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## **Clostridium septicum (Malignant Edema)**

Malignant edema is caused by an anaerobic gram-positive rod shaped bacteria called *Clostridium septicum*. All ages and species of animals are susceptible and the disease occurs worldwide. *Clostridium septicum* is found in the soil and intestinal tracts of animals. Typically infection occurs through contamination of wounds by the bacteria. Wounds caused by lacerations, injections, head butting, shearing, tail docking, castration and parturition may become infected. Once the organism gains entry into a wound the bacteria can release toxins that cause severe local tissue necrosis and systemic signs.

Clinical signs usually appear within a day of the injury. Typical signs include fever, anorexia and localized swelling with pain. The local swelling typically pits with direct digital pressure and will extend into surrounding tissue. The characteristic swelling and high mortality rate is what gives this infection its name, "Malignant Edema."

Diagnosis of the disease is based on necropsy and laboratory confirmation. Lab testing is based on fluorescent-antibody staining of *Clostridium septicum* from a tissue smear. The tissue smear sample needs to be collected rapidly from the carcass, otherwise *Clostridium septicum* can contaminate the tissue within 24 hours after death. Treatment of the disease is less than rewarding. If treatment is attempted, it usually consists of antibiotics, anti-inflammatory drugs and supportive care. Surgical debridement of infected tissue can be attempted, but usually does not greatly improve the outcome. Control of the disease is through vaccinations and good hygiene during invasive procedures.

Colorado Serum Company offers three products that can assist in protecting your animals from infection with *Clostridium septicum*. The three vaccines are Essential 2, Essential 2+P and Essential 4. All are killed bacterin vaccines and should be given before invasive procedures such as castration, dehorning or tail docking. Calves vaccinated under three months of age should be revaccinated at weaning or 4 to 6 months of age. Annual vaccination is recommended in high risk areas and vaccination is recommended after severe trauma.

