

THE EFFECT OF MINERAL SUPPLEMENTATION ON THE CONCENTRATION OF MICROELEMENTS IN BLOOD OF MILKING COWS

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Summary. The purpose of this study was to determine the effect of inorganic and mixed supplementation on mineral status in milking cows. Sixty milking cows were randomly divided into 3 groups of twenty animals in each. All cows were fed a common diet used for milking cows. In addition, cows in group 1 were fed with inorganic supplementation, in group 2 with a mixture of inorganic and organic supplementation, and animals in group 3 had no supplementation (controls).

Blood samples were taken and delivered to the laboratory <1 hour, centrifuged for 5 minutes at 3000 times/min and kept at – 20°C. Levels of microelements in sera were determined by atomic absorption spectrophotometry “Zeeman 3030”. Iodine concentrations in blood plasma were determined by Inductively-Coupled Plasma Mass Spectrometer ELEMENT-2.

Our results revealed that the level of Mg, Zn, Cu, Co and I in the blood of experimental cows in groups 1 and 2 significantly increased after 3 and 2 month of diet supplementation as compared to controls (group 3). Furthermore, the level of Mg, Zn, Cu, Co and I in the blood cows of group 2 on mixed supplementation after 3 month was respectively on 5.81%, 1.26%, 1.03%, 3.44% and 2.86% higher compared to cows on inorganic supplementation (group 1). The results from this study demonstrated that mineral supplementation can have a marked effect on the mineral elements level in milking cows and are essential for keeping microelements level within physiological norm.

Keywords: cows, blood sera, mineral supplementation, microelements.