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Processing healthier, appealing and safer foods

The research activity of group will be briefly summarised. The core activities are focused in food quality and promoting sustainable foods with enhanced health and sensorial properties. Multi-parametric chromatographic methods for evaluation of nutrients, bioactive and aroma compounds and contaminants are the main area of expertise of the group. Testing the activity of food beneficial and harmful compounds using human cells in vitro is another relevant area of research. Group interests can therefore be divided into five main topics: Food composition and adulteration; Contaminants and Additives; Diet and Health; Food sustainability and Processing healthier, appealing and safer foods. This last topic includes the reduction of carcinogenic compounds in cooked meat and fish and will be described with more detail. Increased cancer risk is mainly attributed to harmful compounds that are formed when the meat is processed, due to the formation of heat generated carcinogenic compounds, namely heterocyclic aromatic amines (HAs) and polycyclic aromatic hydrocarbons (PAHs). These chemicals can damage DNA and cause cancer. Variable amounts of HAs were quantified in pan fried, grilled and barbecued red meat, poultry and fish. PAHs were detected and quantified only in barbecued samples. More than 2ug/100g of HAs and PAHs can be taken in a single meal of barbecued meat. Mitigation of HAs and PAHs formation was achieved marinating meat with beer or wine before grilling, a reduction of 90% of HAs and 53% of PAHs was observed when marinating with dark beer. This topic is especially relevant since in 2015 the International Agency for Research on Cancer released a report about carcinogenicity of consumption of red and processed meat. with BP disposal and may contribute to indirect income generation.

Biography

Olivia Maria de Castro Pinho is researcher from LAQV/REQUIMTE and full professor at the Faculty of Nutrition and Food Science from the University of Porto. Expertise: Food Safety. Development and optimisation of chemical and biochemical methodologies to be applied to nutrients. Improvement of food manufacturing processes and cooking to promote consumer's health. As nutritionist she has also experience in studies related with food consumption habits. (<http://orcid.org/0000-0001-9477-8638>).

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