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**ABSTRACT BOOK**

***LIBRO DE RESÚMENES***

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## Authentication of *Tuber magnatum* and *Tuber melanosporum* in processed products

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### Abstract

*Tuber magnatum* and *T. melanosporum*, are greatly appreciated throughout the world, both as fresh fruiting bodies and as ingredients in processed products. Truffle species are usually identified on the basis of their spores, asci, peridium and gleba. These features are readily recognizable in fresh truffles by specialists, but are difficult to see in processed products. To solve these problems and to limit frauds due to the use of species of truffles different from those declared on the label of truffle-processed products, a protocol was set up to authenticate *T. magnatum* and *T. melanosporum* in products. Microscopic techniques have been used in order to support molecular identification. Good quality DNA was quickly obtained in a few hours using a kit generally employed for DNA extraction from soil. A new primer pair specific for *T. magnatum* was developed inside the internal transcribed spacer-2 (ITS2) and employed in a quantitative PCR assay (qPCR). A qPCR assay has also been developed to authenticate *T. melanosporum* in processed foods using primers developed by Bonito (2009) and previously applied by Zampieri et al (2012) in *T. melanosporum* soils. The optimized assays for *T. magnatum* and *T. melanosporum*, showing good values of efficiency, are specific, sensitive and applicable to products that have undergone intensive transformation processes. They have been successfully tested on commercial samples such as cream and butter (Rizzello et al, 2012). In conclusion, the designed methods will help in detecting fraudulent practices in order to assess food quality and to protect the consumer.

### References

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Zampieri, E., Rizzello, R., Bonfante, P., & Mello, A. (2012). The detection of mating type genes of *Tuber melanosporum* in productive and non productive soils. *Applied Soil Ecology*, 57: 9-15.

### KEYWORDS

*Tuber magnatum*, *Tuber melanosporum*, processed products, qPCR, food quality.