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**ARCHEOMETRY AT THE FORQUETA RIVER WATERSHED,
STATE OF RIO GRANDE DO SUL: A STUDY ABOUT THE
GUARANI PRECOLONIAL CERAMIC BY MEANS OF
MULTIVARIATE ANALYZES)**

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The physicochemical analyzes elucidate aspects of supreme importance in understanding of precolonial occupations complexity. It aims to analyze the ceramic paste of bowls fragments from two archaeological sites located in the Forqueta River Watershed, state of Rio Grande do Sul. Through Inductively Coupled Plasma Mass Spectrometry (ICP-MS) paste chemical composition results were obtained. The multivariate analyzes were performed by Bioestat® software. It is noticed that among the bowls physical typology, the chemical difference composition is subtle. It is possible to consider that the raw material for making of pieces in both sites come from locations with the same characteristics.

Ceramics pottery fragments were dated using thermoluminescence method and analyzed by mass spectrometry. The samples were grounded, sieved, and then divided in two: a) the fraction with lower grain size diameters was used to the chemical analysis, b) the portion with intermediate size grain diameter was chemically leached, submitted to different doses and then finally the thermoluminescence property was measured. The ages obtained varied from 385 up to 1530 years BP. The ICP-MS determination was performed in the solubilized samples. For solubilization of each sample it was used a microwave-assisted digestion technique and an acid mixture (nitric and fluoric acid). Mn, Fe, Al, Ca, K, Ti, Mg, Na, Cr, V, Ni, Zn, Pb, Li, Cu, La, Ce, Th, U, Sr and Ba have been determined in the studied samples. To guarantee the analytical performance a series of certified reference materials were used (IAEA-Soil 7, and GSJ- JG1a, JA-3, JB2 and JB-3). The chemical analysis of soils and ceramics samples has evidenced differences on the chemical composition, for instance in the Fe and Na (macro-constituents) and Cr, Ni, Zn, Pb as (micro-constituents). The ICP-MS results were evaluated using hierarchical cluster analysis with the squared Euclidean distances was used to calculate dissimilarities between samples.

Reference

[1] Landa, B.S.; Dissertação Mestrado, Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre, Brasil, 1995.