New data on early agriculture in the Central Balkans: Archaeobotanical investigations at Early and Late Neolithic sites in the Morava Valley, Serbia

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Background

The current study presents preliminary results of macrobotanical analysis from three Neolithic sites in the Morava Valley (Serbia): Medureč, Drenovac and Pavlovac – Gomilite (Figs 1-3).

Archaeobotanical research on the studied sites provides an opportunity for a new insight into development of the Neolithic economy in central Balkans.

Research questions:

1) Spread of early agriculture across the Balkans
   - Archaeobotanical investigations on the sites dated to the beginning of the Early Neolithic in the study region – Drenovac and Medureč.
2) Continuity and change in the Neolithic food economy
   - Comparison of the archaeobotanical data from the Early and Late Neolithic horizons at Drenovac.
3) Regional variation in crop use during the Late Neolithic
   - Comparison of the results from Pavlovac and Drenovac, comparison of these results to other Vinča sites.

Material and methods

Archaeobotanical sampling methodology between the sites differed, and it was greatly influenced by the type and scale of excavations (Fig.2).

Until 2010 at Drenovac and Medureč the samples were being selected only from specific contexts such as pits, hearths or vessel contents. During seasons 2010 and 2011 at Drenovac the samples were systematically collected from all excavation layers and units.

Within the recent excavations at Pavlovac – Gomilite sampling was context oriented. Samples were taken only from well-defined contexts and features; multiple samples were removed from large features such as (stratified) fills of pits and ditches.

Samples from all three sites were processed using a flotation machine (seasons 2010 – 2012).

Results

Early Neolithic

Medureč

- The assemblage of plant remains contains less than 40 seeds; some taxa were represented by a single seed. Identified taxa include: emmer, pea and 10 wild plant species (Fig.1).

Drenovac

- Identified taxa include five cultivated and 24 wild plant species (Fig.1). The main crops are einkorn, emmer, lentil and pea.

- Probable legume storage, containing large number of lentil and pea, was discovered in what appears to be a burned building (Fig.3).

Late Neolithic

Drenovac

- The main crop taxa present in the Early Neolithic are also identified in the Late Neolithic occupation horizons (Fig.5). Bitter vetch and flax are found in small frequencies (and quantity), and it is not clear whether they were cultivated (Fig.6).

- The almost complete absence of barley remains from both Early and Late Neolithic levels at Drenovac raises a question of barley cultivation. It seems that barley was of minor importance in Vinča economy as suggested by its very low occurrence at the Vinča sites of Selevac, Opovo and Gomolava (McLaren and Hubbard 1990; Borjević 2006; Van Zeist 2001/2002).

Pavlovac

- All crop taxa present at Late Neolithic horizons of Drenovac are registered (einkorn, emmer, barley, lentil, pea and flax), with one addition - grass pea (Lathyrus sativus/cicerum) (Fig.5).

- Grass pea was not recorded at Neolithic sites in Serbia, except for two cf. Lathyrus sativus seeds found at Divostin (Grüger, Beug 1988). The absence of grass pea on some Late Neolithic (Vinča culture) sites in central and north Serbia (Opovo, Gomolava, Vinča, Selevac) should not be understood as a sampling bias, since these sites have been extensively sampled. Based on this we can attentively suggest the regional differences in the choice of crops between the southern and northern parts of the Vinča culture territory.

Conclusions

1) Early Neolithic agriculture

The small number of remains from the site of Medureč can only be used to indicate presence/absence of certain taxa. Finds of 4 cultivated (einkorn, emmer, lentil, pea) and 24 wild taxa from the Early Neolithic settlement at Drenovac provide new important information and offer more promising results for further research on the Early Neolithic agriculture in the region.

2) Differences in the Early/Late Neolithic crop spectrum

In general, it seems that a similar spectrum of crops occurs at the considered sites, both in Early Neolithic (Starčovo culture) and Late Neolithic (Vinča culture). The main cultivated taxa are two hulled wheats - einkorn and emmer; and two legumes - lentil and pea.

The enrichment of crop repertoire in the Late Neolithic is suggested by the finds of bitter vetch and flax at Drenovac, and grass pea at Pavlovac – Gomilite.

3) Regional variation in crop use in the Late Neolithic

It has been suggested that there are certain inter-site differences based on the presence of grass pea only at site of Pavlovac. To this we may add a „regional“ trend in the Late Neolithic of central Balkans where hulled wheats were preferred to barley.

At this stage of research, it is not yet possible to recognize certain firm patterns and it is still early to assess whether observed variations reflect different sampling methods or real discrepancies.

References


Acknowledgments

The sites have been excavated within the projects at the Institute of Archaeology (Belgrade) under the direction of Ksenija Borojević in Medureč and Drenovac are part of the project "Permanent Archaeological Workshop – Middle Morava Valley in Neolithic of South East Europe" (JAWSE) 2001-2007. I would like to thank Olga Knežević and Bojana Jovanović for their valuable comments and last, but not least, thanks to my friend and colleague Borojević for all the help and support.