

Calf Scours: Some Observations

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It was a unique experience I encountered last spring while collecting samples for the calf scours project. The experience, sometimes tragic and always educational, left me with more questions than answers regarding the calf scours program.

There were 13 cooperators in this project, located in the Jamestown and Cooperstown area. The dedication of these producers toward the collection of the required samples was tremendous. It is no small thing to ask producers to collect colostrum samples from their beef cows. This can be a harrowing experience in itself. We were successful in collecting a large number of samples, but as fate would have it, only two samples came from cows whose calves subsequently scoured. The data gleaned from the remainder of these samples will still be valuable to compare against the coming year's work.

The producer was asked, when practical, to collect approximately one pint of colostrum in a provided container and then freeze it until it could be picked up on the next collection trip. This sample, upon submission to the diagnostic lab, was thawed and divided among the various researchers for their individual studies regarding nutritional data and antibody content of the colostrum.

We also requested the collection of feces from scouring and non-scouring calves. This request, which on the surface looked simple, was time consuming. Waiting for a calf to have a bowel movement is a little like waiting for the tea kettle to boil. Standing behind these calves with a collection cup in hand earned me some rather unique nicknames as well as dirty coveralls. Collection of the feces was important because we could try to compare the "bugs" we found in the scouring calves against those found in the non-scouring calves. These samples were also examined for the coccidia organisms and other internal parasites. The fecal samples were also used to determine which antibiotics the *E. coli* organism was sensitive for. This particular "bug" is one that is thought to be one of the major culprits in causing calf scours. It was surprising to me to see the tremendous variation in the sensitivity of the *E. coli* organism to the various antibiotics. I believe without exception the non-scouring calves could be picked from the scouring calves by looking at the sensitivity sheet.

The *E. coli* organisms in the non-scouring calves were sensitive to practically every form of medication; in the scouring calves there was only one and sometimes two of the antibiotics that would have any effect at all. These, of course, were generally the most expensive antibiotics. We found in several instances that not enough of the antibiotic was administered emphasizing the often-heard advice to read the label requirements. If there is any question, contact your veterinarian re-

garding dosage. If not enough antibiotic is given the time and money expended is just being poured down the drain. The producers I contacted were using electrolytes, oral and I.V.'s, to treat their scouring calves. While I believe this to be an excellent practice, I would advise caution in several areas. First, if electrolytes are going to be given, start them as quickly as possible. The longer the wait the harder it is going to be to replace the lost body fluids. Second, if an I.V. administration of electrolytes is used, start it as soon as possible. It is not easy to get the I.V. started once dehydration becomes serious enough to collapse the veins. Third, if a stomach tube is used, be sure to lubricate it well with mineral oil prior to insertion. Also, disinfect it between calves. I know of few quicker ways of passing an organism between calves than inadequate disinfection of the stomach tubes.

Nutrition of the cow herd as it relates to calf scours was another aspect this project set out to look at. Preliminary nutritional data and my observations would suggest that of the 13 cowherds I observed, **under** nutrition was not a problem. On the contrary, I wonder if in many instances **over** nutrition was not the contributing problem. Producers have known for years that on some energy and protein rich rations, calves from cows consuming these rations had a greater tendency to scour. An adjustment in these rations with some lower quality feedstuff often corrected the problem. My question is—can we cause a breakdown in the calves' natural protective system by **over** nutrition, thus creating a route of infection for a particular pathogenic organism? Is there some, or lack of some, component in the cow's milk that triggers the mechanism that causes calf scours? I'm not advocating starving cows for obvious reasons, but I am suggesting one possible link in the chain of events that may initiate the scour problem.

This project also set out to examine overall management systems of the various cooperators, calving facilities, and disease prevention programs. While obvious differences in physical systems existed and disease prevention programs differed, none of the cooperators visited would classify as having a poor management system. Having dry, non-congested calving pastures with plenty of shelter is desirable, but a March snowstorm can turn the most desirable location into a swamp. Providing the calf with a stress free environment is easy to say, but hard to do. The situation that often presents itself is having to make the choice of turning pregnant cows onto "clean" calving ground generally away from shelter and buildings or keeping them in close confined lots so observation periods can be more frequent. The deficiencies of each choice are obvious. On "clean" ground with fewer observation periods, diagnosing and correcting calving problems as well as treating sick calves can be a problem. On the

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other hand, confining cows and calves to confined lots exposes newborn calves to every organism present in the cow herd.

In the soil samples which were collected from the various cooperators, tremendous differences exist in the number and type of "bugs" found in the area which cows normally frequented to areas which rarely, if ever, had been used by the cow herd. This points to a need for early cleaning of calving lots to give the summer sun a chance to kill as many of the organisms as possible. Consideration should also be given to disinfecting the soil in calving lots with some product such as lime.

Several questions loom large in my mind after the first year of the calf scours study.

(1) Many producers have gone to earlier or later calving to help prevent calf scours and avoid the wet conditions generally found in late February and March. Does this mean that there is less stress associated with cold windy weather (early February) or the hot, dry and dusty weather that we experienced in April this year? Isn't stress just as devastating no

matter what form it comes in? OR—Is there some particular aspect of the management system and/or the cows nutritional requirements that change during this period?

(2) The calving period is proceeding smoothly, the weather changes and there is a scours outbreak. What caused the outbreak? **Stress!** Why didn't all calves get it? Weren't they all exposed to the same amount of stress? Haven't all cows been exposed to the same disease prevention program? Why didn't the neighbor five miles away with the same kind of cows and same type calving pasture have any scours?

If these questions seem unanswerable, it is because with our present knowledge and understanding of calf scours they are unanswerable. I believe that it is only through the continuation of ongoing research projects and the cooperation and input of cooperators such as those we worked with, that we can someday hope to comprehend and then control calf scours.

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