EXPLORING VARIATIONS IN CROP STORAGE AND DISCARD PRACTICES ACROSS NEOLITHIC SITES IN SERBIA

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CROP STORAGE

Diverse ways of storage of agricultural products in the Neolithic in the territory of Serbia have been identified (e.g. Tripković 2011). Of the three types of features proposed to have been used for storing of (unprepared) plant food across the region, the archaeobotanical evidence (i.e. *in situ* burnt seed concentrations) has so far confirmed this particular function for the two of them. At the tell-site of Vinča for instance, large ceramic vessels (pithoi) were used for keeping glume wheat grain (Fig. 1). Similarly, the use of ceramic containers, of pithos-size but also smaller, for storage of wheat has been documented at few other sites (e.g. Medvednjak and Stapari – Renfrew 1969; Chapman 1981). In contrast, domed clay bins served as storage units at the site of Selevac (see IWGP poster on Selevac by Obradovic). The use of containers made of perishable materials has also been suggested based on the finds of concentrations of cereal grain on the floor of houses, such as at Medvednjak, Banjica and Valač (Tripković 2011: 163).

Figure 1 – Vinča site, House 1/06: Burnt pithoi containing cereal grain (mostly emmer) sitting next to an oven (Photo credit © *Vinča Project*, 2006)

The considered sites (Fig. 2) show similar characteristics of the material culture (the Vinča culture). Storage practices, however, seem to have varied between them, as perhaps did preferences for certain crops. For example, the examined clay bins at Selevac contained primarily einkorn grain, with little lentil. Storage contexts at Vinča yielded predominantly emmer grain, with einkorn and 'new type' glume wheat grain as minor components; concentrations of seeds of bitter vetch and flax/linseed, likely representing stored food, were also registered in the Vinča houses. In a ceramic vessel from Medvednjak emmer grain was dominant, with small inclusions of einkorn and free-threshing wheat grain. Thus storage deposits also reflect the diverse choice of crops and perhaps point at their variable importance. Their within-house location suggests household-level storage of plant food.

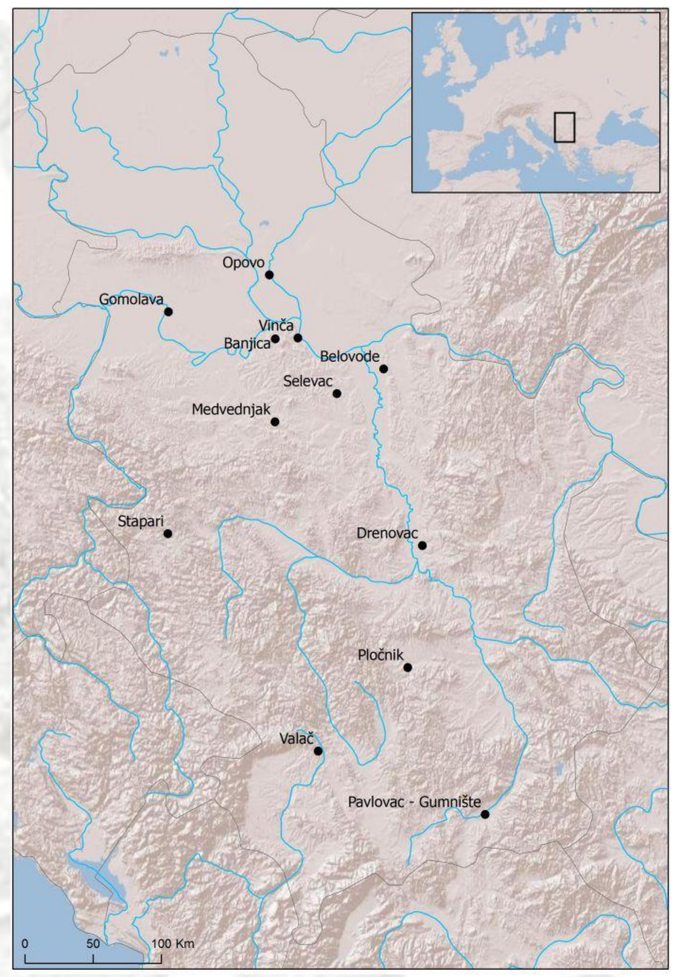

Figure 2 – Map showing location of the sites mentioned in the text

CROP PROCESSING/FOOD PREPARATION

The residue from processing of crops and preparation of food has routinely been thrown into fire (e.g. Van der Veen 2007). At Neolithic sites in Serbia, fire installations are generally located indoors, i.e. inside the wattle-and-daub houses, and they indeed contain residue from crop processing (mainly in the form of wheat chaff). Thus at the site of Pločnik, glume bases of einkorn, emmer and 'new type' wheat and rachis segments of bread wheat were encountered within an indoor oven. There are, however, cases of outdoor hearths and fire pits in which this type of material was discarded, such as at the site of Belovode (Fig. 3), signalling that dehusking was (also) carried out in external space. The best examples are the seven outdoor hearths recently discovered at the site of Pavlovac (Fig. 4a-b). Whilst they all had similar composition (in terms of crop remains), two of the hearths yielded very large quantities of plant remains. One of them was almost entirely composed of glume wheat glume bases. The fill of the other hearth also included a fair amount of glume wheat glume bases but also a great number of seeds of weedy taxa (*c.* 500), whilst it was relatively rich in the remains of a range of wild fruit (e.g. Cornelian cherry fruit stones, wild strawberry and raspberry seeds). In addition to crop cleaning and the disposal of by-products, it is possible that this outdoor space was also used for (wild) food preparation/consumption.

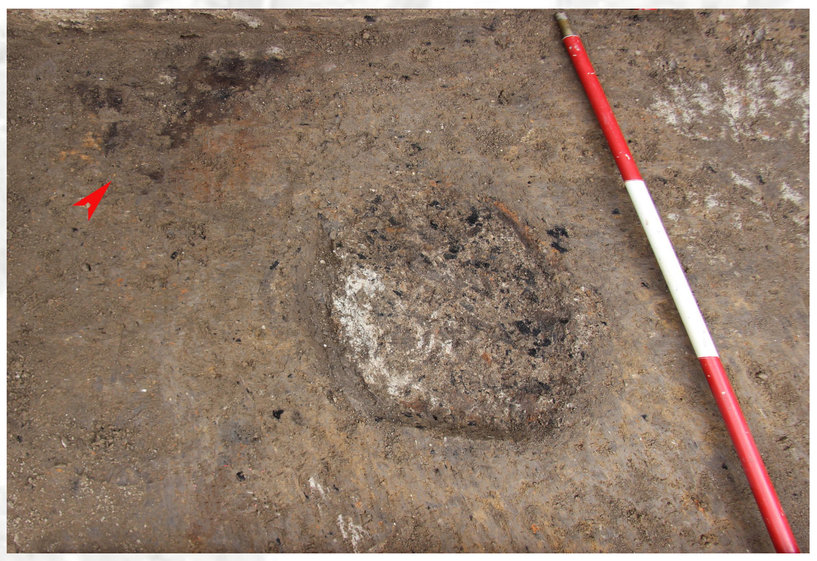

Figure 3 – Small areas of burning in external space: a fire pit and a fire spot outside a building at Belovode (Photo credit © *The rise of metallurgy in Eurasia* project, 2013)

Figure 4a-b – Two of the outdoor hearths at Pavlovac that yielded large amounts of dehusking residue (Photo credit © *Archaeology in Serbia: Cultural identity, integration factors, technological processes and the role of the Central Balkans in the development of European prehistory* project, 2011)

DISPOSAL OF PLANT BY-PRODUCTS

As described above, the fire installations received by-products of plant processing (and food preparation/consumption). However, another type of features at Neolithic sites in Serbia also regularly contains discard from plant-related activities, most prominently crop cleaning. These are rubbish pits; they are quite common at some of the analysed sites and are generally located in external spaces (Fig. 5). In the majority of the archaeobotanically analysed pits, remains of glume wheats, mostly chaff, prevail and are accompanied by smaller quantities of pulses, wild/weed seeds and remains of wild fruit, indicating a combination of different plant residues (Fig. 6).

Figure 5 – Rubbish pits at the site of Drenovac (Photo credit © *Archaeology in Serbia: Cultural identity, integration factors, technological processes and the role of the Central Balkans in the development of European prehistory* project, 2011)

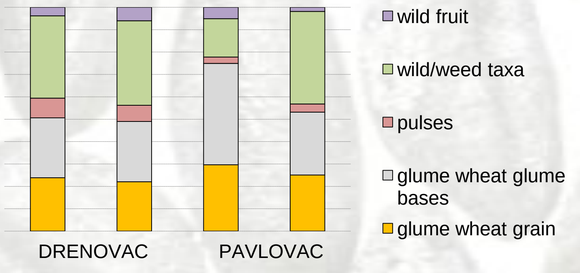

Figure 6 – Summary composition of the rubbish pits at Drenovac and Pavlovac

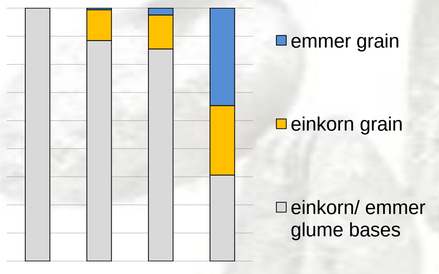

Figure 7 – Relative proportions of glume wheat grain and chaff in the Gomolava pits that yielded ≥100 of these remains (based on van Zeist 2002: Table 2)

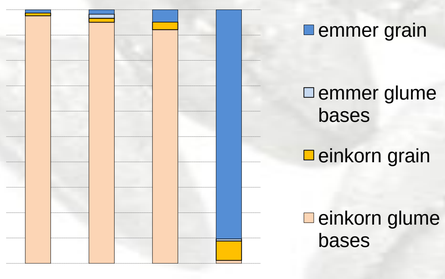

Figure 8 – Relative proportions of glume wheat grain and chaff in the Opovo pits that yielded ≥100 of these remains (based on Borojević 2006: Tables 2.1, 2.3)

There are, however, pits where glume wheat grain is more abundant than glume wheat glume bases (Figs. 7-8). The possibility that they represent grain storage pits ("underground silos"), as suggested for some of the Neolithic pits in Serbia (see overview in Tripković 2011: 162-3), depends on whether the grain was burnt *in situ* or if it originated from elsewhere. At Gomolava, for instance, large concentrations of charred glume wheat grain (with very little chaff) were encountered in contexts other than pits (van Zeist 2002: Table 2).

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