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Effects of washing on the polycyclic aromatic hydrocarbons (PAHs) contents in smoked fish

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ABSTRACT

This study investigated the effects of washing on the contents of the polycyclic aromatic hydrocarbons (PAHs) in smoked fish. Portions of smoked fish samples were washed with warm water (60 °C). The unwashed and washed fish samples were separately homogenized, extracted, cleaned-up and screened for thirteen PAHs. The PAHs were determined using gas chromatography-mass spectrometry (GC-MS). Washing of the fish samples reduced the concentrations of the individual PAHs by 35.8%–100% in almost all *S. victoria* samples, 0.6%–100% in most *L. niloticus* samples and 2.9%–100% in some *Haplochromis spp* samples. The concentrations of total PAHs in *S. victoriae* samples were reduced by 77.4%–99.5% in washed samples compared to the concentrations in the unwashed samples. The concentrations of the total PAHs in most washed *L. niloticus* samples were less by 5.8%–77.4% than the concentrations in the unwashed samples. The concentrations of total PAHs in washed samples of *Haplochromis spp* were reduced by 7.2% in one third of the washed samples but were not reduced in other samples. Therefore, washing reduced or eliminated the PAHs in smoked fish depending on the fish species, although the levels still exceeded the permissible levels.