



## Calf Rearing Fact Sheet: Calf health

# Coccidiosis

### Key Points

1. Coccidiosis is an increasingly common disease that affects animals from 4 weeks to 8 months. It is often associated with the end of meal feeding.
2. The parasite causes severe intestinal damage and affected animals can take a long time to resume normal growth rates.
3. Infection is by ingestion of oocysts which survive well in moist conditions.
4. Clinical signs include dysentery containing mucous and blood and faecal staining of the hind quarters.
5. Definitive diagnosis is difficult from faecal oocysts as the association between onset of diarrhoea and shedding is not consistent.
6. Response to treatment is the common method of diagnosis.
7. Best prevention is gradual weaning off concentrates (containing rumensin) — alternate day feeding of concentrates and then once-weekly feeding coupled with rotational grazing to prevent oocyst build up.

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### General

- Coccidiosis is an intestinal disease caused by a protozoa which occurs primarily in young calves aged 3-8 months of age. In heavily contaminated environments calves may show clinical signs as early as 4 weeks of age.
- Typically Coccidiosis has high morbidity (sickness) and moderate mortality with long term effects on production in animals which survive. The incidence of this disease is increasing and the detrimental effect on dairy beef performance is considered significant.
- This condition can be controlled by inclusion of a coccidiostat in the rations and strategic grazing management.

### What is Coccidiosis?

- Coccidia are intracellular, protozoan parasites which co-exist in the intestinal tract of cattle. *Eimeria zuernii* and *Eimeria bovis* are host specific and infect the ileum and large intestine. The life cycle is complex, including both asexual and sexual reproduction. Sexual reproduction results in the formation of oocysts which are passed in the faeces.
- The source of infection is the faeces of clinically infected animals. The calves ingest oocysts from contaminated pasture, feed and water or by grooming each other.
- Dry conditions and high temperatures in the pasture will destroy oocysts within a few weeks. However under moist conditions they can survive for up to 2 years.
- Clinical disease occurs when there is damage from heavy infestations or the calves have lowered resistance through stress, poor nutrition or concurrent diseases.
- The gut mucosa becomes denuded and stripped of villi which results in severe haemorrhage and impaired water absorption. This leads to diarrhoea, dehydration and death. In lighter infections, mal-absorption is a consequence of villi atrophy resulting in poor growth rates and ill-thrift.

### What circumstances influence the disease?

- Initially, there is a build up of infection on the pasture that the calves are grazing. This is often caused by continual use of the same "calf paddocks" each year. Seasons that are mild and moist speed up the contamination.
- The cessation of meal feeding is also often associated with coccidiosis. Calves that have had lots of meal have been protected by the coccidiostat (often rumensin) in their feed and so haven't had the need or opportunity to build up immunity against the parasite.
- The incubation time is 2-4 weeks and then Coccidiosis is seen as a sudden onset of diarrhoea, usually in many animals in the group.

## What are the presenting signs?

- The incidence and severity of this disease ranges from low grade to acute, severe and often fatal. This is directly related to the level of stress the animals are under.
- Animals often appear unhappy and uncomfortable and may exhibit severe unproductive straining while defecating. Temperature is mildly elevated (39.0-39.5 degrees C.) Dehydration and lack of appetite are common.
- The passage of blood and mucous stained faeces is often the first sign of disease. Faecal staining of the tail, hind quarters and hocks is a strong indication of the presence of Coccidiosis. This is known as the “Coccidiosis flag” or “windscreen wiper” effect.
- Affected calves rapidly lose condition. Moreover, because parasites damage the gut lining, regaining condition takes a long time. Severely affected calves typically undergo a convalescence of many weeks, during which feed intake and weight gains are reduced. Animals can become unthrifty.
- Mild and chronic cases show up as weight loss, anaemia and mild or no diarrhoea. Calves appear weak and listless with droopy ears and rough coats. There is a continuous re-infection in a heavily contaminated environment together with a partial immune response struggling to hold the parasite in check.

## How do I know it is Coccidiosis?

- Laboratory tests for Coccidia oocysts are done using a salt flotation method. Oocysts counts > 5,000 /g are significant. The interpretation of results is complicated by non-pathogenic oocysts which can also be present in large numbers. Likewise, diarrhoea can also occur before the oocysts are shed in the faeces, thus false negative results are possible. Also oocysts numbers may be under-estimated because of the dilution effect of fluid faeces.
- Blood tests are of limited value, though they may confirm a calf is anaemic.
- A definitive diagnosis can only be made at post-mortem examination by collating gross findings with histology and impression smears.
- The best diagnosis is often a rapid recovery from treatment.

## What is the treatment and how do I control the problem?

- In an outbreak the sick animals should be isolated and given supportive oral fluid therapy and treated with coccidiocidal drugs. Preferential feeding may be needed to obtain satisfactory growth rates. Severe cases may recover.
- The remainder of the animals should be removed from the infected pasture and the stocking rate reduced. Place calves back on meal containing a coccidiostat and then gradually remove the meal from the diet. This allows the calf to build up its immunity gradually.
- Minimise stressful procedures during an outbreak.

## What is the prevention?

- Gradually weaning calves from concentrate feeds containing a Coccidiostat to 100% pasture allows a calf time to build up its own resistance to the protozoa. Feeding the concentrate with Coccidiostat on alternate days, progressing to weekly feeding is beneficial.
- Rotational grazing during the post weaning period prevents levels of infection building up whilst the calf is building up immunity.
- Supplementation with a concentrate containing a coccidiostat can be strategically effective in breaking a cycle of infection when the challenge is high, especially warm moist climatic conditions.
- Regularly clean and move feed and water troughs.