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Mercury concentrations in the digestive tract of muskrat from southern Poland

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Mercury is a xenobiotic metal which occurs in the environment in its most toxic form (methylmercury) mostly in sediments. The transfer level from the environment to living organism depends on many factors and is different in various environments. The aim of our study was to inquire the concentrations of total mercury in chosen parts of the digestive tract of muskrat *Ondatra zibetrhicus* L. from Zator fishponds area in southern Poland.

Animals were shot in April 2012, weighed, skinned and frozen (-18°C). Age was determined on the basis of molar wear. During the section in the laboratory of the Institute of Biology (Pedagogical University of Cracow) animals were sexed (5 females and 6 males) and samples of liver, stomach, large intestine, cecum and their content were taken. Concentrations of mercury were measured with CV-AA spectrometer (NIC MA-2; limit of quantification 0.2 ng) in the wet weight of samples. The differences in mercury concentrations between sexes were tested with T test. All analyses were performed with MS Excel 2010 PL and Statistica 10 EN.

All individuals were 24 ± 3 months old. The statistical differences in mercury concentrations between sexes were not statistically significant so the results of both groups were combined. The highest mean mercury concentrations in tissues was noted in caecum (0.0221 μg/g), the lowest one in liver (0.0105 μg/g). The concentrations in the content of the digestive tract fitted into the range from 0.0034 (caecum content) to 0.0096 μg/g (large intestine content). These results show that mercury is available in the studied ecosystem. In comparison of the found concentrations in liver to the literature data they can be evaluated as comparable to ones found in other mammals in Poland and Slovakia region.