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**“Genetic traceability along the agrofood chain: the example
of fig cultivar “Fico Bianco del Cilento”**

Selected topics:

1. Impact of agricultural biotechnology on international trade
2. Impact of science
3. Biotechnology, trade and development

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ABSTRACT

On the basis of our previous expertise on ancient DNA sequence analysis for human and animal fossils we developed a procedure to extract and amplify by PCR DNA obtained from complex matrices, such as dried figs and fig jam. Few fragmented DNA molecules can be recovered from food products. However, we were able to increase the yield of PCR reactions by successfully applying an enzymatic repair protocol to retrieved DNA. The fig was selected as an experimental model

since fig leaves and fruits are particularly rich in poly-phenols and aromatic compounds, and these can hinder DNA amplification by PCR technique considerably. What is more, dried fig and fig jam contain high percentages of carbohydrates and these molecules can co-precipitate

The procedure to extract and amplify by PCR DNA obtained from complex matrices, such as dried figs and fig jam is described. Few fragmented DNA molecules can be recovered from food products. However, we were able to increase the yield of PCR reactions by successfully applying an enzymatic repair protocol to retrieved DNA.

A further reason for choosing the fig as an experimental model is that it has an important role in the agricultural economy of the Campania region of Southern Italy, the most important Italian geographic area for the production of edible figs. The fig cultivar 'Bianco del Cilento' has unique characteristics that make it particularly suitable for drying and syrup production. Protection of the cultivar is of major importance to the Campania, and DNA fingerprint techniques and genetic traceability are of great interest.

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