Supplementary material S1

Apis Mellifera bee propolis sample collection site used in the present study

Chemical Composition of Volatile Compounds in *Apis mellifera* Propolis from the Northeast Region of Pará State, Brazil

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Abstract: Propolis is a balsamic product obtained from vegetable resins by exotic Africanized bees *Apis mellifera* L., transported and processed by them, originating from the activity that explores and maintains these individuals. Because of its vegetable and natural origins, propolis is a complex mixture of different compound classes; among them are the volatile compounds present in the aroma. In this sense, in the present study we evaluated the volatile fraction of propolis present in the aroma obtained by distillation and simultaneous extraction, and its chemical composition was determined using coupled gas chromatography, mass spectrometry, and flame ionization detection. The majority of compounds were sesquiterpene and hydrocarbons, comprising 8.2%–22.19% α-copaene and 6.2%–21.7% β-caryophyllene, with additional compounds identified in greater concentrations. Multivariate analysis showed that samples collected from one region may have different chemical compositions, which may be related to the location of the resin's production. This may be related to other bee products.

Keywords: Amazon; bioproducts; propolis; aroma; bioactive compounds