Provenance and Technology of Ayyubid/Mamluk Glazed Pottery Excavated from Yasileh/North Jordan: An Archaeometric Study.

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Abstract


This study aims at studying and reconstructing the provenance and manufacturing technology of Ayyubid/Mamluk glazed pottery from Yasileh/North Jordan. Thirty representative glazed sherds were selected from the pottery recovered from Yasileh during six seasons of excavation (1988-1998) at the site. These glazes were classified into five groups based on typology, style and color. The samples were examined using chemical, mineralogical and thermal approaches. Atomic absorption spectroscopy and loss on ignition were applied for the chemical investigation. Petrography and x-ray diffraction were performed for mineralogical investigation, while differential thermal analysis, Mössbauer spectroscopy and refiring test were used for the thermal analysis. Chemical investigation indicated that the glazes are of lead-glaze type and are classified into low, medium, and high lead-glazes. This type of glaze was produced by applying lead-silica mixtures to biscuit fired bodies, which were made of homogeneous pastes (non-calcareous ferruginic clays). The variation of lead contents in these glazes substantiates that these varieties existed, on the one hand, to control thermal expansion in order to make the glaze layer more compatible with the body. On the other
hand, the concentrations of lead were used to control the brilliance and the color of the glazes. Thus, Ayyubid/Mamluk potters had a high degree of technical capability. Ayyubid/Mamluk potters fired this pottery at temperatures that exceeded 1000°C°, which is indicated by the presence of mullite in x-ray diffractograms of unfired and re-fired sherds and by the absence of this mineral exothermic peak from differential thermal curves. Firing the pottery was done in oxidizing atmospheres, as the reddish brown colors of the bodies and the presence of hematite in Mössbauer spectra confirmed. Finally, mineralogy of the sherds (non-calcareous clay and mainly quartz and grog added tempers) dose not match those available in Yasileh (mainly carbonates), which is a strong indication that this pottery was not locally made.

Key words: Provenance, Technology, Ayyubid/Mamluk, Glaze, Archaeometry and Yasileh.