Polycyclic Aromatic Hydrocarbons (PAH) in Danish Smoked Fish and Meat Products

Twenty seven PAH were detected in 45 selected smoked food samples produced in Denmark, including mackerel, herring, trout, small sausages, salami, and bacon. The sum of PAH in smoked meat products ranged from 24 μg/kg for salami to 64 μg/kg in bacon, while those in fish products ranged from 22 μg/kg in smoked mackerel prepared in an electric oven to 1387 μg/kg in herring smoked by direct smoking. The concentration of benzo[a]pyrene for all sample types were below the maximum level of 5 μg/kg for smoked fish and meat set by the European Commission. Results from this survey confirm that the actual level of individual PAH in fish products is dependent on variables such as the type of wood used in the smoking process. Furthermore, the use of the benzo[a]pyrene approach for estimation of the carcinogenicity of PAH in food is confirmed. The Danish intake of benzo[a]pyrene from these smoked products is 2 to 4 ng/person/day.