

MEETING ABSTRACTS

TOTAL MERCURY IN GREATER MOUSE-EARED BATS (*MYOTIS MYOTIS*) FROM THE LOCALITY WITH COAL MINING HISTORY

Kamila Novotna Kruzikova¹, Jiri Pikula², Petr Linhart¹, Hana Bandouchova², Jana Sedlackova², Zdenka Svobodova¹

Presenting author: Kamila Novotna Kruzikova (novotnak@vfu.cz)

¹ Department of Animal Protection and Welfare and Veterinary Public Health, Faculty of Veterinary Hygiene and Ecology, University of Veterinary Sciences Brno, Palackeho tr. 1946/1, 612 42 Brno, The Czech Republic

² Department of Ecology and Diseases of Zoo Animals, Game, Fish and Bees, Faculty of Veterinary Hygiene and Ecology, University of Veterinary Sciences Brno, Palackeho tr. 1946/1, 612 42 Brno, The Czech Republic

The mercury is a persistent and widespread heavy metal with neurotic effects in wildlife. To determine the overall mercury exposure in the locality Zastávka u Brna (Czech Republic), total of 71 great mouse-eared bats (*Myotis myotis*) building demolition casualties (23 male and 48 female) were examined. Bats were classified as juvenile or adult. The 71 samples of fur, muscle and wing membrane were collected for analysis to determine total mercury concentrations (THg). The THg was determined by cold vapour atomic absorption spectrometry using AMA 254 analyzer (Altec Ltd., Dvur Kralove nad Labem, Czech Republic) in the fresh weight. The THg measured values ranged from 1.7 to 20.0 mg.kg⁻¹, from 0.05 to 0.25 mg.kg⁻¹ and from 0.03 to 0.19 mg.kg⁻¹ in the fur, muscle and wing membrane, respectively. The mean THg content in the fur, muscle and wing membrane was 6.2±4.03 mg.kg⁻¹, 0.1±0.041mg.kg⁻¹ and 0.084±0.03 mg.kg⁻¹, respectively. There was no difference between THg values in males and females as well as in the study by Åkerblom et al. (2017). The positive correlation between THg content in analyzed tissues were found (fur and muscle p=0.000; r_s= 0.5501; muscle and wing membrane p=0.000, r_s=0.7855; wing membrane and fur p=0.000 r_s=0.6385). According to Zukal et al. (2015) the bats are suitable trophic guild as an indicator of general environment condition.

This study was supported by ITA VETUNI 2022 (Project No. 2022ITA21).

Keywords: heavy metal; contamination; *Myotis myotis*; Czech Republic; fur

References

1. Åkerblom S, de jong J. Mercury in fur of Daubenton's bat (*Myotis daubentonii*) in Southern Sweden and comparison to ecotoxicological thresholds. Bull Environ Contam Toxicol. 2017;99:561-566.
2. Zukal J, Pikula J, Bandouchova H. Bats as bioindicators of heavy metal pollution: history and prospect. Mammalian Biology. 2015;80:220-227.