

# CODEX ALIMENTARIUS COMMISSION



Food and Agriculture  
Organization of the  
United Nations



World Health  
Organization

Viale delle Terme di Caracalla, 00153 Rome, Italy - Tel: (+39) 06 57051 - E-mail: [codex@fao.org](mailto:codex@fao.org) - [www.codexalimentarius.org](http://www.codexalimentarius.org)

Agenda Item 6

CF12/CRD08

## JOINT FAO/WHO FOOD STANDARDS PROGRAMME CODEX COMMITTEE ON CONTAMINANTS IN FOODS

12<sup>th</sup> Session

Utrecht, The Netherlands, 12 - 16 March 2018

### PROPOSED DRAFT MAXIMUM LEVELS FOR CADMIUM IN CHOCOLATE AND COCOA-DERIVED PRODUCTS (AT STEP 4)

*Comment submitted by EU, Uganda and AU*

#### EUROPEAN UNION (EU)

The European Union (EU) welcomes the work on the development maximum levels for cadmium in chocolates and cocoa-derived products by the electronic Working Group chaired by Ecuador and co-chaired by Brazil and Ghana.

The EU notes the health risks related to cadmium, especially for vulnerable consumer groups like children and the subsequent need to set the MLs for cadmium in chocolates and cocoa-derived products at sufficiently low levels.

The EU would like to re-iterate its comment that the suggested maximum levels would only have a very limited impact on the reduction of dietary exposure, due to consumption of cocoa-derived products. As the MLs are proposed at levels resulting in very low world-wide non-compliance rates, they would lead to increased testing costs without much added value for consumer protection. In order to achieve an impact on the consumer exposure, the MLs should be set at a lower level.

The EU cannot support an ML of 0.40 mg/kg **for chocolate products containing or declaring < 30% cocoa solids on a dry matter basis**. The global data set would support an ML of 0.1 mg/kg.

The EU cannot support the proposed ML of 0.50 mg/kg for **chocolate and chocolate products containing or declaring ≥ 30% to <50% cocoa solids on a dry matter basis** as the global occurrence data would support an ML of 0.3 mg/kg.

The EU can agree with the proposed ML of 0.80 mg/kg for **chocolate containing or declaring ≥ 50 to < 70% total cocoa solids on a dry matter basis**.

The EU cannot support the proposed ML of 1.0 mg/kg for **chocolate containing or declaring ≥ 70% total cocoa solids on a dry matter basis** as the global occurrence data would support an ML of 0.8 mg/kg.

The proposed ML of 1.5 mg/kg for **cocoa powder (100% total cocoa solids on dry matter basis)** cannot be supported by the EU. The EU proposes not to set a codex ML for cocoa powder in view of the lower significance of this commodity for international trade.

The proposed MLs of 0.4, 0.6 and 1.0 mg/kg for **dry mixtures of cocoa and sugars**, containing respectively < 29% total cocoa solids on a dry matter basis, ≥ 29 to < 50% total cocoa solids on a dry matter basis and ≥50% total cocoa solids on a dry matter basis, cannot be supported by the EU, as these MLs are disproportionately high compared to the global occurrence data for chocolate with similar amounts of cocoa solids. The EU proposes not to set a codex ML for mixtures of cocoa and sugar in view of the lower significance of this commodity for international trade.

#### UGANDA

Uganda supports the proposed draft maximum levels for cadmium in chocolate and cocoa-derived products. Data collected from various cocoa growing regions of Uganda in 2016 (Table 1) indicate that the cadmium content of dried cocoa beans ranges from 0.065 – 0.355 mg/kg; below the proposed MLs.

Table 1: Cadmium content in dried cocoa beans in various cocoa growing regions of Uganda

	Location where sample was obtained	Result (mg/kg)
1	Bundibujjo	0.208
2	Bundibujjo	0.308
3	Mpigi	0.065
4	Jinja	0.111
5	Bundibujjo	0.226
6	Bundibujjo	0.183
7	Bundibujjo	0.179
8	Jinja	0.243
9	Jinja	0.099
10	Jinja	0.133
11	Budukwanga	0.243
12	Kitara	0.108
13	Bugamikere	0.084
14	Bundimaya	0.307
15	Katumba	0.166
16	Pickfare	0.151
17	Bumadu	0.124
18	Humya	0.220
19	Mpigi	0.068
20	Burondo	0.179
21	Kirumya	0.191
22	Butama	0.159
23	Mukono	0.088
24	Masaka	0.103
25	Bundikahungu	0.156
26	Kabutabure	0.204
27	Rwamabare	0.160
28	Bubandi	0.355
29	Busaru	0.138
30	Butogo	0.116
31	Busunga	0.146
32	Bundimasori	0.223
33	Bundimurombi	0.287
<b>Range</b>		<b>0.065 to 0.355</b>

#### AFRICAN UNION (AU)

**Position 1:** African Union supports the setting of MLs for cadmium in chocolate and cocoa –derived products

**Issue and Rationale:** Contamination of cadmium in food has become a concern in many countries. The metal can accumulate in kidneys leading to irreversible renal tubular dysfunction. High cadmium intake is also associated with the formation of kidney stones as well as problems with the skeletal and respiratory systems. Cadmium is abundant in nature and can be released to the environment in different ways including natural activities such as volcanic activities and through anthropogenic activities such as mining and smelting of ores containing zinc, burning of fossil fuels and emissions from discarded batteries.

About 72% of the world supply of cocoa beans comes from West Africa, especially Cote d'Ivoire, Ghana, Nigeria and Cameroon. Other cocoa-producing countries include Ecuador, Brazil, Peru, Indonesia and Papua New Guinea. Cadmium levels in cocoa beans can vary considerably between regions with West Africa having the lowest concentration.

Exposure assessment to cadmium from consumption of cocoa and cocoa-derived products by JECFA (77<sup>th</sup> Meeting in 2013) concluded that total cadmium exposure for high consumers of cocoa and cocoa products was not a health concern. CCCF 8 (2014) however decided that the lack of MLs could threaten the exports of some member countries thus the decision to set MLs for cadmium. The EWG led by Ecuador, Brazil and Ghana proposed categories for “chocolates” and for “cocoa powder and dry mixtures of cocoa and sugars for which MLs should be developed. This categorization shown below was accepted by the 11<sup>th</sup> session of CCCF (2017).

**Position 2:** African Union supports the recommended classification for chocolate and cocoa derived products and the proposed MLs which are shown below:

#### **Categorization of chocolates and cocoa powder and proposed MLs for cadmium**

Commodity / Product Name	Proposed Maximum Level (ML) mg/kg	Notes / Remarks
Chocolate products containing or declaring <30% total cocoa solids on a dry matter basis	0.40	Including milk chocolate, family milk chocolate, milk chocolate couverture, Gianduja milk chocolate, table chocolate, milk chocolate Vermicelli/milk chocolate flakes
Chocolate and chocolate products containing or declaring ≥ 30% to < 50% total cocoa solids on a dry matter basis	0.50	Including sweet chocolate, Gianduja chocolate, semi – bitter table chocolate, Vermicelli chocolate / chocolate flakes, bitter table chocolate
Chocolate containing or declaring ≥ 50% to <70% total cocoa solids on a dry matter basis	0.80	
Chocolate containing or declaring ≥ 70% total cocoa solids on a dry matter basis	1.00	

#### **Categorization of dry mixtures of cocoa and sugars and proposed MLs**

Commodity / Product Name	Proposed Maximum Level (ML) mg/kg	Notes / Remarks
Dry mixtures of cocoa and sugars containing <29% total cocoa solids on a dry matter basis	0.4	
Dry mixtures of cocoa and sugars containing ≥29 to < 50% total cocoa solids on a dry matter basis	0.6	Including chocolate powder
Dry mixtures of cocoa and sugars containing ≥50% total cocoa solids on a dry matter basis	1.2	Including chocolate powder

**Proposed maximum levels for cadmium in cocoa powder**

Commodity / Product Name	Proposed Maximum Level (ML) mg/kg	Notes / Remarks
Cocoa powder (100% total cocoa solids on a dry matter basis)	1.5	Product sold for final consumption

**Issue and Rationale:**

The “As Low As Reasonably Achievable (ALARA)” principle (GSCTFF, CODEX STAN 193-1995) was applied to the setting of the proposed MLs. A 95% cut-off point (a 5% rejection rate) was used to recommend MLs for the various categories of chocolate and cocoa-derived products. A review of the occurrence data in cocoa beans (by region of origin) (Table 3) shows that Africa has the lowest concentration of cadmium in cocoa compared to other regions such as Latin America, the Caribbean, Asia and South West Pacific regions. It is however to be noted that proposing MLs based on worldwide cadmium data would result in maximum levels that do not reflect the reality of all cocoa producing countries especially Latin America and the Caribbean. This would result in about 27% rejection rate in some instances. In view of the fact that the 77<sup>th</sup> JECFA evaluation noted that there is no health concern with regards to cadmium exposure due to consumption of cocoa and cocoa-derived products, these proposed MLs have been derived to address trade concerns.