



Changes in soil properties after solid urban residue compost addition

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Organic by-products, for instance compost application to soil improve both chemicals and physicals soil properties. However, there is a need to minimize negative impacts of these organic by-products on the environment. The aim of this study was to assess the effects that compost addition exerts on general soil properties and selected microelements (Fe, Mn, Cu and Zn) of different soils from the metropolitan area of A Coruña (NW Spain). Samples were taken in a total of 49 plots during 2000 and 2001, 20 of these plots were treated with compost from solid urban residues and no addition was performed to the rest. Sampling was carried out randomly and at 0 to 20 cm depth. Using routine techniques, the following attributes were analyzed: pH, texture, organic carbon and nitrogen contents and cation exchange capacity. Microelement contents were determined after an acid extraction with Mehlich-3 and DTPA. Moreover, total contents of those elements were measured both semi quantitatively by FRX and quantitatively after acid digestion. The microwave technique was used for digestion with HNO_3 (EPA-SP-846-305); analysis was performed by ICP-MS. Non-significant differences were observed among treatments on nitrogen content and pH; however, organic carbon was found to be higher in samples where compost has been added. No significant differences were found between compost and non-compost sites regarding the selected microelements when determined after DTPA extraction. However, significant differences were observed when these elements were estimated after Mehlich-3 extraction. Cu and Zn presented a high variability and they were greater than the reference values in some occasions.

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