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Propolis phenolic profile: a study in the Atlantic islands of Azores

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Propolis is a natural resinous substance that honeybees (*Apis mellifera*, L.) collect from buds and exudates of plants and transformed in the presence of bee enzymes. This substance plays an important role in the hive as a construction and defence material due to its chemical and biological properties.^[1]

Propolis composition is extremely complex and dependent on its vegetal source, geographical location and climatic conditions. Typically this natural product includes resin (50%), beeswax (30%), essential oils (10%), pollen (5%) and other organic compounds (5%).^[2] Due to the abundance in phenolic compounds (flavonoids, phenolic acids and their esters) and to its biological and pharmacological properties this group of substances became the target of many research studies in propolis.

This work outlines an extensive qualitative and quantitative characterization of the phenolic composition of Azorean islands propolis. For that, eleven samples of propolis, from S. Miguel and Terceira island, were extracted and characterized according to the previous work.^[3] The HPLC results show a similar chromatographic profile for all samples, despite their origin, with 37 compounds identified by ESI-MS/MSⁿ analysis and confirmed by HPLC-DAD. Although the samples revealed a similar phenolic composition, significant differences in the concentrations of the different compounds were found, probably due to the differences in flora distribution around the beehive, and therefore resin availability for bees.

^[1] Sforcin JM (2007). *J. Ethnopharmacol.*, 113, 1-14.

^[2] Bankova, VS, De Castro, SL, Marcucci, MC (2000). *Apidologie*, 31, 3-15.

^[3] Falcão, SI, Vilas-Boas M, Estevinho LM, Barros C, Domingues MRM, Cardoso SM (2010). *Anal. Bioanal. Chem.*, 396, 887-897.

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