

Molecular and isotopic identification of millet in prehistoric pottery: New results from Bruszczewo, Poland

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A range of plant and animal products are identifiable through the analysis of absorbed organic residues in ceramic vessels, indicating their processing and consumption in the past. The application of biomolecular and isotopic analytical techniques has allowed limited identification of cereal crops; however, routine identification of cereal residues in ceramics is yet to be established. One example is the identification of broomcorn millet (*Panicum miliaceum*) processing through the detection of miliacin (olean-18-en-3 β -ol methyl ether), a pentacyclic triterpene methyl ether compound, that is enriched in millet seeds.

This presentation builds upon previous analysis conducted on charred surface deposits of ceramics ('food crusts'), from the Bronze Age/Iron Age site of Bruszczewo, Poland, in which miliacin was detected. This study combines the detection of miliacin with bulk and compound-specific stable carbon isotope analysis and applies them to residues extracted from charred deposit and ceramic vessel samples. Results are interpreted in the context of the site's chronology and ceramic and archaeobotanical assemblages in an attempt to connect millet with material culture. It is believed that this approach is applicable to other regions and will enable archaeologists to deepen their understanding of human interactions with millet in the past.