

TREATING CALF SCOURS

What causes calf scours? As new calves arrive, so does the threat of the common condition known as "calf scours" or neonatal calf diarrhea. Infectious agents such as viruses and bacteria cause this condition. These agents have the common property of causing a **net loss** of water and electrolytes from the calf's body via the gut. This causes potentially life-threatening dehydration and electrolyte imbalances that can result in death. The main infectious organisms that can cause diarrhea in beef calves are:

Rota virus
Corona virus
Cryptosporidium parvum
E. coli (K99 enterotoxigenic form)

The first 3 on the list usually cause diarrhea at 7 to 21 days of age, while the common *E. coli* strains cause diarrhea within the first few days of life. The diarrhea is the result of a combination of factors including: (1) dose (number) of organisms the calf is exposed to, (2) calf immunity (colostrum), and (3) stress on the calf. The number of organisms in the calf's environment is a result of sanitation or the lack of sanitation, i.e., mud, manure, and other cattle. The immunity of the calf is dependent on the quality and quantity of colostrum that the calf received from the cow. Calves that do not receive adequate colostrum are much more susceptible to disease and are at much greater risk of dying from the resulting diarrhea that occurs. Stressful conditions (low milk production by underfed cows, bad weather, crowding) further increase the risk of diarrhea in young calves. The balance of all these factors determine if disease occurs and the severity of disease.

When should I treat the calf? Calves running around the pasture with their tails in the air, bucking and kicking with yellow or white diarrhea may not need treatment. If you can't catch them they probably don't need to be treated. The main indications for treatment are (1) general attitude, (2) appetite, (3) dehydration, and (4) body temperature. If the calf is weak, depressed, or reluctant to move these are all indications that something is wrong. If the calf is not eating, the cow's udder will be distended and this is a sign of trouble also. Dehydration can be evaluated easily by pulling up the skin on the side of the neck or shoulder. In a normal calf, the skin snaps back into position quickly. In a dehydrated calf, the skin remains "tented" for a period of time—the longer it remains "tented" the worse the dehydration. Also, as dehydration worsens, the eyeballs sink back away from the eyelids—this is a bad sign and fluids are indicated immediately. Normal body temperature (measured with a rectal thermometer) is 100.5° F to 102.5 ° F. Body temperatures less than 100 ° F and greater than 102.5 ° F is a sign of problems and treatment should be started.

What are the recommended treatments? The main treatment is fluid therapy. Secondary treatments are antibiotics and nursing care. Because the main problem in scouring calves is the loss of body fluids (water) and electrolytes, the primary treatment must be aimed at restoring the water balance. The calves are thirsty, but they are too sick to drink. Therefore, the first line of treatment is ***oral electrolyte solutions***. There are a number of excellent commercial products on the market for treatment of calf scours. All of these products contain glucose or a similar material, sodium chloride (table salt), and other electrolytes. The glucose and sodium allow the animal to absorb the water they need from their digestive tract. **Giving straight water does not work. The calf needs the glucose and salt to be able to adsorb the water.** Usually 2 liters (just over 2 quarts) of the oral fluid solution is given 1 to 3 times per day to the sick calf. Consult with your veterinarian regarding the appropriate oral electrolyte product for your operation. **Always follow the label mixing instructions**—do not add too much powder to the solution as this may kill the calf and even if you don't kill the calf, this unnecessarily adds to the cost of treatment. Calves that are depressed, dehydrated but still standing can usually be treated successfully with oral fluids alone. Calves that cannot stand or lay in a normal resting position on their own usually need to be treated with I.V. (intravenous) fluids to have a chance to survive. These calves that are “flat out” on the ground are 10-13% dehydrated, usually have a below normal body temperature and are very near death.

What about giving antibiotics? Antibiotics are often given to scouring calves even though antibiotics do not kill most of the calf scours agents. Due to damage in the gut of scouring calves, bacteria will “leak” into the blood stream of these calves and cause further problems. Antibiotics are of value for this reason. Again, consult with your veterinarian regarding the correct choice of antibiotics to give. Many of the antibiotics are not labeled for calf scours and thus require a prescription from your veterinarian and an extended withdrawal time. Avoid the use of injectable gentamicin, spectinomycin, or kanamycin. Tissue residues from these drugs can persist for up to 18 months and this can cause drug residue problems at the packing plant. Long acting tetracyclines can cause some kidney damage in dehydrated calves and should be avoided. Baytril® is not labeled for scouring calves and should not be used. In addition to fluids and antibiotics, nursing care may be essential for the calves to recover. Wind shelters, heat lamps, etc can be very helpful. However, this usually requires some type of facility and may result in a contaminated environment and increase the spread of the germs that cause calf scours. Additionally, the problem of separating the cow and calf has to be solved. **When treating sick calves, always treat the sick calves *after* you have attended to all the normal calves.** This will decrease the spread of germs from the sick calves to the younger healthy calves. Also, keep all your treatment equipment clean—including your hands and clothes, as you can easily transmit these agents.

When do I need additional help? If your treatment methods are not working, contact your veterinarian immediately for additional help. If more than 5% of your calves are scouring and require treatment, you need help. If death loss is greater than 2% due to calf scours contact your veterinarian. Many advances have made the diagnosis and treatment of these conditions. Your veterinarian can submit refrigerated (not frozen) stool samples to the University of California's Animal Health and Food Safety (CAHFS)

Laboratory and receive answers in as little as a few days. Freshly dead calves can also be examined to determine the cause of the diarrhea and to aid in determining those factors needed for prevention and treatment in your herd.

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