

CFS announces risk assessment study results on polycyclic aromatic hydrocarbons in food

The Centre for Food Safety (CFS) of the Food and Environmental Hygiene Department announced today (December 28) the results of a recently completed risk assessment study on polycyclic aromatic hydrocarbons (PAHs) in food. A total of 300 food samples were taken from the local market to estimate the dietary exposure to PAHs of the local adult population arising from consumption of these food items, and to assess the associated health risk. The study results showed that the current dietary exposure to PAHs is of low public health concern under usual consumption.

A spokesman for the CFS said, "PAHs constitute a large class of organic compounds containing two or more fused aromatic rings. They are primarily formed by incomplete combustion or pyrolysis of organic matter and during various industrial processes. PAHs can enter the food chain either through environmental contamination or by formation during food processing, such as drying and smoking; or cooking, such as grilling, roasting, barbecuing and baking. For non-smokers, the major route of exposure to PAHs is consumption of food."

Some PAHs have been shown to be genotoxic, carcinogenic, immunosuppressive and affect development of experimental animals. The Joint Food and Agriculture Organization/World Health Organization Expert Committee on Food Additives considered in 2005 that 13 individual PAHs are clearly carcinogenic and genotoxic. Also, the International Agency for Research on Cancer has evaluated some PAHs and classified benzo[a]pyrene (BaP) as Group 1 (carcinogenic to human), while several PAHs were classified as Group 2A (probably carcinogenic to humans), or Group 2B (possibly carcinogenic to humans).

The CFS collected a total of 300 food samples including cereal and cereal products, meat and poultry, oils and fats, and spices for testing the occurrence of 16 European Union (EU) priority PAHs in food. Among all samples collected, the levels of total PAHs ranged from not detected to 120 microgram/kilogram. Regarding PAHs in different food groups, spices contained the highest mean level, followed by meat and poultry and oils and fats. Combining the food consumption data captured from the Second Hong Kong Population-based Food Consumption Survey, the food group cereal and cereal products is the major contributor to the dietary exposure to PAHs for the local adult population.

It is noted that BaP is of more concern among various PAHs, and PAH4 is often used as indicator of the occurrence of the EU priority PAHs. In this study, the calculated margin of exposure values for both BaP and PAH4 are above 10 000, which indicates that the current dietary exposure to PAHs for the Hong Kong adult population is of low health concern.

The spokesman said that comparing the results of the current study with that of the other places, the dietary exposure to PAHs of the local adult population is low. Based on the results of the study, changes to the basic dietary advice on healthy eating are not justified. However, members of the public are advised to maintain a balanced and varied diet to avoid excessive exposure to any contaminants, including PAHs, from a small range of food items.

Moreover, the spokesman reminded the food trade to take measures to minimise introduction of PAHs in their food products during processing by making reference to the relevant code of practice adopted by the Codex Alimentarius Commission in 2009 in accordance with the principle of as low as reasonably achievable.

The risk assessment study is now available on the CFS website (www.cfs.gov.hk).