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**Heavy metal concentrations in carp fish pond water**

Ivana Sabolek1\*, Anamaria Ekert Kabalin1, Damir Pavliček2, Tiana Novosel2, Vesna Jaki Tkalec2, Albert Trstenjak1, Ivana Tlak Gajger1, Željko Pavičić1, Kristina Matković1, Mario Ostović1

1 isabolek@vef.unizg.hr, University of Zagreb, Faculty of Veterinary Medicine, Zagreb, Croatia

2 Križevci Veterinary Institute, Croatian Veterinary Institute, Križevci, Croatia

**Abstract:**

**Background/Objective:** Heavy metal contamination of water sources is a matter of serious concern due to their toxicity, persistence and bioaccumulation, threatening both aquatic ecosystems and human health. This study aimed at investigating heavy metal concentrations in fish pond water.

**Methods:** The study was performed on a carp fish pond populated with ~1500 commercial fish of 1.5-2 kg mass during a winter-spring period. The study took 45 days. Metal concentrations were measured at 15-day intervals using standard laboratory methods.

**Results:** Aluminium (Al), arsenic (As), barium (Ba), beryllium (Be), boron (B), copper (Cu), iron (Fe), lithium (Li), manganese (Mn), strontium (Sr), uranium (U), vanadium (V) and zinc (Zn) were determined in the fish pond water at the following concentrations: Al (41.0-352.7 μg/L), As (0.2-20.0 μg/L), Ba (5.0-18.0 μg/L), Be (1.3-13.0 µg/L), B (15.0-60.6 μg/L), Cu (2.0-5.2 μg/L), Fe (10.0-145.2 µg/L), Li (3.2-18.8 µg/L), Mn (10.9-38.0 µg/L), Sr (81.0-106.0 µg/L), U (1.0-13.0 µg/L), V (9.1-15.2 µg/L) and Zn (2.0-16.3 µg/L). Final concentrations of Al, Ba, Fe, Mn and Sr were significantly lower (*P*<0.05), and final concentrations of As, Be, B, Cu, Li, U and Zn significantly higher (*P*<0.05) than their initial concentrations, while the concentration of V did not differ significantly (*P*>0.05) between the end and the beginning of the study.

**Conclusion:** Although the measured concentrations of these elements did not seem to pose a health risk, study results suggested regular monitoring and implementation of economic and ecologically acceptable methods to reduce their concentrations in pond water.

**Keywords:** aquaculture, water quality, heavy metals, carp farming