Study of phytoremediation of aquatic plants of Dez River *Potamogeton crispus*, *Ceratophyllum demersum*, *Polygonumhy dropiper* and *Phragmites australis* for bioaccumulation of heavy metals Cd, Pb, Zn and Cu

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Received date: 2014.09.06
Reception date:2015.01.05

Abstract
Contamination of aquatic ecosystems by heavy metals has become a critical environmental concern due to their potential adverse ecological effects. Aquatic macrophytes play an important role in the structural and functional aspects of aquatic ecosystems by altering water movement regimes, providing shelter to fish and aquatic invertebrates, serving as a food source, and altering water quality by regulating oxygen balance, nutrient cycles, and accumulating heavy metals. The ability to hyperaccumulate of heavy metals makes them interesting research candidates, especially for the treatment of industrial effluents and low cost and adaptability of this technology, it is considered by many experts. This study was conducted for bioaccumulation bioaccumulation of Cd, Pb, Zn and Cu for 4 aquatic plants (*Potamogeton crispus*), (*Ceratophyllum demersum*), (*Polygonum hydropiper*) and (*Phragmites australis*) in Dez River in 2012. The concentrations of heavy metals in 10 samples of sediments, roots, stems and leaves of aquatic plants were measured. From each station, three sample of surface sediment (to depth 10 cm) with 700 g, remove by plastic vessels. Results showed that, the highest concentrations of Zn were found in 3 stations, that reaching 240.33± 20.15- 279.67±30.11ppm in North to South sediments, respectively. The lowest concentrations, related to Cd, with 0.99± 0.001- 1.6± 0.10 ppm in North to South sediments, respectively. The concentration of heavy metals including Cu, Pb and Cd were less than the amounts reported by international legislation limits but the concentration of Zn was more than the recommended consumption limit. The statistical results showed that, root of (*Phragmites australis*) and leaves of (*Potamogeton crispus*), significant different with others plants organs ($P<0.05$).

Keywords: Heavy Metals, Aquatic Plants, Phytoremediation, Dez River.

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