

Enterotoxemia type D

"Enterotoxemia" is an aptly descriptive term for a group of enteric infections associated with variants or strains of *Cl. welchii*. Over the last three decades, lamb dysentery, pulpy kidney, struck and overeating disease have received a considerable amount of attention; an attention well merited, as the organisms of this group are among the most pathogenic for sheep and responsible annually under improved conditions. Some of these organisms are actively invasive, others dependent on satisfactory environmental conditions before they can exert their effect. Irrespective of these factors, the organisms of this group are all highly toxigenic, causing fatal toxemias not only in sheep but also in man, goats, cattle, hogs and horses.

Disease Process and Cause:

---- It is predisposed by feed changes and high concentrate diets. Like its relative, *C. perfringens* type C, its course is rapid and affected animals are frequently found dead without symptoms. Sluggishness of the intestinal movement and high concentrate diets lead to multiplication of the organism and toxin production.

This disease is caused by *Clostridia perfringens type D* and usually affects lambs over a month old.

What age it affects:

---- An acute infectious enterotoxemia of sheep of all ages, at any season, though there are peak seasons of incidence, such as the spring and summer, and highly susceptible age groups, such as young lambs folded on rich pasture with their dams and fattening and feedlot lambs.

How to recognize it:

---- Sudden deaths are most characteristic of the disease. If clinical cases are observed, they may follow either of two syndromes: one showing depression and death in coma, the other nervous symptoms and convulsions.

Some animals may show a subacute or chronic form characterized by a severe fetid diarrhea, dullness and disinclination to move and graze.

Diagnosis requires necropsy of a fresh animal via microscopic examination of the small intestine for the bacteria and toxin. On occasion, the

sac surrounding the heart will fill with fluid. If found, this is strong evidence of the disease, but unfortunately it is not always found. As the name implies, there may be a soft pulpy kidney. The intestines usually appear normal. The urine may contain increased amounts of glucose.

How to cure:

----- Treatment for those found alive, as in enterotoxemia type C, is not usually rewarding. Antiserum may be given (25-50 cc), and antibiotics administered very early in the course of the disease may be effective.

How to prevent:

----- Prevention is relatively simple. Vaccination is effective and inexpensive. An enterotoxemia toxoid type C and D should be used in ewes 15-30 days before lambing. For the first time vaccination, two doses at least two weeks apart are necessary for optimum protection. Lambs should be vaccinated at four weeks of age and again at six weeks. Some producers also vaccinate again before putting lambs into the feedlot if they are 90 days of age or older.

If outbreaks are being experienced in groups of unvaccinated lambs, they should be immediately vaccinated. However, because immunity takes from 10 days to 2 weeks, concentrates in the feed should be reduced. Feeding antibiotics can be helpful but must be withdrawn with adequate time before slaughter. Antitoxin can be used but is expensive.

How severe a problem to the industry:

----- Disease and health problems of sheep cannot be controlled or prevented if they are not identified. Every effort should be made to determine the exact cause of death when sheep are lost. Proper diagnosis of the condition causing death may help to save many sheep and lambs in the flock. Records should be kept on all sheep that are lost. Causes of death can be summarized at the end of the year and the health problems of the flock identified. If sires and dams can be identified, some information as to vitality and livability of blood lines with the flock can be established.