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PHENOLIC PROFILE AND ANTIOXIDANT CAPACITY FROM 56 BRAZILIAN DEHYDRATED BEE-POLLEN

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ABSTRACT BOOK

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P-130 PHENOLIC PROFILE AND ANTIOXIDANT CAPACITY FROM 56 BRAZILIAN DEHYDRATED BEE-POLLEN

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Bee-pollen is a food produced by bees from the flower pollen, to be a source of proteins, lipids, vitamins and minerals for the hive [1]. Its composition varies according to the region where it is produced, and its quality is influenced by the collection and processing conditions [2, 3]. Besides nutritional substances, bee-pollen contains significant amounts of polyphenols with recognized health benefits, including antioxidant activity [4].

The present study aimed to evaluate the polyphenolic profile and antioxidant activity of 56 dehydrated bee-pollen samples by high performance liquid chromatography and *in vitro* assays. Bee-pollens samples, collected during November 2011 to December 2013 from apiaries located in different Brazilian regions, were extracted with stirring for 30 minutes with ethanol 70% at 70 ºC and analyzed. The total phenolic content ranged from 6.5 ± 0.2 to 29.2 ± 0.3 mg gallic acid equivalent/g dry sample and flavonoid content ranged from 0.35 ± 0.01 to 17.5 ± 0.1 mg quercetin equivalent/g dry sample. The antioxidant activity assays, with values of 9.4 ± 0.4 to 155 ± 5 μmol Trolox equivalent/g dry sample for DPPH and 133 ± 2 to 563 ± 15 μmol TE/g for ORAC methods, revealed the antioxidant capacity of bee-pollen extracts. Regarding, the characterization of the phenolic composition from the several extracts by HPLC-PAD it was possible to observe that rutin, quercetin and vanillic acid were

the main phenolic compounds found in the Brazilian dehydrated bee-pollen analyzed. On the other hand, caffeic acid was found in less amounts in the majority of samples studied. Among the identified polyphenols, only quercetin seems to have influenced positively in the antioxidant capacity of the samples. The Pearson's Correlation analysis indicated high correlation between quercetin and ORAC values (r=0.6570, *p*=0.000) and medium correlation between quercetin and DPPH values (r=0.4873, *p*=0.000). In conclusion, bee-pollen characteristics vary according to the botanical origin and the Brazilian region where the sample was produced. This is a product with high antioxidant potential, therefore other tests, especially bioavailability assays, should be performed.

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