
Phytoliths as a seasonality indicator? The example of the Neolithic site of Pendimoun, South-Eastern France

Claire Delhon^{*†1}, Didier Binder¹, Pascal Verdin¹, and Arnaud Mazuy¹

¹Culture et Environnements, Préhistoire, Antiquité, Moyen-Age (CEPAM) – CNRS : UMR7264, Université Nice Sophia Antipolis – Campus Saint-Jean-d’Angély - SJA3 24, avenue des Diables Bleus 06357 Nice Cedex 4, France

Résumé

Pendimoun is a rock-shelter located in South-Eastern France, near the Italian border, at 690 m. a.s.l., just above the city of Menton. It is a key-site for the understanding of the Neolithization process in the Northern Mediterranean area (Binder, 2013) as it is among the oldest Neolithic sites known on the French littoral (*Impressa* culture, since ca 5700 BC). It was discontinuously occupied from the Mesolithic (8800-8400 BC) to the end of the Neolithic (2300-2000 BC) and was used mainly for pastoral purposes and domestic activities, including an abundant production of ceramic ware. Agriculture and cereal processing are also clearly attested during the *Impressa* occupation (grains, husk and straws macroremains, grindstones) and become more discreet in the overlying layers.

The phytolith analysis concerned one sample from a Mesolithic (Sauveterian culture) burial and 16 samples covering most of the 6th millennium BC (*Impressa*, Cardial, Early Square Mouth Pottery cultures). Important amounts of grass phytoliths were identified, suggesting that the livestock, whose dung constitutes an important part of the sediment, mainly fed on wild grasses. The scarcity of dicot phytoliths rules out the hypothesis of the use of tree branches as fodder while the animals were kept in the shelter. Although attested elsewhere (Delhon *et al.*, 2008), this feeding practice was considered unlikely at Pendimoun on the basis of charcoal analysis (Battentier *et al.*, 2015). The abundance of glume phytoliths is very low, except in the *Impressa* levels. As dehusking would have provided glume phytoliths, this result confirms that cereals were partly processed *in situ* only during the earlier stages of the Neolithic. Moreover, the scarcity of glume remains also suggests that the wild grasses browsed by the livestock were not bearing mature ears. Panicoid short cells proved to be higher than expected (most of the time between 1 and 5%) in an area where only few panicoid species can grow. We identified only three candidates for panicoid phytoliths suppliers: *Setaria* spp., *Digitaria sanguinalis* and *Echinochloa crus-galli*. All three have a short vegetation cycle entirely run between the end of spring and the beginning of fall, suggesting that the shelter was mainly used during that period. The low amount of glume phytoliths seems to restrict that range to the period before the ears maturity, namely the end of spring or early summer.

Battentier J. et al. 2015 : L’abri Pendimoun (Castellar, Alpes-Maritimes) : nouvelles données

*Intervenant

†Auteur correspondant: claire.delhon@cepam.cnrs.fr

sur l'évolution du couvert forestier et l'exploitation du milieu au Néolithique (5800-2000 ans cal. BCE), *Quaternaire*, 26 (4) : 277-290.

Binder D. 2013 : Méolithique et Néolithique ancien en Italie et dans le sud-est de la France entre 7000 et 5500 BCE cal : questions ouvertes sur les dynamiques culturelles et les procès d'interaction, in T.Perrin, C.Manen, G.Marchand, P.Allard, D.Binder, M.Ilett (eds.) *Transitions, ruptures et continuité durant la Préhistoire*, Paris, SPF : 341-355.

Delhon C. et al. 2008. Shepherds and plants in the Alps: multi-proxy archaeobotanical analysis of neolithic dung from "La Grande Rivoire" (Isère, France). *JAS* 35 (11): 2937-2952.

Mots-Clés: Phytolith, Neolithic, SouthEastern France, seasonality, Panicoideae