

CHANGES IN QUANTITY OF MACRO-ELEMENTS AND IN ACTIVITY OF ENZYMES IN BLOOD SERA OF HEALTHY AND SICK COWS

Irena Klimienė, Vytautas Špakauskas, Laimis Jodkonis

Summary. Feeding-stuffs have an important influence on the quantity of calcium, phosphor, magnesium, sodium and potassium in blood serum, and changes in their quantity define the manifestation of milk-fever and osteomalacia. Hypocalcemia, hypophosphatemia and hypomagnesemia were determined for calved and sick cows with non-balanced ration ($p<0.05$). Lower degree hypocalcemia and less changes in the quantity of phosphor, magnesium, sodium and potassium were determined in the blood sera of dry and calved cows fed with feeds supplemented with mineral additives. The quantity of calcium and phosphor is diminished (up to 1.89 ± 0.12 mmol/l and 0.71 ± 0.06 mmol/l respectively), and the quantity of magnesium and sodium is risen in the blood of cows with milk-fever. Correlation between the quantity of calcium and phosphor in the blood sera of cows with milk-fever was $r=0,6993$. In comparison with healthy cows, cows with osteomalacia had low quantity of calcium, phosphor and magnesium (up to 2.16 ± 0.06 mmol/l, 0.91 ± 0.23 mmol/l and 0.61 ± 0.10 mmol/l respectively) and high quantity of sodium (up to 172.0 ± 1.14 mmol/l). Increased activity of amylase was determined in the blood sera of cows with non-balanced ration and sick cows. Increased activity of alkaline phosphatase was determined in the blood sera of sick cows.

Keywords: cows, osteomalacia, milk fever, macro-elements, enzymes.