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Determination of monovarietal extra virgin olive oil in mixtures

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Olive oil is one of the few oils that come from the juice of a fruit, the olive. Specifically, its colour depends on the quantity of pigments contained in the olive, like chlorophylls and carotenoids. Thanks to the properties possessed by the pigments present in the oil to absorb and emit radiation in the UV-Vis region of the electromagnetic spectrum, spectroscopic techniques can be used to relate the content of these pigments with the quality of the oil. From the spectroscopic UV-Vis absorption information, and further development of a linear model, the composition of three varieties of extra virgin olive oils ("Hojiblanca", "Cornicabra" and "Picual") in a ternary mixture was determined with an estimation error below 5% in volume. The blends have also been analyzed with fluorescence spectroscopy, reaching the conclusion that the use of LEDs provides better results than those reached using a continuous wave laser diode. Using this approach, repeatability problems were found, so a reliable mathematical model could not be developed with these results. The aim of this project is to ensure the correct labelling of the products in order to detect frauds or alterations, by using quick and inexpensive techniques and without requiring previous sample preparation stages or qualified personnel.

Biography

Ana Maria Perez Perez has completed her degree in Biochemistry from the University of Seville in 2013. She has studied the Masters in Environmental, Industrial and Food Biotechnology at the Pablo de Olavide University, Seville.

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