

# Continuous pressurized solvent extraction of polycyclic aromatic hydrocarbons from biosolids. Assessment of their lability in soils amended with biosolids

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An extraction method of polycyclic aromatic hydrocarbons (PAHs) from biosolids, based on continuous pressurized solvent extraction (PSE), was developed and optimized through an experimental design and followed by gas chromatography-mass spectrometry determination. From multivariate analysis, the optimum values for extraction variables were: extraction temperature, 110°C and dynamic extraction time, 42 min, by using a mixture of dichloromethane and acetone (1:1, v/v) as the extraction solvent at a flow rate of 1 ml min<sup>-1</sup>. Under optimum extraction conditions, the detection limits for the analytes were between 0.01 and 0.14 mg kg<sup>-1</sup> with recoveries of between 50 and 126%, which were determined by analysis of certified reference material (Sewage Sludge PAH, LGC6182). The method was applied to assess the lability of PAHs in soils amended with biosolids. It was confirmed that a fraction of these compounds undergoes strong retention in the soil, probably due to interaction with humin material.