



## 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 CAMELLIA SEED OIL

(At Step 3)

(Prepared by the Electronic Working Group chaired by China<sup>1</sup>)

Codex Members and Observers wishing to submit comments, at Step 3, on Annex I of this proposed draft amendment/revision to the *Standard for Named Vegetable Oils* (CXS 210-1999): Inclusion of Camellia seed oil should do so as instructed in CL2023/58/OCS-FO available on the Codex webpage/Circular Letters 2023: <https://www.fao.org/fao-who-codexalimentarius/resources/circular-letters/en/>

#### INTRODUCTION AND TERMS OF REFERENCE

1. The 27<sup>th</sup> Session of the Codex Committee on Fats and Oils (CCFO27), agreed to submit for approval by CAC 45 the proposal for new work on the inclusion of camellia seed oil in the *Standard for Named Vegetable Oils* (CXS 210-1999).
2. The Committee also agreed to establish an Electronic Working Group (EWG), chaired by China, working in English only, subject to the approval of new work, to prepare the proposed draft revision for circulation for comments at Step 3 and consideration by CCFO28.
3. The new work was approved by CAC45.

#### PARTICIPATION AND METHODOLOGY

4. Thirteen Codex Members<sup>1</sup> responded to the invitation to participate in the EWG.
5. The EWG worked from April 2022 to December 2022, with two rounds of discussions (First round discussion: April 1, 2022 to July 31, 2022; Second round discussion: October 3, 2022 to December 31, 2022).

#### SUMMARY OF DISCUSSION

6. There was general agreement by the EWG on all the proposed provisions for Camellia seed oil taking into account editorial comments as well as the need to align the relevant provisions with those of CXS 210-1999.

7. Further, the following two provisions were discussed as follows:

7.1 *Section 2.1 Product definition* — Two definitions were put forward as follow:

- Camellia seed oil is derived from the seed of camellia (*Camellia oleifera* Abel).
- Camellia seed oil (youcha oil) is derived from the seeds of cultivated *Camellia* species (*C.oleifera*, *C.oleifera* var.*meiocarpa*, *C.chekiangoleosa* and *C.vietnamensis*).

<sup>1</sup>Members of the EWG included Chile, China, Egypt, Germany, India, Iran (Islamic Republic of), Japan, Mexico, Poland, Republic of Korea, Saudi Arabia, Thailand, and United States of America.

The EWG Chair considered the two definitions and recommended the second one for the following reasons: (i) it emphasizes that edible camellia seed oil should be obtained from cultivated species with application values; (ii) it lists the main camellia species currently used in producing camellia seed oil, with *Camellia oleifera* representing nearly 80% of total production; (3) youcha (Chinese phonetic) oil was added as a common term because it is widely recognized in industry and has been adopted in relevant Chinese standards.

7.2 *Appendix Table 2* — Based on the data provided, the range for the saponification value was adjusted from 193-196 to 188-199.

### **CONCLUSION AND RECOMMENDATION**

8. Consistent with the TORs, the EWG has completed its task and requests CCFO28 to consider the proposed amendments/revisions to the *Standard for Named Vegetable Oils* (CXS 210-1999) to include the provisions for Camellia seed oil as presented in the Annex I to this report.

**PROPOSED DRAFT AMENDMENT/REVISION TO THE STANDARD FOR NAMED VEGETABLE OILS  
(CXS 210-1999): INCLUSION ON CAMELLIA SEED OIL**

**(Step 3)**

Notes on Proposed Amendment/Revisions to Current Standard:

Bold and underlined: proposed amendment agreed to by all/majority of members of the electronic working group (consensus)

**2. DESCRIPTION**

**2.1 Product definition**

**Camellia seed oil (youcha oil) is derived from the seeds of cultivated *Camellia* species (*C.oleifera*, *C.oleifera var.meiocarpa*, *C.chekiangoleosa*, and *C.vietnamensis*).**

**3. ESSENTIAL COMPOSITION AND QUALITY FACTORS**

**3.1 GLC ranges of fatty acid composition (expressed as percentages)**

Samples falling within the appropriate ranges specified in Table 1 are in compliance with this Standard. Supplementary criteria, for example national geographical and/or climatic variations, may be considered, as necessary, to confirm that a sample is in compliance with the Standard.

**Table 1: Fatty acid composition of camellia seed oil as determined by gas liquid chromatography from authentic samples (expressed as percentage of total fatty acids)**

Fatty acid	Camellia seed oil
C6:0	<b><u>ND</u></b>
C8:0	<b><u>ND</u></b>
C10:0	<b><u>ND</u></b>
C12:0	<b><u>ND</u></b>
C14:0	<b><u>ND-0.8</u></b>
C16:0	<b><u>3.9-14.5</u></b>
C16:1	<b><u>ND-0.2</u></b>
C17:0	<b><u>ND</u></b>
C17:1	<b><u>ND</u></b>
C18:0	<b><u>0.3-4.8</u></b>
C18:1	<b><u>68.0-87.0</u></b>
C18:2	<b><u>3.8-14.0</u></b>
C18:3	<b><u>ND-1.4</u></b>
C20:0	<b><u>ND-0.5</u></b>
C20:1	<b><u>ND-0.7</u></b>
C20:2	<b><u>ND</u></b>
C22:0	<b><u>ND</u></b>
C22:1	<b><u>ND-0.5</u></b>
C22:2	<b><u>ND</u></b>
C24:0	<b><u>ND</u></b>
C24:1	<b><u>ND-0.5</u></b>

ND - Non-detectable, defined as  $\leq 0.05\%$

**APPENDIX TO CXS 210-1999 - OTHER QUALITY AND COMPOSITION FACTORS**

**3. CHEMICAL AND PHYSICAL CHARACTERISTICS**

Chemical and Physical Characteristics are given in Table 2.

Samples falling within the appropriate ranges specified in Table 2 are in compliance with this Standard.

**Table 2: Chemical and physical characteristics of crude camellia seed oil**

	<b>Camellia seed oil</b>
Relative density (x°C/water at 20°C)	<b><u>0.912-0.922 (x=20°C)</u></b>
Refractive index (ND 40°C)	<b><u>1.460-1.464</u></b>
Saponification value (mg KOH/g oil)	<b><u>188-199</u></b>
Iodine value	<b><u>83-89</u></b>
Unsaponifiable matter (g/kg)	<b><u>≤15</u></b>

**4. IDENTITY CHARACTERISTICS**

**Table 3: Levels of desmethylsterols in crude camellia seed oil from authentic samples as a percentage of total sterols**

	<b>Camellia seed oil</b>
Cholesterol	<b><u>ND</u></b>
Brassicasterol	<b><u>ND</u></b>
Campesterol	<b><u>0.5-2.1</u></b>
Stigmasterol	<b><u>0.3-4.6</u></b>
Beta-sitosterol	<b><u>16.0-60.0</u></b>
Delta-5-avenasterol	<b><u>0.4-4.3</u></b>
Delta-7-stigmastenol	<b><u>37.2-69.0</u></b>
Delta-7-avenasterol	<b><u>0.9-8.5</u></b>
Others	<b><u>0.5-5.1</u></b>
Total sterols(mg/kg)	<b><u>100-4000</u></b>

ND - Non-detectable, defined as ≤ 0.05%

**Table 4: Levels of tocopherols and tocotrienols in crude camellia seed oil from authentic samples (mg/kg)**

	<b>Camellia seed oil</b>
Alpha-tocopherol	<b><u>30-950</u></b>
Beta-tocopherol	<b><u>0-11</u></b>
Gamma-tocopherol	<b><u>2-56</u></b>
Delta-tocopherol	<b><u>0-28</u></b>
Alpha-tocotrienol	<b><u>13-35</u></b>
Gamma-tocotrienol	<b><u>5-39</u></b>
Delta-tocotrienol	<b><u>ND</u></b>

Total (mg/kg)	<b><u>70-1000</u></b>
---------------	-----------------------

ND - Non-detectable.

## 5. METHODS OF ANALYSIS AND SAMPLING

The recommended methods in CXS 210-1999 and CXS 234-1999 also apply to camellia seed oil.