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***Edited by***

Miguel Vilas-Boas

Luís Guimarães Dias

Luís Miguel Moreira



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## PC2. Phenolic compounds as markers for the botanical origin of unifloral honeys from *Castanea sativa* flowers.

Lillian Barros (1); Montserrat Dueñas (2); Ana Maria Carvalho (1); Celestino Santos-Buelga (2); Isabel C.F.R. Ferreira (1)\*

1: CIMO-ESA, Instituto Politécnico de Bragança, Campus de Santa Apolónia, Apartado 1172, 5301-855 Bragança, Portugal

2: Grupo de Investigación en Polifenoles (GIP-USAL), Facultad de Farmacia, Universidad de Salamanca, Campus Miguel de Unamuno, 37007 Salamanca, Spain

The determination of the plant origin for honey and other bee products is of great interest. One of the procedures used to determine the floral origin is pollen analysis, but nowadays other analytical methods that could complement that approach are also available. In this perspective there have been many studies that correlate plant source with the presence of certain compounds (Soler et al., 1995; Tomás-Barberán et al., 2001). Recent studies have revealed that the analysis of flavonoids and other phenolic compounds might be a very promising technique to study the plant origin of honey and other bee products.

Chestnut trees (*Castanea sativa* Miller) are of great importance in several Portuguese northeastern areas where chestnut honey is considered of high quality. The flowers of both sexes (sometimes only male flowers which mature first) arranged in long upright catkins appear in late June to August. The ripe pollen produces a characteristic heavy sweet odour.

In the present work, an exhaustive characterization of the phenolic compounds present in *C. sativa* flowers was carried out by HPLC-DAD-ESI/MS following procedures previously described (Barros et al., 2012). The phenolic profile obtained could be used to select some patterns that may possibly be useful to determine honey botanical source.

*C. sativa* flowers presented high levels of total phenolic compounds ( $18.973 \pm 40$  mg/Kg, fresh weight), being hydrolysable tannins ( $14.873 \pm 110$  mg/Kg) the most abundant group found. A trigalloyl HHDP glucoside was one of the main hydrolysable tannins present. Flavonols such as myricetin, quercetin, kaempferol and isorhamnetin derivatives were also found in *C. sativa*, being quercetin-3-O-glucoside and quercetin-3-O-glucuronide the major flavonols present.

The obtained profile should be compared to other honey floral origins in order to point some phenolic compounds specific of *Castanea sativa*, which could be used as botanical markers for unifloral chestnut honeys.

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\* Presenting author: iferreira@ipb.pt