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Soil and Water Research

Systematic geochemical study of the soils, litter, and bedrock of a Permian limestone mountain, Central Japan

Ueno S., Sugitani K.:

Soil & Water Res., 8 (2013): 178-185

[fulltext]

The paper deals with the results of a systematic geochemical study of soils at Mt Kinshozan in Central Japan, a limestone area known for its wellpreserved Permian fossils. Compared with the typical composition of the Japanese upper continental crust, here the soils were found depleted in Si, Ca, Na, Mg, and K and rich in Ti, Al, and Fe. They were enriched with some heavy metals (Cr, Ni, Cu, Pb, and Zn) detected also in the acetic-acid residue of the limestone collected from Mt. Kinshozan. Therefore, the residual materials produced through chemical weathering of the limestone bedrock may have significantly contributed to the soils formation. Concentrations of C_{total} were nearly identical to $\mathbf{C}_{\mathrm{org}}$ and the relationship between C_{total} and Element/TiO₂ suggested a significant contribution of the litter to Si, Mg, Ca, and P in the soils.

Keywords:

chemical composition; enrichment factor; nutrient; plant

[fulltext]

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