

# Combating

## *Coccidiosis in Young Calves*

BY HEATHER SMITH THOMAS

Sometimes during a wet spring, you may be faced with an outbreak of coccidiosis in calves. Good management can help prevent this infection, but Mother Nature can make it difficult.

All cattle are infected to some degree by coccidia — a one-celled protozoan parasite that lives in the intestine. Calves more than 30 days old seem to be the most susceptible; they are starting to graze or eat feed off the ground and are often licking themselves. Once calves reach six months of age, they have all been exposed to the parasite and have a 100 percent infection rate, though only about 2 to 5 percent of calves will have actual symptoms.

### Parasite life cycle

The coccidia enter susceptible animals through contaminated feed or water, when they graze wet, contaminated pasture or lick a dirty hair coat. After the parasites reach the intestine they multiply in the cells, destroying the gut lining, and release thousands of oocysts or eggs. Those eggs pass out with the manure to further contaminate feed, water or bedding and begin the cycle again.

It's estimated that ingestion of only 125 microscopic oocysts will cause destruction of more than 12 billion intestinal cells as these eggs hatch and multiply in the gut. This damage interferes with digestion and absorption of nutrients. It also causes diarrhea and blood in the feces from the damaged gut lining.

The incubation period from when the calf digests the oocysts until it breaks out with diarrhea or scours is about 18 to 19 days. During that time the calf looks normal, but as parasites move through the small intestine into the large intestine (about day 16), then mature to produce more oocysts, you start to see diarrhea about day

18 or 19. By days 21 and 22, oocysts start appearing in the manure if fecal samples are checked under a microscope.

### The disease

Coccidiosis causes scours and weight loss. It can be serious in young calves which have no immunity and can leave them susceptible to other diseases such as corona virus and a more serious diarrhea. The injured intestinal tissues are more vulnerable to bacterial and viral infections.

Adult cattle rarely show diarrhea from coccidiosis; the younger animals are the ones with the least immunity and resistance.

Coccidiosis causes problems most readily when cattle are confined to small areas. This allows the protozoan eggs to build up to infective levels in the environment. Excess stress, such as weaning, processing, shipping, change in diet or a drastic weather change, can also lead to more infections in cattle. Excess stress inhibits the immune system and the parasites are able to overcome the animal's defenses.

In a mild outbreak, most of the animals in a herd or group are infected, but only a few will show actual signs of the disease. In a serious outbreak, however, up to 80 percent or more of the calves may show signs of infection — diarrhea, blood in the manure, emaciation and anemia.

Among those calves with symptoms, the mortality rate can be as high as 10 to 15 percent, unless calves are treated in the early stages. Even in calves which don't show symptoms, subclinical infection may stunt growth for awhile until the intestine is fully healed.

Coccidia can lay dormant in the soil of a corral or pasture over a period of time. Oocysts may live for months or even years in that same environment.

Oocysts can sporulate in winter on the hair coats of cattle contaminated with manure, even when it's too cold for sporulation on the ground. Cattle which lick

themselves or other cattle ingest the parasites and the cycle begins.

### Symptoms to watch for

The rupture of cells lining the intestine during the coccidia's swift multiplication results in diarrhea, especially bloody diarrhea. A mild fever may occur in the early states, but in most cases the temperature is normal or subnormal.

The first sign of illness is usually sudden onset of severe diarrhea, with foul-smelling watery feces containing blood or mucus. The blood may be dark and tarry, or appear as streaks or clots. Sometimes the feces consists of large, fresh blood clots. The calf's rear end, hind legs and tail base are usually covered with loose feces.

A common sign of coccidiosis is a calf straining to pass a bowel movement. The excessive straining is due to irritation of the large intestine and rectum. A calf may continue to strain even after passing the watery feces, or even without passing anything. In severe cases, the rectum may prolapse from all the straining.

If a calf loses a large amount of blood it becomes anemic. Mucous membranes will be pale — mouth and gums will look white or blue instead of healthy pink. The calf may become weak with a staggered gait.

Most affected calves go off feed or eat poorly. Their hair coat becomes rough and dull. They have poor weight gain. Diarrhea may persist as long as it takes the calf's intestinal lining to heal.

### Treatment

Treatment with anti-coccidial drugs is ineffective if the calf already has symptoms of coccidiosis. This is a self-limiting disease; it runs its course and subsides without treatment.

Symptoms don't appear until the animal is already suffering gut damage and, by that time, it's too late for treatment to do any good. Several drugs are effective against coccidiosis, but only if given early in the

course of the disease before symptoms appear.

If coccidiosis catches up with you in a group of calves, veterinarians recommend moving them away from the source of contamination. Put them in a clean area or a fresh pasture and start calves on a good anti-coccidial drug treatment.

Coccidiosis runs its course in five to six days, but some calves take a long time to fully recover. Extra fluid given by stomach tube or intravenously may be needed to combat dehydration and save calves. Injections of vitamin B complex will help anemic calves build up red blood cells. Antibiotics can help ward off secondary infections. Check with your veterinarian on the best prevention and treatment drugs.

### Prevention & management

Coccidia are unlike most viruses and bacteria in that they do not stimulate a strong immune response; the calf builds only a weak immunity after exposure to coccidia, and it's of short duration.

Veterinary researchers believe calves must be exposed to five complete coccidia

life cycles before their immunity is significant enough for them to resist infection.

Farms and ranches with no winter grazing, where cattle are grouped and hay is fed from November through spring, usually provide ideal conditions for coccidiosis outbreaks in calves.

Keeping cattle spread out on good pasture, or changing the feeding area frequently can help prevent coccidiosis exposure. Moving the feed and cattle to different areas causes the oocysts passed in manure to be more widely scattered over a larger area. Calves then can't pick up enough to cause massive infection. They encounter a few of the parasites and begin to build their own immunities, but don't ingest enough to develop the actual disease.

The best way to avoid a coccidiosis problem is to move your cow herd to new ground before calving and to keep brood cows in clean areas. Try to get cattle away from areas of concentrated manure and moisture. Sunlight and heat (dryness) tend to kill the oocysts, so contamination is reduced during the warmer months.

A fall calving herd often won't have a long period of contamination if the past summer has been dry, or if the wet season is short before the weather turns cold. Still, just like their spring counterparts, calves born in the fall can develop coccidiosis when conditions are right.

When the herd can't be moved to clean ground during wet weather or you are forced to use the same calving pens or pasture every year, calves can be protected by feeding an anti-coccidial drug in creep feed. If calves are eating a little creep feed by three or four weeks of age the drug will protect them until they can be spread out on good pasture and away from the contamination.

Good, persistent management is the best prevention tool against coccidiosis. By understanding this parasite and recognizing potential problem areas, a producer can work to minimize contamination, stress and even fickle Mother Nature during the critical calving season.



## Normal and Abnormal Presentations of the Calf at Parturition



**Normal Presentation.**



**Posterior Presentation.** Delivery may often proceed without complications, but assistance may be important if labor is prolonged (calf will suffocate if the navel cord is ruptured).



**Breech Presentation.** This is a posterior presentation with the rear legs extended under the calf's body. May be corrected by pushing the calf forward and grasping the legs one by one. As each leg is drawn into the birth canal, the hock should be pointed toward the cow's flank and the hoof toward the midline.



**Anterior Presentation.** Here the legs are extended beneath the body and the abnormal presentation is very serious. If allowed to progress into advanced labor, fetal death may result. Early professional attention may be required.



**Upside Down Posterior Position.** Delivery must never be attempted with the fetus in this position, and professional assistance often is required. The situation can be caused by twisting of the uterus or rotation of the calf.



**Anterior Presentation with the Head Back.** If the calf's head and neck are turned back over its body, the legs should be secured with chains and the calf pushed back into the body. This often brings the head into normal position.

Source: "Beef Production and the Beef Industry," by Robert E. Taylor  
Illustrations courtesy of Texas A&M University