Calf Scour

Practical Guide

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Scour is a common problem in the first weeks of a calf's life, and it can be a cause of significant mortality – in fact in one survey 48% of farmers had lost animals to scour in the previous year[1]. Even when the calf recovers, the labour required to nurse a sick animal as well as the resulting loss in growth rate both have a cost[2]. This guide covers the causes of scour as well as how to treat appropriately when it occurs. It also discusses important aspects of management which can help prevent cases in the first place, as well as ensuring healthy, vigorous calves.

What is scour?

Scour is another name for severe diarrhoea, and is most critical in very young calves where it leads rapidly to dehydration, depression and even death. A number of different organisms can lead to outbreaks of calf scour. In the first three weeks of life the most common causes are viruses – rotavirus and coronavirus are responsible for most cases, and are found on most farms. Disease can also be caused by the microscopic parasite Cryptosporidium. Some other causes include bacteria such as *E. coli* and *Salmonella*, and slightly older calves can suffer from coccidiosis.

Diagnosis

In an outbreak of scour it is important to investigate the cause – in some cases this can help you choose the most appropriate treatment, but most importantly it will often provide information which can help prevent outbreaks in the future.

Discuss sampling with your vet, as they will be able to guide you. If you decide to go ahead with investigations, collect fresh faeces samples from a number of calves which are at an early stage of disease, and submit them promptly in well-sealed containers for testing. Remember to wear gloves and observe good hygiene when you do this.

Treatment

The treatment in most cases of scour is supportive – that is, it is not always necessary to fight the underlying cause, but you do need to address the negative effects of scour. The main reasons for a calf with scour dying are usually dehydration and hypothermia.

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When you see a calf with the characteristic signs of watery diarrhoea, staining around the tail and hind legs, and they appear dull or weak, act quickly and you can prevent deterioration.

- **Isolate** the affected calf in a clean, well-bedded pen.
- •Check the body temperature using a thermometer – temperatures below 38°C indicate **hypothermia** and require warming with a heat lamp and extra bedding.
- Provide **rehydration**
  - If the calf can hold its head up, it is usually safe to stomach tube two litres of rehydration fluid – electrolyte powders are widely available for this purpose.
  - If the calf cannot hold its head up, contact your vet immediately. More invasive treatment will be needed for these cases.

Avoid giving antibiotics as routine unless your vet has specifically advised you to do so. Most cases of scour are not caused by bacteria and will not respond to antibiotics, so giving them may be a waste of time and money, and can increase the risk of antibiotic resistance developing on your farm.

Continue to give milk feeds. Electrolyte solutions are of little nutritional value. Traditional advice to withhold milk can therefore result in malnutrition, which results in even greater reductions in growth rate. It is best to alternate electrolyte solution with milk feeds every two to four hours.

Prevention

#ColostrumIsGold

Ensuring calves receive adequate colostrum is the single most important way to protect them against scour, and many other diseases. We all know that colostrum is important for calf health, but in suckler systems it can be a real challenge to ensure a calf receives the required volume quickly enough to protect it.

However, the colostrum story starts long before the calf arrives, and there are some simple steps which can be taken to ensure the colostrum is good quality and the calf is vigorous enough to get the benefit of it, without needing your intervention.

- Review **cow nutrition** during pregnancy – good nutrition is essential for good quality colostrum and healthy, vigorous calves. Condition scoring can be helpful: remember both overfat (>BCS 3) and poor condition (<BCS 2) can have negative consequences. In addition, ensure the ration being provided is sufficient in energy and protein and cows have adequate feed access. If you are unsure about your ration consult a nutritionist. Blood samples are another tool which can help you to determine whether nutrition is adequate pre-calving.
- Review **mineral levels** – ensure you are providing the right sort of supplement for your sucklers. A good general purpose mineral should be sufficient throughout the pregnancy period but at 4-6 weeks before calving a specialised pre-calving mineral that is specifically for suckler cows should be provided. These last few weeks are crucial, particularly for colostrum production. Subtle deficiencies can lead to slower calving, and dopey, dull calves which either don't suckle colostrum quickly or fail to absorb it effectively. Discuss a full mineral and trace element review with your vet/nutritionist/consultant.

- Consider using a **scour vaccine** – these are given to the cows during pregnancy to provide protection to the calf, via the colostrum, against rotavirus, coronavirus and one form of *E. coli* scour. Follow datasheet guidelines carefully.
- Select an **easy-calving** bull – if the calf starts life with a difficult delivery and the dam is also tired, painful and lying down a lot, it is much less likely that the calf will be able to get sufficient colostrum and absorb it successfully. One study showed that calves which were delivered with a jack were more than four times more likely to die in their first three weeks of life than those which were born unaided[3].
- Try to ensure calves receive colostrum **from their own dam**. Alternatives are available for emergencies but fresh colostrum is far **superior in quality**. Remember the three Qs – q**uickly, quantity, quality**

The other big area in which you can reduce the risk of calf scour is **hygiene.**

- If cattle are housed, ensure there is adequate **bedding** in areas where newborn calves are present. This maintains a drier, cleaner environment and reduces contamination, offering protection to the calves, including those which are yet to be born.
- If space allows, separating calves by age group can reduce the incidence of scour. Older calves may carry the organisms which are responsible for scour without being unwell themselves, so act as a **source of infection** for younger calves.
- A **tight calving period** can also help reduce contamination – more cases of scour tend to occur later in the calving period due to a build-up of infection. By ensuring a short duration of calving this challenge can be minimised.
- **Isolate** any calves which develop scour. These individuals will be shedding infection which could spread to others. Pen them somewhere clean and warm, and remove contaminated bedding once they have recovered.
- Ensure hygiene of equipment – **wash and disinfect any equipment**, such as stomach tubes, thoroughly after every use. Disposable vinyl gloves are useful when handling affected calves. Special hygiene measures are required if cryptosporidiosis has been diagnosed – discuss this with your vet

Summary

The table below shows the main factors which reduce the risk of scour. It's worth noting that most impact comes from factors which are in effect long before the calf is even born, so preparing in advance is key to preventing this frustrating condition.

Pre-calving	At calving	Post-calving
• **Select for easy calving** • **Tight calving period** • **Dam nutrition** • **Dam minerals** • **Vaccinate**	• **Ensure colostrum intake as soon as possible after birth** • **Hygiene**	• **Hygiene**

1) National Youngstock Survey 2018 (MSD Animal Health May 2018)

2) ADAS Report: Economic impact of health and welfare issues in beef cattle and sheep in England

3) Impacts of Dystocia on Health and Survival of Dairy Calves, J. E. Lombard, F. B. Garry, S. M. Tomlinson, and L. P. Garber, J. Dairy Sci. 90:1751–1760, 2007.