

Factors that influence color degradation in extra virgin olive oils

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In the last twenty years the consumption of olive oil has gone from being located in the Mediterranean Area to expanding around the world and considering today the olive oil as a product of global consumption^[1]. Doubtless, one of the pillars that has allowed the rapid expansion of its consumption is its rich composition in polyphenols, sterols and antioxidants that confer numerous benefits for human health^[2].

Olive oil quality is regulated, among others, by the International Olive Council (COI) that establishes parameters concerning free acidity, peroxide index and organoleptic characteristics based on the set of sensations perceived by the senses: smell and taste properties and defects determined by authorized and standardized tasting committees that give little importance to color^[3]. Currently the COI is considering to give the color a relevant place in olive oil tasting as is already the case in international competitions.

Although is not a parameterized criterion in the standards of evaluation of the olive oils, the color is at a commercial level, one of the most immediate organoleptic properties of olive oils to the point of being usually the main determinant in consumer's choice^[4]. As olive oil is a natural product, its color comes determined by its biological compounds which are provided by the fat soluble chlorophyll and carotenoids pigments present in the olive fruit until its maturation that are subsequently extracted in the oil^[5]. It is necessary the diffusion of the origin of this pigments, which are affected and partially destroyed by the oxidative and degradation processes that the oils suffer over time during the conservation prior to consumption, both in oil mill and household. In addition, poor storage conditions, especially concerning light and temperature, accelerate this process of discoloration^[6]. The alteration of color is therefore perceived today as one of the most important changes affecting the organoleptic quality of the product.

This is why the objective of this chapter is to contrast the color changes experienced by different virgin olive oils, after being harvested at the same maturation index and having undergone the same elaboration processes and storage conditions. And later proceed to evaluate the relationship between the color alteration in these standard conditions of each single variety olive oil studied and the alteration of its chemical composition.

Keywords: Extra Virgin Olive Oil; Storage; Color degradation; Chemical Composition.

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