

EFFECTS OF ENCAPSULATED PROBIOTIC *ENTEROCOCCUS FAECIUM* STRAIN ON DIARRHOEA PATTERNS AND PERFORMANCE OF EARLY WEANED CALVES

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Abstract. The effects of probiotic (*Enterococcus faecium* M74 NCIMB 11181 strain) administration were studied at the Lithuanian University of Health Science in an experiment using 30 Lithuanian Black-and-White calves from 4 to 67 days of age after weaning. Calves were randomly assigned to two groups (control group -T1 and experimental group - T2) with 15 calves for each group and weighing on average of 39.7 (36–43) kg and 39.8 (37–41) kg respectively. The probiotic supplement was added to daily milk intake in experimental group: from day 4 to day 25 of age at a dose of 1.8 g (9.0×10^{10} CFU) per calf per day and from day 26 to day 67 of age at a dose of 0.3 g (1.5×10^{10} CFU (colony forming units)) per calf per day. Feed intake, body weight gain, feces microbial composition and general health condition of all calves were observed. Also condition of feces was examined daily and the occurrence of diarrhea was recorded throughout the experiment.

Probiotic supplementation reduced the number of diarrheic days per animal, severity and actual percentage of calves having diarrhea from 67 to 47%. Herewith, probiotic supplementation at day 67 of age reduced the faecal count of clostridia by 28.4 % ($P < 0.05$), when the population of enterococci was increased by 35.6 % ($P < 0.05$). Mean values of body weight at the end of experiment and weight gain during 63 days of experiment for treatments probiotic (T2) group and control (T1) group were 78.4 and 74.7 and 38.6 and 35.1 kg ($P < 0.01$) respectively. Dry matter intake illustrated that calves fed probiotic (T₂) from day 4 to day 46 of age had numerically greater (by 3.8% $P = 0.059$) dry matter intake than control (T1) calves. For the entire study period (63 days), calves fed probiotic (T₂) had greater by 10.1% ($P < 0.01$) daily weight gain ($P < 0.01$), also calves fed probiotic (T2) had numerically better feed conversion ratio than control (T1) calves ($P = 0.299$). The results of this study indicated that present probiotic (*Enterococcus faecium* M74 strain) have beneficial effects in rearing calves.

Keywords: calves, probiotic, growth performance, diarrhea, fecal flora.