



Dealing with Diarrhea: A 4-step Approach

Adapted from case study: A holistic approach to colostrum management: Enrichment of maternal colostrum combined with extended colostrum feeding as control measures for bovine rotavirus-associated neonatal calf diarrhoea

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Introduction

Neonatal Calf diarrhea (NCD), also known as scours, remains one of the most significant health challenges in pre-weaned calves contributing to high treatment rate, risk of death, and decreased future productivity on both dairy and beef operations. Even mild cases can have long-term impacts on growth and overall performance. While diarrhea is often seen as an unavoidable part of calf rearing, most outbreaks can be linked to management factors that can be improved with the right attention to detail.

Here are 4 steps you can take when dealing with diarrhea to improve calf outcomes:

1. Review colostrum management

- a. Ensure the colostrum being fed has at least 50g of immunoglobulins (IgG) per liter and limit bacterial contamination through clean handling practices such as feeding as soon as possible and IgG safe pasteurization (140 °F or 60 °C for 60 min). Calves should receive colostrum within the first 6 hours after birth.
 - i. Colostrum should be no less than 22% brix.
 - ii. Use refractometer to confirm brix % and the SCCL app to see how much enhancement with powdered colostrum is needed to increase to excellent quality.
- b. Calves should be receiving either 200 to 300 g of IgG or 10% of their bodyweight in quality colostrum.
- c. Use 100% bovine colostrum.
 - i. Hierarchy of colostrum sources maternal > fresh or frozen from another dam in the herd > powdered colostrum replacement. It is recommended to not use colostrum from another farm to avoid outside pathogens.

2. Environment

- a. Are calves being born in a clean environment? Employ a protocol to clean calving pens between uses (and individual or group housing pens), if calving on pasture, employ a Sandhills or Foothills calving system to avoid pathogen exposure from older calves to younger calves.
- b. Have nipples and tubes specific for sick animals so do not accidentally infect healthy calves.

3. Adapted transition feeding protocol – colostrum fortified milk replacer

- a. Switching to a straight milk replacer after the initial colostrum feeding, rather than using transition milk or a colostrum-enriched milk replacer, can deprive calves of key bioactive components such as oligosaccharides, insulin-like growth factors, and lactoferrin, which they would naturally receive when suckling from their dam. However, transition milk, while often available, may not be ideal for calves due to inconsistency and variable quality including IgG content and potential contamination. Feeding a milk replacer ration fortified with colostrum powder can deliver a more consistent feed, that is less labor intensive, and reduces pathogen exposure compared to feeding transition milk.
- b. A recent case study highlighted that supplementing 70g of colostrum replacer in the milk replacer ration 2x daily can reduce diarrhea and improve titres against pathogens while having a reduced bacterial load compared to transition milk.

4. Follow-up and evaluate success

- a. Even small adjustments can have a significant impact on calf health. Understanding where you started, what needs to be improved, what data needs to be collected to make a decision, and what adjustments to management made the difference is important in making impactful changes to improve animal health and the bottom line by preventing future outbreaks.

Conclusion

Small changes can have a big impact. Understanding areas on your operation where efficiency can be increased and pathogen loads can be decreased are key to healthy calves. Giving calves their best start by introducing them into a clean environment, setting protocols to ensure successful transfer of passive immunity with a robust colostrum protocol, and following up to measure success means continual progress of the productivity and health of your herd.

Work with your veterinarian and team to set up a plan, to identify potential risks to prevent diarrhea before it happens and to minimize the impact if it does.