

# Ask the Vet/Ask the Nutritionist



**“We provide our calves with a clean maternity pen to be born in, good quality colostrum at birth and a sound nutrition program as they grow but we still have outbreaks of scours. We work hard to keep our calf pens clean and have developed a good vaccination program with our veterinarian. What are we missing?”**

**- Wondering from Minnesota**

Congratulations on providing your calves with a healthy start to their lives. The three most common areas for exposure of newborn calves to harmful pathogens are 1) the maternity pen, 2) the calf hutch/housing and 3) feeding utensils, bottles and pails. Even when these three areas are managed well, invisible threats can pose a significant risk. Recent studies in sanitation protocols have led the agriculture industry to a new awareness regarding biofilms. Biofilms are layers of microorganisms that grow on surfaces, or in water, that are protected by a polymeric coating that prevents destruction from most standard disinfectants. Refer to the April, 2017, Crystal Creek® Newsletter for more information on biofilms.

Logical sources where biofilms can be found on a farm are surfaces such as rubber, plastic, copper/brass, aluminum and even stainless steel. Another common location for biofilms, which is often overlooked, is water. We may be trying to keep our calf pens and feeding equipment clean, but what about the water source we are using? Water is used in every application from washing hutches and bottles to mixing milk replacers. Automatic waterers and milk feeders can provide the perfect environment for biofilms to flourish; harboring the very organisms we try to protect our calves against. Pathogens such as E.coli, Salmonella and Cryptosporidium become encapsulated in the biofilm

layers within the water and are then ingested by the calves. As you can imagine, this can present a great threat to the calves and often cause gastro-intestinal disruption, resulting in scours. When calves scour, we recommend using an electrolyte solution mixed with water to hydrate them. Because this water is infected with biofilms, we have now introduced even more pathogens to an already sick calf. So how can we break this vicious cycle?

Many calf raisers are using water treatment systems using residual chlorine dioxide concentrations at a low inclusion rate of 0.5 to 0.8 ppm for the removal of biofilms.<sup>1</sup> Because chlorine dioxide concentrations can vary between different manufacturers, it is imperative that the concentration of the chlorine dioxide be verified every time prior to use by testing. Call Crystal Creek® to learn more about concentration verification and safe handling recommendations when using chlorine dioxide. Many calf raisers are implementing this new technology with great success. Destroying harmful biofilms may be the key your operation needs to raise healthy, trouble free calves.

<sup>1</sup> Sockett, Don, *Bovine Veterinarian* “Sanitation for Calf Scours Prevention”, January, 2015.

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