The Effect of Neomycin Inclusion in Milk Replacer on the Health, Growth, and Performance of Male Holstein Calves Preweaning

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The prophylactic use of oral antimicrobials in milk is a common practice in calf rearing that is thought to aid in preventing disease, but presents potential risks to the calf. The objective of this study was to investigate the effects of neomycin on calf health and growth performance. One hundred and sixty calves were assigned to one of three treatments: control (non-medicated milk replacer (MR)), short-term antimicrobial (20mg/kg BW neomycin in MR from d 1-14), or long-term antimicrobial (20 mg/kg BW neomycin in MR from d 1-28). Calf BW was measured weekly, and health scores, feed intakes, and the use of additional electrolytes and antimicrobials were recorded daily. Calves in the CON group experienced a higher proportion of days with diarrhea, longer bouts of diarrhea, and higher fecal scores. However, the time to reach first diarrhea and respiratory illness was not different, nor was the time to recover from respiratory illness. The time to intervention with additional electrolytes or antimicrobials was not different, nor was growth performance, feed intake, or feed conversion ratio. The defined daily dose of total antimicrobials that ST and LT calves received was higher than that of CON calves, who received no prophylactic antimicrobials. Given that there were no differences in performance parameters and no health benefits aside from reduced fecal scores in calves fed neomycin, current practices involving the use of antimicrobials on dairy and veal operations need to be considered more prudently.

Cool-Climate Adapted CDC Genotypes of Chickpeas Grown in Western Canada: Evaluation of Impact of Varieties and Processing Methods on Physicochemical, Nutritional, Molecular Structural Characteristics

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The primary objectives of this study were to: (1) evaluate the molecular structural, physicochemical, and nutritional characterization of cool-climate adapted CDC chickpeas developed in western Canada, and the impact of varieties and heat processing methods as an elective imperativeness hotspot for ruminants; (2) evaluate the effect of heat processing methods, Dry Heat, Wet Heat and Microwave Irradiation Processing Method on cool-season adapted CDC chickpeas as an alternative source for protein and energy feed for ruminant livestock. Within three varieties of CDC chickpeas; these being provided by the Crop Development Center; (3) reveal the molecular structure spectral results from chickpeas varieties grown in Western Canada and the molecular structure changes when heat processing methods are used using vibrational molecular spectroscopy. Chickpea samples were determined for chemical composition, energy values, CNCPS carbohydrate fractions. Subsequently, chickpea samples were incubated in the rumen for NDF degradation kinetics analysis. Later, carbohydrate related spectral features after incubation was performed results were obtained using ATR-FTIR spectroscopy.