



## **Comparative chemical analyses of soils formed on carbonate rocks in Hungary**

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The present study focuses on the physical and chemical investigation of soils formed primarily on carbonate rocks. One part of the investigated soil profiles originated from the top of the Bükk Hills, the Bükk-Highlands' limestone plateau, which is located in the North-Eastern part of Hungary. The rest of the samples were taken from the Szárhalom Forest (located in West Hungary). The different location and climate of the sites forms a basis of the comparison of the soils with similar base rock. These soils are formed mainly on limestones, however they differ significantly in terms of certain characteristic properties.

The following physical parameters were evaluated from the samples: transition, structure, compactness, roots, skeletal percent, colour, physical assortment, concretion and soil defect. Laboratory analysis involved the measurement of acidity, particle distribution, carbonated lime content, humus content, ammonium lactate-acetic acid soluble phosphorus- and potassium content, potassium chloride soluble calcium- and magnesium content, ethylene-diamine-tetraacetic-acid (EDTA) and diethylene-triamine-pentaacetic-acid (DTPA) soluble copper-, iron-, manganese- and zinc content. X-ray diffraction, thermoanalytical measurements and ICP-OES were also carried out to determine the mineral composition of the soils and the content of heavy metals. Evaluation focused on the comprehensive analysis of the data with a special regard to possible relationships and correlations.

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