

PHthalATES IN FOOD ON THE BELGIAN MARKET: OCCURRENCE AND POSSIBLE CONTAMINATION PATHWAYS

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Background and Aims: Phthalates are used in many industrial and consumer products. High-molecular-weight phthalates are primarily used as plasticizers to soften PVC products, while low-molecular-weight phthalates are widely used as solvents to hold colour and scent in products. Phthalates have been detected in food and also measured in humans.

This study investigated phthalates in food products on the Belgian market in order to explore possible contamination pathways.

Methods: 650 Representative samples of widely consumed foods were purchased in Belgian shops. The levels of eight phthalates were determined and product specific properties were stored in a database. This database was used to explore the contamination pathways by identifying relations between sample properties (e.g. fat content, pH and packaging) and measured phthalate concentrations.

Results: The results of the measurement campaign show a wide variety of phthalate concentrations in the food samples. Concentrations are higher in high-fat food products like butter, oil and cheese compared to low-fat food products, like vegetables and juices. Higher phthalate concentrations were also detected in some cardboard packed food, probably due to migration from inks and glues. Aluminium inner package seems to be a good barrier for migration. A wide range of phthalate levels in bread was found and further research is necessary.

Conclusions: A wide variety in phthalate concentration was found. The fat content of the food product, the composition of the food as well as the composition and properties of the packaging material have been identified as possible contamination causing conditions. In a next phase of this study, we will use these data to quantify the dietary intake of phthalates for the Belgian population.

Acknowledgement – This study was funded by the Federal Public Service of Health, Food Chain Safety and Environment (contract RT/ 08/1 PHTAL)