enterotoxemia is usually positive for glucose (sugar) when tested by simple laboratory means.

A diagnosis of enterotoxemia is suggested by the sudden death of concentrate-fed lambs, the post-mortem finding described, and the vaccination status of the lamb. This diagnosis can be confirmed by laboratory tests. It is wise to seek the counsel of a veterinarian to help in establishing a correct diagnosis and to outline control measures.

There is no satisfactory treatment for animals already affected. All emphasis should be placed on prevention.

Prevention by management:

- Make the adjustment from range or pasture to feedlot conditions gradual. Place lambs on either alfalfa hay or prairie hay first and then gradually accustom them to concentrates.
- Check lambs for parasites and worm with a recommended worming agent prior to vaccination (a burden of parasites interferes with the production of protective antibodies from the vaccines).
- Have ample feed in front of the lambs at all times.

Prevention by vaccination:

- Provided that the lambs are in good condition and are not wet vaccinate the lambs soon after their arrival in the feedlot

with either a bacterin or toxoid. Allow at least 10 days after vaccination for immunity to develop.

- Under certain conditions, re-vaccination with the bacteria or toxoid is required (booster dose) at a later date (4-8 weeks later).

What to do in case of explosive outbreaks late in the feeding period:

Several procedures may be followed:

- Reduce the amount of concentrate by 50% for 1 week or longer. Then gradually increase the amount of concentrate to full feed.
- Sort lambs into two groups. The ones close to marketing should be shipped as soon as possible. The other group should be vaccinated with the bacterin or toxoid and the gradually returned to full feed.
- Consider the use of Type D antitoxin immediately to stop the loss. The immunity will be temporary (2-3 weeks) but losses will ease. After the storm is over you may secure a long-lasting immunity by vaccinating or giving a booster dose of bacterin or toxoid. The use of serum to stop an outbreak of enterotoxemia may be expensive. A veterinarian should be consulted in your area for a proper program to follow for maximum control of this one of the most common diseases of sheep.



Summary:

Sheep producers should be aware that enterotoxemia is not just a problem of lambs being fed for market. This same disease can cause death in suckling (nursing) lambs, older sheep, or even in newborn lambs before they are 36 hours old. The surest way to prevent overeating disease is to vaccinate against it.

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