

Early cultivation & palaeoenvironment on the western-central Anatolian farming frontier: archaeobotany at Neolithic Ekşi Höyük

Ceren Kabukcu | University of Algarve & University of Liverpool

Archaeological evidence to date suggests that the late eighth and the seventh millennia BCE were key periods for the transformation of early farming communities in southwest Asia (Marciniak 2019), with shifts in habitation practices, farming economies and material culture. This timeframe also provides evidence for the geographic expansion and dispersal of farming and ‘Neolithic’ lifeways from the semiarid foothills, river valleys and plateaus of northern Mesopotamia, Anatolia and the Levant westwards into new environments. Ekşi Höyük, a small Neolithic–Chalcolithic habitation site, located next to a tributary of the Büyük Menderes River in western-central Anatolia, provides evidence for continuous occupation during the early seventh and early sixth millennia (ca 6700–5900 cal BC) (Dedeoğlu et al. 2023). Due to its location and the timeframe of occupation, the site provides a prime opportunity to investigate the establishment and development of farming economies in this western frontier zone.

The site, excavated since 2015 by Fulya Dedeoğlu (Ege University, Izmir) displays clear affinities with both lowland sites, like Ulucak and Çukuriçi, and sites in the Lake District such as Hacılar (Dedeoğlu et al. 2023). Since the beginning of the excavations, the Ekşi Höyük project team has routinely collected bulk sediment samples for flotation from most excavated contexts and kept them in storage. In 2022, we carried out a pilot phase of archaeobotanical sample recovery at the site, processing 51 sediment samples (ca 850 litres), using a manually operated single flotation tank on loan from the Beycesultan excavation project. Initial assessment of these flotation samples confirmed excellent levels of preservation of charred plant remains and their high potential for more detailed analysis. Our primary objective during the 2023 field season, with the generous support of the British Institute at Ankara, was to build a bespoke, pump-operated, 3-tank flotation system to ensure systematic recovery of bioarchaeological as well as artefactual finds contained in the samples.

During our stay at Ekşi Höyük in July, working alongside the excavation team and local contractors, we were able to complete the preparation of an area for flotation sample processing, build a custom-designed 3-tank flotation system, and provide training to undergraduate and postgraduate students in flotation recovery techniques. Using this new system, a further 53 sediment samples were processed (ca 545 litres), chiefly by the students we had trained.

During this period, we also started the study and identification of the light fractions obtained through flotation processing. Among the studied samples, we recorded a diverse

range of cereals and legumes, as well as the remains of seeds, stems and tubers of wetland plants. Emmer and einkorn hulled wheat were the most dominant cereals, but we also found barley and free-threshing wheat in good quantities. Peas and lentils were commonly found, as well as a small number of other legumes that have not yet been positively identified due to the preservation conditions. The remains of terebinth and hackberry provide data, albeit still limited, on the use of wild fruits and berries. In addition to these finds, carbonised seeds belonging to small-seeded legumes, mallow, mustard, and seeds of the daisy family were found, likely representing weeds of cultivation, wild plants found on roadsides and areas used as pastures. Several samples were also rich in crop-cleaning waste containing remains of chaff, awns, and stalks, etc. Thus, we are confident that in the coming years our research will uncover detailed local signatures of farming and pastoral practices by the site’s inhabitants.

In sum, thus far, the range and diversity of crop remains at the site bear strong similarities to Neolithic phases of occupation at Çatalhöyük. On the other hand, charcoal analysed from the same samples reflects an entirely different vegetation composition when compared to the central Anatolian Neolithic–Chalcolithic habitations. These samples contained two species of pine (stone pine and red pine), which were likely used as building materials. In addition to this, small amounts of oak, terebinth, almond and poplar remains were also identified. An interesting aspect of the anthracological results is the very low abundance and ubiquity of riparian/wet woodland taxa, despite the frequent appearance of reeds and rushes in the non-wood charred plant remains.

The archaeobotanical record at Ekşi Höyük already suggests a distinct tradition in landscape and vegetation exploitation. Our future work in the coming years will focus on the processing and analysis of further samples from the site, seeking to understand in greater detail the establishment and evolution of farming regimes in this region.

References

- Dedeoğlu, F., Ozan, A., Konakçı, E., Temür, B., Boz, B., Milić, B., İlgezdi-Bertram, G., Erdalkıran, M. 2023: ‘Archaeological and analytical investigation of a new Neolithic site in western Anatolia: Ekşi Höyük (Denizli, Turkey)’ *Mediterranean Archaeology and Archaeometry* 23.1: 1–29
- Marciniak, A. 2019. *Concluding the Neolithic: The Near East in the Second Half of the Seventh Millennium BCE*. Atlanta, Lockwood Press