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Animal Health
Fact Sheet

CALF SCOURS SIMPLIFIED

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Virtually stacks of material have been written about calf scours and yet it remains as one of the major problems for beef calves. Enough is now known that we should be able to prevent or at least control the great majority of scours outbreak problems. Let's apply and use what we know.

Calf scours is a complex disease; that is, it is caused by a variety of infectious agents and conditions, not just one single agent. In fact, almost any disease agent which attacks a calf during the first three weeks of life will result in some level of scours (diarrhea). The reason is because the gut is still so immature during that period and is the weakest point of the calf's system. That is a significant point to remember as you consider prevention, treatment or diagnosis. It may be important to pursue a diagnosis through laboratory work of culture, etc.; the cause could be a single agent, such as salmonella. But if a variety of agents are present, the diagnosis is not very significant and you had better concentrate on control and prevention rather than a specific diagnosis. In this latter type of outbreak, the lab can eventually identify almost all of the common causes of scours as being present in the herd.

TREATMENT

The immediate and most important treatment for all scouring newborn calves is the same, regardless of cause. They must receive fluids, electrolytes and energy. The fluid is essential in order to allow the body organs such as the kidneys, liver, etc. to continue to function. However, the fluid cannot be absorbed from the gut unless it contains electrolytes (salts) in the proper proportions. And, that absorption process also requires lots of energy. If you can keep the calf hydrated, its own body defenses will usually be able to control the infectious agents involved. The exception to this occurs when there is an immune deficiency (lack of absorption of antibodies from colostrum).

There are a variety of fluid and electrolyte formulas available and most will work to some extent. Consult with your veterinarian about his choice and why. If the products are not working, re-evaluate with him again. Some formulas also contain a gel substance which helps to add bulk and may absorb some toxins (poisons) from the gut. Most calves with scours tend to be acidotic (their system is too acid). It will help these calves to receive electrolytes that are alkaline (basic) in nature for 24–36 hours. After that they should be changed to non-alkaline electrolytes. Examples of alkaline electrolytes include Life-Guard, Revive, and Biolyte. If being used with or near milk feeding, an acetate form should be used. If this is not a problem them bicarbonate or lactate can

be used. Examples of non-alkaline electrolytes that can be used include Resorb, IonAid, and Calf-lyte. The use of systemic antibiotics by injection may also be of benefit if a bacterial infection has become generalized in the calf's body.

The major problem encountered in treatment with fluids and electrolytes is that producers give too little, too late. Plan to give 2 qts., 2–4 times per day. Determine the frequency of treatment needed by the amount of dehydration present; this is evidenced by sinking of the eyes and elasticity of skin on the neck and withers. Don't mix the fluid and electrolytes with milk; that prevents curd formation and the milk is then of no benefit. If you are feeding milk, wait for 15–20 minutes before giving the fluid and electrolytes.

PREVENTION

The primary efforts during a scours outbreak should be to prevent it from affecting additional calves (break the cycle). This should be directed to three main areas:

1. Level of immunity

This is related directly to colostrum. The newborn calf has no antibodies and must obtain them from the colostrum by absorption of these large proteins through the immature intestine. But, the intestine changes rapidly after birth and by 12–24 hours, closes off to absorption of these antibodies.

The quality of colostrum varies greatly. It is better from older cows than from heifers and is much better from the first milking than the second. Vaccination of the dam can increase the level of immunity against specific agents, especially E. coli.

A blood serum test can be performed on calves of a few days old to determine their level of immunity. If it is low, then colostrum management must be improved. A herd outbreak may begin from one ill calf; the illness in that calf may be due to a lack of colostrum.

Commercial substitutes for colostrum are available and have seemed to work on the ranch. But some controlled studies have shown only a small amount of antibody is absorbed from these products. Good quality colostrum is better.

There are specific monoclonal antibody products available for E. coli which help to increase the protection against that specific agent. These must be given soon after birth and the calf must also receive colostrum.

2. Increased organisms in the environment

Any factors which allow an increase in the number of organisms in the environment will increase the chance for calves to be exposed to and contract scours. As disease causing organisms pass through one animal and on into another, they increase in their ability to cause disease; they become much more potent for future infections. They are spread by ingestion, aerosol-inhalation, or contamination of the navel. Sanitation and ventilation become critical. The following management guides will help reduce the build-up of organisms in the environment.

a. Breed and calve the first-calf heifers before the cows.
b. Avoid having large numbers of females in the "close-up" area; sort by nearness to calving.
c. Keep calving stalls clean, dry and well ventilated; clean out between cows.
d. Treat the navel with iodine, soon after birth.
e. Remove the dam and calf as soon as possible to a clean pasture or lot; keep pairs in small groups (10–15 maximum) for 7–14 days.
f. Don't use the same esophageal feeder, etc., for newborn calves that is used for treatment of ill calves. The person doing the treatment must also wash hands and clean up after treating ill calves.

3. Reduce stress factors

The primary stress factors for baby calves are difficult birth, lack of energy intake (starvation), wetness and wind. Calves can take severe cold weather if they can stay dry and get out of the wind. Many producers provide protection in the form of small, portable calf sheds which are placed in the grazing area. It is essential that they be moved (or cleaned out) periodically and that they have adequate ventilation. Have your veterinarian help you evaluate your operation for "stress" areas and then correct them.

Calf scours can be prevented and controlled, but we must do it through proper management. Don't expect to find the cure or preventive in a pill, bottle, or bag.

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