

Abstract

Pollution of aquatic ecosystems with heavy metals is now of global concern due to their dangers to human health and persistence in the environment. An investigation on the spatial distribution of heavy metals in water and sediments and the bioaccumulation potential of heavy metals by plant parts (i.e. roots, stems and leaves) of aquatic macrophyte *Typha domingensis* (Pers.) Steud in a tropical reservoir was carried out. The results showed no difference in spatial distribution of heavy metals (Fe, Cu, Cd, Cr, Pb, Zn, Mn) in water and sediments from the riverine to the dam wall. The concentration of heavy metals Fe, Cu, Cr and Zn in *T. domingensis* was of the order root > stem > leaves, but for Pb, Cd and Mn, it followed the order root > leaf > stem. The metal transfer between roots and shoots of *T. domingensis* followed the order Zn > Pb > Fe > Cu > Cd > Cr. The bio-concentration factor (BCF) was low (BCF < 1) for all the selected metals while the transfer factor (TF) varied among metals suggesting that *T. domingensis* is not an accumulator of the studied metals. The high concentration of heavy metals found in the water (0.7-16.14 mg L⁻¹) and sediments (43.6-569.18 mg kg⁻¹) present a potential risk to both ecological health and human health for the population living in the area. The results of metal concentration in water and sediments from this study are important as a baseline for future monitoring studies. Further studies on bioavailability of metals to other macrophytes and aquatic organisms are recommended.