Blackleg: The most likely disease to cause problems in your herd

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Despite all of the articles in the news media about Foot and Mouth Disease, E-coli in meat, and Mad Cow disease, Georgia cowherds are hundreds of times more likely to have calves die of Blackleg than any of these diseases. Blackleg is one of a group of fatal diseases of cattle that are caused by the group of bacteria called Clostridia. These bacteria have the ability to form shell-like spores that allow them to persist in soils for long periods of time. As cattle graze, they ingest the bacteria. The clostridia migrate in the cattle's body and under the right conditions produce toxins that may be highly fatal. A member of this same group of bacteria is *Clostridium tetani* (the bacteria that causes tetanus). Vaccination is generally effective in preventing death loss from Clostridial diseases.

Blackleg
Blackleg is caused by *Clostridium chauvoei* and is highly fatal in cattle under two years of age. Cattle consume the bacteria while grazing. Signs of the disease include depression, lameness, swelling of muscle masses, production of gas under the skin and sudden death. The usual clinical case is a cattle producer finds a dead calf that was one of his or her "best doing" calves. Treatment is not effective but large doses of penicillin may save some calves if the diagnoses is made very early in the disease. Post mortem diagnosis is based on clinical signs, sudden death with a gas swelling in unvaccinated calves.

Malignant Edema
Malignant edema is a disease of any aged cattle and is caused by *Clostridium septicum.* The bacterium is shed in the feces of most normal cattle and is found in high numbers in soil where cattle graze. The bacteria enter the body through wounds and cause depression, soft swelling around the wound, high temperature and death usually in 24 to 48 hours. The lesion is a necrotic, dark, foul-smelling area under the skin with very little or no gas. Post mortem diagnosis is based on lesions and sudden death of unvaccinated cattle.

Black disease
Black disease is caused by *Clostridium novyi* and can occur in cattle of any age. The route of infection can be oral or through a wound. The bacteria are found in the soil where cattle normally graze. This disease is seen as a sudden death syndrome in feedlot cattle as well as cow/calf herds. Diagnosis is usually after death and the lesions are similar to *Clostridium septicum,* a foul smelling wet lesion with little or no gas in unvaccinated cattle.

Clostridium sordelli
This is a sudden death disease encounter in feedlot cattle and cow/calf animal herds. The organism is ingested and the usual syndrome is sudden death of a healthy looking animal. Post mortem lesions are a dark black hemorrhagic area in the brisket or throat in unvaccinated cattle.

Enterotoxemia
This disease occurs primarily in young calves and feedlot cattle. It is caused by *Clostridium perfringens* and the clinical signs are a bloody diarrhea and/or sudden death. The bacteria are ingested orally, grow in the gut and produces toxins that cause the disease. The toxins most often affecting cattle are type C and type D toxin. The disease is enhanced by high carbohydrate diets (like milk or grain), a partial slow down of the gut from ingesting a large amount of feed. These conditions permit bacterial growth that produces excessive amounts of toxin, which is absorbed through the gut. Young calves may show abdominal pain, go down, have convulsions and die in a few hours. Often we see baby calves that are less than a week old that die suddenly with no signs observed. The post mortem lesion is an area of bright red gut in a calf that died suddenly.

The common component in all of these diseases is that the bacteria exsist in high numbers in soils where cattle graze, they are ingested while eating or enter through a wound, and **all of them produce toxins that kill cattle very rapidly**. The good news is that **vaccination for Clostridial diseases has been proven to be extremely effective**. In areas of high exposure, young calves should be vaccinated around 60 days and the vaccination repeated after the calves are four months old. In areas of low incidence, vaccination when

calves are four to six months is usually effective. *Clostridium perfringens* in baby calves can be prevented by vaccination of the cowherd before calving to produce better colostrum and/or *Clostridium perfringens* antitoxin to the calves at birth. Your veterinarian is the best source of information of the specific recommendations for your herd.