Abstract

This study was conducted to investigate the effects of different probiotics supplement on growth performance parameters, biochemical blood factors, immune response and health status of young dairy calves. A total of 40 neonatal calves, immediately after birth, were randomly assigned to one of 4 treatments, 10 replicates with 1 calf in each with a completely randomized design. Treatments included: control (C; without any probiotic supplement), CP (feed containing 2 g/d/calf commercial produced probiotic), DP (feed containing 2 g/d/calf domestically produced probiotic) and LP (feed containing 2 g/d/calf laboratory produced probiotic). Calves were weaned abruptly if they consumed 900 g dry matter of starter per day for three consecutive days. Compared with control, incorporation of the probiotics in the diet had signifi-cantly effect on final body weight, as the lowest and the highest average weight gain in the whole period of the study (day 1-60) were respectively seen in control and CP treatments ($P<0.05$). In addition, there was no significant effect on dry matter intake and feed converson ratio ($P>0.05$). Including probiotic into diets resulted to decrease weaning time compare to control group ($P<0.05$). Feeding probiotics to calves had not remarkable effects on biochemical blood parameters and blood metabolites ($P>0.05$). At the end of trial, the fecal population of lactic acid bacteria was different ($P<0.05$) between treatments; as the average fecal population of LAB was greater ($P<0.05$) with CP than other treatments. Based on the results of this experiment, control group had higher population of *coliform* and *E. coli* ($P<0.05$) and lower the *Lactobacillus*/*coliforms* ratio in the feces compare to the supplemented groups. The results of the present study indicate that adding probiotics supplements could be a potential treatment for increasing health status, and better performance.

Keywords: Probiotic, Calf, Performance, Immunity, Health.

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Thesis Submitted in Partial Fulfillment for the Degree of Master of Science in Animal Nutrition

Impact of probiotic administration on growth performance, health and immune response of young dairy calves

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October 2015