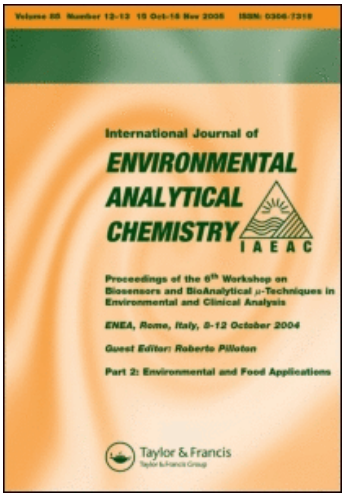

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Preface

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PREFACE

This special issue of the *International Journal of Environmental Analytical Chemistry* contains selected papers presented at the workshop on Sequential Extraction in Sediments and Soils held in Sitges, Spain, on 29 March–1 April 1992. This event was organized by the Community Bureau of Reference (BCR) of the Commission of the European Communities and the Department of Analytical Chemistry of the University of Barcelona, in collaboration with the Comissió Interdepartamental de Recerca i Innovació Tecnológica and the Departament de Medi Ambient de la Generalitat de Catalunya. The chairman of the organizing committee was Prof. Dr Gemma Rauret; members were Prof. Dr Ulrich Förstner, Dr Bernard Griepink, Dr Herbert Muntau, Dr Philippe Quevauviller, Dr Roser Rubio, Dr Wim Salomons, Dr Allan Ure and Prof. Dr Miguel Valcarcel. The local organizing team was composed of students of the University of Barcelona, namely Mr. J. Alberti, Miss V. Hatje, Dr J.F. López, Mr. A. Padro, Miss A. Sahuquillo and Mr. M. Vidal.

The determination of extractable trace metal contents in soils and sediments is currently performed in many laboratories to assess the bioavailable metal fraction (and related potential phyto-toxic effects) and the importance and possibility of mobilization of trace metals from polluted soil, sludge or sediment upon landfill application. Single and sequential extraction schemes are used for the assessment of the different "forms" of trace metals often defined as e.g. "mobile/bioavailable", "carbonate-bound", "residual" etc. The term "speciation" is generally used although the group determinations being operationally defined, this wording strictly speaking cannot be applied. The lack of uniformity in the different extraction procedures used do not allow the results to be compared worldwide or the procedures to be validated which has led to many criticisms in the past few years. Indeed, the results obtained are highly dependent on the extraction procedures used. Moreover, the lack of suitable reference materials for this type of analysis did not enable the quality of the measurements to be controlled. Owing to the need for establishing common schemes for single and sequential extractions as well as for the improvement of the quality of extractable trace metal determinations in soil and sediment, the Community Bureau of Reference (BCR) has organised a project of which the first step was to adopt common procedures after consultation with European experts and to test these procedures in interlaboratory exercises.

At this stage, it was found highly necessary to discuss thoroughly the results obtained so far and a workshop was therefore held for this purpose with all the participants in the project. The aim of the workshop was to establish the state of the art of extractable trace metal determinations, to define the use, applicability and necessity of the determination of forms of metals, to investigate where limitations exist and discuss the work necessary to overcome these.

The workshop was attended by 52 participants from 13 European countries; it focussed on three types of activities: lecture introductions, round-table discussions and plenary

sessions. In addition, an informal poster exhibition took place in order to facilitate the exchange of opinions. The following four topics were discussed in round-tables:

— Sampling,
— Practical experience with reagents and matrices,
— Analytical problems after extraction,
— Ammonium acetate extraction, justification and precautions for use.

Plenary lectures dealt with the aims and background of the project, general concepts and applications of extraction procedures, modelling leaching studies and quality control. The practical aspects of single/sequential extraction were illustrated by a video tape presentation. The recommendations issued from the round-table discussions and plenary sessions are summarized in this special issue as well as the plenary lectures. The discussions show that the adoption of common schemes could attribute to the development of an international norm (e.g. ISO, CEN) which hence would allow for a worldwide comparison of the results obtained.

The selected papers of this issue give examples of the present state of the art of single/sequential extraction analyses and highlight the strong need for the use of well defined and validated extraction procedures.

The editors thank their colleagues for their contributions to the success of the workshop.

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