

Assuring the Integrity of the Food Chain

Conference

Food Fraud - the Analytical Tools

Workshop

Determining the Geographic Origin



PROGRAMME AND ABSTRACTS



Department
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Applicability of DNA-based methods for food authentication

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Abstract

Authenticity evaluation of foods encompasses many issues, including the entire or partial fraudulent substitution of higher commercial value constituents by others with lower value and the presence of undeclared ingredients. To address the referred food authenticity problems, several analytical methodologies have been developed at REQUIMTE during the last years. Due to its fastness, sensitivity and high specificity, the application of molecular biology techniques has proved to be an effective alternative to other methodologies for the identification of species in foods. Among other works, we have applied DNA analysis coupled to polymerase chain reaction (PCR) for the detection of frauds in the meat industry, namely to detect and quantify the addition of soybean as substitute of meat, the presence of pork in processed poultry meat products, the presence of horse in beef products, and the identification of several species (including hare, red deer, duck, partridge, pheasant, cow, etc.) in traditional game meat sausages. More recently, we also started the development of methodologies for the botanical origin identification of honey, based on the DNA analysis of pollen present in honey, and also for the authentication of medicinal plants used in plant food supplements.