For discussion
on 8 October 2024

Legislative Council
Panel on Food Safety and Environmental Hygiene

Proposed Amendments to the Food Adulteration (Metallic Contamination) Regulations (Cap. 132V)

Purpose

This paper briefs Members on the review of and proposed amendments to the Food Adulteration (Metallic Contamination) Regulations (Cap. 132V).

Background

2. Metals are naturally present and ubiquitous in the environment. Sources of human exposure to metallic contaminants are multifarious. Metallic contaminants may enter the food supply chain through environmental contamination or during food production process. For ordinary adults, diet is one of the important sources of exposure to these metallic contaminants. The adverse health effects caused by dietary exposure to metallic contaminants depend on the chemical nature, as well as the amount and duration of individual exposure. For example, chronic exposure to cadmium would affect the kidney function, and methylmercury exposure in the womb can adversely affect a foetus's growing brain and nervous system. In addition, evidence demonstrates that there is an association between blood lead levels and impaired neurodevelopment in children, specifically reduction of intelligence quotient, as well as an association between blood lead levels and an increase in systolic blood pressure in adults.

3. The food safety laws of Hong Kong are mainly laid down in Part V of the Public Health and Municipal Services Ordinance (Chapter. 132) ("the Ordinance"). The provisions in the Ordinance cover general protection for food purchasers and offences in connection with the sale of unfit food and adulterated food, etc. Standards relating to food safety are provided in various subsidiary legislations of the Ordinance.

In particular, the Food Adulteration (Metallic Contamination) Regulations (Chapter. 132 V) ("the Regulations") focus on regulating metallic contamination in food. Under the Regulations, the maximum levels ("MLs") of specified metals in specified foods ("food pairs") are set out in the Schedule, which must not be exceeded if such foods are to be imported, consigned, delivered, manufactured, or sold for human consumption.

4. At present, the Regulations stipulate 144 MLs for 14 metallic contaminants in food. Since the completion of the previous legislative amendment exercise, namely the Food Adulteration (Metallic Contamination) (Amendment) Regulation 2018, the Centre for Food Safety ("CFS") of the Food and Environmental Hygiene Department ("FEHD") has been closely monitoring the development of the relevant standards for metallic contamination of other places, including the latest Codex Alimentarius Commission ("Codex") [1] standards for metallic contamination and the relevant standards adopted by major sources of import, such as the Mainland, European Union and Korea, etc.

Proposed Legislative Amendments

5. Taking into account local food consumption pattern, dietary practices, results of risk assessments, and stakeholders' concerns, we propose to add 27 new MLs for specified metals in specified foods (16 MLs with reference to Codex standards and 11 MLs with reference to the Mainland standards) (**Annex I**) and update 9 MLs for specified metals in the existing relevant food pairs (6 MLs with reference to Codex standards and 3 MLs with reference to the Mainland standards) (**Annex II**), with a view to better protecting public health, facilitating effective regulation and promoting harmonisation between local and international food safety standards. The total number of MLs will increase from 144 to 171 after the amendment.

(A) To add or update the MLs of lead, cadmium and methylmercury in specified foods with reference to Codex standards

6. Codex deliberates, adopts, reviews, and updates various MLs of contaminants,

[1] Codex, established by Food and Agriculture Organization ("FAO") and World Health Organization ("WHO") in 1960s, is the single most important international source of reference for consumers, food producers, processors, food control agencies and the international trade in developing food associated standards. Currently Codex has 188 member countries and 1 member organisation ("the European Union") and is recognised by the World Trade Organization as the standard-setting body for food safety.

including metallic contaminants[2] for various types of food from time to time in view of the advancement of science and the results of the risk assessments carried out by the Joint Food and Agriculture Organization of the United Nations / World Health Organization Expert Committee on Food Additives ("JECFA")[3]. According to the Codex principles for establishing MLs in food, MLs shall only be set for food in which the contaminant may be found in amounts that are significant for the total exposure of the consumer. In other words, it is not necessary to set MLs for each and every type of food that contains a contaminant. We propose to add 16 new MLs and update 6 MLs for lead, cadmium and methylmercury in specified foods with reference to Codex standards. Foods with new MLs include fish and chocolate, etc., and foods with updated MLs include edible offal of cattle and edible fats and oils, etc. The details are set out in Part 1 of **Annex I** and **Annex II** respectively.

MLs for methylmercury in fish

7. For the level of methylmercury in fish, Codex completed the relevant review in 2022. Codex has adopted new MLs for methylmercury in six specified predatory fish species[4] (ranging from 0.8 to 1.7 mg/kg) based on the principle of "as low as reasonably achievable"[5]. In line with the latest Codex standards, we propose to add MLs for methylmercury in the six specified fish species in the Regulations with reference to the relevant MLs adopted by Codex. In Hong Kong, the dietary exposure to methylmercury arising from the consumption of the six fish species accounts for a relatively low proportion of the population's total dietary exposure to methylmercury (with a total of 3%) and hence we expect that the new MLs would not have any significant impact on the local population's exposure to methylmercury. CFS will continue to provide dietary advice to the local population, especially the population sub-groups (e.g. pregnant women) that might be more susceptible to the adverse effects resulting from methylmercury exposure. As for other fishes, we propose to maintain

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2 Majority of Codex MLs for metallic contaminants are set out in the General Standard for Contaminants and Toxins in Food and Feed (CODEX STAN 193-1995).

3 Joint FAO / WHO Expert Committee on Food Additives ("JECFA") is the international food safety authority responsible for collecting and evaluating scientific data on food additives and allocating health-based guidance value (i.e., acceptable daily intake) to the food additives evaluated.

4 The six specified fish species are tuna, alfonsino, marlin, shark, orange roughy and pink cusk-eel.

5 According to the CODEX STAN 193-1995, MLs should be set as low as reasonably achievable and at levels necessary to protect the consumer. MLs should be based on Good Manufacturing Practice and/or Good Agricultural Practice considerations in which the health concerns have been incorporated as a guiding principle to achieve contaminant levels as low as reasonably achievable and necessary to protect the consumer.

the existing ML for methylmercury in "fish" (except the six specified fish species) at 0.5 mg/kg in the Regulations to protect public health.

8. In addition, there is currently no ML for methylmercury in "fish products". According to the Second Hong Kong Population-based Food Consumption Survey conducted by CFS from 2018 to 2020, the consumption of "fish balls/fish cakes" by the local population is the highest among fish products. We propose to add a ML for methylmercury in "fish balls/fish cakes" at 0.5 mg/kg, which is of the same level with the existing ML for methylmercury in "fish". As for fish products other than "fish balls/fish cakes", we propose to maintain the existing risk assessment and regulatory approach since local consumption of such fish products is relatively low and it should have limited impact on the local exposure of methylmercury.

MLs for cadmium in chocolate products

9. Codex has adopted 5 new MLs for cadmium in different chocolate products (ranging from 0.3 to 2 mg/kg). According to the risk assessment conducted by the European Food Safety Authority, for children of 3 to 9 years old, the dietary exposure to cadmium from chocolate products constitutes up to 9.4% of the total dietary exposure to cadmium of the children concerned. As such, taking into account the potential health risks to the local population, especially children, posed by exposure to cadmium from chocolate products, we propose to set MLs for cadmium in chocolate products with reference to Codex standards.

(B) To add or update MLs of lead and cadmium in specified foods with reference to the latest Mainland standards

10. Codex has not set relevant standards for certain food items, e.g., edible fungi. We propose to add 11 MLs and update 3 MLs of lead and cadmium in specified foods with reference to the latest ML for metallic contaminants in food promulgated by the Mainland recently in 2022 (i.e., GB 2762-2022). Foods with new MLs include "*Boletus bainiugan*, *Lanmaoa asiatica*, *Sutorius brunneissimus*, *Rugiboletus extremiorientalis*", *Tricholoma matsutake*, "*Auricularia cornea*, *Auricularia heimuer*" and *Tremella fuciformis*, etc; and foods with updated MLs include fat spreads and blended spreads and lime preserved eggs. The details are set out in Part 2 of **Annex I** and **Annex II** respectively.

MLs for cadmium in certain edible fungi

11. Since Codex has no relevant MLs for cadmium in edible fungi and the Mainland is our primary source of food, we propose to make reference to the latest Mainland standards to set 6 MLs for cadmium in various kinds of edible fungi (ranging from 0.2 to 2 mg/kg).

12. According to the results of the 1st Hong Kong Total Diet Study, the dietary exposures to cadmium of average and high consumers of the local population were 8.3 µg/kg bw/month and 19 µg/kg bw/month respectively. As these levels are well below the corresponding health-based guidance value of 25 µg/kg bw/month, normal dietary exposure to cadmium is unlikely to pose any health risk to the local population.

MLs for lead in certain edible fungi

13. The existing ML for lead in "edible fungi" at 1 mg/kg in the Regulations was made with reference to an earlier version of the Mainland standard, which was promulgated in 2017 (i.e., GB 2762-2017). Under the latest Mainland standards, the corresponding ML for lead has been replaced by separate MLs for four groups of edible fungi (ranging from 0.3 to 1 mg/kg). We propose to update the ML value for lead in edible fungi in the Regulations with reference to the latest standards of the Mainland.

MLs for lead in "white and refined sugars, corn and maple syrups" and "soft brown, raw, and non-centrifugal sugars"

14. There is currently no ML for lead in sugar in the Regulations. To protect public health, we propose to set new MLs for lead in "white and refined sugars, corn and maple syrups" and "soft brown, raw, and non-centrifugal sugars" at 0.5 mg/kg in the Regulations with reference to the standards of the Mainland and Korea. Since the Mainland and Korea are the major sources of sugar imports for Hong Kong, and both places set the ML for sugar at 0.5 mg/kg, the proposed addition of the new ML should not affect the supply of sugar in Hong Kong.

MLs for lead in "fat spreads and blended spreads"

15. Currently, the MLs for lead in both "fat spreads and blended spreads" and "edible fats and oils" are set at the same level at 0.1 mg/kg. We propose to update the two MLs for lead in the Regulations to the same level at 0.08 mg/kg, in line with the

relevant standards of the Mainland.

ML for lead in lime preserved eggs

16. The existing ML for lead in "lime preserved eggs" at 0.5 mg/kg in the Regulations was made with reference to the ML for metallic contaminants in food promulgated by the Mainland in 2017. Under the latest Mainland standards, the corresponding ML for lead has been updated to 0.2 mg/kg. As lime preserved eggs are mainly imported from the Mainland, we propose to update the ML for lead in lime preserved eggs in the Regulations from 0.5 mg/kg to 0.2 mg/kg, in line with the relevant standards of the Mainland.

Reality check

17. CFS has reviewed food surveillance statistics and collected additional food samples, in particular those newly added food pairs, for reality check. The results showed that more than 99% of the food samples can meet the proposed MLs.

Public Consultation and the Way Forward

18. We have consulted the Expert Committee on Food Safety on the proposed amendments, and members supported the proposal. We will later launch a three-month public consultation, with a view to introducing the proposed legislative amendments to the Legislative Council in the second half of 2025.

Transitional Period

19. We propose that a transitional period of 18 months be given after the enactment of the proposed amendments with a view to allowing a reasonable lead-time for the food trade and the private testing and laboratory sector to get prepared for the updated food safety standards.

20. During the transitional period, it would be legal for any single food item to comply wholly with the requirements of either the existing Regulations or the amended Regulations. After the end of the transitional period, the trade shall fully comply with the requirements of the amended Regulations.

Advice Sought

21. Members are invited to offer views on the proposed amendments to the Regulations.

Environment and Ecology Bureau
Food and Environmental Hygiene Department
Centre for Food Safety
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Annex I

To add 27 new MLs for specified metals in specified foods

Part 1: With reference to Codex				
Food		**Hong Kong**		**Codex ML (mg/kg)**
		Existing ML (mg/kg)	**Proposed ML (mg/kg)**	
Lead				
1	Grape juice	0.05 (Fruit juice exclusively from berries and other small fruits)	0.04	0.04
2	Fresh farmed mushrooms (button mushrooms (*Agaricus bisporous*), shiitake mushrooms (*Lentinula edodes*), and oyster mushrooms (*Pleurotus ostreatus*))	1 (Edible fungi)	0.3	0.3
3	Cereal-based foods for infants and young children	N/A	0.02	0.02
4	Ready-to-eat complementary foods for infants and young children	N/A	0.02	0.02
5	Honey and candies made with food-grade sugar	N/A	0.1	0.1
Cadmium				
6	Cocoa powder (100% total cocoa solids on a dry matter basis) ready for consumption	N/A	2.0	2.0
7	Chocolate containing or claiming to contain ≥ 70% total cocoa solids on a dry matter basis	N/A	0.9	0.9
8	Chocolate containing or claiming to contain ≥ 50% to < 70% total cocoa solids on a dry matter basis	N/A	0.8	0.8
9	Chocolate containing or claiming to contain ≥ 30% to < 50% total cocoa solids on a dry matter basis	N/A	0.7	0.7
10	Chocolate containing or claiming to contain < 30% total cocoa solids on a dry matter basis	N/A	0.3	0.3
Methylmercury*				
11	Tuna	0.5 (Fish)	1.2	1.2
12	Alfonsino	0.5 (Fish)	1.5	1.5
13	Marlin	0.5 (Fish)	1.7	1.7
14	Shark	0.5 (Fish)	1.6	1.6
15	Orange roughy	0.5 (Fish)	0.8	0.8

16	Pink cusk-eel	0.5 (Fish)	1.0	1.0

Part 2: With reference to the Mainland

	Food	Existing ML (mg/kg)	Proposed ML (mg/kg)	Relevant GB 2762-2022 ML (mg/kg)
Lead				
17	*Armillaria mellea*	1 (Edible fungi)	0.3	0.3
18	"*Boletus bainiugan*, *Lanmaoa asiatica*, *Sutorius brunneissimus*, *Rugiboletus extremiorientalis*", *Tricholoma matsutake*, *Tuber spp.*, *Russula virescens*, *Termitomyces spp.*, *Cantharellus spp.*, and *Lactarius volemus*	1 (Edible fungi)	1.0	1.0
19	"*Auricularia cornea*, *Auricularia heimuer*" and *Tremella fuciformis*	1 (Edible fungi)	1.0 (In dried form)	1.0 (In dried form)
20	White and refined sugars, corn and maple syrups	N/A	0.5	0.5
21	Soft brown, raw, and non-centrifugal sugars	N/A	0.5	0.5
Cadmium				
22	Edible fungi (unless otherwise specified)	0.1 (Vegetables unless otherwise specified)	0.2	0.2
23	Shiitake mushrooms	0.1 (Vegetables unless otherwise specified)	0.5	0.5
24	*Morchella importuna*, *Sarcodon imbricatus*, *Russula virescens*, *Cantharellus spp.*, and *Armillaria mellea*	0.1 (Vegetables unless otherwise specified)	0.6	0.6
25	*Tricholoma matsutake*, "*Boletus bainiugan*, *Lanmaoa asiatica*, *Sutorius brunneissimus*, *Rugiboletus extremiorientalis*", *Termitomyces spp.*, and *Lactarius volemus*	0.1 (Vegetables unless otherwise specified)	1	1
26	*Tuber spp.* and *Agaricus blazei*	0.1 (Vegetables unless otherwise specified)	2	2
27	"*Auricularia cornea*, *Auricularia heimuer*" and *Tremella fuciformis*	0.1 (Vegetables unless otherwise specified)	0.5 (In dried form)	0.5 (In dried form)

* In addition to the 27 proposed new MLs for metals, we propose to group "fish" and "fish balls/fish cakes" together in the Regulations by extending the existing ML for methylmercury in "Fish" (i.e., 0.5 mg/kg) to cover "fish balls/fish cakes", with reference to the Mainland's practice in which the relevant standards for aquatic animals and their products (except carnivorous fishes and their products) also apply to fish products.

Annex II

To update 9 MLs for lead in specified foods

Part 1: With reference to Codex				
Food		**Hong Kong**		**Codex ML (mg/kg)**
		Existing ML (mg/kg)	**Proposed ML (mg/kg)**	
Lead				
1	Mango chutney	1	0.4	0.4
2	Edible offal of cattle	0.5	0.2	0.2
3	Edible offal of pig	0.5	0.15	0.15
4	Edible offal of poultry	0.5	0.1	0.1
5	Edible fats and oils	0.1	0.08	0.08
6	Salt, food grade (Other than salt from marshes)	2	1	1

Part 2: with reference to the Mainland				
Food		**Existing ML (mg/kg)**	**Proposed ML (mg/kg)**	**Relevant GB 2762-2022 ML (mg/kg)**
Lead				
7	Fat spreads and blended spreads	0.1	0.08	0.08
8	Lime preserved eggs	0.5	0.2	0.2
9	Edible fungi (unless otherwise specified)	1	0.5	0.5