

# The Scourge of Calving Season

**Regardless of the pathogen that might be causing scours in your calves, fluid therapy is the most effective treatment.**

Story by  
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After more than 20 years of practice in the Ruby Valley area of southwestern Montana, veterinarian Layne Carlson can't guess how many scour pills and potions he has dispensed. Like ranchers throughout cow country, many of Carlson's clients annually battle neonatal calf diarrhea, or scours. Most ask for antibiotics to remedy this scourge of calving season. But with every box or bottle, Carlson also dispenses the warning that antibiotics may not do much good.

"People think they have to give calves some kind of drug. Antibiotics may help a bacterial infection; but, like the common cold in humans, calf scours are often caused by a virus," Carlson explains. "And antibiotics do not work on viral infections."

So what is to be done when calves are stricken with scours? A producer's own veterinarian can provide the best answer, but some basic knowledge can help producers recognize scour-related problems and act accordingly. Early detection and prompt response should improve the odds for successful treatment. However, there are situations where the best initial response could be to wait and see.

Carlson urges ranchers to cultivate their skills of observation. Some calves that exhibit the most obvious symptom of scours — diarrhea — aren't really sick. Such is the case with nutritional scours. In rancher lingo it's called "milk scours," and it most often occurs when a calf overeats following a disruption of its normal nursing pattern. The usually white scour is caused by undigested milk passing through the intestinal tract. Normally, it is a temporary condition.



Veterinarian Layne Carlson urges ranchers to cultivate their skills of observation. Some calves that exhibit the most obvious symptom of scours — diarrhea — aren't really sick. (PHOTO BY CORINNE PATTERSON)

"You don't always have to treat every calf with a dirty hind end," Carlson offers. "If a calf is still nursing, active and hard to catch, milk scours usually isn't a big problem. But it can turn into something more serious. Keep the calf under observation in case the diarrhea continues and there are changes in attitude."

Loss of appetite, listlessness, droopy ears and dull eyes are signs of a depressed attitude that typically accompanies persistent scours caused by an infectious organism. Common causative agents for bacterial scours include *E. coli*, salmonella and *Clostridium perfringens* (enterotoxemia). Viral scours usually are caused by rotavirus and/or coronavirus. Scours may also be a result of cryptosporidiosis or coccidiosis, which are caused by parasites.

## Dealing with dehydration

Regardless of the pathogen involved, the greatest danger to the scouring calf is dehydration. The preferred treatment is oral administration of fluids and electrolytes to replace those lost due to diarrhea. Several commercial products are available in powder form to mix with water and to feed to the calf through an esophageal tube. In many cases of scours, timely and properly administered therapy with fluids and electrolytes is the most beneficial therapy.

"A calf is pretty tough and may try to live in spite of what we do to them. More would live if they received adequate fluids given early and correctly," says Russ Schnepfer, a Platteville, Wis., veterinarian with 40 years of experience doctoring both beef and dairy calves.

"The bottom line is," Schnepfer adds, "you have to put fluids in the front end of the calf faster than it comes out the back."

Schnepfer says too many producers use electrolytes incorrectly, and then wonder why they didn't work. Most of the commercial products are formulated so that one dose is mixed with 2 quarts of water and fed to the calf. If a dose of electrolyte powder is mixed with less than 2 quarts of water, a hypertonic solution is created. Instead of correcting dehydration, a hypertonic solution draws water out of the calf's tissues in the same way that Epsom salts work as a laxative. The result is a worsening of the diarrhea and dehydration.

Schnepfer also warns against trying to dissolve powdered electrolytes in milk instead of water. That also creates a hypertonic solution, which will not remedy dehydration.

**To remove or to not remove**  
Many veterinarians will

recommend that a scouring calf be removed from the cow for a period of time, while receiving multiple treatments with electrolyte solution. Schnepfer prefers that milk not be completely withheld. He says research has shown that a scouring calf that is kept on milk and fed multiple doses of electrolytes and water between milk feedings will continue to gain weight in spite of the scours.

Under range conditions, however, it might be challenging to manage a scouring calf's nursing habits to see that it receives a moderate amount of milk at regular intervals and to provide regular doses of electrolyte solution, too. Separation of the calf from the cow for 24 hours or so may be more practical. Still, Carlson advises against withholding milk too long.

"A calf can't be sustained for long on just water and electrolytes, so I wouldn't keep a calf off of milk for longer than 36 hours," he warns. "Then I would ease [the calf] back onto a milk diet. You can do that by feeding electrolyte solution (electrolytes already dissolved in water according to directions) mixed half-and-half with milk."

Before returning a calf to its mother, producers are often advised to milk out the cow so the calf does not have the opportunity to overeat. Taking on a big load of milk could prompt another round of scours.

## Treating for scours

If dehydration in a calf has progressed, an intravenous injection of fluids becomes necessary. Carlson also incorporates sodium bicarbonate into intravenous treatments to correct the acid-base balance of the sick calf's system.

When a calf is suffering from hypothermia, or a subnormal body temperature, Carlson recommends giving intravenous fluids and placing the calf in an area where the ambient temperature can be maintained at 75°-80° F. Hypothermic calves are in shock and need to be sufficiently warmed.

Carlson says giving a scouring calf a remedy containing kaolin and pectin (basic ingredients of Kaopectate® used by humans) usually helps relieve diarrhea. It may be added to an orally administered electrolyte solution.

A veterinarian also may prescribe antibiotics for a scouring calf, but usually reserves such remedies for treatment or prevention of secondary bacterial infections. All pathogen-caused scours leave the calf's immune system compromised, opening the door to other problems — especially pneumonia.

"Of the scouring calves we treat at the clinic, 80% to 85% are sent home. Those that don't make it usually die from pneumonia," Carlson states. "I will recommend subcutaneous injection of a broad-

spectrum antibiotic to prevent bacterial pneumonia. Tetracycline can be used, but products like Baytril 100<sup>®</sup>, Nuflor<sup>®</sup> or Excenel<sup>®</sup> are probably used most. But producers need to understand that antibiotics won't touch viral scours, which is what we see most often in our practice."

Schnepper reports good results when treating very young calves with a relatively new product marketed as Immunoboost<sup>®</sup>. While it is not an antibiotic, the product is derived from beneficial bacteria and serves to stimulate an immune response. Though developed primarily to address scours caused by

*E. coli*, Schnepper's experience suggests that Immunoboost may also be effective against salmonella, rotavirus and coronavirus.

"It is the most effective enhancement to calf health that I've ever used. It fires up the calf's own immune system, prompting a response within 2 hours of injection," Schnepper offers. "Immunoboost has been effective treatment when given at the first sign of scours, but it works best as a preventative."

#### **Preventive options**

Schnepper claims treatment of scours is not a profitable option, and, instead,

emphasizes prevention. He advises producers experiencing scour problems to improve sanitation. Calves most often contract scour-causing pathogens through manure, so calving in a confinement situation may be asking for trouble.

"It's easier to check cows in a calving lot. Maybe it's easier to drag out dead calves, too," Schnepper says. "I'd rather see calves born in a snowbank than a muddy lot."

Carlson agrees. In addition to avoiding overcrowded, manure-contaminated calving grounds or barns, he advises producers to pay close attention to cow nutrition.

"Cows in poor condition are likely to have weak calves that have trouble fighting off scour infections," he explains.

Thin cows also are more likely to produce colostrum of low quality and quantity. Colostrum or "first milk" is the newborn calf's first line of defense because it contains infection-fighting antibodies. Research indicates that scour cases may be directly related to colostrum intake. Sooner is better than later. A calf that receives 1-2 quarts of colostrum within the first few hours after birth absorbs a higher level of antibodies. However, by the time it is 24 hours old, a calf is unable to absorb colostrum antibodies.

"I can't overemphasize the importance

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## Home remedies

Ever hear of a surefire home remedy for calf scours? Montana veterinarian Layne Carlson says he has heard of producers dosing calves with diesel fuel, bleach or scorched flour. They don't work.

"There is no rationale — no reason they would work," Carlson says. "A scouring calf's intestine is raw, and home remedies like those will just make it worse."

However, if commercial products recommended for the correction of dehydration, acidosis and electrolyte loss in scouring calves are unavailable, suitable substitutes can be prepared from ingredients commonly found in the kitchen. A University of Nebraska (NU) publication (G75-269-A) offers recipes for three electrolyte therapy solutions:

1. Combine 1 can beef consommé, 1 package fruit pectin (the kind used for thickening jellies and jams), 2 teaspoons (tsp.) low-sodium salt, 2 tsp. baking soda and enough warm water to make 2 quarts (qt.) of solution.
2. Combine a solution of 1 can beef consommé, 3 cans warm water and 1 heaping tablespoon (Tbs.) baking soda.
3. Combine 1 Tbs. baking soda, 1 tsp. salt and 8 ounces (oz.) 50% dextrose (or 8 oz. light Karo<sup>®</sup> syrup) with enough warm water to total 1 gallon of solution.

The publication recommends feeding the calf up to 1 qt. of any of these solutions at 3- to 4-hour intervals. Do not overfeed.

of prevention. And vaccination of cows prior to calving does help, especially for rota- and coronavirus," Carlson states. "Paying attention to cow nutrition and avoiding concentration of animals definitely makes a difference. Keep them well-fed and spread out, and you'll have less trouble."

Carlson also suggests that producers think twice about going to the sale barn, or a dairy, to buy a calf to put on a cow that has lost her own baby. Know that there is risk involved. It can be an easy way of bringing scour problems into the herd, so don't buy trouble.

