EXPOSURE ASSESSMENT OF BISPHENOL A FROM FOOD CONTACT MATERIALS

Liesbeth Jacxsens[a], An Vermeulen[a], Sofie Coelus[b], Bruno De Meulenaer[a]

[a]Ghent University, Laboratory of Food Chemistry and Human Nutrition, Department of Food Safety and Food Quality, BE-9000 Gent, Belgium

[b]HoGent, Biowetenschappen en Landschapsarchitectuur, Levensmiddelenwetenschappen en –technologie, BE-9000 Gent, Belgium

Contact: Bruno De Meulenaer, Ghent University, Coupure links 653, BE-9000 Belgium, E-mail: bruno.demeulenaer@ugent.be

Human exposure to bisphenol A (BPA) is mainly caused by the consumption of food that is packed in polycarbonate, epoxy coated cans and glass jars with coated lids. This study examined if adults, infants and small children are exposed to BPA higher than the tolerable daily intake (TDI of 50 µg/kg body weight/day), through consumption of packed foods.

In order to achieve this objective, migration data from BPA into food products were collected through market research and data in available literature. Furthermore, consumption data were obtained from canned food products in order to determine the daily intake of BPA. Using probabilistic and deterministic exposure calculations, the average intake of BPA attributed to canned food was found to be 0,02 µg/kg body weight /day. Results show, that the intake of BPA through consumption of canned foods by adults does not exceed the TDI. Other possible factors of BPA-intake - such as air, water, soil and polycarbonate kitchen materials – were not included in the exposure assessment.

The BPA-intake for infants and young children were obtained with deterministic calculations and were related to polycarbonate baby bottles and baby food in glass jars with coated lids. The intake was calculated using consumption scenarios that where constructed through guidelines and weight distributions. The average total intake ranged from 1.1 to 1.8 µg /kg body weight /day under normal use of baby bottles and from 10.4 to 6.4 µg/kg body weight /day under use of alkaline detergents and sterilization methods for baby bottles. These values are still far below the TDI, but are remarkable higher than the BPA intake by consumption through canned foods by adults.