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World Health Organization

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**Agenda Item 4.3** **CX/FO 21/27/5 Add.1**

**JOINT FAO/WHO FOOD STANDARDS PROGRAMME**

**CODEX COMMITTEE ON FATS AND OILS**

**Twenty-Seventh Session**

**Virtual, 18 - 26 October 2021**

# PROPOSED DRAFT AMENDMENT/REVISION TO THE STANDARD FOR NAMED VEGETABLE OILS (CXS 210-1999): INCLUSION OF AVOCADO OIL

**Comments at Step 3 (Reply to CL 2021/28/OCS–FO)**

*Comments of Australia, Canada, Chile, China, Colombia, Cuba, Egypt, European Union, Kenya, Malaysia, Panama, Peru, Thailand, Uganda, USA and the European Federation of the Associations of Dietitians (EFAD)*

## Background

1. This document compiles comments received through the Codex Online Commenting System (OCS) in response to CL 2021/28/OCS-FO issued in July 2021. 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 appendix

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

**ANNEX I**

**Comments at Step 3 (Reply to CL 2021/28/OCS – FO)**

| COMMENTS | MEMBER/ OBSERVER |
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| The United States appreciates the co-leadership of Mexico, the input of the electronic working group, and the opportunity to comment on this proposal. The United States supports the proposed draft provision for inclusion of avocado oil in the Codex Standard for Named Vegetable Oils (CXS 210-1999) and provides the following specific comments on the draft as elaborated below.<br><br>Since "Clerosterol" is a new parameter and is therefore not specified for the other oils in CXS 210-1999, the United States favors Option 3.<br><br>The United States supports the consideration of a new work by CCFO to elaborate on the definitions and standards for other categories of avocado oil, including Virgin and/or Extra Virgin. | **USA** |
| Australia has no comments concerning the document presented for comments. | **Australia** |
| The European Union and its Member States (EUMS) agree with the proposed draft amendment/revision to the Standard for Named Vegetable Oils (CXS 210-1999): Inclusion of avocado oil and thank the EWG for the valuable work.<br><br>The EUMS welcome the inclusion of avocado oil into the Codex Standard for Named Vegetable Oils. Regarding the new parameter "Clerosterol", the EUMS prefer option 2, i.e to insert the new parameter for "Clerosterol" to the category "Others" in Table 3. This is because also for other oils in Table 3 "Clerosterol" is not listed separately. Furthermore, oils such as rapeseed oil (0,5%), sunflower oil (1.35%) and others contain lower amounts of clerosterol which are recorded under "Others" in Table 3. Since clerosterol is also present in other oils in appreciable quantities, it is not a unique characteristic feature that can be used to prove the authenticity of avocado oil. Thus, it is not necessary for the content to be reported in contrast to the other oils listed in the standard.<br><br>The EUMS welcome the suggestion of a new work by CCFO to elaborate a standard for virgin avocado oil with its own definition of the product since the type of raw material (mesocarp or whole fruit) as well as the process of obtaining the avocado oil (raw, virgin or extra virgin) has a strong impact on the quality of the resulting oil. That is not only true for avocado oil but also for other types of vegetable oils. | **European Union** |
| Malaysia records appreciation for the opportunity to respond to CL 2021/28/OCS-FO and offer comments on Document CX/FO 21/27/5 on Agenda Item 4.3 of the 27th Session of the Codex Committee on Fats and Oils. Malaysia's comments are as follows:<br>(i) Paragraph 15<br><br>The phrase 'fruit with certain characteristics' is ambiguous. It is recommended that the actual characteristics are listed. | **Malaysia** |
| Canada thanks Mexico and the United States of America, for the work on the proposed draft revision to CXS 210-1999: Inclusion of Avocado Oil.<br><br>Canada continues to support the development of a Codex standard for avocado oil that reflects the global supply of authentic avocado oil, taking into consideration variability due to varietal, geographic, climatic, environmental and others factors.<br><br>Overall, Canada supports advancing the draft proposed revisions to the standard CXS 210-1999: inclusion of avocado oil, to the next step. There are a few areas where Canada has specific comments below for consideration. Most of these have also been provided to the EWG chair in the course of the work of this EWG, including values for desmethylsterols and inclusion of tocopherols and tocotrienols.<br><br>Regarding the manner of including Clerosterol in Table 3 of the standard, Canada supports Option 3.<br><br>With regards to the suggestion to add descriptions and quality characteristics for extra virgin and virgin avocado oils in CXS 210-1999, Canada believes this will need more review and discussion. | **Canada** |

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| Proposed New Work to elaborate a standard for Virgin Avocado Oil (CX/FO 21/27/5 paragraph 20)<br><br>Canada would like to understand the need for this standard. It is not certain whether there is currently sufficient volume and trade in this type of product compared to other avocado oil. As well, Canada notes that the addition of virgin or extra virgin categories in the current CXS 210-1999 would make the Codex Standard for Named Vegetable Oils (CXS 210-1999) very complicated. As such, Canada is not inclined to support addition of these specific categories for named vegetable oils in CXS 210-1999. | |
| Uganda supports inclusion of avocado oil in the standard for named vegetable oil CXS 210-1999. The standard for avocado should remain part of CXS 210-1999 as opposed to stand-alone standard consistent with other oils included in this standard | **Uganda** |
| We do not have comments since the issue is out of our scope. | **EFAD** |
| Peru appreciates the request for comments, at Step 3, on the Proposed Draft amendment/revision to the Standard for Named Vegetable Oils (CXS 210-1999) (Inclusion of Avocado oil), but we will not state any position because we have no local data. | **Peru** |
| China appreciates the opportunity to provide comments on the proposed draft revision to the standard for Named Vegetable Oils (CXS 210-1999):- Inclusion of Avocado oil. | **China** |
| Kenya supports the development of avocado oil standard as proposed and supports most provisions as agreed. However we would like to make specific comments as will be found in the specific sections of the document. | **Kenya** |
| Panama appreciates the work done, we agree with the proposed document, and we recommend its progress. | **Panama** |
| In response to CL 2021/28/OCS-FO, Cuba supports the inclusion of avocado oil in the Proposed Draft amendment/revision to the Standard for Named Vegetable Oils. | **Cuba** |
| Egypt recommends adoption of option 1: Insert the new parameter for “Clerosterol” in Table 3, as proposed in the Annex. | **Egypt** |
| **2.1 Product definitions** | |
| Uganda proposes the description be improved to read as, ‘Avocado oil may be derived from either the mesocarp of avocado fruit or obtained by processing the whole avocado fruit’<br><br>Justification - The proposed text is to editorialy improve the text of the description<br><br>Uganda agrees with the new proposal of the definition as suggested in the new text<br><br>Rationale<br><br>Depending on the variety it may difficult the separate the mesocarp from the whole fruit of avocado, therefore extraction can be done from the entire fruit. | **Uganda** |
| Avocado oil is derived from the mesocarp of the avocado fruit (Persea americana) and can be obtained by processing the whole fruit or just the mesocarp.<br><br>The definition of avocado oil is unclear, it should be clarified from which portion of avocado fruit the oil is extracted. This is because the fatty acid composition and other quality properties may differ according to the sources of the avocado oil. Accordingly, the FAC in Table 1 should specify the source of the oil – i.e. the mesocarp alone and whole fruit. Avocado oil extracted from whole fruit or just mesocarp may also display different organoleptic characteristics, tocopherols, sterols and fatty acid composition profile, and these too should be reflected where appropriate in the corresponding tables.<br><br>Malaysia is of the view that until such a very fundamental criteria be decided, other discussion on other parameters such as FAC to be put on hold.<br><br>Malaysia also of a view that all parameters required by CX210-1999 should be provided by the eWG, as mandated in the Project Document approved as new work. | **Malaysia** |

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| The description be amended to read as, 'Avocado oil may be derived from either the mesocarp of avocado fruit or obtained by processing the whole avocado fruit'<br><br>Rationale: This is to improve the structure of the sentence to provide for the option of either deriving the oil from mesocarp or by processing the whole fruit. | **Kenya** |
| • The United States notes that this definition does not differentiate between avocado oil categories. Crude avocado oil destined for refining and refined avocado oil may be derived from either mesocarp tissue or whole fruit. However, certain categories such as virgin or extra virgin, may only be derived from high quality fruit that is not overripe and using only mesocarp tissue with little skin or seed tissues.<br>• Therefore, while the United States supports the proposed definition for crude or refined avocado oil, the United States suggests the addition of separate definitions for virgin and extra virgin avocado oil. | **USA** |
| Canada agrees with the proposed product definition for avocado oil. | **Canada** |
| Include the following note: This definition does not include avocado oil extracted from the mesocarp of the avocado fruit (*Persea americana*).<br><br>The definition and composition and quality criteria put forward in the proposed draft refer to refined avocado oil and are not consistent with the obtaining of superior quality avocado oils. Therefore, we request the inclusion of a note which explicitly states that this definition does not encompass oils extracted from the mesocarp of the cold fruit. | **Chile** |
| **3. ESSENTIAL COMPOSITION AND QUALITY FACTORS** | |
| Uganda supports the adoption of proposed values for avocado oil<br><br>Justification - The proposed ranges are aligned to the ranges in various varieties of avocado and thus will accommodate a wide range of products<br><br>Uganda agrees with the new limits of the fatty acid profile, however, this should be places in the informative annex<br><br>The new ranges for the fatty acid profile cover a wide scope while considering the range including the previous ranges in the previous | **Uganda** |
| **Table 1: Fatty acid composition of avocado oil as determined by gas liquid chromatography from authentic samples** *(expressed as percentage of total fatty acids)* | |
| The United States has the following comments and suggested changes to the proposed standard ranges for fatty acids.<br><br>- For C16:0, the United States recommends a range of 10.0 – 24.0<br><br>- For C18:1, the United States recommends a range of 50.0 – 72.0 | **USA** |
| It is found that the portion fatty acids of oil from avocado mesocarp（avocado collected from Haas, Peru, Chile and Mexico）did not meet the draft. China suggests revise the range of these fatty acids C16:0, C16:1, C18:1.<br>Table of the results of test samples<br>Samples — C16:0 — C16:1 — C18:1<br>• Oil from avocado mesocarp (avocado from Haas) (Aug. 2021) — 25.07 — 12.11 — 50.04<br>• Oil from avocado mesocarp (avocado from Chile) (Aug. 2021) — 25.92 — 12.01 — 48.51<br>• Oil from avocado mesocarp (avocado from Mexico) (Aug. 2021) — 25.64 — 12.9 — 48.34 | **China** |
| Canada agrees with the proposed ranges of fatty acid composition for avocado oil, except for C18:3 as noted above<br><br>Fatty acid C18:3 A - Avocado oil ND-2.1 - Comment: Canada supports a range of 0.7 – 2.1 for C18:3. | **Canada** |
| According to the product definition in Section 2.1 which state that avocado oil is derived from the mesocarp of the avocado fruit (Persea americana) and can be obtained by processing the whole fruit or just the mesocarp, Thailand would like to seek clarification | **Thailand** |

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| whether Tables 1, 2, and 3 are the provisions for avocado oil obtained only from mesocarp or whole fruits. | |
| We propose amendments based on the lipid profile of avocado oil in Colombia<br>**4.0 – 17.0~~512.0~~**<br>**0.1 – 1.9~~11.3~~**<br>**~~53.0~~42.14 – 70.0**<br>**ND – 0.6~~50.3~~** | **Colombia** |
| **OTHER QUALITY AND COMPOSITION FACTORS** | |
| Tocopherols and Tocotrienols (CX/FO 21/27/5 paragraph 13)<br>Canada notes that Codex Standard 210-1999 includes in Table 4 the "Levels of Tocopherols and Tocotrienols in crude vegetable oils", which is an Identity Characteristic under Other Quality and Composition Factors. Unfortunately, values for tocopherols and tocotrienols were not solicited and discussed during the current work of the EWG. Canada believes that alpha-tocopherol is a major constituent of the tocopherol fraction in crude and virgin avocado oils. Hence, Canada believes that the values for the tocopherols and tocotrienols should be included in the proposed standard for avocado oil.<br>Canada notes that CX/FO 19/26/8 has provided the ranges for tocopherols and tocotrienols in Avocado oil below. Rather than keeping these parameters blank for avocado oil, as currently the case in the final report of the EWG, Canada supports including these values in the draft revision to the standard, but placing them in square brackets, for review by member countries and consideration in the next CCFO session.<br>Levels of tocopherols and tocotrienols in crude avocado oil (Values from CX/FO 19/26/8)<br>Alpha-tocopherol 50-450<br>Beta-tocopherol ND<br>Gamma-tocopherol 10-20<br>Delta-tocopherol ND-10<br>Alpha-tocotrienol ND<br>Gamma-tocotrienol ND<br>Delta-tocotrienol ND<br>Total (mg/kg) 50-450 | **Canada** |
| **Table 2: Chemical and physical characteristics of crude avocado oil** | |
| The United States supports the values provided in Table 2. | **USA** |
| Canada agrees with the proposed values for the chemical and physical characteristics of avocado oil. | **Canada** |
| (1) In CXS210-1999, the apparent density only applies to palm oil and its series standards, and safflowerseed oil. Furthermore avocado oil is liquid at room temperature. China suggests delete apparent density.<br>(2) Some Testing data did not fall into the range of the draft. China suggests revise the three parameters of the draft as follows: Refractive index 1.450-1.470, Relative density 0.905-0.920, Iodine Value 64-96.<br>**Table of the results of test samples**<br>Samples / Refractive index / Relative density / Iodine Value<br>Oil from avocado mesocarp (avocado from Haas) Aug. 2021 / 1.456 / 0.9066 (x=20 ℃) / 67.57<br>Oil from avocado mesocarp | **China** |

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| (avocado from Chile) Aug. 2021 | 1.458 | 0.9148 (x=20 ℃) | 74.9 | |
| oil from avocado mesocarp (avocado from Mexico) Aug. 2021 | 1.457 | 0.9102 (x=20 ℃) | 70.04 | |
| Oil from supplier | | | 91.46 | |
| Oil from supplier | | | 92.93 | |
| According to the product definition in Section 2.1 which state that avocado oil is derived from the mesocarp of the avocado fruit (Persea americana) and can be obtained by processing the whole fruit or just the mesocarp, Thailand would like to seek clarification whether Tables 1, 2, and 3 are the provisions for avocado oil obtained only from mesocarp or whole fruits. | | | | **Thailand** |
| Uganda agrees with the proposed limits<br>The ranges are wide which indicate that many varieties have been considered | | | | **Uganda** |
| **Saponification Value (mg KOH/g oil)** | | | | |
| We propose amendments based on the lipid profile of avocado oil in Colombia<br>**170 – 201.66~~198~~**<br>**~~80~~78 – 90** | | | | **Colombia** |
| **4. IDENTITY CHARACTERISTICS** | | | | |
| The United States notes that tocopherol parameters were included in the proposal from CCFO26 (see CX/FO 19/26/8) but were omitted from the current proposal. Tocopherols are an important identification characteristic, like desmethylsterols. Therefore, the United States recommends that data on tocopherol content and composition should be collected and reviewed and be considered in updating the standard. The United States further recommends that the tocopherol levels considered by CCFO26 be added to the standard in square brackets, as shown below, until further data are obtained.<br>Avocado oil<br>Alpha-tocopherol [50-450]<br>Beta-tocopherol [ND]<br>Gamma-tocopherol [10-20]<br>Delta-tocopherol [ND-10]<br>Alpha-tocotrienol [ND]<br>Delta-tocotrienol [ND]<br>Total (mg/kg) [50-450] | | | | **USA** |
| **Table 3. Levels of desmethylsterols in crude avocado oil from authentic samples as a percentage of total sterols.** | | | | |
| The United States has the following comments and suggested changes to the proposed standard ranges for desmethylsterols:<br>• Since the standard applies to vegetable oils presented in a state for human consumption, the categories of avocado oil that are suitable for consumption are recognized as either refined avocado oil or extra virgin olive oil, and the refining process removes desmethylsterols, for these reasons, the United States recommends reducing the lower limit for total sterols to 2400 mg/kg (i.e., 2400 – 6500 mg/kg). | | | | **USA** |
| Canada has proposed changes in-line with comments provided to the third draft of the ewg report (paragraphs 10 and 11 in CX/FO 21/27/5) but these were not considered. These values are based on data generated for the past few years by experts in the Food Chemical Codex (FCC)<br>Stigmasterol - ND - 2.0 - Comment: Canada supports the range of 0.3 – 2.0 | | | | **Canada** |

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| Brassicasterol - ND-0. 2 - Comment: Canada proposed the range of ND – 0.45<br>Delta-7-stigmastenol - ND-1.0 - Comment: Canada proposed the range of ND – 3.5<br>Delta-7-avenasterol - ND - 1.0- Comment: Canada proposed the range of ND – 1.5<br>Others - 0.0 - 2.0 - Comment: Canada suggests this should be ND – 2.0<br>Total sterols (mg/kg) - 3500 - 6500 - Comment: Canada proposed the lower limit of 3000 (3000 - 6500)<br>Clerostero l- Comment: Clerosterol is not a specific sterol named in Table 3 of the Codex Standard for Named Vegetable Oils (CXS 210-1999) for all oils. Canada suggests that this is added as a footnote to Table 3, in the same manner that the range of values for beta tocotrienol in maize is added as a footnote in Table 4. This will make the format of the tables consistent in the way that certain information that are unique for some oils are included. | |
| Beta-sitosterol - 79.0 - 93.4 - Comment: Canada notes that Beta-sitosterol upper limit might be lower than the proposed level but this needs some resolution. The concern is that many laboratories are using methods generally aceptable for olive oil, which is “apparent Beta-sitosterol”. The level of “actual” Beta-sitosterol is approximately 7-8% lower than for the “apparent”, which is the sum of a number of minor sterols. The olive oil approach should not be used for avocado oil. More careful data are required to reconcile this issue. | **Canada** |
| According to the product definition in Section 2.1 which state that avocado oil is derived from the mesocarp of the avocado fruit (Persea americana) and can be obtained by processing the whole fruit or just the mesocarp, Thailand would like to seek clarification whether Tables 1, 2, and 3 are the provisions for avocado oil obtained only from mesocarp or whole fruits.<br>Regarding the proposed draft provision to include a new parameter “Clerosterol” into the proposed draft provision for avocado oil for inclusion in CXS 210-1999, Thailand request CCFO to further clarified on the rationale of inclusion of a new parameter “Clerosterol” in Table 3. | **Thailand** |
| Uganda supports option 1 to include Clerosterol in the main table<br>Justification - It is an important identifying characteristic and thus should be included in the main table rather than use of footnotes or otherwise.<br>Uganda agrees with the limits set, though this should also be informative<br>Rationale - Available country data | **Uganda** |
| Kenya supports option 1 to include Clerosterol in Table 3 of the standard.<br>Rationale: It is an important parameter in identifying characteristic and thus should be included in the main table rather than use of footnotes or otherwise. | **Kenya** |