



## 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 HIGH OLEIC ACID SOYA BEAN OIL

(Step 3)

(Prepared by the Electronic Working Group chaired by the United States of America)

Codex Members and Observers wishing to submit comments, at Step 3, on Annex 1 of this proposed draft amendment/revision to the *Standard for Named Vegetable Oils* (CXS 210-1999): inclusion of high oleic acid soya bean oil should do so as instructed in CL2023/60/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. At the 27<sup>th</sup> Session of the Codex Committee on Fats and Oils (CCFO27), the United States of America presented the new work proposal to amend/revise the Standard for Named Vegetable Oil (CXS 210-1999) to include high oleic acid soya bean oil.
2. The CCFO27 agreed to:
  - i. Submit for approval by CAC45 the proposal for new work on the inclusion of high oleic acid soya bean oil in the Standard for Named Vegetable Oil (CXS 210-1999).
  - ii. Establish an electronic working group (EWG) chaired by the United States, 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.
  - iii. Make the report of the EWG available to the Codex Secretariat at least three months before CCFO28.
3. The CAC45 approved the new work proposal.

#### PARTICIPATION AND METHODOLOGY

4. Codex Members and Observers were invited to register their experts for the EWG in January 2022. Experts from 21 Members<sup>1</sup> and 2 Observers registered to participate in the EWG. The work of the EWG was conducted on the Codex EWG platform.
5. The EWG worked on the standard parameters during four rounds of consultations. The first draft of the proposed standard for high oleic acid soya bean oil was circulated to the EWG for comments in February 2022, while the fourth draft was circulated for comments in October 2023.

<sup>1</sup> Members of the EWG included: Argentina, Brazil, Canada, Chile, China, Colombia, Cyprus, Dominican Republic, Ecuador, Egypt, India, Iran, Japan, Malaysia, Mexico, Poland, Republic of Korea, Saudi Arabia, Thailand, United States of America, Uruguay FEDIOL, and USP

## SUMMARY OF EWG DISCUSSIONS

### Table 1

6. The EWG considered the fatty acid composition and agreed all the values taking into account the following:
- i. The maximum value for C8:0 and C10:0 was revised to one decimal point to be consistent with current standard CXS 210-1999.
  - ii. There was discussion on decreasing the proposed maximum value for C14:0 fatty acids from 0.5 to 0.1, however a maximum value of 0.5 was retained as this was considered to be inclusive of high oleic acid soya bean oil with C14:0 values falling between 0.1 and 0.5.
  - iii. The maximum value for fatty acids C18:1 and C18:2 was increased to be inclusive of authentic oils with high content of C18:1 and C18:2, respectively.
  - iv. The maximum fatty acid value for C18:3 was decreased to a value that is not too restrictive and consistent with the maximum limit published in Food Chemical Codex monograph for high oleic soybean oil. Further, the minimum fatty acid value was decreased from 1.1 to 1.0 as it was noted that there are commercial varieties with C18:3 below 1.1%

### Table 2

7. The EWG considered the chemical and physical characteristics of crude high oleic acid soya bean oil in Table 2 and agreed to the values in Table 2 taking into account analytical data provided, made changes as appropriate to the values of the parameters including formatting them to the decimal point to be consistent with the standard CXS 210-1999.

### Table 3

8. The EWG considered levels of desmethylsterols and agreed to the proposed values in Table 3 taking into account additional analytical data/results. The proposed values for the parameters were formatted to be consistent with the current standard CXS 210-1999.

### Table 4

9. The EWG considered levels of tocopherols and tocotrienols and agreed to the proposed values in Table 4 taking into account additional analytical data. The proposed values for these parameters were formatted to ensure consistency with current standard CXS 210-1999.

## CONCLUSION AND RECOMMENDATION

10. The EWG requests CCFO28 to advance the proposed draft amendment/revision to the *Standard for Named Vegetable Oils* (CXS 210-1999) to include high oleic acid soya bean oil as proposed in Annex 1.

## ANNEX 1

**PROPOSED DRAFT AMENDMENT/REVISION TO THE STANDARD FOR NAMED VEGETABLE OILS  
(CXS 210-1999): Inclusion of high oleic acid soya bean oil**

**(Step 3)**

**2. DESCRIPTION****2.1 Product definitions**

**Soya bean oil – high oleic acid (high oleic acid soya bean oil; high oleic acid soybean oil)** is produced from high oleic acid oil-bearing seeds of varieties derived from soya beans (seeds of *Glycine max* (L.) Merr.).

**3. ESSENTIAL COMPOSITION AND QUALITY FACTORS****3.1 GLC ranges of fatty acid composition (expressed as percentages)**

**High oleic acid soya bean oil must contain not less than 65% oleic acid (as a % of total fatty acids).**

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

Fatty acid	Soya bean oil (high oleic acid)
C6:0	ND
C8:0	ND – 0.1
C10:0	ND – 0.1
C12:0	ND– 0.1
C14:0	ND – 0.5
C16:0	2.5 – 8.0
C16:1	ND – 0.1
C17:0	ND – 0.8
C17:1	ND – 1.5
C18:0	3.2 – 5.0
C18:1	65.0 – 87.0
C18:2	1.0 – 12.0
C18:3	1.0 – 6.0
C20:0	ND – 1.0
C20:1	ND – 1.0
C20:2	ND – 0.1
C22:0	ND – 0.7
C22:1	ND – 0.4
C22:2	ND
C24:0	ND – 0.5
C24:1	ND

ND – not detectable, defined as  $\leq 0.05\%$

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

## 3. CHEMICAL AND PHYSICAL CHARACTERISTICS

Table 2: Chemical and physical characteristics of crude vegetable oils

	Soya bean oil (high oleic acid)
Relative density (x°C/water at 20°C)	0.909 – 0.923
Apparent density (g/ml)	
Refractive index (ND 40°C)	1.462 – 1.468
Saponification value (mg KOH/g oil)	188 – 192
Iodine value	75 – 95
Unsaponifiable matter (g/kg)	≤15
Stable carbon Isotope ratio	

## 4. IDENTITY CHARACTERISTICS

Table 3: Levels of desmethylsterols in crude vegetable oils from authentic samples as a percentage of total sterols

	Soya bean oil (high oleic acid)
Cholesterol	0.2 – 0.5
Brassicasterol	0.2 – 0.3
Campesterol	19.9 – 25.2
Stigmasterol	17.3 – 23.0
Beta-sitosterol	42.3 – 51.9
Delta-5-avenasterol	1.9 – 3.0
Delta-7-stigmastenol	0.6 – 2.5
Delta-7-avenasterol	0.5 – 1.5
Others	4.5 – 7.1
Total sterols (mg/kg)	2300 – 3850

ND – Non-detectable, defined as ≤ 0.05%

Table 4: Levels of tocopherols and tocotrienols in crude vegetable oils from authentic samples (mg/kg)

	Soya bean oil (high oleic acid)
Alpha-tocopherol	17 – 138
Beta-tocopherol	9 – 106
Gamma-tocopherol	89 – 1756
Delta-tocopherol	44 – 570
Alpha-tocotrienol	ND – 39
Gamma-tocotrienol	ND
Delta-tocotrienol	ND
Total (mg/kg)	900 – 2000

ND – Non-detectable.