Pottery traditions and raw materials used for the ancient production of ceramics in Istria, Croatia

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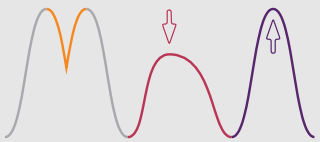

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This paper presents the study of pottery technology focused on the multi-period (Bronze Age, Iron Age, Roman and early Mediaeval period), archaeological sites situated in the southwestern part of the Istrian peninsula. The research goal is to determine ancient pottery's characteristics and examine the raw materials used for pottery production, including characterization and availability of the raw materials. A total of 12 clayey sediments were collected in the vicinity of the sites in order to compare the chemical and mineral composition with the ceramic samples. Analytical methods applied in the study are optical microscopy, X-ray powder diffraction, and geochemical analyses (ICP-MS, ICP-ES). The correlation between ancient ceramics and clayey samples suggests that ancient potters probably exploited raw materials within several kilometers from the settlement. The use of calcite as temper is present during all studied periods while the use of grog is characteristic only of the Bronze Age. The results indicate the use of local, easily accessible raw materials and reflect the geological structure of the area. The deposition of a clayey material is very restricted in the Istrian karst environment which leads to the continuous exploitation of the same raw material sources. Conversely, calcite is very common among the carbonate rocks and due to its physical characteristics can be easily crushed and added to the clay during the paste preparation. Using calcite as dominant tempering material represents a long and stable pottery tradition. The use of grog is probably not only a technological but also a culturally determined choice.