

Accelerated Solvent Extraction-Gas Chromatographic Determination of Acidic Herbicides in Soil

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Accelerated solvent extraction with water extractant is an effective procedure for isolation of phenoxy acid and phenolic herbicides (MCP, MCPA, 2,4-D, 2,4,5-T, PCP, dinoseb, dinoterb) from soil. SPE was used to transfer analytes from an aqueous to an organic solvent, in which acidic herbicides were effectively derivatised using methyl iodide in the presence of trimethylphenylammonium hydroxide at 85°C. In the final step of GC-MS determination, detection limits for phenoxy acid and phenolic herbicides were in the range of single ng g⁻¹ and ca 20 ng g⁻¹, respectively. Real soil samples from arable fields and former pesticide dump area were successfully analysed.