Mercury and methylmercury in food

1. Background

In reply to the question of the European Commission to consider new developments regarding inorganic mercury and methylmercury toxicity and to evaluate whether the Joint FAO/WHO Expert Committee on Food Additives (JECFA) provisional tolerable weekly intakes for methylmercury of 1.6 µg/kg body weight (b.w.) and of 4 µg/kg b.w. for inorganic mercury were still appropriate, the CONTAM Panel of the European Food Safety Authority adopted the *Scientific Opinion on the risk for public health related to the presence of mercury and methylmercury in food*[1].

As next step, the European Commission requested EFSA to address the risks and benefits as regards fish/seafood consumption related to relevant beneficial substances (e.g. nutrients such as n-3 long-chain polyunsaturated fatty acids) and the contaminant methylmercury. In response to this question, two additional documents were presented by EFSA: the NDA Panel of the European Food Safety Authority adopted the "*Scientific Opinion on health benefits of seafood (fish and shellfish) consumption in relation to health risks associated with exposure to methylmercury*"[2] and the Scientific Committee[3] delivered the "*Statement on the benefits of fish/seafood consumption compared to the risks of methylmercury in fish/seafood*".

2. Consumption advice

During the last meeting of the Expert Committee on Environmental and Industrial Contaminants, some Member States indicated that the information on DG SANTE's website related to mercury was outdated.

The current information note[4] "Methyl mercury in fish and fishery products" states that "*Women who might become pregnant, women who are pregnant or women who are breastfeeding should not eat more than one small portion (<100g) per week of large*

[1] EFSA Panel on Contaminants in the Food Chain (CONTAM); Scientific Opinion on the risk for public health related to the presence of mercury and methylmercury in food. EFSA Journal 2012;10(12):2985. [241 pp.]

[2] EFSA NDA Panel (EFSA Panel on Dietetic Products, Nutrition and Allergies), 2014. Scientific Opinion on health benefits of seafood (fish and shellfish) consumption in relation to health risks associated with exposure to methylmercury. EFSA Journal 2014;12(7):3761, 80 pp.

[3] EFSA Scientific Committee, 2015. Statement on the benefits of fish/seafood consumption compared to the risks of methylmercury in fish/seafood. EFSA Journal 2015:13(1):3982, 36 pp.

[4] D/530286 dated 21 April 2008

predatory fish, such as swordfish, shark, marlin and pike. If they eat this portion, they should not eat any other fish during this period. Also, they should not eat tuna more than twice per week. Parents should be aware that this advice also applies to young children. Consumers should also pay attention to any more specific advice from national authorities in light of local specificities."

The EFSA Scientific Committee estimated how many servings of fish/seafood per week population groups at risk of exceeding the tolerable weekly intake (TWI) for methylmercury would need to reach the TWI for methylmercury and the dietary reference value (DRV) for n-3 (Long-Chain) Polyunsaturated Fatty Acid (LCPUFA): "*When consuming species with a high methylmercury content, only a few numbers of servings (<1–2) can be eaten before reaching the TWI, which may be attained before the DRV. To protect against inter alia neurodevelopmental toxicity of methylmercury and achieve the benefits of fish consumption (effect of fish/seafood consumption during pregnancy on functional outcomes of children's neurodevelopment and on cardiovascular diseases in adults), which are associated with 1–4 fish servings per week, fish/seafood species with a high content of mercury in the daily diet should be limited*".

However, the Scientific Committee further stated that "*because a variety of fish species are consumed across Europe, it is not possible to make general recommendations on fish consumption*" and concluded that "*each country needs to consider its own pattern of fish consumption, especially the species of fish consumed, and carefully assess the risk of exceeding the TWI of methylmercury while obtaining the health benefits from consumption of fish/seafood*".

As a consequence, the Commission considers to replace the current information note by a webpage on mercury in food paraphrasing the content of the abstract of the statement of EFSA's Scientific Committee with links referring not only to the statement of the Scientific Committee, but also to the CONTAM[5] and NDA[6] opinions.

[5] EFSA Panel on Contaminants in the Food Chain (CONTAM); Scientific Opinion on the risk for public health related to the presence of mercury and methylmercury in food. EFSA Journal 2012;10(12):2985. [241 pp.]

[6] EFSA NDA Panel (EFSA Panel on Dietetic Products, Nutrition and Allergies), 2014. Scientific Opinion on health benefits of seafood (fish and shellfish) consumption in relation to health risks associated with exposure to methylmercury. EFSA Journal 2014;12(7):3761, 80 pp.

3. MLs for fish & fishery products

Currently, two MLs are applicable to fish and fishery products: 0.5 mg/kg ("default ML" for "fishery products and muscle meat of fish") and 1.0 mg/kg ("higher ML" for a list of named fish species, applicable to fish species which are generally referred to as "predatory fish").

As explained during the Expert Committee on Environmental and Industrial Contaminants held on 8 January 2015, the average mercury content of a number of fish species is (far) below or (far) above current ML both for the lower and the higher ML. A review of the existing MLs should take into account the available occurrence data.

Taking into account the EFSA CONTAM Opinion conclusion that "*the mean dietary exposure across age groups does not exceed the TWI for methylmercury, with the exception of toddlers and other children in some surveys. The 95th percentile dietary exposure is close to or above the TWI for all age groups. High fish consumers, which might include pregnant women, may exceed the TWI by up to approximately six-fold*", a review of the MLs for mercury is envisaged in view of a further reduction of dietary exposure.

As the statement of EFSA's Scientific Committee covers a wide range of fish consumption (< 1 to 4 fish servings per week), differentiated consumption advice (age, physiological state, kind of fish…) seems unavoidable. Such consumption advice could benefit from a wider range of MLs.

Maximum levels should be adjusted to achieve a further reduction of dietary exposure in view of available occurrence data and without jeopardising the potential beneficial effects of fish consumption. Taken into account the wide range of mercury content as well as the complex relation between the tolerable weekly intake for methylmercury and the dietary reference value for n-3 (long-chain) polyunsaturated fatty acid (LCPUFA), a further differentiation of the MLs could be envisaged. Such differentiation could include not only more MLs in the lower range, but could exceptionally also include one or more "extra high MLs" for a very limited number of fish species.

More differentiation in the lower ML range would allow for a better orientation of the fish consumption in view of reaching the dietary reference value for LCPUFA in a safe manner, whilst one or more "extra high MLs" could combine continued consumption of fish species with high natural content with a (more) conscious consumption of such highly contaminated species.

Member States are invited to consider (and express their views at the meeting) on the following points

- **Is a further differentiation of the MLs for methylmercury in fish needed / useful / logical in view of the available occurrence data? If yes, how many categories (and corresponding MLs) would be needed?**
- **Would an additional "extra high ML" supported by occurrence data be acceptable for a limited number of fish species?**

3.1 Fish:

Individual species are sorted by increasing P95 value.

Entry / species	# data (total Hg)	P95 (mg/kg)	Current ML	Possible future ML
Sprat (Sprattus)	76	0,029	0,5	0,1
Salmon & Trout (Salmo spp.)	1.579	0,055	0,5	0,1
Smelt (Osmerus)	1 (MeHg)	(0,073)	0,5	(0,1)
Herring (Clupea)	1.150	0,075	0,5	0,1
Sturgeon (Acipenser species)	22	0,09	1,0	0,1
Mackerel (Scomber)	1.066	0,110	0,5	0,1
Sardine & Pilchard (Sardina)	76	0,112	0,5	0,1
Sole (Limanda)	65	0,135	0,5	0,2
Plaice (Pleuronectes)	225	0,160	0,5	0,2
Mullet (Mullus species)	24	0,172	1,0	0,2
Flounder (Platichthys)	80	0,176	0,5	0,2
Carp (Cyprinus)	232	0,194	0,5	0,2
Shad (Alosa)	4	0,196	0,5	0,2
Bullet Tuna Auxis)	1	0,2	0,5	0,2
Megrim (Lepidorhombus species)	3	0,204	1,0	0,2
Grenadier (Coryphaenoides rupestris)	12	0,238	1,0	0,2

Entry / species	# data (total Hg)	P95 (mg/kg)	Current ML	Possible future ML
Seabream, pandora (Pagellus species)	1	0,280	1,0	0,3
Whitefish (Coregonus)	47	0,288	0,5	0,3
Roach (Rutilus)	31	0,313	0,5	0,3
Redfish (Sebastes marinus, S. mentella, S. viviparus)	213	0,334	1,0	0,3
Hake (Merluccius)	128	0,347	0,5	0,5
Cod & Whiting (Gadus spp.)	1.246	0,348	0,5	0,5
Rays (Raja species)	62	0,395	1,0	0,5
Perch (Perca)	424	0,439	0,5	0,5
Anglerfish (Lophius species)	78	0,448	1,0	0,5
Eel (Anguilla species)	510	0,451	1,0	0,5
Halibut (Hippoglossus hippoglossus)	24	0,451	1,0	0,5
Bass (Marone)	65	0,459	0,5	0,5
Atlantic catfish (Anarhichas lupus)	158	0,502	1,0	0,5
Bream (Charax)	134	0,564	0,5	0,5
Babel (Barbus)	24	0,703	0,5	0,5
Anchovy (Engraulis)	24	0,801	0,5	0,5
Pike (Esox lucius)	250	0,886	1,0	0,5
Scabbard fish (Lepidopus caudatus, Aphanopus carbo)	3	0,973	1,0	1,0
Snake mackerel or butterfish (Lepidocybium flavobrunneum, Ruvettus pretiosus, Gempylus serpens)	4	0,980	1,0	1,0

Entry / species	# data (total Hg)	P95 (mg/kg)	Current ML	Possible future ML
Emperor, orange roughy, rosy soldierfish (Hoplostethus species)	None	N/A	1,0	1,0
Kingklip (Genypterus capensis)	None	N/A	1,0	1,0
Pink cusk eel (Genypterus blacodes)	None	N/A	1,0	1,0
Plain bonito (Orcynopsis unicolor)	None	N/A	1,0	1,0
Poor cod (Tricopterus minutes)	None	N/A	1,0	1,0
Sail fish (Istiophorus platypterus)	None	N/A	1,0	1,0
Tuna (Thunnus species, Euthynnus species, Katsuwonus pelamis)	452	1,035	1,0	1,0
Shark (all species)	43	1,835	1,0	2,0
Portuguese dogfish (Centroscymnus coelolepis)	138	1,866	1,0	2,0
Bonito (Sarda sarda)	8	2,024	1,0	2,0
Marlin (Makaira species)	9	2,431	1,0	2,0
Swordfish (Xiphias gladius)	202	2,916	1,0	2,0

No occurrence data are available for the following fish species: emperor (a.k.a. orange roughy or rosy soldierfish), kingklip, pink cusk eel, plain bonito, poor cod and sail fish. Of these fish species, two have been specifically added[7] to the list of named fish species to which the higher ML applies: kingklip and pink cusk eel.

In addition, for a number of fish species (anchovy, babel, bonito, bullet tuna, grenadier, halibut, marlin, megrim, mullet, roach, scabbard fish, seabream (or pandora), shad, shark, smelt, snake mackerel (or butterfish), sturgeon, whitefish), only a **limited number (< 60) of occurrence data** is available.

[7] Commission Regulation (EC) No 629/2008 of 2 July 2008 amending Regulation (EC) No 1881/2006 setting maximum levels for certain contaminants in foodstuffs (OJ L 173, 3.7.2008, p. 6)

Member States are invited to consider (and express their views at the meeting) on the following points

- **For fish species for which insufficient / no occurrence data are available, which approach to apply?**
  - **Maintain the ML that is currently applicable?**
  - **Re-attribute to the "default ML" (0,50 mg/kg)?**
  - **Another approach?**
- **Occurrence data show that Swordfish (Xiphias gladius) is the fish species that contains the highest level of mercury. What could be the future ML for swordfish, taking into account the following theoretical statistical non-compliance rates (based on the available occurrence data):**
  - **1,0 mg/kg → 49,8 % non-compliance**
  - **1,5 mg/kg → 32,4 % non-compliance**
  - **2,0 mg/kg → 14,5 % non-compliance**
  - **2,5 mg/kg → 10,0 % non-compliance**

Differentiated MLs for fish could be as follows:

Muscle meat of fish [24] [25] excluding the species listed below	0,50
Herring (Clupea), Mackerel (Scomber), Salmon & Trout (Salmo spp.), Sardine & Pilchard (Sardina), Smelt (Osmerus), Sprat (Sprattus), Sturgeon (Acipenser species)	0,10
Bullet Tuna (Auxis), Carp (Cyprinus), Flounder (Platichthys), Grenadier (Coryphaenoides rupestris), Megrim (Lepidorhombus species), Mullet (Mullus species), Plaice (Pleuronectes), Shad (Alosa), Sole (Limanda)	0,20
Redfish (Sebastes marinus, S. mentella, S. viviparus), Roach (Rutilus), Seabream, pandora (Pagellus species), Whitefish (Coregonus)	0,30
Emperor, orange roughy, rosy soldierfish (Hoplostethus species), Kingklip (Genypterus capensis), Pink cusk eel (Genypterus blacodes), Plain bonito (Orcynopsis unicolor), Poor cod (Tricopterus minutes), Sail fish (Istiophorus platypterus), Scabbard fish (Lepidopus caudatus, Aphanopus carbo), Snake mackerel or butterfish (Lepidocybium flavobrunneum, Ruvettus pretiosus, Gempylus serpens), Tuna (Thunnus species, Euthynnus species, Katsuwonus pelamis)	1,0

Bonito (Sarda sarda), Marlin (Makaira species), Portuguese dogfish (Centroscymnus coelolepis), Shark (all species)[, Swordfish (Xiphias gladius)]	2,0
[Swordfish (Xiphias gladius)]	[2,5]

3.2 Bivalve molluscs

Individual species are sorted by increasing P95 value.

Entry / species	# data (total Hg)	P95 (mg/kg)	Current ML	Possible future ML
Water molluscs (all species)	**1.973**	**0,049**	**0,5**	**0,050**
Scallop (Pecten spp.)	100	0,023	0,5	0,050
Queen scallop (Chlamys opercularis)	45	0,024	0,5	0,050
Razor clam (Solen marginatus)	8	0,024	0,5	0,050
Cockle (Cardium edule)	49	0,034	0,5	0,050
Mussel (Mytilus edulis)	1.078	0,039	0,5	0,050
Oyster (Ostrea edulis)	291	0,040	0,5	0,050
Clam (Mya arenaria)	178	0,102	0,5	0,10

Insufficient data are available for a number of species (queen scallop and razor clam).

Comparable to the MLs for fish species, Member States are invited to consider (and express their views at the meeting) which approach to apply to bivalve molluscs for which insufficient occurrence data are available:

- **Maintain the ML that is currently applicable?**
- **Re-attribute to the "default ML" (0,50 mg/kg)?**
- **Another approach?**

Based on the available occurrence data, a possible entry MLs for bivalve molluscs could be

Bivalve molluscs [(26)] excluding Clam (Mya arenaria)	0,050
Clam (Mya arenaria)	0,10

In case the MLs for species for which insufficient occurrence data are available should remain unchanged, the entry MLs for bivalve molluscs would become

Bivalve molluscs [(26)] excluding Clam (Mya arenaria), Cockle (Cardium edule), Queen scallop (Chlamys opercularis), Razor clam (Solen marginatus)	0,050
Clam (Mya arenaria)	0,10
Cockle (Cardium edule), Queen scallop (Chlamys opercularis), Razor clam (Solen marginatus)	0,50

An update of footnote[(26)] due to the repeal of Regulation (EC) No 104/2000 by Regulation (EU) No 1379/2013[8], has been done in the PAH amendment (SANCO/12420/2014), voted in the PAFF Committee section "TOX" on 10 March 2015.

3.3 Cephalopods

Individual species are sorted by increasing P95 value.

Entry / species	# data (total Hg)	P95 (mg/kg)	Current ML	Possible future ML
Cephalopods (all species)	**326**	**0,200**	**0,5**	**0,2**
Squid	154	0,117	0,5	0,1
Cuttlefish	68	0,133	0,5	0,1
Octopus	104	0,269	0,5	0,3

In view of the available occurrence data, the current ML for cephalopods should be reviewed. Splitting of the occurrence data by species demonstrates a difference in mercury content for the different species of cephalopods.

Member States are invited to consider (and express their views at the meeting) on the following points

- **Whether a single ML for cephalopods would be sufficient or whether further differentiation would be needed in view of the available occurrence data?**
- **In case further differentiation is needed, what MLs should be envisaged?**

Based on the available occurrence data, a possible entry MLs for cephalopods could be

[8] Regulation (EU) No 1379/2013 of the European Parliament and of the Council of 11 December 2013 on the common organisation of the markets in fishery and aquaculture products, amending Council Regulations (EC) No 1184/2006 and (EC) No 1224/2009 and repealing Council Regulation (EC) No 104/2000

Cephalopods	
Squid & cuttlefish	0,10
Octopus	0,20

3.4 Crustaceans

Individual species are sorted by increasing P95 value.

Entry / species	# data (total Hg)	P95 (mg/kg)	Current ML	Possible future ML
Crustaceans (all species)	**679**	**0,284**	**0,5**	**0,3**
Crayfish (Astacus)	1	(0,1)	0,5	(0,1)
Crawfish (Panulirus)	23	0,064	0,5	0,1
Crab (Cancer spp.)	139	0,175	0,5	0,2
Prawns (Palaemon serratus)	115	0,189	0,5	0,2
Shrimps (Crangon)	224	0,200	0,5	0,2
Lobster (Hommarus)	37	0,304	0,5	0,3
Norway lobster (Nephrops norvegicus)	31	0,496	0,5	0,5

As for the fish species, only a limited number of occurrence data are available for some species of crustaceans. For the species for which sufficient occurrence data are available, the current ML (of 0,50 mg/kg) seems adequate for Norway lobster (Nephrops norvegicus). For some other species, the occurrence data show that the current ML should be reviewed.

In view of concentrating instructions related to interpretation in the footnotes rather than in the table containing the MLs, footnote [(44)] could be redrafted and moved from the column describing the commodity to the column listing the MLs. The redrafted footnote [(44)] could be "*The maximum level for crustaceans applies to muscle meat from appendages and abdomen (excluding the cephalothorax). In case of crabs and crab-like crustaceans (Brachyura and Anomura) it applies to muscle meat from appendages.*"

This again raises the question how to deal with the species for which insufficient occurrence data are available:

- **Maintain the ML that is currently applicable?**
- **Re-attribute to the "default ML" (0,50 mg/kg)?**

- **Another approach?**

Based on the available occurrence data, a possible entry MLs for crustaceans could be

Crustaceans excluding Lobster (Hommarus) and Norway lobster (Nephrops norvegicus)	0,20 (44)
Lobster (Hommarus)	0,30 (44)
Norway lobster (Nephrops norvegicus)	0,50 (44)

In case the MLs for species for which insufficient occurrence data are available should remain unchanged, the entry MLs for crustaceans could become

Crustaceans (excluding crab (Cancer spp.), prawns (Palaemon serratus) and shrimps (Crangon))	0,50 (44)
Crab (Cancer spp.), prawns (Palaemon serratus) and shrimps (Crangon)	0,20 (44)

3.5 Marine gastropods

Individual species are sorted by increasing P95 value.

Entry / species	# data (total Hg)	P95 (mg/kg)	Current ML	Possible future ML
Gastropods (all)	**22**	**0,076**	**0,5**	**0,1**
Winkle (Littorina littorea)	8	0,073	0,5	0,1
Whelk (Buccinum undatum, Fusus antiquus)	14	0,078	0,5	0,1

Comparable to the MLs for fish species and bivalve molluscs, which approach should be applied to marine gastropods?

- **Maintain the currently applicable ML (0,50 mg/kg)?**
- **Lower the ML to 0,10 mg/kg?**
- **Another approach?**

Based on the available occurrence data, a possible entry MLs for marine gastropods could be set at 0,1 mg/kg.

4. MLs for food supplements

Entry / species	# data (total Hg)	P95 (mg/kg)	Current ML	Possible future ML
Food supplements	**2.774**	**0,038**	**0,100**	**0,040**

The non-compliance rate for the existing ML (0,10 mg/kg) is 2,5 %. Based on the available occurrence data, the non-compliance rates for 0,050 mg/kg and for 0,040 mg/kg respectively are 4,2 % and 4,9 %. Based on the available occurrence data, the ML for food supplements could be reviewed to 0,040 mg/kg.

5. PPP commodities

5.1 General principles

For a number of commodities ("PPP commodities"), the default ML under PPP legislation ("ML $_{PPP}$") causes enforcement problems due to the close proximity between the ML $_{PPP}$ and the background level of mercury in these commodities. The list of PPP commodities for consideration was established using the upper bound approach.

In view of the establishing MLs under the contaminants legislation ("ML $_{CONT}$") for these PPP commodities, the non-compliance rate versus the ML $_{PPP}$ is checked.

1. In case the non-compliance rate is too high / unacceptable, the standard approach (95th percentile) used for the establishment of MLs $_{CONT}$ is applied.

2. In case this non-compliance rate is comparable to the approach applied under the contaminants legislation (95th percentile), several options are possible:

- **2.a. No to set an ML $_{CONT}$ (as the enforcement level would be too close to the background level)**

- **2.b. To set the ML $_{CONT}$ using the standard approach (95th percentile)**
- **2.c. To set an ML $_{CONT}$ if the commodity is listed as a major contributor for dietary exposure in the EFSA opinion / exposure report**
- **2.d. To set the ML $_{CONT}$ at the same level as the ML $_{PPP}$ (as it doesn't lead to unacceptable non-compliance rates)**

Member States are invited to consider (and express their views at the meeting on the suggested approach. In considering the option 2.a., Member States should not forget that if no MLs $_{CONT}$ are established, no MLs $_{PPP}$ will be applicable either under the envisaged future scenario[9].

5.2 Detailed information for PPP commodities

An overview of the key data for the different PPP commodities is given in the tables below. Figures in the column "Possible future ML" are only indicative. When an ML $_{CONT}$ seems justified, the figures are presented as ***bold-italic***. When an ML $_{CONT}$ seems less justified, the figures are presented between brackets.

Entry	# data (total Hg)	P95 (mg/kg)	Current ML $_{PPP}$	NC rate at ML$_{PPP}$	Possible future ML
Fungi (all)	**1.346**	**0,638**	**0,01**	**28,0 %**	**(0,6)**
Fungi (cultivated)	734	0,021	0,01	48,7 %	***0,2***
Fungi (wild)	612	2,476	0,01	10,8 %	***2,0***

As the non-compliance rates for both subgroups are quite high, an ML $_{CONT}$ should be considered. In view of the large difference between cultivated and wild fungi, a group ML for fungi seems unrealistic.

Entry	# data (total Hg)	P95 (mg/kg)	Current ML $_{PPP}$	NC rate at ML$_{PPP}$	Possible future ML
Herbs (all)	281	0,165	0,01	19,7 %	***0,15***

As the non-compliance rates for herbs are quite high, an ML $_{CONT}$ should be considered.

[9] Described as option 1A in the "***Discussion paper on the approach for mercury compounds***" (distributed for the ENVI expert committee meeting held on 8 January 2015): "***1A****: in addition, to introduce into Regulation (EC) No 396/2005 a* ***general cross-reference to Regulation (EC) No 1881/2006*** *for mercury at substance level (e.g. with a footnote behind the substance name) stating that* ***where Regulation (EC) No 1881/2006 does not establish MLs, no MRLs apply.***"

Entry	# data (total Hg)	P95 (mg/kg)	Current ML $_{PPP}$	NC rate at ML$_{PPP}$	Possible future ML
Spices (all)	291	0,014	0,02	2,6 %	(0,01)

As the non-compliance rates for spices are within the normal range, question 2 above applies.

Entry	# data (total Hg)	P95 (mg/kg)	Current ML $_{PPP}$	NC rate at ML$_{PPP}$	Possible future ML
Meat (all species)	**11.490**	**0,06**	**0,01**	**2,8 %**	**(0,05)**
Meat (livestock species*)	5.312	0,002	0,01	1,1 %	(0,002)
Meat (farmed game)	498	0,002	0,01	1,0 %	(0,002)
Meat (rabbit)	135	0,004	0,01	0,0 %	(0,005)
Meat (poultry)	2.137	0,005	0,01	2,6 %	(0,005)
Meat (wild game)	585	0,009	0,01	3,8 %	(0,01)
Meat (wild & farmed game)	3.772	0,010	0,01	5 %	(0,01)

* livestock species = beef, goat (& kid), horses (& asses, mules and hinnies), mutton (& lamb), pig (& piglet), veal.

As the non-compliance rates for spices are within the normal range, question 2 above applies. In view of the large variation, a group ML for meat seems unrealistic.

Entry	# data (total Hg)	P95 (mg/kg)	Current ML $_{PPP}$	NC rate at ML$_{PPP}$	Possible future ML
Edible offals (all species)	**13.335**	**0,015**	**0,01**	**8,6 %**	**(0,015)**
Edible offals (poultry)	977	0,003	0,01	0,8 %	(0,003)
Edible offal (livestock species)	11.597	0,013	0,01	7,4 %	(0,015)
Edible offals (game)	568	0,088	0,01	45,9 %	***0,1***
Edible offals (rabbit)	9	0,000	0,01	0,0 %	---

In view of the large variation, a group ML for edible offal seems unrealistic. Occurrence data point at a need for an ML for edible offals of game meat. Unfortunately, a further subdivision between farmed game and wild game is not feasible. The setting of an ML for edible offals for livestock species seems justified. Further subdivision of the edible offal for livestock species (subdivided by species, kidney versus liver) is given in the table below.

Entry	# data (total Hg)	P95 (mg/kg)	Current ML $_{PPP}$	NC rate at ML$_{PPP}$	Possible future ML
Edible offal (livestock species)	**11.597**	**0,013**	**0,01**	**7,4 %**	**(0,015)**
Beef kidney & liver	1.193	0,015	0,01	15,8 %	(0,015)
Beef kidney	700	0,018	0,01	23,9 %	***0,015***
Beef liver	461	0,009	0,01	3,7 %	(0,010)
Sheep kidney & liver	252	0,017	0,01	15,6 %	(0,015)
Sheep kidney	97	0,018	0,01	23,0 %	***0,015***
Sheep liver	155	0,013	0,01	10,4 %	***0,010***
Pork kidney & liver	8.137	0,013	0,01	6,3 %	(0,010)
Pork kidney	4.121	0,021	0,01	9,8 %	***0,020***
Pork liver	4.076	0,007	0,01	2,9%	(0.010)
Veal kidney & liver	324	0,003	0,01	2,1 %	(0,005)
Veal kidney	117	0,004	0,01	2,1 %	(0,005)
Veal liver	207	0,003	0,01	1,8 %	(0,005)

As figures for kidney and liver are quite different for a given animal species, it seems unrealistic to set a single ML for all edible offals within a species. The need for an ML for edible offals for livestock meat seems limited to beef kidneys, sheep kidney, sheep liver and pork kidney. For the other edible offals (beef liver, pork liver, veal kidney, veal liver), question 2 above applies.

No calculations were performed on the categories "Heart" and "Tongue" (both for beef, veal, pork, mutton and lamb), as only 6 data points were available for these groups. As for all commodities for which insufficient occurrence data are available, the same question arises:

- Maintain the ML that is currently applicable?
- Re-attribute to the "default ML" (0,50 mg/kg)?
- Another approach?

Entry	# data (total Hg)	P95 (mg/kg)	Current ML $_{PPP}$	NC rate at ML$_{PPP}$	Possible future ML
Animal fat (all species)	**552**	**0,002**	**0,01**	**1,3 %**	**(0,002)**
Fish & cod liver oil	110	0,000	0,01	0,8 %	N/A
Pork fat	149	0,004	0,01	0,40 %	(0,005)
Butter & butter oil	285	0,005	0,01	1,80 %	(0,005)

An ML for fish & cod liver oil doesn't seem justified. For pork fat and butter & butter oil, question 2 above applies.

Entry	# data (total Hg)	P95 (mg/kg)	Current ML $_{PPP}$	NC rate at ML$_{PPP}$	Possible future ML
Tree nuts	336	0,005	0,01	2,1 %	(0,005)
Oil seeds	848	0,011	0,02	1,1 %	(0,01)

Both for tree nuts and for oil seeds, question 2 above applies.

Entry	# data (total Hg)	P95 (mg/kg)	Current ML $_{PPP}$	NC rate at ML$_{PPP}$	Possible future ML
Honey	1.271	0,001	0,01	1,0 %	(0,001)

An ML for honey doesn't seem justified based on the available occurrence data.

Entry	# data (total Hg)	P95 (mg/kg)	Current ML $_{PPP}$	NC rate at ML$_{PPP}$	Possible future ML
Milk (all species)	**2.524**	**0,0003**	**0,01**	**0,20 %**	**---**
Milk (Cow)	2.188	0,0003	0,01	0,30 %	---
Milk (Sheep)	184	0,0004	0,01	0,00 %	---
Milk (Goat)	121	0,0004	0,01	0,00 %	---

Taking into account the very low non-compliance rate as well as the levels, there seems to be no need to propose a maximum level for milk (for the species cows, sheep and goat).

Entry	# data (total Hg)	P95 (mg/kg)	Current ML $_{PPP}$	NC rate at ML$_{PPP}$	Possible future ML
Cocoa beans	151	0,007	0,02	3,60 %	(0,01)
Coffee beans	293	0,006	0,02	0,00 %	(0,005)

For cocoa beans, occurrence data for cocoa beans, cocoa mass and cocoa powder have been used. Both for cocoa beans and for coffee beans, question 2 applies.

Entry	# data (total Hg)	P95 (mg/kg)	Current ML $_{PPP}$	NC rate at ML$_{PPP}$	Possible future ML
Tea & herbal infusions	936	0,02	0,01	29,60%	**0,02**
Dehydrated & unprocessed	43	0,02	0,01	39,30 %	**0,02**
Tea "solids"	508	0,019	0,01	33,00 %	**0,02**
Camellia sinensis	392	0,014	0,01	32,50 %	**0,02**
Peppermint	24	0,026	0,01	44,30 %	**0,02**
Camomile flowers	7	0,004	0,01	0,0 %	---
Rooibos	4	0,008	0,01	0,0 %	---
Hibiscus flowers	2	0,000	0,01	0,0 %	---
Other	82	0,046	0,01	34,60 **%**	---

Although insufficient data are available for some specific commodities (dehydrated & unprocessed, peppermint, camomile flowers, rooibos and hibiscus flowers), occurrence data in general clearly indicate than an ML $_{CONT}$ should be set. A group ML could be envisaged.

6. Conclusion:

On the consumption advice, the Commission considers to replace the current information note entitled "Methylmercury in fish and fishery products" by a webpage on mercury in food with links referring to the relevant EFSA webpages / opinions.

There is a clear need to structure the discussions on mercury in food. It is the intention to find agreement on the following fundamental points before starting the discussion on the MLs for the individual commodities. Member States are invited to consider (and express their views at the meeting) on these points.

On the review of the existing MLs for fish and fishery products, these points are

- Is a further differentiation of the MLs for methylmercury in fish needed / useful / logical in view of the available occurrence data? If yes, how many categories (and corresponding MLs) would be needed?
- Would an additional "extra high ML" be acceptable as this could combine continued consumption of fish species with high natural content with a (more) conscious consumption of such highly contaminated species?
- How to deal with the repetitive question on how to deal with subgroups of commodities for which insufficient data are available?
    - Maintain the ML that is currently applicable?
    - Re-attribute to the "default ML" (0,50 mg/kg)?
    - Another approach?

On the PPP commodities, what would be the preferred option in case the non-compliance rate versus the ML_{PPP} is comparable to the effect of the 95^{th} percentile approach applied under the contaminants legislation?

- No to set an ML_{CONT} (as the enforcement level would be too close to the background level)?
- To set the ML_{CONT} using the standard approach (95^{th} percentile)?
- To set an ML_{CONT} if the commodity is listed as a major contributor for dietary exposure in the EFSA opinion / exposure report?
- To set the ML_{CONT} at the same level as the ML_{PPP} (as it doesn't lead to unacceptable non-compliance rates)?

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