

COCCIDIOSIS

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Coccidiosis is an intestinal disease affecting several different animal species. In cattle, coccidiosis usually produces clinical symptoms in animals from 1 month to 1 year of age but is able to infect all age groups.

The causative agent is a protozoan that can multiply rapidly. The group of coccidia that are infective to cattle belongs to the *Eimeria* genus with more than 20 species identified affecting cattle. The two most common species affecting cattle are *Eimeria bovis* and *Eimeria zuernii*. Coccidia are very host specific, meaning only cattle specific species will cause disease in cattle.

The coccidia protozoan invades the cells of the intestinal lining, leading to rapid multiplication and subsequent rupture of the infected cells. Several stages of multiplication occur before the final stage, the oocyst, is passed in the feces. Oocysts are extremely resistant to environmental stress and are difficult to completely remove from the environment. Oocysts must undergo a final process called sporulation before they are again infective. Oocysts are frequent contaminants of feed and water and when the sporulated oocysts are ingested by other animals they start the life cycle over in the new host. The pre-patent period for the common *Eimeria* species can be from 5 to 21 days (period of time between infection and shedding through the feces).

Clinical Signs

Most cattle that are infected do not show clinical signs. They will appear clinically healthy even though they may be shedding oocysts.

Coccidiosis is frequently referred to as an opportunist — a disease that develops when other stress factors are present. Clinical signs of coccidiosis usually are present at, or shortly following, stress such as weather changes, weaning, overcrowding, long truck rides, unsanitary conditions, large exposure, and other disease conditions such as shipping fever. This leads to the highest incidence of coccidiosis occurring in the first 21 days after arrival at the feedlot.

Symptoms or signs of coccidiosis depends on the state of the disease at the time of observation. In general, coccidiosis affects the intestinal tract and symptoms are associated with it. In mild cases, only watery diarrhea may be present, and if blood is present in the feces, it is only in small amounts.

Severely affected animals may have thin, watery feces with considerable amounts of intestinal mucosa and blood. Straining to defecate usually is evident, rapid dehydration, weight loss, and anorexia (off feed) also may be clinically visible. Rough hair coat, decreased weight gains, and manure packed hair around the perineal regions is often noted on affected animals.

“Nervous coccidiosis” is a nervous system condition associated with coccidia infection. Signs are consistent with central nervous system involvement, and include muscle tremors, convulsions, and other central nervous symptoms. A consistent sign in “nervous cocci” cattle is that stimulation of any type seems to trigger the symptoms. Death may follow the acute disease either directly or from secondary diseases such as pneumonia.

The postmortem lesions associated with coccidiosis generally are confined to the cecum, colon, ileum, and rectum. There usually is an eroded lining of these regions with blood in the lumen.

Diagnosis often is obvious, but confusion can exist — apparently normal animals can have oocysts present in the feces. Diarrhea may be present in the animal before the oocysts can be found, therefore, a confirmed laboratory diagnosis may not always be possible. Laboratory findings should be correlated with clinical signs for a diagnosis.

The susceptibility of animals to this disease varies. The ingestion of oocysts may not produce the disease; some animals constantly carry them without being affected. Recovered animals develop immunity and seem to be partially resistant to reinfection.

Treatment

Treatment of infected animals is required. Individual treatment should be used when possible; however, medications are available for herd/group applications. The actual coccidiosis problem is critical and, in addition, dehydration and loss of appetite must be treated.

Drug selection should be handled by a veterinarian. Options exist for water treatment, in feed treatments, as well as individual animal treatments. Therapeutic and metaphylactic strategies are most effective when started early. Most confinement operations begin strategies at arrival. Management can reduce exposure by reducing stress, such as overcrowding and poor sanitation.

In case of a confirmed outbreak of coccidiosis in a group of cattle, the following steps should be started immediately:

1. Separate the sick animals from healthy ones.
2. Treat sick animals with effective medication as prescribed by a veterinarian.
3. Instigate mass or pen-based medication, as the other animals are likely to be infected.

General information on coccidiosis in cattle:

1. Coccidiosis is an opportunistic disease — it affects stressed animals. Reduce stress as much as possible.
2. Do not feed on the ground. Minimize fecal (oocyst) exposure.
3. Feedlot conditions provide ideal circumstances for an outbreak.
4. In most confinement situations, prevention or control with coccidiostats is a wise strategy. Labeled coccidiostats available for prophylaxis include amprolium, monensin, lasalocid and decoquinate (see table). These products affect different stages of the life cycle of coccidia, thus sound veterinary advice is needed in the choice of products.
5. Mass treatment or pen medication is usually effective.
6. Scrape and clean pens regularly to reduce mud and environmental contamination.
7. Consult your veterinarian for diagnosis, prevention and treatment recommendations.
8. Clean water tanks regularly, daily during an outbreak.

Product	Use/Dose		
	Prevention	Control	Treatment
Amprolium	5mg/2.2 lbs for 21 days		10 mg/2.2 lbs for 5 days
Decoquinate	22.7/100 lbs for 28 days		
Lasalocid		1.0 mg/2.2 lbs not more than 360 mg/hd/day	
Monensin	0.14-0.42mg/lb up to 200mg/hd/day	0.14-0.42mg/lb up to 200mg/hd/day	

- When using these treatments, ensure all meat withdrawal times are followed.
- All medicated feeds must be fed in accordance with manufacturer's current label directions.

A.J. Tarpoff, DVM, Beef Extension Veterinarian, Kansas State University

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