COMMITTEE ON TOXICITY OF CHEMICALS IN FOOD, CONSUMER PRODUCTS AND THE ENVIRONMENT

Potential future discussion items – horizon scanning

Background

1. The Committee Terms of Reference specify *"To advise at the request of" (……government departments)*. Therefore, the work of the Committee is primarily reactive and the agendas are set by the Secretariat based upon the need for advice from government departments and agencies particularly, but not exclusively, the Food Standards Agency (FSA) and Public Health England (PHE).

2. The Code of Practice for Scientific Advisory Committees (Office of Science and Technology, December 2001), specifies that "*committees should ensure that they have mechanisms in place that allow them to consider on a regular basis whether new issues in their particular areas of responsibility are likely to emerge for which scientific advice or research might be needed*".

3. Members have agreed that it would be useful to have an annual agenda item to discuss potential future topics. The list of topics is displayed on the Committee's website at: https://cot.food.gov.uk/forthcomingCOTmeetings

4. As Members are aware, the UK has left the European Union and the authorisation of regulated products that would have been done by EFSA will now be done in the UK. Three Joint Expert Groups (JEGs) have been established to cover regulated products and these will be over seen by the COT who will provide challenge comment and assurance of their work. This will inevitably affect the future agendas of the Committee, although it is unclear as yet how much Committee time this will represent.

Agenda items for 2021

Ongoing items

5. There are a number of ongoing items, either on the current agenda or scheduled for further discussion at a future meeting:

- COT input into the Scientific Advisory Committee on Nutrition (SACN) review of the maternal diet.

- Biologically based food contact materials.

- Microplastics
- Dioxins
- SETE subgroup
- Biological relevance and statistical significance.

6. Requests for COT advice are frequently received at short notice.

7. The FSA has a substantial programme of surveys to monitor the safety and quality of food. Details of these are available on the FSA website at https://www.food.gov.uk/research/research-projects.

Where appropriate, the Committee's advice will be sought on the health implications of the results.

Regulated products

8. As noted above, the Committee will be providing support, challenge and final sign off for the assessments of three JEGs on Food Contact Materials (FCM JEG), Food Additives, Enzymes and other Regulated Products (AEJEG) and Animal Feed and Feed Additives (AFFAJEG). However, ad hoc risk assessment advice may also be needed on other regulated products that are outside of the scope of the three JEGS this could be on supplements, foods for special groups or reference points for non-authorised veterinary medicines.

New Approach Methodologies Workshop 2021

9. A workshop on new approach methodologies (NAMs) is planned to follow on from the success of the Exploring Dose Response (March 2020) and PBPK for Regulators (December 2020) workshops. The outcomes of this workshop will pave the way towards an understanding and approach to integrating the best advanced scientific methodologies available for regulatory risk assessment.

10. The workshop will involve specialists in the field and will provide information towards a UK Roadmap of NAMs in a regulatory setting. Furthermore, this will feed into related COT and FSA workstreams and the FSA-funded Fellowship with the University of Birmingham.

Potential discussion topics

Consultations of the European Food Safety Authority (EFSA)

11. EFSA frequently consults on draft documents on issues of generic relevance across its remit, or that are particularly high profile. When these have been of particular importance to the Food Standards Agency, the COT has been invited to respond to the consultation (e.g. HBCDD, ochratoxin A and nickel in 2020). Similarly,

EFSA documents on toxicological risk assessment approaches with potential relevance to the working practice of the COT may also be discussed. It is anticipated that further relevant EFSA documents will be presented to COT during 2021. The draft opinion on non monotonic dose response is on the agenda of this meeting.

Items carried forward from previous horizon scanning

10. A number of items were carried over from horizon scanning in 2020. These include:

- Approaches to the risk assessment of residues of human pharmaceuticals.
- The exposome
- Developments in dietary risk assessment

UK benchmark dose (BMD) modelling guidance

12. During discussions on the EFSA nickel update "it was considered that UK guidance on BMD modelling was needed to ensure consistency in software use and in interpretation of the outputs".

13. Whilst carrying out its normal functions the COT is likely to come across instances where it will be essential that there is a good understanding of BMD modelling, including when it should be used; the software available and its respective limitations; and interpretation of the outputs. The secretariat, in addition may also need to know how to carry out the modelling. In order that there is consistency in all of these aspects it is essential that there is guidance from a UK perspective.

14. A COT (or wider UK) guidance document should be put together which would detail all of the above recommendations and also list relevant resources with links. Discussions with experts in-the-field would likely be necessary to ensure that the guidance is accurate, reliable and future-proof for the FSA and the COT.

COC and COM horizon scanning

15. On 24th-25th November 2020, the COC and COM held a joint meeting to which COT members were also invited, and one of the discussion items was joint horizon scanning. From this discussion, the following topics were agreed and the Secretariats will consider how to progress these either as joint topics or which Committee might lead on these:

- Use of toxicogenomics/omics technologies in toxicity testing
- PBPK modelling – the COT workshop (see paper TOX/2021/06) was held the following week, and COM and COC members participating will feed back to their respective Committees on this.
- Next generation sequencing
- Further exploration of microplastics/microparticles and their composition – also linking with COMEAP
- Development of a dynamic cancer risk model, including consideration that pre-cancer effects are assessed as 'general' toxicity pathways, and other influencers on cancer/toxicity risk (e.g. shift work)

- Knowledge sharing across the three Committees, including impacts of EU Exit
- Consideration of uncertainty, use of uncertainty factors and margins of exposure – noting this also links with other activities

Other Updates

FSA-funded Computational Toxicology Fellowship

16. The 4-year Fellowship funding has been awarded to the University of Birmingham. The objectives of the Fellowship are:

- Create a hub at FSA for the interested community;

- Engage and map the research community, public bodies and industry in the UK and overseas that can deliver and use or would like to use any validated and/or cutting edge *in*-silico tools to provide meaningful input into, or deeper understanding of FSA risk assessments

- Evaluate the opportunity of using *in silico* models and potentially including the outputs within FSA risk assessments where appropriate

- Investigate the uncertainties associated with such models

- Scoping and review of existing and emerging technologies and approaches. Bring in/design relevant models/technologies to be used by the FSA in risk assessment.

- Ensure validation and QA/QC of any models designed for or brought into the FSA meets with FSA policies/requirements

- Ensure that FSA staff are fully trained in the use of any model/technology either brought in-house or developed

- Cross fertilisation of ideas with experts in other chemical areas e.g. cosmetics and industrial chemicals, environmental risk assessment, chemical risk assessment and learning from each other as we develop 21st century methods and strengthening our 3Rs commitment.

FSA Research Programme

15. The FSA research strategy has seen the consolidation of all research in the portfolio into a series of multidisciplinary programmes. The three likely to involve matters that COT will be consulted on are food hypersensitivity, chemical hazards in food and feed and cutting edge regulator.

Balance of expertise on the Committee

16. It has previously been agreed that the following types of specialist expertise are required by the Committee for some or all of its evaluations:

Analytical techniques	Biochemistry
Bioinformatics	Cell biology
Clinical practice	Dietary exposure assessment
Endocrinology	Environmental exposure assessment
Epidemiology	Human toxicology
Immunology	Mathematical Modelling
Mechanistic toxicology	Molecular biology
Neurotoxicology	Nutrition
Paediatrics	Pharmacokinetics
Pharmacology	Probabilistic modelling
Reproductive toxicology	Respiratory toxicology
Risk assessment	Statistical aspects of experimental design
Statistics	Systems biology
Toxicogenomics	Toxicological pathology
Xenobiotic metabolism	

17. It would not be necessary to have an individual member for each listed expertise as some people would have a combination of the required skills. Additional key experts are also invited to attend meetings for specific topics to supplement missing knowledge.

18. Members are invited to comment on whether this list is still appropriate and if there are important gaps amongst the current membership or in light of possible future developments.

Questions on which the views of the Committee are sought

19. Members are invited to comment on each of the above areas and also to consider the following questions:

a. Do Members have additional suggestions for future topics for:

- Specific issues to be included as routine agenda items
- Focussed topics for one-day open meetings
- Generic issues requiring establishment of a Working Group.

20. Do Members have proposals for research that FSA should fund in order to improve future COT risk assessments?

21. Members are reminded that they may draw particular issues to the attention of the Secretariat at any time.

Secretariat

January 2021