

Analysis of benzo(a)pyrene in Spanish honey samples

Corredera, L., Abenoza, M., Lahoz, I., Bayarri, S., Pérez, C., Lázaro, R., Herrera, A.

Department of Animal Production and Food Science, Faculty of Veterinary, University of Zaragoza (Spain)

Polycyclic aromatic hydrocarbons (PAHs) are one of the most important groups of environmental pollutants. They are formed during incomplete combustion of organic substances and have attracted most attention lately because of the carcinogenic potential presented by some of them.

Benzo(a)pyrene (BaP) is one of the most carcinogenic of the PAHs and it has been extensively studied and found in grilled meat, vegetables, oils, cereals, smoked fish, seafoods, etc. Maximum levels of BaP, used as a marker for PAH contamination, are now specified in Commission Regulation (EC) 1881/2006 in a range of foodstuffs.

Honey could also be contaminated with PAHs, which may come from several sources, such as forest fires, stubble burning, location of beehives near industrial sites, or inadequate practices by beekeepers. However, little information is available on the frequency and levels of this type of pollutants in honey.

The aim of this study was to apply an analytical methodology, previously developed and validated in our laboratory, to several Spanish honey samples in order to evaluate the presence of BaP. The procedure is based on solid-phase extraction (SPE) and identification and quantification by high-performance liquid chromatography (HPLC) with fluorescence detection.

Keywords: Benzo(a)pyrene; PAHs; Honey; HPLC.

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