

THE LEVELS OF IODINE IN BLOOD SERA OF HEALTHY AND SICK COWS

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Summary. Iodine is an essential trace element for humans and animals. More than 95 % of total iodine is accumulated in the thyroid gland. The blood levels of microelements iodine was examined in 64 cows, which included healthy cows and cows with paresis. Iodine concentrations in blood were determined by Inductively-Coupled Plasma Mass Spectrometers ELEMENT-2 (ThermoFinnigan AB). Levels of thyroid hormone (triiodothyronine and thyroxine) were determined using the enzyme linked immunosorbent assay (ELISA).

Iodine concentration in blood serum ranged from 40 µg/l to 110 µg/l. The level of iodine was below the physiological norm (105 µg/l). The level of iodine decreased in blood of cows after parturition. The median iodine concentration of summer blood was significantly lower (95.8 ± 7.25 µg/l) than the iodine concentration of autumn and spring blood. Levels of iodine were negatively related to the daily milk yield ($r = -0.15$). The blood serum levels of iodine changed depending on age: the blood serum level of iodine were significantly higher in cows aged 6-8 years compared to cows of 3-5 years old and heifers. After postmilking teat dipping with iodophor (1 g available iodine/l) the iodine concentration increased significantly from 14 to 36 micrograms/l.

Key words: cows, blood sera, iodine.