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DNA verification for Mitera GmbH



Molecular analysis was performed in order to verify the correspondence between the expected variety and olive oil composition indicated on the label of Mitera GmbH.

The samples were marked as follows:

- Reference sample Raio [lot: 21/06/2020]: inside a 100ml dark glass bottle with indication of the cultivar on white label
- Reference sample Raio [lot: 21/06/2020]: inside a 500ml dark glass bottle with indication of the cultivar on white label
- Reference sample Mastoidis [lot: 21/06/2020]: inside a 100ml dark glass bottle with indication of the cultivar on white label
- Reference sample Mastoidis [lot: 21/06/2020]: inside a 500ml dark glass bottle with indication of the cultivar on white label

Results

The molecular profiles of the reference samples Raio and Mastoidis (synonyms of Tsunati) were found in agreement with the aforementioned olive cultivar.

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Method

The samples were subjected to the analysis of the DNA contained in the oily matrix to verify the varietal composition. The methods followed and the obtained results are described below:

Analysis:

- The total DNA was extracted from three aliquots of the oil sample using the protocol developed at the Institute of Biosciences and Bioresources (CNR-IBBR) in Perugia (IT).
- The extracted DNA underwent double amplification by Polymerase Chain Reaction (PCR) and nested PCR on regions containing sequence polymorphisms (SNP) and indels (insertion/deletion), and for tri-nucleotide SSR markers.
- The markers utilized, are able to discriminate the majority of Italian and other olive cultivars commercially used worldwide. The markers used have been experimentally verified in the CNR-IBBR research laboratory. The set of markers used for this analysis comprehend the proprietary genetic markers of BioCoS and markers developed by CNR-IBBR.
- PCR amplification products were run on the ABI 3130 Genetic Analyzer Capillary Sequencer (Applied Biosystems). The molecular profiles were expressed as length of the fragments. Subsequently, the sequences of the analysed samples were compared with those of the genomic DNA of the olive varieties present in the CNR-IBBR database.
- In all reactions, a positive control using leaf DNA extracted from cv. Leccino was utilized as reference, and additionally a negative control (no DNA template) was added in the PCR to exclude any technical or environmental contamination. The analysis was carried out in triplicates in the shake of the results' accuracy.

Notes: This method of analysis has not yet been accredited and therefore the results cannot be used in the case of legal disputes. Results are limited to the lot numbers provided by the company and BioCoS does not hold any responsibility to other lot numbers.

