

Winter Dysentery

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Winter Dysentery is a viral disease resulting in very acute onset of profuse watery diarrhea in adult cattle. Winter Dysentery typically occurs in the winter months, most commonly from November through March, in the northern states of the U.S. It has also been observed in beef and feedlot cattle. While outbreaks rarely occur in successive years within a herd, they may occur at intervals of 3 to 15 years.

Winter Dysentery is characterized by its highly explosive epidemic nature within a herd. Animals are often normal the day before and then suddenly break with severe watery diarrhea. Up to 30-50% of the herd can be affected within just a few days and up to 100% within a week. The feces are typically dark green, dark brown, or may appear black. Frank blood will be observed in the feces of some cows. Most animals do not demonstrate an elevated temperature once the diarrhea is present; however, there may be a fever just prior to becoming sick. The cattle are often bright and alert with minimal systemic signs of disease. They generally maintain rumen activity and continue to eat while they are sick. Milk production is often decreased anywhere from 5 to 30% during an outbreak and production levels may not return fully to expected normal during that lactation. Fortunately, while the number of animals affected is very high, fatal cases are very rare. Most animals recover with basic supportive treatment after about 3 days. The disease will often run its course through a herd within two weeks.

Winter Dysentery is caused by an enteric Coronavirus. Recent studies have shown that the same strains of bovine coronavirus that cause diarrhea in calves also cause Winter Dysentery in adult cattle. It has also been shown that adult cattle with low serum antibody levels to coronavirus are more susceptible to developing disease than those with high antibody levels.

It used to be thought that Winter Dysentery was caused by a bacterium, *Campylobacter fetus* var. *jejuni*. While this bacteria is associated with diarrhea in adult cattle, it is not routinely associated with the explosive breaks of diarrhea classically associated with Winter Dysentery. Bovine viral diarrhea virus (BVDV), Coccidiosis and salmonellosis can also cause herd disease outbreaks of diarrhea that may resemble Winter Dysentery. Since the herd significance and specific treatment and control are different for these diseases, it is important to establish an accurate diagnosis whenever possible. BVDV can be diagnosed by both serology and virus isolation. Bovine coronavirus can be confirmed by both electron microscopy of the feces of affected cattle or by an antigen capture ELISA test of the feces. Coccidiosis can be diagnosed with a fecal floatation test that identifies the coccidia oocysts. Salmonellosis can be diagnosed by fecal cultures.

Treatment for Winter Dysentery should focus on providing basic support for the affected cattle. Most animals will continue to eat and drink and rarely show significant

dehydration. If an animal becomes dehydrated, it may be effectively treated with oral fluids. There is no evidence that the use of oral medications shorten the clinical course of the disease or the progression through the herd.

Four factors have been identified as increasing the risk within a herd for Winter Dysentery. These include:

- 1.The presence of adult cattle with low coronavirus titers.
- 2.The presence of bovine viral diarrhea virus (BVDV) in the herd.
- 3.Tiestall or stanchion barn housing compared to free-stall or dry lot facilities.
- 4.Use of equipment to handle manure and subsequently handle feed.

Some basic herd recommendations can be made that will help prevent Winter Dysentery as well as help decrease other diseases in the herd. Recent studies have demonstrated that experimental coronavirus vaccines can protect against Winter Dysentery in adult cattle. While not specifically tested, the use of calf scour vaccines that contain coronavirus antigens may be helpful in preventing Winter Dysentery in adult cattle. These vaccines are administered to pregnant cattle before calving in order to provide additional immunity to the calf via the colostrum. The immune response stimulated by these vaccines may also help prevent Winter Dysentery in the dams. Routine BVDV control and eradication practices should be established in the herd. This includes periodic serologic surveillance of cattle for BVDV and specific testing of newborn calves to identify and eliminate persistently infected animals. Focus should be directed toward basic hygiene including routine manure removal and preventing the contamination of feed or water sources with manure. Manure handling equipment should either not be used to handle feed or it should be thoroughly disinfected before handling feed. These measures will also help decrease the spread of other enteric diseases such as salmonellosis or Johne's disease.