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Heavy Metals Content of Two Red Soils in Samar, Philippines

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ABSTRACT

The study evaluated the total and available heavy metal (Cd, Cu, Cr, Pb, Ni, and Zn) contents of two red soils in Samar, Philippines, one developed from slate near a mining site (Bagacay soil) and the other from serpentinite (Salcedo soil), a well-known source of heavy metals. Soil samples were collected from every horizon in each profile and samples were digested using *aqua regia* and NH4NO3 to determine total and available heavy metals content, respectively. Results revealed that Salcedo soil had high contents of total Cr (average: 1353 mg kg-1), total Ni (average: 610 mg kg-1), and available Cr (average: 0.19 mg kg-1) that exceeded the maximum allowable contents in agricultural soils but it had low amounts of the available form of the heavy metals. Bagacay soil showed very low contents of both total and available heavy metals due to their low amounts in the parent rock. The red Bagacay soil showed no effect of the nearby mining activity.

Keywords: heavy metals, soil pollution, red soils, Samar island, mining, serpentinite