

4th International Conference and Exhibition on

Food Processing & Technology

August 10-12, 2015 London, UK

Analysis of heterocyclic amines and polycyclic aromatic hydrocarbons in commercial ready to eat meat products in UK

Fei Lu

University of Reading, UK

Accumulating epidemiologic evidences indicate that processed meats intake is associated with risk of colorectal cancer and breast cancer. While heterocyclic amines (HCAs) and polycyclic aromatic hydrocarbons (PAHs), the two main types of carcinogen developed during meat processing may play key roles in the imposing health risk. Being one of the main types of processing meat products, ready-to-eat (RTE) meat product is favored by consumers due to its conveniences and its consumption has increased dramatically in recent years. Therefore, it is essential to evaluate its health risk and provide guidance to general public and meat producers. In this work, 11 RTE meat products were selected from UK market including BBQ chicken breast, Tikka chicken breast, chargrilled chicken, ham, smoked ham, roasted bacon, crispy bacon, pork sausage and Swedish meatballs, honey roast salmon, sweet chilli salmon to investigate their health risks in concern of HCAs and PAHs levels. HCAs and PAHs were extracted by using solid-phase extraction and analyzed by HPLC methods. Chargrilled chicken contained the highest amount of HCAs (37.45 ± 4.89 ng/g) and PAHs (3.11 ± 0.49 ng/g) whereas ham (HCAs 4.49 ± 1.19 ng/g) and smoked ham (HCAs 0.34 ± 0.29 ng/g, PAHs 0.27 ± 0.18 ng/g) had the least carcinogens. Overall, HCAs level varied from 0.34 ng/g to 37.45 ng/g, but PAHs level was relatively low with maximum at 3.11 ± 0.49 ng/g. Major components of HCAs formed in selected RTE meat samples were IQ and DiMeIQx while PAHs were mainly found in chargrilled chicken. Factors affecting formation of carcinogens could be complicated such as cooking methods, fat content and marinating ingredients. All selected RTE meat products in UK market did not pose big health risk due to relatively lower level of HCAs and PAHs. This study would provide useful data to assess cancer risk of processed meat products for the general public.

Biography

Fei Lu is currently a second year PhD Student from the University of Reading. So far, she has finished the literature review that is going to get published which is about the mechanisms of forming heterocyclic amines and polycyclic aromatic hydrocarbons and ways to control the development of carcinogens. She has good knowledge about the solid phase extraction and HPLC.

f.lu@pgr.reading.ac.uk

Notes: