
Phytoliths and threshing processes

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Résumé

Agricultural techniques can shed light on cultural identity, as well as economic use of plant products. Over nearly 20 years we've been finding phytolith spodograms with smooth, straight cuts in archaeological samples from the near Eastern Neolithic, Chalcolithic, and Bronze Age from mudbrick, in storage structures, and directly on threshing floors. Similar observations were made for a limited number of Western and Eastern European samples. To what extent do these special cuts really characterize the threshing sledge as opposed to other techniques? We have studied phytoliths produced by the use of different kinds of threshing sledges in Syria and Tunisia, as well as those produced by animal trampling there. In each case the threshing sledge produced a particular assemblage including smooth cut spodograms, as did our experiments with a reconstructed Bronze Age threshing sledge. We compare these assemblages with those from trampling, bearing in mind that trampling is a component of threshing sledge use. Finally we have looked at phytoliths produced by flailing, chopping straw on the ground, cutting it against a sickle and harvesting crops. All the latter can produce cut phytoliths but these are more jagged, and rare or absent. A statistical study (described in the poster session) focused on the morphology of these cuts, found that 2 types of cut morphology and orientation were only found in threshing sledge assemblage. Our criteria were used to study a Neolithic site in Syria, Chalcolithic sites in Syria, Israel, and Romania, and Bronze Age sites in Syria, showing the threshing sledge was producing chopped straw that was stored, or used in mudbrick, as well as undoubtedly to fuel ovens. The need for building mudbrick structures may have driven the use of the threshing sledge to quickly produce a fine grade of chopped straw. Phytoliths also showed evidence as to the harvesting and winnowing techniques, and in some cases whether harvesting, threshing, winnowing, and storage were taking place at the site, or elsewhere.

Mots-Clés: threshing, threshing sledge, phytolith analysis, Neolithic, Chalcolithic, Bronze Age, Near East, ethno archaeology, experimental archaeology

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