



# KILLER BUG

*Producers battle calf scours with good management, early detection and antibiotic treatment.*

*by Heather Smith Thomas*

**S**cours is the No. 1 killer of young calves. Yet, not all operations are plagued with exactly the same type of scours bug. Producers must work at resolving the problems unique to their own situation.

When my husband and I were married in 1966 and moved to our Idaho ranch, we had to learn fast about fighting scours. The pastures and fields had been intensively used by cattle for more than 80 years.

Our first small herd calved from March through May. In 1969 — a wet year — every calf born developed diarrhea by the time it was two weeks old. We spent up to eight hours each day catching and doctoring calves. Scour boluses were given to most; force-fed fluids were given to the critical ones.

In spite of all our efforts, we lost three calves that season. But that was the year we learned how to use a stomach tube (esophageal feeders weren't invented yet). We began giving every sick calf fluid, electrolytes, oral liquid antibiotics and gut soother (Kaopectate) every six to eight hours. We had much better luck from that point on.

From 1969 through 1981 we lost no calves to scours, but doctored hundreds using our stomach tube method. Our cow herd grew to 180 cows and we often treated 25 to 30 percent of our calves for scours each year. Then we moved our calving up to January to get away from the wet, sloppy weather. This greatly reduced our number of scour cases; most calves didn't scour when the ground was frozen.

**Then a setback occurred in 1982.** A new scour bug cropped up on our place—a deadly bacteria that affected every calf by the time it was two to 12 hours old. We suspected it was caused by some type of *E. coli* bacteria, but it wasn't halted by the prevaccination of cows. The vaccination protects against some strains of *E. coli*, but there are more than 100 different strains.

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**"Over the past 22 years we've doctored more than 1,300 calves for scours and lost only one."**

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The first year it hit us, we were nearly done with calving. The last 24 calves scoured shortly after birth and became seriously dehydrated, even with our traditional fluid treatments every six hours. We had to give fluid every two hours to save those calves, but one died.

We had nightmares about the next calving season. Who had the time or energy to doctor all our calves that diligently?

We soon found out that several other ranchers in our valley were experiencing the same problem. We consulted our veterinarian who recommended using Furox-zolidone (brand name Furox or Furaxone). So that next year (1983) we gave this oral antibiotic to every calf soon after birth. Formulated for use against *E. coli* in newborn pigs, it was also effective against the bug that was attacking our calves. Administered orally — three or four squirts from a pumper bottle — immediately after the new calf nursed for the first time, the Furox completely prevented our *E. coli* scours strain.

We revolutionized our doctoring, beginning in 1988, when I started carrying around a pumper bottle of liquid neomycin in my coat pocket at feeding time. For years we had been using liquid neomycin sulfate as our drug of choice in the fluid electrolyte-Kaopectate mix (see sidebar). Why not give it orally by pumper bottle to early scour cases that were not yet weak or dehydrated? To our delight, this treatment halted scours before it got to the stage of calves needing intensive fluid therapy.

Toward the end of calving season, as the bug gets "hotter," a few calves start to get loose bowel movements in spite of this treatment. We give a second dose, which stops the problem. After that, we only have to worry about regular scours when the calves are a little older.

**Proper diagnosis is important** when trying to treat scours. Before you can effectively deal with calf diarrhea, you

have to know exactly what's causing it. Your veterinarian can help find out if the culprit is a virus or bacteria, and whether or not there is any method of prevention as well as treatment.

Some deadly intestinal infections, such as enterotoxemia, can be prevented by vaccinating the cow before calving or the calf immediately after birth, with a booster shot a few weeks later. Some other common calf killers, such as rotavirus, corona virus and K99 strain of *E. coli* bacteria, can be greatly reduced in incidence by vaccinating the cow before calving. This helps the cow produce antibodies in her colostrum and gives a calf temporary immunity during those first critical days of life. Immunities gained through colostrum will usually protect a calf for two to three weeks. From then on it must build its own defenses.

The calf that scours during the first two weeks of life is more susceptible (unless intensively treated) than an older calf. It's more vulnerable to dehydration, its gut lining is not able to quickly regenerate after being damaged by infection, and it takes longer for the calf to recover. With many types of scours, the month-old calf can handle the diarrhea and recover without treatment. The same infection, however, in a week-old calf might prove fatal without treatment.

Viral scours tend to hit calves during the first two weeks of life. Bacterial scours can hit at any age. If viral scours are a problem in your operation, vaccinating the cow herd ahead of calving is advised. The same is true if young calves are being hit with K99 strain of *E. coli*. But in other herds, the scours are being caused by other bugs and prevaccination of cows doesn't always help.

Scour problems in a herd can vary in severity from year to year, often depending on the weather. If the ground stays frozen and snow-covered, there will usually be less incidence of scours. Once the ground thaws or weather gets wet and sloppy, scour bacteria becomes more readily available to the calf; it ingests them by eating dirt or drinking surface water. The dirt not only contains many bacteria (especially in a field or pasture where there have been calves before) but also irritates the gut lining, enabling the bacteria to get established and start multiplying.

The bacteria may damage the gut so the calf can't absorb fluid and nutrients, causing it to become dehydrated and weak, or they may produce deadly toxins

## Homebrew Scours Medicine

### *Electrolyte Mix*

1/2 tsp regular table salt  
1/4 tsp Lite salt (sodium chloride & potassium chloride)  
1/2 tsp baking soda (sodium bicarbonate)

dab of powdered sugar  
2 qt warm water

Add Kaopectate and liquid neomycin (antibiotic) to this mix and give it to the calf by stomach tube or esophageal feeder.

Sodium and potassium are crucial to the scouring calf. Chemical changes in a calf's gut and body create a buildup of acids which can lead to coma and death. The sodium bicarbonate neutralizes the acidosis and helps the calf get back to normal function.

Whatever recipe you use, mix it thoroughly with water and make only the amount you'll be using immediately. If a mix sits too long it may separate and lose its effectiveness.



that are then absorbed by the body and quickly kill the calf unless the infection is halted early.

When treating scours, remember that the younger the calf, the more serious the problem. On our ranch we treat every case under two weeks of age as an emergency and begin treatment immediately.

A relatively new treatment that works well for viral scours is Diaproof. Its active ingredient is derived from vegetable fibers that coat the surface of the small intestine and help the gut absorb glucose and electrolytes more rapidly. It's not so helpful for a calf with bacterial scours, however, and can prove deadly if the scours are caused by a toxin-producing bacteria. The Diaproof increases absorption of the toxin, resulting in quick death. When in doubt as to the cause of scours, don't use Diaproof. The cheaper Kaopectate is safer.

**Good management is half the battle** in dealing with scours. Clean calving areas that have not been used before would be the ideal situation, but not many of us have that option. We have to make do with pens and pastures that are already contaminated and build our management around ways to minimize the contamination.

Weather stressed calves are more susceptible to infection. If conditions are wet and muddy, we put out lots of straw for bedding. The calves usually sleep in our calf houses, but the cows need a dry place, too. If their udders stay clean, you have less scour cases.

Group calves according to age. Don't put new ones out with older ones. The field full of older calves is more contaminated and the bugs may quickly overwhelm the passive (temporary) immunity of the younger calf.

Our first-calf heifers also go into a group by themselves for more intensive feed and management. We believe their calves are more susceptible to scours than calves from older cows. The heifer's colostrum doesn't have as rich an antibody content as that from an older cow.

Also crucial to herd health management is a good identification system. This is especially true if one person is doing the feeding and noticing the problems and another is doing the doctoring. Unless you know which calf is which, which ones aren't nursing or which have already been doctored, your scours treatment program is doomed to failure.

My husband and I feed the cows twice daily in winter. Not only is this more efficient for feed consumption — less waste, each gets her share—it's essential for checking the calves and spotting health problems early. While my husband feeds, I drive the feed truck in a pattern so I can see the udder on every cow as I drive back past them.

Checking udders is just as important as checking calves during those first three weeks of a calf's life. Often the first signs of illness is a calf not nursing. If I find a full udder, I check on the cow's calf more closely, determine its health problem and take immediate action.