

Accepted Manuscript

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PII: S0026-265X(17)30883-4
DOI: doi:[10.1016/j.microc.2017.10.014](https://doi.org/10.1016/j.microc.2017.10.014)
Reference: MICROC 2935
To appear in: *Microchemical Journal*
Received date: 30 August 2017
Revised date: 16 October 2017
Accepted date: 21 October 2017

Please cite this article as: L. Angeli, S. Legnaioli, C. Fabbri, E. Grifoni, G. Lorenzetti, J. Guilaine, V. Palleschi, G. Radi, Analysis of Serra d'Alto figuline pottery (Matera, Italy): Characterization of the dark decorations using XRF. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. *Microc*(2017), doi:[10.1016/j.microc.2017.10.014](https://doi.org/10.1016/j.microc.2017.10.014)

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Analysis of Serra d'Alto *figuline* pottery (Matera, Italy): characterization of the dark decorations using XRF

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Abstract

During the Middle Neolithic (between 5000-4500 cal. BC) the *Serra d'Alto Culture* was particularly widespread in Matera's territory and in Apulia region. *Serra d'Alto* pottery wares consist both of a very fine yellow paste — called *figuline* — decorated with patterns in black, and of a medium/coarse paste.

In this paper, the X-Ray Fluorescence (XRF) analyses of 102 samples of black painted decorated *figuline* pottery are reported. We analyzed sherds from six archaeological sites of Matera's area: Serra d'Alto, Trasano, Setteponti, Tirlecchia and Pipistrelli's cave, and Funeraria cave.

The results show that a black pigment based on manganese has been used for the decoration of each of the *Serra d'Alto* samples. The exclusive presence of this material suggests a deliberate technological choice and defines a regular characteristic of *Serra d'Alto* pottery manufacturing.

This study is part of an interdisciplinary project on painted pottery in the central and southern Italy, from Early to the Middle Neolithic period.

Key words

Neolithic ceramic pigments, Matera, Serra d'Alto Culture, X-Ray Fluorescence, Manganese.

1. Introduction

This study is part of a wider research project about the Neolithic painted pottery in the Adriatic side of the Italian peninsula, which aims to define the organic or inorganic nature of pigments employed in the painted decoration of pottery productions between the Early and Middle Neolithic [1].

The research here reported focuses on the study of the Middle Neolithic painted pottery dated between 5000-4500 cal. BC and referred to the *Serra d'Alto Culture*. This archeological *facies* was widespread in southern Italy, with a particular concentration in the trenched villages located in Matera's area and also in the Apulia region (Tavoliere and Murge). It is largely documented even in central Italy and also in funeral-cultural contexts in northern Italy.

Serra d'Alto potters produced wares consisting of a very fine-granulated paste (*figuline*) and of a medium/coarse paste. Fine paste ware is usually decorated with curvilinear/geometric patterns (rhombuses, chessboards, grids, windings, *a tremolo*, etc.) painted with a black pigment. Their vertical strap-like handles are often enriched on the top by zoomorphic plastic applications. The vase types includes bowls with globular or truncate conical forms and jars with short neck (Fig. 1).

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