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Abstract

Food contact materials and their chemical risk for the consumer's health

A. Perez-Vazquez[1], P. Barciela[1], M. Carpena[1], A. G. Pereira[1,2], P. Garcia-Oliveira[1,2], P. Donn[1], Jianbo Xiao[1,3], M. Fraga-Corral[1,2], J. Simal-Gandara[1,*], M.A. Prieto[1,2,*]

[1] Nutrition and Bromatology Group, Department of Analytical and Food Chemistry, Faculty of Food Science and Technology, Universidade de Vigo, Ourense Campus, E32004 Ourense, Spain.
[2] Centro de Investigação de Montanha (CIMO), Instituto Politécnico de Bragança, Campus de Santa Apolonia, 5300-253 Bragança, Portugal.
[3] International Joint Research Laboratory of Intelligent Agriculture and Agri-products Processing, Jiangsu University, Zhenjiang, China

* Correspondence: J. Simal-Gandara (jsimal@uvigo.es); M. A. Prieto (mprieto@uvigo.es)

Abstract

Food contact materials are materials and utensils with direct contact with food products. Different plastic polymers, glass, paper, and board are examples of compounds used to produce these packages. Moreover, these compounds are usually fortified with different additives, such as antioxidants and plasticizers, improving the food contact materials' technological properties. There is a concern regarding the diffusion of these chemicals from materials to food since these molecules do not have an inert behavior in the package. Furthermore, additives incorporated into food contact materials have been related to toxicological effects, leading to interferences in the reproductive system or affecting the gut microbiota. In this way, to carry out assessments in which migration is evaluated must be performed using the gas chromatography-mass spectrometry (GC-MS) technique as the most for both target and non-target analysis of compounds present in plastic packaging materials due to its high sensitivity and accessibility in the routine control analysis. Moreover, *in silico* tools have been suggested as cost-effective and throughout identification predictors, which can provide a screening of compounds, complementing *in vivo* and *in vitro* test results. In this work, the identification techniques of non-intentional and intentional added compounds present in food contact materials are studied to determine the status in this field.

Keywords: food contact materials, migration, plastic materials, gas chromatography-mass spectrometry, *in silico* tools.

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