

Calf Scours

—Margaret S. Kipps, VMD

Calf scours is an acute complex disease of newborn calves caused by both infectious and non-infectious agents. Infectious agents include: bacteria, viruses, funguses, and parasites. Differentiation/Diagnosis can be accomplished by fecal flotation (which can be performed in your veterinarian's office), bacterial culture, or viral isolation (both of which are done by most diagnostic referral laboratories).

One must stress the role of non-infectious agents in the development of diarrhea in a recently born calf. Stress (which includes: wet conditions, dystocia, shipping, poor hygiene, and mis-mothering), iron deficiency, and poor nutrition (lack of Colostrum) are critical in triggering the syndrome of calf scours. It is extremely important that newborns get an adequate amount of colostrum within 6-12 hours after birth. Colostrum provides the antibodies necessary to fight disease. This is the basis of both "dry cow" vaccines and monoclonal antibody vaccines. Vaccines such as: Immu-coli B, Coli-Bovis, E coli Bac, etc. are vaccines which are administered to pregnant heifers and cows twice within the last two months of pregnancy. These vaccines are given to stimulate production of antibodies against one common strain of bacterial pathogen (E coli), in the mother. However, I see three problems with these vaccines in buffalo. First, there is a great risk of causing an abortion since the cow

would have to be restrained twice within the last two months of pregnancy for an intramuscular shot. Second, the calf would still have to drink colostrum within 6-12 hours of birth for any benefit. Lastly, there is still question as to whether the same antigenic stimulus (the K99 epilus) would be the agent necessary to stimulate antibody production in buffalo. For instance, in pigs a K88 antigen for E coli is required as opposed to the K99 in calves. Therefore, the question is whether the K99 would be the right stimulus for buffalo. Monoclonal antibodies are formulations given to a calf orally, within 6-10 hours of birth. These bypass the need for giving the mother shots, but I must question how easy it would be to get close to a calf born to a healthy female cow.

Clinical signs include diarrhea within a few days after birth, progressive dehydration, weakness, off feed, comatose, foul odor, eyes sunk in, and in terminal stages the affected calf may feel cold. The death rate is high. Septicemia (blood infection) plays a heavy role in scours. The brain and joints are target tissues, evidenced clinically by: depression, inability to stand, convulsions, rolling of the eyes, coma and death.

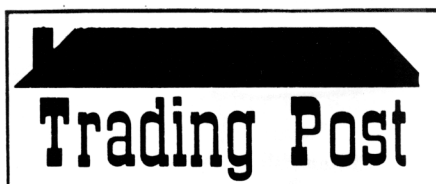
Treatment of calf scours rely's heavily on electrolytes. These are given either intravenously, subcutaneously, or orally; depending on the calves' condition. Antibiotics are quite controversial. Antimicrobial usage is limited to treatment of a

primary or secondary bacterial infection. They are useless on viral infections. However, due to more resistant bacteria, many antibiotics are less effective or completely ineffective. Certain antibiotics can cause renal damage, aplastic anemia, or cerebral edema in a severely dehydrated calf. Astringents and gastric protectants as therapeutic agents in calf scours are of questionable value. Kaopectate, astringent powders etc., were formulated to coat the inner surface of the intestinal tract. Since the major factor in the development of diarrhea is intestinal secretion, attempts at coating the villi will do little to modify the diarrheal problem. One important exception is bismuth subsalicylate (Pepto Bismol). Evidence suggests the beneficial effect is due to the salicylate and its' effect on prostaglandin metabolism in the intestinal mucosa.

Ask the Vet

The N.B.A. will be offering to any interested individual an opportunity to ask questions about buffalo veterinarian techniques. We have been in contact with two veterinarians that deal with buffalo. One raises buffalo in addition to practicing medicine.

If you have any inquires, please send in in letter form to Kim Dowling, Editor, National Buffalo Association, Box 580, Ft. Pierre, SD 57532. As many inquires as possible will be addressed in each magazine.



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