Cow Sense Chronicle

January 2014

Infectious Causes of Calf Scours

Happy New Year! I hope your 2014 is off to a great start. Calving season is looming on the horizon, and is already underway on some operations. With that in mind, this month's topic is infectious causes of calf scours.

Infectious causes of calf scours can be grouped into 4 categories: bacteria, viruses, protozoa, and yeasts/molds. Non-infectious factors may contribute to scours outbreaks, including inadequate pre-calving nutrition of the dam (see February 2013 Cow Sense Chronicle) and a poor environment for the newborn (wet weather, contaminated lots, etc). Control of non-infectious factors is critical to preventing scours.

Bacterial causes of calf scours include *Escherichia coli*, *Salmonella*, and *Clostridium perfringens*. Most newborn calves are exposed to *E. coli* from the environment. Calves as young as 16 to 24 hours can be exposed via manure from healthy cows and stools from scouring calves. The younger the calves, the greater the chance for death from severe dehydration.

Salmonella produces an endotoxin (a potent poison) within its cells, that is released by the cells upon damage from antibiotic treatment. This can lead to endotoxic shock and severe illness in the affected animal. Calves are usually affected at six days of age or older. The source can be other cattle, birds, cats, rodents, the water supply, or humans. Clinical signs include diarrhea, blood and fibrin in the feces, depression, and fever. The disease is more severe in young or weak calves.

Clostridium perfringens infections are commonly known as enterotoxemia. Enterotoxemia is fatal and caused by toxins released by various types of *C. perfringens*. The disease has a sudden onset and generally occurs when a hungry calf who has not nursed for a longer period of time than normal over consumes milk. The large amount of milk in the gut establishes a media conducive to growth and production of toxins by clostridial organisms. Bloody diarrhea may or may not occur. In many cases, calves may die without any signs being observed.

Viral causes of calf scours include *Coronavirus*, *Rotavirus*, bovine viral diarrhea (BVD), and infectious bovine rhinotracheitis (IBR). Both *Coronavirus* and *Rotavirus* disrupt cells lining the small intestine, resulting in diarrhea and dehydration. *Coronavirus* also damages cells in the crypts of the intestine where new cells are produced, thus slowing healing of the intestinal lining. Damage is often compounded by bacterial infections. Mortality risk is increased when mixed infections occur. Calves as young as one to two days old may be affected; most outbreaks occur when calves are near a week old or older.

Although less common than other viral sources, BVD and IBR can cause scours. In BVD-caused scours, erosions and ulcers of the tongue, lips, and mouth can be found, similar to lesions found in older animals infected with the virus. IBR scours cases exhibit erosions and ulcers in the esophagus along with dullness and weight loss.

Protozoan causes of calf scours include *Cryptosporidium* and *Coccidiosis*. *Cryptosporidium* is a parasite that attaches to the cells lining the small intestine and damages the microvilli. It can be a primary pathogen, but is often part of a mixed infection in combination with *Coronavirus*, *Rotavirus* or *E. coli*. Infected calves range form one to three weeks of age.

Coccidiosis is more commonly observed in weaned calves, but outbreaks in calves three to four weeks of age can occur. These outbreaks have been associated with stress, poor sanitation, overcrowding, or sudden changes in feed. Tarry or bloody scours are commonly observed.

Yeasts and molds are sometimes associated with lesions in the stomach or intestines of scouring calves. Yeasts and molds are secondary invaders that are often found when scouring calves are subject to overuse of antibiotics and little was done to counteract dehydration by using fluids and electrolytes.

Consult your local veterinarian to learn about common scours-causing organisms in your area and to develop a specific vaccination and management program for your herd. Be sure to read and follow label directions.

And finally, remember that bacterial and protozoal scours pathogens are transmissible from animals to humans! Excellent hygiene and sanitation should be practiced when handling scouring calves!

Reference: Stoltenow, C. L. and L. L. Vincent. 2003. Calf Scours: Causes, Prevention, Treatment. NDSU Extension Publication AS-776.

Questions for Rachel?
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Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1 New Year's Day	*2*	*3* Fort Benton	*4* Cabin Fever, Havre
5	*6*	*7*	*8* Classes Begin Gallatin Beef Producers Mtg, 3 Forks	*9* Granite Co. Herdsman-ship School, Hall	*10*	*11*
12	*13*	*14*	*15* Hardin	*16*	*17*	*18*
19	*20*	*21* Ennis	*22* Rancher Roundtable, Livingston	*23*	*24*	*25* MFU Young Producer Conference, Fairmont
26	*27*	*28*	*29*	*30*	*31*	