

ABSTRACT

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Title of thesis: Comparison of manual and dynamic extractions of selected transition metals from solid samples

The analysis of trace metals in soil is a subject of study in many laboratories. Due to large industrial areas soil can be highly contaminated. This work focused on two easy methods – manual extraction and single flow extraction with the same extractant –acetic acid. Two methods, two concentrations of acetic acid (0.11 M and 0.43 M), and two samples were used to evaluate, which conditions were more effective. As a detection device inductively coupled plasma - optical emission spectrometry was selected and two different wavelengths were used to prevent interferences.

Manual extraction was more time-consuming and less reproducible than the dynamic extraction. Higher concentration of acetic acid extracted a larger amount of metals and the extraction showed higher reproducibility of the results. In both soils the contaminations with Cu outreached the permitted level for this metal (according to the requirement of the government of the Balearic Islands) and are potentially contaminated.