

COMPARISON OF CONTENT OF SELECTED MINERALS AND CADMIUM IN CHICKEN AND GOOSE LIVER

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Abstract

Abstract: The aim of the study was to compare the content of selected metals in raw chicken and goose liver. The study was carried out on three chicken breeds (New Hampshire, Plymouth Rock, Rhode Island) obtained from National Research Institute of Animal Production in Balice and Zatory Landrace goose breed obtained from Department of Poultry, Fur Animal Breeding and Animal Hygiene-Experimental Station in Rzaska. The analysis of Fe, Cu, Mn, Zn and Cd were performed in 24 samples by atomic absorption spectrometry (using Varian AA240Z and AA240FS spectrometer) after microwave digestion (MARS Xpress, CEM). The concentrations of investigated minerals in chicken liver samples were found to be in the range of 63.09-146.47 mg/kg for iron, 3.46-5.34 mg/kg for copper, 2.99-4.99 mg/kg for manganese, 40.19 and 59.42 mg/kg for zinc and 0.03-0.06 mg/kg for cadmium. The minerals content of goose liver was found to be much higher as compared to chicken liver. Minerals content in goose liver samples were to be in the range of 52.93-659.84 mg/kg for iron, 39.32-64.45 mg/kg for copper, 3.43-5.32 mg/kg for manganese, 50.87-67.20 mg/kg for zinc and 1.10-4.12 mg/kg for cadmium. The concentration of cadmium found in chicken liver in most instances is lower than the limits established by European Union legislation, in contrast to goose liver, where the concentration of cadmium highly exceeds the limits.

Key words: liver, chicken, goose, minerals, cadmium

Poređenje sadržaja odabranih minerala i kadmijuma u pilećoj i guščjoj jetri

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Rezime

Cilj ove studije bio je poređenje sadržaja odabranih metala u sirovoj pilećoj i guščjoj jetri. Istraživanje je sprovedeno na tri rase pilića (novi hempřir, plimut rok, rod ajland) Nacionalnog Instituta za stoćarstvo u u Balicama i Zatory rase gusaka iz Odeljenja za uzgoj živine i krznařica i higijenu životinja-Eksperimentalna stanica u Rzaska. Analiza Fe, Cu, Mn, Zn i Cd je sprovedena u 24 uzorka atomskom apsorpcijskom spektrometrijom (koristeći Varian AA240Z i AA240F spektrometar) nakon mikrotalasne digestije (MARS Xpress, CEM).

Koncentracije ispitivanih minerala u pilećoj jetri utvrđene su u rasponu od 63,09 do 146,47 mg/kg za gvoždje, 3,46-5,34 mg/kg za bakar, 2,99-4,99 mg/kg za mangan, 40,19 i 59,42 mg/kg za cink i 0,03-0,06 mg/kg za kadmijum. Utvrđen je sadržaj minerala u guščjoj jetri mnogo veći u odnosu na pileću jetru. Sadržaj minerala u uzorcima guščje jetre bio je u rasponu od 52,93 do 659,84 mg/kg za gvoždje, 39,32-64,45 mg/kg za bakar, 3,43-5,32 mg/kg za mangan, 50,87-67,20 mg/kg za cink i 1,10-4,12 mg/kg za kadmijum. Koncentracija kadmijuma utvrđena u pilećoj jetri u većini slučajeva je niža od granica utvrđenih zakonodavstvom Evropske unije, za razliku od guščje jetre, gde je koncentracija kadmijuma bila znatno iznad granice.

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