

Evaluation of the bioaccessible gastric and intestinal fractions of heavy metals in contaminated soils by means of a simple bioaccessibility extraction test

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© 2017 Elsevier Ltd A study is made to evaluate the bioaccessibility of heavy metals in contaminated soils through a simple bioaccessibility extraction test (SBET), applied to the analysis of both the gastric and intestinal phases. Soils with high metal content of the Mapocho, Cachapoal, and Rancagua series were studied; they are located in suburban areas of large cities in the central valley of Chile. The bioaccessible concentrations of Cd, Cr, Cu, Ni, Pb, and Zn were related to the main physicochemical characteristics of the soils and to the chemical forms obtained by sequential extraction. The elements Cd, Cu, Ni, and Zn are distributed in the soils between the exchangeable fractions, bound to oxides, to organic matter, and in the residual fraction. On the other hand, Cr and Pb are found mainly in the fractions bound to organic matter and in the residual fraction. The three soils have a high Cu content, (640?2060 mg/kg), in the order Cachapoal > Rancagua > Mapocho. The SBET test all