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THE INFLUENCE OF AGRONOMIC GROWTH TECHNIQUES ON THE CALCIUM POTENTIAL IN POULTRY PRODUCTS

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One of the persistent trends in the poultry industry is the massive use of intensive bird rearing techniques - in batteries, in closed spaces. The determined aim of this investigation was to make a comparison between the amount of Ca accumulated in poultry products, coming from poultry farm with industrial rearing conditions and birds raised under organic farm conditions.

The food product sample with a mass of about 5 g was subjected to calcination, then mineralization. To 2.5 ml of mineralized ash were added 3 ml of ammonium oxalate solution, 0.2 N, and 0.5 ml of ammonia solution, 25%. Upon subsequent heating for 10 min. calcium oxalate sediment is formed. The sediment is separated with the help of a Bunsen flask, then dissolved with H_2SO_4 conc., approx. 2 ml. The obtained extract is brought to 20 ml with distilled water. To each extract sample, which contains Ca ions and oxalate ions in a soluble state, was added 5 ml of $KMnO_4$, 0.02 N, an amount that in the given case is in excess. Residual Ca was titrated with sodium thiosulfate, $Na_2S_2O_3$, 0.02 N. Next step was the calculation according to the equilibrium reactions.

The conditions of raising chickens drastically influence the amount of calcium accumulated in the resulting products. A particularly large difference was observed for chicken liver, the one obtained from the organic farm exceeded 1.7 times the amount of accumulated calcium compared to the similar product from the industrial farm. The amount of calcium accumulated in hen legs is 42 mg% for industrial conditions and 56 mg% for ecological conditions, in hen liver, respectively 28 and 47 mg%. In the case of chicken legs, the difference in calcium content is reflected in the difference in tenderness. The egg yolk did not show much difference in calcium when comparing the growth regime.

Poultry products do not contain significant amounts of calcium, but even the smallest variations of this element can influence the nutritional value and technological qualities.

In general, the rearing regime of birds, under industrial or ecological conditions, differently influences the accumulation of calcium in the resulting poultry products.

Keywords: calcium content, ecological rearing techniques, industrial rearing techniques, nutritional value, poultry products, technological qualities.