

Updated position paper on bamboo composites in food contact materials

Bamboo composites in food contact materials

Background

1. In May 2020, a scoping paper entitled “Alternatives to conventional plastics for food & drinks packaging” (TOX/2020/24), which introduced some of the possible toxicological hazards associated with the use of bio-based food contact materials (BBFCMs), was presented to the Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment (COT). Subsequently, a proposed list of BBFCMs for health risk assessment was presented to the COT in February 2021 (TOX/2021/01); this included BBFCMs containing bamboo food contact materials.
2. In 2021, the COT considered whether exposure to bamboo bio-composites in food contact materials posed a risk to human health in discussion papers TOX/2021/34 and TOX/2021/54. Overall, the Committee agreed that the migration of formaldehyde and melamine from bamboo composite cups was a potential concern to human health (COT 2021c). In 2022, the COT published an interim position paper on bamboo composites in bio-based food contact materials capturing the outcomes of the discussions and their current position.
3. In 2024, the COT discussed provided an update on the use of bamboo composites in biologically based food contact materials (TOX/2024/09). The discussion paper contained a summary of the responses obtained from manufacturers following a 2023 FSA call for information. An additional report containing relevant analytical data was also provided but was treated as reserved as it contained commercially confidential information.
4. Following the discussion at the February 2024 meeting, Annex A provides a draft updated position paper on bamboo composites in bio-based food contact materials. The new text has been highlighted in bold.

Questions to the Committee

i: Does the additional text highlighted in yellow summarise the discussions of the Committee at the last meeting accurately?

ii: Does the Committee have any other questions?

Secretariat

May 2024



Annex A to TOX/2024/21

1. Risk assessment advice on biobased food contact materials (BBFCMs) has been increasingly requested from the Food Standards Agency (FSA), hence it was considered timely for the Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment (COT) to review the available toxicological information on BBFCMs (COT, 2021a).
2. The COT acknowledged the challenges and complexities associated with BBFCMs and highlighted several limitations and knowledge gaps on BBFCMs research and regulation. These included labelling, composition (including biodegradability), contamination and standardisation (COT, 2021a).
3. The COT undertook a more detailed review of the potential health risks of bamboo composites in Food Contact Materials (FCMs) due to the increased number of incidents reported of non-compliant bamboo composite items (e.g. coffee cups) being placed onto the European market (COT, 2021b).
4. Until December 2020, reports in relation to bamboo composite FCMs were predominantly related to misleading labelling on packaging and/or their advertisement, as well as incidences of formaldehyde/melamine migration levels exceeding legal limits. Since 2021, and due to the EU's conclusion, that bamboo is an unauthorised additive within plastic FCMs, reports received by the FSA have predominantly been of non-compliance of plastic-bamboo FCMs in the European market. This included the advertisement of products from UK businesses on EU

facing markets. No action appeared to have been taken on that basis prior to this year.

5. In 2019, the EFSA panel on FCMs was asked by the European Commission (EC) to assess whether the authorisation of untreated wood flour and fibres (FCM no. 96) as an additive in plastic food contact materials was still in accordance with EC Regulation 1935/2004, and also to consider whether bamboo could be considered under the scope of this authorisation. EFSA concluded that wood and bamboo should be considered distinct and each material regarded on a case-by-case basis (EFSA, 2019). In addition, the food safety authorities of Belgium, Luxembourg and the Netherlands (Benelux) published a joint letter calling for the market withdrawal of bamboo-melamine plastics (NVWA, 2021a). In April 2021, the EC recommended that Member States should take stringent action on bamboo composite FCMs and set out a coordinated control plan. The UK FSA is aware of the stance by the EC and of the individual Member States and is considering an appropriate course of action based on scientific evidence.

6. The COT previously assessed the reports by the German Federal Institute for Risk Assessment (BfR) and the Netherlands Food and Consumer Product Safety Authority (NVWA) and noted that the BfR applied their own tolerable daily intake (TDI) of 0.6 mg/kg/day for formaldehyde whereas the NVWA and EFSA used a lower TDI of 0.15 mg/kg/day (BfR 2020; NVWA 2021b; COT 2021c). Overall, the COT concluded that the exposure assessments were conservative but not necessarily worst-case. It was agreed that although the NVWA and BfR opinions took slightly different approaches, in general the same conclusions were reached. Based on the assessment of the BfR and NVWA reports the Committee concluded that the migration of formaldehyde and melamine from bamboo composite cups was a potential concern to human health (COT 2021c).

7. To assist the COT with their assessment the FSA launched a call for evidence in 2023 to obtain further information from industry, consumers, or interested parties on the safety and stability of plastic contact materials and articles containing bamboo and other plant-based material. In March 2024, the COT assessed the information submitted to the FSA in response to the call for evidence as well as an additional report containing relevant analytical data.

8. Following the considerations of the new evidence submitted to the FSA and the currently available data, the COT agreed that there was still insufficient exposure data on which to perform a complete risk assessment. Concerns remained regarding the migration of

formaldehyde and melamine from these FCMs, while the actual composition of these products remained uncertain.

COT Position paper

May 2024

Abbreviations

BBFCMs Biobased food contact materials

BfR German Federal Institute for Risk Assessment

NVWA Netherlands Food and Consumer Product Safety Authority

COT Committee on Toxicity

EC European Council

EFSA European Food Safety Authority

EU European Union

FCM Food Contact Material

TDI Tolerable daily intake

References

BfR (2020) Fillable articles made from melamine formaldehyde resin, such as a coffee-to-go cups sold as “bamboo-ware”, may leak harmful substances into hot foods: [Fillable articles made from melamine formaldehyde resin, such as coffee-to-go](#).

Committee on toxicity of chemicals in food, consumer products and the environment (COT). (2021a). The potential human health risks of bamboo bio-composites in food contact materials: [The potential human health risks of bamboo bio-composites in food contact materials](#).

Committee on toxicity of chemicals in food, consumer products and the environment (COT). (2021b). Discussion paper on the German Federal Institute for Risk Assessment (BfR) and Office for Risk assessment & research (BURO)/ Netherlands Food and Consumer Product Safety Authority (NVWA) opinions on the

potential health risks of bamboo food contact materials (FCMs): [Discussion paper on the German Federal Institute for Risk Assessment \(BfR\) and Office for Risk Assessment & research \(BURO\)/ Netherlands Food and Consumer Product Safety Authority \(NVWA\) opinions on the potential health risks of bamboo food contact materials \(FCMs\).](#)

Committee on toxicity of chemicals in food, consumer products and the environment (COT). (2021c). October meeting final minutes 2021: [Final minutes of the meeting of the Committee on 26th October 2021.](#)

European Food Safety Authority (2019) Update of the risk assessment of 'wood flour and fibres, untreated' (FCM No 96) for use in food contact materials, and criteria for future applications of materials from plant origin as additives for plastic food contact materials: [Update of the risk assessment of 'woodflour and fibres, untreated'\(FCM No 96\) for use in food contact materials, and criteria for future applications of materials from plantorigin as additives for plastic food contact materials.](#)

Netherlands Food and Consumer Product Safety Authority (2021a) Benelux statement on bamboo or other unauthorized additives: [Benelux statement on bamboo or other unauthorized additives.](#)

Netherlands Food and Consumer Product Safety Authority (2021b) Health Risks of Bamboo Cups: [Advice from BuRO on the health risks of bamboo cups.](#)