

JOINT EVENT

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Trace contamination of Algerian virgin olive oil by migration from PET packagingHamitri Guerfi^{1,2} and F Madani K²¹High school Agronomic National of Algiers (ENASA), Algeria.²Abderrahmane Mira University of Bejaia, Algeria

In Algeria, PET is nowadays the packaging material of choice for virgin olive oil. Reasons for this are its resistance to breaking as well as the clarity of the PET material. Admittedly, food contact plastic materials are covered by the European regulation N°10/2011, which established the list of authorized compounds for use in plastic formulation, but in my country we import the raw material in the form a mixture whose exact composition is unknown, however, it has been demonstrated that plastic packaging contains various substances such as additives and monomers but also non-intentionally added substances coming mainly from three sources: interaction between constituents of the packaging material, degradation processes and impurities of the raw materials. Thus, the objective of our work is to evaluate the contamination levels of olive oil during storage. We have used a high chemical quality of extra virgin olive oil and three different commercial bottles. The bottles were stored at room temperature for one year. The polymer tested can absorb water at 0.51±0.11% to 0.65±0.09% and can lose at 105°C after evaporation 0.33 to 0.53%. The rate of ash of the plastic is established and analyzed, so, some metals are identified in oil by the comparison between the results obtained by the spectroscopy of atomic absorption and the microanalysis. The global migration was calculated by determination the weight of specimens before and after 10 days of contact with the oil at 40°C and the amount of absorbed oil. The absorbed oil was determined by gas chromatographic analysis. The results of these determinations guided us to follow the migration of monomer terephthalic acid during storage. The lowest migration is recorded in oil while no significant difference ($p \leq 0.05$) was found for three samples of containers, and the amounts of specific migration conform to European Union legislation that identifies specific migration limits, whereas the rate of the total migration is relatively high. Further investigation will be needed to better explain this contamination and these results of interaction.

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