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Effect of cellooligosaccharide feeding on growth performance of weaned grazing Japanese black calves

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Calves at weaning can digest easily fermentable carbohydrates such as starch, but they may not be able to obtain sufficient energy from forage because of inefficient fiber digestion. Improving energy acquisition in weaned calves on pasture by implementing a measure to the conventional grazing system is crucial for successful rearing. Non-digestible oligosaccharides have been used in calf diets to improve health and cellooligosaccharides (CE), which are derived from enzymatic digestion of plant cellulose, may be a good supplement for stocker calves. Here, we evaluated the effect of CE supplementation on weaned grazing calves. Eight castrated calves weaned at 3 months were allocated to either a control (CON) or an CE group based on body weight (BW) and age. All calves were provided a commercial concentrate feed (TDN 72.5%, CP 15.5%) from 4 weeks before weaning at a daily maximum of 2000 g. The experimental groups were fed CE (NPC Cello-Oligo®, containing 95-97% D-cellobiose, Nippon Paper Chemicals Co., Ltd, Tokyo, Japan) at a rate of 10 g/day mixed with the concentrate feed from the starting time of experiment. Neither BW nor average daily gain differed significantly between the groups, but there was a tendency for BW gain to be greater in CE than in CON at 7 weeks (CE, 33.8±3.2 kg; CON, 26.8±2.1 kg; $P<0.05$). We assume that CE may be more advantageous for grazing calves if it is provided from an earlier timing (i.e., pre-weaning period), or at a larger amount than 10 g.

Biography

S Kushibiki has completed his PhD from Tohoku University and Post doctoral studies from National Institute of Livestock and Grassland Science (NILGS). He is the Associate Director of Ruminant Metabolism Unit of NILGS. He has published more than 30 papers in reputed journals and is serving as a Professor of Tsukuba University.

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