



Cattle Producer's Handbook

Animal Health Section

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Clostridial Diseases

Dr. Bruce Wren
Des Moines, Iowa

The clostridial diseases are a group of mostly fatal infections caused by bacteria belonging to the group called *Clostridia*. These organisms have the ability to form protective shell-like forms called spores when exposed to adverse conditions. This allows them to remain potentially infective in soils for long periods of time and to present a real danger to the livestock population. Many of the organisms in this group are also normally present in the intestines of man and animals.

Blackleg

Blackleg is a disease caused by *Clostridium chauvoie* that primarily affects cattle under 2 years of age and is usually seen in the better doing calves. The organism is taken in by mouth. Symptoms first noted are lameness and depression. A swelling, caused by gas bubbles, often can be felt under the skin as a crackling sensation. A high temperature is present. Occasionally, sudden death occurs with no symptoms observed.

Upon a postmortem examination, the infected area is composed of black, dead (necrotic) muscle that is pocketed with gas bubbles and is usually found in the heavier, more active muscle masses of the animal. A sweetish odor of rancid butter may be detected from a fresh lesion. Lesions may occasionally be discovered in the diaphragm, heart, or tongue. Diagnosis is based on the symptoms of lameness with a gaseous swelling under the skin in young cattle and is confirmed by postmortem and laboratory tests.

The chances for survival are poor unless symptoms are discovered early in the disease. Large doses of penicillin may save the life of the animal if administered early.

Prevention is readily accomplished by the use of Blackleg bacterins, which over the years have proven very effective. Vaccination at less than 4 months of age will not produce a lasting immunity. Calves vaccinated at less than 4 months should be revaccinated at 5 to 6 months.

Malignant Edema

Malignant edema, a disease of cattle of any age caused by *Cl. septicum*, which is found in the feces of most domestic animals and in large numbers in the soil where livestock populations are high. The organism gains entrance into the body in deep wounds and can even be introduced into deep vaginal or uterine wounds in cows after difficult calving.

The symptoms are those primarily of depression, loss of appetite, and a wet doughy swelling around the wound that often gravitates to lower portions of the body. Temperatures of 106°F or more are associated with the infection. Death frequently occurs in 24 to 48 hours.

Postmortem lesions seen are those of necrotic, darkened, foul-smelling areas under the skin, often extending into muscle. Very little, if any, gas is associated with the swellings.

Diagnosis is based on the history of illness in unvaccinated cattle, typical symptoms, and postmortem lesions with laboratory confirmation. Treatment with massive doses of penicillin is occasionally successful in cases observed early.

The disease can be prevented by the use of *Clostridium septicum* bacterins usually produced in combination with other bacterins.