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MEETING ABSTRACT OP

Development of an algorithm for extra virgin olive oil with sensory identity

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Abstract: In this report, extra virgin olive oil, according to legislation, is produced exclusively by natural and mechanical methods and must meet strict limits both in chemical parameters and in organoleptic characteristics (E.U. Directive 2022/2104), (IOC standards) (COI/T.15/NC No 3/Rev. 21, 2025). As consumers place increasing emphasis on taste, aroma, and consistent quality, the need for olive oils with a stable and recognizable sensory identity has become particularly strong. However, establishing a consistent quality profile is not a simple process, as each batch of olive oil is a complex mixture of components that affect taste, the absorption of health-protective compounds, and the product's shelf life. Within the framework of this challenge, we implemented "Extra Virgin Olive Oil Sensory Identity Algorithm" (EVOO SIA), which is funded through the "CREs" program. The initial results show that the combination of structured sensory evaluation, targeted chemical analyses, and computational tools can lead to a significant improvement in consistency and predictability in the creation of bottled extra virgin olive oils with a specific 'Sensory Identity.' The development of the first functional version of the algorithm that combines chemical and organoleptic data for predicting and achieving targeted sensory profiles is taking place. As an output of this algorithm enhance the accuracy of the algorithm and contribute to the production of products with high stability and reliability, offering a new tool in Greek olive oil bottling.

Keywords: Extra virgin olive oil, sensory identity, sensory analysis, olive oil polyphenols, algorithm-based quality prediction

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Commission Delegated Regulation (EU) 2022/2104 of 29 July 2022 supplementing Regulation (EU) No 1308/2013 of the European Parliament and of the Council as regards marketing standards for olive oil, and repealing Commission Regulation (EEC) No 2568/91 and Commission Implementing Regulation (EU) No 29/2012. Delegated regulation-2022/2104-EN-EUR-Lex (retrieved on April 3, 2026)

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