

CHARACTERIZATION OF NURAGIC POTTERY FROM THE NURAGHE CANDELARGIU ARCHAEOLOGICAL SITE

Cassandra Savoldi ^{1,*}, Marco Merlini ¹, Chiara Mangano ¹, Araceli Rodriguez Azogue ², Manuela Puddu ³

¹ *Dip. di Scienze della Terra, Università degli studi di Milano (Milano, Italy)*

² *Arqueologia y gestion (Siviglia, Spain)*

³ *Ministero della Cultura (Cagliari, Italy)*

[↶ list](#)

*Cassandrasavoldi98@mail.com

This study presents a mineralogical and chemical characterization of pottery from the Nuraghe Candelargiu archaeological site, located in S. Giovanni Suergiu, Cagliari (IT). One hundred samples were selected based on their archaeological context, historical period, aesthetic appearance, and small size, which made them unsuitable for museum exhibition. Petrographic description on thin section, synchrotron radiation XRD and laboratory XRF chemical analysis have been performed to describe the raw material used and the manufacture process and provide insights into the history of ceramic production and trade of the Nuragic population.

The main crystalline phases present are feldspars (plagioclase and alkali-feldspar), quartz, amphibole, pyroxene, illite/muscovite and hematite. Quantitative phase analysis was performed by Rietveld method on XRD data. XRF was performed on fused beads samples. Qualitative and quantitative description of petrographic features, such as temper mineralogy and temper to clay ratio was determined with semi-automatic image analysis data processing. Microprobe analysis was also performed on selected samples. The numerical parameters obtained were used for multivariate analysis, to determine possible grouping of materials. Quantitative XRD data were mostly effective for such a purpose. PCA and cluster analysis clearly indicate that bronze and iron age nuragic pottery were mostly similar, matching with the use of grounded local andesitic rocks as temper, mixed with local clay. On the contrary, punic pottery is composed by a subgroup matching older ceramics, and a significant number of samples with different mineralogical and chemical features, richer in quartz, supporting the idea of imported ceramics or production with different technology and raw materials.

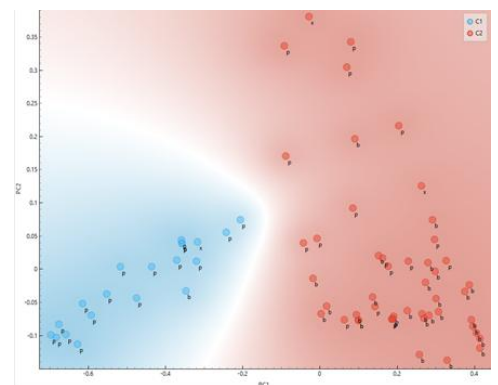


Figure 1 –PCA and cluster analysis of ceramics according to their period and mineralogical phases quantified by XRD

References

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