

## Oral presentation

### **From food to pharmacology: exploring the prehistoric utilization of root-crops in the Middle Atlantic and Northeast regions of North America**

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**Introduction.** Ethnobotanical and ethnohistoric documents describe many North American Indigenous cultures as being dependent upon a wide range of subterranean storage organs for pharmacological and dietary purposes. In spite of the apparent significance these plant resources played in many aspects of historic Native life, their visibility in the archaeological record fails to substantiate their importance, drawing into question their significance in prehistoric life. Recent advances in archaeobotanical inquiry offer the potential to overcome what may be preservation bias. This research uses the Middle Atlantic and Northeast regions of North America as a case study for understanding prehistoric root-crop exploitation in the greater Eastern Woodlands.

**Objectives.** To determine the range of root-crop taxa utilized within historic Native economies for dietary and pharmacological purposes; and to evaluate the legitimacy in using ethnohistoric and ethnobotanical data in interpreting prehistoric Native pharmacopoeia and subsistence via starch grain analysis.

**Methods.** This research first carries out a survey of the ethnohistoric and ethnobotanical literature pertaining to root-crop exploitation in the Middle Atlantic and Northeast regions. A sample of prehistoric plant processing tools recovered from four archaeological sites spanning AD 200-1300 are then examined using starch grain analysis. This methodology uses morphological characterizations of modern reserve starch to identify ancient plant processing residues embedded in archaeological tools. Findings are compared with results of the ethnohistoric record.

**Results.** European accounts of Native plant utilization depict a wide range of root-crops used for pharmacological purposes -- a number far greater than those simply used for dietary purposes. According to these accounts, root-crops from 70 families were used for medicinal purposes in these regions. Sources describe several of these as highly valued constituents in Native pharmacopoeia. Starch grain analysis studies highlight the use of root-crop resources in the prehistoric past. Starch grains from several taxa potentially utilized for medicinal purposes were isolated from tools at two sites. Also present were residues derived from several root-crop taxa depicted as dietary resources.

**Conclusion.** This study provides direct evidence of root-crop exploitation in the Middle Atlantic and Northeast regions and helps substantiate the survival of at least aspects of Native plant-based knowledge systems from prehistoric to historic times.

Keywords: Starch, archaeobotany, subsistence, ethnohistory, residue

#### Selected References

1. Messner, T. and R. Dickau. 2005. New Directions, New Interpretations: Paleoethnobotany in the Upper Delaware Valley and the Utility of Starch Grain Research in the Middle Atlantic. *Journal of Middle Atlantic Archaeology* 21:71-82.

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