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CODEX COMMITTEE ON CONTAMINANTS IN FOODS

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PROPOSED DRAFT MAXIMUM LEVELS FOR CADMIUM  
IN CHOCOLATE AND COCOA-DERIVED PRODUCTS

*Comments at Step 3 submitted by Colombia, Costa Rica, Cuba, Egypt, Kenya, Malaysia and Nicaragua*

**COLOMBIA**

Colombia is pleased to present its position on document CX/CF 15/9/6 at Step 3/8 of the procedure, submitted by the Secretariat of the Codex Alimentarius Commission, in the sense of keeping the document at Step 3.

**COSTA RICA**

Costa Rica appreciates the opportunity to submit its comments to the **PROPOSED DRAFT MAXIMUM LEVELS FOR CADMIUM IN CHOCOLATE AND COCOA DERIVED PRODUCTS**.

In this sense, Costa Rica would like to make the following comments:

1. Paragraphs 2, 3 and 4 of the recommendations read as follows:

“2. Once available information was gathered and analyzed, the eWG would like to recommend taking into consideration the ML described in the table, because it summarizes the different studies performed by several countries and international organizations on the content of cadmium in chocolate and cocoa derived products, as well as the exposure in the human diet. **However, the analysis of this information suggests that it is necessary to conduct studies on this area such as:**

**3. Influence of the amount of cocoa solids in the concentration of cadmium in cacao.**

**4. A study to determine the content for cadmium in the ingredients that chocolate and cocoa derived products are elaborated with, such as sugar, milk, etc.”**

(The text in bold does not correspond to the original)

If the EWG indicates that studies are needed to determine the influence of cocoa solids and other ingredients in chocolate and cocoa derivatives in the content of cadmium, Costa Rica proposes that any discussion concerning the establishment of Maximum Levels for Cadmium in chocolate and cocoa derived products be postponed until we have the necessary information from the studies suggested by the EWG.

CX/CF 15/9/6 indicates that the data and supporting information are not subject to comments, however, Costa Rica considers that it is important to make the following comments:

- Paragraph 7 of the recommendations reads as follows:

“ in the case of MERCOSUR for a chocolate and cocoa products with less than 40% of cocoa has a recommended limit of 0.2mg/**Kg**.”

Justification: The correct units are mg/kg.

- Paragraphs 2, 14, 15, 16, 44, 45, 52 and 54 of the Annex refer to information from the report of the 77<sup>th</sup> JECFA; however, the wording is confusing. Therefore, Costa Rica proposes to maintain the original wording of the JECFA report (Paragraph 4, pages 39-45).
- In paragraph 8, it is proposed to place the entire words **body weight** and in the rest of the document continue using the abbreviation bw.

- In paragraph 10 of the annex, Spanish version, the last sentence which is included in the English version is missing, namely:  
**“Products made from these grains are first -origin quality products only high percentage of cocoa mostly consumed by adults, who are willing to pay higher prices.”**
- In paragraph 14 of the annex, English version, the last two sentences which are included in the Spanish version are missing, namely:  
**“The PTWI 7 mg Cd / kg bw for week remained in JECFA Session 64<sup>th</sup>. Subsequently JECFA in 2010 decided to express the tolerable intake as a monthly value by establishing a Provisional Tolerable Monthly Intake (PTMI) of 25 mg Cd / kg bw.”**
- The Spanish version, paragraph 20, should read correctly: “Límite de detección (LOD, for its acronym in English). The English version should read: “Limit of detection (LOD)”. In Table 3 of the Spanish version the units (µg/L) should be indicated and in the title of the English version “Limit of detection”.
- In Table 4, paragraph 21 indicate the meaning of HorRat or HORRATR. In Spanish it corresponds to “Relación de Horwitz” and in English to “Horwitz Ratio”.
- In paragraph 22, third line, English version, indicate “limit of detection”.
- Apply the following to the entire document: leave a space between numbers and units, e.g. change 70kg to 70 kg.
- In Table 5 of paragraph 45 there are some errors in the given values, they even come from the JECFA report. The following table shows the corrected values: in bold, underlined and larger.

**Table 5.** Summary of cadmium occurrence data for cocoa and cocoa products

Cocoa product	N (total)	Minimum Concentration (µg/kg)	Maximum Concentration (µg/kg)	N > 100µg/kg (%)	N > 300µg/kg (%)	N > 500µg/kg (%)	N > 1000µg/kg (%)
Cocoa bean	451	ND	5239	392 <del>(86,9%)</del> <b>(86,9%)</b>	324 <del>(71,8%)</del> <b>(71,8%)</b>	245 <del>(54,3%)</del> <b>(54,3%)</b>	119 <del>(26,4%)</del> <b>(26,4%)</b>
Cocoa beverage	137	ND	290	13 <del>(0,0%)</del> <b>(9,5%)</b>	0	0	0
Cocoa mass	85	15	593.8	36 <del>(37,0%)</del> <b>(42,4)</b>	6 <del>(6,3%)</del> <b>(7,1)</b>	4 <del>(4,2%)</del> <b>(4,7)</b>	0
Cocoa powder	1292	ND	1910	669 <del>(47,4%)</del> <b>(51,8)</b>	55 <del>(3,9%)</del> <b>(4,3)</b>	21 <del>(1,5%)</del> <b>(1,5%)</b>	6 <del>(0,5%)</del> <b>(0,5%)</b>
Other cocoa products (including chocolate)	1954	ND	1073	408 <del>(20,8%)</del> <b>(20,8%)</b>	78 <del>(4,0%)</del> <b>(4,0%)</b>	7 <del>(0,4%)</del> <b>(0,4%)</b>	1 2 <del>(0,05%)</del> <b>(0,05%)</b>

ND, not detected

5. In the annex mention from paragraph “The decision by the European Union was the result of a report on the cadmium content in chocolate, prepared by the European Food Safety Authority (EFSA) of 23 January 2012 whereby the European Union recommended that chocolate with a greater than or equal to 50% cocoa solids amount should contain a maximum of 0.3mg/kg Cd.”

6. Despite all the collection of information, it is nowhere reflected clearly how an agreement was reached on the **proposed maximum levels for cadmium which are being proposed**. The **risk assessment** which was made to select these limits must be documented somewhere. Otherwise remains the vacuum of the election of the limits as there is a lot of information and it is unclear which criteria were used to establish the limits.

## CUBA

Cuba considers that the levels of Cd in cocoa proposed by Ecuador:

- 0.20 mg/kg in milk chocolate with <30% total dry cocoa solids;
- 0.60 mg/kg in chocolate with <50% total dry cocoa solid; milk chocolate with  $\geq$ 30% total dry cocoa solids;
- 2 mg/kg in chocolate with  $\geq$ 50% total dry cocoa solids.
- 1.5 mg/kg in cocoa powder sold to the final consumer or as an ingredient in sweetened cocoa powder sold to the final consumer (drinking chocolate); are high, especially the two last ones, therefore, in principle, we do not agree to the proposal. In our country we have regulated 0.3 mg/kg, which could be increased, but not up to 2 mg/kg.

Considerations underlying these criteria:

- Although according to JECFA the contribution of Cd from cocoa to the total diet is very low and can reach up to 0.39  $\mu$ g/kg bw/month (1.6% of the PTMI of 25 $\mu$ g/kg/month), residents of cocoa and producing regions and their derivatives could exceed this consumption.
- Although there are no data on chocolate consumption and their derivatives in our country, we assume that in the region of Baracoa, eastern Cuba, Cd intake through these products could be higher than that of other regions, so that studies for the intake of these foods to assess the risk for the levels proposed will be started.
- Although there are not enough data on analysis of Cd in cocoa in Cuba, the few samples analysed have presented concentrations ranging between 0.29 and 0.6 mg/kg, well below the proposed 2 or 1.5 mg/kg by Ecuador.
- The data presented in the paper on Cd levels in cocoa in different regions are much lower than those proposed, and even data from Ecuador are below.
- The document states that to reach the PTMI of Cd, 44 chocolate bars of 20g with 2 mg/kg Cd would be required, which may seem hardly achievable, but the contribution of Cd to the diet cannot be limited only to cocoa. In Cuba 100g chocolate bars are sold therefore the PTMI of 0.025 mg/kg/month would be reached with the monthly consumption of only 8 of those bars without taking into account the intake of Cd from other foods.
- The paper reports that in 2019 the EU will apply cadmium limits for cocoa and chocolate products much lower than those proposed by Ecuador (0.10 mg/kg, 0.30mg/kg, 0.80mg/kg and 0.60mg/kg for the same categories). Similarly, MERCOSUR values are between 0.2 and 0.5 mg/kg for cocoa products.

**In view of the foregoing, Cuba therefore proposes the Codex to consider values above those required by the European Union and MERCOSUR but not as high as those proposed by Ecuador.**

Cuba proposes as follows:

- 0.20 mg/kg in milk chocolate with <30% total dry cocoa solids;
- 0.60 mg/kg in chocolate with <50% total dry cocoa solids; milk chocolate with  $\geq$ 30% total dry cocoa solids;
- 1 mg/kg in chocolate with  $\geq$ 50% total dry cocoa solids.
- 0.8 mg/kg in cocoa powder sold to the final consumer or as an ingredient in sweetened cocoa powder sold to the final consumer (drinking chocolate).

**EGYPT**

Referring to your document CX/CF 15/9/6 concerning request for comments on proposed draft maximum levels for cadmium in chocolate and cocoa – derived products.

I would like to inform you that Egypt supports the low level to protect the health of consumers especially the children, so we agree with the EU limits of cadmium for cocoa derivatives and chocolate to be applied after 1 January 2019 as follows:

- 1- Milk Chocolate with <30% total dry cocoa solids; 0.10mg/kg.
- 2- Chocolate with <50% total dry cocoa solids; milk chocolate with ≥30% of total dry cocoa solids; 0.30mg/kg.
- 3- Chocolate with ≥50% of total dry cocoa solids; 0.80mg/kg.
- 4- Cocoa powder sold to the final consumer or as an ingredient in sweetened cocoa powder sold to the final consumer (beverageing chocolate); 0.60mg/kg

**KENYA**

We would like to thank the Electronic working group led by Ecuador and appreciate the good work done.

Kenya has gone through the document and accepts both conclusion and recommendation contents therein.

**MALAYSIA**

Malaysia appreciates and supports the effort made by electronic Working Group (eWG) led by Ecuador to prepare proposals for MLs for cadmium in chocolate and cocoa-derived products.

1. Below are our specific comments **on the Conclusions** presented by the eWG:
  - i. We wish to correct the year of publication stated for the reference Yanus et al., 2013 in Conclusion #2; for it should be Yanus et al., **2014**. While in the reference section, the year of publication of this reference is stated as 2004. Hence, this should consequentially be corrected to **2014**.
  - ii. With regard to Conclusion #7, we are of the view that the use of the term LOD in the text is misleading, since LOD is the abbreviation for Level of Detection, which refers to the sensitivity of equipment. We would also like to seek clarification on the following:
    - In line 5, does the term 'dry material' refer to cocoa solid content?
    - In line 7, it is stated that "...chocolate and cocoa products with less than 40% of cocoa has a recommended limit of 0.2 mg/g". Is the unit mg/g correct? Or should it be mg/kg, as stated for the rest?
  - iii. With reference to the Report of the 77<sup>th</sup> Session of JECFA, we wish to seek clarification on the unit stated for the PTMI in Conclusion #8 and #9. The unit should be µg/kg bw per month and not mg/kg bw per month.
2. We would like to seek clarification whether the detection limit in Table 3 (in page 8) is referring to instrumentation detection limit or method detection limit?

**NICARAGUA**

Nicaragua says that at present there is no technical and scientific information to issue an objective position on the MRL for cadmium in products mentioned in document CX/CF 15/9/6; however, currently the country has planned to make a diagnosis on the concentration of cadmium in soils and fruits of cacao, as well as its derivative products.

It is considered that the discussion on the issue should continue, taking into account that the adoption of very low MRLs would create negative results or unnecessary barriers to trade, especially to developing countries whose producing families support their economy in this crop.