

Behavior of Pet Packaging on Quality Characteristics of an Algerian Virgin Olive Oil Under Various Conditions of Storage

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Abstract : Virgin olive oil is appreciated by consumers, the quality of the oil is regulated by the international olive oil council depends on its chemical composition, so, the correct packing conditions are a prerequisite to preserve oil color, flavor, and nutrients, from production to consumption. The contact of food with various materials of packaging, since the production, until their consumption constitutes one of the essential aspects of food safety (directive 76/833/CEE). In Algeria, plastic bottles, although, they are economic and light are largely used at packaging olive oil but not used in other countries. This is due to migration phenomena that can occur from these materials. Thus, the goal of this work is to examine the physicochemical behavior of the couple packaging plastic-oil during their exposure to three temperatures corresponding to the conditions of storage applied in Algeria. Like, it is difficult to compare blowers of bottles which are heavy engineering, it comes out from this study that the effect of heat, the absorption of water, the constraints of storage of acidity, as well as the composition of oil, the PET bottles showed a remarkable structural instability, this defect of quality was confirmed by the analysis of morphology by electronic scan microscopy. These bottles present a total migration significantly higher than the threshold of acceptance. Moreover, a metal contamination of oil by its packaging was confirmed by the spectroscopy of atomic absorption and a microanalysis. The differences observed between the results of the microanalysis applied and the mechanical characterizations of the various bottles are reported, showing the reality of the container-contents exchanges.

Keywords : interaction, stability, pet, virgin olive oil

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