

Process-Related Compounds and Natural Toxins Task Force

ABOUT THE TASK FORCE

As consumers are often exposed to naturally occurring contaminants and process-related compounds in their diets, it is crucial to investigate how these compounds are formed in order to improve how we detect and measure them and to assess their safety.

The task force aims to advance the scientific knowledge relating to such substances, particularly focusing on assessing their impact on human health. Key topics include consideration of toxicity, exposure, mitigation impact and analytical aspects.



WHAT'S NEW?

NEW PUBLICATIONS

- Highlighting physical, chemical and biological processes which can lower or eliminate specific mycotoxins. Published in *Mycotoxin Research*, that was downloaded more than 9,000 times;
- Highlighting the benefit of biomarker-based exposure assessment for process-related contaminants. Published in *Archives of Toxicology*; that was already downloaded more than 1,000 times.

ACTIVITIES

Reactions and Potential Mitigation of Mycotoxins during Food Processing

Mycotoxins are toxic, secondary metabolites produced by fungi that significantly affect the quality, safety and yield of important crops used worldwide for food and feed. The activity reviewed options to optimise or introduce additional food processing in order to reduce mycotoxin

contamination of food and feed. The final goal was to minimise food and feed losses while maximising the safe use of crops. A follow up activity aiming to provide practical guidance for industry in order to mitigate mycotoxin in foods is now being set up.

New Approaches to Exposure Assessment of Process Related Contaminants in Food by Biomarker Monitoring – **COMPLETED**

The development of new approaches for assessing human exposure to chemical contaminants increasingly rely on biomarker monitoring in easily accessible body fluids such as urine, saliva or blood. The advent of methodologies to monitor biomarkers of diet-related exposure to process-related compounds is expected to allow for a significant step forward in risk assessment, as

well as supporting decision-making and prioritisation for risk mitigation. The aim of this activity is to provide guidance on the development and application of biomarkers to assess exposure to process-related compounds in the food chain. It is intended to provide researchers working in the biomarker field with tools on how to design studies and validate biomarkers.

MEMBER COMPANIES

- Abbott Nutrition
- ADM
- Barilla G&R Fratelli
- Cargill
- General Mills
- Luigi Lavazza
- Mars Chocolate
- Mondelēz Europe
- PepsiCo International
- Premier Foods
- Südzucker Group
- Unilever

ACTIVITIES (CTD)

Mineral Oil Risk Assessment: Knowledge Gaps and Roadmap – **NEW**

New joint activity on 'Mineral Oil Risk Assessment: Knowledge Gaps and Roadmap' co-organised with the Packaging Materials Task Force will kick-off soon. This activity will aim to bring together stakeholders across industries – food, packaging, cosmetics and petroleum – to examine the current approaches used to

establish the safety of mineral oil hydrocarbons. It will include identification of the data gaps on sources of exposure both dietary and non-dietary, current analytical methodologies, approaches to risk assessment and potential mitigation risk management measures.

POTENTIAL NEW ACTIVITIES BEING DISCUSSED

- Combined Mycotoxin Exposure
- Impact of Good Agricultural Practices (GAP) on Mycotoxins Contamination
- Health Effects of Whole Foods Versus Single Components
- Emerging Risks from New Mycotoxins
- Characterization of Co-exposure to Toxins in Food and the Role of Human Biomarker
- Non-Animal Testing Approaches to Combined Toxicity Assessments

RECENT PUBLICATIONS

I. M. Rietjens, P. Dussort, H. Günther, P. Hanlon, H. Honda, A. Mally, ... & J. Teeguarden. **Exposure assessment of process-related contaminants in food by biomarker monitoring.** *Archives of toxicology* 2016; 1-26.

P. Karlovsky, M. Suman, F. Berthiller, J. De Meester, G. Eisenbrand, I. Perrin, I. P. Oswald, G. Speijers, A. Chiodini, T. Recker, P. Dussort. **Impact of Food Processing and Detoxification Treatments on Mycotoxin Contamination.** *Mycotoxin Research* 2016; 32(4):179-205.

H.J. (Ine) van der Fels-Klerx, S. G. Edwards, M. C. Kennedy, S. O'Hagan, C. O'Mahony, G. Scholz, P. Steinberg, A. Chiodini. **A Framework to Determine the Effectiveness of Dietary Exposure Mitigation to Chemical Contaminants.** *Food and Chemical Toxicology* 2014; 74:360-371.

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