

TOPIC: Fingerprinting Methods in Food Authenticity / Traceability

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BIOGRAPHY

Paul Brereton is Head of Fera International at the Food and Environment Research Agency in York. He has published over 60 peer reviewed papers on the development and application of analytical methodology to food safety and quality. Paul currently co-ordinates TRACE, a 19M€ EU integrated project, that comprises a portfolio of international research and training activities on food traceability and authenticity. He currently sits on the Editorial Board of the Journal of the Science of Food and Agriculture. He has close links with the food industry, food control authorities, academia and the European Commission.

ABSTRACT

New analytical approaches to authenticating food: an overview

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Food fraud and traceability continues to have a high profile with several major incidents being reported in the press and media. There has been an increased emphasis from the food industry on marketing of foods with perceived food quality attributes to an ever more discerning consumer. The lack of objective methods for verifying some of these labelling claims is to the detriment of the consumer but also the food industry, as the honest producer is not protected nor the purchasers of such products within the food chain. Many of these perceived quality attributes cannot easily be verified using current analytical methods. In particular, labelling claims that relate to: provenance, organic, identity, sustainability are difficult to substantiate and require the development of new analytical approaches and processes.

Analytical methods for use in detecting food fraud rely on detecting/quantifying marker(s) of the authentic product or of the adulterant and pose considerable challenges in terms of detection, quantification and interpretation. Some of the latest analytical and chemometric approaches used to authenticate labelling claims will be described together with specific examples of the application of metabolomic profiling methods and stable isotopic techniques for confirmation of food authenticity and traceability.

Keywords: Food fraud, traceability, analytical methods

Acknowledgement: This work is funded by the European Commission, under the FP6 Food Quality and Safety Priority, within the framework of the Integrated Project TRACE – 006942 – entitled “Tracing Food Commodities in Europe”.