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Chronisches Krankheitsgeschehen in Milchviehbetrieben - Der sogenannte „viszerale oder chronische Botulismus“

Chronic diseases in dairy farms - the so-called "visceral or chronic botulism"

In recent years has been increasingly reported on a chronic diseases in dairy farms, which is accompanied by a gradual decay of animals affected with not clearly defined clinical picture. To the aforementioned symptoms include, for example, reduced milk production, mastitis, emaciation, indigestion, be bended back, lameness with increased incidence of laminitis and mouth ulcers and paralysis up to recumbency. For the operation concerned, this means significant economic losses through decreased milk production and increased replacement rate. In infected animals, the pathogen Clostridium (C.) botulinum and its toxins were frequently detected, so that a causal relationship is suspected. This chronic disease process is referred to as so-called visceral or chronic botulism.

The pathological condition "botulism" is understood classically intoxication (direct recording of poison) in humans and animals with a highly potent neurotoxin that is produced by C. botulinum. The so-called botulinum neurotoxin (BoNT) binds to nerve cell receptors and inhibits the transmission of impulses to the muscles by blocking the release of neurotransmitters. This leads to paralysis, which often lead to death. There are seven serologically related forms known toxin (A, B, C, D, E, F, G). While Type G toxin appears to cause no disease symptoms toxin types A, B, E and F are described as a trigger of botulism in humans. The toxin types C and D are made primarily responsible for diseases in poultry, mink and cattle.

In humans, five different forms of botulism described (EFSA 2005), bearing in mind that in addition to intoxication, a Toxikoinfektion (infection with C. botulinum that produce only the body BoNT) is obviously possible:

classical botulism - by taking small quantities of BoNT (about 1 ug) infant botulism - Toxikoinfektion after colonization of the intestine with C. botulinum Intestinal botulism - Toxikoinfektion to dysbiosis in the gut wound botulism in adults inhalational

In cattle, the clinical picture of classical botulism has long been known. The diagnosis is based primarily on the presence of typical clinical symptoms. Key symptoms caused by muscle paralysis, for example, staggering gait up to recumbency, tail and tongue paralysis, droopy eyelids and ears. A toxin detection in animals fail in classical botulism mostly because the BoNT is already absorbed or bound to the nerve endings or already degraded.

In chronic botulism in cattle is probably a toxicologist infection. Whether the detection of C. botulinum in the digestive tract of chronically ill animals is actually causally related to the disease process described in context, is not sure at this time. C. botulinum and other clostridia are ubiquitous occurring bacteria that are also found in the digestive tract of healthy animals.

With the help of this study, a possible relationship between the occurrence of chronic diseases in dairy farms and the presence of C. botulinum should be investigated. This affected / suspected unsuspecting herds or flocks with suspicious animals are compared with unsuspecting animals in terms of the occurrence of this bacterium and other possible causes of disease.