

Use of bentonite in helping control diarrhea in calves - Chapaval L.^{*}, Oliveira M.C.S., Esteves S.N., Zafalon L.F.

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The favorable aspect of the use of natural minerals in the diet on the growth and weight gain in cattle and the parasite control has been evaluated. Some minerals such as zeolites act as a reservoir of NH₄ + allowing the rumen of microorganisms synthesize microbial protein continuously, resulting in a more efficient passage into the small intestine. These properties are also common to other aluminosilicates represented not only by the zeolites, but particularly by the clay minerals such as bentonite. Bentonite is the common name of clay mainly composed by montmorillonite clay mineral (55-70%), the group of smectites, regardless of their origin or occurrence. The Bentonites have as its main features, high capacity to absorb water, agglomeration, swelling and gel formation. This study aims to establish the role of bentonite to aid the control of diarrhea in calves. Some studies show that diarrhea in calves is a frequently observed clinical signs in cattle and is a major cause of losses in these herds. Eighteen animals will be used, Holstein, from birth to 60 days old, was randomly distributed as birth order, in three treatments. The control group will receive no milk added bentonite (T1) and the other two, increasing doses of mineral, 50 g (T2) and 100 g (T3) animal/day. The weight of the animals will be measured weekly and the hydration status will be evaluated individually. The stools are analyzed for the consistency, color, stool egg counting technique and microbiology.

Key-words: calves, bentonite, weight gain

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Use of bentonite in helping control diarrhea in calves

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INTRODUCTION

The favorable aspect of the use of natural minerals in the diet on the growth and weight gain in cattle and the parasite control has been evaluated. Some minerals such as zeolites act as a reservoir of NH_4^+ allowing the rumen of microorganisms synthesize microbial protein continuously, resulting in a more efficient passage into the small intestine. These properties are also common to other aluminosilicates represented not only by the zeolites, but particularly by the clay minerals such as bentonite. Bentonite is the common name of clay mainly composed by montmorillonite clay mineral (55-70%), the group of smectites, regardless of their origin or occurrence. The Bentonites have as its main features, high capacity to absorb water, agglomeration, swelling and gel formation. Some studies show that diarrhea in calves is a frequently observed clinical signs in cattle and is a major cause of losses in these herds.

MATERIAL and METHODS

Were used eighteen animals, Holstein, from birth to 60 days old, that was randomly distributed as birth order, in three treatments. The control group received no bentonite in milk (T1) and the other two, increasing doses of mineral, 50 g (T2) and 100 g (T3) animal/day. The weight of the animals was measured weekly and hydration status was evaluated individually by skin-tent duration on neck, thorax, and upper and lower eyelids. The faeces were analyzed for the consistency, color, eggs per gram technique and microbiology. Anaerobic and aerobic bacteria were cultured at 37°C in brain heart infusion medium (Difco Laboratories, Detroit, Mich.) under anaerobic (10% CO_2) or aerobic (no CO_2) conditions.



RESULTS

When treatment, sex or individual were evaluated, there were no significant differences between weights of calves. The weight data were analyzed using the GLM procedure of SAS statistical package that included in the model the effects of treatment (TRAT), sex of calf, day of weighing, and their interactions over the residue. There were no significant differences in weight between treatments. No animal showed signs of dehydration during the experiment and EPG (eggs per gram) exams with results zero. In the microbiological examination of faeces of calves there was a predominance of enterobacteria but the faeces were more consistent and dried in the animals fed the bentonite in milk. More research should be carried out for evaluate the change in intestinal microflora and the effects of bentonite in development of calves and control of diarrhea.



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