

ARCHAEOMETRICAL ANALYSIS OF NEOLITHIC POTTERY AND COMPARISON TO POTENTIAL SOURCES OF RAW MATERIALS IN THEIR IMMEDIATE ENVIRONMENT – AN OVERVIEW

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Pottery, daub and soil samples from ten Neolithic sites throughout Hungary were investigated by mineralogical, petrological and geochemical methods (Vörs, Tihany, Kup, Aggtelek, Felsővadász, Borsod, Tiszalúc, Füzesabony, Tiszaszőlös and Szarvas-Endrőd). Clay deposits in the vicinity were also sampled and studied. More than 300 sedimentary/soil samples were taken by drilling and described macroscopically, about 130 characterized petrographically. From 173 sherds and geological samples major and trace elements were analysed by XRF, partly also by INAA. XRD was done on about 100 samples for mineralogical information.

Our investigations can be regarded as the first large scale comparative study on early pottery and its potential raw material. The most important observations are:

- the raw material of pottery and burnt wall debris (daub) is characteristically different at most of the localities. Chemical composition of daub is closer to that of the local soil and has typically a high phosphorous content, due to the admixture of organic material.
- the geochemical pattern of the pottery of individual sites ("fingerprint") is different by sites and regions.
- Locally the raw material of the pottery can be different from the soil but related to local clay deposits (e.g. Vörs). Sometimes higher Al concentrations show, that soil varieties with higher clay mineral concentrations were chosen. In the case of some sites, the soil composition and the daub and pottery compositions are close to each other (e.g. Szarvas-Endrőd, Füzesabony).
- among the Neolithic samples investigated, no pieces of foreign origin have been encountered so far. However on multi-level sites some

non-Neolithic samples (e.g. Bronze age, Borsod) may be of foreign origin.

- at some sites from the Bükk-culture (e.g. Aggtelek, Felsővadász), pottery samples show very complex chemical patterns with (possible influence) of cave clay and temper of bat-dung, quartzite, and others.

The data were organised into a database that will be accessible on the project homepage.