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Study of the effects of probiotic BioPlus 2B and yogurt bacteria on blood metabolites and elements, and *E. coli* shedding in calves

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Probiotics are useful microorganisms that colonize in digestive system of the domestic animals and are able to affect improvement function and weight gain in animals through making microbial equilibrium in flora of intestine. The objectives of this study were to determine the effects of BioPlus 2B (*Bacillus subtilis* and *Bacillus licheniformis*) and yogurt (*Lactobacillus bulgaricus* and *Streptococcus thermophiles*) on health, weight gain, blood metabolites and elements, and fecal E. coli shedding in calves. Thirty milk-fed calves were distributed in 3 groups, 10 calves (5 females and 5 males) in each group separately in sporadic boxes. The control group was fed 3 times a day (7 am, 2 pm and 10 pm) as long as 30 days on pure milk besides starter, and the treatment groups on the same diet further BioPlus 2B (1 gr/2 lit milk, $1.6*10^6$ CFU/g food) and yogurt (200 gr yoghurt/1.8 lit milk, $1.6*10^6$ CFU/g food) at 2 pm meal. The scaling of weight, rectal swab for culture and blood samples were taken from calves on the day 1st, 15th and 30th of experiment. The data were analyzed through PROC mixed method, the software SAS9, and the average comparison among the fixed levels effects was done with the help of least square means (LSM). The result showed that the additive (BioPlus 2B and yogurt) decreased the urea concentration significantly ($p>0.05$) in probiotic groups. Urea concentration in blood serum at first period with third period was significantly different ($p>0.05$). Glucose concentration in BioPlus 2B and yogurt group was higher than control group ($p>0.05$).The average glucose concentration in female calves was more than in male calves. The probiotics and experimental period increased total protein ($p>0.05$) significantly. There was no significant effect of sex on the urea and total protein concentration. BioPlus and yogurt groups increased Ca and P concentration in blood serum significantly when compared to control group ($p>0.01$). The experimental period and sex had no significant effect on Ca and P concentration in blood serum. The probiotics, sex and experimental period had significant effect on weight gain ($p>0.05$). The average of *E. coli* shedding in faces at BioPlus 2B group was more than the other two groups. According to the obtained results, probiotics can be used in animals for better outcomes.

Biography

Gholamali Moghaddam has his expertise in Domestic Animals Pathophysiology. He is a Faculty Member at the University of Tabriz since 1984. He teaches the BSc, MSc and PhD students on Domestic Animals Health, Diseases and Physiology. He is interested in Animal Preventive Medicine field.

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