

INFLUENCE OF STABLE IODINE ON BIOCHEMICAL PARAMETERS OF BLOOD AND ON MORPHOLOGY IN BROILER CHICKEN

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Summary. The influence of different dosages of the stable iodine from the product „Stabile Iodine Water Concentrate“ on the organism of broiler chicken and on features of accumulation of iodine in the organism were investigated.

The results showed that the level of free tiroksine FT4 in the blood of broiler chicken steadily increased and depended on concentration of iodine in the drinking water. In experimental group where the concentration of iodine in drinking water was highest (5 mg/l H₂O), level of FT4 was highly significantly on 38,10% higher compared with controls (P<0.001). In experimental group where iodine was added at the rate of 0.5mg/l of water, the level of FT4 was on 13,5% higher compared to controls (P<0.01). Further, the levels of free tri-iodine tironine (FT3) in both experimental groups was slightly lower compared with controls. The broiler chicken on iodine 5mg/l drinking water supplementation had on 3.8-8.5% decreased the average liver weight compared to controls.

The histology results showed, that in experimental groups the activity of thyroid was lower in both sexes of broiler chicken compared with controls. Accumulation of iodine in chicken liver and muscles was highest in 21 day and 42 day old chicken on 5mg iodine/l drinking water supplementation.

The results from this study showed that supplementation of drinking water with stable iodine have potential value to improve biochemical parameters of broiler chicken blood and morphological features of the thyroid. This is a positive factor and have potential value to use the stable iodine in drinking water instead the potassium iodine as a supplement in chicken feed. Consideration should also be given to the accumulation of iodine in muscles and liver of broiler chicken. Our results indicate that the drinking water supplementation with stable iodine may help to obtain iodine-enriched poultry products which can be used in human nutrition as a functional food.

Key words: stable iodine, broiler chicken , thyroid activity, functional food.