U.PORTO

IJUP'11

4th meeting of young researchers of U.Porto

ABSTRACT BOOK

Detection of partridge meat for the authentication of "Alheiras de caça" using polymerase chain reaction

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The manufacture of traditional meat products is a long-established tradition in Northeastern region of Portugal, in particular the case of "Alheiras". Besides the traditional "Alheiras" mainly produced with pork and poultry meat, others are currently available in the market, which are produced with different game meats, such as "Alheiras de caça". Since this kind of meat products are prepared using more expensive meats, they are prone to adulterations due to the economic profit that might result from the replacement or decrease of those high valued meats.

Consumers require clear and accurate information about the products they purchase and, therefore, the assessment of food composition and authenticity is becoming a very important issue to allow accurate information and to avoid unfair competition among producers. Thus, it is important to develop analytical tools to access the authenticity of this kind of foodstuffs, contributing to their valorisation.

Due to the higher stability of DNA molecules compared with proteins, and for its fastness, accuracy and sensitivity, polymerase chain reaction (PCR) techniques is the most suited for the species-specific detection in food products [1].

The aim of this project was to develop species-specific PCR techniques, able to specifically identify meat species in "Alheiras de caça", namely partridge meat. For this, reference meat mixtures containing known amounts of partridge meat were prepared and "Alheiras" were acquired in the market. DNA was extracted using the Wizard method. Purity and DNA yield were assessed by spectrophotometry. To specifically detect partridge species, specific primer targeting the mitochondrial 12S rRNA gene were used to obtain 141 bp DNA fragments [2]. Pork and poultry species were also detected by PCR to evaluate the amplification capacity of extracts [3]. The results showed the detection of partridge until the level of 0.01% addition in pork meat. The technique was successfully applied to commercial samples of "Alheiras de caça" indicating possible misleading labelling in some of them. Other game species, such as quail, pheasant, duck and hare are under study.

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Acknowledgments:

Joana Costa is grateful to FCT PhD grant (SFRH/BD/64523/2009) financed by POPH-QREN (subsidised by FSE and MCTES).