Vet Call

by Bob L. Larson, DVM, University of Missouri

Controlling coccidiosis in cattle

Coccidiosis is caused by a small organism in the protozoan class. This parasite invades the cells of the intestinal tract and causes disease when many intestinal cells are damaged.

Sixteen species of coccidia are known to infect cattle, and almost all mammals can be infected with some type of coccidia organism. However, the organism is species-specific and does not spread from one species to another. In other words, cattle can not be infected with coccidia from pigs, chickens or any other animal.

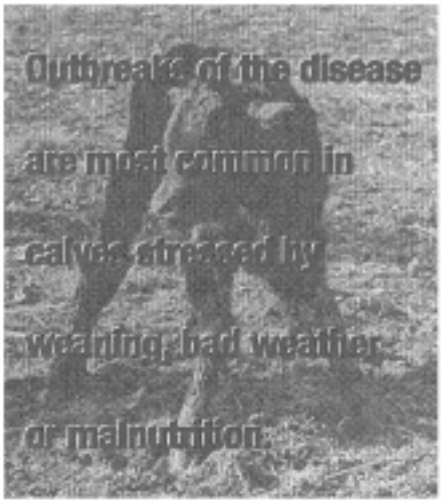
Coccidia organisms are common and most farm animals are infected, but only a limited number suffer from disease; infection by no means consistently leads to disease. Cattle acquire the infection by ingesting feed or water contaminated with immature stages of the coccidia organism.

Severity of coccidiosis depends on the number of the organisms in the intestinal tract. If only a few are ingested, no symptoms may occur. Repeated mild exposure may produce immunity to the organism without disease. If a moderate number are ingested, the disease may be mild and immunity may result. If, however, poor sanitation, crowding, or stress increases the number of organisms ingested or the ability of the organisms to multiply rapidly, severe disease and even death can result.

Coccidiosis is most common in young animals because they have limited immunity to the organism. Adult animals which remain in the herd are usually immune to the local coccidia. Bringing in new animals can cause an outbreak of coccidiosis in the new additions, or the new animals may bring in a new species of coccidia and cause an outbreak in the original herd.

The immunity to coccidiosis is not well understood. Immunity is species specific. For example, animals which are immune to one species of coccida organisms are still susceptible to the 15 other species. In addition, breakdowns in immunity associated with either extremely high exposure or stress-related immune suppression do occur. Cell-mediated immune responses appear to be more important than humoral responses, but antibodies also appear to provide a certain degree of protection against recurrence of the disease.

Visible signs of coccidiosis are: diarrhea or soft feces containing blood, a rough hair coat, poor weight gain, rectal straining or prolapse. In severe infections nervous system problems occur such as staggering and seizures.



Outbreaks of the disease are most common in calves stressed by weaning, bad weather or malnutrition. Although other diseases will cause a bloody diarrhea, coccidiosis is a common culprit if blood is found in the feces.

Good animal husbandry practices to improve sanitation and reduce stress, and the proper use of anticoccidial drugs are the only effective means of controlling the disease. Limiting exposure to the organisms is of prime importance because using anticoccidial drugs in a heavily-infected environment provide marginal control.

The immature stages of the coccidia organisms develop very fast and survive well in moist, shaded areas. They are fairly resistant to common detergents and can survive freezing temperatures. Exposure to sunlight (at least four to eight hours) and dryness (humidity less than 25 percent) are probably the best methods to kill the immature forms of the organism found contaminating the environment. Therefore, designing facilities that avoid moist, shaded areas combined with proper manure management greatly decreases the risk of clinical disease.

A number of treatment and control drugs are available. Each class of drug acts during a different stage in the life cycle of the organism. Ionophores affect the later stages of the life cycle and are generally less successful in stopping clinical signs of disease than other drugs that act early in the life cycle. However, ionophores are fairly effective in preventing clinical cases in animals which do not show signs of the disease when started on the drug.

Decoquinate is effective at preventing clinical signs of coccidiosis. It's commonly fed for at least 28 days (to break the life cycle) during periods when coccidiosis is likely to be a hazard, such as after weaning or shipment.

Amprolium can be administered in the feed or water. It can be used at a high dosage for five days to treat active cases of coccidiosis, or can be fed at a reduced dosage for 28 days to prevent disease. Sulfa products are able to kill coccidia organisms and are often used to treat individual cases.

Of great importance to cattle producers are sub-clinical cases of coccidiosis. In these cases the calves do not have bloody scours, but they do not perform as well as treated calves. Because of the concerns and economic losses associated with both sub-clinical as well as clinical cases, many calves that are stressed or weaned are automatically placed on some type of anti-coccidia drug without waiting to see if they develop bloody diarrhea.

Bob Larson's E-mail address: