

# CODEX ALIMENTARIUS COMMISSION



Food and Agriculture  
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World Health  
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**Agenda Item 6**

**CX/CF 17/11/6**

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**ORIGINAL LANGUAGE ONLY**

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

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

*Comments submitted at Step 3 (in response to CL 2017/24-CF) by Australia, Canada, Chile, Costa Rica, Cuba, Egypt, EU, Japan, Kenya, Malaysia, Peru, Republic of Korea, USA, AU, ECA, FoodDrinkEurope, ICA and ICGMA*

#### **AUSTRALIA**

In response to circular letter CL 2017/24-CF, Australia thanks the delegations from Ecuador, Brazil and Ghana for preparing the paper regarding proposed draft maximum levels (MLs) for cadmium (Cd) in chocolate and cocoa-derived products, and acknowledges the work accomplished to date.

Australia wishes to comment as follows:

#### **Comments on recommendations**

##### **Recommendation 1**

Australia needs to give further consideration to the appropriateness of the proposed MLs and, as such, is providing limited comments on this aspect at this stage.

- We support the application of a 95% achievability limit to set MLs. However, we are concerned that the data used to evaluate achievability is not fully representative of the world cocoa product supply. In particular, GEMS/Food data from Latin American and Caribbean countries (which are understood to produce cocoa beans with inherently higher levels of Cd) did not make up a large proportion of the total data analysed for intermediate products, and there were significant variations between the GEMS/Food and ECA data, contributing to our concerns around global representativeness.
- Australia notes that the approach now being taken to setting MLs is to link groups of named product types to ranges of % total dry cocoa solids (with the exception of the last two groups of products which are grouped by a declared % cocoa content only). Product types appear to reflect those listed in Table 11 (which shows Codex Standards for cocoa and its products). However, the list of products included in the general recommendations table does not cover all of the products listed in Codex Standard 87/1981 (Chocolate and chocolate products) e.g. *Chocolate para mesa*. Furthermore some products may fall into more than one grouping when based on % total dry cocoa solids. This is because the Codex Standard only gives the minimum amount, not an upper level.
  - o For this reason Australia does not support the approach of using both names of products and % total dry cocoa solids to categorise the products to which MLs will apply. We would prefer either using simple, generic terms (e.g. *Sweet chocolate*), as per the second draft of the paper, or basing the values solely on the % cocoa solids. If either of those approaches are adopted, cross-referencing to the relevant cocoa products along the lines of those in Table 11 (as examples), may be a useful option.
- Australia queries whether the EWG has considered whether proposing MLs for chocolate products based on % total dry cocoa solids will be problematic from an enforcement aspect, in terms of the number of products that currently display this information on their labels. To illustrate, Australia notes from the first draft of the paper circulated in November 2016 that a total of 2973 samples of chocolates were submitted to GEMS/Food. However, the footnote to Table 3 in the current draft indicates that only 1279 samples (or 43%) of these presented information on % total dry solids of cocoa.
- In terms of the proposed ML for dry mixtures of cocoa and sugars, Australia restates the importance of clarifying whether this ML is based on the cocoa powder in the mix, or on the complete cocoa powder plus sugar mix.

- Paragraphs 51 – 53 state that the eWG established a category for cocoa powder as an *intermediate product* based on Codex Stan 105/1981 and using 100% cocoa as the criterion to differentiate between this product and dry mixtures of cocoa and sugars (*ready for consumption*). We wish to point out that cocoa powder may also be considered as a finished product ready for consumption (as opposed to an intermediate product like cocoa liquor), which is sold directly to consumers for domestic use. The key issue is that neither product will be purchased for consumption as is, but rather will be used at low levels in baking or else diluted and consumed with milk and/or water.
- We note that the category described in the second draft as *Bitter chocolate or dark chocolate* (>50% total cocoa solids) has now been split into two. The proposed ML in the second draft was 1 mg/kg (Option 2). Two different MLs are now being proposed for products: the first for products with a declared cocoa content of >50% - <70% (0.6 mg/kg) and the second for those with >70% (0.8 mg/kg). Australia would like to understand the rationale behind the split, particularly in noting that these proposed MLs are both lower than previously proposed.

### **Recommendation 2**

- Australia suggests that a discussion on Recommendation 2 (performance criteria) be postponed until decisions regarding the categories to which MLs should apply and the values of the MLs are finalised.

### **Recommendation 3**

- Australia suggests that Recommendation 3 could be split into two separate recommendations as it currently deals with two discrete issues: the establishment of MLs for intermediate cocoa products; and the need for further data on chocolate with a high cocoa content.
- Australia agrees with the recommendation at paragraph 93 and alluded to at Recommendation 3, for a further call for data on chocolate with a high cocoa content (>50% total dry cocoa solids), including appellation of origin (due to a lack of data on this aspect in GEMS/Food), to determine if the proposed ML for this product type should be reviewed.
- Australia supports abandoning the development of MLs for intermediate products cocoa liquor and cocoa powder. We note the considerable variation in Cd concentrations in cocoa liquors and powders originating from different regions (and significant differences between the GEMS/Food data and ECA data observed for these products), presenting practical difficulties in determining MLs which are appropriate for different regions. We also note the practice of mixing/blending of such products means that levels in intermediate products do not reflect levels in the final product.

### **General comments**

- The ML proposed for chocolate products with ≤30% total dry cocoa solids may not always be practically achievable in terms of the levels found in cocoa liquor, as reported in Table 4. For example, if cocoa liquor from Ecuador with a Cd content of 1.46 mg/kg was used to produce a milk chocolate comprising 12% cocoa liquor and 14% cocoa butter, then the Cd level in the milk chocolate would be 0.18 mg/kg, exceeding the proposed ML. Similarly, cocoa liquor sourced from Indonesia with a Cd content of 1 mg/kg would produce a milk chocolate (with the same cocoa solid composition), with a Cd level of 0.12 mg/kg, again exceeding the proposed ML.
- In addition, if cocoa beans that typically contain 1.2 mg/kg of Cd are used to produce single origin milk chocolate (with < 30% total cocoa solids content), the chocolate would again not be compliant with the proposed ML for this type of chocolate. We note that the second draft proposed a different ML for *Sweet chocolate* of 0.2 mg/kg (Option 2).
  - As such, we would welcome further work to evaluate the proposed MLs from the perspective of practical achievability, taking account of the information collated on the levels of Cd in intermediate products. We note that achieving the MLs for finished products may require industry to find new/additional sources of intermediate cocoa products, with consequent disruption to trade and cost to industry.
- Australia would like to restate the comments we made in response to the second draft of the paper, which was circulated in January 2017 in relation to the provision of data. Australia submitted data on seven samples of cocoa powder; and one sample of a dry mixture of cocoa and sugars. Not all of these included information on the % total cocoa solids, but all included a chocolate classification and the country of origin. Australia queries why these data are not reflected in Table 7 and paragraph 63, and the respective distribution tables.
- It is unclear throughout the document whether references to *origin of data* refer to the country who submitted the data, or the country of origin of the food. For example, paragraphs 40, 50, 54 and 61.

## Specific comments

### General recommendations

- It is not clear what the numbers given after the product name in column 1 refer to and further clarification may be useful e.g. *Milk chocolate ≥ 25% total dry cocoa solids*.
- *Chocolate para mesa* and *Bitter chocolate para mesa* have not been included in the table in the Recommendations section – it is assumed that these have been renamed as *Table chocolate* and *Bitter table chocolate*. For consistency, should this not also be revised for *Semi-bitter chocolate para mesa*, which still appears in the table to the recommendations?
- In addition, if the information presented in the table in the Recommendations section is meant to reflect the information in Table 11, then *Sweetened cocoa-flavoured mix* should have a % total dry cocoa solids of <20%, not ≥ 20%.

### Definitions

- Note that *cocoa cake* has been removed from the list of definitions, however this term is used throughout the paper and therefore should be retained.

### Data collection

- The footnote under Table 3 states that *only the samples that presented information on the percentage of total dry solids of cocoa have been considered*. Australia assumes from this that it was not possible for the eWG to take up our suggestion to include data submitted to GEMS/Food which included a chocolate classification only (e.g. bitter, with milk) (as per the request in the CL) in setting up the chocolate categories and the subsequent analyses. This may have helped boost sample sizes for some categories.

### Cd in cocoa liquor samples

- Para 43: The sample size for Mexico (and probably Brazil as well) is not large enough to be able to make any comments regarding variations in Cd concentrations by country.
- Para 45: States that *Table 5 presents a summary of the data provided by the ECA, indicating the country of origin, number of samples, and minimum, maximum and average values*. However average values are not included in this table (it would be useful if they were).

### Cd in cocoa powder samples and samples of dry mixtures of cocoa and sugars

- Table 8: We request that the table entries be checked as some entries seem to be incorrect. In the second draft provided by the eWG, the category *Unknown* was listed as having a maximum value of 6.0 mg/kg (not 0.00 mg/kg). Also, the category *Mixtures* was listed as having 356 (now given as 365) samples, and with a maximum value of 1.3 mg/kg (not 0.00 mg/kg).
- Para 60: The reference to 831 samples in GEMS/Food is no longer correct and should be changed to 926.
- Para 61: Table 7 shows 304 and not 381 entries.
- Para 63: Contradictory statement – initially, the paper states that origin information was available for samples from Brazil, Ecuador and USA. Later in the paragraph it states that the origin of the samples submitted by the USA was not reported.
- Para 65: Information that describes the data used to determine the cut-off point of 95% to derive the ML would be helpful.

### Categorisation of chocolates

- Table 11: Note that the following cocoa products have been omitted from the table in the Recommendations section: sweet chocolate ≥30; couverture chocolate ≥35.
- Table 12: This table appears to be redundant and should be deleted in favour of keeping Table 13. Noting also there are presently two table 13s.
- Para 87: This paragraph could include a statement to the effect that although it is possible to derive an ML for all chocolates with greater than 50% total dry cocoa solids, the sections below look at the option of dividing this category of chocolates into two based on the total dry cocoa solids content, and proposing different MLs for each of the two categories to take account of higher Cd levels that may be present in premium, single source, dark chocolates (for example).
- Para 89 and 90: Information that describes the data used to determine the cut-off point of 95% to derive the ML would be helpful.
- Para 87 and 89 both refer to recommended MLs that differ from the actual recommendations (due to rounding). It is normal practice for MLs to be set to one decimal place only.
- Table 16 and 17: If the total number of observations (267 plus 237) is added, the total does not equal 552 as per Table 15. It equals 504 only. If the discrepancy is because data submitted by Canada was not considered (as per paragraph 91) then this should be more clearly stated.

**CANADA**

Canada wishes to express its appreciation to the lead country Ecuador and co-chairs Brazil and Ghana for once again leading the electronic Working Group (eWG) on the **Proposed Draft Maximum Levels (ML) for Cadmium in Chocolate and Cocoa-Derived Products**. Canada would like to express its agreement with the proposed MLs for cadmium in various types of chocolate, classified according to its percentage of total dry cocoa solids, as well as that for dry mixtures of cocoa and sugars, also expressed on their percentage of dry cocoa solids.

Based on cocoa liquor and cocoa powder without added sugar accounting for approximately 7.1% and 4.6%, respectively, of the global value of imported cocoa and cocoa preparations, Canada agrees with the suggestion of the eWG that the elaboration of MLs for cadmium in these commodities, which consider the geographic origin of the raw material (i.e. cocoa beans), could be the subject of future work of the eWG.

**CHILE**

Chile agradece la oportunidad de presentar observaciones sobre el anteproyecto de Niveles Máximos para el Cadmio en el Chocolate y Productos derivados del cacao

Chile revisó las recomendaciones de esta carta circular y sus comentarios se exponen a continuación:

- En la tabla donde se proponen los niveles máximos para Cadmio en Chocolate se indica en la primera columna "Nombre del producto", ya que estos nombres pueden variar de un país a otro, se sugiere modificar el título de esta columna por "Ejemplos de nombre del producto" o "Nombre referencial del producto" de tal forma que exista mayor flexibilidad en este punto.
- Chile está de acuerdo con los valores propuestos por el GTE para Chocolate con un porcentaje de sólidos secos de cacao menor o igual al 30%, para las mezclas secas de cacao y azúcares, y para los chocolates con un porcentaje de sólidos secos de cacao entre 30 y 50%. Respecto de los valores propuestos para los chocolates con un porcentaje de sólidos secos de cacao entre 50 y 70% y sobre el 70%, Chile considera que estos dos niveles deben ser objeto de mayor debate, ya que se podría considerar a estos dos últimos grupos como uno solo, con un contenido superior al 50%
- Respecto de la propuesta de evaluar la posibilidad de un futuro debate sobre los NM para el chocolate con más del 50% del total de sólidos de cacao con denominación de origen, Chile considera que, desde el punto de vista de la inocuidad, no se justificaría utilizar este criterio como argumento para tener un nivel máximo superior al de un chocolate sin denominación de origen
- Chile solicita revisar la definición de alcalinización, indicando que este proceso está destinado a reducir el amargor

**COSTA RICA**

Costa Rica agradece la oportunidad de emitir comentarios. En ese sentido; externa su apoyo a los niveles propuestos por el grupo de trabajo.

**CUBA**

Cuba enfatiza la importancia del muestreo de las materias primas (cacao en grano) considerando el origen de las mismas. Evitando así situaciones como la referida en el párrafo 99 del documento.

**EGYPT**

We would like to thank the electronic Working Group and inform you that Egypt supports the EWG recommendation.

**EU**

The European Union (EU) welcomes the work on the revision of the maximum levels for cadmium by the electronic Working Group chaired by Ecuador and co-chaired by Brazil and Ghana.

The EU can agree with the proposed MLs and performance criteria. The EU agrees to postpone the establishment of MLs for intermediate cocoa products as data in GEMS Food database does not reflect all origins.

The EU sees no immediate need for specific MLs for chocolate with more than 50% total cocoa solids with appellation of origin.

**JAPAN**

Japan appreciates the efforts of Ecuador, Brazil and Ghana as chair and co-chairs of the electronic working group on the development of MLs for cadmium in chocolate and cocoa-derived products. Japan would like to submit the following comments in response to the request for comments at Step 3.

### **Recommendation for MLs**

The name and the percentage of total dry solids of cocoa for each chocolate or chocolate product should be consistent with the STANDARD FOR CHOCOLATE AND CHOCOLATE PRODUCTS (CODEX STAN 87-1981) which stipulates the minimum % of total cocoa solids on dry matter basis for chocolate and chocolate products.

Comparing the proposed table with the standard, some products are not contained in the table but contained in the standard (e.g. Couverture Chocolate), while some other products are not contained in the standard but contained in the table (e.g. Table chocolate).

In addition, the provided table is somewhat confusing to the reader as it has the column for total dry solids of cocoa (%) as well as the column for name of the product with the minimum % of total cocoa solids. Therefore, Japan proposes that the committee clarify to which column each ML should apply. If MLs are set on a product basis, the column for total dry solids of cocoa (%) should be deleted. If MLs are set depending on the total dry solids of cocoa (%), the column for name of the product should be deleted.

Japan suggests that a single ML should be developed for chocolate and chocolate products as a whole for the following reasons:

- the concentrations of cadmium are significantly different among the types of chocolate and chocolate products,
- it is not practical to identify the types of chocolate and chocolate products from the labels on the products, and
- JECFA77 noted that JECFA did not consider cadmium to be of concern in cocoa-containing products.

The Committee should also consider the possibility that any other ingredients of chocolate and dry mixtures of cocoa and sugars than dry solids of cocoa influence cadmium occurrence for the following reasons:

- As far as we consider from the range of proposed MLs, the cadmium levels do not seem proportional to the percentage of total dry solids of cocoa; and
- The minimum percentages of total dry solids of cocoa for dry mixtures of cocoa and sugars are similar to those of chocolates categorized with “ $\leq 30\%$ ” of total dry solids of cocoa. However, the proposed MLs are substantially different: 0.65 and 0.1 respectively.

### **Recommendation to postpone the establishment of ML for intermediate products**

Japan supports the extension of development of ML for intermediate products.

#### **KENYA**

### **COMMENT**

MLs to be adopted are to facilitate access to international market without disregarding the health perspective.

#### **MALAYSIA**

Malaysia would like to congratulate the electronic Working Group led by Ecuador and co-chaired by Brazil and Ghana on the proposed draft maximum levels (MLs) for cadmium in chocolate and cocoa-derived products.

Malaysia is of the view that the MLs for cadmium should be established for the primary and intermediate commodities such as cocoa powder and cocoa liquor as a priority rather than finished products. This is due to the general principle that prevention and reduction of food contamination starts at the source, which includes control of raw materials to be used in finished products.

Therefore Malaysia is of the view that MLs for cadmium should be set for primary and intermediate commodities rather than finished products.

#### **PERU**

### **OBSERVACIONES GENERALES:**

El Perú reconoce y felicita el trabajo realizado por el Grupo de Trabajo Electrónico presidido por Ecuador y copresidido por Brasil y Ghana, que vienen elaborando el Anteproyecto de Niveles Máximos para el Cadmio en el Chocolate y Productos Derivados del Cacao; y agradece la oportunidad de referir los siguientes comentarios sobre el Informe presentado por el Grupo de Trabajo:

En la 10ª Reunión del Comité del Codex sobre Contaminantes de los Alimentos realizado en Rotterdam, Países Bajos, del 4 al 8 de abril 2016, el Comité acordó restablecer el Grupo de Trabajo para continuar trabajando en el desarrollo de los NM en el cadmio en las categorías de alimentos:

- Productos intermedios, esto es, licor de cacao y cacao en polvo
- Productos acabados o terminados basados en el contenido total de sólidos de cacao (%), es decir chocolate y cacao en polvo listo para el consumo.

El Perú expresa su acuerdo con normar, en lo que hiciera falta, los productos de consumo final o chocolates, que es la etapa más eficaz para proteger al consumidor. En la medida en que existen metodologías de atenuación de los niveles de cadmio en los distintos puntos de la cadena productiva, resultaría contraproducente para el comercio el establecimiento de niveles máximos en los productos intermedios derivados del cacao. Así, por ejemplo, el cadmio en el suelo puede ser retenido mediante enmiendas agronómicas; las trazas de cadmio en las almendras, pueden verse disminuidas mediante un lavado del mucilago; granos secos de distinto origen pueden disminuir su contenido final mediante la elaboración de mezclas o blends, etc. En tanto existan alternativas de manejo, señalar u objetar un producto, puede devenir en discriminatorio y constituirse en un obstáculo técnico innecesarios al comercio.

En tal sentido, se recomienda continuar con la recolección de datos, armonización de métodos de detección y evaluar el efecto real en la salud del consumo de cadmio en productos terminados de cacao para luego de este trabajo, proponer los límites de cadmio en producto terminado

#### **OBSERVACIONES ESPECÍFICAS:**

Por lo antes comentado, se presenta las siguientes observaciones específicas:

1. El número de muestras de países utilizadas para documentar los resultados no son estadísticamente representativas, siendo necesario contar con una mayor fuente de datos en la plataforma GEMS/food o SIMUVIMA/Alimentos, que justifique la información a ser incluida para establecer niveles máximos de cadmio en chocolates y productos derivados del cacao; por lo tanto, son insuficientes y se debe instar a seguir aportando esta información.
2. La metodología para la determinación de cadmio en ensayos de laboratorio seguida por diferentes países no es la misma en cuanto a precisión, por lo que, se puede tener un sesgo en los resultados obtenidos. Es decir, en la descripción de la metodología de estimación de los valores de corte, no se refleja ningún paso de validación de datos. Se establecen como valores de corte, por ejemplo 0,1 o 0,6 ppm, valores que están por debajo del Límite de Detección de la Espectrofotometría de Absorción Atómica de Llama, que es la técnica más utilizada. Los datos que se usen para el cálculo deberían haber sido obtenidos con Espectrofotometría de Absorción Atómica de Horno de Grafito u otros procedimientos como los de Emisión Óptica, cuyos límites de detección estén por debajo de los NM que se decidan establecer. En concreto, consideramos imprescindible un paso previo de ponderación y valoración de la data utilizada no sólo en cuanto a la cantidad y procedencia de los datos utilizados, sino sobre la metodología utilizada para su estimación.
3. El anteproyecto utiliza como criterio para el establecimiento del punto de corte, el percentil 95 % para recomendar niveles máximos de cadmio en productos terminados basados en el total del contenido de sólidos de cacao (%), sin tener en consideración el tema de salud determinada por la exposición alimentaria. Con esta metodología se estaría excluyendo por razones estrictamente estadísticas al 5% de los chocolates con "mayor" contenido de cadmio, sin que se verifique que este contenido alcance o represente realmente un peligro para la salud de los consumidores.
4. Adicionalmente, también por la metodología utilizada y en razón de que todavía no se cuenta con una cantidad representativa de datos, los valores de corte pueden variar de manera importante con un mayor ingreso de datos al sistema. Por eso, se recomienda que los valores de corte sean establecidos cuando la cantidad de datos en el sistema se haya estabilizado y sea representativa de todas las Regiones del Mundo en las que sea relevante (especialmente las zonas productoras y consumidoras de chocolate y los insumos relacionados).
5. Por otro lado, consideramos que no es necesario especificar los nombres de los chocolates en el cuadro 1) de recomendaciones generales, por cuanto, es suficiente con precisar el porcentaje de sólidos de cacao.
6. El Comité del Codex sobre Contaminantes de los Alimentos, en su sexto período de sesiones, solicitó al Comité que realizara una evaluación de la exposición dietética al cadmio a partir de cacao y productos de cacao.
7. El Perú está de acuerdo respecto de que el Comité Codex destacara que la exposición al cadmio en la dieta de los consumidores con altos niveles de consumo de cacao y sus productos es probable que estuviera sobrestimada y no la consideraba motivo de preocupación, según la evaluación de la JECFA (77ª reunión).
8. El Perú solicita ser parte del grupo de redacción del anteproyecto de norma para brindar su apoyo y colaboración en la construcción de la argumentación y textos, antes de su difusión entre los Países Parte.

## REPUBLIC OF KOREA

The Republic of Korea supports the setting of MLs for the final products of cocoa such as chocolates and dry mixtures of cocoa and sugars.

However, considering that cocoa-derived products and chocolates are largely consumed by children, it is also appropriate to set MLs for intermediate products such as cocoa liquor and cocoa powder from cake.

Therefore, we recommend EWG to set MLs for these intermediate products after additional data collection and further discussions.

## USA

The U.S. appreciates the work that Ecuador, Brazil, and Ghana has done in preparing the recommendations on Maximum Levels (MLs) for Cadmium in Chocolate and Cocoa-Derived Products and submits the following comments for consideration.

- JECFA concluded in 2013 that total cadmium exposure, including for high consumers of cocoa and cocoa products, was not considered to be of concern. In 2014, Ecuador proposed work on MLs because the lack of MLs for cadmium in cocoa and its products could threaten the exports of some member countries, especially developing countries.
- Since there is no health concern from exposure to cadmium in chocolate and cocoa products based on the JECFA assessment, it is important that the proposed new MLs do not negatively impact exports from these countries.
- At this time, the U.S. cannot recommend that the proposed MLs move forward in the step process.
  1. The U.S. is concerned that the data presented to support MLs for dry cocoa mixtures and chocolate products may not capture differences in cadmium levels due to geographic origin. Failure to consider geographic origin could negatively impact countries with cocoa beans that contain higher levels of cadmium, such as some Latin American countries. Although Appendix I identifies countries that contributed data for specific chocolate categories, it is not possible to determine from the data presented if certain countries (or regions) are associated with higher cadmium levels and thus negatively impacted by proposed MLs, or if particular countries (or regions) are underrepresented in the data collection.
  2. The U.S. is concerned that some of the proposed MLs may not be achievable. For example, in a small U.S. Food and Drug Administration (FDA) survey of chocolate bars collected at retail in the United States, 13 percent of chocolate bars with >70% total dry cocoa solids exceeded the proposed ML of 0.8 mg/kg. All of the samples of known origin that exceeded this ML were from Latin America.
  3. Additional (or subset) product categories of MLs may be needed, including for chocolate with very high cocoa solids content; dry mixtures of cocoa and sugars with higher levels of cocoa solids, e.g., > 50 percent; and for cocoa powder (without sugar) sold at retail.
- The U.S. suggests the Committee consider two options:
  1. Reestablish the EWG for development of a revised draft paper for comments and consideration at the 12<sup>th</sup> Session of CCCF in 2018. The Committee should renew the request to member countries and organizations for new data, including data on country of origin and percent total cocoa solids.
  2. Request that JECFA conduct an impact assessment of proposed MLs. In their analysis, the EWG stated that MLs established for cocoa-derived products should be based primarily on practical achievability worldwide using a 95 percent cutoff. However, given JECFA's conclusion that total cadmium exposure is not of concern, including for high consumers of cocoa and cocoa products, the U.S. recommends that the Committee ask JECFA to conduct an impact assessment of proposed MLs (including possible higher alternate MLs). The results of the impact assessment should be used to guide ML selection, rather than achievability alone. As with Option 1, the Committee should renew the request to member countries and organizations for new data, including data on country of origin and percent total cocoa solids.

## AU

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

**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 and Nigeria. Cadmium levels in cocoa beans can vary considerably between regions. The region of lowest concentration is West Africa. For instance, the highest cadmium levels in cocoa shells of Ghana was reported to be 0.75mg/kg. Studies by Takrama et al. (2015) in Ghana also showed that cadmium levels in cocoa nibs ranged from 0.248 to 0.336 mg/kg with a mean value of 0.269 mg/kg (n=67).

The 10<sup>th</sup> CCCF (2016) agreed on the categories for which MLs for cadmium were to be developed. These were:

- Intermediate products (cocoa liquor and cocoa powder from cake)
- Finished products based on total cocoa solids content (%) i. chocolate and cocoa powder ready-for-consumption)

The EWG however considered it premature to develop MLs for the intermediate products (cocoa liquor and cocoa powder from cake) at this stage because although a large amount of data was provided by the European Cocoa Association (ECA) this data (cocoa liquor: 1200 samples, cocoa powder: 1620 samples) was not considered because it was only provided in a summarized form. Data on individual samples was not available so it was not possible to perform calculations of respective intervals and ranges of frequencies to be able to propose maximum levels for cadmium in these intermediate products.

**Position 2:** AU supports the recommended classification for chocolates and the proposed MLs which are as follows:

Name of the product	Total dry solids of cocoa (%)	Proposed ML (mg/kg)
Milk chocolate Family milk chocolate Milk chocolate couverture Gianduja milk chocolate Table chocolate Milk chocolate Vermicelli/milk chocolate flakes	≤ 30%	0.1
<u>Dry mixtures of cocoa and sugars:</u> Sweetened cocoa, Sweetened cocoa powder and drinking chocolate with 25% or more total dry solids of cocoa Sweetened cocoa mix, Sweetened mixture with cocoa containing 20% or more total dry solids of cocoa Sweetened cocoa- flavored mix with 20% or more total dry solids of cocoa		0.65
Chocolate Gianduja chocolate Semi – bitter chocolate para mesa Chocolate Vermicelli/chocolate flakes Bitter table chocolate	>30% - 50%	0.3
Chocolates and products with declared cocoa content more than 50% and less than 70%	>50% - <70%	0.6
Chocolates and products with declared cocoa content more than 70%	>70%	0.8

**Rationale:** The recommended classification is aligned to the already existing Codex Alimentarius categorization/standards for cocoa and cocoa products. MLs proposed for cocoa-derived products were based primarily on practical achievability worldwide, i.e., As Low As Reasonably Achievable (ALARA) principle (GSCTFF, CODEX STAN 193-1995). A 95% cut-off point was used to recommend MLs for the various categories of chocolate and cocoa powder as this would impact on only 5% of the global trade of these products.

The 77<sup>th</sup> session of JECFA evaluated exposure to Cadmium from the consumption of products containing cocoa and its derivatives. It estimated that the highest per capita cocoa and its derivatives consumption ranged from 0.1 – 7.5 g/day through the 17 GEMS/Food groups. Most African countries are in the lowest part of the consumption range.

From the JECFA evaluation, the average Cd dietary exposure of cocoa and its derivatives for the entire population within the 17 GEMS / Food groups ranged from 0.005 to 0.39 µg/kg bw / month, which is equivalent to 0.02 to 1.6% of the PTMI (25µg/kg bw/month). Similar dietary exposures to Cd in the population for individual cocoa products were estimated from national data and these ranged from 0.001 to 0.46 µg/kg bw/month (0.004 to 1.8% PTMI). Since 5% of the PTMI of Cd from cocoa-derived products for the general population was not exceeded relative to cadmium dietary intake in even one of the GEMS/Food Consumption Cluster Diets, it was suggested that cadmium consumption from cocoa-derived products does not significantly contribute to the total cadmium exposure of the consumer justifying the use of the ALARA principle in the development of the MLs.

## FOOD DRINK EUROPE

FoodDrinkEurope would like to commend the eWG on all their hard work done so far, and welcomes this opportunity to review the third draft paper with its conclusions and recommendations, and is pleased to provide the following comments.

### **Maximum levels for cadmium in chocolate and derived cocoa products should not be established as there is no need.**

On the basis of the JECFA opinion, we would like to reiterate that the establishment of maximum levels (MLs) of cadmium for cocoa and chocolate-derived products is not a safety issue, but rather presents a trade concern. The 73<sup>rd</sup> Joint WHO/FAO Expert Committee on Food Additives (JECFA) previously identified the major contributors to cadmium exposure as cereals/grains, vegetables, meat and poultry offal, and seafood (especially molluscs.)<sup>1/</sup> Further, the 77<sup>th</sup> JECFA session clearly expressed that both high consumers and the general population are not at risk from cadmium dietary exposure from cocoa-derived products. Therefore, we consider no need to develop MLs for cadmium in cocoa and chocolate-derived products.

This issue is especially important to the global cocoa and chocolate industry in light of concerns about the supply of cocoa.<sup>2/</sup> A number of factors, including, but not limited to, demand, weather, and farming practices, present challenges for the cocoa supply and the potential exclusion of product for non-safety reasons, such as cadmium levels, is an unnecessary burden for this industry. Alignment on this issue is critical as it could significantly threaten exports in developing countries where cocoa is primarily grown.

### **Nevertheless, if MLs are to be put in place, FoodDrinkEurope agrees that they should relate to the cocoa solids content of [finished] products, in this instance.**

FoodDrinkEurope believes the proper focus of MLs should relate to the cocoa solids content of [finished] products, in this instance. Evidence has demonstrated that cadmium associates with the non-fat dry cocoa solids.<sup>3/</sup> Therefore, the establishment of MLs based on non-fat dry cocoa solids would be most consistent with scientific evidence and would promote the greatest degree of achievability.

Standard industry practice dictates the blending of various cocoa beans, liquors and powders for the purpose of quality control and taste<sup>4/</sup> /. There are multiple points of comingling of cocoa and chocolate intermediary products throughout the supply chain. Often beans or intermediary products (cocoa powder, chocolate liquor) sourced from multiple regions are blended together. As a result, the levels of cadmium in blended products differ from those for products derived from a single origin. The majority of chocolate products available on the market are made from beans from multiple origins, however, for products derived from a single origin, the relationship between levels in the primary and finished products would be more predictable.

### **The Committee should direct the eWG to consider all available data.**

The Circular Letter acknowledges that some data was excluded from analyses by the eWG due to a lack of information. Specifically, paragraph 100 of the conclusion explains that the large amount of data submitted by the European Cocoa Association (ECA) was not considered in the analysis or recommendations. However, the Circular Letter suggests that the data could be used in future analyses to inform MLs that would be representative of all available data.

<sup>1/</sup> CADMIUM (addendum) in WHO Food Additive Series 68: Safety of evaluation of certain food additives and contaminants (p. 358, [http://whqlibdoc.who.int/publications/2011/9789241660648\\_eng.pdf](http://whqlibdoc.who.int/publications/2011/9789241660648_eng.pdf))

<sup>2/</sup> ICCO.2014.The Cocoa Market Situation. EC/4/2 [http://www.icco.org/about-us/international-cocoa-agreements/cat\\_view/30-related-documents/45-statistics-other-statistics.html](http://www.icco.org/about-us/international-cocoa-agreements/cat_view/30-related-documents/45-statistics-other-statistics.html)

<sup>3/</sup> Yanus, R. L., Sela, H., Borjovich, E. J. C., Zakon, Y., Saphier, M., Nikolski, A., Gutflais, E., Lorber, A., & Karpas, Z. 2004. Trace elements in cocoa solids and chocolate: An ICPMS study. *Talanta*, 119:1–4.

<sup>4/</sup> "Certain foods are widely blended across many individual units (e.g. orange juice); in these cases, it may be **appropriate to estimate concentrations in blended commodities** by using the arithmetic mean of the concentrations in the individual or composite samples." (EHC 240: Principles for Risk Assessment of Chemicals in Food. Chapter 6.2.1.2. pp. 6.9.-6.10.)

It is essential that all available data, including the ECA data, is included in analysis. The analysis previously conducted by the eWG was not based on a sufficient quantity of data upon which to base global recommendations. A re-analysis of the data, including the previously excluded ECA data, would significantly increase the number of samples and provide a more globally representative analysis of data from varying geographic origins.

Due to the importance of ascertaining global achievability and the relative lack of data from certain regions, we advocate for a re-analysis of the data in order to capture all of the data that was submitted to the GEMS database.

**The rationale of the MLs proposed in the Circular Letter is unclear.**

FoodDrinkEurope has concerns regarding the rationale for the large deviation of proposed levels in the Circular Letter from those that were proposed in the second draft paper. It is unclear what basis the proposed levels in the Circular Letter were developed upon. Although several of the comments submitted to the eWG were supportive of Option 2 in the second draft paper, the MLs in the Circular Letter were closer to, or even lower than, the levels proposed in the second draft paper of the eWG.

Furthermore, FoodDrinkEurope supports the proposed levels in Option 2 from the second draft paper as they more closely represent globally achievable cadmium levels for the proposed product categories. As such, we support a ML of 0.2 mg/kg for the <30% total dry cocoa solids category, a ML of 0.3 mg/kg for the >30%-50% total dry cocoa solids category (which is currently proposed in the Circular Letter) and a ML of 1 mg/kg for the >50% total dry cocoa solids category. Notwithstanding this, we can support an ML of 0.8 mg/kg for the >50%-70% total dry cocoa solids category that was newly established in the Circular Letter, to align with the limit in the European Union applicable to this category of chocolate.

FoodDrinkEurope appreciates that the eWG took into consideration the recommendation to establish an additional category for chocolates with >70% total dry solids. However, for this higher cocoa solids content product, ideally, no ML should be set since this represents a small percentage of chocolate sold worldwide. If it is necessary to set an ML for this category, then a ML higher than 0.8 mg/kg should be proposed by the eWG: additional data is needed to address the increased cadmium levels present in products with higher percentages of total dry cocoa solids.

FoodDrinkEurope recommends that the eWG consider more data for this product category and, if determined necessary, establish an achievable ML accordingly.

Additionally, we question the rationale of the ML proposed for the “dry cacao mixtures with sugars” category; an increase in MLs for products with higher percentages of total dry cocoa solids would be scientifically justified, because cadmium is known to concentrate in the non-fat cocoa solids portion, as the percentage of total dry cocoa solids increases, it is expected that the cadmium level would increase as well. There are concerns that the proposed levels do not accurately reflect the increase in levels for products containing higher percentages of total dry cocoa solids.

FoodDrinkEurope suggests that a better approach would be to establish an additional category for “dry cacao mixtures with sugars” that is reflective of products containing higher percentages (>50%) of total dry cocoa solids.

**We would like to reiterate that the establishment of MLs is premature at this stage, prior to additional analysis, and bring your attention also to the European Commission’s position on the CCCF’s eWG’s proposed MLs.**

As explained above, there is a substantial amount of data that was not included in the analysis from the second and third draft papers. Furthermore, according to the European Commission’s position<sup>5/</sup> on item 6 of the Agenda of the CCCF’s 11<sup>th</sup> Session to be held in Rio de Janeiro in Brazil on the 3<sup>rd</sup> to the 7<sup>th</sup> of April 2017: “*The EU agrees to postpone the establishment of MLs for intermediate cocoa products as data in GEMS Food database does not reflect all origins. The EU sees no immediate need for specific MLs for chocolate with more than 50% total cocoa solids.*” For these reasons, FoodDrinkEurope believes it may be premature to propose MLs for product categories and a reanalysis of data should be considered by the eWG.

**Conclusion**

FoodDrinkEurope thanks the committee for taking the above comments into consideration and welcomes the opportunity to provide further clarification on specific issues flagged within the draft discussion paper crafted by Ecuador, Brazil and Ghana. FoodDrinkEurope also reiterates its appreciation for the eWG for their extensive work on preparing the draft discussion paper relative to proposed maximum levels for cadmium in chocolate and cocoa-derived products and looks forward to commenting on the next iteration of this discussion draft.

<sup>5</sup> European Commission’s position on item 6 of the Agenda of the CCCF’s 11<sup>th</sup> Session to be held in Rio de Janeiro in Brazil on the 3<sup>rd</sup> to the 7<sup>th</sup> of April 2017

[http://ec.europa.eu/food/sites/food/files/safety/docs/codex\\_cccf\\_11\\_agenda\\_item\\_06.pdf](http://ec.europa.eu/food/sites/food/files/safety/docs/codex_cccf_11_agenda_item_06.pdf)

## ECA

Paragraph	Comment
General Recommendations – Point (1)	<p><b>As indicated in the previous draft document, ECA supports ML of Option 2, under the condition that fine flavour and single origin values are duly taken into account.</b></p> <p><b>Justification:</b></p> <ul style="list-style-type: none"> <li>- In our previous comments submitted to the 2nd draft, we also suggested the establishment of an additional category for “Bitter chocolate or dark chocolate &gt;50%” - with proportionally increased ML to take into account the higher content of total dry cocoa solids.</li> <li>- However, the newly proposed MLs for “Chocolates and products with declared cocoa content more than 50% and less than 70%” and “Chocolates and products with declared cocoa content more than 70%” are considerably lower in comparison to Option 2 and not workable for the industry. Exclusion of cocoa products for non food safety reasons (cf. JECFA) would be an unacceptable burden for the industry.</li> <li>- In addition, these new suggested limits are nearly identical to the EU limits - except for “Dry mixtures of cocoa and sugars” as indicated in this current Codex proposal (EU: 0,6 vs. 0,65 mg/kg).</li> <li>- To ensure no trade disruption from some countries, while ensuring compliance with food safety requirements, ML need to be representative and achievable for most origins.</li> <li>- This will not be the case for the newly proposed limits in this proposal, therefore, <b>we support Option 2 on the condition of proportionally increased ML for higher cocoa solid %, to also cover fine flavour and single origins. We strongly request that all data need to be taken into account to guarantee representativeness for all origins currently on the global cocoa market.</b></li> </ul> <p><b>Option 2</b></p> <ul style="list-style-type: none"> <li>-Sweet chocolate&lt;30%: 0.2</li> <li>-Dry cocoa mixtures with sugars: 0.8</li> <li>-Semi bitter chocolate 30-50%: 0.3</li> <li>-Bitter chocolate or dark chocolate &gt;50%: 1</li> </ul> <p><b>EU limits</b></p> <ul style="list-style-type: none"> <li>-Milk chocolate &lt;30% total dry cocoa solids: 0.1</li> <li>-Cocoa powder sold to final consumer or as ingredient in sweetened cocoa powder sold to the final consumer: 0.6</li> <li>-Chocolate with &lt;50% total dry cocoa solid; milk chocolate with &gt;30% total dry cocoa solid: 0.3</li> <li>-Chocolate with &gt;50% total dry cocoa solid: 0.8</li> </ul>
General Recommendations – Point (1)	<p><b>ECA strongly suggests to review the ML for “Dry mixtures of cocoa and sugars”, including all available data.</b></p> <p><b>Justification:</b></p> <ul style="list-style-type: none"> <li>- In the definition of “Dry mixtures of cocoa and sugars” it is not clear at what percentage cocoa powder is used.</li> <li>- As stated previously, ML need to be representative and achievable for products from <u>all</u> origins. Hence as previously suggested a proportionally increased ML is needed to take into account the higher content of total dry cocoa solids. The current category does not differentiate between cocoa solids percentages, which is incorrect.</li> </ul>

General Recommendations – Point (3)	<p><b>ECA does not oppose the recommendation to postpone the establishment of ML on intermediate cocoa products <u>as long as</u> limits on finished products are representative and achievable for intermediate products (cocoa liquor and powder).</b></p> <p><b>Justification:</b></p> <ul style="list-style-type: none"> <li>- Low limits on finished products automatically reduce Cadmium limits in intermediate products, which could entail trade disruptions from some countries.</li> <li>-Limits on finished products will be translated by the industry into limits on semi-finished products, to ensure that limits are manageable and controllable.</li> <li>- Hence it is crucial that levels found on semi-finished products are duly taken into account for the establishment of final product limits, whether or not limits will be established for semi-finished products.</li> <li>-Therefore, limits on finished products must be representative and achievable for all origins, notably for fine flavour products.</li> <li>- If limits would be set on semi-finished products, they should cover <u>all origins</u> (taking into account ECA data).</li> <li>- In addition, we would prefer ML on “Chocolate with more than 50% of cocoa total solids, with appellation of origin”, to be defined in the scope of this current Codex proposal.</li> </ul>
Table 4	<ul style="list-style-type: none"> <li>- In most cases, the origin is determined by the producing plant and hence the samples are not sufficiently representative for the world cocoa market, where 5-8% is fine flavour cocoa.</li> <li>- In addition, using the 95% cut-off approach, the few data points of specific origins that are high in Cadmium are not included.</li> </ul>
Paragraph 43	For this reason, the presentation of ECA data should be detailed instead of summarised.
Table 5	<ul style="list-style-type: none"> <li>- As previously pointed out by ECA, data was provided to allow break down by country and includes average values, similar to Table 4.</li> <li>- We therefore ask to present Table 5 in a similar way.</li> <li>- In addition we would like to re-emphasize that for this data set the origin of the liquor is always reflecting the place of harvest (unlike Table 4).</li> </ul>
Paragraph 47	<ul style="list-style-type: none"> <li>- As previously pointed out, ML need to be representative and achievable for all origins.</li> <li>- ECA provided 10 times the amount of data than accessible in the GEMS/Food database, however, this data was not included in the 95% cut-off calculations.</li> <li>- <b>We strongly suggest to take into account the data provided by ECA in order to achieve representative ML.</b></li> </ul>
Table 8	<ul style="list-style-type: none"> <li>- As previously pointed out by ECA, data was provided to allow break down by country and includes average values, similar to Table 7.</li> <li>- We therefore ask to present Table 8 in a similar way.</li> <li>- In addition, Table 7 has not enough numbers per origin to be representative.</li> </ul>
Paragraph 58	Since data provided by ECA differed in maximum and average values from GEMS/Food database, but shows overall a similar regional trend, data should be taken into account for calculation to obtain representative ML.

Paragraph 72	- <b>ECA agrees with this suggested classification of finished products.</b> - However, if it is agreed that Codex levels should be established following the EU model, then the EU classification should also be applied.
Paragraph 100	<b>ECA strongly supports the proposal to carry out a more comprehensive analysis taking into account all the available information and thus deriving representative and achievable ML.</b>

### ICA

The International Confectionery Association (ICA) is a nongovernmental organization that brings together the interests of the global confectionery industry, representing and promoting these interests internationally. ICA facilitates, coordinates and communicates international scientific, regulatory and public affairs information while promoting and representing the interests of the confectionery industry in a collaborative and responsible manner.

ICA promotes the harmonization of confectionery standards and policies based on science and is a strong supporter of *Codex Alimentarius*. ICA also works to facilitate international trade of confectionery products by eliminating or preventing artificial barriers to trade and believes that global harmonization of food additive standards is important to achieve that goal.

ICA welcomes this opportunity to review CL 2017/24-CF with its conclusions and recommendations, and is pleased to provide the following comments.

#### **I. The Joint WHO/FAO Expert Committee on Food Additives determined there is no health risk linked to cadmium exposure**

In the introduction to the CCCF11 Circular Letter (CL) 2017/24-CF (March 2017) Appendix 1, paragraph 1, 2 and 3 reiterates that the establishment of maximum levels (MLs) of cadmium for cocoa and chocolate-derived products is not a safety issue, but rather a trade concern. The 73<sup>rd</sup> Joint WHO/FAO Expert Committee on Food Additives (JECFA) previously identified the major contributors to cadmium exposure as cereals/grains, vegetables, meat and poultry offal, and seafood (especially molluscs.)<sup>6/</sup> Further, the 77<sup>th</sup> JECFA session clearly expressed that both high consumers and the general population are not at risk from cadmium dietary exposure from cocoa-derived products.

On the basis of the JECFA opinion, ICA would like to reiterate that this issue is especially important to the global cocoa and chocolate industry in light of concerns about the supply of cocoa.<sup>7/</sup> A number of factors, including but not limited to demand, weather, and farming practices, present challenges for the cocoa supply and the potential exclusion of product for non-safety reasons, such as globally unachievable cadmium levels, is an unnecessary burden for this industry. Alignment on this issue is critical as it could significantly threaten exports in developing countries where cocoa is primarily grown.

#### **II. It is imperative for the Committee to direct the eWG to consider all available data**

The Circular Letter (CL 2017/24-CF) acknowledges that some data was excluded from the eWG analyses due to an absence of particular information. Specifically, paragraph 100 of the conclusion explains that the large amount of data submitted by the European Cocoa Association (ECA) was not considered in the analysis or recommendations. However, the Circular Letter suggests that the data could be used in future analyses to inform MLs that would be representative of all available data.

It is essential that all existing data, including the ECA data, is included in future analysis. Further, the analysis conducted by the eWG was not based on a sufficient quantity of data upon which to base global recommendations. For several product categories, particularly dry cocoa and sugar mixtures and chocolate products containing between 50-70% total dry cocoa solids and greater than 70% total dry cocoa solids, there is a lack of data including the sample origin. A reanalysis of the data, including the previously excluded ECA data, would substantially increase the number of samples and provide a more globally representative analysis from varying geographic origins.

Due to the importance of ascertaining global achievability and the relative lack of data from certain regions, we advocate for a reanalysis of the data in order to capture all of the data that was submitted to the GEMS database.

<sup>6/</sup> CADMIUM (addendum) in WHO Food Additive Series 68: Safety of evaluation of certain food additives and contaminants (p. 358, [http://whqlibdoc.who.int/publications/2011/9789241660648\\_eng.pdf](http://whqlibdoc.who.int/publications/2011/9789241660648_eng.pdf))

<sup>7/</sup> ICCO.2014. The Cocoa Market Situation. EC/4/2 [http://www.icco.org/about-us/international-cocoa-agreements/cat\\_view/30-related-documents/45-statistics-other-statistics.html](http://www.icco.org/about-us/international-cocoa-agreements/cat_view/30-related-documents/45-statistics-other-statistics.html)

**III. The establishment of MLs would be premature at this stage, prior to additional analysis. Further, the basis of the MLs proposed in the Circular Letter is unclear, however, if a position must be taken, ICA supports the MLs proposed in Option 2 of the Second Draft Paper**

ICA has concerns regarding the rationale for the large deviation of the proposed MLs in the Circular Letter from those that were proposed in the eWG second draft paper, and it is unclear what basis the proposed levels in the Circular Letter were developed upon, particularly as there may be insufficient data to determine if these levels would have 95% achievability. Although several of the comments submitted to the eWG were supportive of Option 2 in the second draft paper, the MLs in the Circular Letter were closer to, or even lower than, the Option 1 levels proposed in the second draft paper of the eWG.

The proposed levels in the Circular Letter are problematic for the international confectionery industry. Consistent with our previous comments on the eWG's second draft paper, the proposed MLs in Option 2 are preferable. Additionally, ICA supports the establishment of MLs in finished products rather than primary and intermediary products such as cocoa bean and cocoa liquor, respectively, that are intended to undergo further processing and/or blending. Due to the nature of blending these products, it would be more practical, straightforward and protective of public health to establish limits on finished cocoa and chocolate products rather than cocoa beans or intermediary products. However, for the aforementioned reasons, ICA strongly supports a comprehensive reanalysis that incorporates all available data prior to establishing MLs.

Further, the additional analysis should include supplementary data on intermediary products. Intermediary product data will be predictive of certain finished products, particularly single-origin, fine flavor chocolate products, and it is critical that data representing these products is taken into account when developing MLs. Because single-origin chocolates typically contain higher percentages of total cocoa solids, MLs would need to be set sufficiently higher to accommodate the cadmium levels present in products from these particular geographic locations. A lower limit on finished products automatically reduces cadmium limits in intermediate products which could result in trade disruptions for some countries. Similarly, paragraph 93 in the Circular Letter discusses a need for more data to address the increased cadmium levels present in products with higher percentages of total dry cocoa solids. ICA strongly recommends that the eWG consider additional data for these product categories and establish achievable MLs accordingly.

For the "dry cacao mixtures with sugars" category, an increase in ML for products with higher percentages of total dry cocoa solids would be scientifically justified. These mixtures could encompass a wide range of products in the marketplace with extremely variable levels of cadmium. Because cadmium is known to concentrate in the nonfat cocoa solids portion, as the percentage of total dry cocoa solids increases, it is expected that the cadmium level would increase as well. There are concerns that the proposed levels do not accurately reflect the increase in levels for products containing higher percentages of total dry cocoa solids. ICA suggests that a better approach would be to establish an additional category for "dry cacao mixtures with sugars" that is reflective of products containing higher percentages (>50%) of total dry cocoa solids.

ICA would like to reiterate that the establishment of MLs is premature at this stage and we strongly support a proposal to conduct a reanalysis taking into account all available data.

**Conclusion**

ICA thanks the committee for taking the above comments into consideration and welcomes the opportunity to provide further clarification on specific issues flagged within CL 2017/24-CF. ICA also thanks the eWG chairs for their extensive work on preparing the draft discussion papers relative to proposed maximum levels for cadmium in chocolate and cocoa-derived products and looks forward to discussing this further at the CCCF 11<sup>th</sup> Session in Brazil.

**ICGMA**

The International Council of Grocery Manufacturers Associations (ICGMA) is a nongovernmental organization that represents foods and consumer packaged goods manufacturers globally including a segment of the confectionery industry. ICGMA promotes the harmonization of food standards and policies based on science and are a strong supporter of Codex Alimentarius. ICGMA also works to facilitate international trade of food products by eliminating or preventing artificial barriers to trade and believes that global harmonization of food standards is important to achieve that goal. ICGMA welcomes this opportunity to provide further feedback on the current Circular Letter.

**1. The Joint WHO/FAO Expert Committee on Food Additives determined there is no health risk linked to cadmium exposure**

In the introduction to the second draft paper, paragraphs 10 and 11 reiterate that the establishment of maximum levels (MLs) of cadmium for cocoa and chocolate-derived products is not a safety issue, but rather a trade concern.

The 73<sup>rd</sup> Joint WHO/FAO Expert Committee on Food Additives (JECFA) previously identified the major contributors to cadmium exposure as cereals/grains, vegetables, meat and poultry offal, and seafood (especially molluscs.)<sup>8/</sup> Further, the 77<sup>th</sup> JECFA session clearly expressed that both high consumers and the general population are not at risk from cadmium dietary exposure from cocoa-derived products.

ICGMA would like to restate that this issue is especially important to the global cocoa and chocolate industry in light of concerns about the supply of cocoa.<sup>9/</sup> A number of factors, including but not limited to demand, weather, and farming practices, present challenges for the cocoa supply and the potential exclusion of product for non-safety reasons, such as globally unachievable cadmium levels, is an unnecessary burden for this industry. Alignment on this issue is critical as it could significantly threaten exports in developing countries where cocoa is primarily grown.

II. It is imperative for the Committee to direct the eWG to consider all available data

The Circular Letter acknowledges that some data was excluded from the eWG analyses due to an absence of particular information. Specifically, paragraph 100 of the conclusion explains that the large amount of data submitted by the European Cocoa Association (ECA) was not considered in the analysis or recommendations. However, the Circular Letter suggests that the data could be used in future analyses to inform MLs that would be representative of all available data. It is essential that all existing data, including the ECA data, is included in future analysis.

Further, the analysis conducted by the eWG was not based on a sufficient quantity of data upon which to base global recommendations. For several product categories, particularly dry cocoa and sugar mixtures and chocolate products containing between 50-70% total dry cocoa solids and greater than 70% total dry cocoa solids, there is a lack of data including the sample origin. As a result, the findings are not globally representative. A call for additional data, as well as a reanalysis of the data, would substantially increase the number of samples and provide a more globally representative analysis from varying geographic origins.

Due to the importance of ascertaining global achievability and the relative lack of data from certain regions, we strongly advocate for a reanalysis to capture all available data.

III. The establishment of MLs would be premature at this stage, prior to additional analysis. Further, the basis of the MLs proposed in the Circular Letter is unclear, however, if a position must be taken, ICGMA supports the MLs proposed in Option 2 of the Second Draft Paper

ICGMA has concerns regarding the rationale for the large deviation of the proposed MLs in the Circular Letter from those that were proposed in the second draft paper, and it is unclear what basis the proposed levels in the Circular Letter were developed upon. Although several of the comments submitted to the eWG were supportive of Option 2 in the second draft paper, the MLs in the Circular Letter were closer to, or even lower than, the levels proposed in the second draft paper of the eWG.

Moreover, the proposed levels in the Circular Letter are problematic for the international confectionery industry. Consistent with our previous comments on the eWG's second draft paper, the proposed MLs in Option 2 are preferable. However, for the aforementioned reasons, including the rationale in Section II of our comments, ICGMA strongly supports a reanalysis that incorporates all available data prior to establishing MLs.

Further, the additional analysis should include supplementary data on intermediary products. Intermediary product data is predictive of specific finished products, particularly single-origin, fine flavor chocolate products, and it is critical that data representative of these products is taken into account when developing MLs. Because single-origin chocolates typically contain higher percentages of total cocoa solids, MLs would need to be set sufficiently higher to accommodate the cadmium levels present in products from these particular geographic locations. Similarly, paragraph 93 in the Circular Letter discusses a need for more data to address the increased cadmium levels present in products with higher percentages of total dry cocoa solids. ICGMA strongly recommends that the eWG consider additional data for these product categories and establish achievable MLs accordingly.

For the "dry cacao mixtures with sugars" category, an increase in ML for products with higher percentages of total dry cocoa solids would be scientifically justified. These mixtures could encompass a wide range of products in the marketplace with extremely variable levels of cadmium.

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<sup>8/</sup> CADMIUM (addendum) in WHO Food Additive Series 68: Safety of evaluation of certain food additives and contaminants (p. 358, [http://whqlibdoc.who.int/publications/2011/9789241660648\\_eng.pdf](http://whqlibdoc.who.int/publications/2011/9789241660648_eng.pdf))

<sup>9/</sup> ICCO.2014.The Cocoa Market Situation. EC/4/2 [http://www.icco.org/about-us/international-cocoa-agreements/cat\\_view/30-related-documents/45-statistics-other-statistics.html](http://www.icco.org/about-us/international-cocoa-agreements/cat_view/30-related-documents/45-statistics-other-statistics.html)

Because cadmium is known to concentrate in the nonfat cocoa solids portion, as the percentage of total dry cocoa solids increases, it is expected that the cadmium level would increase as well. There are concerns that the proposed levels do not accurately reflect the increase in levels for products containing higher percentages of total dry cocoa solids. ICGMA suggests that a better approach would be to establish an additional category for “dry cacao mixtures with sugars” that is reflective of products containing higher percentages (>50%) of total dry cocoa solids.

Conclusion

ICGMA would like to thank the committee for taking the above comments into consideration and welcomes the opportunity to provide further clarification on specific issues flagged within the Circular Letter. ICGMA would also like to thank the eWG chairs for their extensive work on preparing the draft discussion papers relative to proposed maximum levels for cadmium in chocolate and cocoa-derived products and looks forward to discussing this further at the CCCF 11<sup>th</sup> Session in Brazil.