

Coccidiosis in cattle

Coccidiosis is an intestinal disorder in young cattle caused by the parasite *Eimeria*. The parasite causes diarrhea in young calves and growth retardation. This has implications on the health of the calf and can affect the rest of its life. The aim is to prevent young, susceptible animals to suffer from a severe infection. Therefore, it is important to diagnose the infection as soon as possible, so that treatment can start on time.

Symptoms coccidiosis

Each company may face coccidiosis problems. Often it is difficult to recognize coccidiosis in calves, but be aware. Symptoms of coccidiosis can often be observed between one to three months of age, but also in older cattle.

Affected calves may show alterations of the skin (less colour and less glossy), and sometimes diarrhea with blood in the faeces.

In about 10 to 15 percent of cases, the calves develop (sometimes very severe) problems such as diarrhea, which is often accompanied by mucus and blood, also called clinical coccidiosis.

Additionally, loss of appetite and energy, weight loss and dehydration may occur.

Not all calves with coccidiosis develop diarrhea. Some of the infected animals show growth retardation and weight loss. In those cases, the coccidiosis is more or less subclinical.

Coccidiosis and cost estimations (losses)

Both clinical and subclinical coccidiosis result in a reduced daily growth rate of, respectively 41 and approximately 12 percent, compared to healthy calves (calves preventively treated).

Calves with coccidiosis may reach the expected weight more than two months later than calculated for non-infected calves.

All together, the economic losses, induced by coccidiosis, may be up to 180 Euro per calf. This cost estimation is based a rearing cost rate of 3 euro per day, including the loss of income related to milk.

Diagnosis of coccidiosis

A calf with diarrhea has to be treated as soon as possible. Therefore, it is important to determine the cause of the diarrhea. If the diagnosis is correct, consult your veterinarian to start the treatment and to focus on taking preventive measures. This to increase the chances, that the treatment will be successful.

Coccidiosis can be determined by faecal examination. It is advised to consult your veterinarian, and to collect fresh faecal droppings of at least five calves to be submitted for pooled examination on *Coccidia* and *Giardia*.

Diagnostic opportunities coccidiosis

- Quantitative: detection and counting of the number of eggs: no, little or much.
 - Individual faecal droppings on *Coccidia* and *Giardia*
 - Faecal examinations of five animals (pooled) on *Coccidia* and *Giardia*.
- Qualitative research: Detection and characterization of the eggs (pathogenic or non-pathogenic).
 - Individual droppings: *Coccidia Eimeria* typing
 - Faecal examination of 2 to 5 animals (pooled): *Coccidia Eimeria* typing.

Giardia can be found in calves aged from three weeks to four months. *Giardia* can be examined in combination with *coccidia* and only qualitative (detected / not established).

Other causes of diarrhea

Apart from coccidiosis, diarrhea in calves can also be caused by the following pathogens:

- Cryptosporidia,
- E. coli,
- Rotavirus,
- Coronavirus,
- and Giardia.

However, diarrhea caused by rotavirus and coronavirus usually occur within the first few weeks of life. E. coli K99 is often the cause of diarrhea during the first days of life.

Also BVD and Salmonella can cause diarrhea in calves. Also poor quality, not well-prepared powder milk (wrong cooking temperature or incorrect concentration of powder) and large feed changes can cause diarrhea. Grazing heifers can become infected with intestinal worms, which can also cause diarrhea.

Approach control of coccidiosis

In case the result of the faecal droppings on coccidia and giardia indicates coccidiosis, treatment is advised. An early treatment with coccidiostatica may ensure that the impact of the infection will be limited. Always discuss treatments with your veterinarian.

In case the disease shows a persistent course, the infection may result in a serious and permanent damage of the guts. The calves should be housed, if possible after treatment, separately.

Check, fourteen days after treatment, whether the treatment has been effective, or whether there is another reason for having diarrhea.

Prevention of coccidiosis

The following tips can be effective to prevent coccidiosis problems as much as possible:

- Provide clean water and food. Give each calf its own bucket or clean the bucket after each run with water of at least 65°C.
- Clean the individual calf boxes and group pens thoroughly after use, and let them dry at least for a week for the next round of calves. Choose for an additional cleaning with a steam cleaner or use a disinfectant.
- Calves that are well-fed are stronger and more resistant. This makes the risk and the outcome of an infection less. The colostrum intake is important, so provide sufficient milk and start feeding with concentrates (and water) on time. The milk diet should be well prepared and at the right temperature. A good mineral supply is important for calves' health.
- Coccidiosis usually occurs around the weaning period. Also avoid overcrowding in the pens, as this reduces serious stress.
- In case coccidiosis is a persistent problem in your farm, it is advised to clean your farm annually by a steam cleaner or treat your animals with coccidiostatica. These treatments will kill the parasite and prevents calves to become infected from environmental sources.
- Ensure that animals do not eat roughage contaminated with manure from other animals, for instance by pulling hay from another box in the box with calves.