

Best practice guide for the management of calf scours





Introduction

Scour is the most common condition affecting young calves and is the greatest single cause of death, accounting for almost 50% of all calf deaths in the UK. One in seven dairy and one in thirteen beef breed calves are believed to die as a result of scour during the rearing phase in the UK each year¹.

For scouring calves, the treatment priority is to provide appropriate fluid therapy, ensure adequate pain relief, and treat with antibiotic therapy only when necessary.

Preventing calf scours requires good management processes around pre-calving, the calving period, and post-calving, with special consideration given to colostrum management and hygiene.

An effective herd health plan for both prevention and treatment is essential for all dairy and beef herds to maintain health during this crucial period of the production cycle to protect lifetime production.

Booklet contents

The importance of colostrum	3
Identifying calf scours	4
Prevention of calf scours	5 - 7
Treatment of calf scours.....	8 - 9

¹Calf Nutrition and Colostrum Management (2016). Accessed January 2018. Available at: www.nadis.org.uk/bulletins/calf-nutrition-and-colostrum-management

The importance of colostrum

Early drinking of colostrum, the very first milk from a cow after its calf is born, is critical for the health of calves. As well as being an essential source of nutrition, colostrum provides the calf with antibodies for optimum immune function in the first few weeks of life.

Antibodies are critical to the immune system of the calf because they recognise invaders or pathogens which may cause disease and target them for destruction. A calf is born without antibodies and after exposure to pathogens during the first few weeks of life, will begin to produce these important molecules by itself. However, during those first few weeks, the most important source of antibodies is gained from the colostrum absorbed within the first few hours after birth.

Although colostrum will always remain a nutritious food, the absorption of antibodies from colostrum into the calf's own blood is **only possible in the first 24 hours of life.**

Cow vaccination programmes for scour causing pathogens can also be considered to ensure the necessary antibodies are produced.

As a general rule, calves should have at least 10% of their body weight as colostrum in the first 24 hours of life, ideally half of this within 6 hours of birth².



² AHDA (2017) Managing Youngstock Feeding. Accessed January 2018. Available at: https://dairy.ahdb.org.uk/non_umbraco/download.aspx?media=3790

Identifying calf scours



Image courtesy of NADIS

Staining with faecal material under the tail is usually the easiest way of recognising calf scours. There is also an increase in the frequency and quantity of faeces, which has a higher than normal water content. In some cases, blood and mucus may also be present.

Scours can be classified into two types, nutritional and infectious.

- **Nutritional scours** are usually caused by stress to the calf due to a breakdown in management routines.
- **Infectious scours** have many causes which include viruses, bacteria and protozoa.



Image courtesy of NADIS

Signs of dehydration:

Degree of dehydration	Symptoms
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 will not flatten when tented, comatose
Over 14%	Death

Prevention of calf scours

Before calving:

The management of rearing calves begins well before the anticipated calving time

- Maintaining appropriate condition of pregnant cows is important to good calf health
- Colostrum is created by the cow in the 4-6 weeks prior to calving. Any health concerns during this period may affect the quality of the colostrum produced
- Management of heifers separate to the older cows can improve monitoring and reduce competition and bullying

Around the time of calving:

Vigilant monitoring during the calving period helps ensure successful outcomes

- Provide assistance at calving if required for the mother or her calf
- Strict hygiene must be maintained throughout this time
- Calving difficulties or any disease which prevents natural suckling requires correction. Suckling will ensure adequate colostrum is ingested within the first twelve hours of birth
- It may be necessary to tube feed colostrum to animals which refuse to suck



Caring for the calf after calving

It is important to meet calves' needs during their first weeks of life.

- Appropriate nutrition including milk for growth and supplements to develop the rumen

- Fresh clean water

- Comfortable environment which is warm, protected and dry

- Clean environment where contamination is minimised

- Well ventilated environment providing clean fresh air, without drafts

- Minimise chances of aerial and faecal transfer of pathogens between batches of calves of different ages

- Routine disinfection of equipment, including feeding apparatus following contact with calves

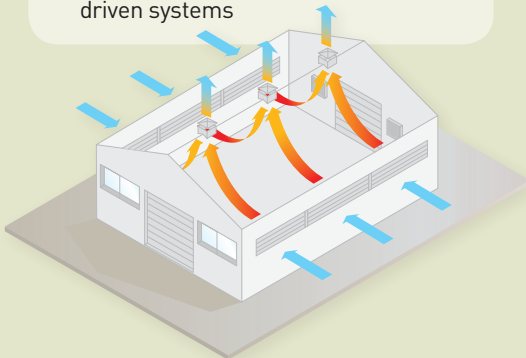
- Prompt isolation of sick calves separate to healthy calves

Considerations for batches of young calves

- Try to avoid mixing groups of animals of varying ages, as mixing increases stress and increases the chance of transferring pathogens from older calves to immune-naive younger calves
- Watch out for other diseases which compromise the immune system, for example, bovine viral diarrhoea (BVD) virus
- Avoid multiple procedures, including vaccinations, disbudding or marking at the same time to minimise cumulative stress
- Do not overstock as this increases infection pressure

When higher stocking densities cannot be avoided...

- Minimise pathogen challenge by improving housing and ventilation
- Monitor environmental conditions at calf level to ensure they are comfortable
- Keep bedding fresh and dry to help with air quality
- Passive ventilation may need to be supplemented with active fan driven systems



A shed designed around 'the stack effect' can be useful if sufficiently stocked.



Fluid therapy

Whatever the cause of scour, the lining of the bowel can become compromised, resulting in the loss of large amounts of body fluid into the gut. As a result, the calf dehydrates, electrolytes can become unbalanced, and the calf may rapidly become clinically ill, making early intervention critical.

The primary treatment of scours in calves should focus on replacing and then maintaining lost body fluids, correcting the electrolyte imbalance, and the supply of energy and nutrition.

All scouring calves require electrolytes. Less severely affected calves may respond to oral electrolytes alone. **More severely dehydrated calves may need fluids administered intravenously by a veterinary surgeon in order to recover.**



Image courtesy of NADIS

Energy and nutrition, in the form of milk, is critical to the wellbeing of scouring calves. Milk is a crucial source of nutrition and should not be withheld for long periods. Remember that milk and electrolytes may need to be administered separately.

Traditional calf scour treatments have involved the administration of oral fluids to help correct dehydration, acidosis and electrolyte imbalance without sufficiently addressing the energy requirements of the calf. The addition of glucose to oral rehydration supplements helps to provide increased energy to recuperating calves above and beyond simple milk alone. The other added benefit of incorporating glucose is that it enhances sodium, and secondarily, water transport across the mucosa of the intestine via a process which remains relatively intact despite presence of infective pathogens, making the therapy even more efficient at rehydration of the calf.

Glutamine is also an important addition to rehydrating supplements. It is an amino acid proven to be a prime source of energy, in this case specifically for gut mucosal cells. It not only promotes further absorption of sodium, alongside absorption and utilisation of glucose, it also helps to promote repair and proliferation of enterocytes, the cells of the intestine and, therefore, helps to facilitate healing of the gut lining.

It is essential to appreciate that **fluid therapy is the most important part of a treatment plan.** If you can keep a calf fully hydrated and rebalance lost electrolytes, its chance of recovery from scours, even without any other intervention, is good. If fluid therapy has not returned the calf's behaviour to normal within 24-48 hours consult with a veterinary surgeon.

Pain therapy

Scours can be a cause of significant pain and discomfort for calves. As well as being unpleasant for the calf, one common sign of pain or stress is the loss of appetite. As proper nutrition is critical for a recovering calf, there is an incentive to treat pain in order for the animal to eat properly.



Anti-inflammatory drugs have also been proven to be beneficial in cases where infection has resulted in toxins being released into the bloodstream, which is a serious and sometimes fatal consequence of scours.



Antibiotics

The majority of treated calves should be back to normal after 48 hours of fluid therapy, while the remainder may require a veterinary examination or targeted medical therapy.

Targeted antibiotic therapy, provided by a veterinary surgeon, may be necessary when a bacterial pathogen is suspected or identified or when there is concern the calf may develop bacteraemia (bacteria in the blood) such as when:

- The calf is severely or systemically ill
- The calf is significantly dehydrated
- The calf has been ill for some time (as this may alter the bacterial population in the intestinal tract increasing the risk of further damage)
- A colostrum transfer problem is present on the farm reducing the immunity of young calves
- There is blood in the scour indicating damage to the intestinal tract



Image courtesy of NADIS

Antibiotic therapy may not be required in the vast majority of cases. As discussed previously, many causes of scour are not bacterial in origin. This is where diagnostics are important to prevent using antibiotics in cases where they will be ineffective, and therefore a waste of expenditure.

Ensure animals treated with antibiotics are **identified** and **clearly marked**.

The **date of treatment** should be recorded and the **withhold period** for any antibiotic obeyed.



Norbrook[®]

www.norbrook.com