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Oral Presentation

Universal biological bar-code for the determination of geographical origin of foodstuffs

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Abstract

Introduction: The issues surrounding food safety continue to be hot topics throughout the supply chain. BSE (Bovine Spongiform Encephalopathy), Salmonella and avian influenza remain embedded in the memories of European consumers. Regulations across Europe continue to be tightened in order to provide a greater degree of insurance in quality and safety. Meanwhile, the traceability and labeling of imported products in European countries remains a compulsory issue (UE regulation 178/2002). The need for vigilance and strict monitoring is necessary. One of the great concerns of the customers is the traceability of the products. Traceability is the capacity to find the history, use or origin of a food by registered methods (ISO 9000, 2005).

Purpose: Molecular techniques employing 16S, 26S and 28S rDNA profiles generated by PCR-DGGE were used to detect the variation in microbial community (bacteria, yeast, fungi) structures of Pangasius fish from Viet Nam harvested in different aquaculture farms and during different seasons and two fruits Physalis from Egypt and mandarins from Spain and Morocco.

Results: The DNA profiles of bacteria from Pangasius fish and mandarins and DNA profiles of yeasts and molds of Physalis were specific to each place of production and could be used as a biological barcode certifying the origin of fish and fruits.

Significance of paper: To follow the product during processing, we proposed to identify and validate some pertinent biological markers which come from the environment of the food to assure their traceability during international trade. It is one of the first analytical methods which permit to determine the origin of food or to follow them during international trade.

Key words: biological markers, Pangasius fish, Physalis, mandarins, microbial communities