



"OVEREATING DISEASE"

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The term "overeating disease" unfortunately has been used to describe three different diseases. This has led to confusion for both inexperienced shepherds and lifetime sheep veterans and their veterinarians. In this article we will discuss each of the diseases that has been termed "overeating disease" including cause, presentation, treatment and prevention.

Type C Enterotoxemia. This is a disease of young suckling lambs or bottle fed lambs. The causative agent is a bacterium, *Clostridium perfringens* Type C. *C. perfringens* is an anaerobic bacteria that resides in soil and manure and forms spores that are highly resistant to disinfectant and environmental breakdown. Essentially *C. perfringens* is present in all types of soil throughout the world. *C. perfringens* Type C causes death in young suckling lambs. The bacteria enters the body through the mouth either from contamination on the udder of the ewe or from suckling on dirty wool or manure tags in effort to find the teat. The bacteria grow rapidly and produce a toxin, which causes rapid death. The lambs are rarely observed ill but rather are simply found dead in the morning. If observed before death treatment is unsuccessful. Post-mortem exams on dead lambs are the most reliable method of diagnosing Type C. The abomasum and small intestine are hemorrhagic and blood filled. Type C is easy to control and prevent by vaccinating ewes 3-4 weeks pre-lambing with *C. perfringens* Type C toxoid. This will boost antibody levels in the colostrum which will neutralize the toxin when ingested. Obviously, if the lamb ingests high number of *C. perfringens* before it suckles colostrum you may still have an occasional death. Therefore, drop pen and lambing pen sanitation are very important to prevent the disease and shearing pre-lambing is also beneficial.

Type D Enterotoxemia. This is a disease of rapidly growing lambs on a high plane of nutrition. The causative agent is also *Clostridium perfringens* but it is the Type D strain and the toxin which it produces that is the problem. Again, *C. perfringens* is present in soil and manure and is present on all sheep farms. The bacteria are ingested by lambs exploring their environment. The acid in the abomasum kills most of the bacteria. However, in lambs that are on a high plane of nutrition, such as rapidly growing single suckling lambs, creep fed lambs and feedlot lambs some of the bacteria gets into the small intestine where it grows rapidly on the starch that is in the diet. The bacteria produce a toxin that causes rapid

death. Convulsions, muscle tremors and bizarre neurologic behavior can be seen before death. Treatment is rarely successful, as the toxin has already done extensive damage by the time the shepherd observes the lamb. Vaccinating the lambs with Clostridia Type D toxoid is very effective in preventing the disease. Both a primary and a booster vaccination, 3-4 weeks later are required for protection. One of the frustrating problems is timing of the vaccination. If we vaccinate very young lambs (2 weeks of age) we do not see a good response, as the lamb's immune system is not mature enough to respond adequately to the vaccine. If we wait too long to vaccinate we can see death loss before we get the lambs vaccinated with the booster dose. If the lambs are young when they are vaccinated it is wise to give an additional booster at 5 months of age, especially if the lambs are on a high concentrate diet.

Grain Overload. This is strictly a management disease where lambs are allowed to engorge a large amount of grain or when we change rations quickly. Sheep, along with other ruminants, need to be kept on a regular diet. If they are suddenly allowed uncontrolled access to grain the grain rapidly ferments in the rumen. This drops the pH of the rumen and causes, dehydration, lowering of blood pH and acid burns to the rumen wall. If severe this can result in a quick death. If the sheep survives the rapid change in pH the next problems that can develop are laminitis (founder) and polioencephalomalacia. Weeks after the incident the lamb can still be affected by liver abscess and poor growth rate due to severe damage of the rumen. If caught in the early stages grain overload can be drenched with sodium bicarbonate in cold water. The sodium bicarbonate will buffer the pH change and cold water will slow the fermentation process. Activated charcoal is also used to bind the starch and prevent further fermentation. Banamine and dexamethasone are useful to treat inflammation, pain and shock. If the lamb lives more than 24 hours it should be fed grass hay and probiotics to stimulate the rumen, treated with B complex vitamins to prevent polioencephalomalacia and treated with long-acting penicillin or tetracycline to prevent liver abscess for 2 weeks. Prevention is much easier than treatment. Changing rations gradually, secure gate latches and sheep proof feed storage can easily prevent grain overload.