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Current development in detection of adulteration in extra virgin olive oil

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Adulteration of food products involves the replacement of high cost ingredients with lower grade and cheaper substitutes. The extra virgin olive oil adulteration with other lower value vegetable oils remains an important issue for the consumers and the olive oil sector. Adulteration of olive oil is also serious problem for regulatory agencies, oil suppliers and could also threat health of consumers. Blend edible oils can be prepared only for suitable oils, if the resulting blend deviates from the mixture proportions this should be given on the label. The edible oils widely employed in virgin olive oil adulteration can be lower quality olive oil (refined or pomace olive oil) or other seed oils such as corn, peanut, cottonseed, sunflower, soybean and poppy seed oils. Hazelnut oil is oil with very similar triacylglycerol, total sterol and fatty acid compositions to extra virgin olive oil and has concerned numerous researchers. Several chromatographic and spectroscopic techniques in combination with chemometric methods have been proposed as rapid screening techniques for the authentication of extra virgin olive oil, and the detection and quantification of its adulteration with refined oils. Recently, simple, inexpensive, rapid and accurate alternative methods to determine adulterants in extra virgin olive oil in environments that time and fast decisions are important (ports, control points, market surveys and other rapid testing environments) have been developed including near infrared and Raman techniques combined with chemometric methods. This presentation will discuss recent researches which have been performed or in progress best in detecting and quantifying adulteration of extra virgin olive oil.

Biography

Turkan Mutlu Keceli is working as an Assistant Professor in Food Engineering at University of Cukurova, Adana, Turkey. She received her BS and MS degree in the University of Cukurova and PhD in Food Science from University of Reading, England. She has been active in food science for over 15 years. Her research mainly includes olives and olive oil quality; natural extracts; lipid oxidation and oxidative stability; production and purification of value-added bio product phenolic compounds such as antimicrobials and antioxidants; characterization of olive oils from different regions. Her research is supported by the grants from DPT and University research funds. She is currently directing the projects on characterization of virgin olive oils obtained from Gemlik, Sarı Ulak, Halhalı, Sarı Hasebi olive varieties. She has produced over 77 international and national publications, has been cited 90 times and worked on 26 projects. She has reviewed 18 service activities in journals of food science and technology.

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