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Variations in Chemical and Sensorial Quality Characteristics of Turkish Extra Virgin Olive Oil

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Olive oil, extracted from the fruit of the olive tree, *Olea europea* L., has high economical value and is an important component of Mediterranean diet, due to its chemical composition. The presence of biophenols with strong antioxidant properties differ olive oil from other high-monounsaturated fatty acid containing oil sources.

Virgin olive oil is consumed without further refining to retain biophenols. In order to obtain a high-phenolic content oil extraction should be made at 26-40⁰C, for protection of the aromas and the reduction of oxidation, either with the olives at green stage or those started to turn color by the use of physical means.

For an inerrant virgin olive oil production care must be applied starting with the growing process all the way through storage and bottling. Fruit maturity and olive variety are the critical factors in determining the taste and quality of olive oil. Bringing hand picked olives immediately to the mill, proper stowing without smashing, separating bottom olives from top ones, applying suitable filtration and storage conditions produce higher quality oil.

The methods used to increase the yield from any type of olives such as heating, adding water, and use of chemicals during the milling process may result in reduced oil quality. In addition exposure to oxygen, light and heat is detrimental to the quality of the oil, particularly on fatty acid composition and phenolic content, due to oxidation reactions. Besides their beneficial health effects biophenols give olive oils their unique taste and they represent an important contribution to the oxidative stability of olive oil.

Therefore in the present study fatty acid compositions, phenolic contents, physico-chemical properties (acid value, peroxide value, iodine value and saponification value) and sensory characteristics of extra virgin olive oils, designated as excellent, medium-low and highly positive according to their sensorial attributes, with monthly intervals over a year, were determined. The oils were collected from various parts of Marmara and Aegean regions of Turkey, and bottled and stored under appropriate conditions.