

## ABSTRACT

The present study deals with the determination of heavy metal pollution load in water, adjoining soil, and various tissues, such as liver, kidney and muscle of Indian Bull Frog (*Hoplobatrachustigerinus*) inhabiting the study area. Three sampling sites were selected for periodical collection of samples, whereas concentrations of a number metal ion solutions were estimated, such as  $Pb^{+2}$ ,  $Cr^{+6}$ ,  $Cd^{+2}$ ,  $Ni^{+2}$ , etc. Additionally, various physicochemical characteristics, such as Dissolved Oxygen (DO), Total Dissolved Solids (TDS), Electrical conductivity (EC), pH and temperature of water and soil were also studied.

Concentrations of the heavy metal ions (Pb, Cd, Cr, Ni, etc.) in water, soil and various organs (liver, kidney and muscles) showed significant variation in comparison with NEQS (2000) and WHO standard (2008).

The results showed that  $Ni^{+2}$  was detected in kidneys (0.02 mg/Kg) and in muscles (0.05mg/Kg) at S2 and S3 respectively. A higher concentration of  $Pb^{+2}$  is calculated at S2 in all the studied tissues such as liver (0.11mg/Kg), kidneys (0.8 mg/Kg) and muscles (0.11mg/Kg).  $Cr^{+6}$  concentrations in muscles and kidney at all the studied sites (S1, S2 and S3) were in accordance with the permissible limits as described by WHO standards (0.05 mg/Kg). In various organs heavy metals were found accumulated beyond permissible limits as devised by WHO standards (2008).

Overall heavy metal concentration was measured in a descending order of  $S2 > S3 > S1$ . So the higher concentration of heavy metals was found at S2. Kidney was found more vulnerable for the accumulation of heavy metals.

Dissolved oxygen contents of all the sampling sites (S1, S2 and S3) along Hudiara Drain were extremely low (0.37-0.66 mg/L) which could not support aquatic life for long time. Putting all finding together, it can be concluded that the heavy metal pollutants which are leached through Hudiara drain round its vicinities are toxic to the wild life inhabiting these sites along Hudiara and might lead to decline in amphibian population in Lahore City.

**Keywords:** Heavy metal, accumulation, amphibians, Hudiara Drain.