



Why Should We Care About Diarrhea?

It not only affects calf welfare but also your bottom line!

Diarrhea is a common disease that affects dairy calves, male and female, that are raised as replacements or enter into the dairy-beef or veal industries. Canadian researchers estimate that each case of diarrhea will cost \$155¹ based on labour and treatment costs as well as the cost of calf losses from diarrhea. However, it should be noted that this is likely an underestimate of the true cost of diarrhea.

28 %
OF DAIRY
CALVES

50%
OF VEAL
CALVES

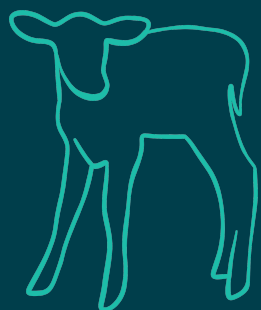
Receive treatment for diarrhea

What are the consequences of diarrhea in calves?



Diarrhea can cause a variety of impacts on the health and welfare of calves through dehydration. This causes calves to become weak and, in severe cases, unable to stand. In addition, calves with diarrhea will also experience pain. Beyond the welfare impacts, diarrhea occurring in early life can have substantial consequences both short and long-term.

INCREASED RISK OF MORTALITY



**Diarrhea causes
56% OF CALF
MORTALITY**

Diarrhea is the main cause of mortality in the preweaning period, causing 56% of all mortality during this time. Mortality often occurs as a result of dehydration, where ongoing fluid loss through feces leads to reduced blood and nutrient circulation to critical organs. Because of this, it is critical to ensure that calves with diarrhea are treated promptly. Work with your veterinarian to discuss an effective treatment strategy for your herd.

REDUCED WEIGHT GAIN

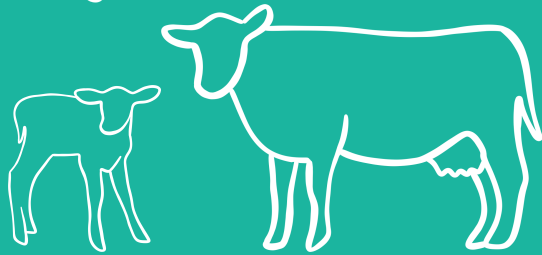


**Calves that
survive an initial
case of diarrhea
will have reduced
weight gain.**

This has been highly supported by research^{2,3}, with some studies showing an up to 15 kg reduction in weight gain within the preweaning period for calves affected with diarrhea. Weight loss can still occur later in life, with a study showing that veal calves treated for diarrhea had a 9 kg lower hot carcass weight and decreased carcass quality when compared to calves without diarrhea. This reduction in weight gain is due to diarrhea-causing pathogens reducing the ability of the calf's intestines to absorb nutrients.

REDUCED REPRODUCTIVE PERFORMANCE

Female calves may need multiple breedings.



Although not commonly investigated, a recent study⁴ has shown that calves that had diarrhea during the preweaning period were more likely to need multiple breedings in order to become pregnant as a heifer. It is thought that this is likely the result of reduced preweaning weight gain that contributes to a delayed onset of puberty.

INCREASED AGE AT FIRST CALVING

INCREASED AGE OF FIRST CALVING



INCREASED COSTS FOR PRODUCERS

For female calves that are retained as replacements for dairy production, there are many long-term consequences to being treated for diarrhea. Calves with diarrhea preweaning will have an increased age at first calving, where they are twice as likely to calve after more than 29.5 months of age. As raising female calves is the second highest cost associated with dairy production, having heifers calve at a later age can have a significant economic impact.

DECREASED MILK PRODUCTION



325-344 kg LESS MILK

Beyond an increased age at first calving, some studies^{4,5} have shown that diarrhea in the preweaning period can have an effect on milk production for cows later on in life. Specifically, calves treated for diarrhea in the preweaning period had a 325 to 344 kg reduction in milk production in their first lactation. This reduction is likely attributed to the effect of diarrhea on weight gain in the preweaning period. Calves with a higher average daily gain in the preweaning period are seen to have an increased milk yield, which is likely due to improved mammary gland development.

TAKE HOME MESSAGES

Diarrhea can be a costly disease and can severely impact the welfare & productivity of male and female dairy calves, in both the short and long-term. To mitigate impacts of diarrhea, it is important to think about prevention through:

- 1 Excellent colostrum management
- 2 A high plane of nutrition
- 3 Providing calves with a clean & dry environment

Work with your veterinarian to develop a strategy to mitigate the consequences of diarrhea on your farm.

References 1. Roche, S.M., M. Von Massow, D.L. Renaud, D.A. Shock, A. Jones-Bitton, and D.F. Kelton. 2020. Cost-benefit of implementing a participatory extension model for improving on-farm adoption of Johne's disease control recommendations. *J Dairy Sci.* 103:451-472.; 2. Windeyer, M.C., K.E. Leslie, S.M. Godden, D.C. Hodgins, K.D. Lissemore, and S.J. LeBlanc. 2014. Factors associated with morbidity, mortality, and growth of dairy heifer calves up to 3 months of age. *Prev Vet Med.* 113:231-240; 3. Renaud, D.L., C. Rot, J. Marshall, and M.A. Steele. 2021. The effect of *Cryptosporidium parvum*, rotavirus, and coronavirus infection on the health and performance of male dairy calves. *J Dairy Sci.* 104:2151-2163.; 4. Abuelo, A., F. Cullens, and J.L. Brester. 2021. Effect of preweaning disease on the reproductive performance and first-lactation milk production of heifers in a large dairy herd. *J Dairy Sci.* 104:7008-7017.; 5. Svensson, C., and J. Hultgren, 2008. Associations between housing, management, and morbidity during rearing and subsequent first lactation milk production of dairy cows in southwest Sweden. *J Dairy Sci.* 91:1510-1518