CODEX ALIMENTARIUS COMMISSION

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Food and Agriculture Organization of the United Nations

World Health Organization

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Agenda Item 7.1 **CX/FO 21/27/8 Part I**

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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON FATS AND OILS

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PROPOSALS FOR NEW WORK

(Replies to CL 2019/54-FO)

PART I - PROPOSED AMENDMENT/REVISION TO THE CODEX STANDARD FOR NAMED VEGETABLE OILS (CXS 210-1999), - INCLUSION OF CAMELLIA SEED OIL PROJECT DOCUMENT

(Submitted by the People's Republic of China)

Codex Members and Observers wishing to submit comments, on this **project document for new work on the inclusion of camella seed oil in CXS 210-19999**, should do so as instructed in CL 2021/36/OCS-FO available on the Codex webpage/Circular Letters 2021:http://www.fao.org/fao-who-codexalimentarius/resources/circular-letters/en/

1. PURPOSE AND SCOPE

The purpose of this new work is to amend the Codex Standard for Named Vegetable Oils (CXS 210-1999) to include camellia seed oil derived from the seed of camellia (*Camellia oleifera Abeel*), which has enhanced functionality due to its high oleic acid content (68–87%) and abundant natural antioxidants. The amendment would enable Codex member countries and the food industry to appropriately characterize, name, and market camellia seed oil developed for improved functional and nutritional benefits for consumers and the food processing industry.

The scope of this work is the addition of camellia seed oil in the Codex Standard for Named Vegetable Oils (CODEX STAN 210-1999). The compositional characteristics will be provided for associated tables in the Standard.

2. RELEVANCE AND TIMELINESS

With its extremely similar fatty acid profiles and physicochemical properties to those of olive oil, camellia seed oil is therefore honored as the “oriental olive oil” and “the king of cooking oil”. It is rich in oleic acid (68–87%). Meanwhile, camellia seed oil also contains a multitude of natural antioxidants, such as squalene, phytosterol (β-sitosterol, campesterol and stigmasterol), polyphenols, fat-soluble vitamins (Vitamins A, B, E), sasanquasaponin, and other functional substances. These components with various biological activities are useful for lowering triglycerides and cholesterol, thus preventing hypertension, heart disease, arteriosclerosis, and other diseases. Also, it could be used as a base oil for high-level skin care oil through further intensive processing.

To facilitate international trade in food products and ingredients, Codex standards often are used as the basis for names and specifications for such products to ensure fair trade practices. It has been confirmed that

camellia seed oil enhances functionality attributes as above. Camellia seed oil usage is expected to experience rapid growth over the next several years. Since this oil will be utilized in expanded amounts due to its favorable characteristics, it is important for it to have consistent naming and specifications to insure fair trade internationally.

3. MAIN ASPECTS TO BE COVERED

The proposed new work to amend the Codex Standard for Named Vegetable Oils (CXS 210-1999) to include camellia seed oil l will include the following aspects: :

- Description
- Essential composition and quality factors
- Establishment of general requirements for camellia seed oil derived from the seed of camellia (*Camellia oleifera Abeel*),.
- Establishment of specific requirements for camellia seed oil
- 2.1 Product definition. Include the description camellia seed oil.
- 3.0 Composition and quality factors
- Table 1. Include the fatty acid composition of camellia seed oil
- Table 2 Quality characteristics of camellia seed oils
- Other quality and compositional factors
- Table 3, and Table 4 the content of sterol and tocopherol will be proposed.

The preliminary results indicate that the contents of β-sitosterol and α-tocopherol in camellia seed oils are 106-820 mg/kg and 153-771 mg/kg, respectively.

4. ASSESSMENT AGAINST THE CRITERIA FOR THE ESTABLISHMENT OF WORK PRIORITIES

This proposal is consistent with the Criteria for the Establishment of Work Priorities applicable to both commodities and general subjects.

(a) Volume of production and consumption in individual countries and volume and pattern of trade between countries.

In China, the production of camellia seed has been increased year by year, and reached 2.68 million tons in 2019, around 700 kilo tons of camellia seed oil were produced for different purpose, and 600 kilo tons of camellia seed oil is estimated to be consumed in food market.

According to the data from the General Administration of Customs of China, in 2018 and 2019, a total of 171 and 262 tons of camellia seed oil was exported, of which worth $2.05 million (USD) and $3.24 million (USD). These numbers went up to 338 tons and $4.17 million (USD) in 2020.

More than 15 countries import camellia oil from China, the top trading partners are Japan, USA, Canada, France, Australia and Korea.

(b) Diversification of national legislation and apparent resultant or potential impediments to international trade

The voluntary National Standard for camellia seed oil (GB/T 11765) in China was first published in 2003 and revised in 2018, which establishes the general specifications of camellia seed oil for domestic market. With the rapid demand in international market, the proposed amendment for camellia seed oil to the Codex Standard

for Named Vegetable Oils (CODEX-Stan 210-1999) will help to promote the wide-recognized, science-based standards, and facilitate global trade in camellia seed oil. Without such a standard, it is expected that national legislations or standards will differ, which may affect international trade in this product. In addition, it is expected that the lack of a Codex standard might trigger proliferation of private standards for this oil and contribute to the confusion and deceptive practices in trade in oils that are unsuitable for their intended uses.

(c) International or regional market potential

As indicated above, a significant international and regional market potential exists, especially as global health authorities call for the use of nutritionally preferred alternatives to edible oils that are high in saturated fatty acids. By this amendment to the standard as mentioned, the potential for both of international and regional markets will be increased.

(d) Amenability of the commodity to standardisation

This is a proposed amendment to the Codex Standard for Named Vegetable Oils (CODEX-Stan 210-1999) to include camellia seed oil. The addition of this oil including essential factors related to composition, health and quality would enable the standardization of oils of this type and contribute to consumer protection.

(e) Coverage of the main consumer protection and trade issues by existing or proposed general standards

As indicated above, development of a Codex standard for camellia seed oil will enhance consumer protection by discouraging deceptive practices and the development of private standards.

(f) Number of commodities which would need separate standard indicating whether raw, semi-processed or processed

Not relevant.

(g) Work already undertaken by other international organizations in this field and/or suggested by the relevant international intergovernmental body(ies)

None known.

5. RELEVANCE TO THE CODEX STRATEGIC OBJECTIVES

The proposed amendment to the Codex Standard 210 is appropriate to Goal 1, Promoting Sound Regulatory Frameworks.

As indicated in this Goal, “the CAC will provide essential guidance to its members through the continued development of international standards and guidelines relating to food safety and hygiene, nutrition, labeling, and import/export inspection and certification and quality of the food stuff.”

Specifically, as stated in bullet #1, “the CAC will develop international standards, guidelines and recommendations based on scientific principles…that can serve as a model for member of the CAC to pursue food regulatory systems that provide consumers with safe food and ensure fair practices in the food trade.”

Further, under bullet #2, it is noted that “Codex standards for food quality should focus on essential characteristics of products to ensure that they are not overly prescriptive and that the standards are not more trade restrictive than necessary.” The proposed amendment to Codex Standard 210 will facilitate fair trade in camellia seed oil.

The work would also focus on essential characteristics, taking into consideration the technical and economic implications for all Codex members.

6. INFORMATION ON THE RELATION BETWEEN THE PROPOSAL AND OTHER EXISTING CODEX

DOCUMENTS

None.

7. IDENTIFICATION OF ANY REQUIREMENT FOR AND AVAILABILITY OF EXPERT SCIENTIFIC ADVICE

None.

8. IDENTIFICATION OF ANY NEED FOR TECHNICAL INPUT TO THE GUIDELINES FROM EXTERNAL BODIES THAT CAN BE PLANNED

None.

9. PROPOSED TIMELINE FOR COMPLETION OF THE NEW WORK, INCLUDING THE START DATE, THE PROPOSED DATE FOR ADOPTION AT STEP 5/8, AND THE PROPOSED DATE FOR ADOPTION BY THE COMMISSION

Timeline:

- Project document and new work agreed at 27th Session of CCFO27
- Approval of new work by CAC44
- Consideration of the Proposed Draft Step 3 by CCFO28
- Adoption of the Draft Amendment to CXS 210 – 1999 at Step 5/8 by CAC 46 (2023) .

ANNEX

PROPOSED DRAFT CODEX STANDARD FOR CAMELLIA SEED OILS

2. DESCRIPTION

2.1 Product definition

Camellia seed oil is derived from the seed of camellia (*Camellia oleifera Abeel*).

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.

Table 1 Fatty acid composition of camellia seed oils (expressed as percentage of total fatty acids)

Fatty acid	Content (%)
C14:0	ND-0.8
C16:0	3.9-14.5
C16:1	ND-0.2
C18:0	0.3-4.8
C18:1	68.0-87.0
C18:2	3.8-14.0
C18:3	ND-1.4
C20:0	ND-0.5
C20:1	ND-0.7
C22:1	ND-0.5
C24:1	ND-0.5

ND - Non-detectable, defined as ≤ 0.05%.

APPENDIX

Other Quality and Composition factors 1. Quality Characteristics

Matter volatile at 105°C	≤0.2% m/m
Insoluble impurities	≤0.2% m/m
Peroxide value	≤10 milliequivalents of active oxygen/kg oil
Acid value	≤4.0 mg KOH/g Oil

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 Quality characteristics of camellia seed oils

Quality characteristic	Value
Relative density (20℃/water at 20℃)	0.912-0.922
Refractive index (ND 40℃)	1.460-1.464
Saponification value (mg KOH/g oil)	193-196
Iodine value	83-89
Unsaponifiable matter (g/kg)	≤15

9. OTHER QUALITY AND COMPOSITIONAL FACTORS

The content of sterol and tocopherol will be proposed. The preliminary results indicate that the contents of β-sitosterol and α-tocopherol in camellia seed oils are 106-820 mg/kg and 153-771 mg/kg, respectively.