



## Maximise your herd's potential

### TREATMENT OF SCOURS.

Intestinal infections and nutritional disturbances interfere with nutrient digestion and absorption as well as water movement. This interference with the normal movement of fluid and electrolytes in and out of the intestine results in diarrhoea. The excretion of excess fluid and electrolytes composing the diarrhoea results in dehydration and the physical symptoms of electrolyte imbalance. A study in the U.S. showed that more than 60 percent of all death loss in calves less than 2 months of age is a direct result of scours.

Improved hygiene and nutrition could have prevented many of these calves becoming ill. However, once the animals were ill, many of these deaths could still have been prevented had the calf raiser given effective, timely treatment.

#### **How to assess the severity of the problem.**

Calves which die from scours principally die from dehydration. It is rarely the actual infection which kills the calf.

Treatment involves correcting the fluid deficit and electrolyte imbalance and needs to be tailored to suit the severity of the symptoms. An evaluation of the calf should be made, to determine how ill it is.

A good estimate of the level of dehydration can be gained by using skin tenting. This involves pinching a fold of skin on the neck and counting the seconds it takes to flatten. Flattening of skin in less than 2 seconds indicates normal hydration. If skin takes 2 to 6 seconds to flatten, the calf is about 8% dehydrated. Over 6 seconds indicates severe dehydration above 10%.

The gums of a healthy calf are moist and pink; when a calf is 8-10% dehydrated its gums will be dry and pale.

The following table below is a useful guide when assessing scouring calves.

#### **Clinical symptoms that help evaluate dehydration levels in calves**

<b>Dehydration</b>	<b>Symptoms</b>
5-6%	Diarrhoea, no clinical signs, strong suckling reflex
6-8%	Mild depression, skin tenting 2-6 seconds, calf still suckling, sunken eyes, weak
8-10%	Calf depressed, lying down, eyes very sunken, dry gums, skin tenting >6 seconds
10-14%	Calf will not stand, cool extremities, skin won't flatten when tented, comatose
Over 14%	Death

Adapted from J. M. Naylor, Can. Vet. J. (1989).

## **What treatment do I need to give to help this calf survive?**

If a 40kg calf is 8% dehydrated, this means a fluid deficit of 3.2ℓ (40 x 0.08 = 3.2).

To correct this deficit, cater for its maintenance needs and counter any extra loss from scouring, the calf will need to have:

- 3.2ℓ replacement of lost fluid
- + the normal fluids required for maintenance (say > 5ℓ, particularly in warm weather)
- + sufficient fluids to correct on-going loss from continued scouring.

This could easily amount to >12ℓ fluids /day, especially in hot weather.

An important fact to remember is that if a calf is given more fluid than it needs, it will do no harm. The excess fluid will be excreted as urine.

The first line of treatment for scouring calves which still have a suckle reflex should be administration of oral rehydration therapy (commonly just called “electrolytes”) to replace lost body fluid and electrolytes. It is important to remember that electrolyte mixes which contain sodium bicarbonate or citrate will interfere with milk curding in the abomasum. At least 1½ hours should elapse between feeding milk and electrolytes.

If calves do not have a suckle reflex or they are >8% dehydrated, the best way to rehydrate them is with subcutaneous or intravenous fluids. Your vet will be able to supply or administer these.

## **Should I stop feeding milk to my sick calves?**

Providing contaminated milk was not the cause of the scours, it is far better to keep feeding milk. Extensive studies overseas have demonstrated the benefits of continuing to feed scouring calves milk. These calves recover more quickly than calves which have milk withheld and which are only fed electrolytes. They also lose less weight than calves which are removed from milk.

Calves are born with very small fat reserves (unlike a human baby); within a few days of birth these fat reserves are depleted and the calf is dependent on milk to supply energy. If food is withheld, the calf goes into a state of negative energy balance i.e. it has to break down body tissues just to survive. Oral rehydration solutions do not contain nearly as much energy as milk. They do not contain enough energy even for maintenance, let alone growth. Calves need extra energy when they are sick, so they can fight the infection.

## **What else should I do for sick calves?**

- **Isolating calves.** Unless a scours problem is endemic in the rearing facility, it is good management to remove a sick calf from contact with other calves. Calves which are removed from their pen still need to be able to see and hear other calves.

- **Keeping calves warm.** A calf which is not able to absorb all the nutrients from its milk is likely to have low blood sugar. This is particularly true in cold weather, when a calf is using extra energy to keep warm. The symptoms of low blood sugar are lethargy & weakness which combined with the effects of acidosis can affect the calf's ability to regulate its temperature. Subnormal temperatures (below 37.7° C) result as the calf loses the ability to maintain body heat. A warm, draught-free straw filled pen + a coat will help counter this heat loss.
- **Antibiotic use.** Routine antibiotic use is only appropriate where a facility has an ongoing problem with an identified bacterial disease. Using antibiotics as the first or only treatment for undiagnosed intestinal infections, is not appropriate treatment. Early intervention with aggressive oral rehydration therapy can often avert the need for antibiotics. If antibiotics are used, they should only be used in accordance with veterinary instructions.

### **Ongoing monitoring and evaluation**

Calves can deteriorate very quickly. A calf which drank its morning milk can be dead from scours by afternoon. It is vital to monitor calves while they are drinking their milk, as the first signs that a calf may be ill can be something as minor as coming up to the feeder more slowly or fiddling with the teat a little, rather than sucking vigorously. Oral rehydration therapy, given early, can often avert a full blown episode of scours. If you think a calf looks just a bit "off", it is a good idea to check this calf in 2-4 hours and be prepared to give 2ℓ electrolyte mix even if it still doesn't look really sick.

### **Step by step treatment.**

**Step 1.** Assess condition of calf & calculate % dehydration

**Step 2.** Remove calf from its pen mates if it is an isolated case of scours.

**Step 3.** Provided the calf has not just consumed milk and it can still swallow, give the calf, via nipple or stomach tube, 2ℓ oral rehydration solution, mixed according to the directions.

**Step 4.** Make sure calf is warm, using straw/hay, a calf coat and a windproof shelter.

**Step 5.** Ensure that the calf receives, by nipple or stomach tube, its normal quota of milk for the day; there must be a 1½ hour gap between milk and electrolytes containing sodium bicarbonate or citrate.

**Step 6.** Repeat oral rehydration at regular intervals during the day.

**Step 7.** Assuming the calf is still alive in the morning, repeat steps 1-6 until it is better.