

CALVING EASE

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The Frustration of Cryptosporidiosis

Are we having fun yet? Imagine! Yet another issue about calf diarrhea. Calf raisers really know how to have fun. They get together and talk about diarrhea! They even read about it. Well, it sure is frustrating when 30, 50 or even 90 percent of one's calves break with three to five days of scours at about one week of age. It's even more frustrating when fecal cultures come back negative for everything but cryptosporidia oocysts; and the vet tells says, "Nope, no medicine for cryptosporidiosis. Just give 'em supportive therapy - fluids and electrolytes as needed. They'll get over it."

No Silver Bullet, No Magic Powder

Drs. J.A. Harp and J.P. Goff summarized current knowledge about this frustrating illness in an article entitled, "Strategies for the Control of *Cryptosporidium parvum* in Calves." They remind us, "A major problem in controlling *C. parvum* is the lack of an effective means of preventing or treating infection. A large number of drugs have been tested for treatment of cryptosporidiosis, but none is available that have proved to be consistently effective in a controlled trial." In a related article in *Hoards Dairyman* entitled "Crypto can be a calf raiser's nightmare," Dr. Harp observes, "Many nonspecific remedies ... have been reported to 'cure' cryptosporidiosis in calves. It is important to remember that cryptosporidiosis is a sporadic problem on many farms, worsening at times, and almost disappearing at other times, even without treatment." So, we can't depend on a pill, powder or injection to solve our crypto problem.

But, I try to keep everything clean!

First, *Cryptosporidium parvum* is a protozoan parasite. It's too small to see without magnification. At one stage in its life cycle it forms egg-like bodies called oocysts. These are passed in bovine manure. Harp reports concentrations as high as 10 million oocysts per gram of manure of an infected calf (perhaps you recall that 1 ounce equals about 28 grams). Did you know that as few as 100 oocysts can infect a calf? Aha! That's why these oocysts seem to be everywhere - there are so many to start with and it takes so few to infect a calf. It's not easy to protect calves from calf manure. Frustrating.

Second, these oocysts are highly resistant to most chemicals we routinely use as disinfectants, including chlorine. This is not suggesting we quit using disinfectants (they are very effective against bacteria). Rather, we just should not depend on them to control crypto. Frustrating.

Third, on the plus side, extreme temperatures do inactivate or kill the oocysts. That may mean turning up the thermostat on the hot water heater even if it means we have to wear rubber gloves for washup. On the subject of cleaning up, getting things dry is an effective control measure, too. Scientifically speaking, oocysts are susceptible to desiccation. In milk-house terms it means getting bottles, nipples, buckets and barrels thoroughly dry.

What about low temperatures? In general, it takes a long time (more than a week) of continuous very cold weather (10F or below) to kill oocysts. So, even in the winter any place that's not really frigid can be a reservoir of crypto oocysts. Frustrating. But, we have one really cold place - our freezer! It's zero or even below! Dr. Elaine Hunt of North Carolina State Univ. suggests placing thoroughly cleaned nipples and bottles in a freezer until next feeding time as a control measure when fighting a crypto outbreak.

Calf feeder cleanliness may help but won't stop crypto.

In Calf Manager, Dr. Sheila McGuirk commented on the route oocysts take to a calf's gut. She said, "Adult cows shed the organism, don't show clinical signs, but may pass the infection on to their offspring in the maternity pen where calves are in contact with their manure." Whew! It sure is hard to get ahead of these oocysts. Drs. Harp and Goff also found early introduction of the parasite in their crypto vaccine research. Calves immediately taken away from their dams and isolated had low levels of infection. On a field trial farm where cryptosporidiosis was common, when calves were left with their dams and not isolated, nearly all calves had cryptosporidiosis even when vaccinated. The rule of thumb here might be, "Take every opportunity to protect calves from adult cow manure."

References: James A. Harp, "Crypto can be a calf raiser's nightmare," *Hoard's Dairyman*, page 302, April 10, 1997.

J.A. Harp and J. P. Goff, "Strategies for the Control of *Cryptosporidium parvum* infection in Calves," *Journal of Dairy Science* (81:289-294) January, 1998.

Sheila McGuirk, "Crypto tough to avoid, tough to control" *Calf Manager* (4:1) April, 1996, p.3. Elaine Hunt, quoted in *Nebraska Veterinary Newsletter* (26:5) May, 1997.

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