



GLAZED CERAMICS IN THE VESUVIAN AREA: RESULTS OF AN ARCHAOMETRIC INVESTIGATION

G. E. DE BENEDETTO¹, L. GIANNOSSA², A. MANGONE², L. SABBATINI²

¹ Università del Salento, Laboratorio di Analisi Chimiche per l'Ambiente ed i Beni Culturali, Dipartimento di Beni delle Arti e della Storia, viale S. Nicola, 73100 Lecce (I)
tel. +39 0832 296776
giuseppe.debenedetto@unile.it

²Università degli Studi di Bari, Centro Interdipartimentale Laboratorio di Ricerca per la Diagnostica dei Beni Culturali, Dipartimento di Chimica
via Orabona 4, 70126 Bari (I)
tel. +39 080 5442020
annarosa@chimica.uniba.it
sabba@chimica.uniba.it

A collection of glazed ceramics from the Roman Ages found in Pompeii and Herculaneum (Vesuvian area, Napoli, Italy) were characterized by using different analytical techniques to investigate their composition and possibly production techniques. The microsamples were embedded in epoxy resin, sectioned and polished. The resultant polished cross sections were studied first by optical microscopy permitting the identification of the different layers making up the glazes. Since the samples under investigation were heterogeneous at microscopic scale, Laser Ablation hyphenated to ICP-MS, an analytical technique for solid samples with sufficient spatial resolution to allow element analysis of the interesting regions (single layers) while avoiding the inclusions and viceversa, was used. Thanks to its wide linear dynamic range, its low detection limits, and its spatial resolution capabilities within a range from approximately a few micrometers up to 100 mm, the major, minor, and trace element composition of the each layer was obtained. Moreover, the decoration layers were studied by means of micro-Raman spectroscopy. As an optical method, micro-Raman spectroscopy offers, indeed, a great advantage over most other techniques in that it can be performed without any contact with the studied artefact, both in laboratory, using high resolution large spectral window instruments, and on site, using medium resolution portable instruments. The technique permitted the chemical and mineralogical identification of the chemical substances found inside and on top of the glazes (inclusion and degradation materials, respectively).

A distinction was found in the chemical composition of the glazes: some samples have opaque lead glazes, others have transparent high-lead glazes, others have silica glazes. Interesting results were obtained by Raman spectroscopy. In one of the investigated samples, lapislazuli was identified; its occurrence is quite important as, to our knowledge, it is the first identification in this class of objects in the Roman Imperial Ages.

The present communication will give the results of the study concerning the chemical and mineralogical characterization of Roman glazes excavated in Pompeii and Herculaneum.

Acknowledgements

The present study has been carried out within the PRIN05 project "Development of reliable guidelines in the chemical characterization of works of art; case study: Vesuvian area (Herculaneum and Pompeii)" financed by MIUR.