CODEX ALIMENTARIUS COMMISSION

Food and Agriculture Organization of the United Nations

World Health Organization

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Agenda Item 14

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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON CONTAMINANTS IN FOODS

Tenth Session
Rotterdam, The Netherlands, 4 – 8 April 2016

(Comments provided by FAO/WHO)

Discussion paper on maximum levels for methylmercury in fish

FAO/WHO provided comments to the EWG during the consultation process for the preparation of the discussion paper on maximum levels for methylmercury in fish. FAO/WHO would like to note that only some of their comments have been considered in the final version distributed for discussion under the agenda item 14 (CX/CF 16/10/15) for the 10th CCCF. Therefore, FAO/WHO would like to re-offer their comments to CCCF members.

First of all the FAO/WHO would like to remind the EWG that the FAO/WHO expert consultation on the risk/benefit of fish consumption in its report (published in 2010[1]) already provides information and clear advice on many of the issues before the EWG, in particular:

- A quantitative risk/benefit assessment has already been made during the FAO/WHO consultation compiling a large numbers of occurrence data for total mercury (28 000 data for mercury from 103 species of fish from France, Norway, Japan, USA, etc.) which provides a solid database (Please see Appendix A page 45 of the Report of the Joint FAO/WHO Expert Consultation on the Risks and Benefits of Fish Consumption[1]). Please also note that the fish list defined by the FAO/WHO expert consultation is also well supported by a recent review published in the EHP (ie - *Roxanne Karimi et al., A quantitative synthesis of mercury in commercial seafood and implications for exposure in the United States, Environmental Health Perspective review, vol 120, number 11, pp1512-1518, November 2012).*
- We also extracted the occurrence data in the GEMS database for Hg and MeHg in the fish categories under consideration: data are available from 20 countries with 4227 analytical results, 2967 being for non-tuna predatory fishes (see table 1 below). We further proceeded with the analysis and compare these data with table 2 of the discussion paper. We note that our analysis appears to have found a contamination level that seems to be generally higher than the one reported in the table 2. More importantly, the contamination of non-tuna predatory fishes appears to be higher than the one of tuna. Consequently, if one assumes a similar consumption for all predatory fishes (which is reasonable for certain populations, in the absence of better consumption data), we would suggest to consider proposing an ML for non-tuna predatory fishes that is equal or lower compared to the one for tuna in order to provide a similar level of protection. In any case, ***we would strongly recommend CCCF to consider using the GEMS data in order to increase the robustness of its assessment.***
- We also note that the conclusions by the FAO/WHO expert consultation on the risks and benefits of fish consumption took into consideration international fish species that accumulate highest mean content of methylmercury (>0.5-1microg/g) with lowest mean EPA+DHA (<3mg/g) or even over 3mg/g (for seven serving per week).

The species of interest mentioned in the FAO/WHO report which could be of health concern (with scientific evidence showing that the risks outweighed the benefits regardless of the number of serving/week) are the 10 following common fish species (*latin name*):

- Alfonsino (*beryx splendens)*

[1] http://www.fao.org/docrep/014/ba0136e/ba0136e00.pdf

- o Mackerel, king *(Scomberomorus cavalla)*
- o Marlin *(Makaira spp.)*
- o Orange roughy *(Hoplostethus atlanticus),*
- o Shark *(selachimorpha spp.)*
- o Swordfish *(Xiphias gladius)*
- o Tuna bigeye *(Thunnus obesus)*
- o Tuna, Pacific bluefin *(Thunnus orientalis)*
- o Tuna, Atlantic bluefin *(Thunnus thynnus)*
- o Tilefish, gulf *(caulolatilus microps)*

- FAO/WHO propose to add to the initial list (as described in the classification table 3 page 23 of the Report of the Joint FAO/WHO Expert Consultation on the Risks and Benefits of Fish Consumption[1]) the two last fish species. These two species were initially not included because data on EPA + DHA content were lacking in the database reviewed at that time of the FAO/WHO expert consultation. However it is noted that considering their content in total mercury (over 0.5 mg/kg) and the daily consumption, their inclusion in the list would be independent of EPA + DHA content.

Furthermore, FAO/WHO would also like to provide some comments regarding the data used in the exposure assessment:

- In the context of international ML setting, we also question the utility of a dietary exposure assessment based on new data only on two countries; indeed this exposure assessment does not seem to provide an improvement and/or refinement compared to the FAO/WHO one. Moreover the consideration of the low proportion of consumers for some fish species seems to be due to insufficient dataset and should not be used to draw conclusions.
- We note that the EWG has conducted its exposure assessment based only on specific consumption of fish species without taking into consideration the overall exposure to methylmercury coming from other fish species. This might lead to underestimate the total intake. Moreover, we would suggest to evaluate the appropriateness of using an exposure scenario with maximum concentration in fish species when chemical compounds with chronic toxicity end point such as methylmercury are considered. In this context we would like to note the recommendations of the JECFA exposure guideline to rather use the mean concentration data in combination with the average and with the high percentile of consumption (P90, P95 or P97.5th) of whole population and eaters only.

Table 1: Summary of occurrence data provided by Member States to GEMS/Food (mg/kg).

Fish species or category name		**Data Source**	**Number of samples**	**Average**	**Median**	**P95**	**P97.5**	**P99**	**Maximum**
Predatory fishes	*Including tuna*	GEMS/ Food	4227	0.47	0.34	1.33	1.73	2.56	6.76
Predatory fishes	*Excluding tuna*	GEMS/ Food	2967	0.55	0.42	1.47	1.97	2.74	6.76
Tuna	*(Unspecified)*	GEMS/ Food	1260	0.27/0.28	0.17/0.19	0.83	1.15	1.61	3.37