

# CODEX ALIMENTARIUS COMMISSION



Food and Agriculture  
Organization of the  
United Nations



World Health  
Organization

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Agenda Item 4.3

CX/FO 24/28/6 Add.1  
January 2024

## JOINT FAO/WHO FOOD STANDARDS PROGRAMME

### CODEX COMMITTEE ON FATS AND OILS

Twenty-Eighth Session

Kuala Lumpur, Malaysia

19 - 23 February 2024

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

#### Comments in reply to CL 2023/59/OCS-FO

*Comments of Brazil, Canada, Chile, China, Egypt, Iraq, Peru, Saudi Arabia, Sierra Leone, Thailand, United Arab Emirates, USA and ICUMSA*

#### Background

1. This document compiles comments received through the Codex Online Commenting System (OCS) in response to CL 2023/59/OCS-FO issued in November 2023. 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 as **Annex I** and are presented in table format.

**General comments**

<b>COMMENT</b>	<b>MEMBER / OBSERVER</b>																																																																					
Brazil appreciates the work developed by Peru and informs that there are no additional comments to the standard for Sacha inchi oil proposed on CL 2023/59-FO.	<b>Brazil</b>																																																																					
Canada is pleased to submit the following comments in response to CL 2023/59/OCS-FO.  Canada thanks the EWG chaired by Peru for the work to amend/revise the Standard for Named Vegetable Oils to include Sacha Inchi Oil. Canada supports the inclusion of Sacha Inchi oil to the standard. Canada's comments on the proposed draft standard are below for consideration.  Canada notes some sections where the format does not align with the manner of presentation of texts in the current Standard for Named Vegetable Oils (CXS 210-1999). These are included as minor editorial comments to ensure that the final draft aligns with the formatting and language in the current standard.	<b>Canada</b>																																																																					
Chile has no comments.	<b>Chile</b>																																																																					
Ecuador appreciates the work done to prepare the document "PROPOSED DRAFT AMENDMENT/REVISION TO THE STANDARD FOR NAMED VEGETABLE OILS (CXS 210-1999): INCLUSION OF SACHA INCHI OIL. Ecuador has no comments on the description, or essential composition and quality factors, since the existing national regulation does not include any of the proposed parameters. These products are currently governed in the country by the <i>Ecuadorian Technical Standard NTE INEN 2688 - Sacha Inchi Oil. Requirements</i> . We encourage further efforts to develop the documents, and look forward to any future requests, which we will reply to with more information, if available.	<b>Ecuador</b>																																																																					
Egypt thanks The EWG chair for the good work and agrees with the request of the CCFO28, to consider advancing as currently drafted, the draft for Sacha Inchi Oil for inclusion in the Codex Standard for Named Vegetable Oils (CXS 210-1999) as presented in the Annex to EWG report	<b>Egypt</b>																																																																					
Agree with no comments. Regards	<b>Iraq</b>																																																																					
Peru provides data about sachu inchi oil samples from the country's diverse production regions, obtained at various times of the year and from different producers, to support the fatty acid ranges in tables 2, 3 and 4 of the CX/FO 24/28/6 report.  The following table is based on data derived from 41 sachu inchi oil samples taken in 2016, 2017, 2018, 2019, 2020 and 2023 for the main fatty acids of sachu inchi oil.	<b>Peru</b>																																																																					
<table border="1"> <thead> <tr> <th rowspan="2">FATTY ACIDS (%)</th> <th colspan="2">TOTAL</th> <th colspan="2">GENERAL</th> </tr> <tr> <th>Average</th> <th>Deviation</th> <th>Minimum</th> <th>Maximum</th> </tr> </thead> <tbody> <tr> <td>Palmitic acid 16: 0</td> <td>3.95</td> <td>0.19</td> <td>3.65</td> <td>4.50</td> </tr> <tr> <td>Stearic acid 18: 0</td> <td>2.96</td> <td>0.17</td> <td>2.60</td> <td>3.30</td> </tr> <tr> <td>Oleic acid 18:1 w9</td> <td>9.49</td> <td>0.46</td> <td>8.69</td> <td>10.77</td> </tr> <tr> <td>Linoleic acid 18:2 w6</td> <td>35.61</td> <td>0.76</td> <td>34.09</td> <td>36.91</td> </tr> <tr> <td>Linolenic acid 18:3 w3</td> <td>47.13</td> <td>1.28</td> <td>44.41</td> <td>49.60</td> </tr> <tr> <td>Arachidic acid 20:0</td> <td>&lt;0.1</td> <td>&lt;0.1</td> <td>&lt;0.1</td> <td>&lt;0.1</td> </tr> <tr> <td>Gadoleic acid 20:1</td> <td>0.30</td> <td>0.02</td> <td>0.25</td> <td>0.35</td> </tr> <tr> <td>Erucic acid 22:1</td> <td>&lt;0.1</td> <td>N.D.</td> <td>&lt;0.1</td> <td>&lt;0.1</td> </tr> <tr> <td>Saturated</td> <td>7.10</td> <td>0.32</td> <td>6.50</td> <td>8.00</td> </tr> <tr> <td>Monounsaturated</td> <td>9.83</td> <td>0.59</td> <td>8.98</td> <td>12.20</td> </tr> <tr> <td>Polyunsaturated</td> <td>82.76</td> <td>0.79</td> <td>81.00</td> <td>84.30</td> </tr> <tr> <td>Total fatty acids</td> <td>99.71</td> <td>0.22</td> <td>98.85</td> <td>100.04</td> </tr> </tbody> </table>	FATTY ACIDS (%)	TOTAL		GENERAL		Average	Deviation	Minimum	Maximum	Palmitic acid 16: 0	3.95	0.19	3.65	4.50	Stearic acid 18: 0	2.96	0.17	2.60	3.30	Oleic acid 18:1 w9	9.49	0.46	8.69	10.77	Linoleic acid 18:2 w6	35.61	0.76	34.09	36.91	Linolenic acid 18:3 w3	47.13	1.28	44.41	49.60	Arachidic acid 20:0	<0.1	<0.1	<0.1	<0.1	Gadoleic acid 20:1	0.30	0.02	0.25	0.35	Erucic acid 22:1	<0.1	N.D.	<0.1	<0.1	Saturated	7.10	0.32	6.50	8.00	Monounsaturated	9.83	0.59	8.98	12.20	Polyunsaturated	82.76	0.79	81.00	84.30	Total fatty acids	99.71	0.22	98.85	100.04	
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Upon review of the Proposed Draft amendment/revision to the Standard for Named Vegetable Oils (CXS 210-1999) in Step 3, Peru has a number of specific comments about the values in tables 1 and 2.  As to the other aspects presented in Annex I to CX/FO 24/28/6, Peru agrees with advancing it in Step 3.	
Saudi Arabia support the proposed draft	<b>Saudi Arabia</b>
Sierra Leone is in agreement with the PROPOSED AMENDMENT/REVISION TO THE STANDARD FOR NAMED VEGETABLE OILS	<b>Sierra Leone</b>

### Specific comments

<b>2 DESCRIPTION</b>	
<b>Sacha inchi oil</b> is <del>obtained by cold pressing derived from the seeds of</del> <u>sacha inchi fruit (<i>Plukenetia volubilis</i> L.)</u> .  The current definition in the standard does not include references to the extraction process of these oils, but only indicates where the oil comes from, using the phrase "...is derived from the seeds of ...". The suggested change is proposed for consistency with the current standard.	<b>Canada</b>
<b>Sacha inchi oil</b> is <del>obtained by cold pressing derived from the seeds of the sacha inchi fruit (<i>Plukenetia volubilis</i> L.) fruit.</del> <u><i>Plukenetia volubilis</i> L.</u> .  United States proposes this revision to remove 'obtained by cold pressing' to allow sacha inchi oil produced by other processes and to be consistent with product definitions in this section.	<b>USA</b>
<b>2 DESCRIPTION</b>  Why does the numbering of the sections start at 2? I would expect the numbering to start at 1.	<b>ICUMSA</b>
<b>3. ESSENTIAL COMPOSITION AND QUALITY FACTORS</b>	
<b>3.1 GLC RANGES OF FATTY ACID COMPOSITION (EXPRESSED AS PERCENTAGES)</b>	
<b>3.1 GLC ranges of fatty acid composition (expressed as percentages)</b> <del>Sacha inchi oil shall contain not less than 44% linolenic acid (as a percentage of total fatty acid content) and more than 32 % linoleic acid.</del>  Canada does not consider this information necessary to be added to this section of the standard. This section contains information that distinguishes specific vegetable oils that are derived from closely related oils, and in which certain fatty acids are mentioned in the common name to distinguish the oil from the regular ones. For example, the amount of erucic acid in low-erucic acid rapeseed oil distinguishes it from regular rapeseed oil; and the amount of oleic acid is mentioned in oils that contain higher levels of oleic acid in safflower oil, sunflower oil and palm oil. Since there are no other types of sacha inchi oil in the standard, there is no need to add the information on the linoleic acid and linolenic acid in this section.	<b>Canada</b>
<b>3.1 GLC ranges of fatty acid composition (expressed as percentages)</b> <del>Sacha inchi oil shall contain not less than 44% linolenic acid (as a percentage of total fatty acid content) and more than 32 % linoleic acid.</del>  Thailand proposes to delete this sentence. We consider that this sentence under section 3.1 is determined for vegetable oil with specific fatty acid contents such as low erucic acid rapeseed and high oleic acid safflower.	<b>Thailand</b>
<b>TABLE 1: FATTY ACID COMPOSITION OF SACHA INCHI OIL AS DETERMINED BY GAS LIQUID CHROMATOGRAPHY FROM AUTHENTIC SAMPLES (EXPRESSED AS PERCENTAGE OF TOTAL FATTY ACIDS) (SEE SECTION 3.1 OF THE STANDARD)</b>	
<b>TABLE 1: Fatty acid composition of sacha inchi oil as determined by gas liquid chromatography from authentic samples (expressed as percentage of total fatty acids) (see Section 3.1 of the Standard)</b>  Canada supports keeping some of the values within square brackets to allow for the generation of more data and information on authentic sacha inchi oils to ensure that the proposed standard is inclusive of these authentic oils produced in various regions and geographical conditions, and which may vary due to a number of factors.  Minor editorial comments:	<b>Canada</b>

<ul style="list-style-type: none"> <li>• C11:0 and C15:0 could be removed from the table as these are not found in Table 1 of the current standard, and the values reported are ND anyway.</li> <li>• For C18:1, the lower value of 8,4 should be reported as 8.4 (use a period instead of a comma).</li> <li>• For C20:0 the upper value should be reported as 0.1 instead of 0.10 (to one decimal place only).</li> <li>• For C24:1, the value should be reported as ND instead of a “-“.</li> <li>• Remove the spaces between the dash and the upper and lower values in the table as there are no spaces in the Tables in CXS 210-1999 (same comment for Tables 2, 3 and 4).</li> </ul>	
<p><b>TABLE 1: Fatty acid composition of sachu inchi oil as determined by gas liquid chromatography from authentic samples (expressed as percentage of total fatty acids) (see Section 3.1 of the Standard)</b></p> <p>For Table 1, we tested some cold pressed oil from local area, which is produced of Sachu inchi seed planted in Yunnan, China. The fatty acid composition results determined by gas liquid chromatography showed that the oil samples contain 6.2%-11.0% oleic acid (as a percentage of total fatty acid content), 35.5%-43.4% linoleic acid and 37.1%-49.4% α-linolenic acid. We suggest to adjust the range of oleic acid, linoleic acid and α-linolenic acid.</p> <p>For Table 1, the representation of "Non-detectable" of C24:1 is inconsistent with CXS 210. China suggests that replace “—” with “ND”.</p>	<p><b>China</b></p>
<p><b>Table 1</b></p> <p><u>The table reads: C18:3 [44.0] – [50.0] It should read: C18:3 44.0 – 50.0</u></p> <p>Peru’s data show minimum levels of 44.41 for C18:3. However, we could agree on having this value set at 44.0. In addition, Peru has data indicating maximum levels of 49.60 for C18:3 but we could agree on setting this value at 50.0 if it is representative of this oil's production in the world.</p> <p><u>The table reads: C18:2 [32.0] – [40.0] It should read: C18:2 32.0 – 40.0</u></p> <p>Peru’s data show minimum levels of 34.09 for C18:2. However, we could agree on having this value set at 32.0. In addition, Peru has data indicating maximum levels of 36.91 for C18:2 but we could agree on setting this value at 40.0 if it is representative of this oil's production in the world.</p> <p><u>The table reads: C18:1 8.4 – [11.7] It should read: C18:1 8.4 – 11.7</u></p> <p>Peru has data indicating maximum levels of 10.77 for C18:1; but we could agree on setting this value at 11.7 if it is representative of this oil's production in the world.</p> <p><u>The table reads: C18:0 2.6 – [4.00] It should read: C18:0 2.6 – 4.00</u></p> <p>Peru has data indicating maximum levels of 3.30 for C18:0 but we could agree on setting this value at 4.0 if it is representative of this oil's production in the world.</p> <p><u>The table reads: C17:0 ND – [0.1] It should read: C17:0 ND – 0.1</u></p> <p>Based on data from reports of sachu inchi oil tests, Peru agrees with setting the upper limit of total fatty acids at 0.1%.</p> <p><u>The table reads: C16:1 ND – [0.1] It should read: C16:1 ND – 0.1</u></p> <p>Based on data from reports of sachu inchi oil tests, Peru agrees with setting the upper limit of total fatty acids at 0.1%.</p> <p><u>The table reads: C16:0 3.6 – [4.8] It should read: C16:0 3.6 – 4.8</u></p> <p>Peru has data indicating maximum levels of 4.50 for C16:0, but we could agree on setting this value at 4.8 if it is representative of this oil's production in the world.</p>	<p><b>Peru</b></p>
<p><b>TABLE 1: Fatty acid composition of sachu inchi oil as determined by gas liquid chromatography from authentic samples (expressed as percentage of total fatty acids) (see Section 3.1 of the Standard)</b></p> <ul style="list-style-type: none"> <li>- Thailand supports the proposed requirements of fatty acids C16:0, C16:1, C17:0, C18:0 and C18:1. Therefore, the square brackets should be removed.</li> </ul> <p>C16:0            3.6 – 4.8  C16:1            ND – 0.1</p>	<p><b>Thailand</b></p>

<p>C17:0 ND – 0.1 C18:0 2.6 – 4.0 C18:1 8.4 – 11.7</p> <p>- Considering the characteristics of sacha inchi oil produced in Thailand, we propose to revise the values of fatty acid contents of C18:2 and C18:3 as follows:</p> <p>C18:2 32.0 – 43.2 C18:3 36.2 – 50.0</p>	
<p><b>TABLE 1: Fatty acid composition of sacha inchi oil as determined by gas liquid chromatography from authentic samples (expressed as percentage of total fatty acids) (see Section 3.1 of the Standard)</b></p> <p>CL 2023/59/OCS-FO Inclusion of Sacha inchi oil United Arab Emirates suggested that in the item 2.1 Product definitions to define the cold pressing of Sacha inchi seeds to obtain Sacha inchi oil, we recommend replacing the sentence:</p> <p><i>(Sacha inchi oil is obtained by cold pressing from seeds of Sacha inchi fruit (Plukenetia volubilis L.) by the following sentence:</i></p> <p><i>(Sacha inchi oil is obtained by the cold pressing under controlled conditions using mechanical extraction with low-temperature "less than 79°F (26°C) to extract the oil from seeds of Sacha inchi fruit (Plukenetia volubilis L.)</i></p>	United Arab Emirates
<b>APPENDIX TO CXS 210-1999 – OTHER QUALITY AND COMPOSITION FACTORS</b>	
<b>TABLE 2 – CHEMICAL AND PHYSICAL CHARACTERISTICS IN SACHA INCHI OIL</b>	
<p><b>TABLE 2 - Chemical and physical characteristics in sacha inchi oil</b></p> <p>For Table 2, we had determined iodine value of some cold pressed oil produced of Sacha inchi seed from Yunnan, China. The results showed that the iodine value of the samples is from 196 g/100g to 205 g/100g. We suggest to adjust the range of iodine value.</p>	China
<p><b>TABLE 2 - Chemical and physical characteristics in sacha inchi oil</b></p> <p>The table reads: Saponification value [189] – 196 It should read: Saponification value 189 – 196</p> <p>Peru's data show minimum values of 190.76 for the saponification value. However, we could agree on having this value set at 189 if it is representative of this oil's production in the world.</p> <p>The table reads: Unsaponifiable matter (g/kg) [≤ 5] It should read: Unsaponifiable matter (g/kg) ≤ 5</p> <p>Based on data from reports of sacha inchi oil tests, Peru agrees with setting the upper limit at ≤ 5 g/kg.</p>	Peru
<p><b>TABLE 2 - Chemical and physical characteristics in sacha inchi oil</b></p> <p>Saponification value</p> <p>Considering the characteristics of sacha inchi oil produced in Thailand, we propose to decrease the minimum values of the saponification to be inclusive of sacha inchi oil as follows:</p> <ul style="list-style-type: none"> <li>Saponification value 185 – 196</li> </ul>	Thailand
<p><b>TABLE 2 - Chemical and physical characteristics in sacha inchi oil</b></p> <p>Alignment of heading for Tables should be the same for all tables. Table 2 and Table 4 appear to be different to Table 1 and Table 3.</p>	ICUMSA
<b>TABLE 3 - LEVELS OF DESMETHYLSTEROLS OF SACHA INCHI OIL FROM AUTHENTIC SAMPLES AS A PERCENTAGE OF TOTAL STEROLS</b>	
<b>TABLE 4 - LEVELS OF TOCOPHEROLS AND TOCOTRIENOLS IN SACHA INCHI OIL FROM AUTHENTIC SAMPLES (MG/KG)</b>	
<p><b>TABLE 3 - Levels of desmethylsterols of sacha inchi oil from authentic samples as a percentage of total sterols</b></p> <ul style="list-style-type: none"> <li>Use a period instead of a comma for the values with a decimal point.</li> <li>Remove space in values reported in the thousands.</li> </ul>	Canada

<ul style="list-style-type: none"> <li>For example, total sterols in Table 3 should be reported as 2080-2480 (instead of 2 080 – 2 480)</li> </ul> <p><b>TABLE 4 - Levels of tocopherols and tocotrienols in sachai oil from authentic</b></p> <ul style="list-style-type: none"> <li>Use a period instead of a comma for the values with a decimal point.</li> <li>Remove space in values reported in the thousands.</li> <li>For example, Gamma-tocopherol in Table 4 should be reported as 1040-1370 (instead of 1 040 – 1 370). <b>samples (mg/kg)</b></li> </ul>	
<p><b>TABLE 3 and 4</b></p> <p>For Table 3 and Table 4, the representation of value is inconsistent with CXS 210. China suggests that replace “1,0” with “1.0” and replace “2 080” with “2080”.</p>	<b>China</b>