

Coccidiosis in cattle

Coccidiosis, also known as black scours, is a common problem in weaner cattle. Coccidia are single-celled parasitic organisms that affect all domestic animals. There are many species of coccidia, and most types are specific to host animals. Eleven species have been identified in Australian cattle. However, only 2 are thought to cause disease, *Eimeria zuernii* and *E. bovis*.

Coccidiosis is a form of enteritis (infection and inflammation of the intestines) seen in weaners of all ages up to 250kg live-weight. It usually occurs soon after weaning. Profuse, dark, foul-smelling diarrhoea results in dirty tails and hindquarters (Figures 1). Once an animal becomes badly dehydrated and goes down, it will often die. These animals should be euthanised on humane grounds unless intensive supportive nursing care can be provided.

Figure 1: Weaners with signs of coccidiosis, of varying severity



Clinical signs

The incubation period, which is the time between infection and the appearance of signs of disease, can be between 16 and 30 days. The organisms live within the cells lining the animal's gut. During the life cycle of the parasite, the organisms cause damage to the gut cells. This results in the following signs of the disease when too many organisms are present:

- sudden onset of severe, foul-smelling diarrhoea that may be bloodstained, with either a dark, tarry stain or fresh, red blood clots, and may also contain shreds of mucous
- straining to defecate
- dehydration, which presents as sunken eyes and a depressed animal that is slow to move
- anaemia
- depressed appetite.

Recovered animals can have a long convalescent period, with poor weight gain and feed consumption. The parasite causes significant damage to the gut lining and affected animals may never completely recover. Long-term effects include a failure to thrive and poor weight gain.

Some animals may recover from an infection without treatment. Others may be infected but not show any signs of disease. They develop immunity to that species of coccidia.

The parasite is spread when *Eimeria* oocysts (a stage in the life cycle of coccidia) are passed in the faeces and then ingested by another animal. Warm, moist conditions favour the spread of coccidia in the environment. The spore stage of the parasite is very resistant and it can survive in that stage in any environment for a long time.

Factors that predispose weaner herds to outbreaks of coccidiosis include:

- age, disease usually occurs in calves or weaners, which have no immunity
- stress, such as weaning, cold weather, inappropriate weaning diets or a sudden change in diet
- weaning light-weight calves
- confinement in small areas, such as yards or small paddocks
- feeding and/or watering on the ground or in troughs that can be contaminated with faeces.

Diagnosis

The disease is confirmed by veterinary laboratory testing of fresh faecal samples, from about 10 affected animals in separate containers. There are a number of other causes of diarrhoea (such as worm infestations, bacterial and viral infections of the gut), so it is worthwhile confirming the cause of the problem. Faecal samples may have over 5000 oocysts/g of faeces.

Coccidiosis is a more common cause of intestinal disease in young cattle than worms in the Territory.

Prevention

The disease can be easily prevented by feeding a medicated ration or supplement containing an ionophore additive, monensin (such as Rumensin®, Bovatec®, and Posistac®). This is the recommended practice if you are early weaning or holding weaners in yards on feed for more than a week. If feeding weaner pellets, check the ingredients on the manufacturer's label. There is no vaccine for coccidiosis.

Treatment

If an outbreak occurs, affected animals should be separated from the others. Overcrowding should be reduced and feed and water troughs should be raised high enough off the ground to prevent contamination with faeces. Electrolytes can be added to the water. Ionophore-medicated feed should be provided. It is essential to provide a high quality, highly digestible feed suitable for the age and weight of the animals to ensure the best possible nutrition.

Monensin should be used as a feed additive at the rate of 10 to 20mg per head, per day. Proprietary brands of feed or supplement containing monensin can be used, or it can be added to a home-mixed feed.

Care must be taken with monensin, and feeds containing monensin, as it is toxic to humans and horses. Never feed weaner pellets containing monensin to horses. Store medicated weaner pellets separately from horse foods to avoid accidental poisoning.

Thorough mixing and even distribution of monensin through feed is essential. There is no withholding period for monensin but the manufacturer's directions should be followed closely. During an outbreak, provide medicated feed to all susceptible animals under 6 months of age for a minimum of 28 days.

Once a calf has developed severe scours, successful treatment is very difficult. Drenching with electrolyte mixtures will reduce dehydration and replace essential salts and sugar. Trimethoprim-sulphonamide antibiotics are effective at certain stages of the disease. This must be prescribed by a veterinarian. Commercially available electrolyte solutions are readily available from feed merchants and veterinary clinics. Alternatively, a homemade electrolyte mixture can be made up as follows:

- 1 teaspoon of table salt
- half teaspoon of baking soda
- half cup (125 mL) of glucose
- 1.2 litres of water.

Recommendations

- Confirm the disease through laboratory testing.
- Routinely use medicated feed or supplement for weaners, particularly during times of stress. Always use it in calf-rearing and weaner feedlot operations.
- Manage an outbreak with medicated feed or supplement, and good nutrition.
- Consider intensive treatment for severe cases, such as drenching with electrolytes and injectable antibiotics. If that is not possible, consider euthanasia.
- Consider changing weaner-handling locations if you have suffered an outbreak.

Livestock Biosecurity Branch staff at your regional Department of Tourism, Industry and Trade office can provide further advice and assist with the diagnostic process.

Livestock Biosecurity Branch contact details

Darwin Region

Veterinary Officer

P: 08 8999 2035, M: 0427 003 600

Regional Livestock Biosecurity Officer

P: 08 8999 2034, M: 0401 115 802

Katherine Region

Veterinary Officer

P: 08 8973 9716, M: 0437 527 372

Regional Livestock Biosecurity Officer

P: 08 8973 9767, M: 0467 740 233

Livestock Biosecurity Officer

P: 08 8973 9765, M: 0427 604 002

Tennant Creek Region

Principal Livestock Biosecurity Officer

P: 08 8962 4458, M: 0401 113 445

Regional Livestock Biosecurity Officer

P: 08 8962 4492, M: 0457 517 347

Alice Springs Region

Veterinary Officer

P: 08 8951 8181, M: 0401 118 181

Regional Livestock Biosecurity Officer

P: 08 8951 8125, M: 0401 118 125