Desalination and Water Treatment
www.deswater.com
19 (2010) 325–328
July
1944-3994 / 1944-3986 © 2010 Desalination Publications. All rights reserved.
doi: 10.5004/dwt.2010.1969

Bioaccumulation of nickel by aquatic macrophytes

Yesim Kara

Department of Biology, Pamukkale of University, Science and Letters Faculty, Denizli 20017, Turkey
Tel. +90 258 2963669; email: eylul@pau.edu.tr

Received 25 November 2009; Accepted in revised form 1 April 2010

ABSTRACT

Aquatic plants are being used successfully for the accumulation of trace elements in natural and constructed wetlands. Four aquatic plants were examined for their ability to remove heavy metals from contaminated water. In our study, bioaccumulation abilities of *Lemna*, *Apium*, *Ceratophyllum* and *Groenlandia* species were found. As for the results, different rates of Ni were removed mostly by *Groenlandia* on the 6th day correlated with time and concentration. The BCF rates for Ni are found in the concentration values ranging from 576 to 1867 mg g^{-1} for *Lemna trisulca*, 587–1116 mg g^{-1} for *Apium nodifolium*, 920–2945 mg g^{-1} for *Grolandia densa* and 489–774 mg g^{-1} for *Ceratophyllum submersum*. Maximum rates for Ni are determined for *Grolandia densa* and the minimum rate is 489–774 mg g^{-1} for *Ceratophyllum submersum*.

Keywords: Accumulation; Aquatic macrophytes; Heavy metal; Nickel; Removal