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Occurrence of legacy and novel brominated flame retardants in food and feed in France for the period 2014 to 2016

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1     **OCCURENCE OF LEGACY AND NOVEL BROMINATED FLAME RETARDANTS**  
2             **IN FOOD AND FEED IN FRANCE FOR THE PERIOD 2014 TO 2016**

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13  
14    **Abstract**

15    Determination of the occurrence levels of legacy and novel BFRs is today required to better understand the trends  
16    of BFRs contamination in food consecutive to the EU PBDEs restrictions and to proceed to a recent human food  
17    exposure in parallel. Therefore, concentrations of a large set of brominated flame retardants (BFRs) (n=27)  
18    including PBDEs, HBCDDs, TBBPA and novel flame retardants (nBFRs) have been determined in more than 600  
19    food and feed samples collected between 2014 and 2016 in the context of French monitoring plans. Although  
20    legacy BFRs had already been studied in France, such a survey constituted the very first determination of nBFRs  
21    occurrence in foodstuffs at the national level. The concentration levels measured in fish and fish products were in  
22    general higher than in the other food categories. PBDEs were detected in 70% of the samples and were observed  
23    as the most abundant congeners (representing 80% of the sum of the monitored BFRs), while  $\alpha$ -HBCDD could  
24    also be considered as a predominant congener (up to 26% of the sum of the monitored BFRs in fishes). nBFRs  
25    concentration levels were most of the time below the LOQ, except PBT, PBBz and HBBz which were more  
26    frequently detected at low levels. Also investigated in the study, BRPs exhibited high concentration levels in  
27    crustaceous (maximum value>2700 pg/g ww).

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29    **Keywords**

30    BFRs

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