

P12/ QUANTIFICATION OF BISPHENOL RELATED COMPOUNDS IN CANNED FOOD BY HPLC-FLD

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Major types of interior can coatings are made from synthetic polymers known as epoxy-based resins. These resins usually contain among their components bisphenol related compounds, which can be released as well as oligomers and/or derivatives (hydrolysed or chlorinated) and reach the food. There is no specific European legislation for can coatings, but there are specific migration limits (SML) for some of them that are known to migrate. Several investigations have suggested bisphenol A (BPA) as an endocrine disruptive chemical, and for this reason other analogues have been developed to replace BPA in the manufacture of these resins.

In this work, canned food including fish (tuna, sardines), vegetables (corn, olives, asparagus, tomato), seafood (clams, mussels) and fruit (peach) were taken as study samples. Determination of the pH of each sample was carried out. The simultaneous identification and quantification of thirteen compounds including bisphenols (BPA, BPB, BPC, BPE, BPF, BPG) and BADGEs (BADGE, BADGE.H₂O, BADGE.2H₂O, BADGE.HCl, BADGE.2HCl, BADGE.H₂O.HCl, cyclo-di-BADGE) was performed using an analytical method based on high performance liquid chromatography (HPLC) with fluorescence detection, after extraction using heptane and acetonitrile as extraction solvents. In addition, a liquid chromatography coupled to tandem mass spectrometry (LC-MS/MS) method was optimized for confirmation purposes.

The HPLC-FLD method developed to determine the migrants in the food samples showed an adequate linearity ($R^2 > 0.9994$), low detection levels (LOD = 5ppb), good repeatability (RSD % < 12) and acceptable recoveries (>70 %).

The study was financially supported by the Ministerio de Ciencia, Innovación y Universidades, by Fondo Europeo de Desarrollo Regional (FEDER), and by Agencia Estatal de Investigación Ref.No. PGC2018-094518-B-I00 "MIGRACOATING" (MINECO/FEDER, UE). Antía Lestido is grateful for her grant "Programa de axudas á etapa predoutoral" da Xunta de Galicia.