

Blackleg and Malignant Edema

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Blackleg and malignant edema are constant disease problems of cattle, sheep and sometimes other domestic and wild animals. Blackleg is caused by the Clostridium chauvoei organism and occurs in cattle, sheep and deer and infrequently in swine. Malignant edema affects most species of warm blooded animals and is caused by the Clostridium septicum organism.

These are rod-shaped organisms which will not grow in the presence of oxygen, so they grow very actively in deep wounds. They are spore forming organisms and are extremely resistant to heat, drying and most disinfectants. Under ordinary conditions they are capable of remaining alive in the ground for many years. Clostridium organisms live normally in the digestive tract of many animals and they also escape from the carcasses of animals which died from clostridial infections. Because of the prevalence of the organisms and their extreme resistance to environmental conditions, the clostridia must be considered as an ever present threat to livestock health.

DISEASE SPREAD

The bacteria for blackleg and malignant edema produce potent toxins which cause severe destruction in the area of infection as well as general illness and finally death.

It is not known exactly how the blackleg organism enters the animal's body, but it is generally thought to pass from the digestive tract into the blood stream and settle in the muscles. Under certain unknown conditions these organisms multiply in the muscles and produce disease.

Malignant edema occurs in horses, cattle, sheep and swine and is comparable to gas gangrene in

man. The disease results when a wound becomes infected by the toxin producing clostridial organisms. Malignant edema and blackleg occur most commonly in animals less than two years of age, but they are by no means limited to this age group. Both diseases have been observed in animals over five years of age. These infections are most prevalent in warm seasons but may occur at any time in both range and housed cattle.

SIGNS

Frequently the presence of blackleg or malignant edema in a herd is first indicated by finding one or more dead animals. If the infected animals are observed before death, one may note marked lameness, local muscle swelling, and severe depression. Often the animal is unable to rise. The temperature is elevated in the early stages of the disease but later decreases to even sub-normal levels. Death usually comes within 24-48 hours after the first signs are observed and animals in which no signs have been observed often are found dead.

In the early stages of the disease the muscle area in which the infections locate frequently is swollen, hot and painful. Later the area becomes cold and painless and fluid and gas may be felt beneath the skin. The absence of such lesions does not rule out the possibility that malignant edema or blackleg may be present. These lesions are often small or may be overlooked or they may occur in areas where they are difficult to detect.

Blackleg often affects the upper part of the infected leg. However, the infection may localize in any muscle of the body including the tongue, neck, jaw, or diaphragm. Malignant edema lesions may occur anywhere in the muscles of the body and are usually associated with a wound.

PREVENTION

The vaccines available usually are made up of both blackleg and malignant edema. However,

The prevention program in sheep ordinarily consisted of vaccination of ewes about three weeks before they have their first lamb. Animals so vaccinated usually are permanently protected. Lambs born to immune ewes are resistant to infection for at least three weeks. Sheep vaccinated before one year of age should be revaccinated after becoming mature at about one year old.

TREATMENT

If the signs of blackleg and malignant edema are evident and if the disease is detected in the early stages, treatment may be effective. Usually massive dosages of antibiotics are utilized. A good prevention program is far more valuable and less expensive than attempting to treat the sick animal.

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