GC QUANTIFICATION OF FATTY ACID PROFILE OF COLOMBIAN BEE POLLEN

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Honey-bee collected pollen is a natural food product characterized by several functional and nutritional properties that so far have not been widely described, in particular the lipid content. Lipids are important in nutrition due to they participate in numerous metabolic reactions in cells by inducing biological phenomena in organs and muscles. Sixty samples of honey-bee pollen were collected in four different zones from the central region of Colombia and analyzed for fatty acid profile by Gas-Chromatography. Results showed predominant fatty acids in pollen were α-linolenic (29 to 43% of total fatty acids), palmitic (14 to 18%), linoleic (10 to 15%), lauric (4 to 11%) and oleic (6 to 8%). The particular high content in essential α-linolenic and linoleic fatty acids gives pollen bioactive and functional properties once is digested by consumer. It was also found acceptable ratio unsaturated/saturated fatty acids (1.57 to 2.13), indicating pollen preserved its nutritional quality after collection, processing and storage stages. In addition to fatty acid profile, there were performed protein and mineral content analyses to evaluate the capacity of all these parameters for differentiating pollen according to origin. Statistical analysis showed a close influence on predominant fatty acids and protein content (20 to 24% dry basis) as well iron (59 to 73mg/kg dry basis), zinc (39 to 41mg/kg dry basis) and copper (8 to 10mg/kg dry basis). These data were useful to classify Colombian honey-bee collected pollen coming from four geographical zones and to support the evidence regarding the protection of this product.