Recommended Pre-test Management: **Controlling Bovine Coccidiosis**

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Bovine coccidiosis is an important economical disease of cattle**.** Coccidiosis is caused by protozoa that live inside the cells lining the intestinal tract. Sub-clinical infection with no signs of disease is common. Clinical signs of coccidiosis include diarrhea (often bloody) and anemia due to the loss of red blood cells. In chronic cases, decreased growth rates and feed efficiency occur. Economic losses are associated with decreased performance, costs for treatment and prevention, and cattle deaths.

Transmission of coccidiosis is fecal-oral primarily through the consumption of manure from an infected animal - usually via fecal contamination of feed or water. It is commonly spread to nursing calves when a cow lies in an area of fecal contamination and gets manure on her teats.

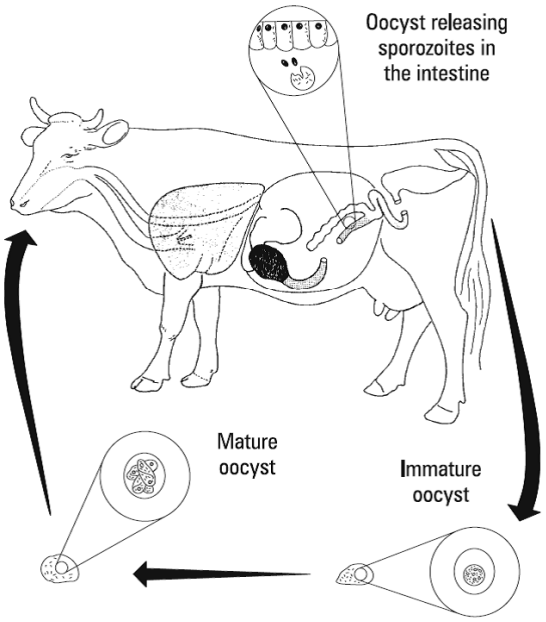

Figure 1. Life cycle of coccidia in cattle. From: M. J. Kennedy, Alberta Agriculture and Food

The life cycle of coccidia is complex (Figure 1). Cattle ingest the infective oocyst. An infective form called a sporozoite is released upon digestion of the oocyst. This form penetrates the cells of the intestine where they go through a cycle of rapid growth and division known as the asexual phase. One infective oocyst can produce up to 1000 asexual forms, each invading a cell in the intestine. Eventually, the asexual form goes through a sexual phase that results in oocysts being formed, which are then passed in the feces. Once passed in the feces, the oocysts are protected from adverse environmental conditions by a double wall. Coccidia oocysts have survived as long as 2 years under favorable environmental conditions. It is common to have areas of the environment that are highly contaminated with coccidia. Common areas of coccidia contamination are those where there is significant fecal matter accumulation/concentration, such as around a hay bale feeder.

Coccidia harm the host by destroying the cells and tissues in the lower intestines, cecum, and the colon. The loss of intestinal lining may lead to blood and fluid loss and may alter nutrient absorption. Secondary bacteria may invade the damaged tissue. Cattle usually do not show clinical signs of the disease, unless stressed by weaning, weather, shipping, or other diseases. It is common for cow/calf producers to have coccidiosis in their cattle, but not see clinical signs of the disease. Calves often break with the disease when shipped to a backgrounder or feedlot.

Control of coccidiosis in cattle is based on sanitation, treatment of clinical cases as they appear, and the use of preventive medications. An infective dose of coccidia is necessary to produce signs of disease. If the level of farm contamination is minimized by sanitation and protecting feed and water sources from fecal contamination, the impact of coccidia can be reduced. It should be noted that the oocyst wall provides protection against chemical disinfectants. Therefore, coccidia are unlikely to be completely destroyed in nature, and it is not feasible to expect complete control by treating the external environment.

The use of pharmaceuticals to prevent coccidiosis is a common management practice. Approved drugs for prevention of coccidiosis in cattle are amprolium (Amprol® or Corid®), lasalocid (Bovatec®), monensin (Rumensin®), and decoquinate (Deccox®) – see table below. Amprolium is a coccidiostat used as a feed additive or in the drinking water and is best used as a treatment of clinically infected cattle. It can also be used for

disease prevention. Deccox® is a feed additive that is effectively used as a preventative treatment in confined cattle. Rumensin® and Bovatec® are growth-promotant feed additives that are also effective at preventing or controlling coccidiosis.

Product	Prevention	Control	Treatment
Ampolium (Corid®)	☑		☑
Decoquinate (Deccox®)	☑		
Lasalocid (Bovatec®)		☑	
Monensin (Rumensin®)	☑	☑	

In cow-calf herds, the usual source of infection is a cow that is shedding the coccidia, but has no signs of disease. These cows continuously shed coccidia contaminating pasture. The best way to prevent coccidia in a cow-calf environment is to stop these cows from shedding coccidia. That can be accomplished by using mineral with Rumensin® or Bovatec® for the cow herd starting about 45 – 60 days before calving. Sanitation is also important especially around areas where feces may accumulate and calves congregate (*e.g.* round bale feeders).

The most common situation for clinical coccidiosis is in stressed calves that have an unapparent coccidia infection. These calves have small numbers of coccidia in the intestine but not enough to cause clinical disease. Once these calves are stressed, they produce large numbers of coccidia and contaminate the environment. This large production of coccidia and subsequent contamination of the environment is commonly seen in calves weaned, sold and commingled with other calves all on the same day**.** This can be prevented with a program of feeding mineral medicated with Rumensin® or Bovatec® to the cows prior to the calving season**.**

Cow-calf operators who retain ownership on calves in custom feedlots or who wish to maintain good relationships with calf buyers should work towards preventing and controlling coccidia on their operations, thus helping to ensure good subsequent performance of these calves.