

Effects of Ig Y Supplementation to Colostrum Having Insufficient Antibodies on Calves Metabolism and Costs

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Abstract : This study aimed to evaluate the effects of orally Immunoglobulin (Ig) Y treatments to calves were fed with colostrum having insufficient antibodies before first suckling. A total of 28 Holstein calves were fed assigned into control and treatment groups. The calves were fed fresh colostrum from their respective mother for the first 4 days. The treatment group calves were orally administered IgLock (10 g/d/calf) immediately before the first colostrum feeding and IgLock was administered just one time in treatment group calves. Then, the calves were offered normal milk until weaning. After weaning, all calves kept same paddock and were fed same ration. Diarrhea and respiratoric diseases were recorded for one year. Blood was collected from all calves in the study on birth day (0 day) before vaccination and IgLock administration, then, collected for the following 2 days in all groups. Albumin (ALB), Total Protein (TP), Aspartate Aminotransferase (AST), Alanine Aminotransferase (ALT), Gamma-Glutamyl Transferase (GGT), Serum Amyloid A (SAA), Haptoglobin (HPT) and Ig G analyses were performed on all samples. Although serum ALB, ALT, GGT and Ig G levels were not shown a time dependent-change within control group; serum TP, AST, HPT and SAA levels were significantly changed by the time within mentioned group. Serum TP level was steady at first 2 days, then, it was increased significantly at 3rd day. Also, serum AST level was significantly increased at 2nd day, then it was descended to first day levels again at 3rd day. Although serum HPT levels were shown a significant gradually decreasing within control group, serum SAA levels were decreased rapidly after first day and there were no significance differences between 2nd and 3rd day in SAA levels. Serum ALB, ALT, HPT and SAA levels were not shown a time dependent-change within treatment group. After first day Serum TP, GGT, AST and Ig G levels were shown an significant increasing at 2nd day. Serum TP, GGT and Ig G levels were higher as compared to 1st day within treatment group at 3rd day. But, serum AST level was less significantly 3rd day as compared to 2nd day values. The total numbers of calves suffered from diarrhea were significantly less in treatment group as compared to control group ($p < 0,05$). The pneumonia reappear ratio in calves suffered the diseases is 33,3% in control group and 11,11% in treatment group. Total cost of diseases and additives was 2339,36 \$ for control and 1276,4 \$ for treatment. As a conclusion, the immunity enhancers like IgLock are important and cost-effective to boost up immunity status in the early age which would be having positive effects on calves were received colostrum included insufficient antibodies.

Keywords : dairy calves, Ig Y, pneumonia, scours

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