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The occurrence of polycyclic aromatic hydrocarbons in dried herbs and spices

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ABSTRACT

A sensitive, selective, and robust method for the determination of four EU-regulated polycyclic aromatic hydrocarbons (benzo[a]pyrene, chrysene, benzo[b]fluoranthene, and benzo[a]anthracene) at trace levels in dried herbs and spices using gas chromatography coupled to tandem mass spectrometry was elaborated and validated in accordance with the performance criteria outlined in EU legislation. A total of 150 samples of oregano, basil, thyme, black pepper, paprika, and nutmeg were tested for the occurrence of four PAHs. These PAHs were detected in 86% of the samples. The benzo[a]pyrene content in seasonings ranged from non-detectable levels to 6.60 $\mu\text{g kg}^{-1}$. None of the samples exceeded the levels acceptable in EU for BaP and the sum of four regulated PAHs.

Keywords:

PAHs, GC-MS/MS, dried herbs, spices

1. Introduction

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