



Towards a green analytical laboratory: microextraction techniques as a useful tool for the monitoring of polluted soils

Ignacio Lopez-Garcia (), Pilar Viñas (), Natalia Campillo (), Manuel Hernandez Cordoba (), and Carmen Perez Sirvent ()

(2) University of Murcia, Faculty of Chemistry, Department of Agricultural Chemistry, Geology and Pedology, Murcia, Spain (melita@um.es), (1) University of Murcia, Faculty of Chemistry, Department of Analytical Chemistry, Regional Campus of International Excellence “Campus Mare Nostrum”, Murcia, Spain

Microextraction techniques are a valuable tool at the analytical laboratory since they allow sensitive measurements of pollutants to be carried out by means of easily available instrumentation. There is a large number of such procedures involving miniaturized liquid-liquid or liquid-solid extractions with the common denominator of using very low amounts (only a few microliters) or even none of organic solvents. Since minimal amounts of reagents are involved, and the generation of residues is consequently minimized, the approach falls within the concept of Green Analytical Chemistry. This general methodology is useful both for inorganic and organic pollutants. Thus, low amounts of metallic ions can be measured without the need of using ICP-MS since this instrument can be replaced by a simple AAS spectrometer which is commonly present in any laboratory and involves low acquisition and maintenance costs. When dealing with organic pollutants, the microextracts obtained can be introduced into liquid or gas chromatographs equipped with common detectors and there is no need for the most sophisticated and expensive mass spectrometers. This communication reports an overview of the advantages of such a methodology, and gives examples for the determination of some particular contaminants in soil and water samples

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