

# CODEX ALIMENTARIUS COMMISSION



Food and Agriculture  
Organization of the  
United Nations



World Health  
Organization

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Agenda Item 6

CX/CF 22/15/6-Add.1

April 2022

ORIGINAL LANGUAGE ONLY

## JOINT FAO/WHO FOOD STANDARDS PROGRAMME

### CODEX COMMITTEE ON CONTAMINANTS IN FOODS

15th Session

Virtual

9-13 and 24 May 2022

### CODE OF PRACTICE FOR THE PREVENTION AND REDUCTION OF CADMIUM CONTAMINATION IN COCOA BEANS (At Step 7)

#### Comments in reply to CL 2022/15-CF

*Comments of Canada, Chile, Ecuador, Egypt, European Union (EU), Iraq, Kenya, Saudi Arabia,  
Uganda, United States of America (USA),  
African Union (AU),*

*FoodDrinkEurope, International Commission for Uniform Methods of Sugar Analysis (ICUMSA)  
and International Confectionery Association (ICA)*

#### Background

1. This document compiles comments received through the Codex Online Commenting System (OCS) in response to CL 2022/15-CF<sup>1</sup> issued in March 2022. Under the OCS, comments are compiled in the following order: general comments are listed first, followed by comments on specific sections.

#### Explanatory notes on the Annex

2. The comments submitted through the OCS are hereby attached in the **Annex** and are presented in table format.

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<sup>1</sup> Codex circular letter, including CL 2021/87-CF, are available on the Codex webpage/Circular Letters:  
<http://www.fao.org/fao-who-codexalimentarius/resources/circular-letters/en/>  
or on the dedicated Codex webpage/CCCF/Circular Letters:  
<http://www.fao.org/fao-who-codexalimentarius/committees/committee/related-circular-letters/en/?committee=CCCF>

## GENERAL COMMENTS

COMMENT	MEMBER/ OBSERVER
<p><u>General Comment #1</u> - Canada supports the development of a CoP for the prevention and reduction of cadmium contamination in cocoa. The format and organization of the CoP is consistent, logical and easy to follow. The CoP covers a wide range of topics and appears reasonably comprehensive and complete.</p> <p><u>General Comment #2</u> - Canada is not a cocoa producer and will support the decision of CCCF15 (2022) regarding if the CoP is ready for final adoption at CAC45 (2022) or requires further consideration in order to finalize the CoP at CCCF16 (2023).</p>	Canada
A modo general, Chile quisiera apoyar el avance de este Código de Prácticas para adopción final en trámite 8 por la CAC45.	Chile
<p>En respuesta a la Carta Circular CL 2022/15-CF, Ecuador agradece al Presidente y Copresidente del Grupo de Trabajo por Medios Electrónicos - Gte por preparar y presentar el código de prácticas para la prevención y reducción de la contaminación por cadmio en granos de cacao.</p> <p>La carta circular invitaba a los miembros y observadores a presentar:</p> <ul style="list-style-type: none"> <li>• Observaciones generales sobre el contenido general del código de prácticas.</li> <li>• Observaciones específicas sobre las disposiciones que podrían necesitar más desarrollo.</li> <li>• Orientación sobre si el código de prácticas está listo para su aprobación final en el trámite 8 por la Comisión del Codex Alimentarius en su 45.º período de sesiones (2022).</li> </ul> <p>Ecuador considera que de no presentarse consideraciones importantes durante la plenaria del CCCF15 se proceda a la adopción final del CDP por parte de la CAC en su 45º período de sesiones (2022).</p>	Ecuador
Egypt appreciates the work and efforts done by the EWG in drafting of this circulated document; and in this regard, Egypt agree with the COP for final adoption by CAC45 (2022).	Egypt
<p>The European Union and its Member States (EUMS) welcome the work on the development of a Code of practice for the prevention and reduction of cadmium contamination in cocoa beans by the electronic Working Group chaired by Peru and co-chaired by Ghana and Ecuador.</p> <p>The EUMS support the development of the Code of Practice because sufficient information on mitigation measures is available for field production and post-harvest processes.</p> <p>The EUMS consider that, when taking into account the re-drafting suggestions, the Code of Practice could be adopted at step 8 by CAC45.</p>	EU
Agree with proposal	Iraq
General Comments: Kenya supports the development of this code of practice to the next step having considered the few editorial comments highlighted below.	Kenya
Saudi Arabia support the Proposed Cop For The Prevention And Reduction Of Cadmium Contamination In Cocoa Beans	Saudi Arabia
Uganda appreciates the ongoing work on Code of practice for prevention and reduction of Cadmium contamination in cocoa beans. Uganda therefore, supports the progression of the code to next step and we express interest in adopting the code after its final development stage.	Uganda
<p>The United States commends the work by Peru in developing the COP, which will be an important contribution to lowering cadmium levels in cocoa beans.</p> <p>The United States can support finalizing the COP for adoption by CAC45 (2022) with additional revisions.</p>	USA

COMMENT	MEMBER/ OBSERVER
<ul style="list-style-type: none"> <li>o General comments:               <ul style="list-style-type: none"> <li>• Mitigation measures that are still experimental need to be clearly identified as experimental in the COP.</li> <li>• Mitigation measures that are currently feasible should be presented first, followed by experimental measures that may require a longer time to implement.</li> <li>• Measures that are good farming practices but unrelated to cadmium uptake should be identified as unrelated to cadmium uptake.</li> </ul> </li> <li>o The United States plans to provide additional technical comments in a CRD to address issues such as the following:               <ul style="list-style-type: none"> <li>• Clarify the discussion on the effect of pH on cadmium (Cd) soil concentration and uptake.</li> <li>• Clarify which chemical analytes in the soil should be monitored by farmers to prevent and reduce Cd.</li> <li>• Provide guidance regarding the timing/frequency of soil sampling when measuring Cd content.</li> <li>• Clarify who should be providing recommendations regarding zinc levels in soil.</li> </ul> </li> </ul>	
<p><u>Comments:</u> African Union supports the adoption of the proposed Code of Practice for the prevention and reduction of cadmium contamination in cocoa beans.</p> <p><u>Rationale:</u> The Code of Practice (COP) provides adequate guidance to countries and the cocoa production industry on the prevention and reduction of cadmium (Cd) contamination in cocoa beans during production and postharvest processing: fermentation, drying, storage, and transportation.</p>	<b>AU</b>
<p>FoodDrinkEurope thanks the electronic working group (EWG) chaired by Peru and co-chaired by Ecuador and Ghana, and the working group members, for the opportunity to provide comments on the document CL 2022/15-CF (March 2022).</p> <p>We support the development of a feasible and practical Code of Practice.</p> <p>We appreciate the EWG's effort to ensure that various proposed mitigation strategies are reasonable, implementable, and achievable by farmers and producers, particularly in regions where soil types contain naturally higher levels of cadmium, such as volcanic regions.</p> <p>We believe that the time frames for execution and seeing results for each of these mitigation strategies differ substantially. Some have horizons of only a few years, while others have horizons that are many years out, such as replanting trees with rootstock cultivars for low cadmium uptake, growing to maturity. We support the EWG's approach to not specify the length of time needed to implement and see meaningful reductions in subject crops or the larger cocoa supply pool. The feasibility of mitigation options must consider all factors, such as economic, reduction potential, social, environmental, geology, and time to execute.</p> <p>We thank the Committee for taking these points into account and look forward to further discussion at the CCCF15 session.</p>	<b>FoodDrinkEurope</b>
<p>The International Confectionery Association (ICA) thanks the electronic working group Chair, Peru, the co-chairs, Ecuador and Ghana, and the Electronic Working Group (EWG) members for preparing the updated draft Code of Practice document (CX/CF 22/15/6).</p> <p>ICA supports the development of a feasible and practical Code of Practice. We appreciate the EWG's effort to ensure that various proposed mitigation strategies are reasonable, implementable, and achievable by farmers and producers, particularly in regions where soil types contain naturally higher levels of cadmium, such as volcanic regions.</p> <p>ICA believes that the time frames for execution and seeing results for each of these mitigation strategies differ substantially. Some have horizons of only a few years, while others have horizons that are many years out, such as replanting trees with rootstock cultivars for low cadmium uptake, growing to maturity. We support the EWG's approach to not specify the length of time needed to implement and see meaningful reductions in subject crops or the larger cocoa supply pool. The feasibility of mitigation options must consider all factors, such as economic, reduction potential, social, environmental, geology, and time to execute.</p>	<b>ICA</b>

## SPECIFIC COMMENTS

COMMENT	MEMBER/ OBSERVER
<p>Para 14 No specific recommendation on Cd levels in cocoa growing areas has been identified. The acidity of the soil affects acceptable cadmium soil levels. When the soil pH = 7, the Cd concentration in the soil could be higher <u>than</u> 1.0 mg Cd/kg. Missing “than” between “higher” and “1.0.”</p> <p>Para 25 Include space between 2 and mS/cm.</p> <p>Para 28 Remove “Cd” after “lime”, so line reads “lime contains variable levels of Cd.”</p> <p>Para 30 No space between “over” and “liming.”</p>	Canada
<p>Para 11 Aquí se mencionan una serie de parámetros a considerar al momento de realizar análisis físico-químico del suelo, pero no menciona los rangos de porcentajes que serían deseables de obtener, información importante a la hora de tomar decisiones en el caso de aplicar el COP, por lo que Chile sugiere incluir dichos rangos.</p> <p>Además, Chile quisiera sugerir incluir una recomendación respecto a la necesidad de contar con un profesional idóneo (Edofólogo) para la interpretación de los resultados de estos análisis de suelo.</p>	Chile
<p>In paragraph 11 a wide range of soil parameters is listed, which need to be determined before the establishment of a new plantation. It is proposed to focus in the Code of Practice only on those parameters, which are relevant for cadmium contamination.</p> <p>Para 14 No specific recommendation on Cd levels in cocoa growing areas has been identified. The acidity of the soil affects acceptable cadmium soil levels. When the soil pH = 7, the Cd concentration in the soil <del>could</del> <u>should not</u> be higher 1.0 mg Cd/kg.</p> <p>In a previous version of the document it was indicated that the soil cadmium should not exceed 0.4 mg Cd/kg soil if the soil pH=5 in order for the mean Cd concentration in cocoa beans not to exceed 1 mg/kg Cd. If the soil pH = 7, the Cd concentration in the soil should not exceed 1.0 mg/kg.</p> <p>In the current version it is stated that ‘when the soil pH = 7, the cadmium concentration in the soil could be higher 1.0 mg Cd/kg soil’. This should be modified to ‘when the soil pH = 7, the cadmium concentration in the soil should not be higher than 1.0 mg Cd/kg soil’. Furthermore the EU enquires why the statement that ‘the soil cadmium should not exceed 0.4 mg Cd/kg soil if the soil pH=5’ was removed?</p> <p>As it is concluded in paragraph 16 that agroforestry, compared to monoculture does not significantly change the cadmium concentration in cocoa beans, paragraph 14 with further recommendations for agroforestry, should be deleted.</p> <p><del>Phosphate fertilizers and sedimentary phosphoric rock contain Cd as an impurity. Nonetheless, for successful cocoa production it is vital to add phosphate fertilizers. For a successful cocoa production it is vital to supplement the soil with phosphate, because tropical soils have a very limited natural phosphate content. This can be best done via the use of organic fertilisers, which have a high phosphorous bioavailability and a low cadmium content. As phosphate fertilisers or sedimentary phosphorous rock may contain high cadmium concentrations, they should only be used when they have a demonstrated low cadmium content and they should in any case comply with cadmium limits established by national or regional competent authorities because tropical soils have very limited native phosphorus content. However, producers should control the amount of Cd in phosphate fertilizers they use or comply with any national limits established or given by governments for phosphate fertilizers. In addition, by using organic fertilizers the phosphorus content of the soil can be improved, as these fertilizers show a high phosphorus bioavailability.</del></p> <p>Paragraph 32 states that it is vital to add phosphate fertilisers because tropical soils have a very limited native phosphorous content. Because also by using organic fertilisers the phosphorous content of the soil can be improved, while these fertilisers typically contain less cadmium and they show a high phosphorous bioavailability, it is proposed to rephrase the paragraph.</p>	EU

COMMENT	MEMBER/ OBSERVER	
<p>Para 37 Biochar has been shown to reduce the <del>bioavailability uptake</del> of Cd <del>in by</del> cocoa beans. The reduction rates are comparable to liming and have an additive influence on liming. However, biochar is an expensive soil amendment and may not be cost effective for farmers who grow cacao.</p> <p>Para 47 Based on experimental studies, a longer draining time may lower Cd content in a few cocoa bean cultivars, but an optimal draining time is not known and this has only been studied in a few cultivars. <del>A longer</del> <u>The process of fermentation time than normal also of cocoa beans</u> may <del>result be</del> <u>useful to reduce the levels of Cd of the edible part of the cocoa beans. Cd can be redistributed from the nib (edible part) to the testa (inedible part).</u> <del>The Cd concentrations in less Cd, based on research studies, but the nibs can be reduced by a factor of 1.3 if the pH is sufficiently acidified during fermentation. In an optimal experiment the migration of Cd from the nibs to the testa was only observed if the nib pH dropped below 5. This acidic pH resulted from longer fermentation time for times. Pre-drying and short fermentation times may reduce the extent of outward Cd is not known migration.</del></p> <p>The EUMS propose to explain why a longer fermentation time reduces the cadmium in the edible part of the cocoa beans. Further information can be found in the reference to Vanderschueren et al. (2020).</p> <p><del>Para 49 Saccharomyces cerevisiae is a yeast strain, which absorbs Cd during cocoa fermentation. Therefore increasing the concentration of Saccharomyces cerevisiae during the fermentation process can help to reduce the cadmium content in the beans. The strain of Saccharomyces cerevisiae is one of the strains that intervenes in cocoa fermentation, therefore by increasing its population in such process could improve the absorption of Cd and the safety of cocoa.</del></p> <p>The EUMS propose to explain why Saccharomyces cerevisiae reduces the cadmium concentration in cocoa beans.</p>		
<p>Para 18 <u>Comment</u>: Replace 'dumps' with 'dumpsites' <u>Justification</u>: Editorial comment, for more clarity</p> <p><u>Comment</u>: Replace 'install' with 'Establish' <u>Justification</u>: Editorial comment, for more clarity</p> <p>Para 19 <u>Comment</u>: Replace ' an increased source of' with 'contaminated with' <u>Justification</u>: Editorial comment, for more clarity</p> <p>Para 20 <u>Comment</u>: Replace 'should be' with 'is' <u>Justification</u>: Editorial comment, for more clarity</p>	<p>Para 22 <u>Comment</u>: characterization <u>Justification</u>: Editorial comment, spellings</p> <p>Para 24 <u>Comment</u>: Replace 'production area of cacao' with 'cacao production area' <u>Justification</u>: Editorial comment, for more clarity</p> <p><u>Comment</u>: Replace 'samples In soil' with 'soil samples' <u>Justification</u>: Editorial comment, for more clarity</p>	Kenya
<p><b>Biochar – biocarbon</b>: There is a lot of sensitivity about biochar so it would be worthwhile indicating what is meant by residual biomass. That is, there is a perception that biochar is predominantly animal-derived but that isn't necessarily true.</p> <p><b>Cachaza</b>: The most common understanding of Cachaza (or Cachaça) is that it is a distilled spirit similar to rum. Is this really what is used in section 4.2.1 point 34 as a soil amendment? Or is it residual fibre from sugar cane processing (e.g. bagasse)? If Cachaza is interpreted as being the fibre from sugar cane, it would be appropriate to describe that here.</p> <p><b>Vinasse</b>: It would be worthwhile indicating that this is a liquid and that vinasse is not exclusively obtained from sugar cane alcohol production. Vinasse is also a by-product from alcohol production from sugar beet, for example.</p>	ICUMSA	