



## **Lessivés and clayic brown soils consisting of loess over brown loam at Triassic Shell Limestone. Pedogenic ferric oxides and total ferrous content describing pedogenic and lithogenic features**

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Substrates of different age, properties and origin are participated in the configuration of the Late Quaternary close subsurface at Triassic Shell Limestone: limestone debris, limestone brown loam (and red loam), loess derivates. They generate cover bed complexes of high small-scale, material and facies variability. The example of Shell Limestone illustrates that on limy rocks (75 - >95%  $\text{CaCO}_3$  content) periglacial cover beds of greater differentiation and divergent properties may exist, compared to quartzous or siliceous locations. This also leads to difficulties in parallelisation of these substrates. Stratified soils - lessivés and clayic brown soils over limestone brown loam - are typical soil types with small-scale alteration and interlocking also with non-stratified soils (rendzina types). In four forested study sites in the eastern Basin of Thuringia the dependency of soil to relief, substratum and other factors is investigated. Pedogenic ferrum and total ferrous content are used to estimate holocene pedogenesis, which is also linked to layer boundaries, and to distinguish pedogenic processes and lithogenic properties. These are pre-holocene weathering and intensity of weathering of the participated substrates, lithogenic ferrous contents and recent generation of limestone brown loam although under large loess cover. Non-sequential-fractionated pedogenic ferrum (dithionit- and oxalate soluble fraction), total ferrous content (nitrohydrochloric acid pulping), again "level of activity" (Feo/Fed) and several ratios (e.g. Fed/Fet, Fed-o/clay, Fed-o/(Fet/clay) and compared to other methods of layering proof) are used.