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# Pottery use within a specialized shell-midden site in the southern part of Eastern Europe: a case-study of Rakushechny Yar settlement (6th mill BC)

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## Abstract

The multilayer settlement Rakushechny Yar, situated in the lower Don River, is one of the sites with the most ancient pottery known in Eastern Europe. The subsistence strategies and the life cycle of these communities describe a particular system of resource management determined by specific economic, environmental and cultural conditions. Rich fish remains, shell middens, site location, specific toolkit with restricted categories, and incomplete context of tool production testify all that it was a specialized site for aquatic resource procurement. However, faunal remains indicated the use of resources from other ecological niches as well. In such a particular milieu, pottery was expected to fulfill a range of different tasks, but organic residue analysis of pottery, alongside SEM-analysis, has revealed a rather restricted set of ceramic functions, oriented towards specific aquatic resources processing, particularly the treatment of migratory fish, such as sturgeon.

Clay pots offer an effective means for the slow simmering of foods to extract rich lipids, such as the rendering of fish to produce storable oils. This would have helped to deal with the seasonal surplus of migratory sturgeon, available only during the late spring, and provided a valuable supply of storable food, consumable all year round and especially during the colder seasons when resources were more scarce. These valuable commodities could also have been accumulated and exchanged, with potential implications for social organisation and the creation of ownership and inequality.

Geochemical analysis has shown that early pottery was made from local raw materials, which suggests that the pottery was mainly produced on site. However, some pottery samples were

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made from non-local raw materials, indicating that part of the pottery was brought to the site. One of the samples belongs to the "import" category, which implies movement over even longer distances.

Rakushechny Yar appears to have been an attractive place for the procurement of sturgeon, and pottery technology appears to have played an important role in resource management for the hunter-gatherer communities of this region or even on a wider geographic scale.

**Keywords:** Pottery, Hunter, gatherer, Lipid residue analysis, Scanning Electron Microscopy (SEM), Geochemical analysis, Subsistence strategies, Resource management, Rakushechny Yar, Russia