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MONITORING OF MOBILIZATION AND UPTAKE OF NUTRIENTS IN RESPONSE TO EDTA ADDITIONS TO A CONTAMINATED AGRICULTURAL SOIL

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Abstract

Mobilization of micro- and macronutrients and their uptake by *Zea mays* L. and *Triticum aestivum* L. in response to EDTA additions to risk metal contaminated agricultural soil was monitored over a three year period on the field scale. EDTA addition effectively increased the mobility of total water-soluble micronutrients (Cu, Fe, Mn) and macronutrients (Ca, Mg, P) in soil extracts. Mobilization was highest in the first year and decreased strongly over time. Elements with a high affinity for EDTA (Cu and Fe) were slightly increased two years after application of EDTA down the soil profile, indicating the possibility of nutrient discharge into the groundwater and thereby a loss of soil fertility. Nutrient concentrations in grain and straw of *T. aestivum* were higher for Cu and Fe up to two years after EDTA application whereas Mg concentrations were lower.

Keywords: contaminated soil, EDTA, nutrients, phytoextraction, *Triticum aestivum*, *Zea mays*

Received: April, 2013; Revised final: February, 2014; Accepted: February, 2014

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