

Plant Screening of Halophyte Species for Cadmium Phytoremediation

Ulrico J. López-Chuken and Scott D. Young*

Division of Agricultural & Environmental Sciences, School of Biosciences, The University of Nottingham, Sutton Bonington Campus, LE12 5RD, UK. Fax : +44 (0)1159513251.

E-mail: scott.young@nottingham.ac.uk

* Author for correspondence and reprint requests

Z. Naturforsch. **60c**, 236–243 (2005)

Chloride (Cl^-) has been related to increased phytoavailability of cadmium (Cd) in soil. A glasshouse experiment using a historically contaminated soil was undertaken to evaluate the effect of chloride on Cd uptake by salt-tolerant plants and possibly quantify the uptake of discrete Cd species (*e.g.* Cd^{2+} , CdCl^+ , CdCl_2^0). Chloride treatments were applied as 100 mM NaCl and compared with equivalent Na_2SO_4 treatments. Activities of Cd species in soil pore water were calculated using the WHAM-VI speciation model. Cadmium solubility and uptake by plants was generally enhanced by addition of chloride to soil. Good correlations were found between Cd uptake and concentrations of Cd chloride complexes in soil pore water.

Key words: Cadmium, Phytoextraction, Salinity