



Chemical Composition of Extracts of Geopropolis from Melipona quadrifasciata (Mandaçaia) Evaluation of its Antioxidant Activity

M. B. GABRIEL¹, M. J. CARNEIRO¹, A. C. H. F. SAWAYA^{2*}

¹ Institute of Biology, State University of Campinas, 13083-970 Campinas - SP, Brazil.

² Faculty of Pharmaceutical Science, UNICAMP, SP, Brazil

achfsawa@unicamp.br.

Received/Geliş Tarihi: 08/10/2018, Accepted/ Kabul Tarihi: 19/10/2018

*Corresponding author /Yazışılan yazar

Abstract

Currently, a group of bees called stingless bees, native bees or indigenous bees have attracted interest. These social bees belong to the Apidae family and are divided in three different genera: *Melipona*, *Lestrimelitta* and *Trigona*. These bees have only residual stingers, usually small wings and nests of distinct characteristics that differentiate species ¹.

These bees are of great importance in the pollination of many cultivable species, being responsible for up to 90% of the pollination of Brazilian native flora. *Melipona quadrifasciata* produces geopropolis, honey and wax. Geopropolis is the result of the bees mixing the resinous material collected from the plants with wax and soil. Studies of the ethanolic extract of *Melipona quadrifasciata* geopropolis seek to determine the chemical composition via ESI-MS fingerprinting, as well as their antioxidant activity. Samples collected over one year in Jarguariuna, SP showed a similar chemical profile. Their antioxidant activity was evaluated by the DPPH method and presented similar activity (EC₅₀ between 1 and 4 µg/mL) of ethanolic solution. These results are comparable propolis of bee species *Apis mellifera* ². As these samples were collected over one year, it will be possible to determine if seasonality influences their chemical composition and biological activity.

References:

1. Cardozo, D. V., Mokochinski, J. B., Machado, C. S., Sawaya, A. C. H. F., Caetano, I. K., Felsner, M. L., & Torres, Y. R. (2015). Variabilidade química de geoprópolis produzida pelas abelhas sem ferrão Jataí, Mandaçaia e Mandurí. *Revista Virtual de Química*, 7(6), 2456-2474.
2. Lima, M. V. D. De. (2015). Geoprópolis produzida por diferentes espécies de abelhas: atividades antimicrobiana e antioxidante e determinação do teor de compostos fenólicos. Dissertação (Mestrado) - Universidade Federal do Pará, Instituto de Ciências da Saúde, Belém. Programa de Pós-Graduação em Ciências Farmacêuticas.