



Factsheet

XXV. World Buiatrics Congress in Budapest

Coccidiosis in cattle – an underestimated problem

Cause and transmission of pathogens:

Coccidiosis in cattle is caused by infections with a parasite of the genus *Eimeria*. There are many known species of *Eimeria*, of which *Eimeria bovis* (*E. bovis*) and *Eimeria zuernii* (*E. zuernii*) in particular are pathogenic and are of greatest importance for the clinical course of disease at the stable. They mainly affect young cattle between two and three months of age. A third pathogenic species, *Eimeria alabamensis*, can cause problems in grazing calves in particular.

The life cycle of coccidia takes place both within and outside the host animal. The single-celled parasites develop inside the intestinal mucosa and produce so called “oocysts” that are excreted with the faeces. Under favorable conditions, sporulation occurs within three to seven days. This is the process whereby the oocysts are converted to the infectious form, at which point they each possess eight sporozoites. Each sporozoite is capable of infecting one cell in the calf’s gut. Transmission from one animal to another occurs through the ingestion of oocysts present in the environment or in feed contaminated with faeces. An infected animal can in turn excrete thousands of oocysts in the faeces.

Clinical symptoms and course:

Infection with coccidia causes damage to the gut. This results in the degeneration of intestinal villi and lesions in the small and large intestine, leading to a drastic reduction in the absorption surface for nutrients.

In clinical coccidiosis, depending on the severity of the disease, the animal has watery to bloody, foul-smelling diarrhea which frequently contains mucus. The feed consumption of

the affected animals often decreases significantly. The flanks often have a tucked-in appearance and the back is arched, indicating pain in the gastrointestinal region. The animals strain repeatedly to eliminate faeces. This is referred to as tenesmus. Their whole bodies also often tremble. In severe cases, this is accompanied by significant weight loss, dehydration, inability to rise and death.

In sub clinical coccidiosis, the aforementioned obvious symptoms of disease are absent. Calves with a mild infection nevertheless fare significantly worse than their healthy counterparts. Feed consumption decreases gradually and feed utilization deteriorates because the nutrients are not absorbed properly in the gut. As a result of this, the daily weight gains are also lower and the animals show slower growth. Development is retarded and they are frequently susceptible to other diseases. The infected animals without symptoms are also continuously excreting new infectious *Eimeria* and therefore represent a risk to healthy calves. The economic losses caused by sub clinical coccidiosis are massive.

Conditions favoring disease:

In principle, coccidia are ubiquitous in the environment. The infection rate is thus high. The frequency of clinical disease is relatively low, however, with problems in cattle herds being caused mainly by the sub clinical disease form. The risk of infection increases when the parasite finds favorable conditions for its development. Risk factors are: poor hygiene, overcrowding, stress caused by weaning, rehousing or a change in the feed, poor climate management and concomitant diseases which weaken the animals' immune system.

Diagnosis:

The target-oriented diagnosis includes clinical assessment of the individual animals and the herd along with previous reports concerning diarrheic and/or deterioration of feed conversion parameters in the farm (poor doers), as well as examination of faecal samples in the laboratory. McMaster technique is utilized order to observe the oocysts in faeces under the light microscope in the laboratory. Identification of the *Eimeria* species involved is very important.

A special sample kit, such as the one supplied by Bayer Health Care, should be used for collecting faecal samples on the farm. For a meaningful diagnosis, it is important to have

sufficient amounts of faeces. At least 10 g faeces should be collected from each animal using a plastic glove. The faecal samples from three to five animals in the same age group are combined. If the samples are not sent to the laboratory within one to two days, they must be stored in the refrigerator. When taking the samples, optimum hygiene is important. The sample tubes must be sealed carefully.

Treatment and prevention:

If affected animals are already showing clinical symptoms, the success of coccidiosis treatment is suboptimal, because by this stage there is already significant damage to the intestinal mucosa. Treatment should therefore be given during the pre-patent period, i.e. before clinical symptoms of disease develop. In conjunction with precise diagnostic testing and strategic treatment is given to the calves before the onset of clinical signs (i.e. metaphylactic treatment).

Bayer Animal Health offers an effective tool – an oral suspension containing Toltrazuril, an active ingredient which has been proven effective in practice in the treatment of coccidiosis in different species. In cattle, a single dose of 15 mg per kg body weight is sufficient. This corresponds to 3 ml suspension per 10 kg body weight. The Treatment results in a significant reduction in the rate of oocyst excretion and the onset of clinical symptoms.

In order to reduce the risk of infection with coccidia, cattle farmers should also take preventive measures. Hygiene and environmental conditions should be improved and any stress factors for the calves minimized.

About Bayer HealthCare:

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With sales of €956 million (2007), the Animal Health Division is one of the world's leading manufacturers of veterinary drugs. The division produces and markets more than 100 different animal health and care products worldwide for livestock and companion animals.

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