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BLACKLEG IN CATTLE
By C. R. TOOP, B.V.Sc., Chief Veterinary Surgeon

BLACKLEG is almost essentially a disease of young cattle usually affecting animals between the age of six and 18 months. It is characterised by the development of crepitant swellings on the neck, chest, shoulders or hindquarters and sometimes on other parts of the body, and this is accompanied by symptoms of acute illness which in most cases terminates fatally after an interval of 18-36 hours.

It is caused by infection with Clostridium chauvoei, a short rod-shaped micro-organism or bacillus which occurs in the soil and is believed to gain entrance to the body through the digestive tract. Clostridium chauvoei produces spores which are able to survive in the soil for long periods. Consequently when the infection has become established on a property, outbreaks of the disease may continue to occur for many years.

Although blackleg may occur under a wide variety of conditions it is most frequently observed on moist low-lying areas. In Western Australia it is confined to the South-West coastal districts and has not been reported from the drier inland areas.

The disease may be prevented by inoculation with blackleg vaccine which confers upon the treated animals a strong and lasting immunity and is usually sufficient to protect young cattle from infection during the period when they are most susceptible.

MODE OF INFECTION
It should be recognised that blackleg does not spread directly from animal to animal but results from infection with an organism existing in the soil. The blackleg bacillus (Clostridium chauvoei) is always present in the soil of affected properties and so far as is known it enters the body through the digestive tract and after gaining access to the bloodstream is deposited in various tissues. Lesions in cattle are rarely associated with wounds or other injuries.

The carcass of an animal dead of blackleg contains enormous numbers of infective organisms and, should it be allowed to decompose and disintegrate in the field, gross contamination of the soil will inevitably occur.

The formation of spores, which are very resistant to extremes of temperature and drying, enables the infection to persist in the soil for many years so that after the disease has made its appearance on a property recurrent mortalities are likely to take place.

SYMPTOMS
The disease has a definite age incidence usually affecting young cattle between the age of six and 18 months. It may also be observed on occasions in calves four to six months old but seldom affects animals above the age of two years. In districts where blackleg is prevalent, cattle over three years may be regarded as immune.

The onset of the disease is sudden. The earliest symptoms consist of loss of appetite and cessation of rumination together with high fever and rapid respiration. The animal appears dull and depressed, is reluctant to move and lies down frequently. The development of swellings on the shoulder, neck, chest, thigh or flank, and sometimes elsewhere on the body is a characteristic feature of the disease and this is usually accompanied by lameness affecting the fore or hind limbs.

The swellings are at first small and tender but rapidly increase in size becoming large and extensive and non-sensitive.
Upon pressure, a peculiar crackling sound is heard due to the presence of gas beneath the skin. The gas is formed during the growth of the causal organism in the underlying tissues. Similar swellings are sometimes observed on the gums, tongue, and pharynx.

From this stage the condition of the animal rapidly deteriorates and soon it is unable to rise. Death generally occurs from 12-36 hours from the onset of symptoms and is preceded by prostration and muscular tremors.

**POST-MORTEM APPEARANCES**

Soon after death the carcass becomes tightly distended with gas so that the uppermost limbs may extend straight out from the body and a dark-coloured frothy discharge exudes from the mouth, nostrils and anus.

At post-mortem, the skin overlying the swelling appears dark, dry and parchment-like, and a dark frothy fluid with a sour disagreeable odour escapes when the swelling is incised. The underlying muscles are distended and are brown or black in colour and are infiltrated with bloodstained liquid and gas. Apart from the presence of fluid in the abdomen and chest cavity and some congestion of the liver and kidneys no changes of note are observed in the internal organs.

**PREVENTION**

**Vaccination.**—The disease may be prevented by inoculation with blackleg vaccine which provides the only practical and effective means of control. An injection of 5 cc. of this product given beneath the skin either in front of or behind the shoulder, results after an interval of 14 days in the development of a strong immunity which endures for 12-18 months and is therefore capable of protecting young animals from infection during the period when they are most susceptible to the disease.

In localities where the disease has a seasonal incidence, young stock should be vaccinated annually at least 14 days in advance of the period when losses are expected to occur. Where the disease occurs irregularly, calves should be vaccinated upon reaching the age of four to six months. It should be noted that blackleg vaccine is not a curative and is only of value for the prevention of the disease. When, however, the disease makes its appearance on a property, the immediate vaccination of the animals which are still healthy followed by their removal to a fresh paddock for a period of 14 days can be relied upon to check the mortality.

As a further precaution the carcass of any animal dead of blackleg should be destroyed by burning or buried deeply.
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