

Chemical composition of essential oil from Propolis produced in west of Santa Catarina/Brazil

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Palavras-chave: *Apis mellifera*, essential oils, propolis.

Propolis is a complex mixture formed by resin and balsamic material. It is produced by bees of genus *Apis mellifera* that seek raw material from branches, flowers, buds, exudates, latex and resins from trees. Salivary secretions, wax, and unsaturated acids are added in the collected material, modifying chemically and enhance the therapeutic properties of plant resins^{1,2}. For this reason, propolis is characterized by a varied composition and associated with regional vegetation¹. Therefore, propolis is an important object of study with diversified biological application³. Considering this information, this study aimed to characterize propolis of the west of Santa Catarina state chemically and pharmacologically, thus contributing to the standardization and development of this activity in this region. Propolis was collected in hives of Africanized bees of genus *Apis mellifera* in Itapiranga city, Santa Catarina/Brazil (Linha Popi S26°52,710', WO53°41,408' and Linha Becker S27°06,686', WO53°47,910'). Volatile constituents were obtained using Clevenger apparatus. Extractions were done with 100 g of propolis in 500 mL of distilled water. The extraction process occurred for about 4 hours. After this period, in the graduate tube it was measured the volume of oil obtained⁴. Analysis by GC/MS of essential oil was performed using a gas Chromatograph, model Varian 3800, equipped with a mass selective detector, model (Saturn 2200 MS/MS), and an auto sampler, model (Varian CP8400). Identification of essential oil was based on comparisons of their retention indices linear (Kovats index) which were obtained experimentally with values tabulated by comparing their mass spectra with the database system (NIST 62 lib) or with the use of certified standards. A total of 36 compounds were identified, obtained for the essential oils of Linha Popi representing 91.9% of the oil and the yields were 0.34 %. The essential oil was characterized by a high content of sesquiterpene hydrocarbons (85.5 %). The major component was (*E*)Caryophyllene (20.0 %). Other predominant components were Germacrene D (13.5 %), α -copaene (9.6 %), β -bourbonene (8.2 %), Sig-cadinene (6.7 %) and α -humulene (5.2 %). Myrcene (6.4 %) was the only monoterpene hydrocarbons found. Fourteen compounds were identified in the essential oil obtained Linha Becker, representing 92.6 % of the total oil and the yields were 0.34 %. The essential oil was characterized only presence of sesquiterpene hydrocarbons (92.6 %). (*E*)Caryophyllene (19.1 %), α -copaene (10.7 %), Germacrene D (10.3 %), β -bourbonene (7.2 %), α -bulnesene (8.2 %), α -muurolene (5.9 %) and Sig-cadinene (5.6 %) were the principal components in the oil. In Brazil distinct biological properties and chemical composition are described for different samples collected at different parts of the country. This variation is easily explained by the great Brazilian biodiversity⁵.

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