



Common Calfhood Diseases: Prevention and Treatment of Scours

When considering treatment of scours, there are several options for prevention, supportive therapy and treatment that do not involve reaching for the bottle of antibiotics. By identifying the weaknesses in the chain of disease, we can avoid calfhood scours altogether.

Prevention is the single most important step in managing calf scours. Whether a calf stays healthy or gets scour is determined by the balance between the resistance of the calf to infection and the level of infection to which it is exposed.

- **Provide adequate colostrum in the first few hours after birth.**
- 10% of calf's body weight of colostrum \geq 24 Brix in the first 2 hrs of life.
- 5% of calf's body weight of colostrum \geq 24 Brix at 6-8 hrs of life.
- In order to achieve excellent passive transfer

calves must receive 300 grams of IgG in the first 8 hrs of life.

- Provide proper housing or shelter from the weather to reduce stress.
- Carefully plan calf housing to avoid overcrowding.
- Avoid mixing different ages (i.e. new born calves with calves older than 3-4 days) as younger calves will be more susceptible.
- **Minimize stresses associated with routine management practices e.g. disbudding, castration, vaccination.**

- Maintain strict hygiene by cleaning and sterilizing feeding utensils and facilities.
- Prevent the build-up of fecal contamination around feed and water troughs. Keep feeding areas and water buckets/ troughs off the ground.
- Individual or group calf pens/hutches must be cleaned out and disinfected between animals.
- Clean out bedding regularly or generously top dress bedding. Check bedding by kneeling in the pen; your knees should not get wet if the bedding is dry enough.
- Develop a routine milk feeding program with as few people involved as possible.
- Respond quickly to symptoms of scour; isolate sick calves and address the cause.
- **Implement a sound scours vaccine program for dry cows. The vaccinated cow produces more antibodies to rotavirus, coronavirus, cryptosporidium, and E.coli and delivers them in her colostrum.** Purchase calves from cows that have been vaccinated with a scours

vaccine before calving.

Generalized Treatment of Scours

Although specific treatments are available for scours depending on the causal pathogen, the following steps should be taken in all cases to ensure calf recovery:

1. Isolation

- Scouring calves should be isolated in a clean, dry, and warm pen.

2. Rehydration therapy

- Once scouring, a calf becomes rapidly dehydrated, acidotic, and low in essential electrolytes such as sodium (Na), Potassium (K), and Chloride (Cl). They can lose 5% to 10% of their body weight daily in fluids. Treatment involves rehydration, correction of acidosis, and replacement of electrolytes. Some electrolyte products on the market, while assisting with rehydration and replacement of electrolytes, often fail to effectively correct acidosis. Correcting acidosis is essential for

| Calf Symptoms | Dehydration % | Daily amount of electrolytes needed for 45 kg calf | Total daily amount of fluids (milk + electrolytes) |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| Scours Strong suckling reflex Skin tent returns to normal in less than 2 seconds | 5-6% | 3L of electrolytes plus 4-6L of milk | 7-9L |
| Scours Calf still has suckling reflex Skin tent returns to normal in 2-6 seconds Sunken eyes Mild depression; calf may be weak | 6-8% (moderately dehydrated) | 4L of electrolytes plus 4-6L of milk | 8-10L |
| Scours Calf lying down; rises only when encouraged Skin tent returns to normal in >6 seconds Very sunken eyes; white and dry gums calf depressed; calf may be weak | 8-10% (severely dehydrated) | Metabolic acidosis- intravenous fluids needed to correct blood pH caused by imbalance of acids and bases in the blood | Contact your vet |
| Death | Over 14% | | |

Adapted from an article by D.M. Amaral-Phillips (2012), University of Kentucky.

Ask the Expert

Have a question for our experts?
EMAIL: colostrum.counsel@sccl.com

calf recovery.

- Calves must receive sufficient liquid and electrolytes to replace those lost in the feces.
- Frequent, small, feeds of electrolytes or milk are better than fewer larger ones.
- Healthy calves need up to four liters of fluid a day, and scouring calves need an additional four liters to replace lost fluids.
- Electrolyte scours treatments must have a Strong Ion Difference (SID) of 60mmol.
- The amount of electrolytes needed depends on the extent of the calf's symptoms. Overfeeding electrolytes causes little detriment to calves. However, underfeeding electrolytes can prolong scours and not correct the dehydration and loss of electrolytes.

3. Milk feeding

- Continuing to feed milk or good quality milk replacer will not prolong or worsen the scour and can help to heal the intestine.
- Continue to offer scouring calves normal amounts of milk or milk replacer for as long as they want to drink it.
- If reintroducing milk, it should be offered full strength. Milk should never be diluted with electrolyte solutions as this can lead to poor milk clotting.
- Electrolytes should be given at least 30 minutes before a milk feed.
- Milk or milk replacer should not be stomach tubed.

4. Colostrum

- Feeding colostrum during scours is an effective treatment for a variety of scours pathogens.
- Feeding colostrum as a treatment has demonstrated a significant reduction in the number of scouring days and severity. It has also proved to significantly increase average

daily gain over calves that are treated with antibiotics.

- To use colostrum as a treatment:
 - Feed 140-150 grams of colostrum mixed in 1 liter of water as a separate feeding.
 - Feed colostrum 1x/day for 5 days, or until diarrhea is resolved
 - Mixing 140-150 grams of colostrum and electrolytes in 2 liters has also been very effective at treatment and rehydration.

Note: It is important to remember that not all electrolytes are created equal and some electrolyte/colostrum combinations are not advised. Please consult with your veterinarian to determine the best combination.

5. Antibiotics

- Antibiotics do not work against the parasites and viruses which are the most common causes of calf scour.
- Antibiotics should only be given:
 1. After consulting with your veterinarian
 2. By injection
 3. Calf has a temperature above 102.5°F

In summary, prevention is key to avoiding calfhood scours. If disease does occur, supportive therapy and alternative treatments such as feeding colostrum can help calves recover, and thrive again.

Written by:

Dr. Travis White, DVM

Director of Veterinary Technical Services, SCCL

travis.white@sccl.com

Ask the Expert

Have a question for our experts?

EMAIL: colostrum.counsel@sccl.com

REFERENCES

Feeding colostrum as a therapy for diarrhea in preweaned calves

1. Urie, N. J.; Lombard, J. E.; Shivley, C. B.; Koprak, C. A.; Adams, A. E.; Earleywine, T. J.; Olson, J. D.; Garry, F. B. Preweaned Heifer Management on US Dairy Operations: Part V. Factors Associated with Morbidity and Mortality in Preweaned Dairy Heifer Calves. *J. Dairy Sci.* 2018, 101 (10), 9229–9244. <https://doi.org/10.3168/jds.2017-14019>.
2. Oultram, J., E. Phipps, A.G.V. Teixeira, C. Foditsch, M.L. Bicalho, V.S. Machado, R.C. Bicalho, and G. Oikonomou. 2015. Effects of antibiotics (oxytetracycline, florfenicol or tulathromycin) on neonatal calves' faecal microbial diversity. *Vet. Rec.* 117:598. doi:10.1136/vr.103320.