Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment

Minutes of the meeting held on Tuesday, 11th of September 2018 in Broadway House Conference Centre, Tothill St, London SW1H 9NQ

Present

Chairman:	Professor Alan Boobis	
COT Members:	Dr Phil Botham Ms Jane Case Dr James Coulson Dr René Crevel Prof John Foster Dr Mark Graham Dr Caroline Harris Dr Sarah Judge Dr John Thompson Prof Brian Lake Ms Juliet Rix Prof Faith Williams Prof Matthew Wright	
Food Standards Agency (FSA) Secretariat:	Ms C Mulholland Ms R Acheampong Dr B Doerr Dr D Gott Mr B Maycock Ms F Hill Dr D Hedley Ms C Potter Ms C Tsoulli	FSA Scientific Secretary
Public Health England (PHE) Secretariat:	Britta Gadeberg	PHE Scientific Secretary
Assessors:	Prof T Gant	PHE

Officials:	Mr Mark Willis	FSA
	Ms Tracy Smith	FSA
	Ms Firth Piracha	FSA
	Ms Wendy Dixon	FSA
	Ms Daphne Duval	PHE
Other Invited Experts and Contractors:	Mr P Aggett	SMCN
	Prof N Pearce	COC
	Dr T Fletcher	PHE
	Dr G Loizou (via TC)	Health and Safety Laboratory, UK
Observers:	Mr M Hartwig	Energy Drinks Europe

Contents

Announcements

1. The Chair welcomed the members and other attendees.

Interests

2. The Chair reminded those attending the meeting to declare any commercial or other interests they might have in any of the agenda items.

Item 1: Apologies for absence

3. Apologies were received from COT Members Dr Mireille Toledano and Prof Roy Harrison. Ms M Benton from HSE and Ms R Elsom from PHE also apologised for their absence. Dr Toledano provided written comments.

Item 2: Minutes from the meeting held on 3rd of July 2018.

4. The minutes were agreed without amendment.

Item 3: Matters arising from the meeting held on 3rd July 2018

Item 3: Matters arising from previous meetings:

Draft Statement on copper

5. Para 5: A revised version of the statement addressing Professor Aggett's comments has been sent to the Chair for clearance.

The Report of the COT-COC Synthesising Epidemiological Evidence Subgroup (SEES)

6. Para 8: The SEES report has been finalised and sent out to the SEES subgroup, COT and COC Members for information, before publication. It is anticipated that the report will be published on the COT website in the next 2 weeks.

Draft statement on methylmercury in the infant diet

7. Para 9: This statement is currently being finalised and will be sent to the Chair for clearance shortly.

Item 4: Folic acid

8. The folic acid position paper was published in July. There is continuing interest in this topic, including in the COT activity, with a House of Lords PQ tabled for tomorrow (12th September).

Item 7: Overview and update of the work of the 0-5 review

9. The Committee on Toxicity (COT) was asked to review the risk of toxicity of chemicals in the diets of infants and young children aged 1-5 years, in support of a review by the Scientific Advisory Committee on Nutrition (SACN) of Government recommendations on complementary and young child feeding. The reviews will identify new evidence that has emerged since the Government's recommendations were formulated and will appraise that evidence to determine whether the advice should be revised.

10. A summery table was circulated to the Committee, providing a brief overview of the chemicals under review and at what stage of the process were the Secretariat and Committee currently. It also informed the Committee about the intended approach by the Secretariat for the remaining chemicals and deadlines, where applicable.

11. The members noted that EFSA's working group on bisphenol A had recently started work and the Committee's assessment would therefore be delayed until after the publication of the EFSA opinion. In addition, the final report on the US Clarity study on bisphenol A was due for publication in the next few months.

12. The draft EFSA opinion on dioxin had just been published and would be circulated to members for comment in due course. No additional issues were raised.

Item 4: First draft interim position paper on potential risks from "energy drinks" in the diet of children and adolescents (TOX/2018/30)

13. The Chair declared a personal specific interest as he had consulted for Coca Cola in the past (2014) and also had a contract with Red Bull in 2014, though he was never asked to advise them, nor received any payment. It was considered that he should not Chair this item and he passed the Chairmanship over to Dr John Thompson.

14. The Department of Health and Social Care (DHSC) were currently consulting on a proposal to ban the sale of "energy drinks" to children. The COT have been asked for their views on the safety aspects of "energy drink" consumption by children and adolescents, specifically the effects of caffeine and other components associated with "energy drinks". The Committee has also been asked to consider if the level of no acute concern established by EFSA in its 2015 review of caffeine remains valid for children and adolescents.

15. Members had discussed an initial scoping paper at their meeting in July 2018 on the potential risks to children and adolescents from the consumption of "energy drinks". The views of the Committee were incorporated into a draft interim position paper which will be submitted to the DHSC as a response to their consultation. A full statement would be produced in due course covering other aspects of "energy drink" consumption such as effects on behaviour.

16. Dr John Thompson gave evidence on this issue to the Lords Science and Technology Committee on the 10th July 2018.

17. A number of suggestions were made to update the position paper. The changes would be incorporated, and the revised draft circulated to members for final comments by correspondence in the next week, before being cleared by Chair's action.

Item 5: Review of potential risks from contaminants in the diet of infants aged 0 to 12 months and children aged 1 to 5 years (TOX/2018/31)

18. As part of the review by SACN of Government recommendations on complementary and young child feeding, the COT was asked to review the toxicity of chemicals in the diets of infants and young children aged 0-5 years. An initial scoping paper (TOX/2015/32) was reviewed by the Committee in 2015. A second scoping paper (TOX/2018/28) providing an overview of tropane alkaloids (TAs), zinc, selenium and phthalates was reviewed in July 2018.

19. The scoping paper (part II) presented at the present meeting provided an overview of perchlorate, chlorate and furan.

20. Short overviews for each chemical were provided as Annexes, summarizing the respective Health Based Guidance Values (HBGVs) and conclusions drawn from the exposure assessment and risk characterisation. The aim was for the Committee to decide if a full review was required or if the chemicals could be included in the overarching statement.

Item 5a: Perchlorate

21. Professor John Foster declared a personal specific interest as he was contracted by the European Crop Protection Agency (ECPA) to prepare a rebuttal for submission to comment on the thyroid sections of the EFSA/ European Chemicals Agency (ECHA) and the Joint Research Centre (JRC) guidance document on endocrine disruptors, which includes chlorate/perchlorate as classic examples of thyroid toxicants. He therefore refrained from participating in the discussion on perchlorate.

22. The data collected by FSA on perchlorate had been submitted to EFSA and formed part of its evaluation. The scoping paper therefore provided a brief summary of the 2014 EFSA opinion and the most recent occurrence data from the 2017 scientific report, providing the exposures based on the total European data and UK data only.

23. A description of the derivation of the previously established tolerable daily intake (TDI) by EFSA was provided; an acute reference dose (ARfD) was deemed unnecessary by EFSA on the basis that a single acute exposure to perchlorate at the concentrations found in food and drinking water was unlikely to cause an adverse effect. No breast milk data for perchlorate were available for the UK or Europe. A risk characterisation and conclusions were provided.

24. The Committee agreed with EFSAs approach and conclusions. However, members asked for clarifications on a few points, such as the studies (human/animal) used for the derivation of the HBGVs, the EFSA definition of a suspect sample and which food groups had been used for the exposure assessment.

25. Members asked for clarification on the justification for the use of short term, but not acute, exposures and discussed whether an ARfD for perchlorate would be appropriate, based on a read across from chlorate, as perchlorate also induces methemoglobinemia. Members noted that EFSA's conclusion that an ARfD was unnecessary was in part based on exposure considerations. Members also noted the lack of an uncertainty factor for toxicodynamic differences in the derivation of the TDI and enquired about the justification for this.

26. The Committee noted that some potential exposures to perchlorate in infants and children in the UK exceeded the TDI, and this was a potential concern, particularly when iodine intake was low. It was agreed that a full review on perchlorate was unnecessary but that a detailed summary should be included in the overarching statement, reflecting the uncertainties and concerns of the Committee regarding perchlorate and EFSA's assessment.

Item 5b: Chlorate

27. Professor John Foster declared a personal specific interest as he currently is contracted by the European Crop Protection Agency (ECPA) to review the thyroid sections of the EFSA/ECHA/JRC guidelines for endocrine disruption, which includes chlorate/perchlorate as class examples of chemicals disrupting the thyroid gland. He had received funding from ECPA and was involved in ongoing work on perchlorate. He therefore refrained from participating in the discussion on chlorate.

28. The data collected by FSA on chlorate had been submitted to and formed part of the evaluation undertaken by EFSA in 2015. The scoping paper therefore provided a brief summary of the EFSA opinion on chlorate, with focus on UK exposure.

29. EFSA established a TDI based on a read across from perchlorate and identified the formation of methaemoglobin as the critical acute effect to establish an ARfD for chlorate. No information on levels in breast milk was available and data on infant formula were still awaiting confirmation of the concentrations at the time of the assessment and were therefore not included in the EFSA opinion. A risk characterisation and conclusions were provided.

30. Members commented on the fact that EFSA assumed equal difference in potency for perchlorate and chlorate for rats and humans to establish the TDI for chlorate on a read across basis from perchlorate.

31. The Committee asked for a read across calculation for breastmilk using the available US data for perchlorate to be included in the assessment.

32. The Committee enquired about the contribution of chlorate in swimming pool water to total exposure levels, but this was unknown.

33. Members were informed by FSA colleagues in policy that work is currently underway to set appropriate maximum residue limits (MRLs) for chlorate rather than the use of the default value. It was noted by the Committee that setting a level for drinking water was a much wider issue, but this was outside the scope of the current work.

34. The Committee decided a full review on chlorate was unnecessary. A detailed summary should be included in the overarching statement, reflecting the uncertainties and concerns of the Committee regarding chlorate and EFSA's assessment.

Item 5c: Furan

35. A brief background on furan and methylfurans was presented. EFSA found it not appropriate to establish a TDI due to evidence, albeit limited, of a direct carcinogenic MoA, with indications of DNA-reactive genotoxicity, and therefore used the MOE approach.

36. The UK occurrence data used in the exposure assessment were obtained from the Food Standards Agency's (FSA) 2017 survey, which forms part of a long-term surveillance programme (2014-2018). A risk characterisation and conclusions have also been provided.

37. The Committee asked for a clarification on what ready-to-eat meals were to be included in the text. Members discussed the uncertainties regarding the genotoxicity of furan and suggested application of similar wording to that previously used for acrylamide to reflect the potential concern and many uncertainties regarding furan.

38. Members agreed that the statement on furan should recommend continued monitoring to allow for realistic risk assessments.

39. The Committee decided a full review on chlorate was unnecessary. A detailed summary should be included in the overarching statement, reflecting the uncertainties and concerns of the Committee regarding chlorate and EFSA's assessment.

Item 6: Discussion paper on the potential risks from chromium in the diet of infants aged 0 to 12 months and children aged 1 to 5 years (TOX/2018/32)

40. No interests were declared.

41. Chromium was reviewed by the Committee in Sept 2017 (TOX/2017/39), when Members agreed that, in view of the large margins of exposure, chromium could be included in the overarching statement on metals in the infant diet, rather than as a statement on its own. The present paper provided a condensed summary.

42. Members made a number of editorial suggestions and observed that the reference for the IARC report on chromium was not in the reference list.

43. Members requested that a number of points be clarified: Was Cr (III) classified as a carcinogen in animals, or just Cr (VI); can all Cr in food be regarded as Cr (III); what is the speciation of Cr in drinking water; and, could there be a concern from Cr(IV) in water used to prepare the diet of infants, at high levels of consumption.

44. The Committee concluded that chromium should be included in the overarching statement on the substances remaining on SMCN's list of contaminants in the in the diet of infants aged 0 to 12 months and children aged 1 to 5 years, in sufficient detail to explain the conclusions and uncertainties.

Item 7: Discussion paper on the EFSA Opinion on "Risk to human health related to the presence of perfluorooctane sulfonic acid and perfluorooctanoic acid in food. (Reserved Business) (TOX/2018/33)

45. EFSA will soon publish the opinion "Risk to human health related to the presence of perfluorooctane sulfonic acid and perfluorooctanoic acid in food". New health-based guidance values have been established for both perfluorooctane sulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA). Members were asked to review the EFSA opinion and comment on the approach used and the conclusions.

46. This item was discussed as reserved business. The reserved minutes will be published once the EFSA Opinion is published.

Item 8: EFSA public consultation on the MIXTOX guidance (TOX/2018/34)

47. The Chair declared that Imperial College London was a partner in the EC Horizon 2020 EuroMix project and he was principal investigator from the College. Professor. John Foster declared that he currently had a contract with the European Crop Protection Agency (ECPA) critically reviewing the EFSA proposal for the cumulative aggregate risk assessment of combinations of chemicals. He therefore refrained from discussing this aspect he was still receiving funding from ECPA.

48. EFSA have launched a public consultation on draft guidance on harmonised methodologies for human health, animal health and ecological risk assessment of combined exposure to multiple chemicals. This document describes harmonised risk assessment methodologies for combined exposure to multiple chemicals for all

relevant areas within EFSA's remit. These are: human health, animal health and ecological areas.

49. Members had been invited to comment on the draft prior to the current COT meeting and their comments were compiled by the Secretariat in a document presented for discussion. They were addressed in two sections: The general comments on the document overall, and specific comments on individual sections of the document.

50. Members highlighted that the guidance was useful, though it was very general. They indicated areas they felt should be addressed in more detail as well as areas that were not addressed in the guidance, such as the lack of emphasis on the importance of human biomonitoring and epidemiological evidence when assessing mixture effects on health.

51. It was agreed that the comments should be submitted to EFSA by the Secretariat prior to the deadline of the 15th of September.

Item 9: paper for Information: FSA Scientific Advisory Committees (SACs) update (TOX/2018/09)

52. This paper was provided for information.

Item 10: Any other Business

53. The Chair enquired about the next update on e-cigarettes and the Committee were informed, that a paper is in preparation for the December meeting.

Microplastics

54. A draft FSA request to the COT to evaluate and advise on microplastics and nanoplastics had been tabled. FSA would be continuing to work on this mandate, but it was tabled at this stage for any initial comments by Members. The Committee noted the limited information apparently available on occurrence in food and queried what data are available on relative size distribution. PHE also have an interest in microplastics with respect to their presence in drinking water and air. The starting point for the Committee's work was likely to be scoping out what information was available.

FSA recruitment

55. Members were advised that FSA was considering how to expand the scientific advisory committees and also to recruit additional experts to provide expertise on a more *ad-hoc* basis. It was intended that a recruitment exercise would be launched

later in the Autumn. Members were asked to send any suggestions on useful organisations to approach to the Secretariat.

Date of next meeting

56. The next meeting will be held on Tuesday 23rd October 2018 at Broadway House Conference Centre, Tothill St, London, SW1H 9NQ.