

### **P63: EVALUATION OF VIRGIN OLIVE OIL SHELF-LIFE BY MESH CELL-FTIR SPECTROSCOPY**

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There is a concern in the olive oil sector for obtaining objective methods to predict both, the olive oil shelf-life and its preferred date of consumption. Due to the oxidation process, the oil chemical composition varies modifying its organoleptic properties and biological value. Green analytical methods based on molecular spectroscopic techniques have many advantages as tools for evaluating, monitoring and predicting the oxidation level of the oil. The aim of this work is focused on the application of mesh cells-FTIR to get information on the continuous chemical changes produced on virgin olive oils, emulating storage and transport processes.

Mesh cell is a rapid tool designed to monitor chemical changes that occurs as consequence of oxidation at moderate conditions. Pro-oxidant factors were combined using a compartment with an integrated system to control moderate light and temperature conditions. Extra virgin olive oils from different cultivars were stored in mesh cells for a short period, the oil stability was determined by using this accessory, and compared with the oil stability determined with other accelerated methods.

The mesh cell-FTIR method provided the opportunity to store and analyse the samples over time under similar conditions to the real ones. The evolution of the selected Mesh cell-FTIR spectral regions pointed out the formation of hydroperoxides and the subsequent formation of secondary oxidation products, differentiating the oil stability of the samples from a multi-factor perspective. The information obtained with this method can be relevant for optimizing handling of virgin olive oil samples during their shelf life.