

# CODEX ALIMENTARIUS COMMISSION



Food and Agriculture  
Organization of the  
United Nations



World Health  
Organization

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Agenda Item 19

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**ORIGINAL LANGUAGE ONLY**

## JOINT FAO/WHO FOOD STANDARDS PROGRAMME

### CODEX COMMITTEE ON CONTAMINANTS IN FOODS

17th Session  
15-19 April 2024

#### REPORT OF THE PRE-SESSION WORKING GROUP ON THE FOLLOW-UP TO THE OUTCOMES OF JECFA EVALUATIONS AND FAO/WHO EXPERT CONSULTATIONS

*(Prepared by the Chair of the WG on the Follow-up to the outcomes of JECFA evaluations and FAO/WHO expert consultations, European Union)*

#### INTRODUCTION

1. CCCF16 (2023)<sup>1</sup> agreed to re-convene, as necessary, the in-session Working Group (WG) at CCCF17 chaired by EU and make recommendations on possible follow-up actions to recent Joint Food and Agriculture Organization of the United Nations (FAO)/World Health Organization (WHO) Expert Committee on Food Additives (JECFA) and FAO/WHO expert consultation for consideration by CCCF17.
2. The meeting of the WG has taken place as a pre-session virtual working group on Tuesday 9 April 2024.
3. The Chair of the WG noted that no new JECFA evaluations on contaminants have been performed and no reports of JECFA evaluations from previous years have become available since CCCF16 and that the summary and conclusions of a Joint FAO/WHO Expert consultation on Risks and Benefits of Fish Consumption were published.

#### OBJECTIVE OF THE WORKING GROUP

4. The objective of the WG is to consider follow-up actions to the outcome of the JECFA evaluations and FAO/WHO expert consultations and to discuss and agree on possible recommendations to the CCCF for consideration and agreement.

#### JOINT FAO/WHO EXPERT CONSULTATION ON RISKS AND BENEFITS OF FISH CONSUMPTION

5. A Joint FAO/WHO Expert consultation on Risks and Benefits of Fish Consumption has taken place in October 2023, to update the Report of the Joint FAO/WHO Expert Consultation on the Risks and Benefits of Fish Consumption, published in 2011.

Three main objectives guided the expert consultation to set a framework for assessing the health benefits and risks of fish consumption and to provide guidance to the Codex Alimentarius Commission in their work on managing risks, considering the existing data:

- examine the results of recent systematic literature reviews on risks and benefits of fish consumption;
- draw conclusions regarding the health benefits and risks associated with fish consumption; and
- recommend a series of steps that Member States could take to better assess and manage the risks and benefits of fish consumption

6. The summary and conclusions of the Joint FAO/WHO Expert consultation have been published<sup>2</sup>. That document summarizes the relevant conclusions and recommendations of the Expert Consultation. The full report will include

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<sup>1</sup> REP23/CF16 para 113 (iii)

<sup>2</sup> [jecfa-summary-risks-and-benefits-of-fish-consumption.pdf \(who.int\)](https://www.who.int/publications/m/item/jecfa-summary-risks-and-benefits-of-fish-consumption)

conclusions about the health benefits of fish consumption, the toxic effects of dioxins and dl-PCBs and the toxic effect of methylmercury and the protective effects of selenium. The full report is expected to become available prior to CCCF18.

7. The Chair of the WG highlighted the recommendations from the Joint FAO/WHO Expert consultation on which a follow-up already at this session of CCCF could be considered:
  - **Collect standardized data on fish contaminants** and nutrients;
  - **Develop, maintain and improve existing databases on levels and trends over time of specific contaminants, in particular MeHg, dioxins and dl-PCBs**, as well as nutrient content, such as selenium and long chain omega-3 fatty acids (LCn3PUFAs), for fish consumed by region.

The Chair of the WG noted that this is also related to the ongoing discussions on the Guidance on data analysis for development of maximum levels and for improved data collection, in particular the part of the guidance on data collection and submission (CCCF17, agenda item 17)

8. No concrete proposals for follow-up to these recommendations were proposed.
9. As regards the follow-up risk management measures on methylmercury and dioxins and dioxin-like PCBs, the WG was reminded that once the full report is available, , this could be taken up in the framework of the review of Codex standards for contaminants for methyl mercury in fish (CCCF17, agenda item 18) and for dioxins and PCBs the outcome of the evaluation by JECFA, scheduled for November 2025 has to be awaited (see also REP23/CF16 para 111)

#### ERGOT ALKALOIDS

10. Ergot alkaloids were evaluated by JECFA at its ninety-first meeting taking place virtually from 1-12 February 2021. The summary and conclusions<sup>3</sup> were published on 5 March 2021, the report of the meeting<sup>4</sup> was published on 23 November 2022 and the WHO toxicological monograph<sup>5</sup> on 31 March 2023.
11. JECFA established an Acute Reference Dose (ARfD) of 0,4 µg/kg bw as a group ARfD for the simple sum of total ergot alkaloids and a Tolerable Daily Intake (TDI) of 0,4 µg/kg bw as a group TDI for the simple sum of total ergot alkaloids. The Committee noted that some estimates of the mean (0.46–0.47 µg/kg bw per day) and high percentile (0.56–0.86 µg/kg bw per day) chronic dietary exposure in children and some estimates of the high percentile acute dietary exposure in children (0.65–0.98 µg/kg bw per day) and in adults (0.49 µg/kg bw per day) exceeded the ergot alkaloid group health-based guidance value (HBGV), and that this may indicate a human health concern.
12. The follow-up was already considered at CCCF16. The following recommendation was put forward to CCCF16 for consideration and agreement: to establish an EWG, working in English, to prepare a discussion paper on ergot alkaloids to look into the need and feasibility of possible follow-up actions for consideration by CCCF17. In this discussion paper, minimum requirements for submission of data to the GEMS/Food database should be considered in view of issuing a call for data on the presence of ergot alkaloids in food and feed;
13. However, at CCCF16 no member country volunteered to take up the work. At CCCF16, it was agreed to reconsider the elaboration of a discussion paper on the need and feasibility of possible follow-up actions on ergot alkaloids at CCCF 17 (REP23/CF16 para 113 (ii))
14. The WG raised no objections to put forward the same recommendation for consideration by CCCF17.

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<sup>3</sup> [https://cdn.who.int/media/docs/default-source/food-safety/jecfa/summary-and-conclusions/jecfa91-1to12march2021-summary-and-conclusions.pdf?sfvrsn=1d79351f\\_5&download=true](https://cdn.who.int/media/docs/default-source/food-safety/jecfa/summary-and-conclusions/jecfa91-1to12march2021-summary-and-conclusions.pdf?sfvrsn=1d79351f_5&download=true)

<sup>4</sup> WHO technical report series; 1036. Available at: <https://apps.who.int/iris/rest/bitstreams/1480488/retrieve>

<sup>5</sup> WHO Food additives series; Available at: <https://apps.who.int/iris/rest/bitstreams/1495716/retrieve>

## T-2, HT-2 AND DIACETOXYSCIRPENOL

15. T-2, HT-2 and diacetoxyscirpenol (DAS) were evaluated by JECFA at its ninety-third meeting taking place virtually from 24 March to 1 April 2022. The summary and conclusions<sup>6</sup> were published on 12 April 2022, the report of the meeting<sup>7</sup> was published on 31 March 2023. The WHO toxicological monograph has not yet been published.
16. JECFA 93 established a group ARfD for T-2, HT-2 and DAS of 320 ng/kg bw and recommended a relative potency factor of 0.2 for acute exposure to DAS and a group TDI of 25 ng/kg bw for T-2, HT-2 and DAS, alone or in combination and the relative potency factor of 0.2 should be applied in comparing dietary exposure to DAS with the group TDI. JECFA93 noted that there was insufficient information available to estimate combined acute exposure to T-2, HT-2 and DAS. The acute dietary exposure estimates for T-2 and HT-2 calculated indicate no health concern. JECFA93 concluded that chronic dietary exposure estimates for the sum of T-2 and HT-2 at the mean and at the 95<sup>th</sup> percentile are higher than the group TDI of 25 ng/kg bw, indicating a possible health concern.
17. The follow-up was already considered at CCCF16. The following recommendation was put forward to CCCF16 for consideration and agreement: to establish an EWG, working in English, to prepare a discussion paper on T-2, HT-2 and DAS to look into the need and feasibility of possible follow-up actions for consideration by CCCF17. In this discussion paper, minimum requirements for submission of data to the GEMS/Food database should be considered in view of issuing a call for data on the presence of T-2, HT-2 and diacetoxyscirpenol (DAS) in food and feed;
18. However, at CCCF16 no member country volunteered to take up the work. At CCCF16, it was agreed to reconsider the elaboration of a discussion paper on the need and feasibility of possible follow-up actions on trichothecenes (T-2, HT-2 and DAS) at CCCF 17 (REP23/CF16 para 113 (ii))
19. The WG raised no objections to put forward the same recommendation for consideration by CCCF17.

## PREVIOUS JECFA EVALUATIONS AND FAO/WHO EXPERT CONSULTATION REPORTS ON WHICH NO FOLLOW UP WAS GIVEN IN CCCF

20. It is not appropriate to re-discuss for several years the follow-up to a JECFA evaluation agreed at a previous CCCF meeting, but no action was undertaken because no member country had volunteered to take up the work. Therefore, it was suggested to establish an inventory of JECFA evaluations and FAO/WHO expert consultations on which no or no complete follow-up action has been undertaken. The suggestion was made to list the JECFA evaluations and FAO/WHO expert consultations and indicate the follow-up, i.e. discussion paper and/or Code of Practice and/or establishment of MLs.
21. The Chair of the WG indicated to establish such list and to provide the first draft as annex to this report. The list is preliminary and needs to be further fine-tuned. It contains all JECFA evaluations and FAO/WHO expert consultations of relevance for CCCF. Certain contaminants have been evaluated several times and the follow-up is provided to the last full evaluation of the contaminant by JECFA, even if certain follow-up actions were already undertaken following previous JECFA evaluations or not directly related to the JECFA evaluation.

## WORKING GROUP RECOMMENDATIONS TO CCCF17

22. The following recommendations are put forward to CCCF17 for consideration and agreement:
  - (i) as regards the follow-up to the **risk-benefit assessment of the consumption of fish**, to consider the follow-up to be given to the recommendations on standardized data collection on fish contaminants on to develop, maintain and improve existing databases on levels and trends over time of specific contaminants, in particular MeHg, dioxins and dl-PCBs.;
  - (ii) as regards **ergot alkaloids**, to establish an EWG, working in English, to prepare a discussion paper on ergot alkaloids to look into the need and feasibility of possible follow-up actions for consideration by CCCF18. In this discussion paper, minimum requirements for submission of data to the GEMS/Food database should be considered in view of issuing a call for data on the presence of ergot alkaloids in food and feed;

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<sup>6</sup> [https://cdn.who.int/media/docs/default-source/food-safety/jecfa/summary-and-conclusions/jecfa93-summary-and-conclusions-april2022.pdf?sfvrsn=33db6aca\\_3&download=true](https://cdn.who.int/media/docs/default-source/food-safety/jecfa/summary-and-conclusions/jecfa93-summary-and-conclusions-april2022.pdf?sfvrsn=33db6aca_3&download=true)

<sup>7</sup> WHO technical report series; 1040. Available at: <https://apps.who.int/iris/rest/bitstreams/1495726/retrieve>

- (iii) as regards **T-2, HT-2 and diacetoxyscirpenol (DAS)**, to establish an EWG, working in English, to prepare a discussion paper on T-2, HT-2 and DAS to look into the need and feasibility of possible follow-up actions for consideration by CCCF18. In this discussion paper, minimum requirements for submission of data to the GEMS/Food database should be considered in view of issuing a call for data on the presence of T-2, HT-2 and diacetoxyscirpenol (DAS) in food and feed;
- (iv) to consider an inventory of previous JECFA evaluations or FAO/WHO expert consultations on which no or no complete follow-up was undertaken.
- (v) to consider if the in-session WG at CCCF has to be reconvened for CCCF18, in case there are no remaining open issues from this meeting of CCCF given that there are no JECFA evaluations on contaminants/toxins scheduled prior to CCCF18.

## ANNEX

JECFA EVALUATION	CONTAMINANTS EVALUATED	CCCF Follow-up			
		Discussion paper	Code of Practice	MLs	comments
JECFA-101 (11/2025)	Arsenic (inorganic and organic)				
	Dioxins and dioxin-like PCBs				
JECFA-93 (2022 – to be published)	T2 HT2 toxin and 4,15 diacetoxyscirpenol (DAS)		X CXC 51-2003 (mycotoxin – cereals) CXC 78-2017 (mycotoxin – spices)		
JECFA-91 (31/03/2023)	Cadmium (dietary exposure assessment)				
	Ergot alkaloids		X CXC 51-2003 (mycotoxin – cereals) CXC 78-2017 (mycotoxin – spices)		
JECFA-90 (14/07/2023)	T-2 HT-2 toxin (dietary exposure assessment) (see JECFA-93)				
JECFA-83 (13/12/2018)	Aflatoxins	X	X CXC 55-2004 (aflatoxin- peanuts) CXC 59-2005 (aflatoxin – tree nuts) CXC 45-1997 (Aflatoxin B1 -feed milk producing animals) CXC 65-2008 (Aflatoxin – dried figs) CXC 51-2003 (mycotoxin – cereals) CXC 78-2017 (mycotoxin – spices) CXC 82-2023 (mycotoxin – cassava)	X	

JECFA EVALUATION	CONTAMINANTS EVALUATED	CCCF Follow-up			
		Discussion paper	Code of Practice	MLs	comments
	Aflatoxin M1		X CXC 45-1997 (Aflatoxin B1 -feed milk producing animals)	X	
	4,15 diacetoxyscirpenol (DAS) – see JECFA-93)				
	Fumonisin	X	X CXC 51-2003 (mycotoxin – cereals) CXC 78-2017 (mycotoxin – spices)	X	
	Glycidyl esters	X	X CXC 79-2019 (3-MCPDEs and GEs in refined oils)		
	3-MCPD esters and 3-MCPD	X	X CXC 79-2019 (3-MCPDEs and Ges in refined oils ) CXC 64-2008 (3-MCPD in Acid hydrolysed vegetable protein)		
	Sterigmatocystin	X	X CXC 51-2003 (mycotoxin – cereals) CXC 78-2017 (mycotoxin – spices)		It was premature to set MLs due to a lack of an internationally validated analytical method and reference material (CCCF12-2018)
	Co-exposure of fumonisins with aflatoxins				
JECFA-80	Pyrrolizidine alkaloids (27/11/2020)	X	X CXC 74-2014 (pyrrolizidine alkaloids in food and feed)		

JECFA EVALUATION	CONTAMINANTS EVALUATED	CCCF Follow-up			
		Discussion paper	Code of Practice	MLs	comments
	Non-dioxin-like PCBs (27/09/2016)	X	X CXC 49-2001 (chemicals -food) CXC 62-2006 (dioxins, dioxin-like PCBs and non-dioxin-like PCBs in Food and Feed)		
JECFA-77 (13/01/2014)	Cadmium (exposure from cocoa and cocoa products) (see JECFA-91)				
JECFA-74 (16/06/2012)	Cyanogenic glycosides	X	X CXC 73-2013 (hydrocyanic acid in cassava)	X	
	Fumonisin (see JECFA-83)				
JECFA-73 (16/01/2011)	Cadmium	X	X CXC 49-2001 (Chemicals - food) CXC 81-2021 (Cadmium cocoa beans)	X	
	Lead	X	X CXC 49-2001 (Chemicals - food) CXC 56-2004 (Arsenic-rice)	X	
JECFA-72 (13/01/2011)	Acrylamide	X	X CXC 67-2009 (acrylamide – food)		
	Arsenic (see JECFA-101)	X	X CXC 49-2001 (Chemicals - food) CXC 77-2017 (Arsenic-rice)	X	

JECFA EVALUATION	CONTAMINANTS EVALUATED	CCCF Follow-up			
		Discussion paper	Code of Practice	MLs	comments
	Deoxynivalenol	X	X CXC 51-2003 (mycotoxin – cereals) CXC 78-2017 (mycotoxin – spices)	X	CCCF8, REP14/CF, §61 – “The Committee agreed that it was premature to continue with work on the extension of the MLs for DON in cereals and cereal products to its acetylated derivatives. The Committee encouraged members to continue collecting and submitting data on occurrence of acetylated DON to GEMS/Food and noted the need for development of an internationally validated method for analysis of acetylated DON
	Furan	X			CCCF5 (2011) agreed that this work could be taken up when more adequate data became available
	Mercury		X CXC 49-2001 (Chemicals - food)	X	
	Perchlorate		X CXC 49-2001 (Chemicals - food)		No further action as no health concern at current levels of exposure (CCCF5, 2011)
JECFA-68 (10/08/2008)	Aflatoxins (impact MLs for almonds, Brazil nuts, hazelnuts, pistachios and dried figs)				
	Ochratoxin A	X	X CXC 51-2003 (mycotoxin – cereals) CXC 63-2007 Ochratoxin A-wine CXC 69-2009 Ochratoxin A – coffee CXC 72-2013	X	



JECFA EVALUATION	CONTAMINANTS EVALUATED	CCCF Follow-up			
		Discussion paper	Code of Practice	MLs	comments
			Ochratoxin A in cocoa CXC 78-2017 (mycotoxin – spices) CXC 82-2023 (Mycotoxins – cassava)		
JECFA-67 (10/08/2007)	Aluminium		X CXC 49-2001 (Chemicals – food)		
	1,3-dichloro-2-propanol	X	X CXC 64-2008 (3-MCPD in Acid hydrolysed vegetable protein)	X	
	3-chloro-1,2 propanediol	X	X CXC 64-2008 (3-MCPD in Acid hydrolysed vegetable protein)	X	
	Methylmercury	X	X CXC 49-2001 (Chemicals - food)	X	
JECFA-64 (12/06/2006)	Acrylamide (see JECFA-72)				
	Cadmium (impact assessment different MLs)				
	ethylcarbamate	X	X CXC 70-2011 (ethylcarbamate in stone fruit distillates)		
	Inorganic tin	X	X CXC 49-2001 (Chemicals - food) CXC 60-2005 (tin -canned foods)	X	

JECFA EVALUATION	CONTAMINANTS EVALUATED	CCCF Follow-up			
		Discussion paper	Code of Practice	MLs	comments
	Polybrominated diphenyl ethers (PBDEs)		X CXC 49-2001 (Chemicals - food)		No action required for PBDEs (CCFAC37 2005)
	Polycyclic aromatic hydrocarbons (PAH)	X	X CXC 68-2009 (PAH -food-smokingand drying processes) CXC 49-2001 (Chemicals - food)		
JECFA-61 (5/02/2004)	Cadmium (see JECFA-73)				
	Methylmercury (see JECFA-67)				
JECFA-57 (2002)	Chloropropanols (see JECFA-67)				
	3-Chloro-1,2-propanediol (see JECFA-67)				
	1,3-Dichloro-2-propanol (see JECFA-67)				
	Polychlorinated dibenzodioxins, polychlorinated dibenzofurans, and coplanar polychlorinated biphenyls (see JECFA-101)	X	X CXC 49-2001 (chemicals -food) CXC 62-2006 (dioxins, dioxin-like PCBs and non-dioxin-like PCBs in Food and Feed)		
JECFA-56 (2001)	Aflatoxin M1 (see JECFA-83)				
	Fumonisin (see JECFA-83)				

JECFA EVALUATION	CONTAMINANTS EVALUATED	CCCF Follow-up			
		Discussion paper	Code of Practice	MLs	comments
	Ochratoxin A (see JECFA-68)				
	Trichothecenes (see JECFA-93)				
	Deoxynivalenol (see JECFA-72)				
	T-2 and HT-2 toxin (see JECFA-93)				
JECFA-55 (2001)	Cadmium (see JECFA-73)				
	Tin (see JECFA-64)				
JECFA-53 (2000)	Lead (see JECFA-73)				
	Methylmercury (see JECFA-67)				
	Zearalenone	X	X CXC 51-2003 (mycotoxin – cereals) CXC 78-2017 (mycotoxin – spices)		Exposure below PMTDI
JECFA-49 (1998)	Aflatoxins				
JECFA 44 (1996)	Ochratoxin A (see JECFA 68)				
	Patulin		X CXC 50-2003 (patulin – apple juice)	X	
JECFA-41 (1993)	Chloropropanols (see JECFA 67)				
JECFA-39 (1993)	Cyanogenic glycosides (see JECFA-74)				
	Solanine and chaconine				
JECFA-37 (1991)	Benzo(a)pyrene (see JECFA-64)				

JECFA EVALUATION	CONTAMINANTS EVALUATED	CCCF Follow-up			
		Discussion paper	Code of Practice	MLs	comments
	Ochratoxin A (see JECFA-68)				
JECFA-35 (1990)	Patulin (see JECFA-44)				
	Polychlorinated biphenyls (PCBs) (see JECFA-80)				
JECFA-33 (1989)	Aluminium (see JECFA-67)				
	Arsenic (see JECFA-101)				
	Cadmium (see JECFA-73)				
	Bis(2-ethylhexyl)phthalate				
	iodine				
	Methylmercury (see JECFA-67)				
	Tin (see JECFA-64)				
JECFA-30 (1987)	Lead (see JECFA-73)				
JECFA-28 (1984)-migrants from food contact materials	Acrylonitrile		X CXC 49-2001 (Chemicals - food)	X	
	Bis(2-ethylhexyl)phthalate (see JECFA-33)		X CXC 49-2001 (Chemicals - food)		
	Styrene		X CXC 49-2001 (Chemicals - food)		
	Vinyl chloride		X CXC 49-2001 (Chemicals - food)	X	
JECFA-27 (1983)	Arsenic (see JECFA-101)				
	Iron				
JECFA-26 (1982)	copper				
	zinc				
	Tin (see JECFA-64)				

JECFA EVALUATION	CONTAMINANTS EVALUATED	CCCF Follow-up			
		Discussion paper	Code of Practice	MLs	comments
JECFA-22 (1978)	Asbestos				
	Lead (see JECFA-73)				
	Mercury see JECFA-72)				
	Inorganic tin (see JECFA-64)				
	Organotin compounds				
JECFA-16 (1972)	Mercury (see JECFA-72)				
	Lead (see JECFA-73)				
	Cadmium (see JECFA-73)				
JECFA-15 (1972)	Tin (see JECFA 64)				
JECFA-14 (1970)	Tin (see JECFA 64)				
JECFA-5 (1960)	Arsenic (see JECFA-101)				
<b>FAO/WHO Expert meeting</b>					
FAO/WHO Expert meeting (2023)	Risk-benefit fish consumption Methylmercury Dioxins and PCBs				
FAO/WHO Expert meeting (2020)	Tropane alkaloids	X			
FAO/WHO Expert meeting	Ciguatera fish poisoning	X	(X) In development		
FAO/WHO Expert meeting (2008)	Melamine			X	
FAO/IOC/WHO ad hoc expert consultation (2004)	Saxitoxin group			X	
	Okadaic acid group			X	
	Domoic acid group			X	
	Brevetoxin group			X	
	Azspiracid group			X	