

ETIOLOGY OF DIARRHEA IN EUROPEAN CROSSBRED CALVES IN UP-COUNTRY SRI LANKA: A COMPARATIVE ANALYSIS OF PASTEURIZED VERSUS UNPASTEURIZED MILK FEEDING

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This study examined the etiology of diarrhea among European crossbred calves at Manikpalama NLDB farm, focusing on the effects of feeding pasteurized versus unpasteurized milk. Forty (40), newborn calves were randomly assigned to two treatment groups where one group was fed pasteurized milk and the other group was fed unpasteurized milk. Calves were monitored daily over eight weeks for health indicators, including diarrhea incidences and growth parameters such as body weight, length and height. Water quality and microbial counts of milk were also analyzed. Results revealed that microbial contaminations were high in farm water sources and total *Coliform* and *E. coli* counts were 5.60 CFU mL⁻¹ and 2.56 CFU mL⁻¹, respectively where both exceeding acceptable standards (SLS 614:2013). The total microbial count in pasteurized milk was 1.2×10⁶ CFU mL⁻¹ compared to 1.38×10⁷ CFU mL⁻¹ in unpasteurized milk though levels remained above optimal due to pasteurization challenges associated with the high-altitude location of the farm. Calves fed pasteurized milk exhibited significantly fewer ($p<0.05$) diarrhea incidents, particularly in the initial weeks suggesting improved gastrointestinal health. However, differences in growth metrics between the two groups were statistically insignificant ($p>0.05$) possibly due to inconsistencies in pasteurization efficiency. In conclusion, pasteurization reduces microbial loads in milk and lowers diarrhea incidences in calves. Further, this research highlights the urgent need for improved water quality control and reliable pasteurization processes in high-altitude dairy operations to optimize calf health. Implementing these measures not only minimizes the medical costs associated with treating diarrhea but also represents a cost-effective strategy for improving overall calf welfare. Such improvements are vital for reducing diarrhea-related morbidity, supporting healthy calf growth and ultimately enhancing farm productivity and calf well-being in similar dairy operations.

Keywords: Calf health, Microbial contamination, Water quality