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# What is the story that soil tells us? Environmental and anthropogenic change

Merrit Shanskiy (1), Aivar Kriiska (2), and Ester Oras (2)

(1) Department of Soil Science and Agrochemistry, Estonian University of Life Sciences, 1 Fr. R. Kreutzwaldi Str., 51014 Tartu, Estonia, (2) Department of Archaeology, University of Tartu, Jakobi 2, 51014 Tartu, Estonia

The archaeological studies have shown the evidence of human impact on soils functioning.
On the other hand, the changed conditions of normal soil functioning will influence the human settlement in specific area. This study is part of a wider archaeological project on the environmental studies of the Kohtla Iron Age sacrificial site.

To obtain a data about soil cover around historical finding some 1500 years ago, special sampling and research were carried out at the study site located in Kohtla Vanaküla, northeastern Estonia where a valuable collection of metal weapons and tools was discovered. The aim of current study was to analyze the site-specific soils to find out the connections between soil records and human mediated historical land degradation. Also, the site specific conditions were studied in order to understand its impact on archaeological artefacts and their preservation conditions.

For the current investigation the soil sampling was carried out in July, 2014. The soils were described based on 20 soil pits. The site-specific soil morphological description was finalized and chemical analyses were performed at the laboratory of Soil Science and Agrochemistry, Estonian University of Life Science. Soil was air dried and passed through a 2- mm sieve. The chemical elements (P, K, Ca, Mg, Fe) were analyzed by using Mehlich 3 extraction by MP-AES analytical performance. Soil pH was measured from the soil suspension with 1M KCl. Ctot was analysed by dry combustion method in a vario MAX CNS elemental analyser (ELEMENTAR, Germany). Organic C was determined with elemental analyzer. According to World Reference Base for Soil Resources (WRB) classification system (FAO, 1998), the soil in the study area belongs to the soils subgroups of Gley soils on yellowish-grey calcareous till.

The study area soil cover has strong anthropogenic influence due to different human activities. First, there are agricultural activities in the area. Although the region is currently exploited as grassland for animal grazing, it is known to have been ploughed in the past, resulting in amelioration of this soil type. Second, a result of surrounding oil-shale mining the status of groundwater has been changed as well.