

codex alimentarius commission



FOOD AND AGRICULTURE
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Agenda Item 15(a)

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DRFAT MAXIMUM LEVEL FOR LEAD IN FISH

STATISTICAL ANALYSIS OF DATA ON LEAD CONTENT FOR SIGNIFICANTLY TRADED FISH SPECIES THAT MIGHT CAUSE PROBLEMS IN INTERNATIONAL TRADE

At the 35th session of CCFAC it was agreed, that Denmark should prepare a statistical analysis of the available data on lead in fish and the consequences of ML's of 0.2, 0.4, 0.5 mg/kg. Also, a list should be prepared on the fish species that might cause problems in international trade.

A statistical analysis requires access to raw data on lead in fish. This means, that the data should be the result of each single analysis. As only Denmark and Finland has submitted raw data it's not possible to do the statistical analysis. For this purpose we therefore refer to the document from CCFAC 2002 – attached as Annex 2.

Concerning the trade of fish – and consumption of fish – we have received information from FAO and from EU. This information is presented in table 1-3 and with a summary list in table 4 on all the fish species mentioned in the information submitted from FAO and EU. Some of the information was given in Spanish, which means a translation to English and then again to Latin, which might have resulted in some uncertainties. Submitted information on crustaceans, molluscs and cephalopods has been deleted, as these groups are not for discussion.

ANNEX 1: TRADE AND CONSUMPTION OF FISH

Information on trade and consumption of fish has been submitted by FAO and by EU. The information is given in table 1-3 and summarised in table 4.

Table 1 shows information received from FAO on international trade of fish. Only a few of the categories are described by a fish specie and only these categories supply information which can be used in relation to setting ML's for lead in fish. The column to the right summarises the fish species mentioned in the information submitted from FAO.

Table 1: Information on trade of fish from FAO

Commodity	Trade in year 2000 (MT)	% of total	To be considered for ML
Oily-fish meal	4.164.806	16,5	
Marine fish, frozen	1.595.462	6,3	
Mackerels, frozen	1.020.382	4,0	Mackerel
Fish body oils	830.833	3,3	
Tunas, canned	739.232	2,9	Tuna
Skipjack tuna, frozen	528.918	2,1	Skipjack tuna
Marine fish, fresh or chilled	484.349	1,9	
Marine fish fillets, frozen	474.171	1,9	
Cods, frozen	447.921	1,8	Cod
Atlantic salmon, fresh or chilled	440.897	1,7	Salmon
Yellowfin tuna, frozen	376.146	1,5	Yellow fin tuna
Herrings, frozen	365.525	1,5	Herring
Sardines, sardinellas, brisling or sprats, frozen	310.198	1,2	Sardine, sardinella, brisling and sprat
Alaska Pollack fillets, frozen	295.943	1,2	Pollack
Fish meat, frozen	283.866	1,1	
Atlantic herring, frozen	279.972	1,1	Herring
Fish minced (=surimi), frozen	278.334	1,1	
Fish, canned	235.965	0,9	
Jack and horse mackerel, frozen	233.613	0,9	Jack and horse mackerel
Atlantic herring, fresh or chilled	219.562	0,9	Herring
Fish preparations	212.529	0,8	
Pacific salmon, frozen	196.823	0,8	Salmon
Fish meals	187.410	0,7	

Table 2 summarises the information from EU on trade of fish species.

Table 2: Information on fish trade from European Commission:

Commodity	Trade in year 2001 (thousand tonnes)
Tuna	551
Cod	370
Salmon	362
Hake	262
Alaska pollack	247
Herring	179
Illex	104
Cuttlefish	97
Coalfish	71

Table 3 shows the most consumed fish species in EU. The data was submitted in Spanish and has been translated to English, which however includes some uncertainties as the dictionary in some cases propose more than one specie in English.

Table 3: Information on fish consumption from European Commission

Commodity (Spanish)	Commodity (English)	Consumption (%)
Arenques, sardinas, anchoas	Herring, sardine, anchovy	24,6
Bacalao, merluzas, eglefinos	Cod, hake, haddock	23,3
Gallinetas, lubinas, congrios	blue-mouth/black-belly rosefish/ Jacopever, bass/perch, eel	13,8
Jureles, mugilidos, paparadas	Horse mackerel, mullet, ?	12,3
Caballas, sierras, peces sable	Mackerel, barracoutas/snoeks, scabbard/cutless/hairtails	6,2
Atunes, bonitos, espadones	Tuna, bonit, sailfish/marlin/spearfish	4,7
Platijas, fletanes, lenguados	Flounder, halibut, sole	3,1

Based on the information on trade and consumption given by FAO and EU table 4 has been prepared. All identifiable fish species from table 1-3 has been transferred to table 4 and is given by the English and the Latin name. Again, some uncertainties may appear given the translation from English to Latin. Table 4 could be the bases for discussions of ML's of lead in fish.

Table 4: Proposed fish species for ML discussions.

	English name	Latin name
1	Anchovy	Engraulidae
2	Barracouta	Thyrsites spp.
3	Bass	Dicentrachus labrax
4	Blue-mouth/black-belly rosefish/jacopever	Sebastichthys capensis
5	Coalfish	Gadidae
6	Cod	Gadus morhua, Gadus callarias, Serranidae, Epinephelus, Mycteroperca spp.
7	Cutlass/hair tails	Triciuridae, Lepidopus spp.
8	Eel	Anguillidae
9	Flounder	Platichthys flesus
10	Haddock	Melanogrammus aeglefinus, Gladus aeglefinus
11	Halibut	Hippoglossus hippoglossus, hippoglossus stenolepis
12	Hake	Merluccius spp.
13	Herring	Clupea harengus spp.
14	Mackerels, jack and horse mackerel	Scomber spp, Pneumatophorus spp., Tranchurus spp., decapterus spp.
15	Marlin, sailfish, spearfish	Tetrapturus spp., Tetrapturus albidus, makaira marline, Istiophorus spp.
16	Mullet	Muglidae
17	Perch	Percidae
18	Pollack	Pollachius pollachius, Gadus pollachius
19	Salmon	Salmo salar, Oncorhynchus spp.,
20	Sardine, sardinella, brisling, sprat	Sardina pilchardus, Sardinops spp., Sardinalla spp., Sprattus sprattus
21	Scabbard	Lepidopus xantusi
22	Snoek	Esocidae, Gempylidae
23	Sole	Solea vulgaris vulgaris, solea lascaris, Platichthys flesus
24	Tuna, skipjack tuna, yellow fin tuna, bonit	Tunnidae, Euthynnus pelamis, Katsuwonus pelamis, Thunnus albacares, Neothunnus albacares, Sarda spp.

ANNEX 2: LEAD IN FISH – DATA FROM 2002

Table 5: Distribution of lead in fish (Family name highlighted by bold writing is added by the rapporteur).

Family	Species	English name	No of samples	% < 0.05 mg/kg	% < 0.1 mg/kg	% < 0.2 mg/kg	% < 0.3 mg/kg	% < 0.4 mg/kg	% < 0.5 mg/kg	Country	Habitat
Triahidae, Carcharhinidae	Furgaleus macki, Galeorhinus galeus, Mustelus antarcticus, Carcarhinus obscurus, C. Brachyurus, C. Sorrah, C. tilsonii	Shark	138			96			100	Australia	
	Haplostethus atlanticus	Orange roughy	231			100				Australia	
Scombridae	Thunnus maccoyii	Bluefin tuna	33			100				Australia	
Scombridae Thunnus spp.	Thunnus alalunga, T. albacares, T. obsesus, Katsuwonus pelamis	Tuna	40	90	100					USA	

Family	Species	English name	No of samples	%<0.05 mg/kg	% < 0.1 mg/kg	% < 0.2 mg/kg	% < 0.3 mg/kg	% < 0.4 mg/kg	% < 0.5 mg/kg	Country	Habitat
Scombridae Thunnus spp.	Thunnus alalunga, T. albacares, T. obsesus, Katsuwonus pelamis	Tuna (canned)	256	92	98	100				USA	
Scombridae		Tuna (canned)	26	100						USA	
Scombridae Thunnus spp.		Tuna	73			56				Spain	
Scombridae	Sarda sarda	Bonito	35			14				Spain	
Scombridae	Ethynus=Katsuwonus pelamis		30			97				Spain	
Scombridae		Tuna	50	10	52	94	100			Philippine	
Scombridae	Scomber scombrus	Mackerel	30	100						Denmark	
Nototheniidae	Dissostichus eleginoides	Patagonian toothfish	148			100				Australia	
Nototheniidae? Gadidae	Lotella rhacina, Paranotothenia microlepidota, Gadus macrocepholus, G. morhua	Cod	198	93	97	98	99	99	99	USA	
Gadidae	Gadus morhua	Cod	50	100						Denmark	
Gadidae	Pollachius virens, Theragra chalcogramma	Pollock	126	96	100					USA	
Gadidae	Melanogrammus aeglefinus	Haddock	20	100						USA	
Gadidae	Micromesistius poutassou		9			44				Spain	

Family	Species	English name	No of samples	%<0.05 mg/kg	% < 0.1 mg/kg	% < 0.2 mg/kg	% < 0.3 mg/kg	% < 0.4 mg/kg	% < 0.5 mg/kg	Country	Habitat
Mugilidae	Mugil cephalus	Sea mullet	266			98			100	Australia	
Mugilidae ?	Mugil labrosus labrosus	Grey mullet	22			68				Spain	
Sillaginidae	Silago flindersi, S. bassensis	School whiting	150			100				Australia	
Serranidae, Centrarchidae, Moronidae, Micropterus spp. Ambloplites spp	Centropristis striata, Micropterus dolomieu, M. punctulatus, M. salmoides, Monrhone saxatilis	Bass	9	78	100					USA	
Ictalurus spp.	Ictalurus punctatus	Catfish, Channel	49	89.8	93.9	95.9	100			USA	
Sciaenidae	Pogonias cromis	Drum	6	83	100					USA	
Pleuronectidae	Pleuronectes platessa	Plaice	34	100						Denmark	
Pleuronectidae	Platichthys flesus	Flounder	36	100						Denmark	
Pleuronectidae, Soleidae	Limanda ferruginea, Pseudopleuronectes americanus, Pleuronectes limanda, P. punctatissimus, Citharichthys sordidus, Microstomus pacificus, Solea vulgaris, Eopsetta	Flounder, Dab, sole	47	85	96	100				USA	

Family	Species	English name	No of samples	%<0.05 mg/kg	% < 0.1 mg/kg	% < 0.2 mg/kg	% < 0.3 mg/kg	% < 0.4 mg/kg	% < 0.5 mg/kg	Country	Habitat
	jordani, Glyptocephalus cynoglossus, G. zachirus, Parophrys vetula										
Soleidae	Dicologolossa cuneata		132			68				Spain	
Soleidae?	Solea vulgaris		25			68				Spain	
Carangidae Scomberomorus spp. Scomber spp.	Trachurus symmetricus	Mackerel (canned)	35	51	69	86	91	91	94	USA	
Carangidae	Trachurus trachurus	Horse mackerel/ scad	45			60				Spain	
Chanidae	Chanos chanos	Milkfish	6	0	50	83	100			USA	
Scorpaenidae	Sebastes alutus, S. marinus	Perch, ocean	10	90	90	100				USA	
Percidae, Serranidae	Perca flavescens, Morone americana	Perch, lake	16	81	100					USA	
Esocidae	Esox spp.	Pickerel	7	100						USA	
Salmonidae	Oncorhynchus tshawytscha, O. keta, O. kisutch, O. gorbuscha, O. nerka, Salmo salar	Salmon	187	88	97	100				USA	
Salmonidae	Salmo trutta	Trout	15	100						Denmark	
Salmonidae Sciaenidae	Cynoscion spp. Oncorhynchus mykiss, Salvelinus namaycush, S.	Trout	31	81	94	97	97	100		USA	

Family	Species	English name	No of samples	%<0.05 mg/kg	% < 0.1 mg/kg	% < 0.2 mg/kg	% < 0.3 mg/kg	% < 0.4 mg/kg	% < 0.5 mg/kg	Country	Habitat
	fontinalis										
Clupeidae	Sardinella spp	Sardines (canned)	31	48	61	74	84	84	90	USA	
Clupeidae	Sardina pilchardus	Sardines	56			55				Spain	
Clupeidae	Clupea harengus	Herring	30	90					100	Denmark	
Lutjanidae Lutjanus spp.	Lutjanus peru, L. campechanus	Snapper	17	94	100					USA	
Xiphiidae	Xiphias gladius	Swordfish	11	91	91	91	100			USA	
Xiphiidae	Xiphias gladius	Swordfish	6			33				Spain	
Tilapia spp	Tilapia spp.	Tilapia	5	100						USA	
Anguillidae	Anguilla anguilla	Eel	20			50				Spain	
Anguillidae	Anguilla anguilla	Eel	10	100						Denmark	
Moronidae?	Dicentrarchus punctatus	Bass	24			63				Spain	
		Escualos???	32			53				Spain	
Sparidae	Diplodus vulgaris	Common two-banded seabream	90			69				Spain	
Haemulidae?	Pomadasys benneti	Grunt	40			65				Spain	
Belonidae	Belone belone	Garfish	20	100						Denmark	