

## Seasonal Variation of Polycyclic Aromatic Hydrocarbons Associated with PM10 in Győr, Hungary

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**Abstract :** The main objective of this study was to assess the seasonal variation of atmospheric polycyclic aromatic hydrocarbon (PAH) concentrations associated with PM10 in an urban site of Győr, Hungary. A total of 112 PM10 aerosol samples were collected in the years of 2012 and 2013 and analyzed for PAHs by gas chromatography method. The total PAH concentrations (sum of the concentrations of 19 individual PAH compounds) ranged from 0.19 to 70.16 ng/m<sup>3</sup> with the mean value of 12.29 ng/m<sup>3</sup>. Higher concentrations of both total PAHs and benzo[a]pyrene (BaP) were detected in samples collected in the heating seasons. Using BaP-equivalent potency index on the carcinogenic PAH concentration data, the local population appears to be exposed to significantly higher cancer risk in the heating seasons. However, the comparison of the BaP and total PAH concentrations observed for Győr with other cities it was found that the PAH levels in Győr generally corresponded to the EU average.

**Keywords :** air quality, benzo[a]pyrene, PAHs, polycyclic aromatic hydrocarbons

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