



Concentrations and distributions of Al, Fe, Ba and Zn in soils of Pre-Littoral Range, Sector Sentmenat (Catalonia, Spain).

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The Pre-Littoral Range is one of the six morphological units of the Barcelona province parallel to the coast, formed to the SW of the Lobregat fault by conglomerates, sandstones, and limestones. This Mesozoic-Paleogene range covers Paleozoic sediments with outcrops showing mainly Silurian schists and also granites. The main soils are Alfisols, Inceptisols and Entisols. Concentrations and distributions of five elements – Al, Fe, Ba and Zn – in 28 Sentmenat soil profiles (117 soil samples) were investigated. Background data ranges were estimated with the box plot [median \pm 2 median absolute deviation (MAD)] procedure as follows: Al: 6115 – 13731 mg kg⁻¹, Fe: 7322 – 15106 mg kg⁻¹, Ba: 17.6 – 90.8 mg kg⁻¹ and Zn: 16.3 – 40.7 mg kg⁻¹. Median concentrations of Ba and Zn are lower than the concentration in other European countries. Al concentrations were correlated with clay content, and Ba and Zn were negative correlated with CaCO₃. Element distributions in soils reflected parent materials and pedogenic factor determining variation between and within soil profiles. Generally, metal contents decreased in the order of Alfisols > Entisols > Inceptisols and A > B > C horizons.