Calving Ease

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What to do about Scours?

- **How "Normal" are scours (diarrhea) in young calves?**
- **The pathogen vs. immunity balance predicts scours treatment rates.**
- **What are some low-cost practices that predict lower scours treatment rates?**

Scours treatment rates

The national Dairy Calf and Heifer Association (DCHA) in their 2016 Gold Standards publication suggests the threshold or standard of less than 15 percent of preweaned calves with diarrhea which requires any intervention for more than 24 hours. The most recent national NAHMS dairy study (13 states, 104 dairies, 2,545 heifer calves) reported 21.4 percent of the calves were diagnosed with scours. Other reports suggest higher rates, 29% among NY dairies.

Thus, on one hand, our goals under "normal" dairy farm conditions is to treat 15 or less percent of the calves for scours or diarrhea. This "normal" treatment definition limits feeding electrolytes for only one day. However, I suspect that many calf care persons feed electrolytes a bit longer than one day "just to be on the safe side" even though the calf may not continue to have diarrhea symptoms.

My own electrolyte protocol was for three days once I began providing supplementary fluids. In my scours-rate record keeping, I counted calves that had scours symptoms for more than a day and all that were treated with antibiotics regardless of duration of symptoms.

My peaks for treatable scours were in late spring and early fall – the mud season for my hutch environment. My lowest treatment rates were from December through April – everything frozen as hard as a rock!

On the other hand, national data suggest keeping the treatment rate down to 15 percent may be a challenge. Fecal sampling in the NAHMS study (2,249 calves) revealed *Cryptosporida* in 43% of the calves and *Giardia* in 31% of the calves. [These parasites cause diarrhea in preweaned calves.] Thus, the risk of these calves requiring some kind of treatment for scours (diarrhea) was raised significantly.

The pathogen vs. immunity balance predicts scours treatment rates.
Basic biology tells us that when the challenge of pathogens exceeds the level of the calf's immune system defenses the gut will respond by "hyperfludity of feces.

Bacteria, viruses and protozoan parasites all challenge gut health. Rotavirus and coronaviruses most often damage the cells (enterocytes) that line the intestine. Bacterial growth creates endotoxins [a toxin

that is present inside a bacterial cell and is released when the cell disintegrates]. These endotoxins stimulate movement of water into the small intestine. Coccidia and cryptosporidia come into contact with the lining of both the small and large intestines causing direct damage – thus changing their ability to either absorb fluids or causing leakage into the gut. In summary, all these pathogens can cause increased permeability, hypersecretion and malabsorption – much, too much fluid in the gut!

What can calf care persons do "day-to-day" to cut scours rates?

1. No manure meals! Bacteria in the mouth of newborn calf? Not good. Especially bad if this happens before she is fed colostrum. This includes calving into a clean environment and no sucking on the mothers contaminated hair coat or dirty teats.

2. Feeding clean colostrum. Too much "assummacy" is poor management. Test, don't guess! Culture samples of "as-fed" colostrum as often as needed to assure consistently clean product. A national study including 67 dairies in 12 states showed that among refrigerated colostrum samples 77 percent had over 100,000cfu/ml (too high) bacteria present; 38 percent had over 1,000,000cfu/ml bacteria present. Bacterial contamination of colostrum is a real and serious cause of scours even if you think you are doing a good job of keeping your colostrum clean. Test, don't guess.

3. Minimize exposure to protozoan parasites – especially cryptosporidia. In my experience, nearly every dairy has an ample supply of cryptosporidia to infect every calf. We can reduce exposure by prompt removal from calving pen as soon as she is able to stand – no licking of a pathogen-laden hair coat! Calf pens that are cleaned between calves further reduce opportunities for fecal-oral transmission of these parasite eggs.

4. Monitor your colostrum management program's success. Test, don't guess! Simple blood samples taken within the first seven days after the first feeding of colostrum will give a good indication of the program's success. Our goal for Total Blood Serum Protein (TBSP) levels for a commercial dairy are 90 percent at or above 5.2g/dL and 80 percent at or above 5.5g/dL. For more on this testing click HERE or paste this URL in your browser: http://atticacows.com/library/newsletters/TestPassiveTransferR1880.pdf .

5. Consistency, consistency, consistency. Consistent care is the foundation of good gut health. For a quick review of what consistent calf care looks like just click HERE [or paste this URL in your browser http://atticacows.com/library/newsletters/ConsistencCalfCareChecklistR1867.pdf]. Even when we have superior colostrum management and a relatively low exposure to pathogens, inconsistent practices in daily care provide the basis for diarrhea among young calves.

References: Urie, N.J. and Others, "Preweaned heifer management on US dairy operations: Part 1, Descriptive characteristics of preweaned heifer raising practices." Journal of Dairy Science 101:9168-9184. October 2018. Virtala, A.K. and Others, "Morbidity from nonrespiratory diseases and mortality in dairy heifers during the first three months of life." Journal of American Veterinary Medical Association 208: 2043-2046

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