PP-262

The Heavy Metal Concentrations in Water, Sediment, Soil and Muscle Tissues of Fish from Kabaklı Pond

Birol OTLUDİL[1], M. Abdullah YILMAZ[1], Enes ARICA[1], Pelin UĞURLU[1], Erhan ÜNLÜ[2]
[1]Science and Technology Application and Research Center, Dicle University, Diyarbakır, Turkey
[2]Biology Department, Science Faculty, Dicle University, Diyarbakır, Turkey
birolotludil@dicle.edu.tr

Aim of the study: the aim of the study is to determine heavy metal concentration of water, sediment, soil and muscle tissue of fish in the contaminated pond (Kabaklı Pond) where massive fish dead were seen.

Material and Methods: Fish, water, sediment and soil samples were collected from Kabaklı pond, Diyarbakır, Turkey. The samples were dried and digested with microwave. After digestion samples were diluted with 15 ml with ultra-pure water. All samples were analyzed triplicate times for V, Cr, Mn, Co, As, Se, Mo, Cd, Sb, Ba, Hg, Tl and Pb by Agilent 7700X inductively coupled plasma mass spectrometry (ICP-MS). Working standard solutions for system calibration and control of analytical accuracy were obtained by dilution of the stock solutions (1 mg l^{-1} for ICP-MS).

Results: In the water samples the Ba had the highest concentration (50,702 µg l^{-1}). In parallel, Ba concentration in the sediment was also the highest (141.230 µg l^{-1}). In the soil samples Co, As, Se, Mo, Sb, Ba, Tl and V concentrations were under the detection limits, but Cr had the highest concentration (1.000.000 µg l^{-1}). In the muscle tissues of the fish samples while Sb and Tl were below the permissible limits proposed by the Food and Agriculture Organization, World Health Organization and Turkish Legislation, V, Cr, Mn, Co, As, Se, Mo, Cd, Ba, Hg and Pb concentrations were above the limits.

Acknowledgements: We are thankful to Rectorate of Dicle University for their support.

Keywords: Heavy metals, Kabaklı Pond, ICP-MS, Water, Soil, Sediment, Fish.